CollTech MCOTI

MHS-XSL Series Full-Automatic Online Dispensing System

ShenZhen MCOTI Technologies Ltd.

MHS-XSL Series

MHS-XSL series high-speed dispensing system offers a variety of modular production modes for customers. The series provides a wide range of online dispensing solutions and a variety of valve technology combinations to maximize flexible production. It is the most expansive and cost-effective dispensing system in the industry. Use high-end non-contact jetting valve to improve the uniformity, productivity and reduce material cost. The fully automatic dispensing system has been tested for a long time in the high demand production environment, so that it can calmly meet the process requirements such as high-precision assembly of complex products.

Overview

- Min.dispensing diameter for solder paste：150μm
- Min.dispensing diameter for silver paste：180μm
- Dispensing Speed:
  Contact piezoelectric valve 4 Points/s
  Non-contact piezoelectric valve 20 Points/s
- Non-contact dispensing increases UPH
- High-precision for solder paste quantity
- Fully automated
- Longer service life
- Lower maintenance cost

High Productivity

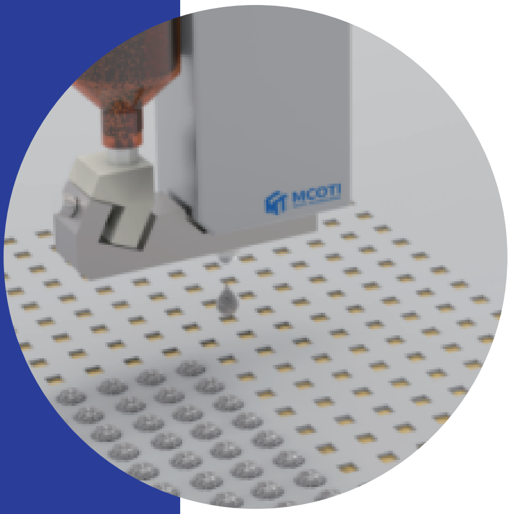
Visual positioning with Flying camera significantly increases production capacity and improves ROI of unit area.

High Precision

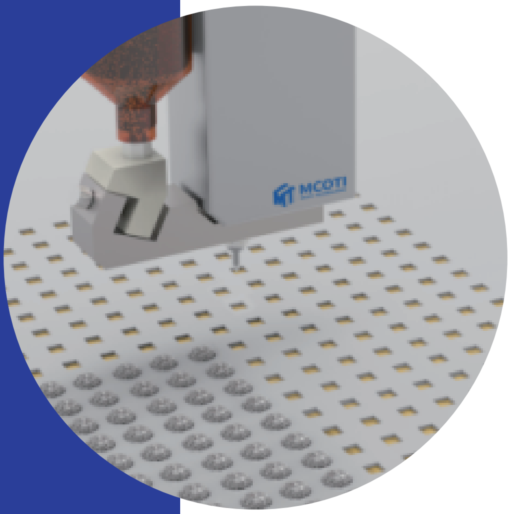
Using linear motor and marble structure ensure accuracy and stability with high speed operation.

Flexibility

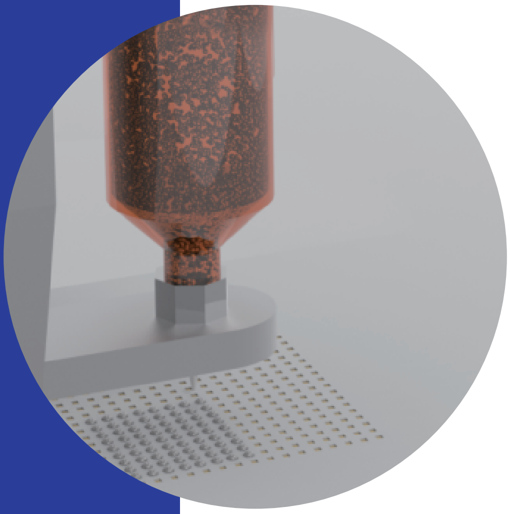
Available for different substrate layouts and different sizes of products to meet different process requirements.
Different function modules can easily and flexibly respond to the demands of complex dispensing processes.
The software is easy to operate and users can automatically adjust the width of the track.



Non-contact Piezo-
electric with Jetting



Non-contact Piezoelectric
Valve with Long needle



Contact Pneumatic Valve

MHS-XSL Series Core Components

High productivity, Low cost

Different types of valves offer a wide range of functions and optimize your process for your material. For high flow applications, screw valve and positive displacement pump reduce cycle times while maintaining strict process control. All nozzles, valves and pumps are designed with speed, durability and precision.

Unique Capabilities

Jetting valves and pumps can lead to high droplet velocities and a wide range of fluids and applications.

Precise Control

Closed-loop control and system feedback are the keys to improving yields.Focused on intelligent jetting control,substrate heating, checking user-specified temperature and material distribution is the basis for quality output.

Easy Maintenance

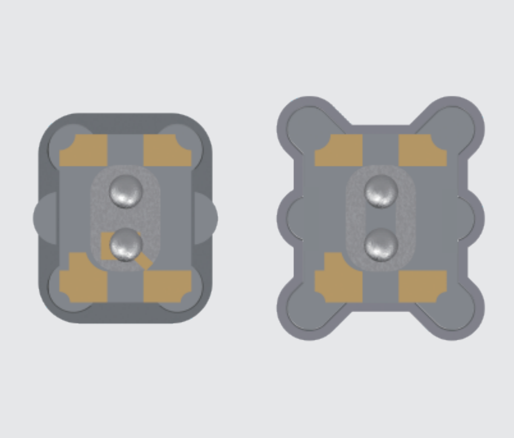
Applications

01

Precision positioning (crystal)

Capabilities：
- Precise positioning to improve efficiency and yield；
- Dispensing solder paste on FPC with protruding objects near the pad;
- Stable dispensing of solder paste at maximum speed

Application Description:
- Available dispensing solder paste in PCB with cavity；
- Match the printing process to improve production efficiency



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Dispensing on PCB with protrusions

Capabilities:
- Solve the problem of protrusions near the pads,when printing FPC circuit with solder paste；
- Suitable for mass production with stable yields；

Application Description:
- Precision dispensing for circuits with fine pitch or small space；
- Attach the components to the PCB substrate with solder paste and then place the components on the solder paste;

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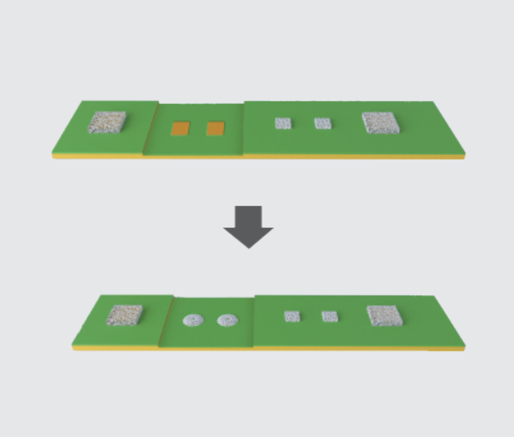
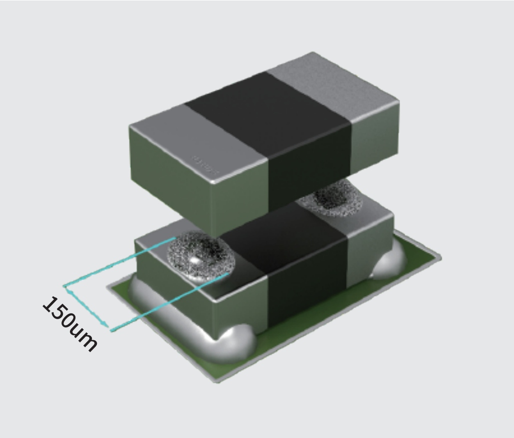
Dispensing after screen printing

Application description:

- Step1：screen printing on the full board, except for cavity；
- Step2: dispensing for cavity



Applications



Stacking components/chips

Capabilities:
- solder diameter: 140~170μm；average diameter: 156.03μm；
- Cpk:1.55

Application Description:
•Solder paste is dispensed on the pads of the installed chips for stacking Chips/Components；
•Dispensing on the pads of chip for stacking wafers or components；
Stacking 01005 component assembling；

04

Mounting of different size components

Capabilities:
- Dispensing solder paste for different size components;

Application Description:
- Dispensing the accurate volume of solder paste on the pad that fixed SMC area;
  Dispensing more solder paste for 1206 and large inductors;
  Dispensing less solder paste for QFN and 0402;
- Place SMC in established position;

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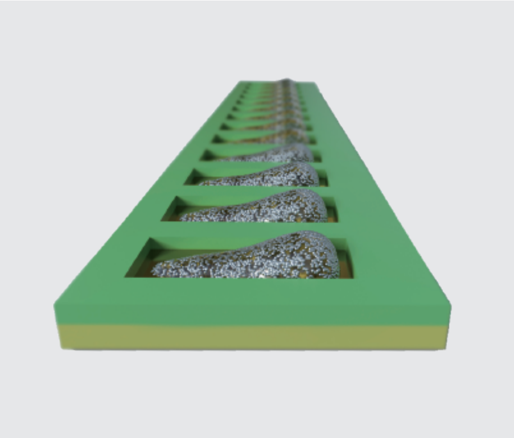


Different requirement for quantity/shape/height/coverage on pad

Application Description:
- Dispense different volume of solder paste on the corre sponding pads;

06

Basic Data

No.	Description	Parameters
1	Machine Dimensions	700*1250*1660mm
2	Machine Weight	800KG
3	Operation System	IPC Industrial Computer control Windows7 32-bit Operation System
4	Number Of Needles	Standard:1 Optional:2
5	Glue Supply	10cc,30cc,55cc,200cc(Optional) Feeder and pressure tank
6	Applicable PCB Size	Minimum:50*50*10mm,Maximum:410*450*10mm
7	positioning accuracy	+/-5um @3sigma，X,Y,Z
8	Repetitive accuracy	+/-5um @3sigma，X,Y,Z
9	Max.Speed	1500mm/s
10	Max.Acceleration	3g(X,Y)
11	Data entry	CAD,Hand-painted,OCR
12	PCB In/Out	Fully automatic production with front and rear track linkage,Standard SMEMA,Left in and out, right in and out, left in and right out, right in and left out,BY-PASS mode
13	Bottom heating	Max.temperature 150°C (optional)
14	Automatic weighing system	0.1mg or 0.01mg (optional)
15	Vision System	5 million element industrial camera
16	Track height	900±50mm
17	Max.track capacity	5KG
18	Power	2.9KW (including bottom heating 5.3KW)
19	Pressure	0.4-0.6MPa
20	Power supply	Voltage AC 220V，50HZ，Current 25A

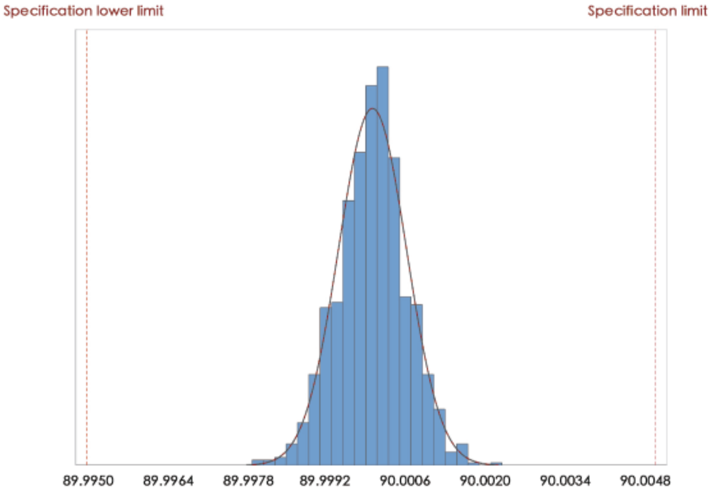
Standard configuration

- XYZ axis
- Camera unit (visual positioning)
- Height sensor
- Automatic width adjustment for conveyors
- Calibrate valve/needle position and height
- Needle cleaning (vacuum)
- Software (computer operation)

Optional

- Automatic weighing
- Syringe temperature control
- Pipeline temperature control
- Substrate heaters
- Valve temperature control

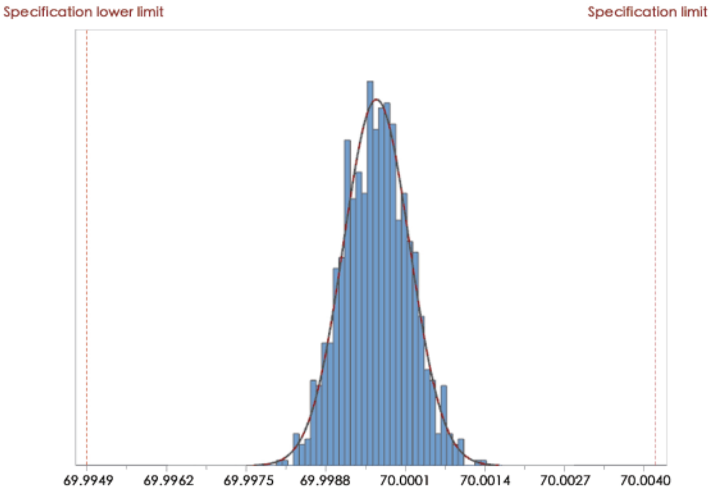
X-axis position accuracy



Overall Capabilities	
Pp	2.79
PPL	2.80
PPU	2.78
Ppk	2.78
Cpm	*
Potential (in-group) capacity	
Cp	2.79
CPL	2.80
CPU	2.78
Cpk	2.78

Process Data	
Specification lower limit	89.995
Objectives	*
Specification limit	90.005
Sample Means	90
Sample N	1000
Standard deviation (overall)	0.000597897
Standard deviation (in-group)	0.000598047

Y-axis position accuracy



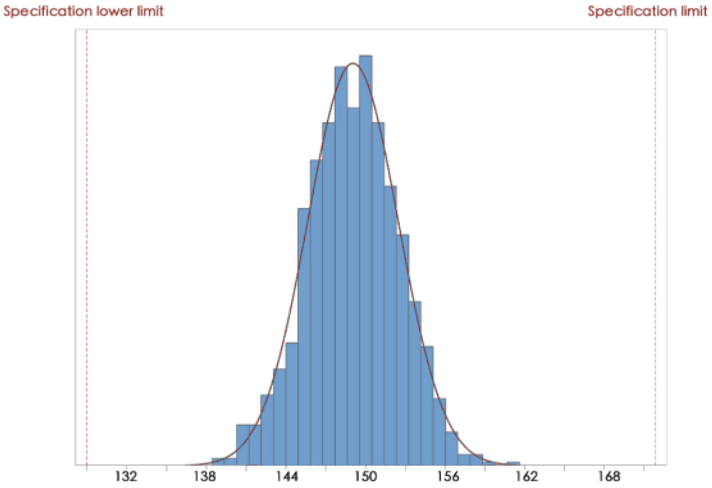
Overall Capabilities	
Pp	2.87
PPL	2.87
PPU	2.86
Ppk	2.86
Cpm	*
Potential (in-group) capacity	
Cp	2.87
CPL	2.87
CPU	2.86
Cpk	2.86

Process Data	
Specification lower limit	69.995
Objectives	*
Specification limit	70.005
Sample Means	70
Sample N	1000
Standard deviation (overall)	0.000581422
Standard deviation (in-group)	0.000581567

Performance

	Observation	Expected Overall	Expected in-group
PPM < Specification lower limit	0.00	0.00	0.00
PPM > Specification limit	0.00	0.00	0.00
Total PPM	0.00	0.00	0.00

Dispensing Diameter



Overall Capabilities	
Pp	1.80
PPL	1.80
PPU	1.81
Ppk	1.80
Cpm	*
Potential (in-group) capacity	
Cp	1.80
CPL	1.80
CPU	1.81
Cpk	1.80

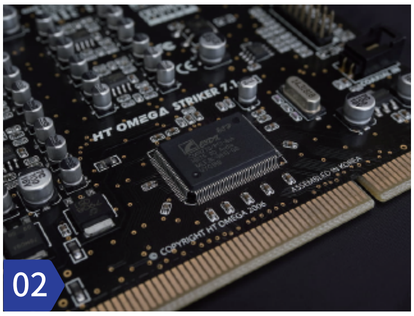
Process Data	
Specification lower limit	130
Objectives	*
Specification limit	170
Sample Means	149.968
Sample N	1000

* The actual process dispersion by 6 sigma

MHS-XSL Series Applications

01. Consumer Electronics
02. SMT Electronics
03. Automotive Electronics
04. LED and medical field

01



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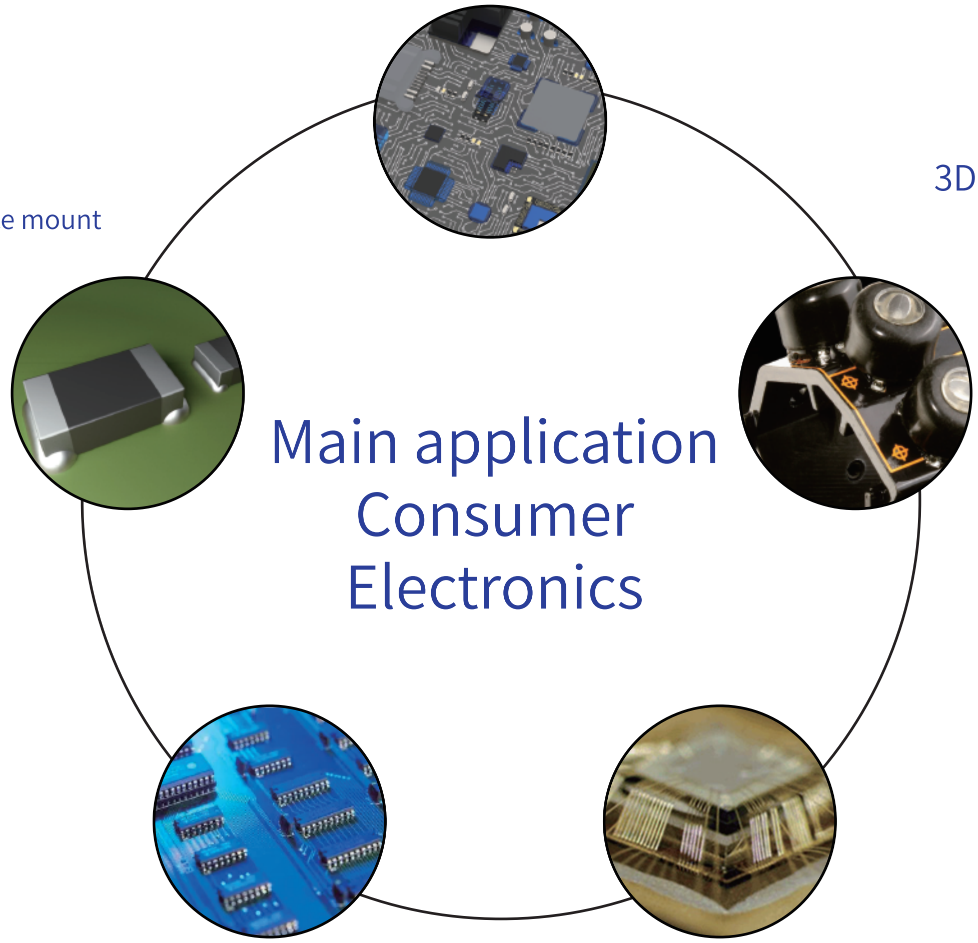


SIP encapsulation

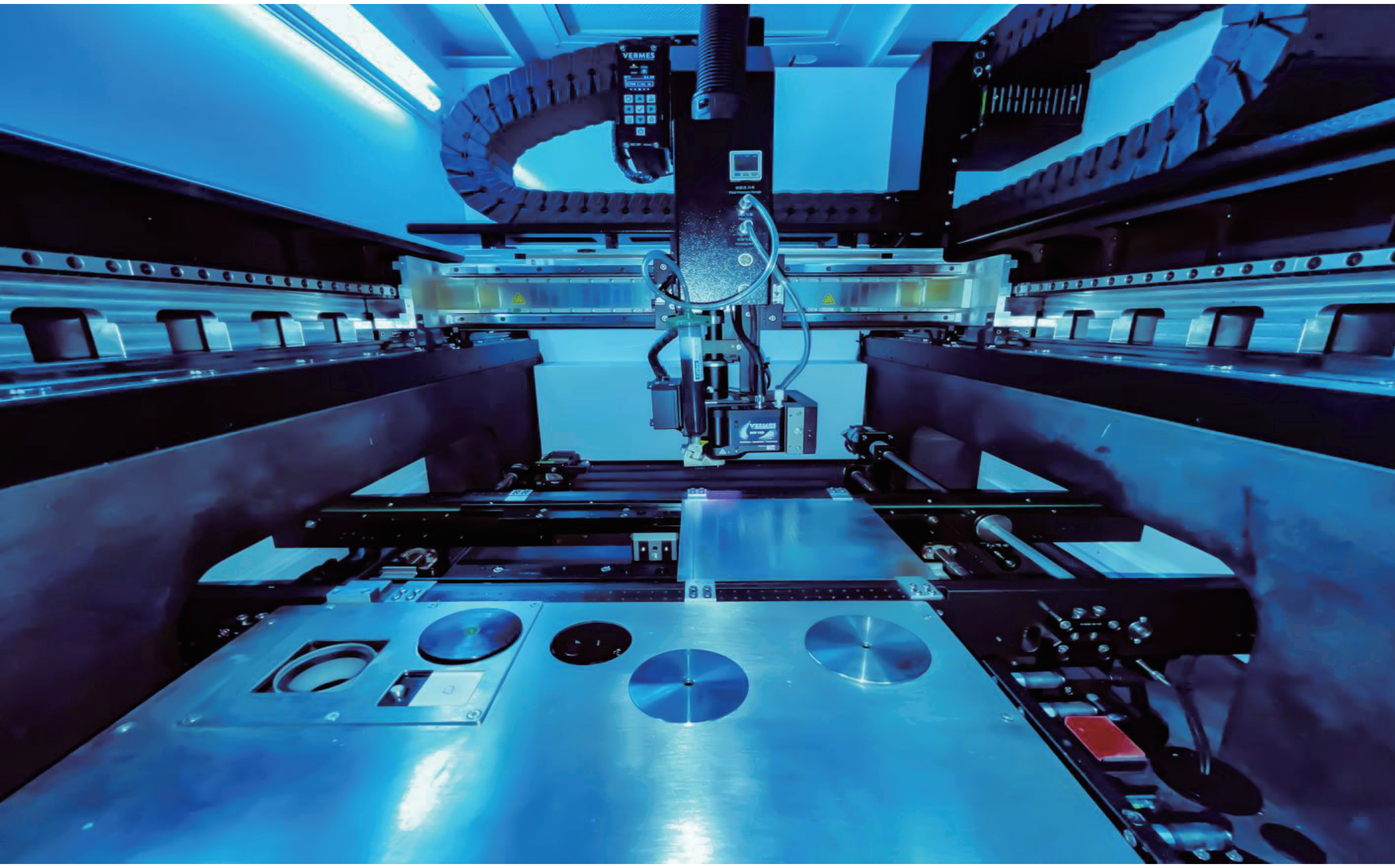
3D MID

Surface mount

Main application
Consumer
Electronics

Semiconductor chip packaging

MEMS assembly



MCOTI

MCOTI Technologies
Adhesive Supplier

A: Der Plaze,Wujiang District,Suzhou,Jiangsu Province,China
Jinyuan Business Building,Baoan District,Shenzhen,Guangdong Province,China
T: +86-755-29769485   M: +86 189 9435 0970   E-mail: info@mcoti.com