



SUPER PRECISION FLUID DISPENSERS

VOL
20

General Catalog

Filling
Sealing
Coating
Dotting
Lining

Bonding
Potting

DISPENSING
TECHNOLOGY

MUSASHI ENGINEERING, INC.



CREATIVE

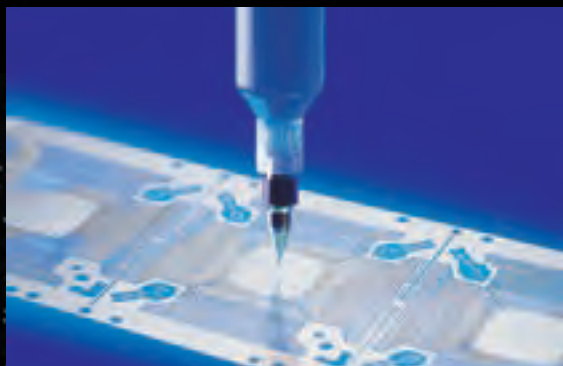
Open up an unlimited fluid
micro universe with macro view

Humanity is now sending the power of science out into the infinite field in search of the great possibilities that lie hidden in outer space. On the other hand, along with the globalization of society and the spread of the Internet, the miniaturization and personalization of electronic products is progressing, and at the same time, efforts to realize a sustainable society are pressing forward in our daily lives.

With these major changes of the times, a myriad of dispensing applications have emerged in every industry, and there is a strong demand for dispensing technology that can handle them. Since its founding, MUSASHI has consistently worked on "precision control technology that gives shape to fluid," and has always pioneered new field in the profoundly unknown world of fluid precision control.

Based on our persistent pursuit of creative technology and our many years of experience in dispensing technology, we are always ready to respond to high-level dispensing applications with the utmost care and attention to detail.

MUSASHI will continue to take on challenges as a pioneer in dispensing high technology, with the theme of "Creating Value and Producing Original Seeds".



MULTIMEDIA



INFORMATION-ORIENTED

DISPENSING TECHNOLOGY

MOBILE COMPUTING

Bonding
Potting

Non-contact JET dispenser P.16 to 21



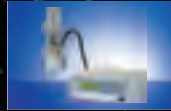
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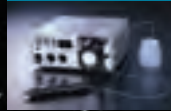


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KEY TECHNOLOGIES

KEY TECHNOLOGIES that fill the new needs of the age

Dispensers (dispensing systems) embodying dispensing technology are utilized in manufacturing processes in all industries, from automobiles, aircraft, and satellites to medicine, pharmaceuticals, biotechnology, and food, as well as in the electronics field, including semiconductors, mounting, electronic components, smartphones, home appliances, and communications.

In particular, the application of the dispensing process is expanding in mobile devices such as smartphones, VR and AR goggles, and smart watches; digital devices such as PCs, tablets, and game consoles; and automobiles, which are undergoing remarkable technological innovation, including automated driving and EVs.

Dispensing technology is now an essential technology for craftsmanship. It is developing into a key technology that supports all industries.

Applications list

Semiconductors, LEDs, MEMS devices (modules)	CSP, BGA, 3D -WLP, LED/miniLED/μLED, Power modules, Pressure sensors, etc.
Digital information terminals and Telecommunications	Smartphones, VR/AR goggles, Smartwatches, Earphones, PCs, Tablets, Game consoles, Security cameras, E-books, Telecommunication base stations, Servers, etc.
Home appliances and office equipment	TV, Video camera, Digital camera, HDD, DVD player, Washing machine, Refrigerator, Air conditioner, Vacuum cleaner, Microwave oven, Humidifier, Air cleaner, Copy machine, Scanner, Projector, etc.
Automotive, Automotive Components & Mobility	EVs, HVs, Engine cars, Drones, Electric bicycles, Electric motorcycles, Trains, Aircraft, Satellites, etc.
Electronic Components (Modules)	Capacitors (capacitors), Inductors (coils), Resistors, Crystal devices, Relays, Switches, Power modules, Motors, Camera modules, Speakers, Connectors, Lithium-ion batteries, Solar cells, Fuel cells, Sensors, etc.
Housing, Plant & Energy	Lighting fixtures, Toiletries, Building materials, Power tools, Industrial plants, Generators, Electric energy storage (ESS), etc.
Equipment and Machinery	Semiconductor manufacturing equipment, Industrial robots, Microscopes, Telescopes, etc.
Medical, Biotechnology Products and Cosmetics	Medical needles, Medical syringes, Catheters, Endoscopes, Thermometers, Sphygmomanometers, Examination kits, Foundations, Lipsticks, Anti-aging cosmetics, etc.
Food	High-grade Japanese and Western confectionery, Chocolate, Fish paste, Sauces, Baste, etc.
General consumer goods, Musical instruments, Hobbies	Stationery, Eyeglasses, Clothing, Shoes, Dishes, Furniture, Musical Instruments, Toys, Sporting Goods, Fishing Equipment, etc.

Business fields

Automobile

Active in the bonding, sealing and coating processes of automotive parts such as engines, EV motors, ECUs, and batteries.

Smartphone/Tablet

Succeed in bonding, reinforcement, conduction and insulation of various devices including semiconductors.

Electronics

Succeed in bonding, reinforcement, conduction and insulation of various devices including semiconductors.



Next generation display

Our technology is taking part in critical process for the development and manufacturing of next-generation products such as curved displays.

Medical/Biotechnology

It contributes to cost and labor reduction and accuracy improvement for research institutes and pharmaceutical manufacturers.

Food

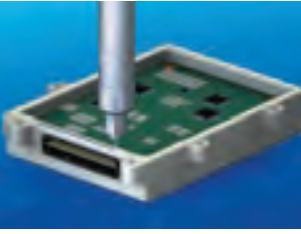
Please ask for the decoration and 3D ornament formation using chocolate and candy.

Aerospace/Ship

It is also used in the manufacture of satellites, spacecraft, airplanes, ship bodies and on-board equipment.

Automobile

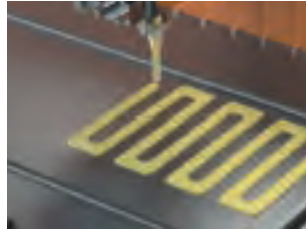
CIPG drawing to ECU P24



Two-component adhesive applied to Motor Magnet P34



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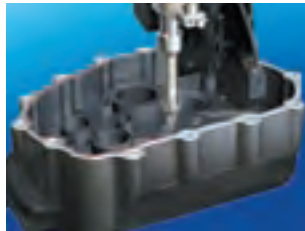


Automobile

Applying thermal grease to the ECU casing P31



FIPG dispensing on engine parts P24



Next generation display

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Smartphone/Tablet

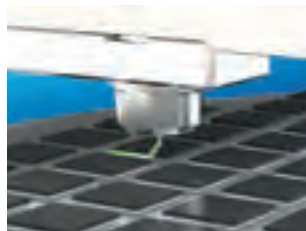
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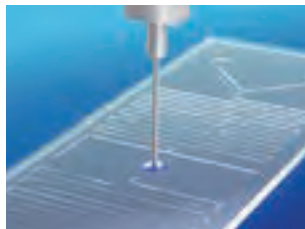


Medical/Biotechnology

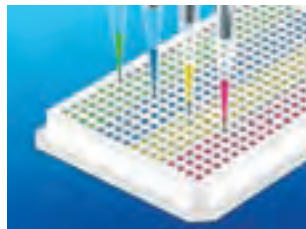
Antibody line dispensing for immunochromatography P65



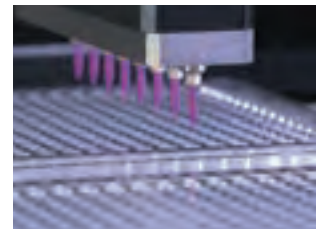
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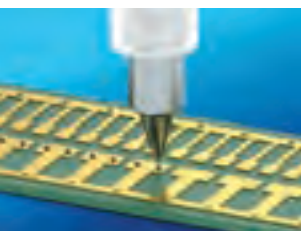


Reagent spotting system P65

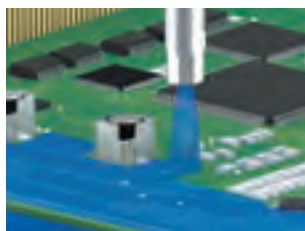


Electronics

Ag paste dispensing in die bonding P39



High-precision coating on substrates P66



Two-component resin encapsulation for IGBT modules P34



Food

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INNOVATION

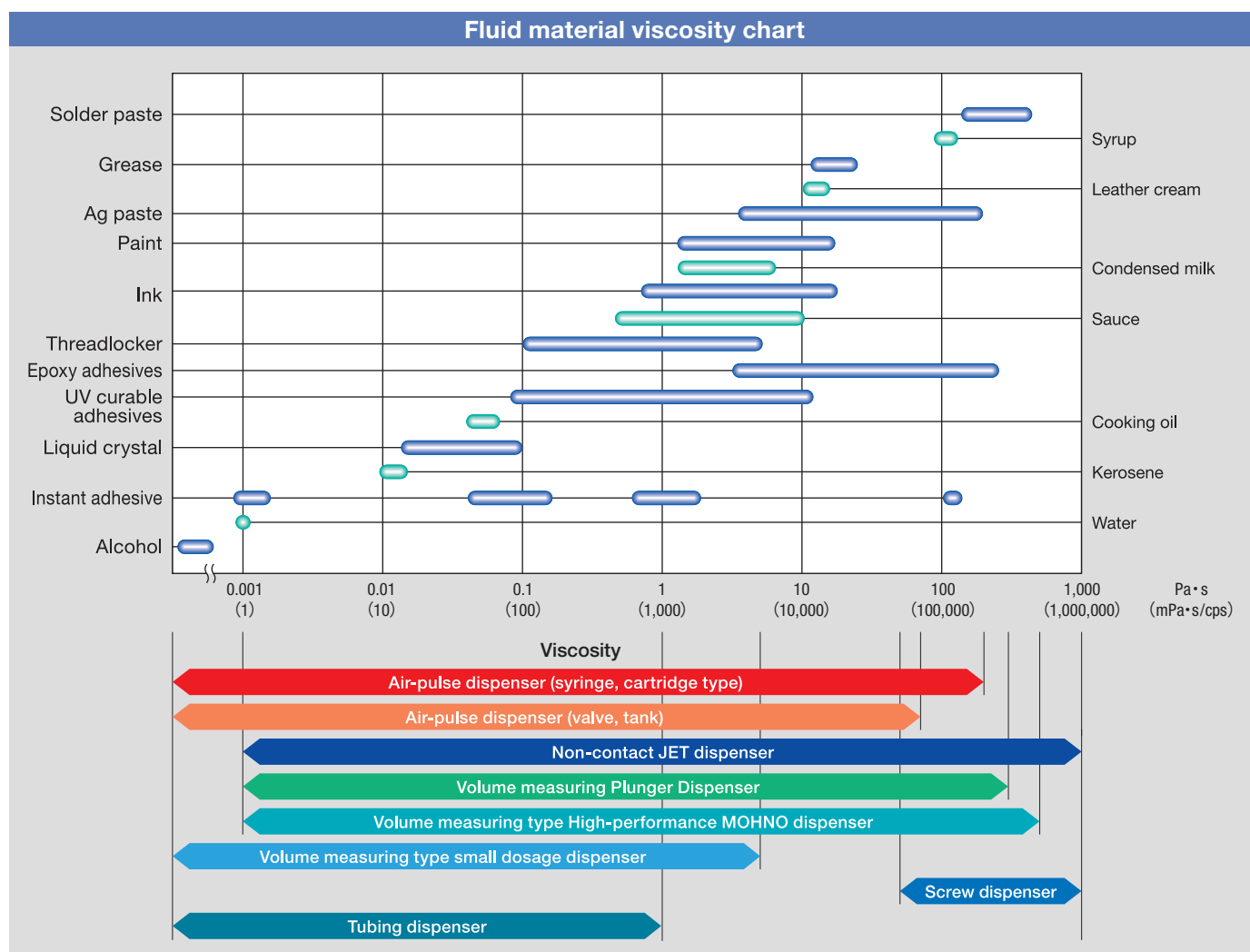
Unending advancement of precision fluid control technologies

Demand for Digital Transformation (DX) and Green Transformation (GX), those related products and devices are also required for smaller, higher performance and more functions.

Variation and usage of fluid materials are also become more advanced as same as evolution of dispensing technology. Fluid materials for various purposes such as adhesion,

reinforcement, protection, sealing, conduction, heat dissipation, sealing, and lubrication have a wide variety of properties, including material, viscosity, curing characteristics, and thixotropy.

The extensive MUSASHI product lineup is developed and commercialized to suit the dispensing application and maximize the capabilities of each fluid material.



Note: The above chart shows reference values. The values may differ depending on the dispensing condition and fluid material to be used. Contact MUSASHI Sales for more information.

Fluid material list (Application)

Assembly and Fixation (Adhesives)

UV curable adhesives, Thermosetting epoxy adhesives, Cyanoacrylate adhesives (instant adhesives), Anaerobic adhesives, Silicone RTV, Rubber adhesives, Two-component adhesives (epoxy/acrylic/urethane, etc.), Hot melts, Pressure sensitive adhesives, Temporary fixing agents, Screw lock agents, etc.

Reinforcement, Protection, Sealing

Underfill material, Junction coating resin (JCR), Polyimide, Moisture-proof coating agent, Fluorine coating agent, LED encapsulation resin, Gel material, etc.

Conduction

Solder paste, Ag paste, Cu paste, Sintering paste (Ag and others), Ag ink, etc.

Radiation

Silicone compound, Gap filler (1/2 component), etc.

Sealing

FIPG, CIPG, Reactive Hot melt (PUR), etc.

Lubrication

Oil, Silicone (oil, grease), Dry lubricant, etc.

Food/Cosmetic Materials

Chocolate, Fish paste, Tempura oil, Various edible pastes, Lotion, etc.

Other

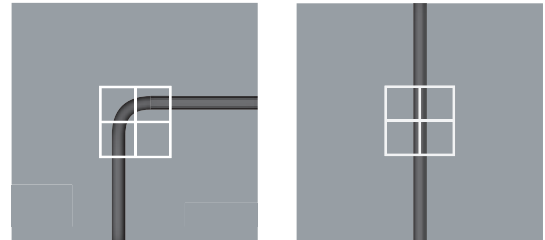
Fluxes, rust inhibitors, Brazing materials (gold, silver, copper), Liquid crystals, Electrolytes, Inks, Dyes, Paints (solvent-based/water-based), Solvents (alcohol), Fluorescent paints, Waxes, Chemicals, etc.



Precision control technology that gives shape to fluids

Of the three states of matter (solid, liquid, and gas), there are no textbooks on dispensing technology (fluid precision control technology) for the 1.5 states of matter: fluids and fluidity solids.

MUSASHI has been pursuing and solving problems with "precision control technology that gives shape to fluids" demanded by the market and customers since its establishment, making full use of not only mechanical, electrical, control, software, and other engineering technologies, but also composite technologies that extend to optics, chemistry, and physics.



High-definition line drawing dispensing using the MLC-6500 fully automated liquid crystal seal dispensing system



Note: This photograph is actual size.

This development approach has resulted in technologies for ultra-fine fluid controlling at the pico/nano level and stable dispensing on automated lines at mass production sites. MUSASHI contributes to the evolution of manufacturing processes for semiconductors and electronic devices, which are becoming smaller and finer, and to R&D activities in the pharmaceutical and biotechnology fields with its Ultra-precision and small fluid control technology.

Dispensing diameter vs. Weight Table

$$\begin{matrix} \text{Aspect ratio} \\ \text{Dispensing diameter } (\phi) : \text{Height} \end{matrix} = \begin{matrix} \textcircled{1} 4:1 \\ \textcircled{2} 10:1 \end{matrix}$$

[Unit:mg]

Dispensing diameter (ϕ) [mm]	0.1	0.15	0.2	0.25	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	
Water Specific Gravity: 1.0	①	0.00011	0.00036	0.00085	0.0017	0.0029	0.0068	0.0133	0.023	0.036	0.054	0.078	0.11	0.36	0.9	1.7	2.9
	②	0.00004	0.00013	0.00032	0.00062	0.0011	0.0025	0.0050	0.0086	0.014	0.020	0.029	0.04	0.13	0.3	0.6	1.1
UV curable adhesives Specific Gravity: 1.1	①	0.00012	0.00039	0.00094	0.0018	0.0032	0.0075	0.0146	0.025	0.040	0.060	0.085	0.12	0.39	0.9	1.8	3.2
	②	0.00004	0.00015	0.00035	0.00068	0.0012	0.0028	0.0055	0.0095	0.015	0.022	0.032	0.04	0.15	0.4	0.7	1.2
Heat dissipation paste(gap filler) Specific Gravity: 3.0	①	0.00032	0.00108	0.00255	0.0050	0.0086	0.0204	0.0399	0.069	0.109	0.163	0.233	0.32	1.08	2.6	5.0	8.6
	②	0.00012	0.00040	0.00096	0.0019	0.0032	0.008	0.015	0.026	0.041	0.061	0.09	0.12	0.40	1.0	1.9	3.2
Ag paste Solder paste Specific Gravity: 4.0	①	0.00043	0.00144	0.00340	0.0066	0.0115	0.0272	0.0532	0.092	0.146	0.218	0.310	0.43	1.44	3.4	6.6	11.5
	②	0.00016	0.00054	0.00127	0.0025	0.0043	0.010	0.020	0.034	0.055	0.081	0.12	0.16	0.54	1.3	2.5	4.3

Note: The above specific gravity is a guide only. The values may differ depending on fluid material to be used.

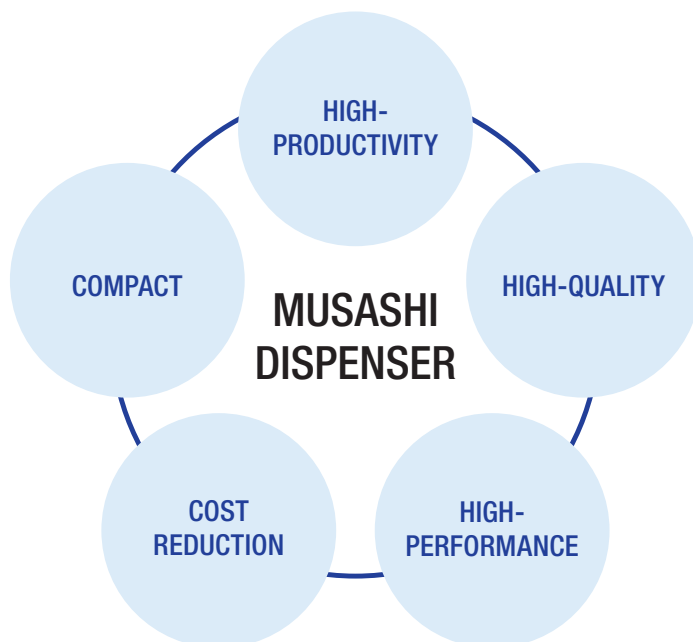
Note: Specific gravity is calculated as density [g/cm³].

DISPENSE SOLUTION

The best solution from MUSASHI.

Professionals in charge of fluid precision control consultation will propose a dispensing system using fluid precision control technology necessary for labor saving and automation of production lines, tailored to the customer's application, needs, and budget. In order to accurately respond to your consultation, of course, we offer face-to-face or web meeting, but we also have a presentation room in our office to provide an excellent in-house environment for the best consultation. In addition, laboratory space at each location for application trials, technical discussions and on-site technical support are available to provide a tailored total solution to customers. To ensure that customers are fully convinced and satisfied with services, we practice technology exchange that is heart-to-heart in every aspect.

Five major advantages by installation of MUSASHI dispensers



Product lineup

Dispenser



Desktop/cartesian robot



Parts & Accessories



Fully automated dispensing machine



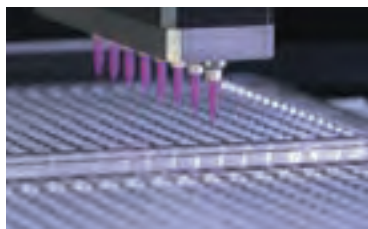
Fully automated substrate coating machine



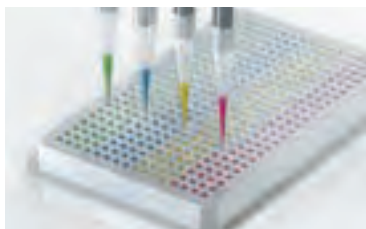
Dispensing inspection machine



Reagent spotting system

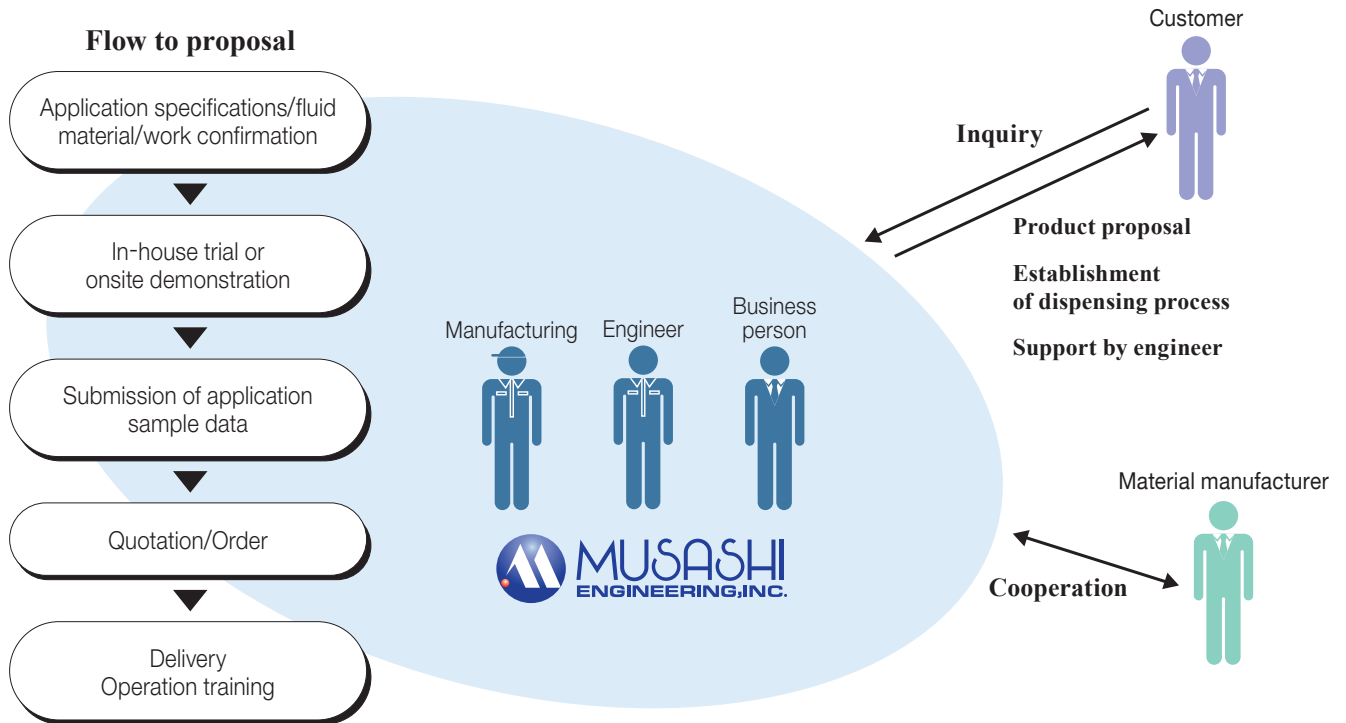


Dispensing/dilution system

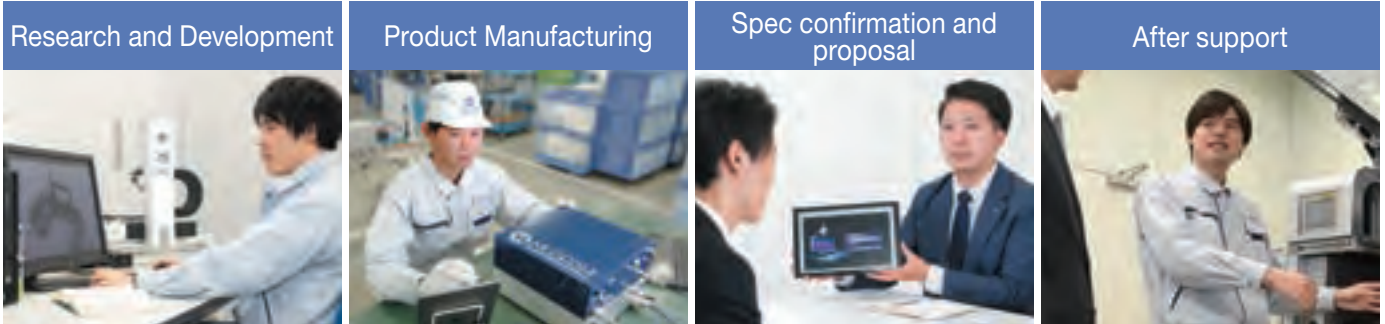


3D Food Printer





MUSASHI Solutions



Fully equipped with a showroom and extensive evaluation facilities.

DISPENSE WORLD

A full lineup of dispense heads, valves, and dispense controllers that are at the core of dispensing technology and responsible for metering fluid materials. Optimal solutions will be proposed for a wide variety of application scenarios.

Jet dispensers

NEW



Ultra-high-speed/small volume/
JET type jetted droplet, the supreme

Super Jet 2

General purpose No.1 seller /
JET type

Aero Jet



For high-viscosity materials/JET type

Super Hi Jet

For low-viscosity fluid and
non scattering/JET type

Cyber Jet 2



Air pulse dispensers

NEW



High precision digital
dispenser with upper-level
communication support

ML-8000X



Micro volume, high-speed and
high-precision/ pneumatic type with
fully-automatic correction function

Super ΣCMIII

Mechanical dispensers

NEW

High-speed and high-grade gasket dispensing system/MOHNO type

MOHNO MASTER

Tubing type for instant adhesive
MT-410

For high-viscosity materials in paste form/screw type

SCREW MASTER 3

Large volume/volume measuring type

MEASURING MASTER MPP-3

For 1nL/ultra-small volume, volume measuring type

NANO MASTER SMP-III

Syringes

High-precision, high-quality syringe

High-precision, high-quality nozzle

NEW

DSHN nozzle FN nozzle

Eco-friendly/compact pneumatic type
SMART SHOT MS-1/MS-1D

Nozzles

Multi nozzle for multiple points per 1 shot

Curtain coating valve
CV-12

High-precision fluid temperature control unit
PELTIER MASTER

NEW

For Industry 4.0 New generation digital dispenser

ML-6000X Pro

Precise volume measuring valve

PPV-5

High-precision needle control valve

MiniVal **NCV-17**

Valve dispensers

Constant-volume dispensing valve with suck back mechanism

MiniVal **PCV-12**

Pails available, 2-component TIM dispensing system
MEASURING MASTER MPP-3-GF-MINI

NEW

Other dispensers

Grease JET dispensing system
GREASE JET

DISPENSE FA WORLD

A wide range of products are available, including desktop type robot as represented by the Shot Master series, fully automated seal dispensing systems and liquid crystal drip systems for the LCD field, and fully automated dispensing systems for the semiconductor and mounting fields.

Cartesian robots

3-D alignment
compensation cartesian robot
**IMAGE MASTER
350PC^{Smart}**
XCROSS MASTER series



**XCROSS MASTER
XM780ΩX**



**XCROSS MASTER
XM340SX**



Fully automated dispensing machines

Fastest and
highly elaborate
high-end machine
FAD 5100S



Highly elaborate machine,
supporting bare wafers
FAD 5100S-WH



Arm robots



Multi-joint dispensing robot
Arm JET



World's smallest, compact, fully automated machine
SMART ROBO TAD 1000



SHOT mini **200 Sx-SS**



SHOTMASTER **300 Qx-SS**



Wafer supported ultrathin film coating machine
COATING MASTER FCD 2000

Desk-top robots



World's first 3D compensation desktop robot
IMAGE MASTER 350 PC Smart
SHOTMASTER series



High-precision coating machine supporting high density implementation
COATING MASTER FCD 1000



Dispensing inspection machine for inline production
SMART ROBO TAI 1000



OCR fully automated lamination machine
FDB-3000



Versatile best seller machine
FAD 2500



Ultra-precise, ultra-high speed, fully automated liquid crystal drop machine
MLC 7500

FPD fully automated dispensing machines



Submicron accuracy achieved with 20t rank machine

FPD fully automated, high-speed seal drawing machine
MLC 6500

High-precision fluid jetting for significant productivity improvement



Non-contact and ultra-high-speed dispensing takt time implemented

Flies droplets with high precision from a position away from a workpiece and achieves all-directional dispensing from bottom, horizontal, or slanted directions. Significantly effective for dispensing on substrates having uneven surfaces or areas too narrow and small to insert a nozzle. Consistent dispensing, regardless of warped workpieces or individual tolerances. No Z-axis movement and gap control required. Dispensing microdots at high-speed with high-precision and reliable consistency. These JET dispensers will contribute to great improvement of productivity what contact dispensing have never achieved.

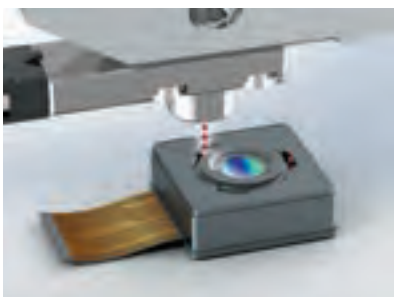
Ideal for micro-point and micro-amount application.

A wide range of lineup for liquid materials and applications.

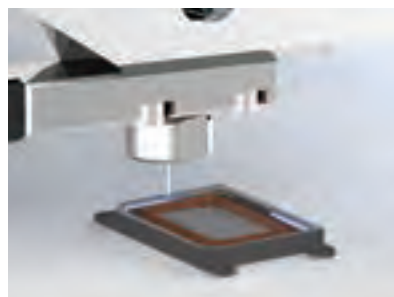
Applicable fluid materials

UF agent, Ag paste, Encapsulant, Coating material, UV curable adhesive, Epoxy resin, Grease, Flux, etc.

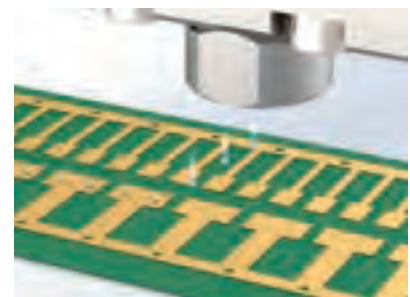
Applications







UV dispensing on camera modules



Speaker Cover Adhesion



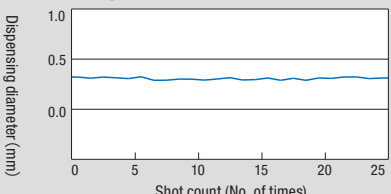
Ag paste dispensing on semiconductor lead frames

JET Dispensers Lineup & Quick Reference					
Item name	<i>SuperJet 2</i> NEW 	<i>SuperHiJet</i> 	<i>AeroJet</i> 	<i>CyberJet 2</i> 	
Maximum operating frequency	Max:1,200 Hz*	Max:300 Hz	Max:333 Hz	Max:133 Hz	
Minimum dispensing volume	0.5 nL/shot~	0.6 nL/shot~	4 nL/shot~	150 mL/shot~	
Applicable fluid material viscosity (Reference value)	50 to 300,000 mPa·s	50 to 1,000,000 mPa·s	50 to 300,000 mPa·s	1 to 2,000 mPa·s	
Corresponding fluid	Coating material	○	○	○	
	Solder paste		○	○	
	UV curable adhesives	○	○	○	
	Silicon		○		
	Grease			○	○ (dry type)
	Underfill	○		○	
	Chemical	○			○
	Solvent	○			○

*Complete continuous dispensing:500 Hz


JET Dispenser Features

Capable of micro dispensing with high precision




Dispenser: SuperJet2 Fluid materials: Ag paste
Work: Copper plate AVE: ϕ 0.3 mm Dispensing accuracy: \pm 5.7%


No need to descend the Z-axis during dispensing, shortening the tact time.




Unaffected by workpiece distortion or warping



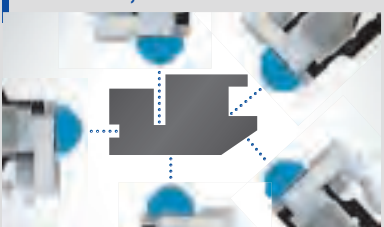
Capable of dispensing to narrow pitches where nozzles cannot fit



No damage to the workpiece (e.g., wire) due to contact with the nozzle



Can be applied from the bottom, horizontal, and slanted directions

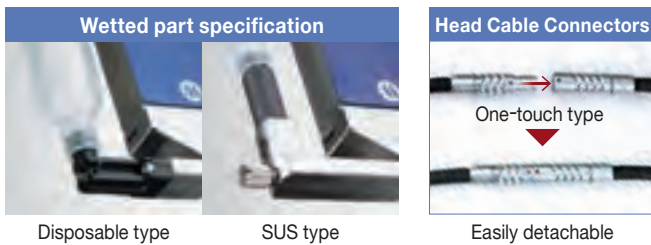


High speed • Non-contact JET Dispenser

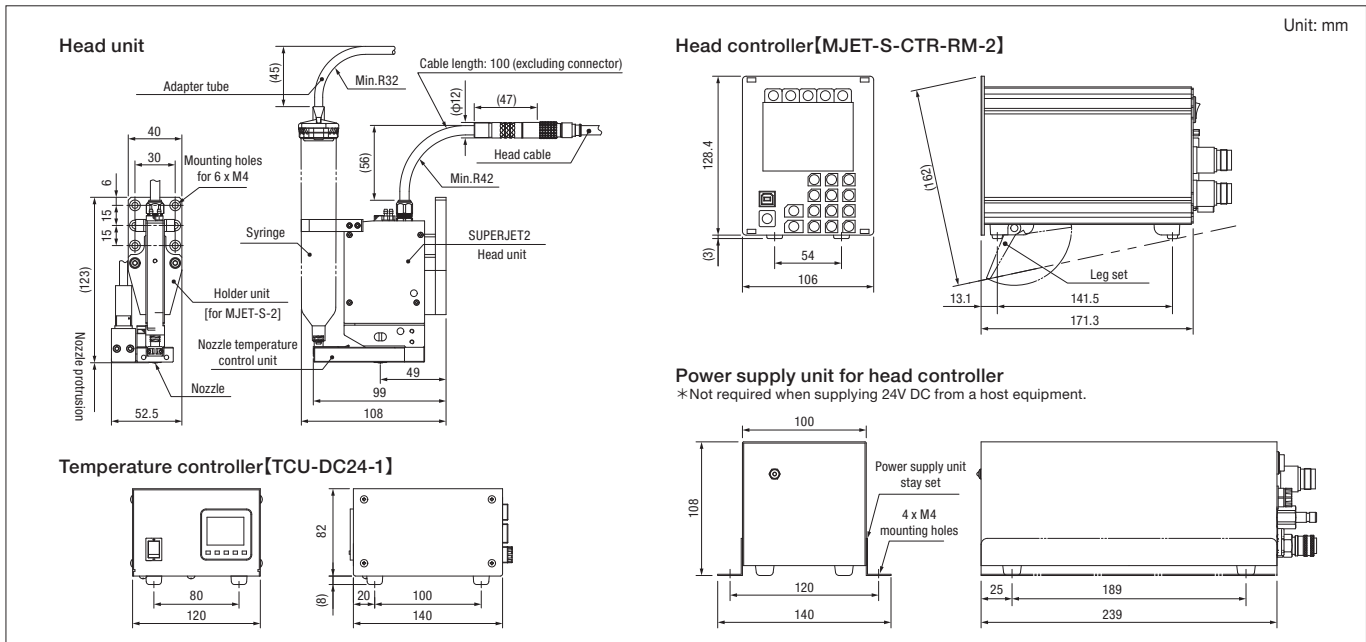


Pursuit of high reliability • high quality Next Jet.

- Rod operation mode is selected according to the fluid.
- The fluid check window allows the operator to know when to replace seal parts.
- Rod replacement possible.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)



External dimensions



Head unit Specification

Item name	Non-contact JET dispenser SUPERJET2
Model	MJET-S-2
Dispensing system	Jet system
Fluid material supply method	Syringe (5 to 70 mL Use)
Allowable fluid feed part temperature	Max. 60°C
External dimensions (excluding protrusions)	W29×D83×H107 mm
Weight	0.4 kg (Including cable and connector Excluding fluid material and material container)

Head controller Specification

Model	MJET-S-CTR-RM-2
Power supply unit	MJET-S-CTR-RM-PW-A
Fluid feed pressure setting range	0.010 to 0.500 MPa Please set pressure following the capacity of host equipment or fluid container.
Source pressure	Max. 0.700 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	75 W (When operating at 500 Hz)
External dimensions (excluding protrusions)	Controller section: W106×D1713×H1284 mm Power supply section: W140×D239×H108 mm
Weight	Head controller section: 1.6 kg Power supply section: 20 kg

Temperature control unit specification

Model	MJET-S-2-NZTB
Temperature control function	Max. 80°C
External dimensions (excluding protrusions)	W46×D82.5×H35 mm
Weight	0.1 kg

Temperature controller specification

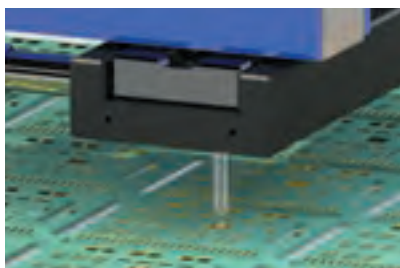
Model	TCU-DC24-1
Heating method	Cartridge heater method
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	Max. 68 W
External dimensions (excluding protrusions)	W120×D140×H90 mm
Weight	1.0 kg

High viscosity • Non-contact JET dispenser



Advanced JET. High viscosity supported.

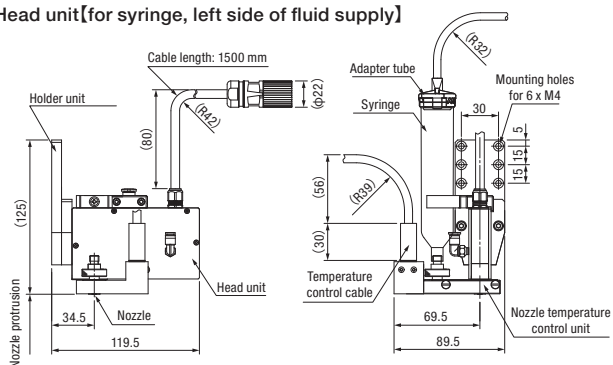
- For viscosity ranges up to 1,000,000 mPa · s.
- Excellent landing position accuracy.
- Rod replacement possible.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)



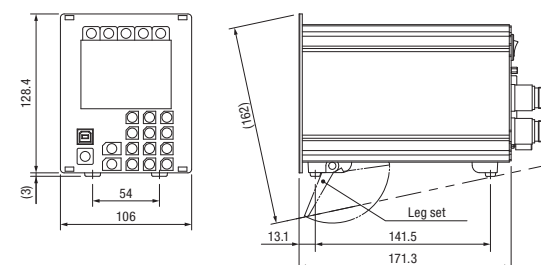
Dispensing of solder paste to PCBs

External dimensions

Head unit [for syringe, left side of fluid supply]

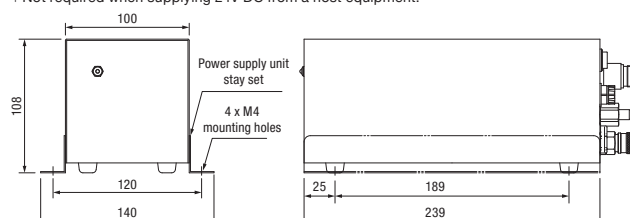


Head controller [MJET-S-CTR-RM-2]

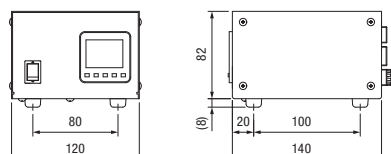


Power supply unit for head controller

* Not required when supplying 24V DC from a host equipment.



Temperature controller [TCU-DC24-1]



Head unit Specification

Item name	Non-contact JET dispenser SUPER HI JET
Model	MJET-S-HI-L
Dispensing system	Jet system
Fluid material supply method	Syringe (5 to 70 mL Use)
Allowable fluid feed part temperature	Max. 80°C (Nozzle temperature control unit with heated temperature control)
External dimensions (excluding protrusions)	W59.5×D103×H85.5 mm
Weight	0.7 kg (Including cable and connector Excluding fluid material and material container)

Head controller Specification

Model	MJET-S-CTR-RM-2
Power supply unit	MJET-S-CTR-RM-PW-A
Fluid feed pressure setting range	0.010 to 0.500 MPa Please set pressure following the capacity of host equipment or fluid container.
Source pressure	Max. 0.700 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	75 W (When operating at 500 Hz)
External dimensions (excluding protrusions)	Controller section: W106×D1713×H1284 mm Power supply section: W140×D239×H108 mm
Weight	Head controller section: 1.6 kg Power supply section: 20 kg

Temperature control unit specification

Model	MJET-S-HI-L-NZTB
Temperature control function	Max. 80°C
External dimensions (excluding protrusions)	W86×D58×H34.5 mm
Weight	0.1 kg

Temperature controller specification

Model	TCU-DC24-1
Heating method	Cartridge heater method
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	Max. 68 W
External dimensions (excluding protrusions)	W120×D140×H90 mm
Weight	1.0 kg

Mid & High viscosity • Non-contact JET dispenser



Synchro Speed
PAT.

Specifications

Item name	Non-contact JET dispenser AEROJET
Head unit Model	MJET-A-2
Dispensing system	Jet system
Fluid material supply method	Syringe (5 to 70 mL Use), Tank
Fluid feed pressure setting range	0.005 to 0.700 MPa Please set pressure following the capacity of host equipment or fluid container.
Source pressure	Max. 0.800 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Allowable fluid feed part temperature	Max. 80°C (Holder unit with thermal temperature adjustment)
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	110 W
Head unit dimensions	W91×D91×H180.5 mm*
Head unit weight	0.46 kg (fluid and fluid container excluded)
Controller dimensions	W300×D250×H107 mm
Weight of dispense controller	4.0 kg

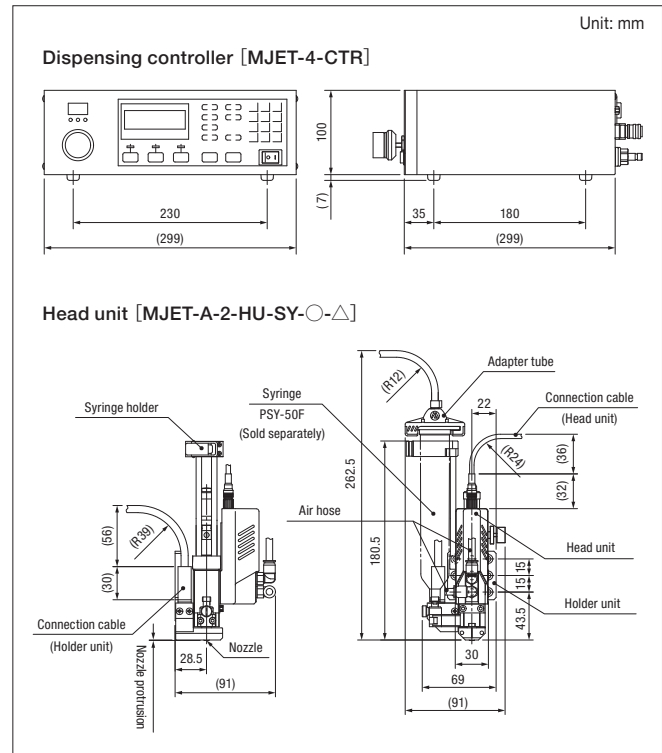
* When PSY-50F is installed.

High-speed and high-precision JET. Major reduction in production takt time.

- “Pinpoint shooting” with non-contact JET.
- Better production takt time with high-speed dispensing.
- Cut costs by reducing wasted Fluids.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [For details, see →P53](#)

Note: Holder unit is non-CE marked.

External dimensions



JET Derived Applications

Grease JET dispense system

GREASE JET

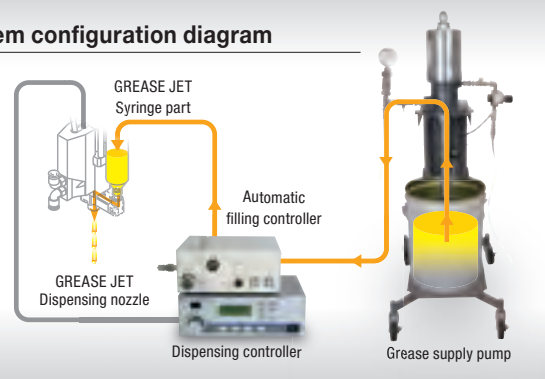


PAT.

Grease JET dispense system configuration diagram

Applying grease from many angles at high speed with pinpoint shooting!

A pail can be set and connected directly to the system for continuous dispensing of one pail's worth of grease. Contributes to squeeze cost reduction.



Low-viscosity • Non-contact JET dispenser



Specifications

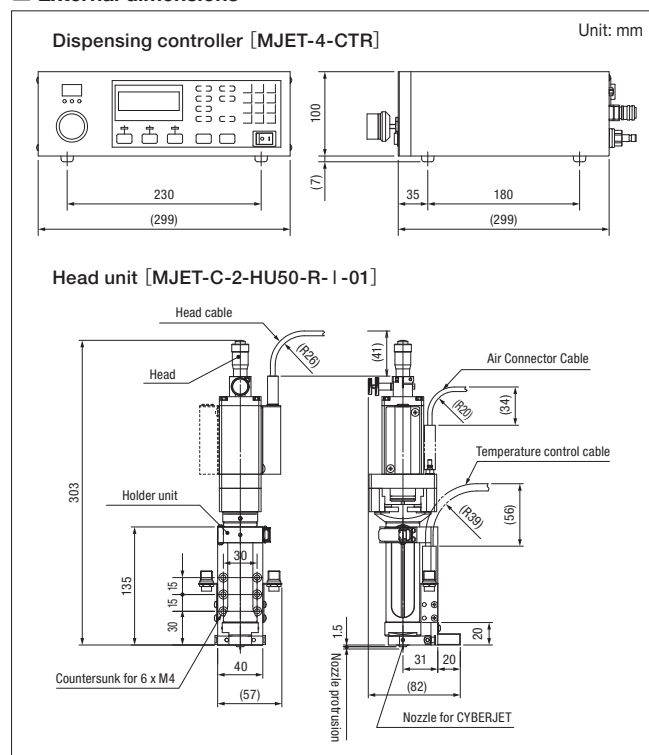
Item name	Non-contact JET dispenser CYBERJET2
Model	MJET-C-2
Dispensing system	Jet system
Fluid material supply method	Syringe(5 to 70 mL Use)
Fluid feed pressure setting range	0.005 to 0.500 MPa
Source pressure	Max. 0.800 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Allowable fluid feed part temperature	Max. 50°C (Holder unit with thermal temperature adjustment)
Rated voltage and frequency	AC90-240 V 47-63 Hz
Power consumption	62 W
Head unit dimensions	W54.5 mm×D61 mm×H303 mm*
Head unit weight	Approx. 760 g (Head : 590 g Holder unit : 170 g)*
Controller dimensions	W235×D324×H106.8 mm
Weight of dispense controller	4.0 kg

* When PSY-50F is installed.

JET Dispensing Low-viscosity micro-droplets without scattering!

- Dead volume “zero”
- Ideal for non-contact dispensing of low viscosity fluids.
- Dry lubricant is applied without clogging when used with Stirring system.
- Applicable for immunochromatography line dispensing.
For details, see →P65
- Compatible Standards: EU RoHS2
- Synchro Speed function support. For details, see →P53

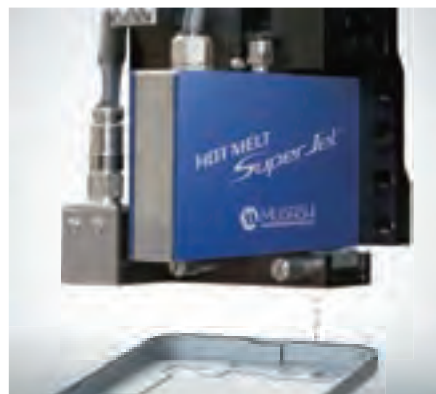
External dimensions



Solder paste JET Dispenser



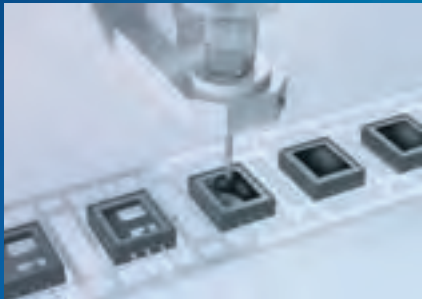
HOT MELT JET Dispenser



Stirring system for CYBERJET2



Ultra-precision constant volume dispensing of fluid material with viscosity fluctuation.



Potting on sensor components

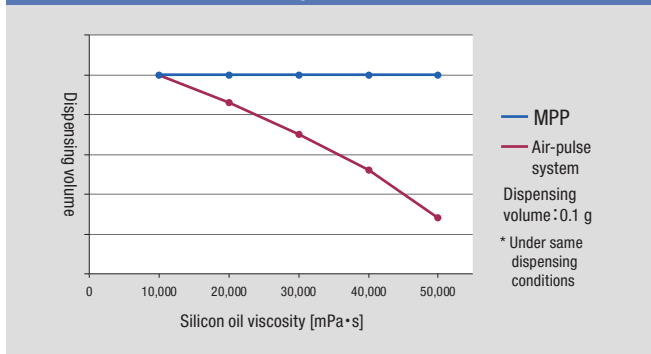


Ultra-precise dispensing implemented by the volume measuring type digital control plunger.

MEASURING MASTER MPP,

a volumetric digitally controlled dispenser series for precise metered dispensing of fluids with viscosity fluctuation. Applications include potting various electronic components, dispensing reagents into vials, gasket dispensing, and OCR dam/fill.

Constant-volume dispensing without dependence on viscosity



Applications



Dispensing reagents into vial bottles



CIPG (gasket)



OCR (DAM)

Volume measuring type digital dispenser

MEASURING MASTER MPP-1



PAT.

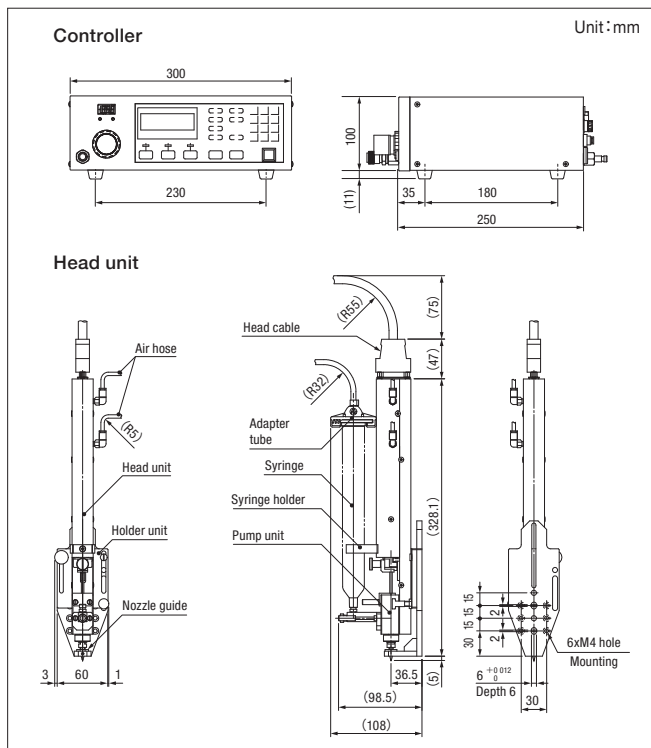
Ultra-precision constant volume dispensing of fluid materials with viscosity fluctuation.

- Set dispensing volume to suit capacity and density.
- High resolution & high linearity.
- Easy maintenance without tools.
- Dedicated two-component systems are also included in the lineup. [For details, see →P34]

Specifications

Item name	Volume measuring type digital dispenser MEASURING MASTER		
Model	MPP-1		
Dispensing system	Volume measuring type		
Pump capacities	Standard type	0.15 mL	Select any one of them
		0.15 mL	
	B1 type	0.30 mL	
		0.65 mL	
Fluid feed pressure setting range	0.001 to 0.500 MPa		
Source pressure	0.400 to 0.800 MPa		
Fluid material supply method	Syringe (10 to 70 mL Use)		
Rated voltage and frequency	AC100-240 V 50/60 Hz		
Power consumption	25 W		
External dimensions (excluding protrusions)	Controller section: W300×D250×H111 mm		
	Head section: W25×D86.5×H320 mm		
Weight	Controller section: approx. 4.5 kg		
	Head section: 0.85 kg (not including fluid material and container)		

External dimensions



Volume measuring type digital dispenser for large capacity

MEASURING MASTER MPP-3



PAT.

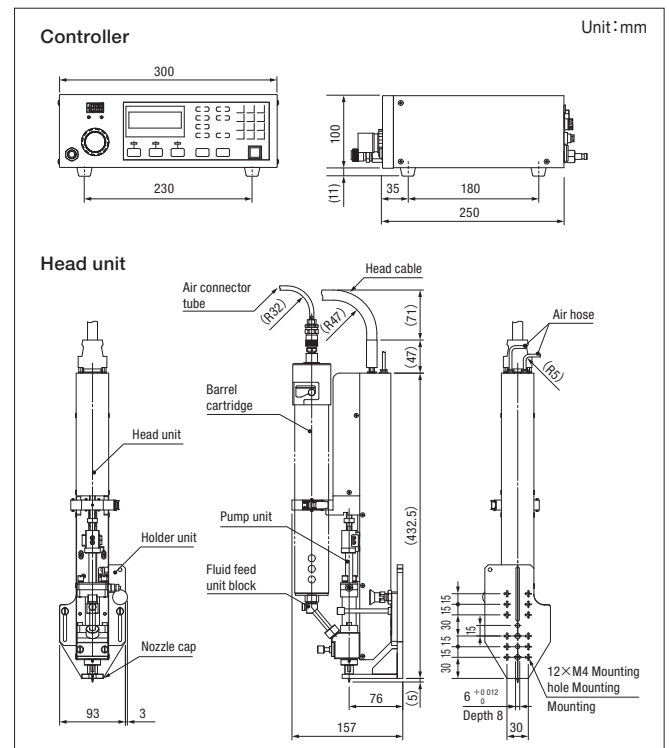
Volumetric. Outstanding “Dispensing Accuracy”

- Excellent constant flow for stunning line formation.
- Suck back mechanism for superior fluid cut-off.
- Dedicated two-component systems are also included in the lineup. [For details, see →P34]

Specifications

Item name	Volume measuring type digital dispenser MEASURING MASTER		
Model	MPP-3		
Dispensing system	Volume measuring type		
Pump capacities	Standard type	5 mL	Select any one of them
		7 mL	
	B1 type	5 mL	
		7 mL	
Fluid feed pressure setting range	0.001 to 0.500 MPa		
Source pressure	0.400 to 0.800 MPa		
Fluid material supply method	BARREL CARTRIDGE (170/340 ML) tank, pail can		
Rated voltage and frequency	AC100-240 V 50/60 Hz		
Power consumption	53 W		
External dimensions (excluding protrusions)	Controller section: W300×D250×H111 mm		
	Head section: W46×D83×H414 mm		
Weight	Controller section: approx. 5.2 kg		
	Head section approx. 2.8 kg (not including fluid material and container)		

External dimensions



Volumetric measuring × Continuous dispensing × No air bubbles Optimal Solution for Gasket Sealing

No Microbubble

Zero bubble contamination for dispensing.



High Responsiveness

Eliminates variation in dispensing precision and dispensing geometry.



Sealant dispensing of FIPG and CIPG at high speed and high quality.

The fluid chamber transfer system, which contributes high flow rate dispensing, forces the fluid material to be squeezed out for high speed dispensing.

In addition, continuous dispensing is implemented, facilitating smooth dispensing to full-scale mass production lines.

MOHNO MASTER is a MOHNO-type dispenser that is effective for high-precision seal dispensing of high-viscosity fluids, such as FIPG/CIPG and other fluid gasket materials for automotive applications, as well as optical bonding and waterproof seals for display-related applications.

Ideal for high flow rate dispensing.

Fewer consumable parts and squeezed running costs.

Applicable fluid materials

Fluid gasket materials FIPG/CIPG, UV curable adhesives, moisture curable materials, two-component curable materials, etc.

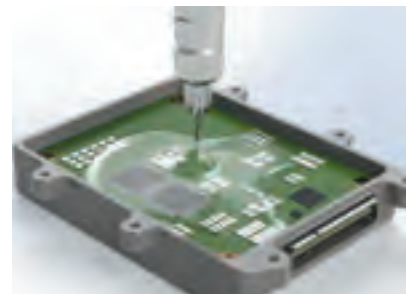
Applications



FIPG dispensing on engine parts



CIPG seal dispensing on IGBT modules



ECU Potting

High-performance MOHNO dispensera

MOHNO MASTER



For high-speed, high-quality gasket dispensing.

- Superior for gasket applications with high speed, high flow rate and high aspect ratio.
- Lineup covers micro volume to high flow rates.
- Dual head configuration enables high-precision volumetric mixing for two-component hardening materials. [\[For details, see →P34\]](#)
- Adoption of highly chemical resistant parts compatible with a wide range of fluid materials.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2
- Synchro Speed function support. [\[For details, see →P53\]](#)

A fusion of dispensing and motion control

Example of desktop robot configuration

SHOTMASTER
Qx series



Example of mounting cartesian robot for inline production

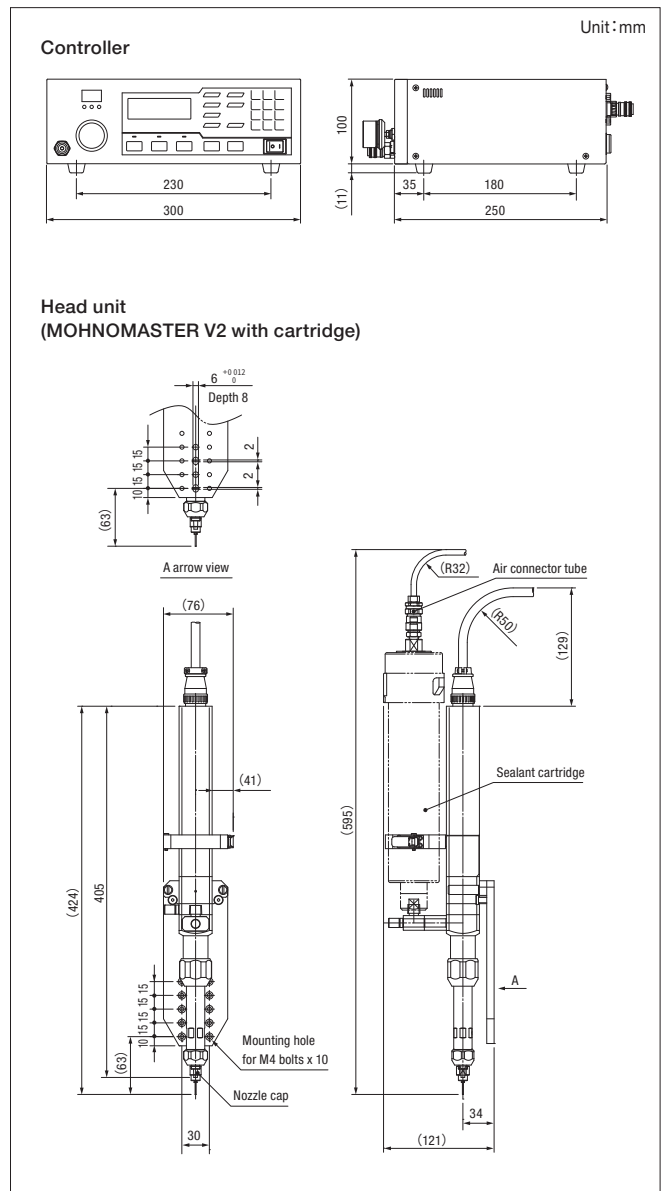
X CROSS MASTER
RX series



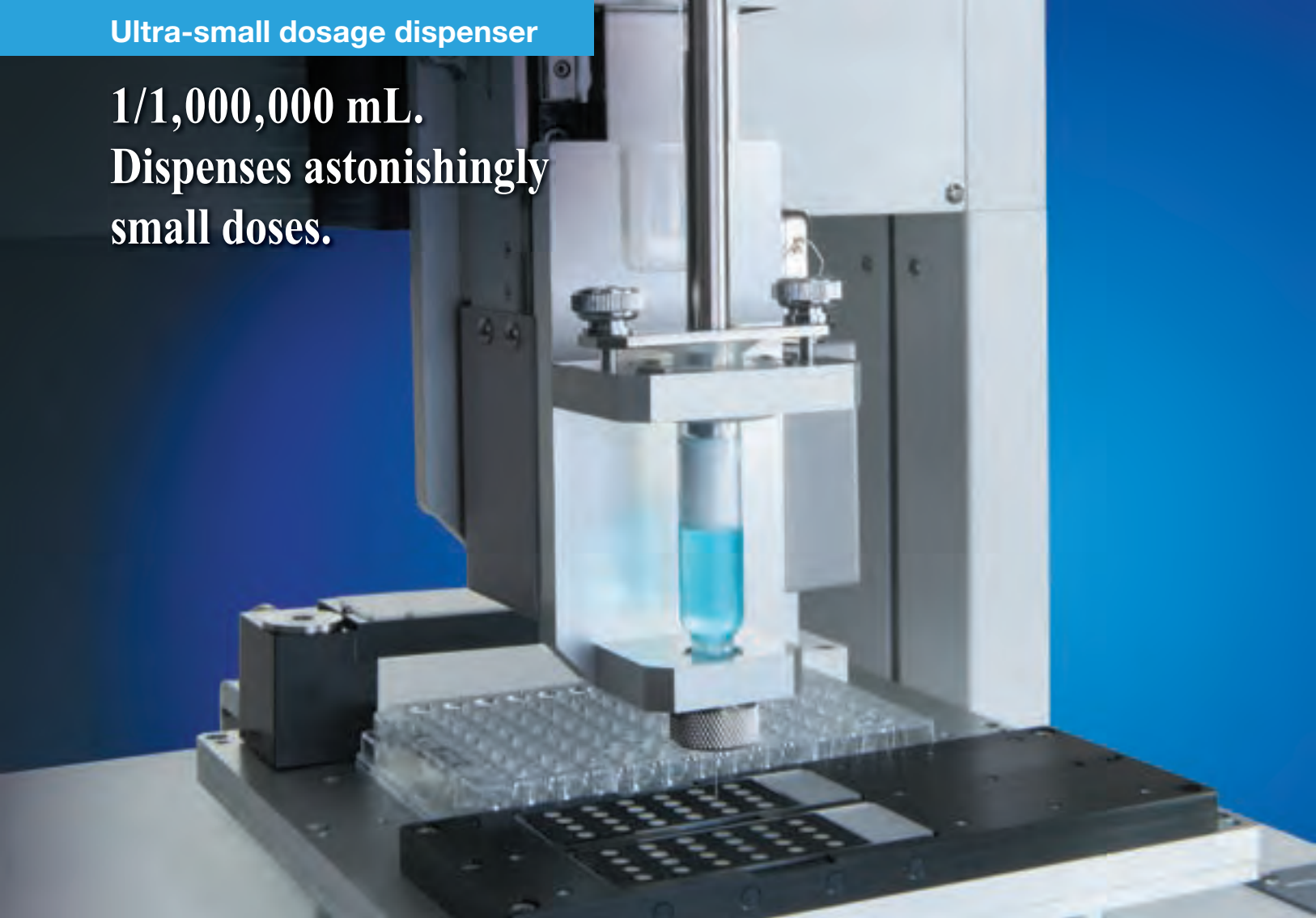
■ Specifications

Item name	MOHNO MASTER V2
Model	VSD-1-001700
Dispensing system	MOHNO system
Fluid feed pressure setting range	0.010 to 0.500 MPa Please set within the available fluid feeding pressure of specified machine or vessel.
Source pressure	Max. 0.800 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Fluid material supply method	Barrel cartridge, Sealant cartridge, Tube cartridge, Pressure pump, Tank
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	145 W
Dispense head unit dimensions (excluding protrusions)	Cartridge Configuration: 70×102.5×405 mm Pump/Tank Configuration: 52×87×405 mm
Dispense head unit weight	1.6 kg
Controller dimensions (excluding protrusions)	W300×D250×H111 mm
Weight of dispense controller	5.0 kg

■ External dimensions

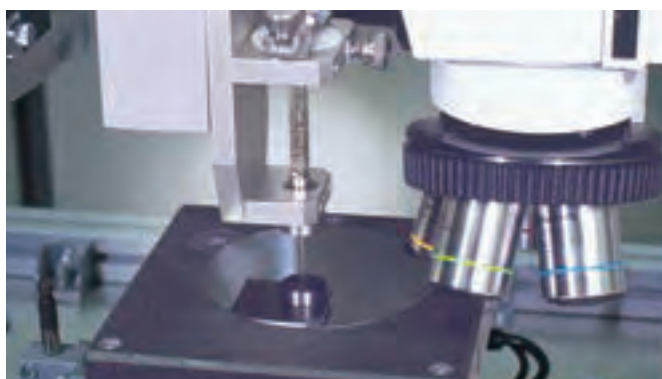


1/1,000,000 mL. Dispenses astonishingly small doses.



Demonstrates power for ultra-small volume dispensing/high precision dispensing/multi-channel dispensing/filling of fluid medicine, solvents and volatile materials.

Newly developed by MUSASHI, **NANO MASTER** series are digitally controlled plunger-type ultra-low volume dispense system exclusively designed for ultra-low volume. The minimum dispensing volume of 1/1,000,000 mL enables ultra-low volume dispensing, and the fully digital control system provides excellent repeatability. It demonstrates outstanding performance in ultra-low volume dispensing of low-viscosity fluid materials such as solvents and volatile fluids, precision dispensing, metered volume filling, etc. From R&D to mass production of electronic components, optical devices, pharmaceuticals, etc., we can handle a wide range of applications in various fields.



Example of FA dispense machine with micro syringe specifications

Suitable products

Semiconductors, Liquid Crystal Substrates, and Electronic Components. Precision Machinery such as Watches, Cameras, Optical Instruments, etc., Medical Supplies, Foodstuffs, etc.

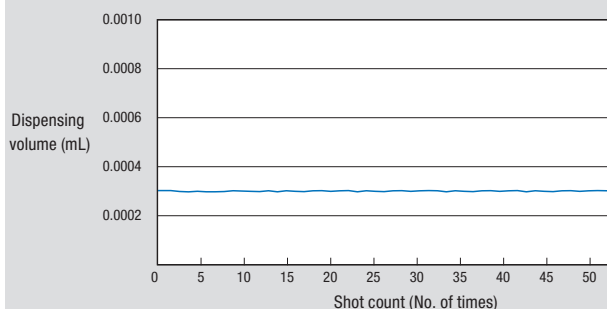
Applicable dispensing materials

Best suited for low viscosity fluid materials. Alcohol, volatile fluids, UV curable adhesives, etc.

Applications

Micro filling, Micro dispensing, Point dispensing, Line dispensing, Gluing, Potting, etc.

Dispensing volume precision by NANO MASTER SMP-III



Syringe: PSY-50F Speed: 100 Fluid material: Water Dispensing volume: 0.0003 mL

Ultra-small dosage dispenser

NANO MASTER SMP-III



nL level volume, ultra-high-precision dispensing.

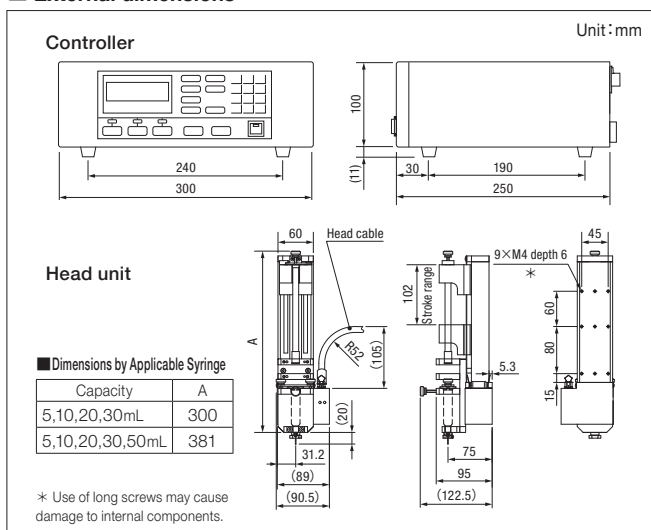
- High stability dispensing by digital control and measurement system.
- Unique plunger mechanism and suck back function eliminate fluid drips.
- Compatible with micro-syringes, for high-precision dispensing of nano-volume fluid.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)

■ Specifications

Item name	Ultra-small dosage dispenser NANO MASTER	
	SMP-III type 30 mL	SMP-III type 50 mL
Model	SMP-3-30	SMP-3-50
Dispensing system	Volume measurement system	
Fluid material supply method	0.005, 0.5, 1, 5, 10 mL micro syringe 5, 10, 20, 30 mL syringe	5, 10, 20, 30, 50 mL syringe
Dispensing volume setting range *	0.009 to 50000.000 µL	
Rated voltage and frequency	AC100-240 V 50/60 Hz	
Power consumption	45 W	
Dispense head unit dimensions	W89×D123×H300 mm	W89×D123×H381 mm
Dispense head unit weight	2.3 kg	2.5 kg
Controller dimensions	W300×D250×H111 mm	
Weight of dispense controller	4.5 kg	

* With 50 mL syringe installed

■ External dimensions



Ultra-small dosage dispenser

NANO MASTER SMP-II



Economical, super micro-volume dispenser.

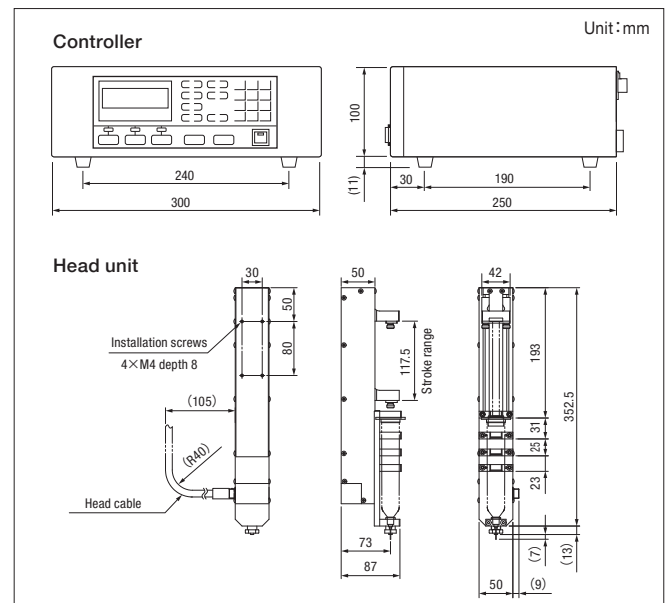
- The SMP-II can dispense super small volumes, as tiny as 1/10,000 mL, of low viscosity fluid.
- High stability dispensing is enabled by digital control and measurement system.
- Unique plunger mechanism and suck back function eliminate fluid drips.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)

■ Specifications

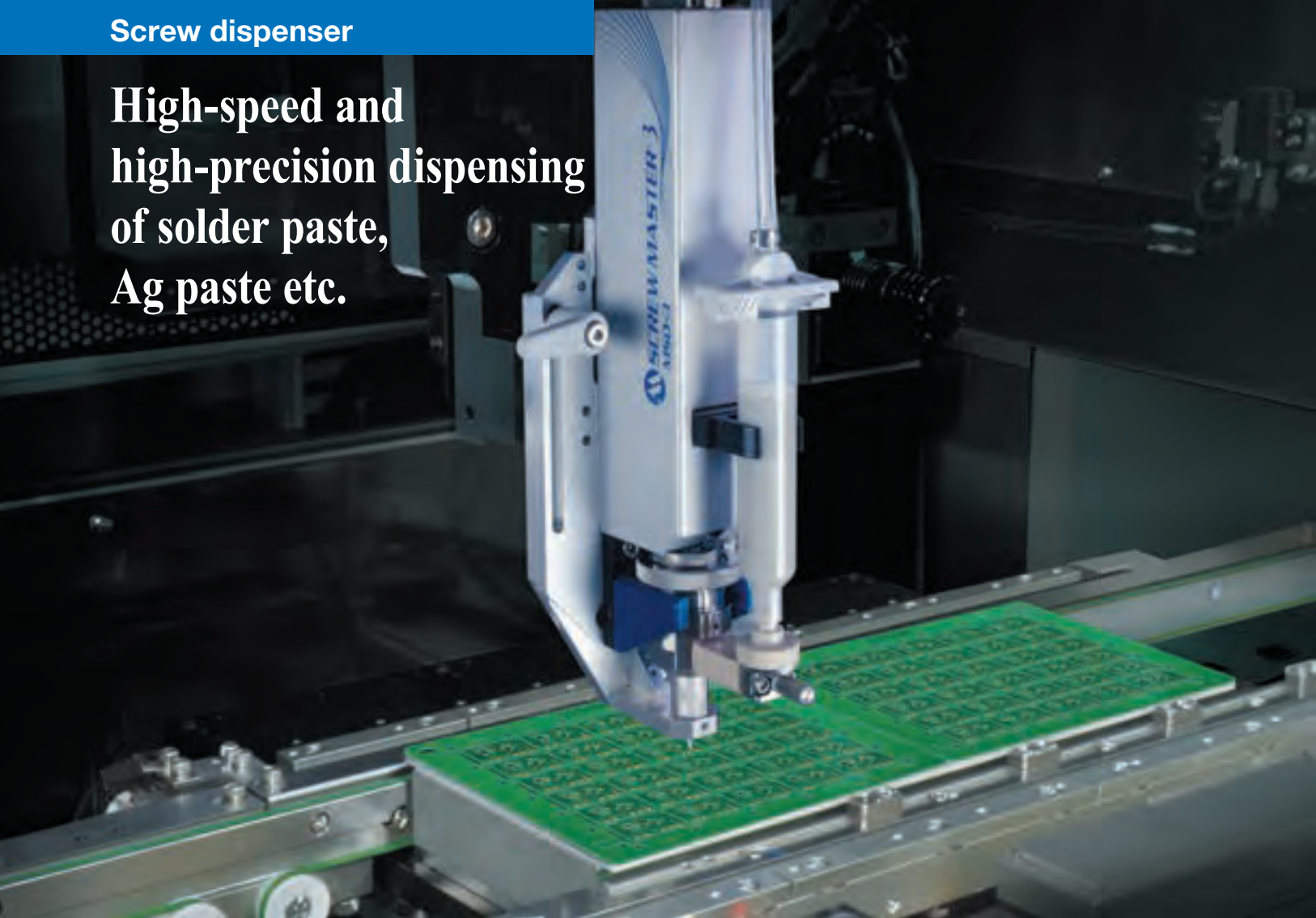
Item name	Ultra-small dosage dispenser NANO MASTE
Model	SMP-2
Dispensing system	Volume measurement system
Fluid material supply method	5, 10, 20, 30, 50 mL syringe
Dispensing volume setting range *	0.1 to 50000.0 µL
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	55 W
Dispense head unit dimensions	W50×D87×H352.5 mm
Dispense head unit weight	1.8 kg
Controller dimensions	W300×D250×H111 mm
Weight of dispense controller	4.5 kg

* With 50 mL syringe installed

■ External dimensions



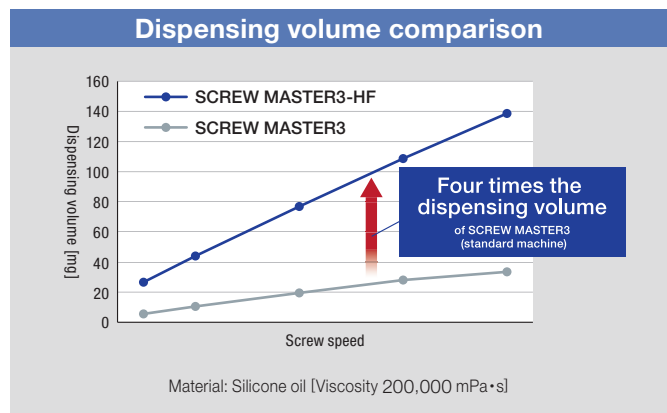
High-speed and high-precision dispensing of solder paste, Ag paste etc.



High-speed stable dispensing of high viscosity fluid containing filler without clogging.

High performance screw dispenser

SCREW MASTER 3 for solder paste, Ag paste, epoxy resin, grease, etc., where stable, high-speed, high-precision dispensing is required. The unique screw mechanism eliminates dispensing volume variation and fluid accumulation, enabling highly stable and precise micro-dot dispensing and line drawing. In addition, the syringe can be easily replaced, promising high work efficiency. It satisfies the severe requirements for the application of particle-containing materials and high-viscosity materials at a high level.



Stable dispensing precision

4 times faster. dispensing speed

Fluid with filler enables high-stability, high-precision, high-speed micro dispensing.

* Comparison of Air-pulse

Applications







Solder paste dispensing



Ag paste dispensing

SCREW MASTER series Lineup & quick reference table

Item name		SCREW MASTER 3-HF NEW 		SCREW MASTER 3 		HOT MELT SCREW MASTER 		SCREW MASTER Applicable to high-viscosity radiation grease Dispensing 		
Flow rate		High flow		Standard		Standard		High flow		
Rod type		Standard	High durability	Standard	High durability	Standard		Standard		
Corresponding fluid	Radiation	Thermal grease	◎		○			◎ (to 1,000,000 mPa·s)		
	Fixation	RTV	◎		○					
		Hot melt					○ (-160°C)			
	Sealing	CIPG/FIPG	○	◎	○	○				
		PUR					◎			
Conduction	Solder paste	○		◎						

Common controller

SCREW MASTER series

A common controller that can drive each head of the SCREW MASTER series.

Equipped with various functions for various High RPM specification also lined up (option)*

* Pre-evaluation is required.

Recommended Functions

- **“Suckback function”** to prevent liquid dripping
- **“Auto increment function”** to automatically switch registered dispensing conditions
- **“Synchro Speed function”** for automatic control of dispensing line width in conjunction with our dispensing robot. [\[For details, see →P53\]](#)
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.



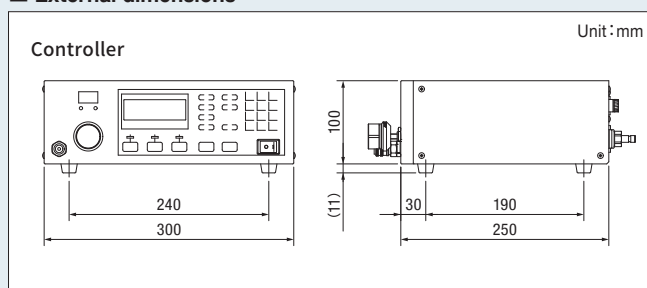
PAT.

Dispensing controller specifications

Item name	High-performance screw dispenser SCREW MASTER3
Model	MSD3-CTR
Fluid feed pressure setting range	0.010 to 0.700 MPa Set to the allowable pressure of the equipment or fluid material container to which it is connected.
Source pressure	Max. 0.800 MPa Recommended supply pressure: Fluid feeding pressure + 0.100 MPa or more
Rated current and frequency	AC 100-240 V 50/60 Hz
External dimensions	W300×D250×H111 mm (excluding protrusions)
Weight	5.2 kg
Power consumption	45 W

Note: High RPM specifications require prior evaluation.

External dimensions



High-performance screw dispenser

SCREW MASTER 3-HF



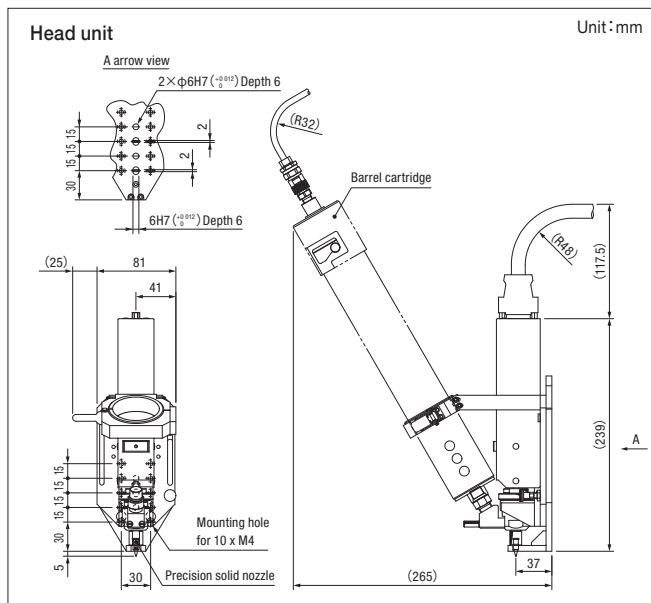
High Flow & High Speed

- Dispensing speed “4 times” as fast as conventional methods.
- High durability rods are also available.
- Compatible with thermal interface material containing filler.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)

■ Specifications

Item name	SCREW MASTER3-HF
Model	MSD3-HD-HF
Dispensing system	Screw type
External dimensions (excluding protrusions)	W37×D79×H233.5 mm
Weight	1 kg (Excluding screw rods, fluid materials and containers)
Applicable temperature control unit	—
Fluid material supply method	Syringe, barrel cartridge, sealant cartridge, tube cartridge

■ External dimensions



High-performance screw dispenser

SCREW MASTER 3



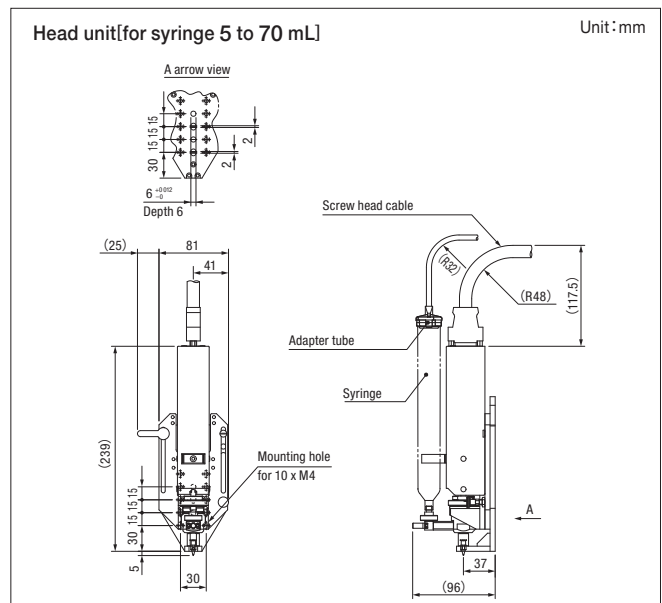
Minimum dispensing volume ϕ 0.15mm realizes overwhelmingly high precision dispensing.

- The unique screw mechanism eliminates volume inconsistency and fluid pools.
- Achieves micro dotting and superfine drawing of solder paste or fluid with filler.
- Syringes and wetted parts can be easily replaced.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Synchro Speed function support. [\[For details, see →P53\]](#)

■ Specifications

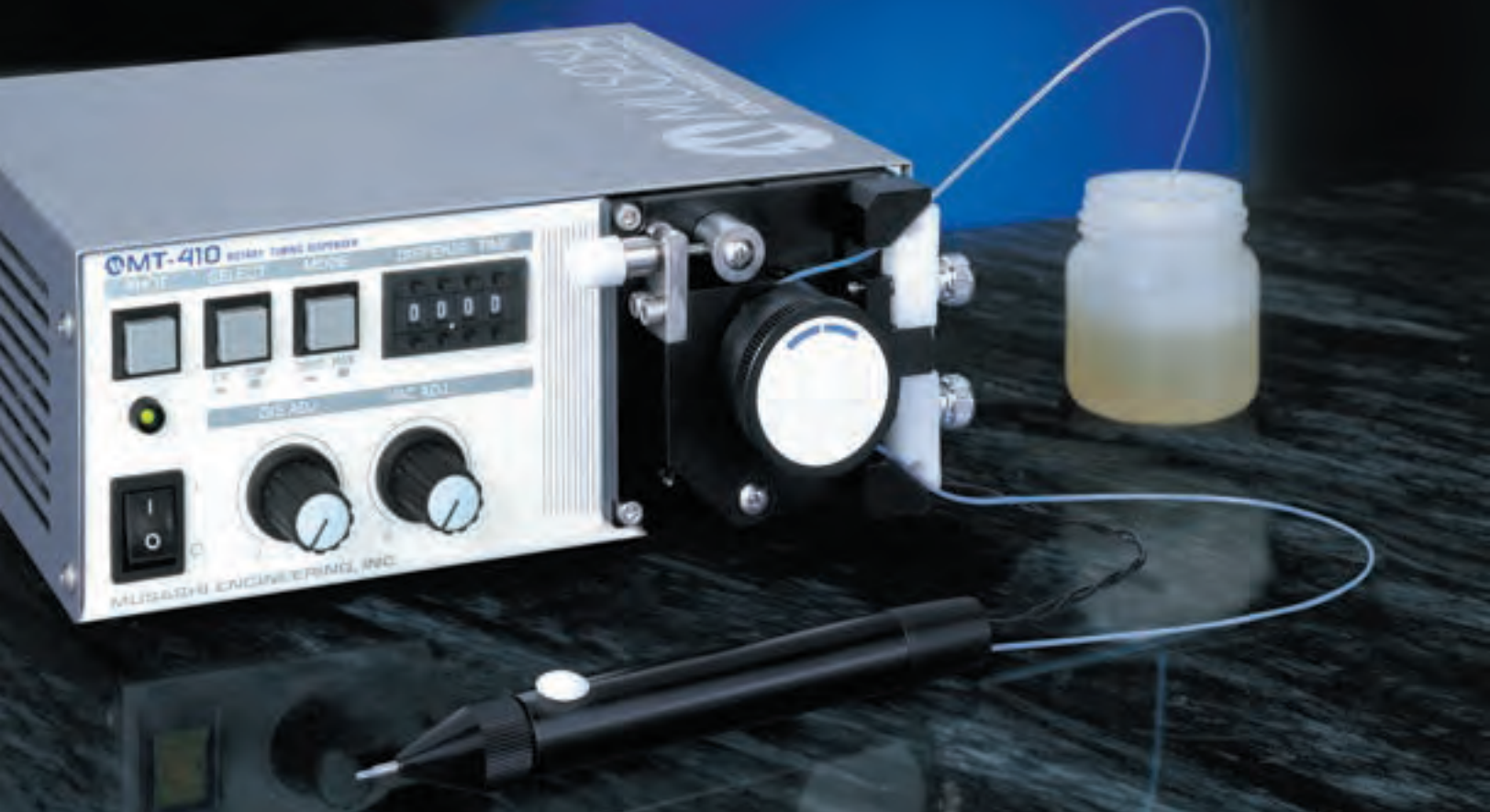
Item name	SCREW MASTER3		
Model	MSD-3-SET1 [For Syringes]	MSD-3-SET2 [Temperature Control Syringes]	MSD-3-SET3 [Cartridge Configuration]
Dispensing system	Screw type		
External dimensions (excluding protrusions)	W37×D85× H230.5 mm	W37×D100× H230.5 mm	
Weight	1 kg (Excluding screw rods, fluid materials and containers)		
Applicable temperature control unit	—	PELTIEMASTER THERMOMASTER	—
Fluid material supply method	Syringes, Tank*	Syringe	Barrel cartridge, sealant cartridge, tube cartridge

■ External dimensions



* Needs to be connected through some valves. Please contact Musashi Sales Department.

Best suited for small-volume dispensing of low-viscosity anaerobic adhesive and for continuous dispensing of small volume at high precision.



Best suited for small volume dispensing of low viscosity materials such as instant adhesive agent at high precision

The **MT** series tubing dispensers are effective for a wide range of dispensing needs, from minute intermittent dispensing to continuous dispensing of low-viscosity anaerobic fluids such as instant adhesives.

Unique rotary tubing mechanism eliminates dispensing volume variation and contributes to longer tube life. Fluid material is suctioned directly from the container without using air pressure and is dispensed through the fluid feed tube only, promoting a significant improvement in the work environment and safety and hygiene. Moreover, the tube can be attached with a single touch. Allows anyone to easily achieve high-precision dispensing without troublesome adjustments. It can also be mounted on manual to automated machines, making it suitable for a wide range of applications.



Simple and secure tube attachment

Suitable products

Printed circuit boards, and coils. Precision equipment such as watches and cameras.

Applicable dispensing materials

Instant adhesives, Anaerobic adhesives, UV curable adhesives, Silicone oils, Threadlockers, Solvents, Fluxes, Inks, Paints, etc.

Applications

Bonding, potting, coating, point dispensing, line dispensing, injecting, filling, etc.

Dispensing volume precision by tubing method

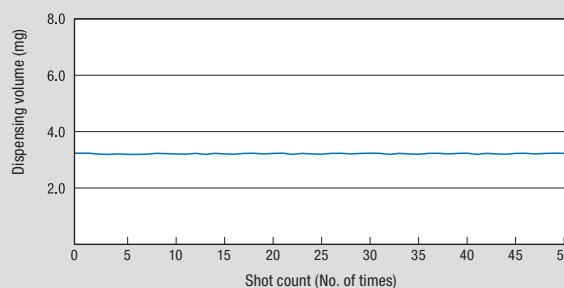


Table: TT-16 Material : Silicone oil (0.1Pa·s) Dispensing time: 0.015 s
 AVE: 3.20 mg Dispensing Accuracy: $\pm 4.4\%$

Rotary tubing dispenser

MT-410



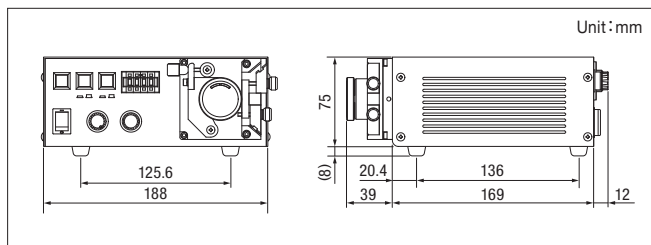
Provide simple and secure quick joint of tube.

- Easy high-precision dispensing without troublesome adjustment.
- Dripping eliminated and bubble generation reduced even for low-viscosity liquid materials.
- Only tube used at wetted part, making maintenance easier.
- Long life of fluid feeding tube thanks to unique installation mechanism.
- “Digital timer” for dispensing time setting with one-touch operation..
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.

Specifications

Item name	Rotary tubing dispenser
Model	MT-410
Dispensing system	Rotary tubing system
Dispensing modes	TIMED/MANUAL mode
Dispensing time setting range	0.01 to 99.99 s
Range of rotational speed setting	0 to 120 rpm
Rated voltage and frequency	AC100-240 V 50/60 Hz
Power consumption	25 W
External dimensions	W188×D208×H83 mm
Weight	3.0 kg

External dimensions



PTFE tube for tubing dispenser List

These fluid feed tubes are made of PTFE for dispensing fluid materials from a tubing dispenser. A variety of tube accessories are available according to fluid's viscosity and dispensing amount.

Note: For UV adhesive, use PTFE tube, black, TT-□B (black tube).

PTFE tube

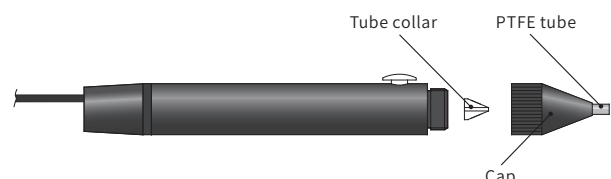
Model		Tube OD (φ) mm	Tube ID (φ) mm	Tube length
PTFE tube	PTFE tube, black (for UV adhesive)			
TT-32	—	0.75	0.25	10 m
TT-30	TT-30B	0.76	0.3	10 m
TT-28	TT-28B	0.84	0.38	10 m
TT-26	TT-26B	0.92	0.46	10 m
TT-24	TT-24B	1.06	0.56	10 m
TT-22	TT-22B	1.18	0.68	10 m
TT-21	TT-21B	1.31	0.81	10 m
TT-20	TT-20B	1.46	0.86	10 m
TT-19	TT-19B	1.56	0.96	10 m
TT-18	TT-18B	1.67	1.07	10 m
TT-17	TT-17B	1.79	1.19	10 m
TT-16	TT-16B	1.95	1.35	10 m
TT-15	TT-15B	2.10	1.50	10 m
TT-14	—	2.28	1.68	10 m
TT-13	TT-13B	2.53	1.93	10 m
TT-12	TT-12B	2.76	2.16	10 m
TT-11	TT-11B	3.01	2.41	10 m
TT-10	TT-10B	3.29	2.69	10 m

Dispenser pen for tubing dispenser

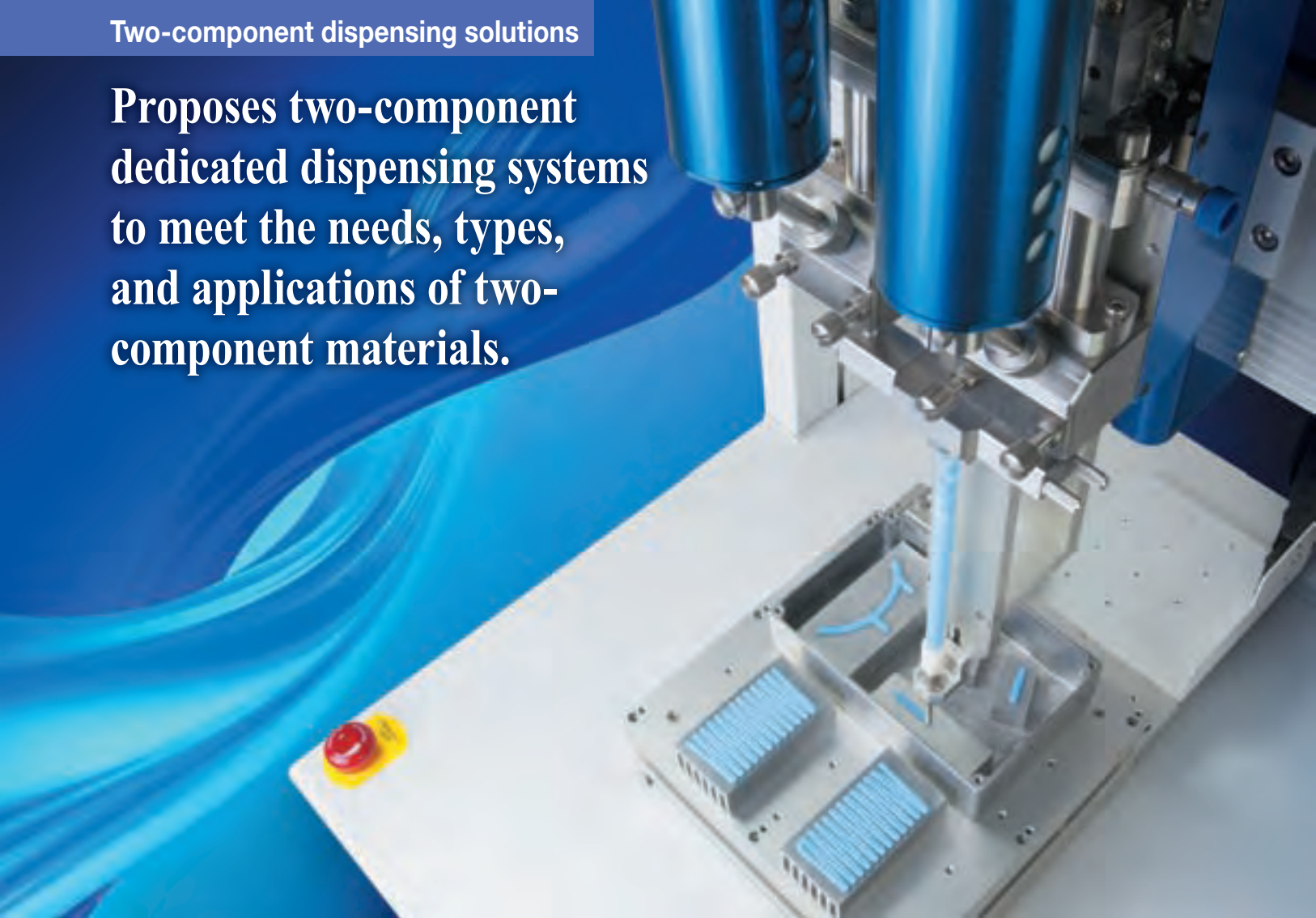


External input switch for tubing dispenser (MT-410).









Item name	Model	Cord length
Dispenser pen	LS-NH3-1604P	1 m



Proposes two-component dedicated dispensing systems to meet the needs, types, and applications of two-component materials.



Dedicated two-component systems Lineup & quick reference table

Item name		<i>DUAL MPP-1</i>	<i>DUAL MPP-1</i> Dual cartridge support NEW	<i>MPP-3-GF-MINI</i> NEW	<i>DUAL MPP-3</i>	<i>DUAL MOHNO MASTER</i>	<i>DYNAMIC DUAL MASTER</i>	<i>DUAL AeroJet</i>	<i>DUAL SuperJet</i>	
										
		Ultra-precision weighing	Supports four types of cartridges	Suitable for large capacity such as pails	Barrel, tank and pail connections available		Compatible with fluids with large specific gravity/viscosity differences	Extensive parts lineup	Ultra high speed Max:1,200 Hz	
Flow rate		Minute amount	Low flow	Medium flow	Medium flow	V1:Medium flow V2:High flow	Low flow	Low flow	Minute amount	
Mixed type		Static Mixed type					Dynamic Mixed type		Honeymoon Mixed type	
Corresponding fluid	Filling	Epoxy, Urethane, Silicone, etc.	○	○	○	⊙	⊙			
	Adhesives	Acrylic, Epoxy, Urethane, Silicone, etc.	○	⊙	○	○		○	○	
	Radiation	Two-component gap filler			⊙	⊙				

Volume measuring type digital control dispenser

DUAL MPP

Ideal for precision dispensing of two-component mixed materials and micro filling.

- Simple maintenance
- Proprietary high-durability design
- Arbitrary mixing ratios are possible by individual setting of 2 heads.
- Applicable to two-component materials with large viscosity differences.



DUAL MPP-1

NEW

DUAL MPP-1
Dual cartridge support



DUAL MPP-3



NEW

MPP-3-GF-MINI



Two-component radiant adhesives



Potting on sensor components



Waterproof sealing of connectors

Dedicated controller



High-performance MOHNO dispenser

DUAL MOHNO MASTER

High-speed, quantitative, continuous potting

- High-speed dispensing of large volumes and arbitrary mixing ratios are also possible.
- Wide lineup of wetted parts.



ADAS holder bonded to windshield



Potting to IGBT

Volume Measuring type Dispenser

DYNAMIC DUAL MASTER

Ultra-high precision mixing and dispensing

- Precise dispensing of two-component materials with large mixing ratio/viscosity differences is possible.
- Set dispensing volume by volume and weight



Potting onto small components.

Non-contact JET Dispenser

DUAL JET

Honeymoon mixing by two-headed JET dispensers

- Maintenance-free, Mixing-free.
- Chemical reaction 2 component adhesive compatible.
- Two types of fluid can be freely patterned (overlaid).
- Required quantity where needed, zero material loss.



Inkjet printer head assembly



Magnet bonding on small-sized motor

DUAL AeroJet



AeroJet V-shape

DUAL SuperJet



SuperJet V-shape



SuperJet Straight type

From manual operation to automated machine mounting, a wide range of production site needs can be handled.

Air-pulse dispenser

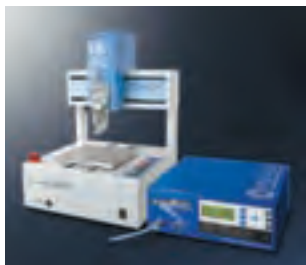
Air-pulse type is the most popular dispenser thanks to its high versatility, economy, and maintainability. From models for manual operation with excellent cost performance to models for automated machines with high accuracy and high speed cycles that are equipped with various automatic compensation and communication functions, models are available to meet a wide range of production site needs. In each segment, MUSASHI Air-pulse dispensers continue to be No. 1.







Syringe system

Standard system for small volume dispensing

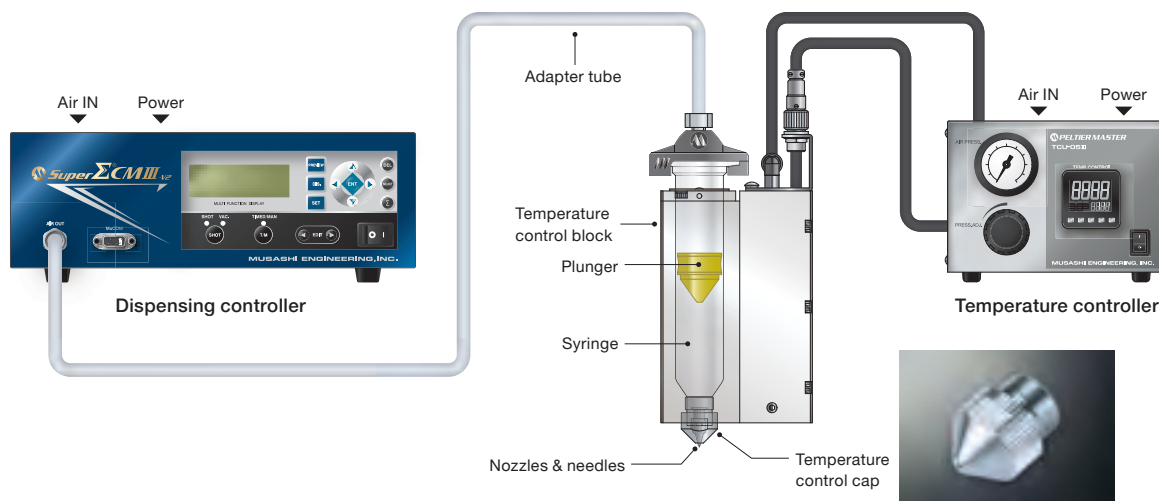
This is the most common dispenser system that can be used for various dispensing operations from manual operation to installation in an automated machine. By combining this system with disposable type syringes and needles, maintenance is much easier. There are nine syringe sizes, from 1 mL to



Quick Reference Table by Specifications and Applications

Performance	High	 	
	Low		
		manual labor	FA dispense machine

Air-pulse system Connection system configuration diagram



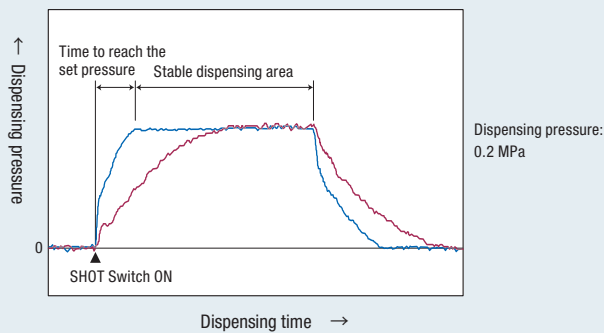


Air-pulse stabilization circuit PAT.

MUSASHI's unique, air-pulse stabilizing circuit raises the pressure faster, providing good response. Accordingly, the stable dispensing area becomes wider to eliminate fluctuations in dispensing volume.

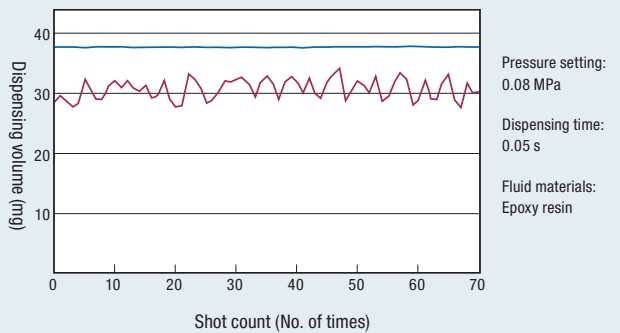
Effect of the air-pulse stabilizing circuit

— *Super Σ CMIII-V5* — Air-pulse without stabilization circuit



Dispensing precision comparison table

— *Super Σ CMIII-V5* — Other brand (with digital timer)



Example of system mounting



manual labor



Desktop robot



Cartesian robot



FA dispense machine

Into the core of automated production lines The Σ series dominates the field of ultra-precision, super-fine point dispensing.



Enhanced dispensing stability, demonstration of global standards.

Our Σ series have been highly valued for their high-precision micro volume dispensing capability and automatized unmanned production lines accompanied with building up overwhelming accomplishments. "Three Major Σ Functions" have solved difficult problems all together such as fluid dripping, volume reduction, and remaining volume alert. These functions provide excellent performance in various production processes including semiconductor manufacturing and electronic component manufacturing, for example, ultra-precision dispensing of as little as 0.01 mg and high-speed dispensing at minimum cycle time of 0.1 s or less.

Higher-precision and higher-stability dispensing has been successfully achieved thanks to further improvement in dispensing stability and remaining volume detection accuracy. Storage capacity of as many as 100 types of operation patterns allows users to manage product variety completely without any difficulty.

In addition, the dedicated software,

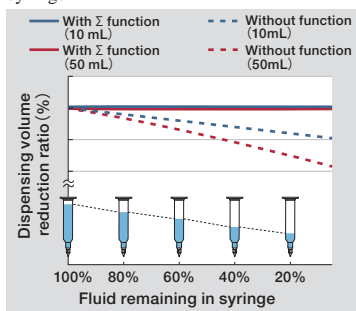
"**MuCOM for Super Σ CM series**", provides editability of dispensing conditions on a PC, dramatically improving accuracy and efficiency of operations.

" Σ 3major functions " help to improve yield and contribute to a smarter production line

Function 1

Automatic correction of volume reduction

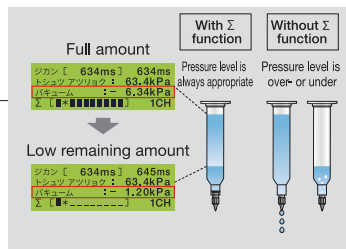
Compensates for the decrease in dispensing volume due to the effect of the difference in hydraulic head. Stable, high-precision dispensing is achieved through a single syringe.



Function 2

Automatic dripping prevention function

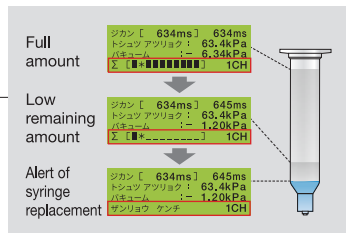
Improved stability of dispensing accuracy by automatically adjusting the vacuum volume to the optimum level at all times according to the amount of remaining fluid.



Function 3

Automatic low fluid alarm

Highly precise detection and constant monitoring of the amount of fluid remaining in the syringe. Outputs a warning sound (signal) when the remaining fluid level reaches the set value.



Fully automated dispensing machine with **Super Σ CM III**



Digital Control Dispenser with Correction Function

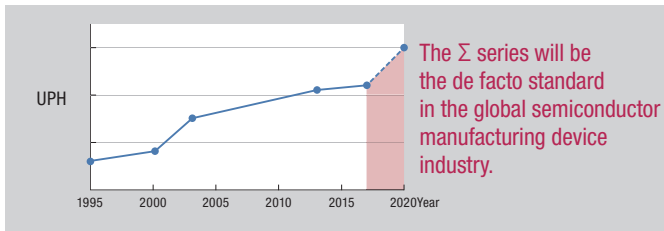
SuperΣ CMIII-V5/V2



Ultra-stable dispensing with faster cycle time and smaller volume.

- Greater performance with the Σ 3 major functions
- Better durability and easier maintenance.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Air-pulse stabilization circuit (PAT) mounted [\[For details, see P37\]](#)

Delivering higher throughput for the global semiconductor manufacturing device industry.



Enable even smaller micro-dispensing.

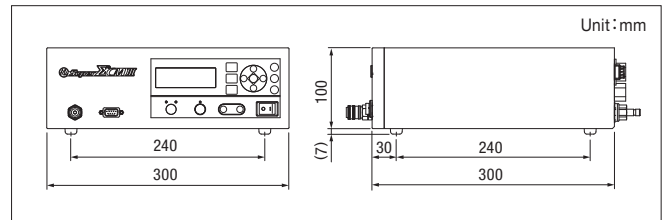


Specifications

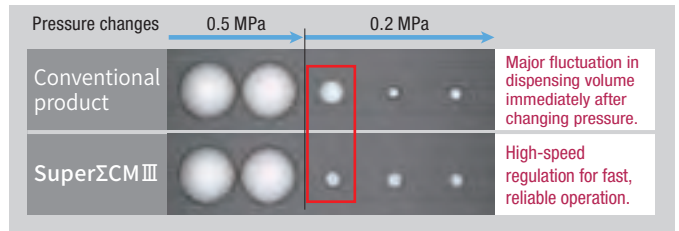
Item name	Fully digital controlled dispenser	
Model	S-SIGMA-CM3-V5	S-SIGMA-CM3-V2
Dispensing system	Air-pulse system	
Air-pulse stabilization circuit	Mounted	
Dispensing pressure setting range	0.030 to 0.500 MPa	0.005 to 0.200 MPa
Dispensing time setting range	0.001 to 9,999.999 s	
Vacuum pressure setting range	0.00 to -0.020 MPa	
Source pressure range	0.200 to 0.700 MPa (600 MPa recommended)	0.200 to 0.400 MPa (300 MPa recommended)
Rated voltage and frequency	AC100-240 V 50/60 Hz	
Power consumption	30 W	
External dimensions	W300×D300×H107 mm	
Weight	5.8 kg	

Note: When using syringes or cartridges larger than 70mL, please contact us.

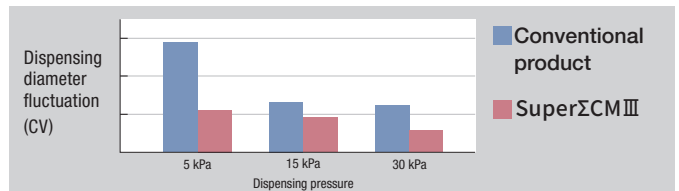
External dimensions



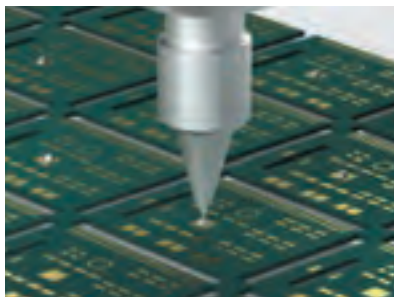
Better coverage of pressure changes.



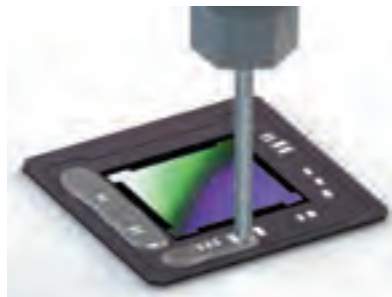
Better reliability for low-viscosity liquid.



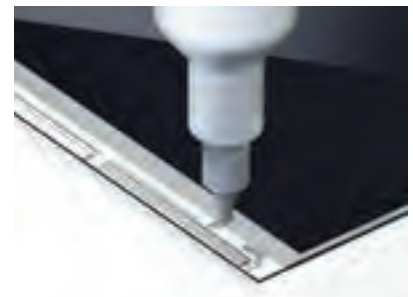
Applications



Ag paste dispensing in die bonding



Dust trapping agent dispensing on camera modules



Conductive Ag paste dispensing on touch panels

Automatic control of the vacuum is adopted to achieve full-function digital control. Enhanced logging and self-diagnostic functions for FA mounting.



Industry 4.0 “complete support”, dispensing platformer is born.

In recent years, there has been a growing need for digital management of production sites in order to achieve "Smart Factories". The newly developed full-function digital control dispenser **ML-8000X** is complete support with Industry 4.0. Enhanced production management functions with logging and self-diagnostic functions. In addition, 4.3 inch color touch panel enables smartphone-like operation. As a platform for dispensing condition management, it contributes to improving the performance of automated production lines.

Applications



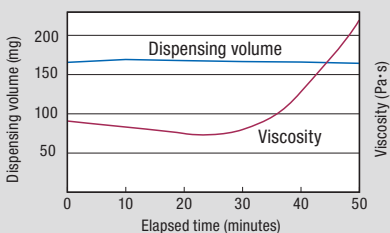
Speaker Vibration Membrane Attachment



Dispensing Ag Paste on optical communication module

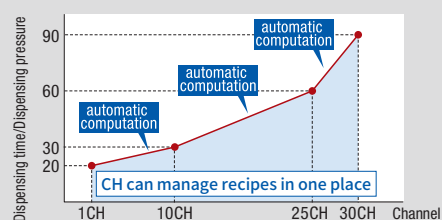
Automatic pressure switching to adapt to viscosity changes

Auto increment function to correct dispensing volume (Automatic channel switching)



Fluid: two-component epoxy adhesive

Automatic calculation of dispensing conditions by auto-slope function



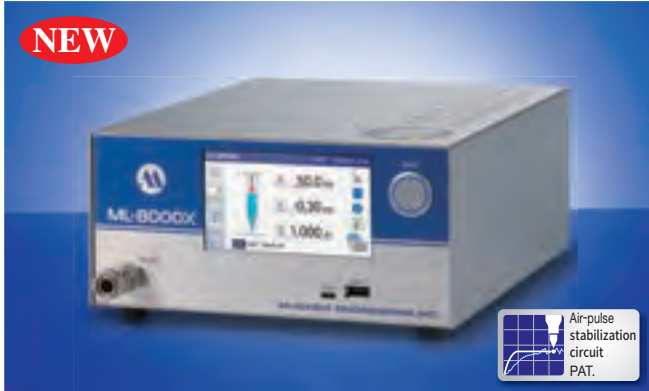
Automatically calculates and sets the dispensing pressure and dispensing time for an arbitrarily specified channel section.

Variable dispensing volume at a constant dispensing rate by express shot function



Industry 4.0 complete support
Fully digital controlled dispenser

ML-8000X



Next-generation dispenser suitable for installation in automated machines

- **Industry 4.0 “complete” support**
Instantly displays errors, logs, and the number of productions.
Minimize defects by working with higher levels.
- **Recipes and channels can be imported/exported via USB port.**
Easy backup to PCs and other devices.
- **Compatible Standards: CE marking**
(Low Voltage Directive, EMC Directive), EU RoHS2.
- **Standard lineup includes PNP specifications for I/O input/output signals.**
- **Air-pulse stabilization circuit (PAT) mounted** [For details, see →P37]



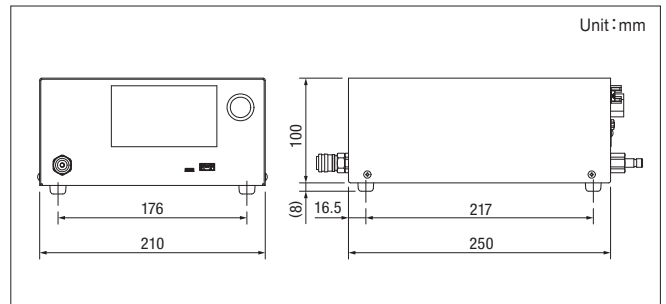
Example on equipments

Specifications

Item name	Supports upper-level communication Fully digital controlled dispenser			
Model	ML-8000X-CTR-V7-N	ML-8000X-CTR-V7-P	ML-8000X-CTR-V2-N	ML-8000X-CTR-V2-P
Dispensing system	Air-pulse system			
Air-pulse stabilization circuit	Mounted			
Dispensing pressure setting range	20.0 to 700.0 kPa		5.0 to 200.0 kPa	
Dispensing time setting range	0.010 to 9,999.999 s			
Vacuum pressure setting range	0.00 to -5.00 kPa			
Source pressure range	200 to 800 kPa		200 to 400 kPa	
Signal Specifications	NPN	PNP	NPN	PNP
Supply power *1	Connector	ACAT-3 dedicated connector, e-CON (3-pin socket) *2		
	Rated voltage	DC 24V ±10%		
	Power consumption	26 W		
External dimensions	W210×D250×H108 mm (excluding protrusions)			
Weight	3.4 kg			

*1 Please use a USB cable and power cable of 3 m or less.
(In excess of 3 m, the product is outside the scope of the CE declaration of conformity for this product.)
*2 The AC adapter is not included in the product. Power should be supplied by one of the following methods.
■ Use our ACAT-3 (input rating AC100 to 240 V 50 / 60 Hz).
■ Use a SELV power supply that meets the CE marking LVD matching standard. (Compatible plug: e-CON 3-pin)

External dimensions



Features of ML-8000X

Improved functions

Vacuum pressure setting

Production control

Equipped with log, self-diagnosis, emergency stop

Refined operability

Equipped with a 4.3 inch touch panel

PC communication

Equipped with USB ports



Two types of main screens are available: “Parameter Operation” and “Visual Operation”.



Easy operation and setting by “screen touch” even with a pen or gloves.

The long-selling ML-5000II has been redesigned with a simplified logging function. High-grade models also realize automatic control of dispensing pressure.



Industry 4.0 entry model, new!

The ML-5000XII high-precision digital dispenser is a long-seller with an overwhelming share of the global market.

「**ML-6000X / ML-6000X Pro**」 is an entry-level model compatible with Industry 4.0, developed and commercialized as its successor. The dispensing performance that surpasses the ML-5000XII, a new simple logging function, and a 2.4 inch color LCD display with greatly improved visibility contribute to the realization of a “Smart Factory”.

Applications



UV dispensing on camera modules

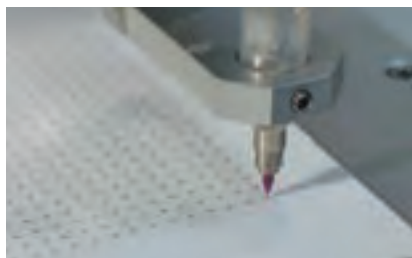


Pressure Sensor Potting

Features of next-generation dispenser

Excellent dispensing

Air-pulse stabilization circuit (PAT) mounted as standard. Eliminates dispensing volume variation and achieves excellent dispensing accuracy. [For details, see →P37](#)



Next-generation Functions

Simple logging function (recording parameters: various pressures, dispensing time, channels, dispensing mode)

Other Enhanced Features

Simple residual volume detection / Interval function channel registration / Channel switching error output / Alarm output



User-friendly

The 2.4 inch color graphic LCD display is easy to set up and operate. Multilingual (Japanese, English, Chinese) support.



High-precision digital dispenser

ML-6000X / ML-6000X Pro

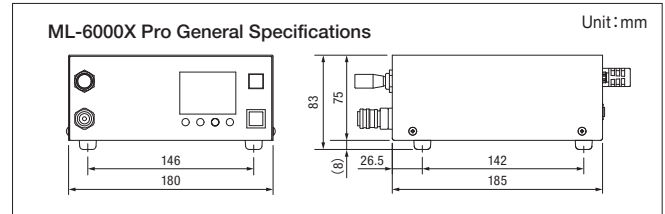
NEW



New generation digital dispenser

- Compatible with Industry 4.0 and outputs various kinds of abnormal errors.
- Channel registration is possible for a variety of products.
- General-purpose and vacuum high-resolution specifications lined up.
- **ML-6000X Pro**
 - Enables pressure setting from the device side.
 - Two types of dispensing pressure are selectable.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.
- Air-pulse stabilization circuit (PAT) mounted [For details, see ▶P37]

External dimensions



Specifications

Item name	High-precision digital dispenser					
Model	ML-6000X		ML-6000X Pro			
	ML-6000X-CTR-N-VHR	ML-6000X-CTR-N-GP	ML-6000XP-CTR-V5-N-VHR	ML-6000XP-CTR-V2-N-VHR	ML-6000XP-CTR-V5-N-GP	ML-6000XP-CTR-V2-N-GP
Dispensing system	Air-pulse system					
Air-pulse stabilization circuit	Mounted					
Dispensing pressure regulating range	5.0 to 700.0 kPa		30.0 to 500.0 kPa	5.0 to 200.0 kPa	30.0 to 500.0 kPa	5.0 to 200.0 kPa
Dispensing time setting range	0.001 to 99.999 sec, 0.01 to 999.99 sec, 0.1 to 9,999.9 sec (digits can be switched by icon switch)					
Vacuum pressure setting range	0 to -20.0 kPa (with air supply of 600 kPa)		0 to -20.0 kPa (with air supply of 600 kPa)	0 to -10.0 kPa (with air supply of 400 kPa)	0 to -20.0 kPa (with air supply of 600 kPa)	0 to -10.0 kPa (with air supply of 400 kPa)
Vacuum pressure setting range	Precision needle valve (Approx. -1 kPa per a turn)	Standard needle valve (Approx. -4 kPa per a turn)	Precision needle valve (Approx. -1 kPa per a turn)		Standard needle valve (Approx. -4 kPa per a turn)	
Source pressure range	Max. 800 kPa (Dispensing pressure + 100 kPa or more)		Max. 800 kPa (Dispensing pressure + 100 kPa or more)	Max. 400 kPa (Dispensing pressure + 100 kPa or more)	Max. 800 kPa (Dispensing pressure + 100 kPa or more)	Max. 400 kPa (Dispensing pressure + 100 kPa or more)
Rated voltage and frequency	When supplying from DC24 V DSUB 25 pin, When supplying from a DC12 V DC jack *1 *2					
Power consumption	12 W					
External dimensions	W180×D185×H83 mm (excluding protrusions)					
Weight	2.2 kg	2.1 kg	2.2 kg		2.0 kg	

*1 The AC adapter is not included in the product.

*2 When supplying from a DC plug, Use one of the following methods to supply power.

- Use our ACAT-2 (input rating AC100-240V 50 / 60Hz).
- Use an AC adapter that conforms to EN-62368-1: 2014. (Compatible plug $\phi 5.5 \times 2.1$ L = 9.5, Center Plus)
- Use a SELV power supply that meets the CE marking LVD matching standard.

Highly functional ECO Dispenser

SMART SHOT MS-1 / MS-1D



PAT.

Outstanding cost-effective performance.

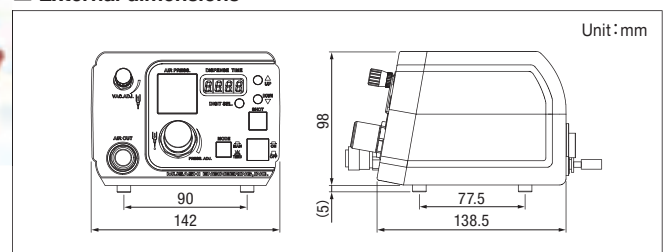
- Power consumption 1/2 — Cut power consumption by 50%
- Significant accuracy improvement — Dispense accuracy is improved to 130% compared to conventional model.
- Multifunctional machine — Equipped with set up function for dispense condition.
- Ultra-light weight and compact design.
- Compatible Standards: CE marking (Low Voltage Directive, EMC Directive), EU RoHS2.



Specifications

Item name	Highly functional ECO Dispenser SMART SHOT	
Model	MS-1-CTR	MS-1D-CTR
Air-pulse stabilization circuit	None	
Dispensing pressure setting range	0.02 to 0.70 MPa	
Dispensing time setting range	0.010 to 9,999 s	
Vacuum pressure setting range	0 to -20 kPa (Source pressure 600 kPa)	
Source pressure range	Max. 800 kPa (Dispensing pressure + 100 kPa or more)	
Rated voltage and frequency	AC100 to 240 V 50/60 Hz (dedicated AC adapter included)	
Power consumption	12 W	
External dimensions	W142×D138.5×H103 mm (excluding protrusions)	
Weight	790 g	

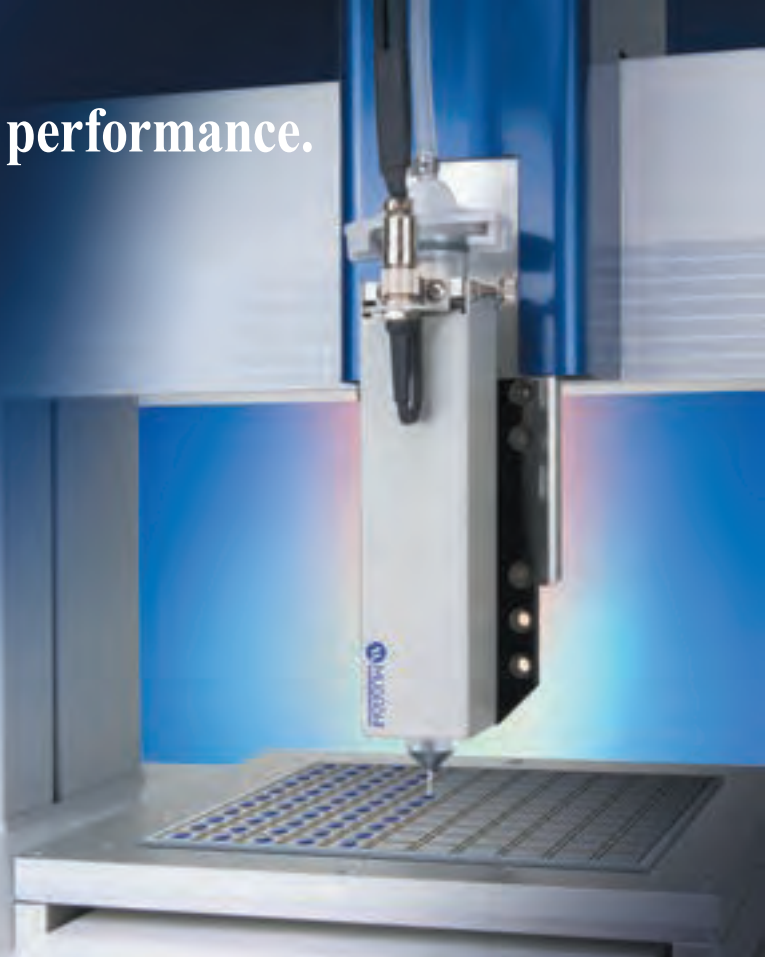
External dimensions



Key unit to improve dispensing performance.

Temperature control unit

Dispensing performance (accuracy, tact, etc.) of Air-pulse dispensers is affected by the viscosity change and viscosity of fluid. Optimal fluid temperature control is achieved by using a temperature control unit that is suited to the purpose, operating environment, and fluid packaging. It is possible to improve the dispensing performance.



High-precision, Peltier, temperature control

Heating and cooling the fluid keeps the fluid viscosity constant to perform high-precision, stable dispensing.

This system keeps the temperatures of fluid materials constant to ensure stable dispensing of high-viscosity fluid materials of which the viscosity is changed due to ambient temperature.



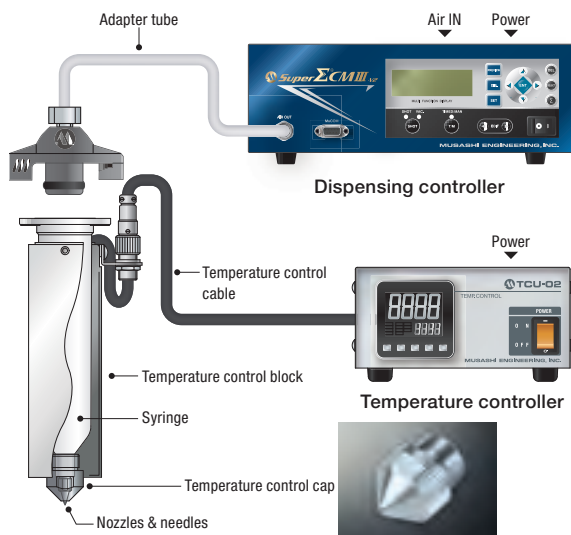
Resistance thermometer bulb temperature control

Stable dispensing at relatively higher temperatures

This is a syringe heating temperature control system suitable for dispensing materials at relatively high temperatures. It is suitable for dispensing materials such as solder and epoxy.



Air-pulse system Connection system configuration diagram



Temperature control system

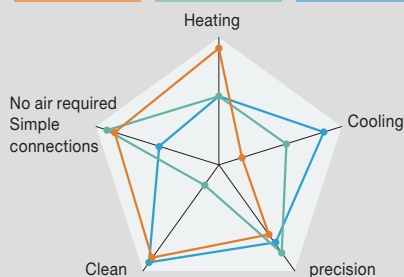
Sophisticated temperature control

Set and control temperature in 0.1°C units. Accurate temperature control is essential for high-precision dispensing.



Comparison of temperature control ability

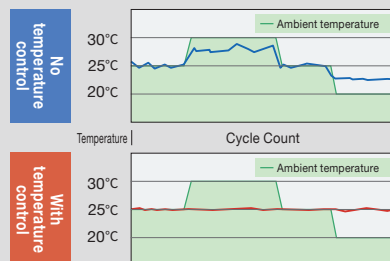
TCU-02 TCU-05FIII TCU-05III



* At an ambient temperature of 25 °C

Effectiveness of temperature control system

Dispensing conditions | Fluid materials : solder paste Target dispensing volume: 5 mg
Dispenser: SuperΣCMIII Nozzle: SHN-0.3 N



* TCU-05 III/TBP-SY10M-A-L use Temperature setting temperature: 25 °C

Resistance temperature detector control system
THERMO MASTER



TCU-02 / TB

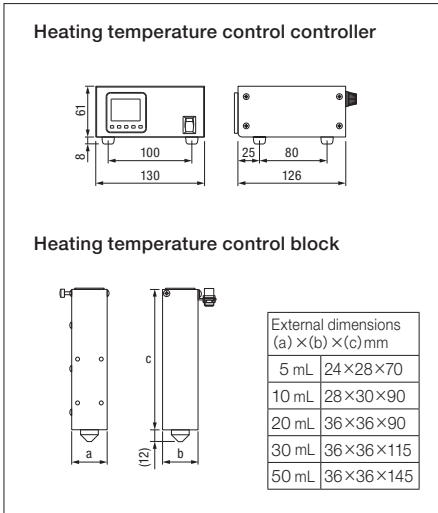
Improved temperature precision and stability, lightweight and compact heating and temperature control system.

■ Specifications

	Model	Weight
Temperature control block	5 mL TB-5E-K	135 g
	10 mL TB-10E-K	190 g
	20 mL TB-20E-K	240 g
	30 mL TB-30E-K	280 g
	50 mL TB-50E-K	340 g
Temperature controller	TCU-02-MU	1.04 kg

■ External dimensions

Unit : mm



Resistance temperature detector control system
PELTIER MASTER



TCU-05FⅢ / TBP

Heating and cooling to control temperature and viscosity of fluid agents and eliminate fluctuations in dispensing volume.

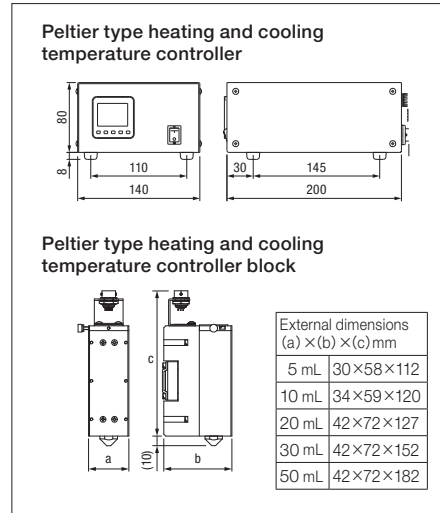
- Simple connections, no air required.
- CE-marking certified, EU RoHS2 compliant.

■ Specifications

	Model	Weight
Temperature control block	5 mL TBP-SY05M-F	230 g
	10 mL TBP-SY10M-F	280 g
	20 mL TBP-SY20M-F	400 g
	30 mL TBP-SY30M-F	500 g
	50 mL TBP-SY50M-F	600 g
Temperature controller	TCU-05F-3-MU	1.8 kg

■ External dimensions

Unit : mm



TCU-05Ⅲ / TBP

- Ideal for clean rooms.
- CE-marking certified, EU RoHS2 compliant.

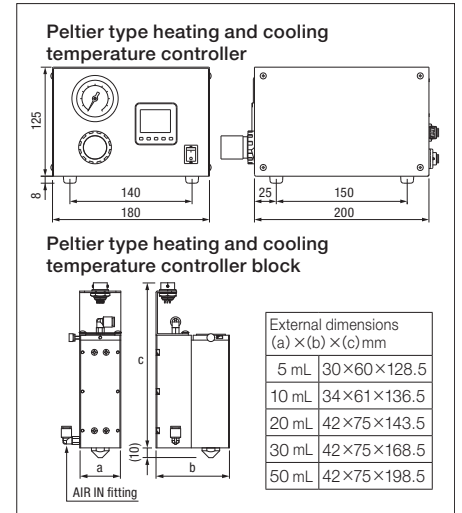
■ Specifications

	Model	Weight
Temperature control block	5 mL TBP-SY05M-A- [L/R]	310 g
	10 mL TBP-SY10M-A- [L/R]	370 g
	20 mL TBP-SY20M-A- [L/R]	530 g
	30 mL TBP-SY30M-A- [L/R]	650 g
	50 mL TBP-SY50M-A- [L/R]	770 g
Temperature controller	TCU-05A-3-MU	2.7 kg

Note: For [L/R], specify either L (left specification) or R (right specification).

■ External dimensions

Unit : mm



■ Head controller Specification

Item name	TCU-02 / TB	TCU-05FⅢ / TBP	TCU-05Ⅲ / TBP
The setting range of temperature	25°C to 100°C (At an ambient temperature of 25°C) *	20°C to 50°C (At an ambient temperature of 25°C)	15°C to 50°C (At an ambient temperature of 20 to 25°C)
Temperature precision	±0.5°C	±0.3°C	±0.4°C
Heat dissipating system	—	Fan air	Air blow
Air supply pressure	—	—	Max.0.2 MPa
Supported syringe	Our 5, 10, 20, 30, and 50 mL syringes		
Rated voltage and frequency	AC100 V 50/60 Hz	AC100 V-240 V 50/60 Hz	
Power consumption (Controller)	9 W	55 W	60 W

* The upper limit of operating temperature for clear syringes is 60 °C.

Note: 1. Caps for Peltier temperature control block must be ordered separately according to the nozzle size.

2. Caps for resistance temperature measurement type temperature control blocks should be ordered separately according to the nozzle size.

A reliable dispensing supporter
that assists at various dispensing sites.

Peripheral equipments for dispensers

To ensure that the dispensing process is always carried out under ideal conditions, MUSASHI offers a diverse lineup of peripheral equipment to suit various production sites, fluids used, and dispensing specifications. The system provides detailed support for syringe filling, defoaming, and agitator of fluids, thereby improving the efficiency and quality of the dispensing process.

Degassing
syringes

MUSASHI
AWATRON 3
AW-20-3

MUSASHI
ENGINEERING INC.

Stirring system

MIX MASTER



Note: The CyberJet2 is not included in this product.

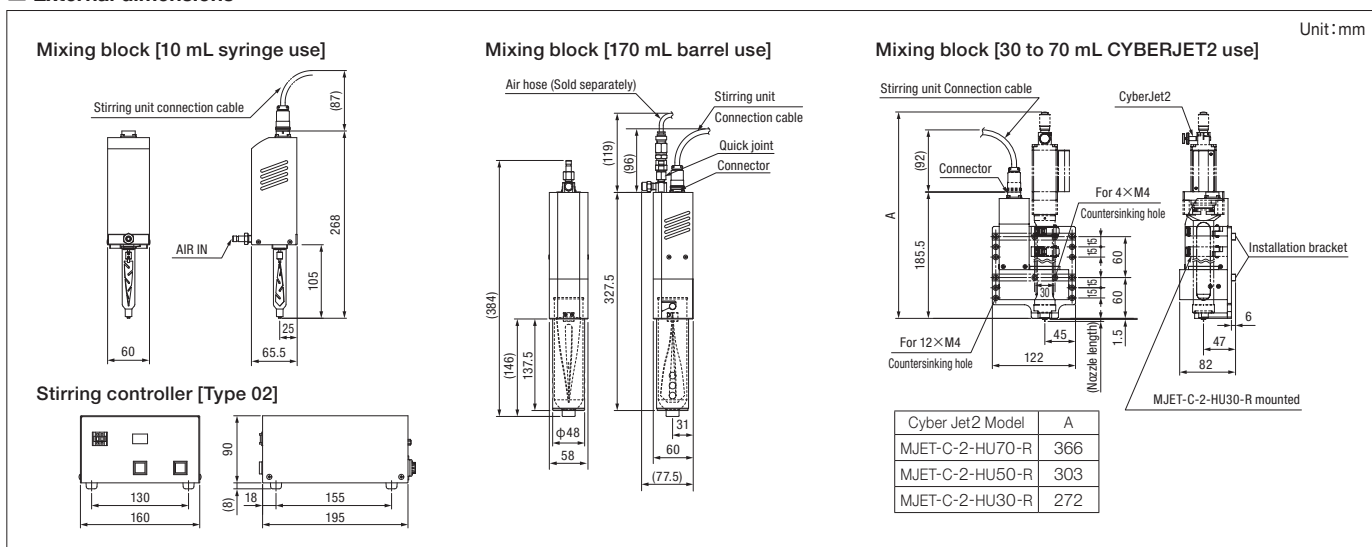
Stirs fluid materials containing fillers to prevent filler sedimentation.

- Best suited for dispensing fluid that contains filler using a syringe/cartridge system.

	Item name	Model	Weight
Stirring block MIX MASTER	[5 mL syringe use]	MB-5E-02	880 g
	[10 mL syringe use]	MB-10E-02	880 g
	[20 mL syringe use]	MB-20E-02	850 g
	[30 mL syringe use]	MB-30E-02	860 g
	[50 mL syringe use]	MB-50E-02	860 g
	[70 mL syringe use]	MB-70E-02	870 g
	[100 mL barrel use]	MB-100C-01	1.2 kg
	[170 mL barrel use]	MB-170C-01	1.3 kg
	[340 mL barrel use]	MB-340C-01	1.4 kg
Stirring controller MIX MASTER	[30~70 mL CYBERJET2 use]	MB-MJETC2-3070	1.4 kg
		RMU-02	1.8 kg

Note: The weight excludes cables, syringe, and fluid material.

External dimensions



Simplified Syringe Filler **FILLING MATE**



Quickly and easily fills syringes with small volumes from fluid material containers, without any bubbles.

Filling options

- Quantitative filling with automatic stop function. (Syringe full detection unit + Dedicated controller)
- Special pistons can be custom ordered.
- Fluid material scatter-proof safety lid
- Remaining level detection unit

Automatic weighing type syringe filling system **AUTO FILLING MASTER**



Fill syringes automatically with highly viscous fluid at high-precision

- Fill syringes quickly and precisely with high viscosity fluid, including paste
- You can fill syringes to the required volume precisely, just by pressing the start switch since this system weighs the fluid.
- Supports different sizes of syringes.

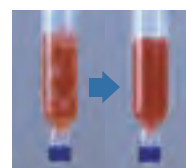
Note: Please contact our sales department in advance.
This system needs to be customized for each kind of fluid.

Syringe centrifugal degasser **AWATRON 3**



Further user friendly, reliable, and speedy bubble elimination!

- Bubbles are eliminated just by placing a syringe and pressing the switch.
- Adoption of a syringe detachable mechanism with stationary holder allows for simple operation and elimination of installation failure.
- Adoption of a digital timer allows for detailed setting and control of bubble elimination time.
- Safety circuits mounted.



Before bubble elimination After bubble elimination

Model	AW-20-3	AW-20-3-220V	AW-50-3	AW-50-3-220V
Timer range	1 to 600 s			
Supported syringe mL	01 mL syringe: equipped with 4 syringes			
	03 mL syringe: equipped with 4 syringes			
	05 mL syringe: equipped with 4 syringes			
	10 mL syringe: equipped with 4 syringes			
	20 mL syringe: equipped with 4 syringes			
	—		30mL syringe: equipped with 4 syringes	
—		50mL syringe: equipped with 4 syringes		
Power	AC100 V 50/60 Hz	AC220 V or AC230 V 50/60 Hz	AC100 V 50/60 Hz	AC220 V or AC230 V 50/60 Hz
Power consumption	165 W		400 W	
External dimensions	W320 × D394 × H210 mm		W431 × D509 × H250 mm	
Weight	15 kg		24 kg	

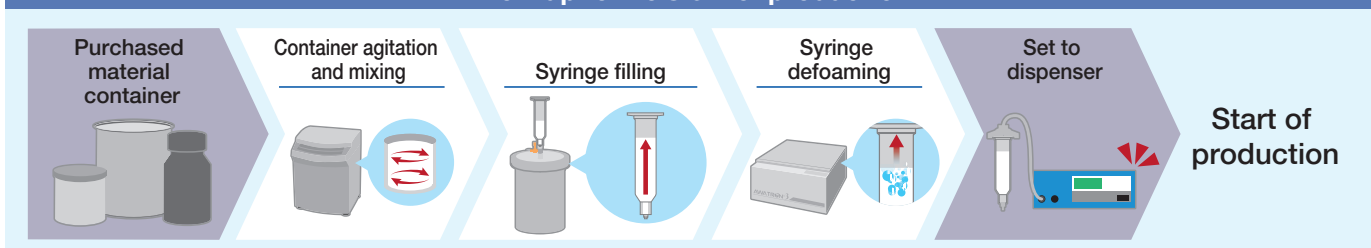
■Transformer (option)

- If AW-20-3 or AW-50-3 is used with the voltage of other than AC100V, use one of the following transformers.

Item name	Model
[AC110V ⇒ 100V]	TR-110
[AC117V ⇒ 100V]	TR-117
[AC200V ⇒ 100V]	TR-200
[AC220V ⇒ 100V]	TR-220
[AC240V ⇒ 100V]	TR-240

Note: 600 W, 2 pole outlet + grounding / 1 outlet
Use TR-220 when the power supply is AC210 V.
Use TR-240 when the power supply is AC230 V.

Flow up to the start of production



Flexible handling of fluid packages of 100 mL or more.

Cartridge

MUSASHI high-performance cartridges for 100 mL and larger fluid packages are available in 100, 170, and 340 mL to suit daily use and dispensing volume. The lineup also includes sealants (330 mL) and dedicated cartridges for dispensing a fixed volume of fluid filled in tubes. It can be connected to a dispensing controller and used for a variety of dispensing applications, from manual operation to automated machine mounting, enabling hygienic dispensing operations without contaminating hands or work area.



Air-pulse/cartridge system

Best suited system for dispensing large fluid volumes continuous operation

Fill a polyethylene barrel with fluid for dispensing operation. There are three barrel sizes: 100 mL, 170 mL, and 340 mL. Cartridges can be used in a wide range of dispensing operations to match the daily consumption.



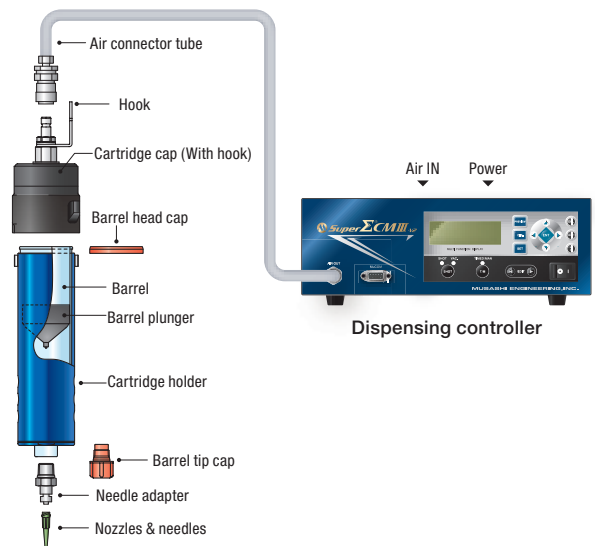
Valve/cartridge system

The smallest valve dispensing system

This dispensing system combines a quantitative fluid dispensing valve with a cartridge system dispenser. While it is compact, you can select a barrel size up to 340 mL, for continuous dispensing of low to high viscosity materials. (This system uses the ME-5000VT dispenser specialized for valve control.)



■ Air-pulse Connection system configuration diagram



One-touch type

Locking mechanism enables quick and secure cartridge mounting



Insert barrel or tube into cartridge holder



Set the cartridge cap in the cartridge holder



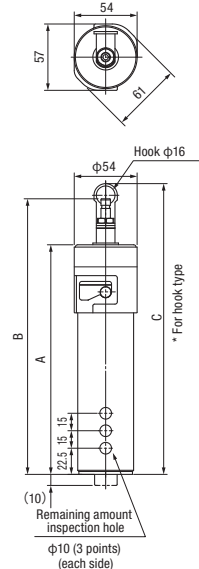
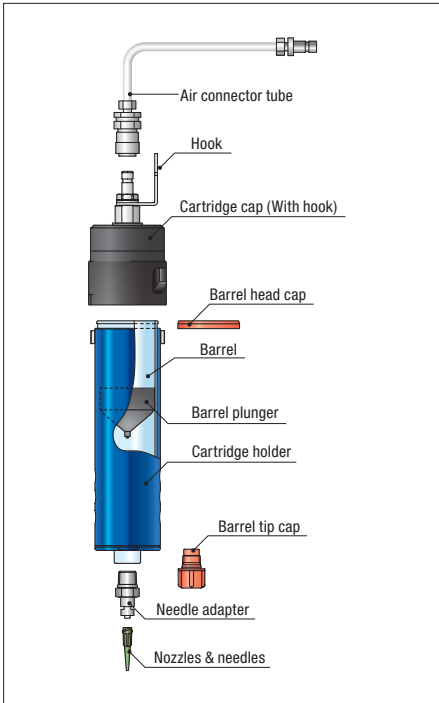
Rotate cartridge caps to lock securely in place

Barrel cartridge



Speedy attachment/detachment just in a few seconds!

Workability in barrel replacement is dramatically improved. This is suitable for large volumes of fluid. You can select the best size from among 100 mL, 170 mL, and 340 mL according to your daily requirements and dispensing volumes.



Barrel cartridge

Item name	Model	Weight	Minimum Order Quantity
Barrel cartridge	[100 mL]	CS-100C	265 g
	[170 mL]	CS-170C	335 g
	[340 mL]	CS-340C	455 g
	[100 mL with hook]	CS-100C-HK	275 g
	[170 mL with hook]	CS-170C-HK	345 g
	[340 mL with hook]	CS-340C-HK	465 g

Note: 1. Always applied pressure: 0.5 MPa or less.

2. The barrel cartridge set consists of a cartridge holder and a cartridge cap.

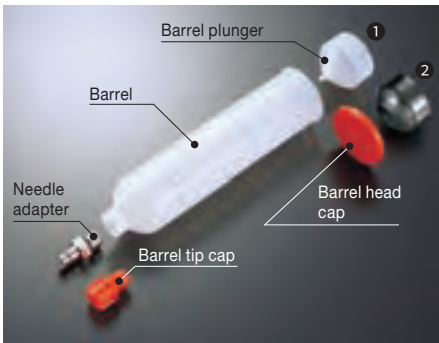
Barrel cartridge components

Capacity	Item name	Model	Material	Minimum Order Quantity
100 mL	Cartridge cap	[without hook]	CC-P-001-1	—
		[with hook]	CC-P-001-2	—
	Cartridge holder	[100 mL barrel use]	CH-100C	Aluminium alloy
170 mL	Cartridge cap	[without hook]	CC-P-001-1	—
		[with hook]	CC-P-001-2	—
	Cartridge holder	[170 mL barrel use]	CH-170C	Aluminium alloy
340 mL	Cartridge cap	[without hook]	CC-P-001-1	—
		[with hook]	CC-P-001-2	—
	Cartridge holder	[340 mL barrel use]	CH-340C	Aluminium alloy

Measurement unit (mm)

Model	A	B	C
CS-100C	119	160.5	—
CS-100C-HK	119	160.5	171.5
CS-170C	197	238.5	—
CS-170C-HK	197	238.5	249.5
CS-340C	328	369.5	—
CS-340C-HK	328	369.5	380.5

Barrel parts

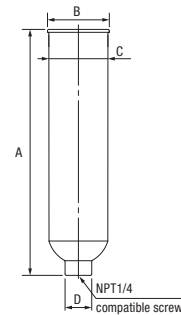


Fluid container for cartridge type

A container or cap to fill the cartridge with fluid material.

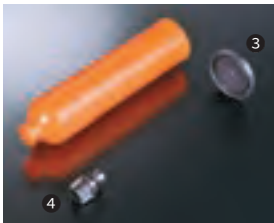
Barrel parts

Item name	Model	Material	Minimum Order Quantity	Remarks	
Barrel	[100 mL, Type B]	PB-100B	Polyethylene	10	
	[170 mL, Type C]	PB-170C	Polyethylene	10	
	[340 mL, Type C]	PB-340C	Polyethylene	10	
Barrel plunger	① [Type W1]	PP-W1	Polyethylene	10	White/Loose
	② [Type B1]	PP-B1	Polyethylene	10	Black/Tight
Barrel head cap	[Type 4]	BC-4	Polyethylene	10	—
Barrel head cap	[Type 4]	BP-4	Polypropylene	10	—
Needle adapter	[No.12]	P-NADP-12	Brass (Nickel plated)	1	—
	[No.13]	P-NADP-13	Fluorine coated	1	—



Measurement unit (mm)

Model	A	B	C	D
PB-100B	99.2	φ45.3	φ43	φ19.3
PB-170C	178	φ45	φ43	φ19.4
PB-170CU-OR	179	φ45	φ43	φ19.4
PB-340C	311.5	φ45	φ42.8	φ19.4
PB-340CU-OR	311.5	φ45	φ43	φ19.4



UV-block Barrel parts

Item name	Model	Material	Minimum Order Quantity	Remarks
UV-block barrel [170 mL type C]	PB-170CU-OR	Polypropylene	10	—
UV-block barrel [340 mL type C]	PB-340CU-OR	Polypropylene	10	—
③ UV-block barrel head cap [Type 4]	BC-4U-B	Polyethylene	10	—
④ UV-block barrel tip cap [Type 4]	BP-4U-B	Polypropylene	10	—

Consumables for cartridge caps

Item name	Model	Minimum Order Quantity
Seal spring [for cartridge cap]	P-SSP-1	1
O-ring receiver [for cartridge cap]	CS-P-001-1A	1
O-ring (for cap sealing)	ORG-42-V-B-1	1
O-ring (for barrel sealing)	ORG-34-V-B-1	1

Item name	Model	Minimum Order Quantity
Seal retainer [for cartridge cap]	SCS-P-001-1C	1
Screw [No.2]	P-SCW-2	1
Cartridge cap hook	SCS-P-005-1	1
Pneumatic quick joint [plug R1/8]	QP-1B	1

Sealant cartridge



Direct constant volume dispensing with commercially available sealant

This cartridge is used for dispensing with a commercially available 330 mL sealant.

Sealant cartridge

Item name	Model	Weight	Minimum Order Quantity
Sealant cartridge [without hook]	SCS-330	570 g	1 set
Sealant cartridge [with hook]	SCS-330-HK	580 g	1 set

Note: 1. Always applied pressure: 0.5MPa or less.

2. The sealant cartridge consists of a cartridge cap, cartridge holder, O-ring, tip adapter, and needle adapter.

Sealant cartridge components

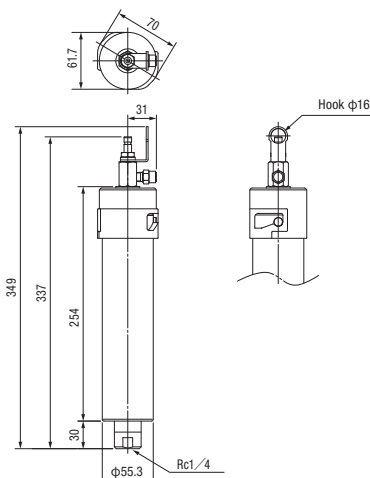
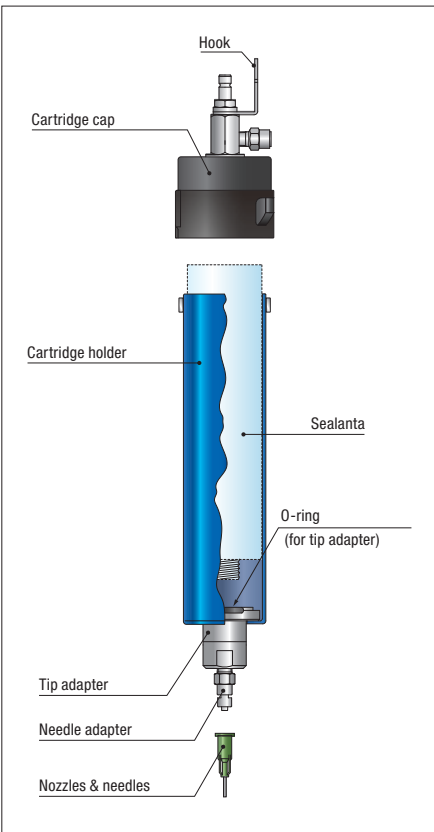
Item name	Model	Material	Minimum Order Quantity
Cartridge cap	[without hook]	PBT, Polyacetal, Stainless steel, Brass, NBR, Fluororubber	1
	[with hook]		1
Cartridge holder [sealant use]	SCS-P-002-1	Aluminium alloy (anodized), Stainless steel	1
O-ring	ORG-20-V-B-1	Fluororubber	1
Needle adapter [No.11]	P-NADP-11	Brass (Nickel plated)	1

Consumables/options

Item name	Model	Material	Minimum Order Quantity
Tip adapter*1	[Type TB]	Aluminium alloy (anodized), Fluororubber	1
	[Type S]		1
	[Type TR]		1
	[Type TS]		1
	[Type MI]		1
	[Type MO]		1
	[Type C]		1
Packing	[No.23]	Fluororubber	1
	[No.15]	Fluororubber	
Seal spring [for cartridge cap]	P-SSP-1	Stainless steel	
Seal retainer [for cartridge cap]	SCS-P-001-1C	Polyacetal	
Screw [No.17]	P-SCW-17	Stainless steel	
O-ring	[φ20 Material V Color B #1]	Fluororubber	
	[φ16 Material V Color B #1] only for TS	Fluororubber	
	[φ14 Material V Color B #1] only for TS	Fluororubber	
Cartridge cap hook*2	SCS-P-005-1	—	

*1 The tip adapter is available in seven types (TB, TR, S, TS, MI, MO, C) according to the sealant used by the fluid manufacturer. Please contact our sales department.

*2 Component parts are two parts.



Applicable to the sealants of all manufacturers



Note: This item needs to be selected in accordance with the material manufacturer's sealant to be used. Contact our sales department.



Tube cartridge

Direct dispensing from commercially available tubes

This cartridge set enables direct loading of commercially available fluid materials in tubes and direct dispensing with tubes for fixed volume.

■ Tube cartridge (former: tube cartridge set)

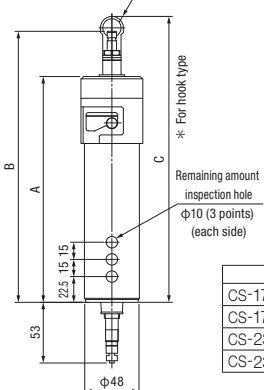
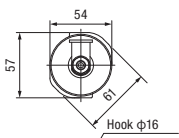
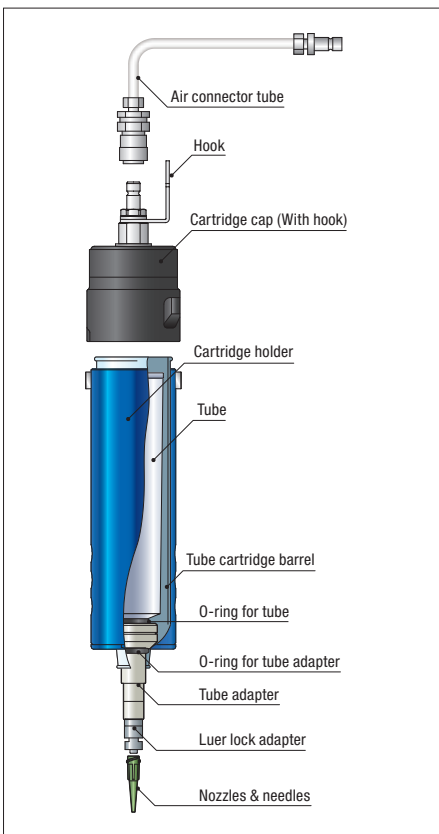
	Item name	Model	Weight	Minimum Order Quantity
Tube cartridge	[100 g]	CS-170CT	378 g	1 set
	[100 g, Type TD]	CS-170CT-TD	378 g	1 set
	[100 g with hook]	CS-170CT-HK	388 g	1 set
	[100 g, Type TD, with hook]	CS-170CT-TD-HK	388 g	1 set
Tube cartridge	[200 g]	CS-230CT	430 g	1 set
	[200 g type TD]	CS-230CT-TD	430 g	1 set
	[200 g with hook]	CS-230CT-HK	440 g	1 set
	[200 g type TD with hook]	CS-230CT-TD-HK	440 g	1 set

Note: 1. Select one of two types of tube cartridges according to the capacity and liquid material to be used. Contact our sales department after confirming the manufacturer, material type, and capacity of the liquid tube.
 2. Always applied pressure: 0.5 MPa or less.
 3. The tube cartridge consists of a cartridge holder, cartridge cap, tube cartridge barrel, O-ring for tube (for tube adapter), tube adapter, O-ring (for luer lock adapter), and luer lock adapter.

■ Tube cartridge components

capacity	Item name	Model	Material	Minimum Order Quantity	
For NET 100 g	Cartridge cap	[without hook]	CC-P-001-1	—	Select either one
		[with hook]	CC-P-001-2	—	
	Cartridge holder [170 mL tube use]	CH-170CT	Aluminium alloy	1	
	Tube cartridge barrel [170 mL] *3 *5	PB-170BT	Polyethylene	1	
	O-ring for tube *1	—	Fluororubber	1	
	O-ring (for tube adapter) [φ12 Material V Color B #1]	—	ORG-12-V-B-1	Fluororubber	1
		Tube adapter	[For No.3 CS-170/230 CT] *2 *3	P-TADP-3	Polypropylene
	[For No.2 CS-170/230 CT-TD] *2 *3	P-TADP-2	Polypropylene		
O-ring (for luer lock adapter) [φ8 Material V Color B #1]	—	ORG-8-V-B-1	Fluororubber	1	
Luer lock adapter [No.1]	—	P-LADP-1	Polypropylene *4	1	
For NET 200 g	Cartridge cap	[without hook]	CC-P-001-1	—	Select either one
		[with hook]	CC-P-001-2	—	
	Cartridge holder [230 mL tube use]	CH-230C	Aluminium alloy	1	
	Tube cartridge barrel [230 mL] *3 *5	PB-230BT	Polyethylene	1	
	O-ring for tube *1	—	Fluororubber	1	
	O-ring (for tube adapter) [φ12 Material V Color B #1]	—	ORG-12-V-B-1	Fluororubber	1
		Tube adapter	[For No.3 CS-170/230 CT] *2 *3	P-TADP-3	Polypropylene
	[For No.2 CS-170/230 CT-TD] *2 *3	P-TADP-2	Polypropylene		
O-ring (for luer lock adapter) [φ8 Material V Color B #1]	—	ORG-8-V-B-1	Fluororubber	1	
Luer lock adapter [No.1]	—	P-LADP-1	Polypropylene *4	1	

*1 The screw shapes of the end of the tubes and O-rings for tubes vary, depending on the liquid material. Confirm the manufacturer, material type and capacity and then contact our sales office.
 *2 Select one of two types of tube adapters according to the liquid material to be used. Contact our sales department after confirming the manufacturer, material type, and capacity.
 *3 Tube cartridge barrels and tube adapters are consumables. Periodical replacement is recommended.
 *4 Wetted part is made of fluorocarbon resin, and luer lock part is metallic.
 *5 Use Musashi's 170 mL type barrel for NET100 g and 230 mL type barrel for NET200 g.



Model	Measurement unit (mm)		
	A	B	C
CS-170CT(-TD)	197	238.5	—
CS-170CT(-TD)-HK	197	238.5	249.5
CS-230CT(-TD)	243	284.5	—
CS-230CT(-TD)-HK	243	284.5	295.5

All manufacturers' tubes are supported and 230 mL type barrel for NET200 g.

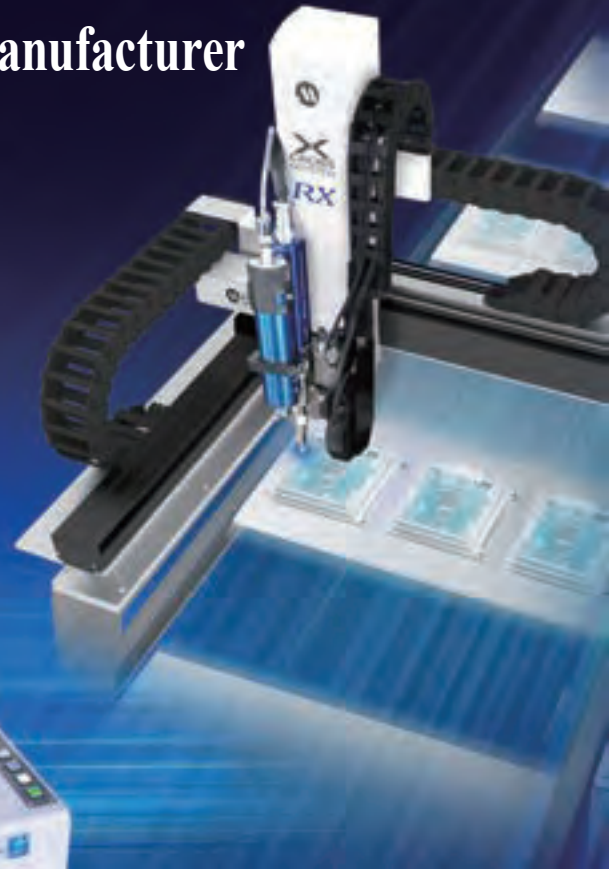


Note: This item needs to be selected in accordance with the material manufacturer's tube to be used. Contact our sales department.

Born from the know-how of a dispenser manufacturer

Desktop/ cartesian robot

A motion unit that “dispenses” the fluid from the dispenser into the required shape. MUSASHI desktop robot and cartesian robot are unrivalled in their unique evolution as dedicated dispensing robots for precision dispensing.



Desktop robot

SHOT mini SHOTMASTER



A desktop type robot that can perform dispensing operations from the day it is delivered. As well as introduction to semi-automatic cell production systems, we can respond to all markets and needs, from R&D to prototype mass production.

Cartesian robot

X CROSS MASTER



Incorporated type cartesian robots that enable the smooth transfer of dispensing processes established with desktop type robots to fully automated equipment and production lines. It implements labor saving, productivity improvement, and quality improvement in the dispensing process.

Choice of two types according to application and use environment



High-speed

800 mm/s top level operation speed in desktop class

High Precision

Repetitive positioning accuracy ± 0.01 mm



High Rigidity

Fast and stable operation even for heavy tools and workpieces.

High Precision

Class-leading ± 0.005 mm repetitive positioning accuracy



Options for Safety safety cover

Two varieties of safety light curtain type and door type are available. It can be selected according to the application, such as safety and work environment.

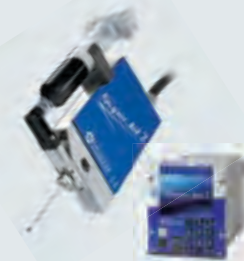
All MUSASHI dispensers can be mounted.

Air-pulse dispenser



Super CMIII

JET dispenser



Super Jet 2

Volume measuring
Plunger Dispenser



*MEASURING MASTER
MPP-3*

Screw dispenser



SCREW MASTER 3

Volume measuring
MOHNO Dispenser



MOHNO MASTER

Fully enhanced operability

Teaching pendant

Robot motion is programmed by inputting the coordinate values of each axis and motion commands. The large backlight screen makes the display easy to view, and the two screen display facilitates programming. Many useful functions such as interactive navigation and a stopwatch function are included. Japanese, English, and Chinese are supported.



Dispensing pattern editing software

MuCAD V

Intuitive editing of dispensing patterns is possible. Easy-to-understand program command icons for beginners to operate, creating free dispensing programming with a CAD like feel. Automatic generation of dispensing programs from DXF data, etc. is also possible.



For details, see →P62

Coordinated with dispenser



Synchro Speed function PAT.

Maintains a fixed line width, regardless of robot speed. Achieves high-quality dispensing automatically, without the need for any complex adjustments.



Right-angle dispensing

Synchro Speed
function ON

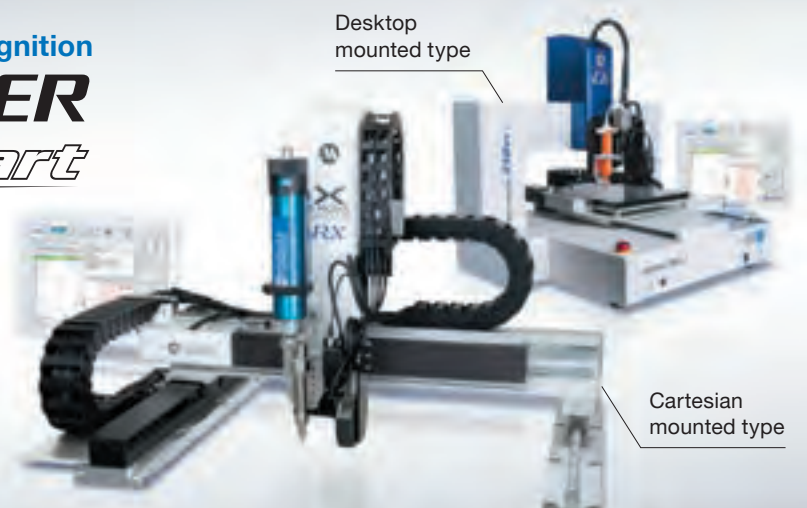


Robot with PC control image recognition

IMAGE MASTER 350PC Smart

There is no problem even if individual workpieces have different distortions or warping, or if workpieces are misaligned in the pallet. The dispense machine automatically senses and performs optimal dispensing. In addition, a full production log function monitors the production cycle from workpiece loading to unloading to ensure stable production. A wide variety of other options are available.

For details, see →P60-61



Desktop
mounted type

Cartesian
mounted type

SHOTmini / SHOTMASTER SX series

MUSASHI's general-purpose desktop robot, the global de facto standard.



SHOTmini/SHOTMASTER SX series Line up



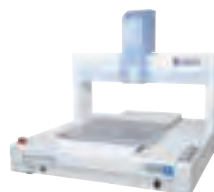
SHOTmini 100SX



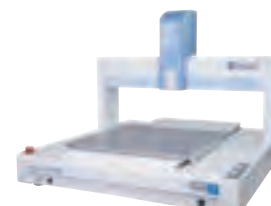
SHOTmini 200SX



SHOTMASTER 300SX



SHOTMASTER 400SX



SHOTMASTER 500SX

Specifications

Item name	SHOTmini 100SX		SHOTmini 200SX		SHOTMASTER 300SX		SHOTMASTER 400SX		SHOTMASTER 500SX		
Model	SM100SX -3A-SS		SM200SX -3A-SS-01	SM200SX -4A-SS	SM300SX -3A-SS	SM300SX -4A-SS	SM400SX -3A-SS	SM400SX -4A-SS	SM500SX -3A-SS	SM500SX -4A-SS	
No. of controlled axes	3-axis			4-axis	3-axis	4-axis	3-axis	4-axis	3-axis	4-axis	
Travel ranges	X-axis, Y-axis	100 mm	200 mm		300 mm		400 mm		500 mm		
	Z-axis	50mm				80mm					
	W-axis	—		±360°	—		±360°	—		±360°	
Setting range of PTP operation speed*1	X-axis, Y-axis	1 to 800 mm/s									
	Z-axis	1 to 350 mm/s		1 to 250 mm/s		1 to 400 mm/s					
	W-axis	—		1 to 900°/s		—		1 to 900°/s		—	
Setting range of interpolation operation speed*1	X-axis, Y-axis	0.1 to 800 mm/s									
	Z-axis	0.1 to 350 mm/s		0.1 to 250 mm/s		0.1 to 400 mm/s					
	W-axis	—		0.1 to 900°/s		—		0.1 to 900°/s		—	
Repetitive positioning accuracy*2	X-axis, Y-axis	±0.01 mm									
	Z-axis	±0.01 mm									
	W-axis	—		±0.01°		—		±0.01°		—	
Loading capacity*3	Y-axis	8 kg				15 kg					
	Z-axis	2 kg	3.5 kg	2.5 kg	7 kg	6 kg	7 kg	6 kg	7 kg	6 kg	
Rated voltage and frequency	AC100-240 V 50/60 Hz										
Power consumption	100 W		120 W		200 W	220 W	200 W	220 W	200 W	220 W	
External dimensions*4 (excluding protrusions)	W	202 mm	302 mm		510 mm		610 mm		710 mm		
	D	290 mm	301 mm		570 mm		670 mm		770 mm		
	H	440 mm		555 mm	590 mm	690 mm	590 mm	690 mm	590 mm	690 mm	
Weight	11 kg	13.3 kg	15.5 kg	37 kg	40 kg	55 kg	58 kg	66 kg	69 kg		

Common specifications

Control system*5	PTP control and interpolation control	
Interpolation function	3D line, 3D circular arc/circle, 3D elliptic arc/ellipse, spline	
Number of input/output signal points	General-purpose input	26 points
	General-purpose output	26 points
Program entry method	Teaching pendant, PC	
Program display language	Japanese, English, Chinese	
Program capacity*6	40000 steps (999 channels)	
Program storage system	Internal	Internal memory
	External	Backup on PC with dispensing pattern editing software
Program editing software	MuCAD V (option)	

*1 These values vary depending on the operation, loaded object weight, load center position and other factors.

*2 This value is measured by the Musashi standards measurement methods (compliant with JIS).

*3 When options are not installed. The value varies with setting speed, setting acceleration/deceleration time, and operations.

*4 W and D are the dimensions of the lower section of the case.

*5 PTP control: Control to move each specified axis to the end-point coordinates at each speed.

Interpolation control: Control to move each specified axis to the end coordinates at the total interpolated speed.

*6 Main routine: 1 to 99 CH, sub routine: 100 to 999 CH

* QX series has no (motor) step-out specifications.

No need for fine adjustment after nozzle replacement

Nozzle adjuster

- Automated nozzle position offset adjustment after syringe replacement
- Significant reduction in downtime
- Nozzle position can be adjusted while dispensing program is running



Expanding Work Approach nozzle replacement

4-axis specification robot

- Rotating specifications enable dispensing to every corner, including crevices, outer circumference, and cylindrical sidewalls.
- Select from two types of rotating specifications to suit your application.



Work rotation specification (custom)



Dispensing head rotating type

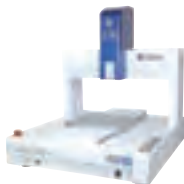
MUSASHI's general-purpose desktop robot, the global de facto standard.



SHOTmini/SHOTMASTER ΩX series Line up



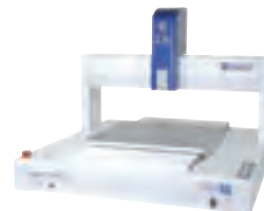
SHOTmini 200ΩX



SHOTMASTER 300ΩX



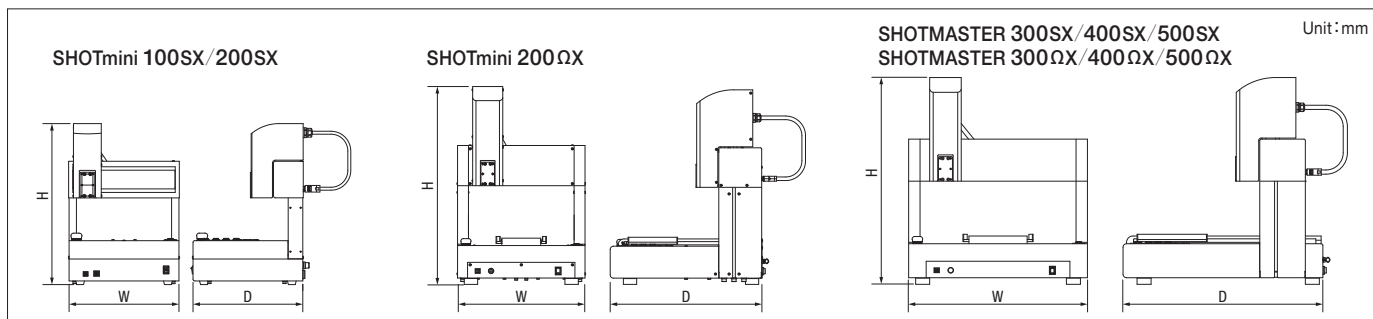
SHOTMASTER 400ΩX



SHOTMASTER 500ΩX

Specifications

Item name		SHOTmini 200ΩX		SHOTMASTER 300ΩX		SHOTMASTER 400ΩX		SHOTMASTER 500ΩX	
Model		SM200OMEGAX -3A-SS	SM200OMEGAX -4A-SS	SM300OMEGAX -3A-SS	SM300OMEGAX -4A-SS	SM400OMEGAX -3A-SS	SM400OMEGAX -4A-SS	SM500OMEGAX -3A-SS	SM500OMEGAX -4A-SS
No. of controlled axes		3-axis	4-axis	3-axis	4-axis	3-axis	4-axis	3-axis	4-axis
Travel ranges	X-axis, Y-axis	200 mm		300 mm		400 mm		500 mm	
	Z-axis	80mm							
	W-axis	—	±360°	—	±360°	—	±360°	—	±360°
Setting range of PTP operation speed*1	X-axis, Y-axis	1 to 500 mm/s							
	Z-axis	1 to 400 mm/s							
	W-axis	—	1 to 900°/s	—	1 to 900°/s	—	1 to 900°/s	—	1 to 900°/s
Setting range of interpolation operation speed*1	X-axis, Y-axis	0.1 to 500 mm/s							
	Z-axis	0.1 to 400 mm/s							
	W-axis	—	0.1 to 900°/s	—	0.1 to 900°/s	—	0.1 to 900°/s	—	0.1 to 900°/s
Repetitive positioning accuracy*2	X-axis, Y-axis	±0.005 mm							
	Z-axis	±0.005 mm							
	W-axis	—	±0.01°	—	±0.01°	—	±0.01°	—	±0.01°
Loading capacity*3	Y-axis	20 kg							
	Z-axis	15 kg	12 kg	15 kg	12 kg	15 kg	12 kg	15 kg	12 kg
Rated voltage and frequency		AC100-240V 50/60Hz							
Power consumption		130 W	150 W	130 W	150 W	180 W	200 W	180 W	200 W
External dimensions*4 (excluding protrusions)	W	380 mm		510 mm		610 mm		710 mm	
	D	460 mm		570 mm		670 mm		770 mm	
	H	590 mm	690 mm	590 mm	690 mm	590 mm	690 mm	590 mm	690 mm
Weight		30 kg	33 kg	40 kg	43 kg	55 kg	58 kg	66 kg	69 kg

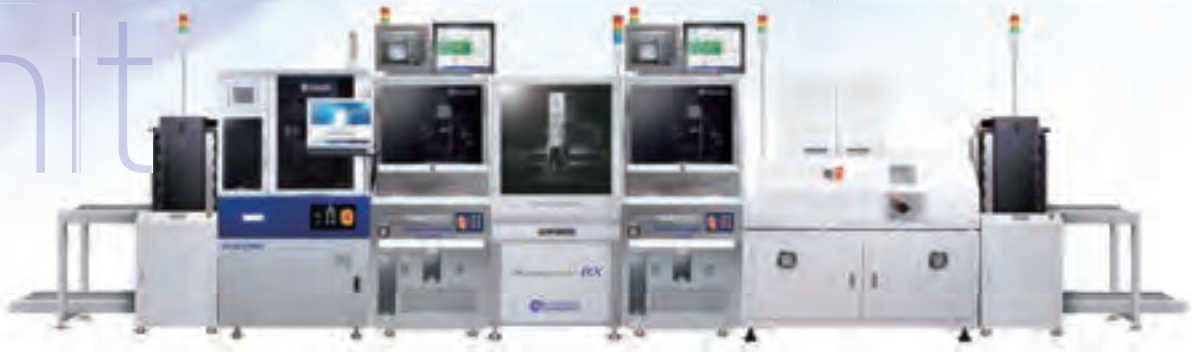


Desktop robot

SHOTmini/ SHOTMASTER SX&ΩX Model Identification	Type	Type X, Y stroke	Series	No. of Axes	Extension	SS function
		SM 200	100:100×100 mm 200:200×200 mm 300:300×300 mm 400:400×400 mm 500:500×500 mm	SX OMEGAX	3A 3A:3-axis 3A-Z:3-axis Z-axis reinforcement 4A:4-axis	EXT100

*SS: Synchro Speed function
*100×100mm is only for SX *3A-Z is only for 200SX *100SX is 4A, not for bulk

Inline Motion Unit



MUSASHI's cartesian robot for inline production

X CROSS MASTER SERIES

RX SERIES

220RX / 230RX / 240RX / 320RX / 330RX / 340RX / 420RX / 430RX / 440RX

Features of the CROSS MASTER RX

Selectable stroke

Select optimum stroke from 9 available combinations.

X-axis stroke

200/300/400

Y-axis stroke

200/300/400



Select from finished product or assembly set

Choose an option to suit your needs.



Finished products with bases



3-axis assembly set

SX SERIES

230SX / 340SX / 460SX / 680SX



OX SERIES

330OX / 440OX / 560OX / 780OX





CROSSMASTER RX series Line up



CROSSMASTER 220RX



CROSSMASTER 330RX



CROSSMASTER 440RX



Controller



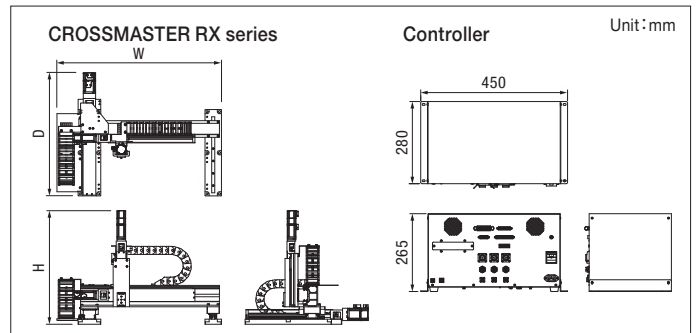
External operation BOX

Specifications

Item name	CROSSMASTER 220RX	CROSSMASTER 230RX	CROSSMASTER 240RX	CROSSMASTER 320RX	CROSSMASTER 330RX	CROSSMASTER 340RX	CROSSMASTER 420RX	CROSSMASTER 430RX	CROSSMASTER 440RX		
Model	XM220RX-3A-L-SBA XM220RX-3A-L-AAS	XM230RX-3A-L-SBA XM230RX-3A-L-AAS	XM240RX-3A-L-SBA XM240RX-3A-L-AAS	XM320RX-3A-L-SBA XM320RX-3A-L-AAS	XM330RX-3A-L-SBA XM330RX-3A-L-AAS	XM340RX-3A-L-SBA XM340RX-3A-L-AAS	XM420RX-3A-L-SBA XM420RX-3A-L-AAS	XM430RX-3A-L-SBA XM430RX-3A-L-AAS	XM440RX-3A-L-SBA XM440RX-3A-L-AAS		
No. of controlled axes	3-axis										
Travel ranges	X-axis	200 mm	200 mm	200 mm	300 mm	300 mm	300 mm	400 mm	400 mm	400 mm	
	Y-axis	200 mm	300 mm	400 mm	200 mm	300 mm	400 mm	200 mm	300 mm	400 mm	
	Z-axis	150 mm									
Setting range of PTP operation speed*1	X-axis, Y-axis	1 to 500 mm/s									
	Z-axis	1 to 300 mm/s									
Setting range of interpolation operation speed*1	X-axis, Y-axis	0.1 to 500 mm/s									
	Z-axis	0.1 to 300 mm/s									
Repetitive positioning accuracy*2	X-axis, Y-axis, Z-axis	±0.005 mm									
Loading capacity*3	7.5 kg										
Rated voltage and frequency	Single phase, AC200-240 V 50/60 Hz										
Power consumption	300 W										
External dimensions (excluding protrusions)	W	SBA	700 mm	700 mm	700 mm	800 mm	800 mm	800 mm	900 mm	900 mm	900 mm
		AAS	684 mm	684 mm	684 mm	784 mm	784 mm	784 mm	884 mm	884 mm	884 mm
	D	SBA	600 mm	700 mm	800 mm	600 mm	700 mm	800 mm	600 mm	700 mm	800 mm
		AAS	595 mm	695 mm	795 mm	595 mm	695 mm	795 mm	595 mm	695 mm	795 mm
	H	SBA	553 mm								
		AAS	528 mm								
Weight	SBA	38 kg	43 kg	48 kg	39 kg	44 kg	49 kg	40 kg	45 kg	50 kg	
	AAS	21 kg	22 kg	23 kg	22 kg	23 kg	24 kg	23 kg	24 kg	25 kg	

Common specifications

Control system*4	PTP control and interpolation control	
3D interpolation function	Line, circular arc, circle, elliptical arc, ellipse, spline	
Number of input/output signal points	General-purpose input	20 points
	General-purpose output	23 points
Program entry method	Teaching pendant, PC	
Program display language	Japanese, English, Chinese	
Program capacity*5	40000 steps (999 channels)	
Program storage system	Internal	Internal memory
	External	Backup on PC with dispensing pattern editing software
Program editing software	MuCAD V (option)	
Controller dimensions	W450×D280×H265 mm (excluding protrusions)	
Weight of dispense controller	15 kg	



Note1: The CROSSMASTER RX series corresponds to industrial robots. Note2: A1 models have no (motor) step-out specifications.

*1 These values vary depending on the operation, loaded object weight, load center position and other factors. *2 This value is measured by the Musashi standards measurement methods (compliant with JIS).
*3 The value varies with setting speed, setting acceleration/deceleration time, and operations.
*4 PTP control: Control to move each specified axis to the end coordinates at each speed. Interpolation control: Control to move each specified axis to the end coordinates at the total interpolated speed.
*5 Main routine: 1 to 99 CH, Sub routine: 100 to 999 CH.

CROSSMASTER RX Model Identification	Type	Type X, Y stroke	Series	No. of Axes	X-axis origin position	Shipping type
	XM 220	RX - 3A - L - SBA	220:200×200 mm 320:300×200 mm 420:400×200 mm	230:200×300 mm 330:300×300 mm 430:400×300 mm	240:200×400 mm 340:300×400 mm 440:400×400 mm	L : Left 3A : 3-axis



MUSASHI's dispensing motion unit mountable on automated units.



CROSSMASTER SX series Line up



Specifications

Item name	CROSSMASTER 230SX		CROSSMASTER 340SX		CROSSMASTER 460SX		CROSSMASTER 680SX		
Model	XM230SX-3A-L-SS XM230SX-3A-R-SS		XM340SX-3A-L-SS XM340SX-3A-R-SS		XM460SX-3A-L-SS XM460SX-3A-R-SS		XM680SX-3A-L-SS XM680SX-3A-R-SS		
No. of controlled axes	3-axis								
Travel ranges	X-axis	200 mm	300 mm	400 mm	600 mm				
	Y-axis	300 mm	400 mm	600 mm	800 mm				
	Z-axis	150 mm							
Setting range of PTP operation speed*1	X-axis	1 to 500 mm/s						1 to 470 mm/s	
	Y-axis	1 to 500 mm/s		1 to 1000 mm/s		1 to 830 mm/s			
	Z-axis	1 to 300 mm/s							
Setting range of interpolation operation speed*1	X-axis	0.1 to 500 mm/s						0.1 to 470 mm/s	
	Y-axis	0.1 to 500 mm/s		0.1 to 999.9 mm/s		0.1 to 830 mm/s			
	Z-axis	0.1 to 300 mm/s							
Repetitive positioning accuracy*2	X-axis	±0.01 mm							
	Y-axis	±0.01 mm							
	Z-axis	±0.01 mm							
Loading capacity*3	2.5 kg								
Rated voltage and frequency	Single phase, AC200-240 V 50/60 Hz								
Power consumption	200 W				300 W				
External dimensions (excluding protrusions)	W	565 mm	635.5 mm	760 mm	1052.5 mm				
	D	565 mm	651 mm	923 mm	1123 mm				
	H	470 mm			490 mm				
Weight	25.5 kg		28.5 kg		44.5 kg		67.5 kg		

Common specifications

Control system*4	PTP control and interpolation control	
3D interpolation function	Line, circular arc, circle, elliptical arc, ellipse, spline	
Number of input/output signal points	General-purpose input	20 points
	General-purpose output	23 points
Program entry method	Teaching pendant, PC	
Program display language	Japanese, English, Chinese	
Program capacity*5	40000 steps (999 channels)	
Program storage system	Internal	Internal memory
	External	Backup on PC with dispensing pattern editing software
Program editing software	MuCADV (option)	
Controller dimensions	W450×D340×H265mm (excluding protrusions)	
Weight of dispense controller	18 kg	

- *1 These values vary depending on the operations, weight and center of gravity of the loaded object, and other factors.
- *2 This value is measured by the method specified by Musashi (measurement method complies with JIS).
- *3 When options are not installed. The value varies with setting speed, setting acceleration/deceleration time, and operations.
- *4 PTP control: Control to move each specified axis to the end coordinates at each speed. Interpolation control: Control to move each specified axis to the end coordinates at the total interpolated speed.
- *5 Main routine: 1 to 99 CH, Sub routine: 100 to 999 CH.
- *The XM460SX series, XM680SX series and XM0X series correspond to industrial robots.
- *All models have no (motor) step-out specifications.

Convenient features of desktop/cartesian robot

Capable of applying a variety of dispensing to workpieces of complex shapes
Three-dimensional circular interpolation and spline operations are also freely available.
Changeable dispensing condition settings according to the dispensing location
Remote control of dispenser dispensing conditions CH during automatic operation.

No mislocation by no (motor) step-out.
Prevents the robot head from falling during emergency stops
Braking function is provided.

Field network is available.
Note: Optional support

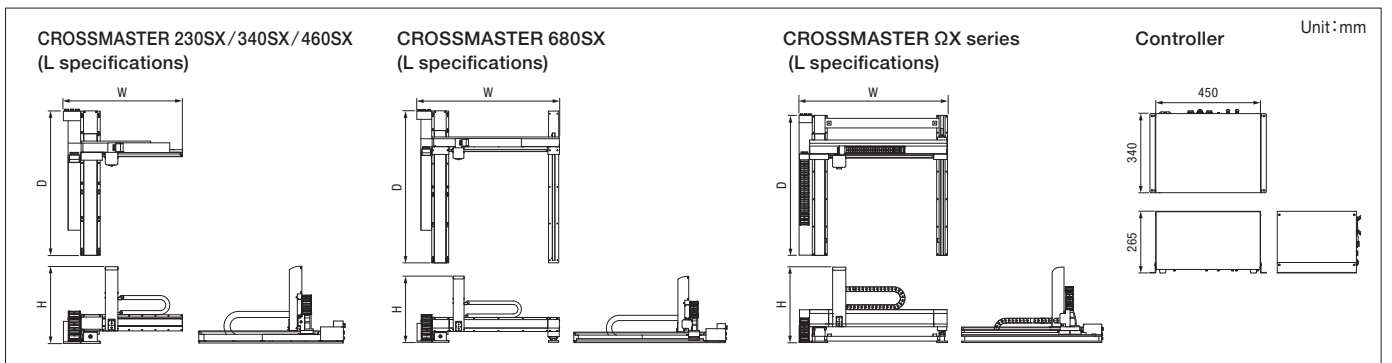


CROSSMASTER Ω series Line up



Specifications

Item name	CROSSMASTER 330ΩX		CROSSMASTER 440ΩX		CROSSMASTER 560ΩX		CROSSMASTER 780ΩX		
Model	XM330OMEGAX-3A-L-SS XM330OMEGAX-3A-R-SS	XM330OMEGAX-4A-L-SS XM330OMEGAX-4A-R-SS	XM440OMEGAX-3A-L-SS XM440OMEGAX-3A-R-SS	XM440OMEGAX-4A-L-SS XM440OMEGAX-4A-R-SS	XM560OMEGAX-3A-L-SS XM560OMEGAX-3A-R-SS	XM560OMEGAX-4A-L-SS XM560OMEGAX-4A-R-SS	XM780OMEGAX-3A-L-SS XM780OMEGAX-3A-R-SS	XM780OMEGAX-4A-L-SS XM780OMEGAX-4A-R-SS	
No. of controlled axes	3-axis	4-axis	3-axis	4-axis	3-axis	4-axis	3-axis	4-axis	
Travel ranges	X-axis, Y-axis	300×300 mm		400×400 mm		500×600 mm		700×800 mm	
	Z-axis	150 mm							
	W-axis	—	±360°	—	±360°	—	±360°	—	±360°
Setting range of PTP operation speed*1	X-axis, Y-axis	1 to 500 mm/s							
	Z-axis	1 to 400 mm/s							
	W-axis	—	1 to 900°/s	—	1 to 900°/s	—	1 to 900°/s	—	1 to 900°/s
Setting range of interpolation operation speed*1	X-axis, Y-axis	0.1 to 500 mm/s							
	Z-axis	0.1 to 400 mm/s							
	W-axis	—	0.1 to 900°/s	—	0.1 to 900°/s	—	0.1 to 900°/s	—	0.1 to 900°/s
Repetitive positioning accuracy*2	X-axis, Y-axis	±0.005 mm							
	Z-axis	±0.005 mm							
	W-axis	—	±0.01°	—	±0.01°	—	±0.01°	—	±0.01°
Loading capacity*3	10 kg	7 kg	10 kg	7 kg	10 kg	7 kg	10 kg	7 kg	
Rated voltage and frequency	Single phase, AC200-240 V 50/60 Hz								
Power consumption	300 W	320 W	300 W	320 W	300 W	320 W	300 W	320 W	
External dimensions (excluding protrusions)	W	831 mm		931 mm		1031 mm		1239 mm	
	D	671 mm		771 mm		971 mm		1171 mm	
	H	630 mm							
Weight	80 kg	83 kg	91 kg	94 kg	120 kg	123 kg	143 kg	146 kg	



Type	Type X, Y stroke	Series	No. of Axes	X-axis origin position	SS function
CROSSMASTER SX&ΩX Model Identification	XM 330	OMEGAX - 3A - L - SS			
	230:200×300 mm	460:400×600 mm	SX	L: Left R: Right	3A: 3-axis 4A: 4-axis
	340:300×400 mm	680:600×800 mm			
	330:300×300 mm	560:500×600 mm	OMEGAX	3A: 3-axis 4A: 4-axis	Note 1: SS=Synchro Speed function Note 2: 4 A is for ΩX only
	440:400×400 mm	780:700×800 mm			

Dispensing platform from research and prototyping to mass production

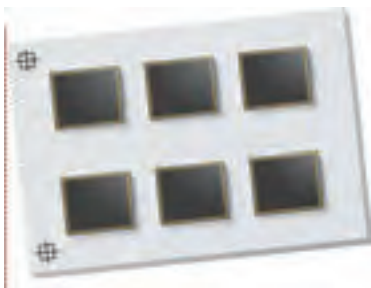
IMAGE MASTER 350PC^{Smart} PAT.



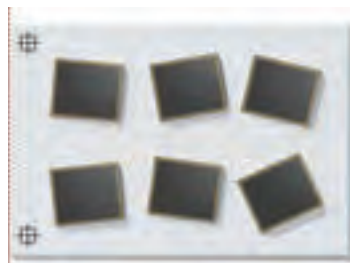
Highly precise positioning

XY Alignment

By image recognition, displacement and inclinations are corrected.



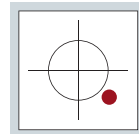
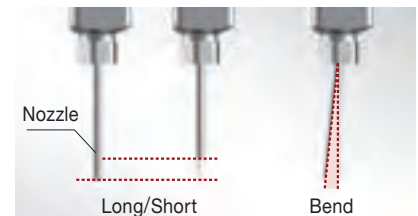
The inclination of the palette



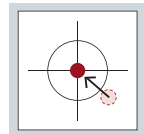
Displacement and inclinations of each workpiece

Positioning of the nozzle

When syringes exchanged, differences of the length and the bend of the nozzle are corrected.



Displacement by the bend of the palette



After correction

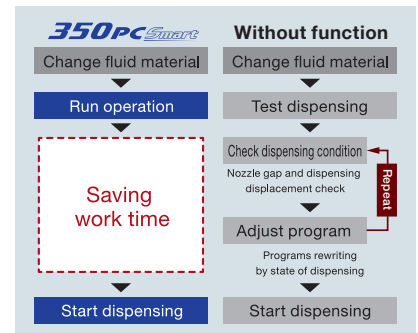
3-D alignment (Profiling)

Correction of distortion and warpage of workpieces



Height correction

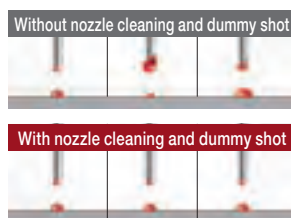
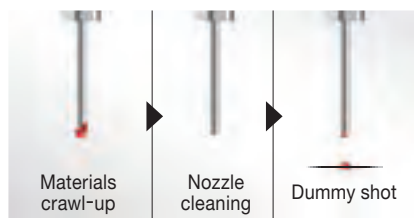
Correction of height differences of workpieces



High-quality dispensing

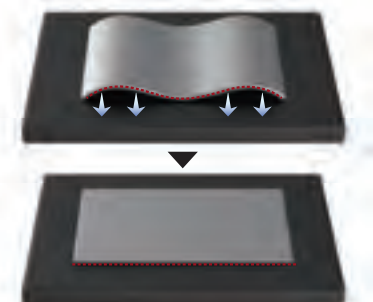
Nozzle cleaning and dummy shot

By removing crawled up materials, materials shape of the nozzle end is kept fixed.



Workbase with workpiece suction Option

Workpiece suction correct * warpage and prevent workpiece disposition throughout dispensing operation.



Workpieces are fixed by sucking through stage suction holes.

*The effect depends on the workpiece material.

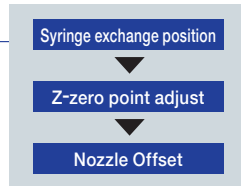
Syringe temperature control Option

By image recognition, displacement and inclinations are corrected.

Usability

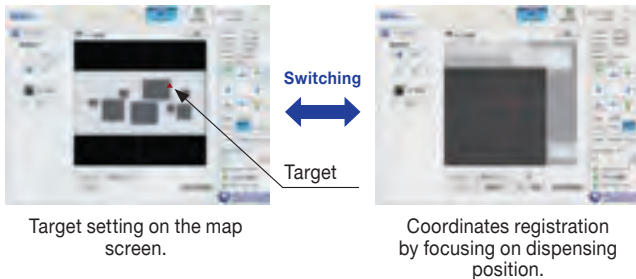
Easy setup

Syringe exchange: Easy setup by just following Wizards.



Camera teaching

Dispensing start position, points, lines are set by click with the vision of live image of workpieces.



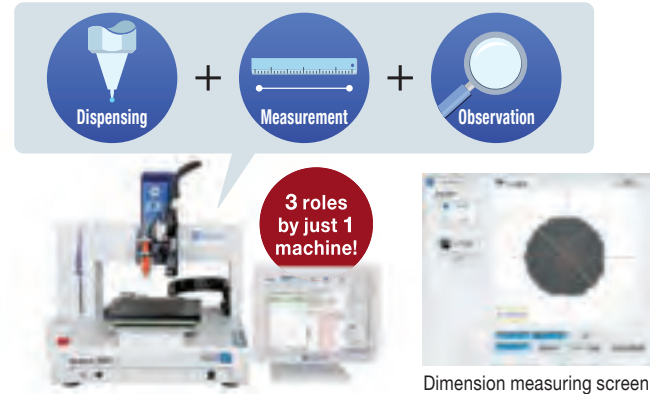
Communication function with Dispensers Option

350PC Smart enables full control of dispenser settings. Pressure, dispensing time, etc. can be set.

*It depends on types of dispensers.

Length measurement/dispensing pattern trace function

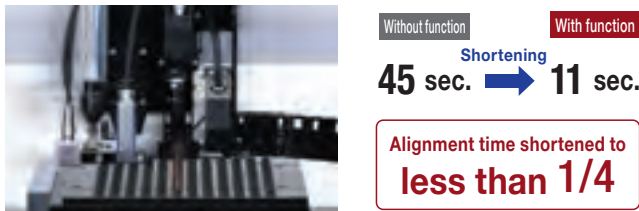
It's possible to measure and observe after dispensing.



Reduced cycle time

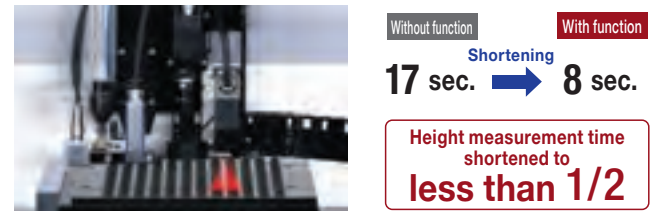
Mu SKY Capture Option

Nonstop image recognition archives remarkable shortening of alignment time.



Mu SKY Sensing Option

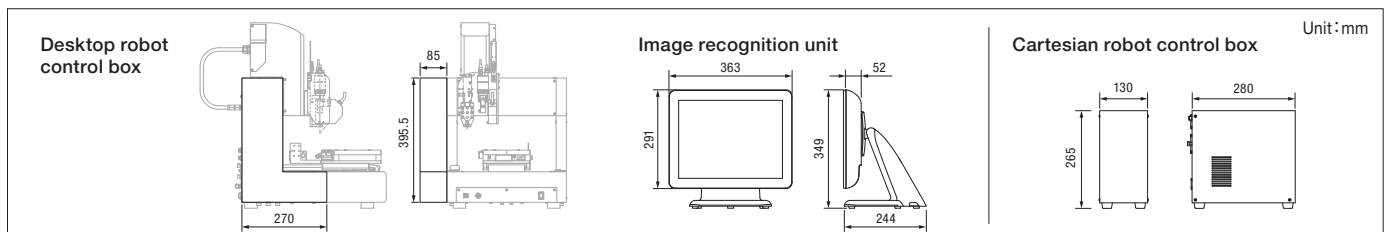
Significantly shortens the height measurement time.



Useful options

- Code reading function**
 Automatically switch recipes by a barcode or a QR code.
- Automatic dummy shots function**
 Automatic dummy shots during standby period.
- Shape search function**
 Corrects rotational disposition of circular parts.
- Rotating table**
 The work piece can be rotated and dispensed at a certain angle.
- Stage temperature control**
 Workpieces can be heated.
- 2 individual heads function**
 2 different dispensers can be applied.

External dimensions



Note: Options may be available for a fee. Please contact our sales department.

Complex dispensing operations can be programmed quickly and intuitively.

MuCAD V PAT.



Intuitive editing of dispensing patterns


Concentration of No.1 dispensing know-how


- Program command icons that are easy to understand even for beginners.
- Freely apply programming as if it were CAD.
- An application program is automatically generated from DXF data, etc.





Drawing input


Programming by "drawing" with mouse dragging


Line


Dotting



Spline



Fill


Coating and more

Useful functions Generates multiple zigzag array program

Works straight away with various work layouts. Includes "copy/rotate/flip" function for dispensing programs.

 Rotate / duplicate

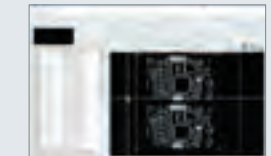
 **Linked**

Command input



Create accurate programs by entering values

Automatically generates programs.

An application program is automatically generated from Gerber data.




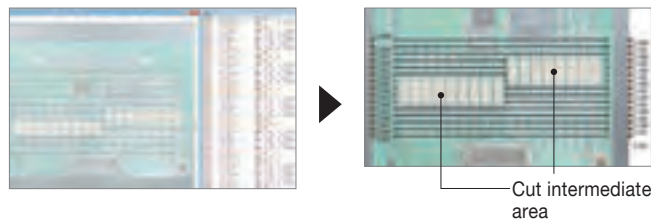
Automatic program creation also available with other data types

-  Program creation from DXF data
-  Program creation from coordinate data

Useful functions to reduce editing time

Cut out dispensing prohibited areas

 Includes cut intermediate dispense area function to separate dispensing into dispense areas and prohibited areas.



Load sketch function

JPEG / BMP



If you import a work photo, you can enter a coating pattern using the image as a base.

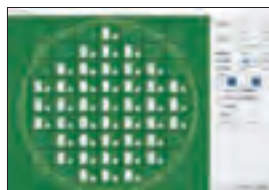
DXF / Gerber data




An application program is automatically generated from DXF / Gerber data.

Pattern generator function

Configure any device layout on wafers. Helps to reduce programming time significantly.




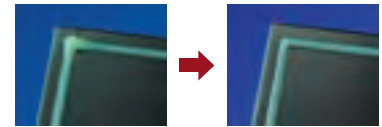
Drawing by hand function

 Programs can be created intuitively by hand (free line drawings).



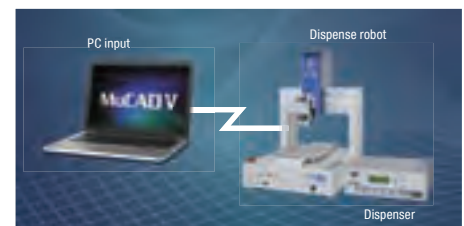
Synchro Speed function PAT.

 The line width can be maintained at constant even when moving through a corner.



System requirements

OS	Windows 11, Windows 10, Windows 8.1
CPU	32-bit (x86) or 64-bit (x64) processor, 2 GHz or faster
Memory	1 GB or more
Display	Resolution of XGA (1024 × 768) or higher
Hard disk	Free space of 100 MB or more
USB port	USB port ×1 (CROSSMASTER ΩX/RX/SX series, SHOTMASTER ΩX/SX series)
Serial port	Serial port ×1 (SHOTMASTER Ω/DS/DSS series, SHOTMINI 100S-3A-01) • When connecting a dispenser, another serial port ×1/unit is required. • USB serial converter is available.
Applicable robots	CROSSMASTER ΩX/RX/SX series, SHOTMASTER ΩX/SX series, SHOTMASTER Ω/DS/DSS series, SHOTMINI 100S-3A-01



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Various applications in accordance with your requirements



Laser welding + Solder dispensing

DISPENSE LASER MASTER



PAT.

New innovation of soldering responding to the needs of various component mountings.

Screw tightening + Threadlocker dispensing




Fast takt time and yield improvement for locking PCB and case.

Pick & Place + Adhesive dispensing



All-in-one system for parts fixing and assembly processes.

UV irradiation + UV adhesive dispensing



High-precision control of UV curing quality.

Dispensing failure inspection + Dispensing



Minimizes production line including inspection function.

Deburring robot



Solves unstable manual process and promote manpower saving.

Evaluation robot



For automation of long-term running tests such as sensitivity and durability evaluation.

Code printing robot



Achieves high-speed and high quality code printing.

Rotary dispensing system CIRCLE MASTER



One-touch execution of circumferential dispensing. Two types are available: head tilting type and workpiece rotating part tilting type.

MUSASHI dispensing system is active in various markets from biotechnology to food.

Fully PC controlled multi-channel dispensing system

PIPET MASTER



Multi-channel head for greater processing capacity.

- Suitable for dispensing work in the drug development and biotechnology fields
- Suitable for consolidating samples
- Fully automated, from tip mounting to multichannel dispensing



Ultra-micro-volume reagent spotting system

SPOT MASTER



Automated dispensing of a wide range of reagents!

- Nozzle auto-cleaning function suitable for spotting a wide range of reagents
- Dedicated software allows pattern editing freely
- Low running costs as tips not required



Chemical solution filling and capping system

Chemical solution filling and capping system



Filling to a tube and capping are automated!

- Automated chemical dispensing system with capper system
- All "cap opening ⇒ filling ⇒ cap closing" procedures consolidated within a single robot
- Torque control prevents overtightening of caps
- Available with various dispensers to suit any application



Automatic filling capper system

Automated filling capper system



Limits vaporization of drug solutions during filling.

- All "cap opening ⇒ filling ⇒ cap closing" procedures consolidated within a single robot
- Torque control prevents overtightening of caps
- Available with various dispensers to suit any application



Cap opening



Filling

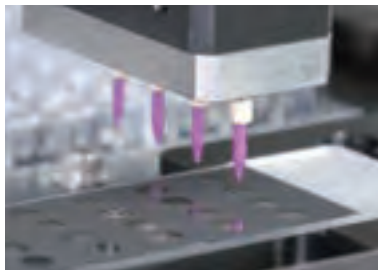
Ultra-high-speed reagent spotting system

JET SPOTTER



Multi-channel heads for suction and “high-speed” spotting!

- Image recognition function allows dispensing with precise positioning
- Non-contact dispensing prevents cross-contamination
- Perfect nozzle auto cleaning system method for spot dispensing a wide variety of reagent solution



Immuno-chromatographic line dispensing system

Immuno-chromatographic line application system



Ultra-high-speed and stable line dispensing to membrane.

- Reducing dead volume of reagents
- Non-contact and high-speed reagents line dispensing to membrane
- Easy maintenance
- Easy programming by dedicated software



FOOD GRADE JET DECORATION SYSTEM

CHOCO JET



Direct JET decoration of chocolate.

- Draw directly on uneven foods and plates
- Make unique designs with images or texts
- 3D decorations with a height also possible



3D Food Printer

3D FOOD DISPENSER



Ornament making in the store!

- Capable of creating three-dimensional ornaments
- Beautifully renders even complex designs
- Once a pattern is drawn, it is managed in data



Convincing automatism with high performance and reliability.

Fully automated high-end dispensing machine

DISPENS MASTER FAD 5100S



PAT.

Achieves high throughput and high quality dispensing.

- High-speed dispensing with uninterrupted, continuous operation.
- High-speed alignment with uninterrupted, continuous operation.
- Automatically controls dispensing volume.
- Forms "leaf line" dispensing patterns ideal for avoiding voids.
- Prevents large numbers of defects from occurring.

Fully automated multi-purpose dispensing machine

DISPENS MASTER FAD 2500



PAT.

Fully automated dispensing mainframe to meet the requirements of an extensive range of applications.

- Major improvement in performance and functionality.
- Multi-head compatibility. Highly versatile to suit various applications.
- Equipped with equivalent functions to higher models as standard.
- Wide range of standardized optional accessories.

Dispensing inspection machine for inline production

SMART ROBO TAI 1000



Inspect dispensing shapes and line widths in a flexible manner!

- Inspection of various dispensing conditions
- Reject discharge unit can be installed (option)
- Space-efficient design

Fully automated substrate coating machine

COATING MASTER FCD 1000



A faster, thinner, higher precision, through fine coating with dual heads.

- Precision sealing over only the required area.
- Drastic reduction in wasted resin materials.
- Equipped with spot/wide coating head. (AeroJet/CV-12)
- Eliminates scattering with special, exclusively designed valves.

Fully automated compact dispensing machine

SMART ROBO TAD 1000M



High-space performance that brings innovation to the production floor.

- Ultra-compact size contributing to labor-saving and lower space costs
- Wide range of options available for reliable, high-quality dispensing. Significant reduction of defective products.
- Easy-to-use operations for any user

Fully automated seal dispensing machine

MLC-6500



Large-format, 20 t class machine bringing the world's fastest sealant dispensing with sub-micron precision.

- High-speed and high-precision sealant dispensing on large-sized substrates.
- Remarkable improvement of productivity achieved by world's fastest, high-stability, and high-definition drawing capability.
- MUSASHI's world-level original
- Automatic non-contact gap control mechanism.
- World's fastest dispensing shape measuring function.



Fully automated ODF machine

MLC-7500



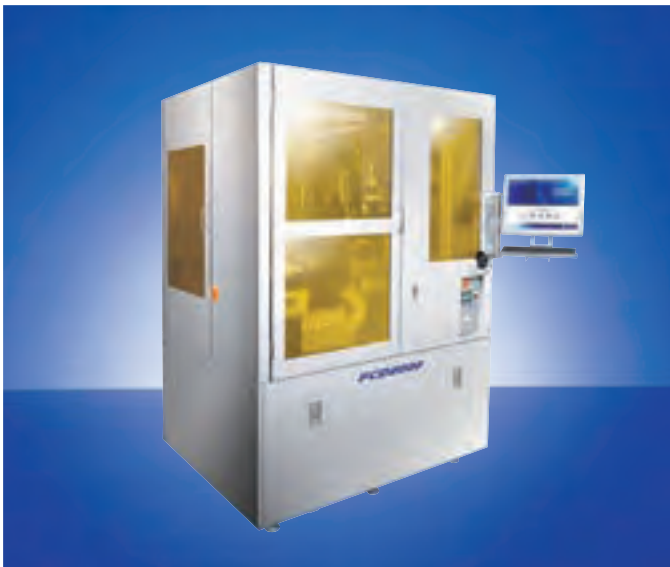
Applicable to eighth generation ultra-precision high-speed ODF system with high stability.

- World's best LC drop dispensing head mounted.
- Drastically improved productivity by multi-head compatibility.
- Simple operations for setting drop pattern and volume.
- High-speed and high-precision LC drop dispensing with high stability thanks to high-performance dispensing head.
- Improved dispensing speed more than 3-fold. (compared to industry standard)



Fully automated wafer coating machine

FCD 2000



Achieves ultra-thin coating.

- Major reduction in material waste by unique film formation method.
- Can be used with inline layouts.
- Available for use with wafers up to 12" in size, and under 100 μm thickness.

Fully automated lamination machine

FDB-3000



Surface coating + touch panel lamination device.

- Adapted for middle size panel laminating (CG + LCM).
- Reducing resin leak by low laminating pressure.
- Stable surface coating succeeded by high-performance dispenser with flat-nozzle.
- Preventing LCM distortion by low vacuum pressure.

High-precision, high-quality parts that incorporate MUSASHI's dispensing know-how

Syringes and accessories

PAT.



① High-precision syringes, specially designed for dispensing

High-precision dispensing is realized by constant internal syringe diameter, excellent fluid characteristic and high pressure resistant construction.

- Clear syringe
High precision dispensing: PSY-[E/F] series
- UV block syringe
Complete UV protection: PSY-[EU/FU]-OR series
- Color syringe
Color type: PSY-[E/F]-PG series
- Heat-resistant syringe
Heatproof: PSY-[FH/FH2]-P series
- Antistatic syringe
Anti-static: PSY-E-SEP series
- Stainless syringe
High temperature and pressure protection: SSY-E series

② Adapter tube (with stopper)

Tubes to supply air pressure by connecting a dispenser and a syringe.

- Adapter tube
Standard type: AT-E-H series
- Side connection adapter tube
Side connection type: AT-E-H-S series
- Antistatic adapter tube
Anti-static: AT-E-H-SEP series
- Stainless adapter tube
High temperature and pressure protection: AT-E-SUS series

③ High-precision plunger (PAT.)

High-precision dispensing is achieved with excellent wiping performance. 4-type lineup in accordance with fluid characteristics and applications.

- Float Wiper Plunger
High precision dispensers: FLP-E series
- Shuttle-type plunger
Ag paste, solder paste : TPP-E series
- Miracle wiper plunger (blue)(red)
Emphasizes scraping of fluid : MLP-B/R-E series
- Miracle wiper plunger (white)
Focus on sealing : MLP-E series

④ Syringe head cap/⑤ Syringe tip cap

Caps to seal the top and bottom of syringes. Three types are available: For general material, UV material and heat-resistant material.

⑥ Protective cap for syringe tip

Protects syringe tips while wearing needle caps.

⑦ O-ring (for tube adapter)

A replacement ring for adapter tubes. Select a suitable O-ring from among four kinds of materials according to the characteristics of fluid for dispensing.

- Fluororubber
- Silicone rubber
- NBR
- Perfluoroelastomer

Safety information → P73



Metal needle SNA series metal needle

An excellent durability SUS needle is used

- Needle length: 13 mm (Type B)
- Needle length: 15 mm (Type C)
- Thin metal needles are also available



Super-fine nozzle FN series

Capability of ultra-small volume dispensing and ultra-fine drawing as tiny as some micrometers in diameter



Plastic needle PN series plastic needles

Economical, disposable plastic needles

- Needle length: 8 mm (Type A)
- Needle length: 13 mm (Type B)



Sharp needle SPN series

High-precision tapered shape of needle tip enables micro-dispensing
Double thread screw design allows the needle to be installed securely on the syringe



Double thread screwed plastic needle DPN series

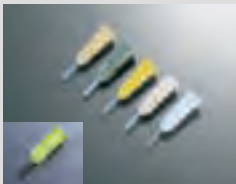
Safe and secure attachment into a syringe with double thread screwed needle design

- Needle length: 6.4mm
- Needle length: 12.7mm
- Needle length: 25.4mm
- Needle length: 38.1mm



Double thread screw tapered nozzle TPND series

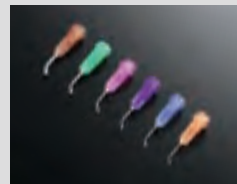
Compatible with UV materials
Best suited for high viscosity materials



PTFE nozzle TN series PTFE nozzles

Excellent in corrosion resistance and suitable for dispensing anaerobic materials

- Needle length: 8 mm
- UV material-compatible nozzles are also available



Curve needle CPN series

Best suited for dispensing to the inner surface of a workpiece
Bending processing with excellent flowability implements stable dispensing



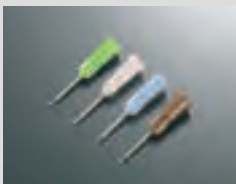
UV-block PTFE nozzle TN-U series

Compatible with UV materials
Ideal for dispensing anaerobic fluid materials
Needle length can be specified



Soft needle PPN series

Soft and flexible needle prevents damage to workpieces and reduces a fraction defective



PTFE nozzles with SUS guide

Used for precision dispensing of anaerobic materials
The SUS guide prevents vibration in the needle tip
Ultrafine type is also available



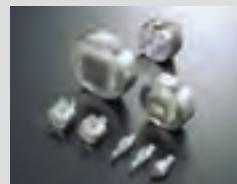
Brush nozzle BN series

Surface dispensing efficiency remarkably improved



Precision solid nozzle SHN series

Stable microscopic dispensing with integrated precision nozzle



Multi nozzle MN series

Suitable for multi-point dispensing with one shot



Double thread screw precision solid nozzle DSHN series

Double thread screw design allows the needle to be installed securely on the syringe More, not clogging, micro dispensing is possible

Note: We can design and supply specialty items, such as bending nozzles and forked nozzles that match your dispensing conditions and materials.

Safety information →P73

Model index (Alphabetical order)

A

	Model	Page	Item name
AT-	AT-□E	68	ADAPTER TUBE [1/100ML]
	AT-□E-H-1.0M	68	ADAPTER TUBE [WITH STOPPER 03/05/10/20-70ML 1.0M]
	AT-□E-H-S-1.0M	68	SIDE CONNECTION ADAPTER TUBE [WITH STOPPER 05/10/20-70ML 1.0M]
	AT-□E-H-SEP-1.0M	68	ANTISTATIC ADAPTER TUBE [WITH STOPPER 10/20-70ML 1.0M]
	AT-□E-SUS-1.0M	68	STAINLESS ADAPTER TUBE [WITH STOPPER 03/05/30-50ML 1.0M]
AW-	AW-[20/50]-3	47	SYRINGE CENTRIFUGAL BUBBLE ELIMINATOR AWATRON3 [1-20/1-50ML]
	AW-[20/50]-3-220V	47	SYRINGE CENTRIFUGAL BUBBLE ELIMINATOR AWATRON3 [1-20/1-50ML AC220/230V]

B

	Model	Page	Item name
BC-	BC-4	49	BARREL HEAD CAP [TYPE 4]
	BC-4U-B	49	UV BLOCK BARREL HEAD CAP [TYPE 4]
BC-	BN-S□	69	BRUSH NOZZLE [STANDARD/SOFT TYPE 2/4.5PHI]
BC-	BP-4	49	BARREL TIP CAP [TYPE 4]
	BP-4U-B	49	UV BLOCK BARREL TIP CAP [TYPE 4]

C

	Model	Page	Item name
CC-	CC-P-001-[1/2]	49,51	CARTRIDGE CAP [WITHOUT HOOK/WITH HOOK]
CCM-	CCM-[3H/3T]	63	ROTATING DISPENSER CIRCLE MASTER [HEAD TILTING TYPE/WORK TILTING TYPE]
CH-	CH-[100/170/230/340]C	49,51	CARTRIDGE HOLDER [100/170/340ML BARREL USE/230ML TUBE]
	CH-170CT	51	CARTRIDGE HOLDER [170ML TUBE USE]
CPN-	CPN-□G-[A45/A90/B45]	69	CURVE NEEDLE [14/15/18/20/21/22/23/25/27/30G NEEDLE LENGTH 12.7MM ANGLE45/12.7MM ANGLE90/38.1MM ANGLE45]BODY: PLASTIC
CS-	CS-□C	49	BARREL CARTRIDGE [100/170/340ML]
	CS-□C-HK	49	BARREL CARTRIDGE [100/170/340ML WITH HOOK]
	CS-[170/230]CT	51	TUBE CARTRIDGE [100/200G]
	CS-[170/230]CT-HK	51	TUBE CARTRIDGE [100/200G WITH HOOK]
	CS-[170/230]CT-TD	51	TUBE CARTRIDGE [100/200G TYPE TD]
	CS-[170/230]CT-TD-HK	51	TUBE CARTRIDGE [100/200G TYPE TD WITH HOOK]
	CS-P-001-1A	49	ORING RECEIVER [CARTRIDGE CAP USE]

D

	Model	Page	Item name
BC-	DPN-□G-[1/2/3]	69	DOUBLE THREAD SCREWED PLASTIC NEEDLE [14/15/18/20/21/22/23/25/27/30/32G NEEDLE LENGTH12.7/25.4/38.1MM]
	DPN-32G-0	69	DOUBLE THREAD SCREWED PLASTIC NEEDLE [32G NEEDLE LENGTH6.4MM]
DSHN-	DSHN-M2-□F	69	DOUBLE THREAD SCREW PRECISION SOLID NOZZLE [FINE TYPE ID 0.10/0.15/0.20/0.25/0.30MM]

F

	Model	Page	Item name
FAD	FAD2500	66	FULLY AUTOMATED MULTI-PURPOSE DISPENSING MACHINE DISPENS MASTER
	FAD5100S	66	FULLY AUTOMATED HIGH-END DISPENSING MACHINE DISPENS MASTER
FCD	FCD1000	66	FULLY AUTOMATED COATING MACHINE COATING MASTER
	FCD2000	67	FULLY AUTOMATED WAFER COATING MACHINE
FDB-	FDB-3000	67	FULLY AUTOMATED LAMINATION MACHINE
FLP-	FLP-□E	68	FLOAT WIPER PLUNGER [1/3/5/10/20/30/50/70/100ML YELLOW]
FN-	FN-□[N/ND]	69	SUPER FINE NOZZLE [ID0.02/0.03/0.04/0.05/0.10/0.15/0.20/0.25/0.30/0.40/0.50/0.60MM LUER LOCK/DOUBLE THREAD SCREWED]*
	FN-□[N/ND]-F	69	SUPER FINE NOZZLE TIP THICK 15MICROMETER [ID0.02/0.03/0.04/0.05/0.10/0.15/0.20/0.25/0.30/0.40/0.50/0.60MM LUER LOCK/2THREADSCREW]*

G

	Model	Page	Item name
GC-	GC-1	68	PROTECTIVE CAP FOR SYRINGE TIP [E TYPE]

H

	Model	Page	Item name
HC-	HC-[□EU/□U]-B	68	SYRINGE HEAD CAP [3/5/10/20/30/50ML UV TYPE BLACK]
	HC-[1E-H/□E/□C]	68	SYRINGE HEAD CAP [1ML HTYPE/3/5/10/20/30/50/70/100ML]
HM-	HM-MSD	31	HOTMELT MSD [SYRINGE/CARTRIDGE TYPE]

L

	Model	Page	Item name
LS-	LS-NH3-1604P	33	DISPENSER PEN [LS-NH3 TYPE 16 4PIN]

M

	Model	Page	Item name
M	M34-2373	31	HIGH-PERFORMANCE SCREW DISPENSER SCREWMASER [FOR HIGH-VISCOSITY THERMAL GREASE]
	M42-21300	35	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER MPP-3-GF-MINI

	Model	Page	Item name
MB-	MB-[100/170/340]C-01	46	MIXING BLOCK [100/170/340ML BARREL USE]
	MB-[5/10/20/30/50/70]E-02	46	MIXING BLOCK [5/10/20/30/50/70ML SYRINGE USE]
	MB-MJETC2-3070	21,46	MIXING BLOCK [30/50/70ML CYBERJET 2]
MJET-	MJET-A-2	20	NON-CONTACT JET DISPENSER AEROJET
	MJET-C-2	21	NON-CONTACT JET DISPENSER CYBERJET2
	MJET-S-2	18	NON-CONTACT JET DISPENSER SUPERJET2
	MJET-S-2-NZTB	18	NOZZLE TEMPERATURE CONTROL UNIT [FOR MJET-S-2]
	MJET-S-CTR-RM-2	18,19	HEAD CONTROLLER [TYPE 2 RACK MOUNT TYPE]
	MJET-S-HI-L	19	NON-CONTACT JET DISPENSER SUPER HI JET
	MJET-S-HI-L-NZTB	19	NOZZLE TEMPERATURE CONTROL UNIT [FOR MJET-S-HI-HU LIQUID FEED ON LEFT]
ML-	MJET-S-HM	21	NON-CONTACT JET DISPENSER HOTMELT SUPERJET
	ML-6000X-[GP/VHR]	42,43	HIGH PRECISION DIGITAL DISPENSER ML-6000X [GENERAL PURPOSE / VACUUM HIGH RESOLUTION]
	ML-6000XP-V5-[GP/VHR]	42,43	HIGH PRECISION DIGITAL DISPENSER ML-6000X PRO [V5 GENERAL PURPOSE / VACUUM HIGH RESOLUTION]
	ML-6000XP-V2-[GP/VHR]	42,43	HIGH PRECISION DIGITAL DISPENSER ML-6000X PRO [V2 GENERAL PURPOSE / VACUUM HIGH RESOLUTION]
	ML-8000X-V2	40,41	HIGH PRECISION DIGITAL DISPENSER WITH UPPER-LEVEL COMMUNICATION SUPPORT ML-8000X [V2]
MLC-	ML-8000X-V7	40,41	HIGH PRECISION DIGITAL DISPENSER WITH UPPER-LEVEL COMMUNICATION SUPPORT ML-8000X [V7]
	MLC-6500	67	FULLY AUTOMATED SEAL DISPENSING MACHINE
MLP-	MLC-7500	67	FULLY AUTOMATED ODF MACHINE
	MLP-□E	68	MIRACLE WIPER PLUNGER [5/10/20/30/50/70ML WHITE]
	MLP-B-□E	68	MIRACLE WIPER PLUNGER [5/10/20/30/50ML BLUE]
MN	MLP-R-□E	68	MIRACLE WIPER PLUNGER [5/10/20/30/50ML RED]
	MN□	69	Multi nozzle
MPP-	MPP-1	23	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER MEASURING MASTER
	MPP-3	23	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER MEASURING MASTER
MS-	MS-1-CTR	43	DISPENSING INSPECTION MACHINE FOR INLINE PRODUCTION SMART ROBO MS-1 [PRESSURE ANALOG DISPLAY]
	MS-1D-CTR	43	DISPENSING INSPECTION MACHINE FOR INLINE PRODUCTION SMART ROBO MS-1D [PRESSURE DIGITAL DISPLAY]
MSD-	MSD-CTR	29	SCREW HEAD DISPENSE CONTROLLER [MSD-3]
	MSD3-HD-HF	30	HIGH-PERFORMANCE SCREW DISPENSER SCREWMASER3 [MSD3 TYPE HIGH FLOW]
	MSD-3-SET1	30	HIGH-PERFORMANCE SCREW DISPENSER SCREWMASER3 [for 5 to 70ml syringes]
	MSD-3-SET2	30	HIGH-PERFORMANCE SCREW DISPENSER SCREWMASER3 [for 5 to 50ml temperature control syringes]
MT-	MSD-3-SET3	30	HIGH-PERFORMANCE SCREW DISPENSER SCREWMASER3 [for Barrel/Cartridge Use]
	MT-410	33	ROTARY TUBING DISPENSER
MU	MUCADV	62	MUCADV DISPENSE EDITING SOFTWARE
	MUCOM-SIGMACM	38	MUCOM FOR SUPER SIGMA [VER.1.0] DISPENSE PATTERN EDITING SOFTWARE

N

	Model	Page	Item name
NC-	NC-3E	68	SYRINGE TIP CAP [DOUBLE THREAD SCREWED LONG TRANSPARENT]
	NC-3EU-B	68	SYRINGE TIP CAP [DOUBLE THREAD SCREWED UV TYPE]
	NC-3FH	68	HEAT-RESISTANT SYRINGE TIP CAP
	NC-5E	68	SYRINGE TIP CAP [LUER LOCK KNURLED HARD WHITE]
	NC-7E	68	SYRINGE TIP CAP [DOUBLE THREAD SCREWED KNURLED BLUE]
	NC-7EU-B	68	SYRINGE TIP CAP [DOUBLE THREAD SCREWED KNURLED UV TYPE BLACK]

O

	Model	Page	Item name
ORG-	ORG-□-N-B-[1/2]	68	ORING [PHI 1.5/6/9/11/18/24 MATERIAL N COLOR B #1/2]
	ORG-□-P-B-1	68	ORING [PHI 1.5/6/9/11/18/24 MATERIAL P COLOR B #1]
	ORG-□-S-R-1	68	ORING [PHI 1.5/6/9/11/18/24 MATERIAL S COLOR R #1]
	ORG-□-V-B-1	49,50,51,68	ORING [PHI 1.5/6/8/9/11/12/14/16/18/20/24/34/42 MATERIAL V COLOR B #1]

P

	Model	Page	Item name
P-	P-NADP-[11/12/13]	49,50	NEEDLE ADAPTER [No.11/12/13]
	P-LADP-1	51	LUER LOCK ADAPTER [NO.1]
	P-PKG-[15/23]	50	PACKING [NO.15/23]
	P-SCW-[2/17]	49,50	SCREW [NO.2/17]
	P-SSP-1	49,50	SEAL SPRING [CARTRIDGE CAP USE]
	P-TADP-[2/3]	51	TUBE ADAPTER [NO.2/3]
PB-	PB-[100B/170C/340C]	49	BARREL [100ML B TYPE/170ML TYPE C/340ML TYPE C]
	PB-[170/230]BT	51	TUBE CARTRIDGE BARREL [170/230ML]
	PB-[170/340]CU-OR	49	UV BLOCK BARREL [170/340ML TYPE C]
PN-	PN-□G-[A/B]	69	PLASTIC NEEDLE [15 to 27G NEEDLE LENGTH 8/13MM]
PP-	PP-[W1/B1]	49	BARREL PLUNGER [TYPE B1/W1]
PPN-	PPN-□G	69	SOFT NEEDLE [15/16/18/20/22/25G NEEDLE LENGTH 35.9MM] RESIN NOZZLE
PSY-	PSY-[1E2/□E/□F]-M	68	CLEAR SYRINGE [1/3/5/10/20/30/50/70ML WITH GRADUATIONS]
	PSY-□[E/F]	68	CLEAR SYRINGE [3/5/10/20/30/50/70/100ML]

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Model index

(Alphabetical order)

P

	Model	Page	Item name
PSY-	PSY-□[E/F]-PG	68	COLOR SYRINGE [5/10/20/30/50ML PEPPERMINT GREEN]
	PSY-□[EU/FU]-OR	68	UV BLOCK SYRINGE [3/5/10/20/30/50/70/100ML]
	PSY-□[EU/FU]-OR-M	68	UV BLOCK SYRINGE [3/5/10/20/30/50/70ML WITH GRADUATIONS]
	PSY-□E-SEP	68	ANTI STATIC SYRINGE [10/30/50ML]
	PSY-30[FH/FH2]-P	68	HEAT-RESISTANT SYRINGE [30ML F/F2 TYPE GRADE P]

Q

	Model	Page	Item name
QP-	QP-1B	49	PNEUMATIC QUICK JOINT [PLUG R1/8]

R

	Model	Page	Item name
RMU-	RMU-02	21,46	MIXING CONTROLLER MIX MASTER

S

	Model	Page	Item name
SCS-	SCS-330	50	SEALANT CARTRIDGE [WITHOUT HOOK]
	SCS-330-HK	50	SEALANT CARTRIDGE [WITH HOOK]
	SCS-P-001-[1/2]	50	CARTRIDGE CAP [WITHOUT HOOK/WITH HOOK]
	SCS-P-001-1C	49,50	SEAL RETAINER [CARTRIDGE CAP USE]
	SCS-P-002-1	50	CARTRIDGE HOLDER [FOR SEALANT]
	SCS-P-004-[1/3/4/5/6/7/8]	50	TIP ADAPTER [TB/S/TS/TR/MI/MO/C TYPE]
	SCS-P-005-1	49,50	CARTRIDGE CAP HOOK
SHN-	SHN-□N	69	PRECISION SOLID NOZZLE [ID0.1/0.15/0.2/0.25/0.3/0.35/0.4/0.45/0.5/0.6MM]
SM	SM100SX-3A-SS	54	DESKTOP ROBOT SHOTMINI 100SX
	SM200OMEGAX-[3A/4A]-SS	55	DESKTOP ROBOT SHOTMINI 200 OMEGAX
	SM200SX-[3A-SS-01/4A-SS]	54	DESKTOP ROBOT SHOTMINI 200SX
	SM300OMEGAX-[3A/4A]-SS	55	DESKTOP ROBOT SHOTMASTER 300 OMEGAX
	SM300SX-[3A/4A]-SS	54	DESKTOP ROBOT SHOTMASTER 300SX
	SM400OMEGAX-[3A/4A]-SS	55	DESKTOP ROBOT SHOTMASTER 400 OMEGAX
	SM400SX-[3A/4A]-SS	54	DESKTOP ROBOT SHOTMASTER 400SX
	SM500OMEGAX-[3A/4A]-SS	55	DESKTOP ROBOT SHOTMASTER 500 OMEGAX
SM500SX-[3A/4A]-SS	54	DESKTOP ROBOT SHOTMASTER 500SX	
SMP-	SMP-2	27	ULTRA-SMALL DOSAGE DISPENSER NANO MASTER SMP-II
	SMP-3-[30/50]	27	ULTRA-SMALL DOSAGE DISPENSER NANO MASTER SMP-III [30ML TYPE/50ML TYPE]
SNA-	SNA-□G-[B/C]	69	METAL NEEDLE [SNA 12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/30/31/32G NEEDLE LENGTH13/15MM]
	SNA-□N-[4/6]L-F	69	THIN-WALLED METAL NEEDLE [SNA ID0.10/0.20/0.30MM NEEDLE LENGTH4/6MM]
SPN-	SPN-□-□L	69	SHARP NEEDLE [ID0.12MM NEEDLE LENGTH 6.5MM/ID0.17MM NEEDLE LENGTH 9.5MM/ID0.25MM NEEDLE LENGTH 12.7MM/ID0.33MM NEEDLE LENGTH 12.7MM/ID0.41MM NEEDLE LENGTH 38.1MM/ID0.58MM NEEDLE LENGTH 38.1MM/ID0.84MM NEEDLE LENGTH 12.7MM] BODY: PLASTIC
S-	S-SIGMA-CM3-V2	38,39	FULLY DIGITAL CONTROLLED DISPENSER SuperSIGMACMIII
	S-SIGMA-CM3-V5	38,39	FULLY DIGITAL CONTROLLED DISPENSER SuperSIGMACMIII
SSY-	SSY-□[B/E]	68	STAINLESS SYRINGE [1/3/5/10/30/50ML]

T

	Model	Page	Item name
TAD	TAD1000M	66	FULLY AUTOMATED COMPACT DISPENSING MACHINE SMART ROBO
TAI	TAI1000	66	DISPENSING INSPECTION MACHINE FOR INLINE PRODUCTION SMART ROBO
TB-	TB-[5/10/20/30/50]E-K	45	TEMPERATURE CONTROL BLOCK [RESISTANCE THERMOMETER BULB TYPE 5/10/20/30/50ML SYRINGE USE]
TBP-	TBP-SY[05/10/20/30/50]M-A-[L/R]	45	TEMPERATURE CONTROL BLOCK [AIR TYPE PELTIER LEFT/RIGHT 5/10/20/30/50ML SYRINGE TYPE M]
	TBP-SY[05/10/20/30/50]M-F	45	TEMPERATURE CONTROL BLOCK [FAN TYPE PELTIER 5/10/20/30/50ML SYRINGE TYPE M]
TCU-	TCU-02-MU	45	RESISTANCE BULB TEMPERATURE CONTROLLER THERMO MASTER
	TCU-05A-3-MU	45	AIR TYPE PELTIER TEMPERATURE CONTROLLER PELTIER MASTER
	TCU-05F-3-MU	45	FAN TYPE PELTIER TEMPERATURE CONTROLLER PELTIER MASTER
	TCU-DC24-1	18,19	TEMPERATURE CONTROLLER [DC24 TYPE]
TN-	TN-□-□-SUSG	69	PTFE NEEDLE WITH SUS GUIDE[ID0.1MM ODO.3MM/ID0.2MM ODO.4MM/ID0.3MM ODO.5MM NEEDLE LENGTH 13.7/26.4MM]
	TN-□G	69	PTFE NOZZLE [13~22G NEEDLE LENGTH 8MM] RESIN NOZZLE
	TN-□G-□L-□G-□L	69	PTFE NOZZLE WITH SUS GUIDE [□G, needle length □mm, guide □G □mm] *
	TN-□G-U	69	UV BLOCK PTFE NOZZLE [13~22G NEEDLE LENGTH 8MM] RESIN NOZZLE
TPND-	TPND-□G-U	69	DOUBLE THREAD SCREWED TAPERED NOZZLE [12/14/16/18/20/22/25/27/30G]
TPP-	TPP-□E	68	SHUTTLE TYPE PLUNGER [5/10/20~70ML CLEAR]
TR-	TR-□	47	TRANSFORMER [AC110/117/200/220/240V-100V]
TT-	TT-□	33	PTFE TUBE [10/11/12/13/14/15/16/17/18/19/20/21/22/24/26/28/30/32]
	TT-□B	33	PTFE TUBE [10/11/12/13/15/16/17/18/19/20/21/22/24/26/28/30 BLACK]

V

Model	Page	Item name
VSD-1-001700	25	HIGH-PERFORMANCE MOHNO DISPENSER MOHNO MASTER V2

X

Model	Page	Item name
XM220RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 220RX
XM230RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 230RX
XM230SX-3A-[L/R]-SS	58	CARTESIAN ROBOT CROSSMASTER 230SX
XM240RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 240RX
XM320RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 320RX
XM3300MEGAX-[3A/4A]-[L/R]-SS	59	CARTESIAN ROBOT CROSSMASTER 3300MEGAX
XM330RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 330RX
XM340RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 340RX
XM340SX-3A-[L/R]-SS	58	CARTESIAN ROBOT CROSSMASTER 340SX
XM420RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 420RX
XM430RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 430RX
XM4400MEGAX-[3A/4A]-[L/R]-SS	59	CARTESIAN ROBOT CROSSMASTER 4400MEGAX
XM440RX-3A-L-[SBA/AAS]	57	CARTESIAN ROBOT CROSSMASTER 440RX
XM460SX-3A-[L/R]-SS	58	CARTESIAN ROBOT CROSSMASTER 460SX
XM5600MEGAX-[3A/4A]-[L/R]-SS	59	CARTESIAN ROBOT CROSSMASTER 5600MEGAX
XM680SX-3A-[L/R]-SS	58	CARTESIAN ROBOT CROSSMASTER 680SX
XM7800MEGAX-[3A/4A]-[L/R]-SS	59	CARTESIAN ROBOT CROSSMASTER 7800MEGAX

Other

Model	Page	Item name
Please select the specification meeting with your requirements. Please contact our sales department for further information.	35	Two-component mixing dispenser DYNAMIC DUAL MASTER
	65	3D food printer 3D FOOD DISPENSER
	60,61	Image recognition dispensing system 350PC Smart XMΩX
	60,61	Image recognition dispensing system 350PC Smart XMRX
	60,61	Image recognition dispensing system 350PC Smart SMΩX
	63	UV IRRADIATION/UV ADHESIVE DISPENSING ROBOT
	65	Immunochromatographic line drawing
	63	CODE PRINTING ROBOT
	21	Solder paste JET dispenser SOLDER JET
	51	O-ring for a tube
	63	SCREW TIGHTENING/THREADLOCKER DISPENSING ROBOT
	63	DEBURRING ROBOT
	63	PICK & PLACE/ADHESIVE DISPENSING ROBOT
	63	LASER WELDING/SOLDER DISPENSING ROBOT
	64	FULLY PC CONTROLLED MULTI-CHANNEL DISPENSING SYSTEM PIPET MASTER
	47	SIMPLIFIED SYRINGE FILLER FILLING MATE
	35	HIGH-PERFORMANCE MOHNO DISPENSER DUAL MOHNO MASTER
	64	AUTOMATED FILLING CAPPER SYSTEM
	47	AUTOMATED WEIGHING TYPE SYRINGE FILLING SYSTEM AUTO FILLING MASTER
	65	FOOD GRADE JET DECORATION SYSTEM CHOCO JET
	65	ULTRA-HIGH-SPEED REAGENT SPOTTING SYSTEM JET SPOTTER
	64	MICRO-VOLUME REAGENT SPOTTING SYSTEM SPOT MASTER
	63	DISPENSING FAILURE INSPECTION/DISPENSING ROBOT
	35	NON-CONTACT JET DISPENSER DUAL JET [DUAL AEROJET/DUAL SUPERJET]
	20	NON-CONTACT JET DISPENSER GREASE JET
	63	EVALUATION ROBOT
	64	Chemical solution filling and capping system
	35	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER DUAL MPP-1
35	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER DUAL MPP-1 DUAL CARTRIDGE COMPATIBLE	
35	VOLUME MEASURING TYPE DIGITAL CONTROL DISPENSER DUAL MPP-3	

Note: 1. For the volumes, shapes, and others shown with [], select one of them in accordance with your specifications. The value of selected specifications shall be entered into the □ of a model name.
 2. The products marked with * have other lineup.
 3. For detailed specifications of parts accessories and valve/tank products, refer to the separate parts catalog or contact our sales department.

Safety Information Precautions and request for your handling

About plastic products such as syringe, barrel, plunger, tip cap, head cap and nozzle, please follow the following instructions for your safety operation and good performance.

1. These products are disposable. Reuse after cleaning may have a risk of explosion and nozzle off to cause damage or injury of operator. Please dispose and change after using to maintain dispensing quality as well.
2. Please be careful not to give any shock. Particularly, a risk of damage with an impact when it is frozen.
3. Please do not wash with solvents such as toluene, MEK, acetone.
4. Please pressurize and heat product within those specification range.
5. Please keep away from fire.
6. Please wear protector such as protective goggles and clothing during operation.
7. Please dispose according to local regulation.

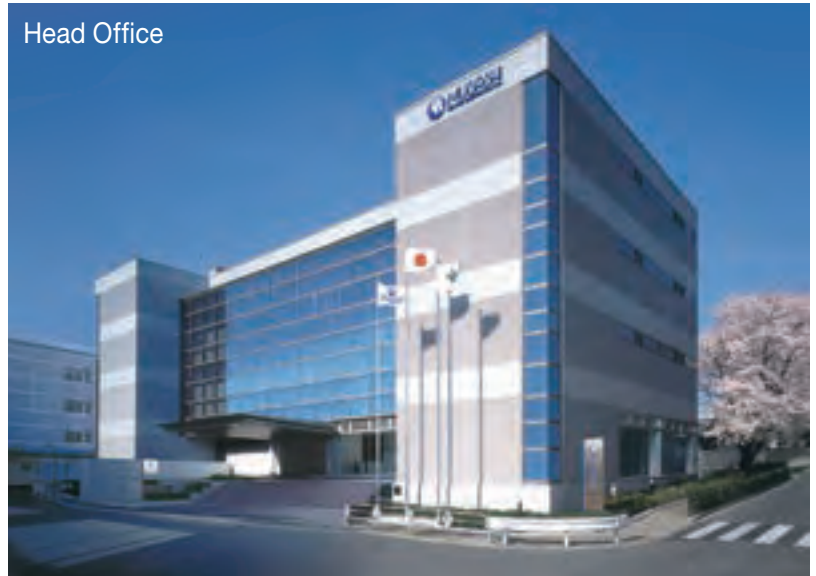
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The world's first pioneer of Dispense Hi-Tech, challenging the “Unexplored Territory”

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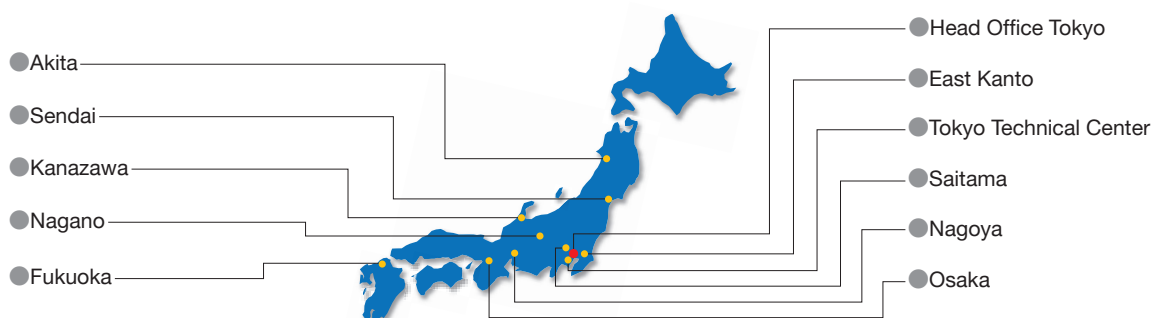
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Domestic bases: 11 locations
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WORLD



JAPAN




A reliable top performer with excellent achievements, MUSASHI will constantly seek new possibilities as a comprehensive manufacturer of dispensers.



Head Office



Tokyo Technical Center

 **Safety precautions**
Please read the instruction manual carefully before use to ensure correct and safe usage.

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