

Syringe parts configuration table

No.	Item name	Capacity	1mL	3mL	5mL	10mL	20mL	30mL	50mL	70mL	100mL	
①	Clear syringes	Without graduations	F-type NEW	—	—	—	—	PSY-20F	PSY-30F	PSY-50F	PSY-70F	—
		E-type	—	PSY-3E	PSY-5E	PSY-10E	—	—	—	—	PSY-100E	—
	With graduations	F-type NEW	—	—	—	—	PSY-20F-M	PSY-30F-M	PSY-50F-M	PSY-70F-M	—	—
		E-type	PSY-1E2-M	PSY-3E-M	PSY-5E-M	PSY-10E-M	—	—	—	—	—	—
	UV-block syringes	Without graduations	F-type NEW	—	—	—	—	PSY-20FU-OR	PSY-30FU-OR	PSY-50FU-OR	PSY-70FU-OR	—
		E-type	—	PSY-3EU-OR	PSY-5EU-OR	PSY-10EU-OR	—	—	—	—	—	—
With graduations	F-type NEW	—	—	—	—	PSY-20FU-OR-M	PSY-30FU-OR-M	PSY-50FU-OR-M	PSY-70FU-OR-M	—	—	
	E-type	—	PSY-3EU-OR-M	PSY-5EU-OR-M	PSY-10EU-OR-M	—	—	—	—	—	—	
②	Float wiper plunger	FLP-1E	FLP-3E	FLP-5E	FLP-10E	FLP-50E		—				
	Miracle wiper plunger	—	—	MLP-R-5E	MLP-R-10E	MLP-R-50E		—				
③	Adapter tube NEW (With stopper)	AT-1E*1	AT-3E-H-1.0M	AT-5E-H-1.0M	AT-10E-H-1.0M	AT-50E-H-1.0M		AT-100E*1				
	O-ring for Adapter tube*2 (Fluororubber)	ORG-1.5-V-B-1	ORG-6-V-B-1	ORG-9-V-B-1	ORG-11-V-B-1	ORG-18-V-B-1		ORG-24-V-B-1				
④	Syringe head cap	HC-1E-H	HC-3E	HC-5E	HC-10C	HC-50E		HC-100E				
⑤	Syringe tip cap	NC-3E (normal type), NC-7E (knurled type)										
⑥	Nozzle	<ul style="list-style-type: none"> • SHN series (High-precision solid nozzle) • FN series (Super fine nozzle) • HN series (Precision nozzle) • MN series (Multi nozzle) • SNA series (Metal needle) • DN series (Twin needle) • DPN series (Double thread screwed plastic needle) • SPN series (Sharp needle) 					<ul style="list-style-type: none"> • CPN series (Curve needle) • PN series (Plastic needle) • TPN series (Double thread screw tapered nozzle) • PPN series (Soft needle) • TN series (PTFE nozzle, PTFE nozzle with an SUS guide) • BN series (Brush nozzle) • Slit nozzle 					

Note: *1. The products, AT-1E and AT-100E are not equipped with a stopper.
*2. Other materials of o-ring are below; silicone rubber, nitrile rubber and perfluoroelastomer.

Plunger

■ 4-type lineup in accordance with fluid type, dispensing characteristics and applications

Float wiper plunger™

FLP series



High-speed high-precision
More

Miracle wiper plunger™

MLP-R series



MLP-B series



MLP series



Special wiping feature
Less

Smoothness between plunger and syringe



<http://www.musashi-engineering.co.jp/english/>



**World Leading Dispenser
MUSASHI ENGINEERING, INC.**

HEAD OFFICE
8-7-4, Shimorenjaku, Mitaka, Tokyo, 181-0013, Japan TEL : (81)422-76-7111 / FAX : (81)422-76-7122

BRANCH
TOKYO, OSAKA, NAGOYA, SENDAI, FUKUOKA, SAITAMA, NAGANO, EAST-KANTO, AKITA, KANAZAWA

SINGAPORE 114 Lavender Street, #08-88/89 CT Hub 2, Singapore 338729
TEL : (65)6258-2422 / FAX : (65)6258-4844

THAILAND No.12 Soi Bangna-Trad 25, Bangna, Bangkok, Bangkok 10260 Thailand
TEL : (66)2-769-5708 / FAX : (66)2-769-5450

INDONESIA Jl. MH. Thamrin, Robson Square, Block A-15, Lippo Cikarang, Bekasi 17550, Jawa Barat, Indonesia
TEL : (62)21-8990-5005 / FAX : (62)21-8990-5004

GERMANY Leopoldstrasse 244, 1.Stock 80807 Munich Germany
TEL : (49)89-208039-470 / FAX : (49)89-208039-478

KOREA (902 No. 9 F. #C, Korea Bio Park) 700, Daewangpangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do 13488, Korea
TEL : (82)31-702-3811 / FAX : (82)31-702-3881

TAIWAN 8F-2, No. 158, Sec. 2, Gongdao 5th Road, Hsinchu, Taiwan 30070
TEL : (886)3-572-9200 / FAX : (886)3-572-9300

CHINA

HONG KONG Unit 1706, 17/F., Greenfield Tower, (South) Concordia Plaza, No.1 Science Museum Road, T.S.T.East, Kowloon, H.K.
TEL : (852)2620-5799 / FAX : (852)2620-5771

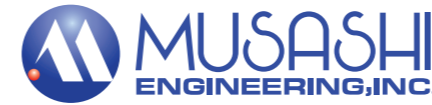
SHANGHAI A-120 Room, No.525 Xian Feng Street (No.55 Jin Yu Road), Min Hang, Shanghai, China
TEL : (86)21-6446-7881 / FAX : (86)21-6446-7882

SHENZHEN Room 702, West Tian'an Tech Plaza II, Tian'an Cyber Park, Futian District Shenzhen, China
TEL : (86)755-8346-6822 / FAX : (86)755-8346-6866

BEIJING Room 106, No.12 Tuan Jie Hu Dong Li, Tuan Jie Mansion Office Building, Chao Yang District, Beijing, China 100026
TEL : (86)10-8598-3317 / FAX : (86)10-8598-3327

SUZHOU Room 1010, No.188 Wang Dun Road, GENWAY BUILDING, Suzhou City Industrial estate Distric, Jiangsu, CHINA
TEL : (86)512-6878-4428 / FAX : (86)512-6878-4438

CAT.No.NOZZLES & NEEDLES-03181-E-COPY



Dispenser Accessories Quick Reference

Nozzles & Needles

Nozzles & Needles

The best quality promises the finest dispensing

Only the best parts are used on the liquid outlet in order to achieve the maximum high-precision controller performance. To achieve our idea, MUSASHI has brought together all of our accumulated wisdom about dispensing technology and then we used computers to design our own unique needles and nozzles. By complete automation and skillful, mechanized processing technology we can create products that offer the world's highest precision commercial dispensing. Our wide range of products can handle the type of fluid and dispensing requirements you have, no matter what they are.



SHN Series

The integral structure eliminates the operation of needle mounting to the nozzle. Excellent flowability thanks to the tapered needle tip. High-precision dispensing with high stability in small volume has been achieved thanks to ultra-thin needle tip.

Nozzle material: Stainless steel



FN Series

Incorporation of these super-fine nozzles into MUSASHI dispensers allows to perform super-fine dotting and ultra-precision drawing.

Body material: Brass (Nickel plated)
Needle material: Stainless steel



SNA Series

These metal needles are made of stainless steel, making them very long lasting. We offer a wide variety of lineup which is applicable to various dispensing shapes.

Needle material: Stainless steel
Body material: Brass (Nickel plated)



TPND Series

Since this nozzle is tapered, it is suitable for both high and low viscosity fluids and materials.

Nozzle material: Polyethylene



PN Series

These are economical, disposable needles.

Needle material: Stainless steel
Body material: Polycarbonate



DPN Series

Double thread screw design allows the user to install the needle on the syringe securely. A variety of needle lengths and gauges expands the dispensing application range.

Needle material: Stainless steel
Body material: Polypropylene



Dispenser Nozzles & Needles

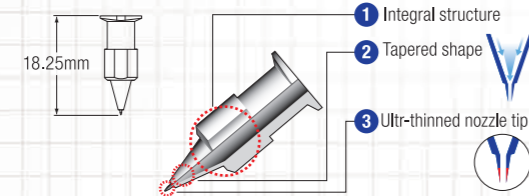
Precision solid nozzle

Micro volume dispensing with high stability achieved thanks to integral nozzle structure



An integral structure and tapered shape for outstanding flowability, also suited for liquid material containing filler. Ultra-fine machining of the nozzle tip bring high-precision reliability and micro-deposit dispensing.

Nozzle material : Stainless steel



Measurement unit (mm)				
Model	Nozzle OD (φ)	Nozzle ID (φ)	Minimum Order Quantity	
NEW SHN-0.6N	0.70	0.60	1	
SHN-0.5N	0.60	0.50	1	
SHN-0.45N	0.55	0.45	1	
SHN-0.4N	0.50	0.40	1	
SHN-0.35N	0.45	0.35	1	
SHN-0.3N	0.40	0.30	1	
SHN-0.25N	0.35	0.25	1	
SHN-0.2N	0.30	0.20	1	
SHN-0.15N	0.25	0.15	1	
SHN-0.1N	0.20	0.10	1	

Super-fine nozzles

Micro-dispensing available from as small as $\phi 10\mu\text{m}$ onwards



Super-fine inner/outer diameter nozzles are key components for delivering MUSASHI's super-fine dotting ultra-precision drawing.

Body material : Brass (Nickel plated) [Luer lock type]

: Stainless steel [Double thread screw type]

Measurement unit (mm)					Tip thickness: 15 μm				
Luer lock Model	Double thread screw Model	Nozzle OD (φ)	Nozzle ID (φ)	Minimum Order Quantity	Luer lock Model	Double thread screw Model	Nozzle OD (φ)	Nozzle ID (φ)	Minimum Order Quantity
FN-0.60N	FN-0.60ND	0.70	0.60	1	FN-0.60N-F	FN-0.60ND-F	0.63	0.60	1
FN-0.50N	FN-0.50ND	0.60	0.50	1	FN-0.50N-F	FN-0.50ND-F	0.53	0.50	1
FN-0.40N	FN-0.40ND	0.50	0.40	1	FN-0.40N-F	FN-0.40ND-F	0.43	0.40	1
FN-0.30N	FN-0.30ND	0.40	0.30	1	FN-0.30N-F	FN-0.30ND-F	0.33	0.30	1
FN-0.25N	FN-0.25ND	0.35	0.25	1	FN-0.25N-F	FN-0.25ND-F	0.28	0.25	1
FN-0.20N	FN-0.20ND	0.30	0.20	1	FN-0.20N-F	FN-0.20ND-F	0.23	0.20	1
FN-0.15N	FN-0.15ND	0.25	0.15	1	FN-0.15N-F	FN-0.15ND-F	0.18	0.15	1
FN-0.10N	FN-0.10ND	0.20	0.10	1	FN-0.10N-F	FN-0.10ND-F	0.13	0.10	1
FN-0.05N	FN-0.05ND	0.15	0.05	1	FN-0.05N-F	FN-0.05ND-F	0.08	0.05	1
FN-0.04N	FN-0.04ND	0.14	0.04	1	FN-0.04N-F	FN-0.04ND-F	0.07	0.04	1
FN-0.03N	FN-0.03ND	0.13	0.03	1	FN-0.03N-F	FN-0.03ND-F	0.06	0.03	1
FN-0.02N	FN-0.02ND	0.12	0.02	1	FN-0.02N-F	FN-0.02ND-F	0.05	0.02	1

Note: Contact MUSASHI Sales for super-fine nozzles with a nozzle diameter of 0.02 mm or less.

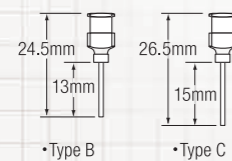
Metal needles

Versatile standard metal needle



These metal needles are made of stainless steel, making them very long lasting. We offer a wide variety of lineup which is applicable to various dispensing shapes.

Needle material : Stainless steel
Body material : Brass (Nickel plated)



Measurement unit (mm)					
Gauge	Needle length 13		Needle length 15		Minimum Order Quantity
	Model	Model	Nozzle OD (φ)	Nozzle ID (φ)	
12	SNA-12G-B	SNA-12G-C	2.77	2.27	60
13	SNA-13G-B	SNA-13G-C	2.40	1.94	60
14	SNA-14G-B	SNA-14G-C	2.10	1.64	60
15	SNA-15G-B	SNA-15G-C	1.83	1.43	60
16	SNA-16G-B	SNA-16G-C	1.65	1.25	60
17	SNA-17G-B	SNA-17G-C	1.49	1.11	60
18	SNA-18G-B	SNA-18G-C	1.28	0.92	60
19	SNA-19G-B	SNA-19G-C	1.08	0.72	60
20	SNA-20G-B	SNA-20G-C	0.91	0.61	60
21	SNA-21G-B	SNA-21G-C	0.82	0.52	60
22	SNA-22G-B	SNA-22G-C	0.72	0.42	60
23	SNA-23G-B	SNA-23G-C	0.64	0.34	60
24	SNA-24G-B	SNA-24G-C	0.57	0.31	60
25	SNA-25G-B	SNA-25G-C	0.52	0.26	60
26	SNA-26G-B	SNA-26G-C	0.46	0.25	60
27	SNA-27G-B	SNA-27G-C	0.42	0.21	60
28	SNA-28G-B	SNA-28G-C	0.36	0.18	60
30	SNA-30G-B	SNA-30G-C	0.32	0.14	60
31	SNA-31G-B	SNA-31G-C	0.26	0.13	60
32	SNA-32G-B	SNA-32G-C	0.23	0.10	60

Note: For specifying needle length, the length from needle top to its body bottom should be notified. Contact our sales department for further information.

Dispensing diameter and volume/weight comparison chart

Φ[mm]	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.6	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0
Water [mg] = [μl]																		
①	0.00011	0.00036	0.00085	0.0017	0.0029	0.0046	0.0068	0.0097	0.013	0.023	0.036	0.054	0.078	0.106	0.36	0.85	1.66	2.87
②	0.00004	0.00013	0.00032	0.00062	0.0011	0.0017	0.0025	0.0036	0.0050	0.0086	0.014	0.020	0.029	0.040	0.13	0.32	0.62	1.07

*Aspect ratio, diameter (Φ):height = (1) 4:1, (2) 10:1

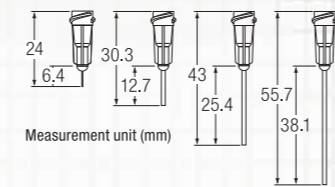
Double thread screwed plastic needle

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



Double thread screw design allows the user to install the needle on the syringe securely. A variety of needle lengths and gauges expands the dispensing application range.

Needle material : Stainless steel Body material : Polypropylene



Measurement unit (mm)									
Gauge	Needle length 6.4		Needle length 12.7		Needle length 25.4		Needle length 38.1		Minimum Order Quantity
	Model	Model	Model	Model	Nozzle OD (φ)	Nozzle ID (φ)	Color		
14	---	DPN-14G-1	DPN-14G-2	DPN-14G-3	1.83	1.52	Dark green	50	
15	---	DPN-15G-1	DPN-15G-2	DPN-15G-3	1.65	1.37	Brown	50	
18	---	DPN-18G-1	DPN-18G-2	DPN-18G-3	1.27	0.84	Green	50	
20	---	DPN-20G-1	DPN-20G-2	DPN-20G-3	0.91	0.58	Pink	50	
21	---	DPN-21G-1	DPN-21G-2	DPN-21G-3	0.81	0.51	Purple	50	
22	---	DPN-22G-1	DPN-22G-2	DPN-22G-3	0.71	0.41	Blue	50	
23	---	DPN-23G-1	DPN-23G-2	DPN-23G-3	0.64	0.33	Orange	50	
25	---	DPN-25G-1	DPN-25G-2	DPN-25G-3	0.51	0.25	Red	50	
27	---	DPN-27G-1	---	---	0.41	0.20	Clear	50	
30	---	DPN-30G-1	---	---	0.30	0.15	Light purple	50	
32	DPN-32G-0	DPN-32G-1	---	---	0.23	0.10	Yellow	50	

Plastic needles

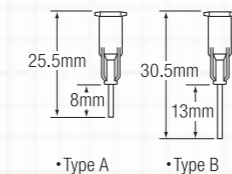
Inexpensive disposable type



These are economical, disposable needles.

Needle material : Stainless steel

Body material : Polyacetal



Measurement unit (mm)						
Gauge	Needle length 8		Needle length 13		Minimum Order Quantity	
	Model	Model	Nozzle OD (φ)	Nozzle ID (φ)		
15	PN-15G-A	PN-15G-B	1.83	1.43	Brown	
16	PN-16G-A	PN-16G-B	1.65	1.26	Black	
17	PN-17G-A	PN-17G-B	1.50	1.06	Blue	
18	PN-18G-A	PN-18G-B	1.27	0.97	Gray	
19	PN-19G-A	PN-19G-B	1.08	0.78	Light green	
20	PN-20G-A	PN-20G-B	0.90	0.66	Light pink	
21	PN-21G-A	PN-21G-B	0.81	0.57	White	
22	PN-22G-A	PN-22G-B	0.72	0.47	Light blue	
23	PN-23G-A	PN-23G-B	0.64	0.40	Yellow	
24	PN-24G-A	PN-24G-B	0.56	0.31	Ivory	
25	PN-25G-A	PN-25G-B	0.51	0.29	Pink	
26	PN-26G-A	PN-26G-B	0.46	0.25	Peppermint green	
27	PN-27G-A	PN-27G-B	0.41	0.20	Brown	

Note: For specifying needle length, the length from needle top to its body bottom should be notified. Contact our sales department for further information.

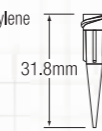
Double thread screwed tapered nozzle

Best suited for dispensing of high-viscosity liquid, and is disposable



Suited to dispensing of liquid materials with high flowability, high viscosity materials or materials containing filler. Made from resin to prevent damage to workpieces, even if there is contact.

Nozzle material : Polyethylene



Measurement unit (mm)					
Gauge	Model	Nozzle ID (φ)	Color	UV block	Minimum Order Quantity
14	TPND-14G	1.60	Pale orange	—	50
16	TPND-16G	1.19	Gray	—	50
18	TPND-18G	0.84	Light green (Former: Green)	—	50
20	TPND-20G	0.61	Pink	—	50
22	TPND-22G	0.40	Blue	—	50
25	TPND-25G	0.25	Rose* (Former: Red)	—	50
27	NEW TPND-27G-U	0.20	Dark gray	○	50
30	NEW TPND-30G-U	0.15	Olive	○	50

* Only color notation is changed. Production specifications are not changed.

Other nozzles & needles

Precision nozzles HN series <p>Separable type nozzle tip For high-precision, high-reliability micro-deposits</p>	Multi nozzles MN series <p>Customization of pin placement and length according to dispensing pattern</p>	Twin needle DN series <p>Outstanding high-precision reliability for simultaneous multi-point dispensing</p>	Sharp needle™ SPN series <p>Prevention of liquid climbing thanks to sharpening processing of needle tip</p>
Curve needle CPN series <p>Best suited for dispensing to the inner surface of a workpiece</p>	Soft needle PPN series <p>Soft touch, and no damage on workpiece</p>	PTFE nozzle TN series <p>Applicable to dispensing of anaerobic liquid material</p>	Brush nozzle BN series <p>Surface dispensing efficiency remarkably improved</p>
		Slit nozzle NEW <p>Full-surface dispensing and film formation in a single pass</p>	