

# Syringe parts configuration table

No.	Item name	Capacity	1mL	3mL	5mL	10mL	20mL	30mL	50mL	70mL	100mL	
①	Clear syringes	Without graduations	F-type <b>NEW</b>	—	—	—	—	PSY-20F	PSY-30F	PSY-50F	PSY-70F	—
		E-type	—	PSY-3E	PSY-5E	PSY-10E	—	—	—	—	—	PSY-100E
	With graduations	F-type <b>NEW</b>	—	—	—	—	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	—	—	—	—	—	—
②	UV-block syringes	Without graduations	F-type <b>NEW</b>	—	—	—	—	PSY-20FU-OR	PSY-30FU-OR	PSY-50FU-OR	PSY-70FU-OR	—
		E-type	—	PSY-3EU-OR	PSY-5EU-OR	PSY-10EU-OR	—	—	—	—	—	<b>NEW</b> PSY-100EU-OR
	With graduations	F-type <b>NEW</b>	—	—	—	—	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	—	—	—	—	—	—
③	Float wiper plunger	FLP-1E	FLP-3E	FLP-5E	FLP-10E	FLP-50E		FLP-100E		<b>NEW</b>		
	Miracle wiper plunger	—	—	MLP-R-5E	MLP-R-10E	MLP-R-50E		—		—		
				MLP-B-5E	MLP-B-10E	MLP-B-50E		—		—		
④	Adapter tube <b>NEW</b> (With stopper)	AT-1E <sup>*1</sup>	AT-3E-H-1.0M	AT-5E-H-1.0M	AT-10E-H-1.0M	AT-50E-H-1.0M		AT-100E <sup>*1</sup>		—		
	O-ring for Adapter tube <sup>*2</sup> (Fluororubber)	ORG-15-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		—		
⑤	Syringe head cap	HC-1E-H	HC-3E	HC-5E	HC-10C	HC-50E		HC-100E		—		
⑥	Nozzle	non UV block	•FN series (Super fine nozzle) •DPN series (Double thread screwed plastic needle) •SPN series (Sharp needle) •CPN series (Curve needle)				•PN series (Plastic needle) •PPN series (Soft needle) •TN series (PTFE nozzle, PTFE nozzle with an SUS guide) •BN series (Brush nozzle)					
		UV block	•SHN series (High-precision solid nozzle) •HN series (Precision nozzle) •MN series (Multi nozzle) •SNA series (Metal needle)				•DN series (Twin needle) •TPND series (Double thread screw tapered nozzle) •TN series (PTFE 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, NBR and perfluoroelastomer.

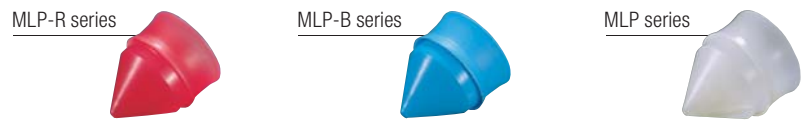
## Plunger

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

### Float wiper plunger



### Miracle wiper plunger



High-speed high-precision  
More

Special wiping feature  
Smoothness between plunger and syringe

Less



World Leading Dispenser  
MUSASHI ENGINEERING, INC.



Distributor  
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# 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: Polycatal



### 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

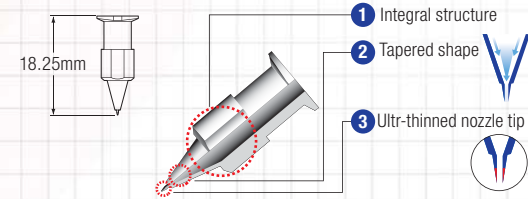
## Precision solid nozzle

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	
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	

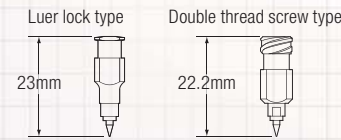
## Super-fine nozzles

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 $\mu\text{m}$				
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.

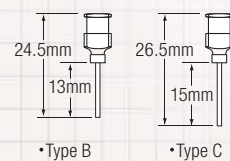
## Metal needles

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)

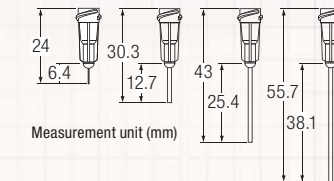


Measurement unit (mm)					
Gauge	Needle length 13		Nozzle OD (φ)	Nozzle ID (φ)	Minimum Order Quantity
	Model	Model			
12	SNA-12G-B	SNA-12G-C	2.77	2.27	60
13	SNA-13G-B	SNA-13G-C	2.40	1.94	60
14	SNA-14G-B	SNA-14G-C	2.10	1.64	60
15	SNA-15G-B	SNA-15G-C	1.83	1.43	60
16	SNA-16G-B	SNA-16G-C	1.65	1.25	60
17	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.

## Double thread screwed plastic needle

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



Double thread screw design allows the needle to be installed securely on the syringe. A variety of needle lengths and gauges increases range of dispensing applications.

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	
	Model	Model	Model	Model	Model	Model	Color	Minimum Order Quantity
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	Light 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	Rose	50
27	---	DPN-27G-1	---	---	0.41	0.20	White	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

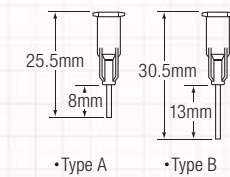
## Plastic needles

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		Nozzle OD (φ)	Nozzle ID (φ)	Color	Minimum Order Quantity
	Model	Model	Model	Model				
15	PN-15G-A	PN-15G-B	1.83	1.43	1.83	1.43	Brown	50
16	PN-16G-A	PN-16G-B	1.65	1.26	1.65	1.26	Black	50
17	PN-17G-A	PN-17G-B	1.50	1.06	1.50	1.06	Blue	50
18	PN-18G-A	PN-18G-B	1.27	0.97	1.27	0.97	Gray	50
19	PN-19G-A	PN-19G-B	1.08	0.78	1.08	0.78	Light green	50
20	PN-20G-A	PN-20G-B	0.90	0.66	0.90	0.66	Light pink	50
21	PN-21G-A	PN-21G-B	0.81	0.57	0.81	0.57	White	50
22	PN-22G-A	PN-22G-B	0.72	0.47	0.72	0.47	Light blue	50
23	PN-23G-A	PN-23G-B	0.64	0.40	0.64	0.40	Yellow	50
24	PN-24G-A	PN-24G-B	0.56	0.31	0.56	0.31	Ivory	50
25	PN-25G-A	PN-25G-B	0.51	0.29	0.51	0.29	Rose	50
26	PN-26G-A	PN-26G-B	0.46	0.25	0.46	0.25	Peacock green	50
27	PN-27G-A	PN-27G-B	0.41	0.20	0.41	0.20	Brown	50

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

Can be used with UV liquid materials. Ideal for dispensing high-viscosity liquids, and is also disposable.



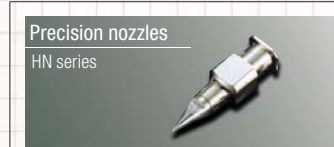
Suited to dispensing of liquid materials with high flowability, high viscosity materials or materials containing filler. Made from resin to prevent damage to workpieces, even if there is contact.

Nozzle material : Polyethylene

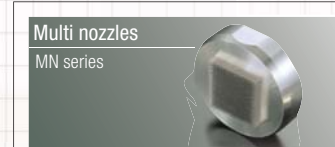


Measurement unit (mm)				
Gauge	Model	Nozzle ID (φ)	Color	Minimum Order Quantity
12	TPND-12G-U	2.40	Red	50
14	TPND-14G-U	1.60	Dark green	50
16	TPND-16G-U	1.19	Black	50
18	TPND-18G-U	0.84	Light green	50
20	TPND-20G-U	0.61	Pink	50
22	TPND-22G-U	0.40	Blue	50
25	TPND-25G-U	0.25	Red	50
27	TPND-27G-U	0.20	Dark gray	50
30	TPND-30G-U	0.15	Olive	50

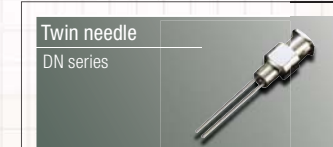
## Other nozzles & needles



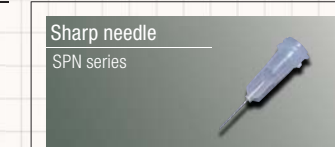
Separable type nozzle tip  
For high-precision, high-reliability micro-deposits



Customization of pin placement and length according to dispensing pattern



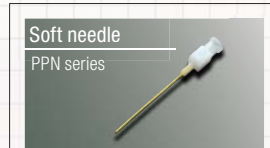
Outstanding high-precision reliability for simultaneous multi-point dispensing



Prevention of liquid climbing thanks to sharpening processing of needle tip



Best suited for dispensing to the inner surface of a workpiece



Soft touch, and no damage on workpiece



Compatible with dispensing of anaerobic liquid material  
UV block type also available



Surface dispensing efficiency remarkably improved



Full-surface dispensing and film formation in a single pass

## Dispensing diameter and volume/mass 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

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