—Reliable Manufacturing Technology to Tomorrow—

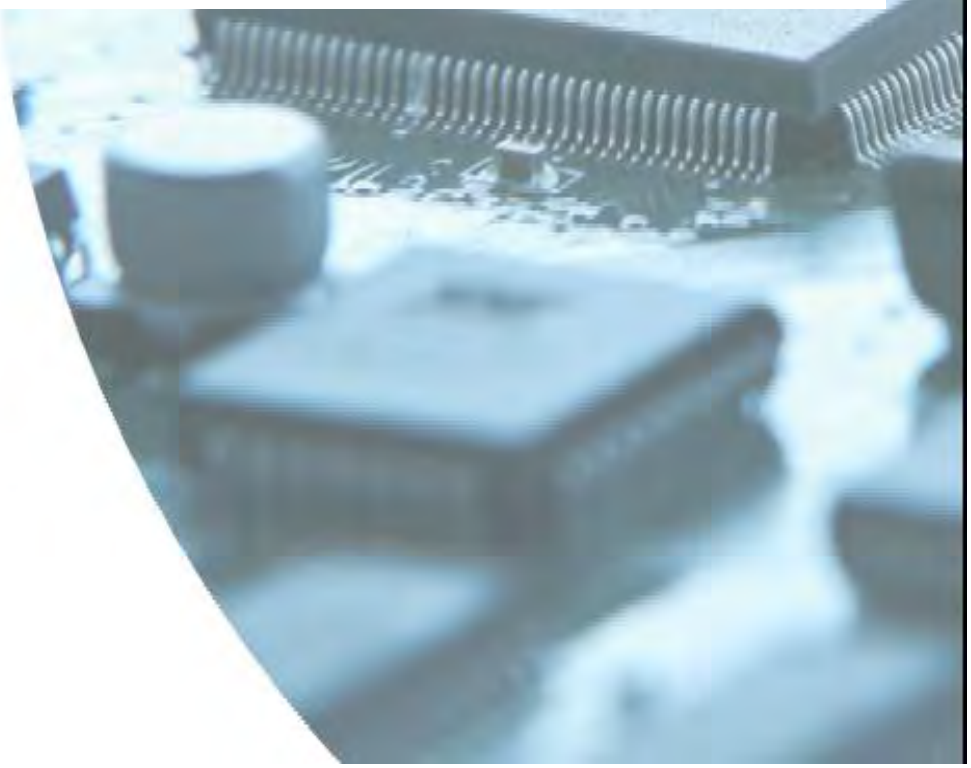
General Catalog

Fluoro Mechanic Co., Ltd.

Table of contents

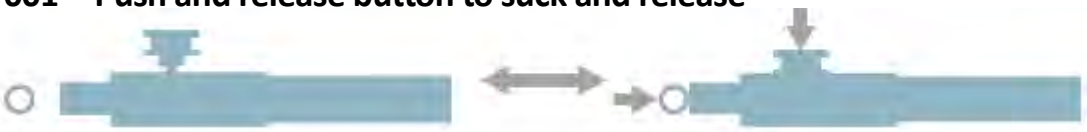
Vacuum Wand

Support a wide range of applications from suction and transfer of silicon wafers and various types of wafers, and minute objects. Versatile enough to be used by just changing attachment depending on the item transported, and lightweight and easy to clean. Conductive and chemical resistant available depending on the application.



Difference between 001, 002, 003 and 007

● 001···Push and release button to suck and release



To release (Not push button)　　To suck (Push button)

● 002···Push and release button to release and suck

To suck (Not push button)　　To release (Push button)

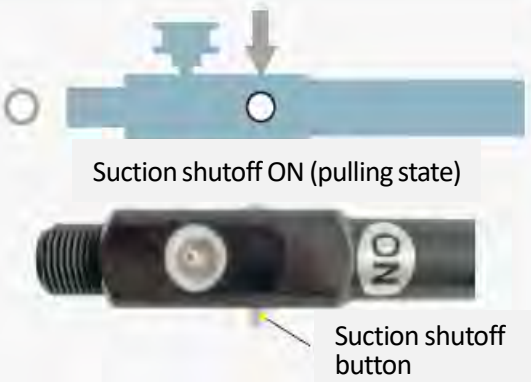
● 003···Push and release button to release and suck (with suction shutoff button)

To suck (Not push button)
Suction shutoff OFF (Pushing)

To release (Push button)
Suction shutoff OFF (Pushing)

About Suction Shutoff button

Suction can be shut off with the suction shutoff button on the side of the body. While the suction shutoff is ON (pulling state), suction is shut off regardless of whether the button on the top is pushed or not, preventing air waste.



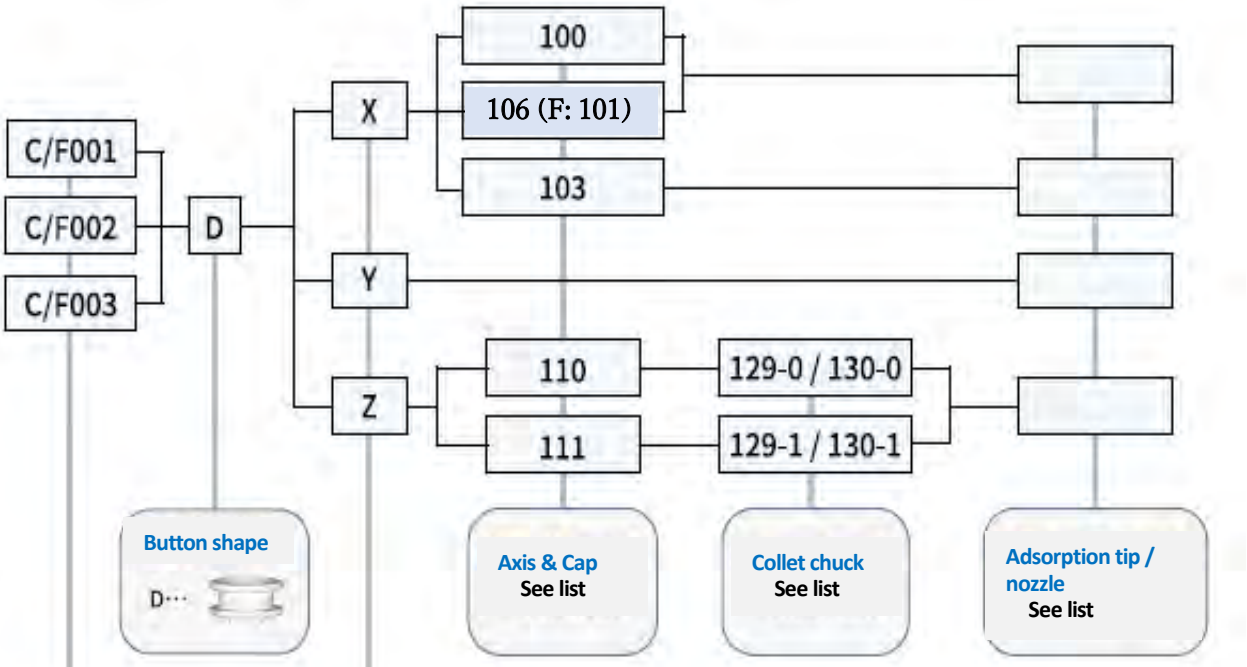
Suction shutoff ON (pulling state)

● 007···Push the button to discharge, release to suck

To suck (Not push button)　　To discharge (Push button)

Code example / Differences in X, Y, Z axis connection methods

● C / F001, 002, 003 Code examples and Differences in axis connection methods



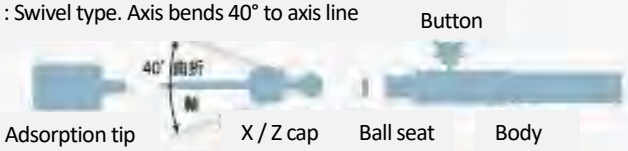
Body material
Valve open/close method

C : Conductive nylon (C series)

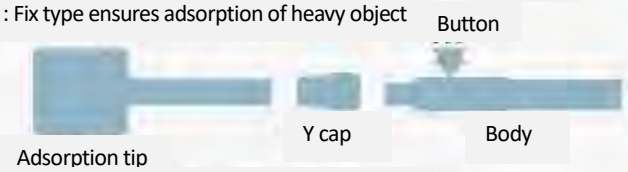
F : Teflon (F series)
001 : Push & release button to suck & release
002 : Push & release button to release & suck
003 : Push & release button to release & suck (with suction shutoff button)

Axis connecting method

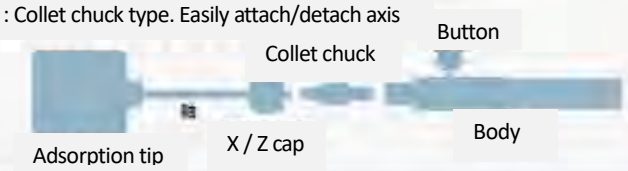
X : Swivel type. Axis bends 40° to axis line



Y : Fix type ensures adsorption of heavy object

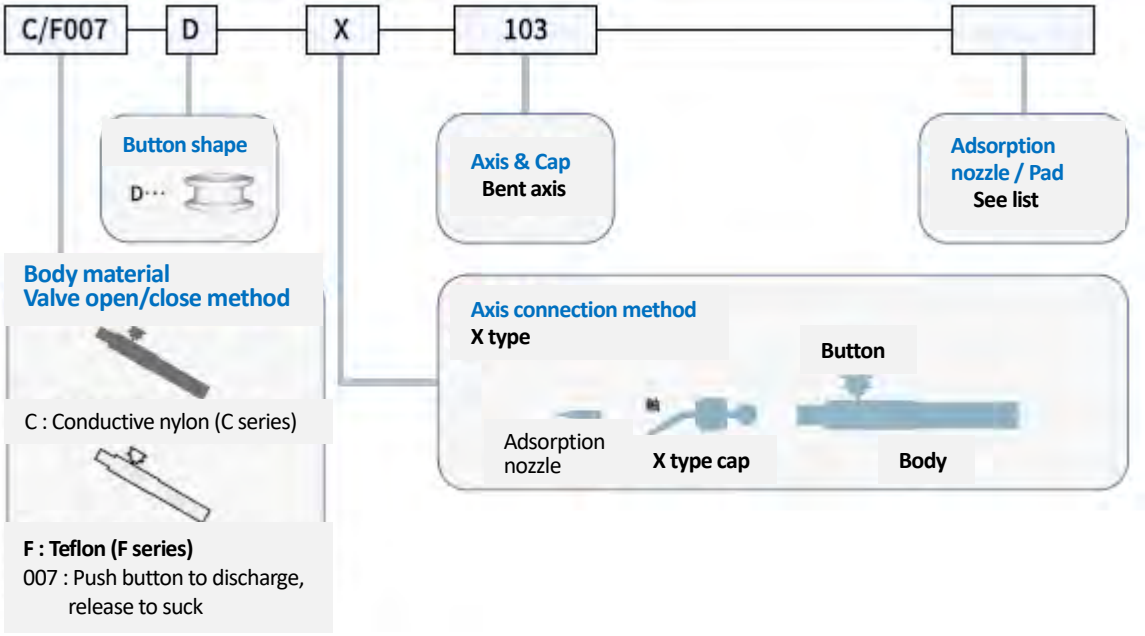


Z : Collet chuck type. Easily attach/detach axis



※Designed to use at between RT20~25℃. The operation outside this temperature range is not guaranteed.
※If using valve open/close methods 002 and 003 with vacuum pressure of -70kPa or higher and may happen to block the opening part at the bottom of the wand body by finger, the inconvenient adsorption phenomenon will occur. Please contact our distributor or us at the time of purchase.

● C / F007 code examples and Axis connection method



※Designed to use at between RT20~25℃. The operation outside this temperature range is not guaranteed.

Vacuum Wand C Series Conductive

Features of C Series

Feature 1 : The material of the body is Nylon blended carbon fiber (TORAYCA) which is superior in physical property and conductivity. The inner valve is made of fluorocarbon resin and has a structure covered with carbon fiber by the unique molding method without impairing airtightness. Therefore, like the conventional F series, the nimble valve open/close operation is possible. (Patented)

Feature 2 : Adsorption tip made of PEEK resin material having superior chemical resistance, heat resistance and toughness, heat-treated and mirror-finished after machining process maintains stable performance even over long periods of use.
The addition of carbon nanotubes makes it possible to manage high conductivity with low level of filler content.

Feature 3 : Various sizes of adsorption tip are available and selectable for the wide range of wafer sizes.

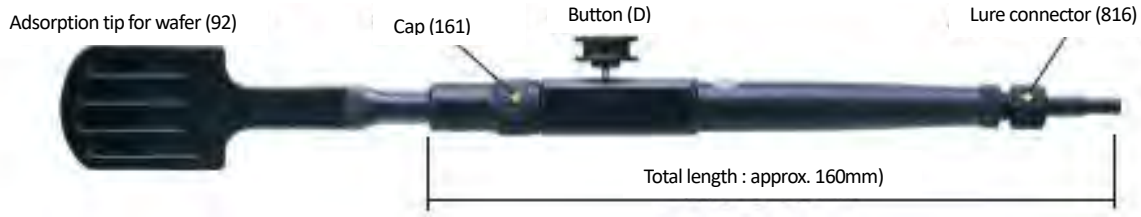
Feature 4 : Both Φ3x5 and Φ4x6 tube sizes are available.

Name of each part and example of connection combination

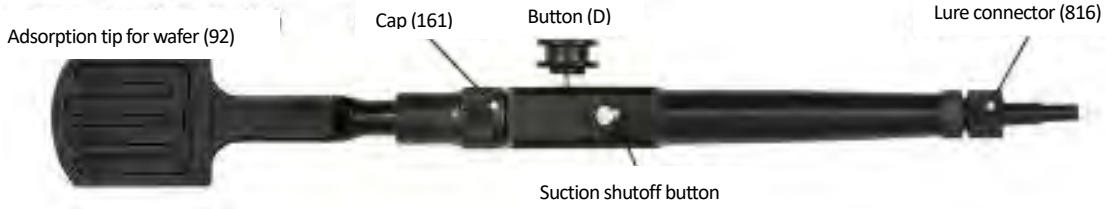
In case of C001-D-X-100-97

※Number in parenthesis is code.

In case of C002-D-Y-161-92



In case of C003-D-Y-161-92



In case of C007-D-X-103-26-0.3

Vacuum Wand F Series

Chemical resistant

● Features of F Series

Feature 1 : The material of the body is fluorocarbon resin (4F-PTFE). Precise production process skillfully combining each property of this resin offers airtightness, durability, and stable performance over long periods of use.

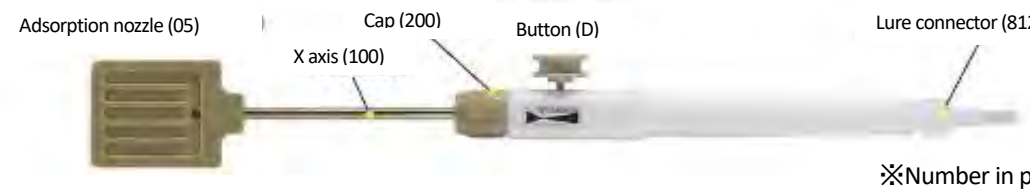
Feature 2 : Adsorption tip made of PEEK having superior chemical resistance, heat resistance and mechanical strength, heat-treated and mirror-finished after machining process maintains stable performance even over long periods of use

Feature 3 : Various sizes of adsorption tip are available and selectable for the wide range of wafer sizes.

Feature 4 : Both Φ3x5 and Φ4x6 tube sizes are available.

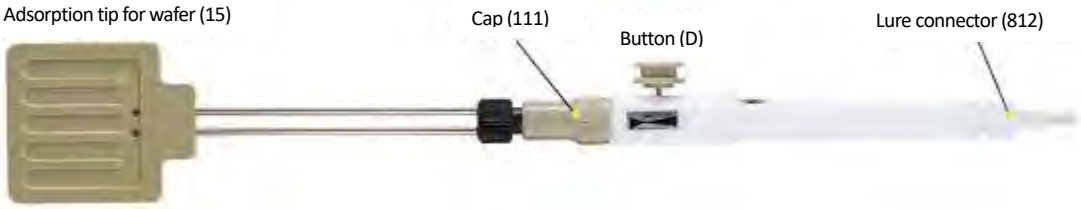
● Name of each part and example of connection combination

• In case of F001-D-X-100-05

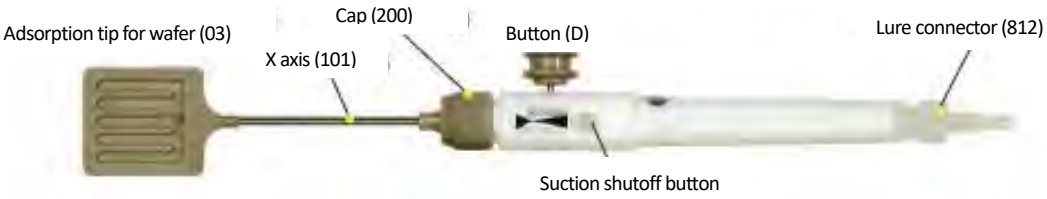


※Number in parenthesis is code.

• In case of F002-D-Y-131-15



• In case of F003-D-X-101-03



• In case of F007-D-X-103-26-0.3

※Please use wand at room temperature.

Parts for vacuum wand

Cap, lure connector, collet chuck for C series

129-0/1...collet chuck　161...conductive Y cap　260···conductive X/Z cap　816···conductive lure connector




※Please attach and detach by hand, not use tools, etc.

Code No.	Description	Material	Compatible Tip Code												Connection		
			90	91	92	94	95	96	97	98	99	64	67	68	69	X	Y	Z
129-0	Collet chuck (Φ2.3)	Cond MC nylon				●	●	●										●
129-1	Collet chuck (Φ1.4)	Cond MC nylon							●									
161	Conductive Y cap	Cond nylon	●	●	●					●	●	●	●	●	●		●	
260	Conductive X/Z cap	Cond Nylon				●	●	●	●							●		●
816	Cond lure connector	Cond Nylon																

Cap, lure connector, collet chuck, ball seat for F series

130-0/1...collet chuck　131...Y cap　200···X/Z cap　201···ball seat　812···lure connector





※Please attach and detach by hand, not use tools, etc.

Code No.	Description	Material	Compatible Tip Code						Connection			
			01	02	03	05	06	09	15	X	Y	Z
130-0	Collet chuck (Φ2.3)	PEEK	●	●	●		●					●
130-1	Collet chuck (Φ1.4)	PEEK				●		●				●
131	Y cap	PEEK							●		●	
200	X/Z cap	PEEK	●	●	●	●	●	●		●		●
201	Ball seat	PEEK	●	●	●	●	●	●		●		
812	Lure connector	PFA										

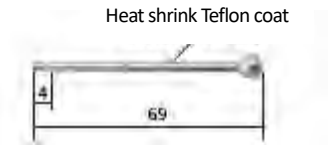
Description of materials used for vacuum wand

Material	Material Features
4F-PTFE	PTFE resin is most superior in chemical resistance, heat resistance, lubricity.
PK-PEEK	PEEK is superior in chemical resistance, heat resistance and mechanical strength, but dissolves in concentrated sulfuric acid.
Conductive nylon (TORAYCA)	Conductive nylon is made of nylon 6 reinforced with carbon fiber providing electrical conductivity and high mechanical strength, but slightly affected by alkali.
Conductive MC nylon	MC501CDR6 has high strength and durability : Inheriting the characteristics of MC901,which is the base of nylon engineering plastic, and has high mechanical strength and durability.
Conductive PEEK	Conductive PEEK resin is superior in mechanical strength, toughness, chemical resistance and heat resistance, and addition of carbon nanotube makes it possible to manage high conductivity with low level of filler content. Excellent chemical resistance, but dissolves in concentrated sulfuric acid.
PFA	Fluorocarbon resin superior in moldability (physical property is comparable to PTFE and PCTFE)
SUS	SUS304

Applicable axis

※Code Nos. 100, 110 and 111 are common to F series.

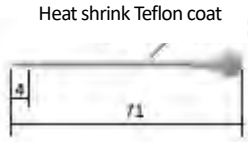
Screw type X axis



Code No.	Material	Applicable tip code	Axis type
100	SUS	05, 09, 97	X

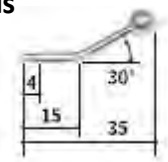
※M3 screw

Insertion X axis



Code No.	Material	Applicable tip code	Axis type
101	SUS+PEEK	01, 02, 03, 06	X

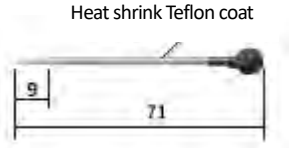
Bent axis



Code No.	Material	Applicable tip code	Axis type
103	Cond PEEK	Nozzle/Pad	X

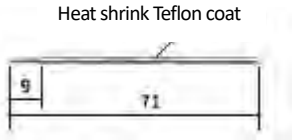
※M3 screw

Conductive insertion X axis



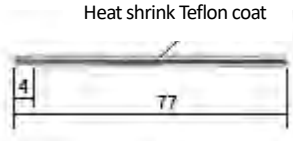
Code No.	Material	Applicable tip code	Axis type
106	SUS + Cond nylon	94,95,95	X

Insertion Z axis



Code No.	Material	Applicable tip code	Axis type
110	SUS	01, 02, 03, 06, 94,95,95	X

Screw type Z axis



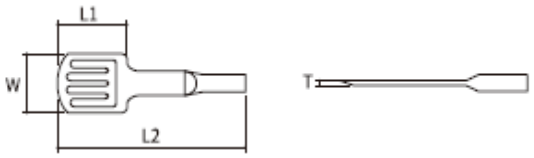
Code No.	Material	Applicable tip code	Axis type
111	SUS	05 09, 97	Z

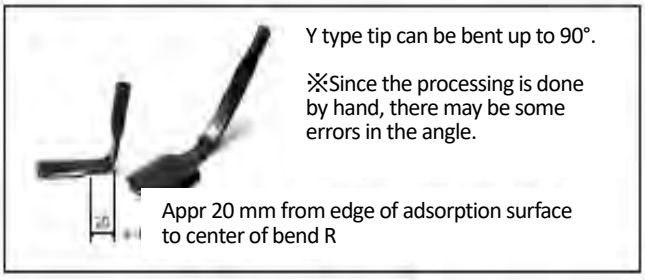
※M3 screw

Adsorption tip for wafer (C series)

● Adsorption tip for wafer

For dimensions of each part of the product, please refer to the symbols in the dimension drawing and the values in the table below.
※Made for silicon wafer. Please fully evaluate prior to use.





• Conductive Y tip for 5 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
90	Cond PEEK	--	--	161	2.7	16	26	82

※Insertion type

• Conductive Y tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
91	Cond PEEK	--	--	161	3	26	33	89

※Insertion type

• Conductive Y tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
92	Cond PEEK	--	--	161	3	32	39	95

※Insertion type

• Conductive X / Z tip for 4 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
94	Cond PEEK	106	**110**	260	2.6	10	21	30

※Insertion type

• Conductive X / Z tip for 5 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
95	Cond PEEK	106	**110**	260	2.7	15	27	37

※Insertion type

• Conductive X / Z tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
96	Cond PEEK	106	**110**	260	3	27	32.5	43

※Insertion type

• Conductive X / Z tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
97	Cond PEEK	100	**111**	260	3.8	31	37	42.5

※Screw type

• Conductive Y tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
98	Cond PEEK	--	--	161	3.5	32	39	128

※Insertion type

• Conductive Y tip for 12 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
99	Cond PEEK	--	--	161	3.5	48	58	151

※Insertion type

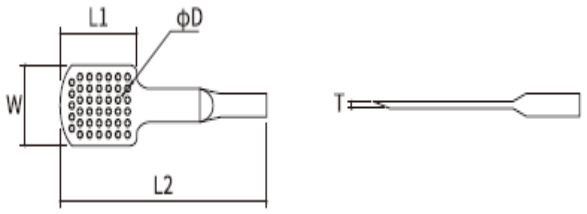
• Table

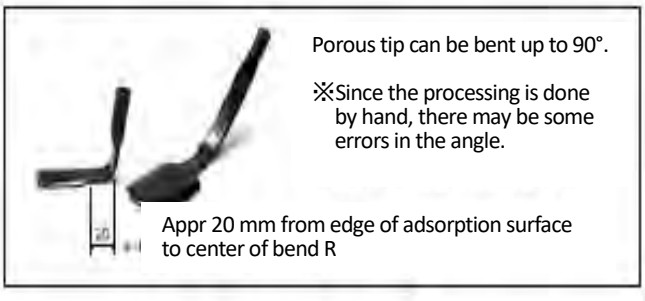
Code No.	Description	Material	X axis		Z axis		Cap		Size (mm)			
			100	106	110	111	161	260	T	W	L1	L2
90	Cond Y tip for 5”	Conductive PEEK					●		2.7	16	26	82
91	Cond Y tip for 6”						●		3	26	33	89
92	Cond Y tip for 8”						●		3	32	39	95
94	Cond X/Z tip for 4”			●	●			●	2.6	10	21	30
95	Cond X/Z tip for 5”			●	●			●	2.7	15	27	37
96	Cond X/Z tip for 6”			●	●			●	3	27	32.5	43
97	Cond X/Z tip for 8”		●			●		●	3.8	31	37	42.5
98	Cond Y tip for 8”						●		3.5	32	39	128
99	Cond Y tip for 12”						●		3.5	48	58	151

Conductive Porous Tip

- Ideal for reducing stress in handling compound semiconductor and thin wafer, etc.

Adsorption tip with nimble response for adsorbing and releasing. Material is conductive PEEK.
For dimensions of each part of the product, please refer to the symbols in the dimensionl drawing and the values in the table below.
※Made for silicon wafer. Please fully evaluate prior to use
※Due to the manufacturing process, there are burrs in the porous tip cavity that cannot be removed. We apologize in advance for any inconvenience which may cause.





- **Conductive porous tip for 3 ~ 5 inch**

Code No.	Material	Cap	Size (mm)				
			T	W	L1	L2	ΦD
90	Conductive PEEK	161	2.8	16.5	26	82	0.8

※Insertion type

- **Conductive porous tip for 8 ~ 12 inch**

Code No.	Material	Cap	Size (mm)				
			T	W	L1	L2	ΦD
66	Conductive PEEK	161	4.3	48	58	151	0.9

※Insertion type

- **Conductive porous tip for 6 ~ 8 inch**

Code No.	Material	Cap	Size (mm)				
			T	W	L1	L2	ΦD
67	Conductive PEEK	161	3.5	32	39	128	0.8

※Insertion type

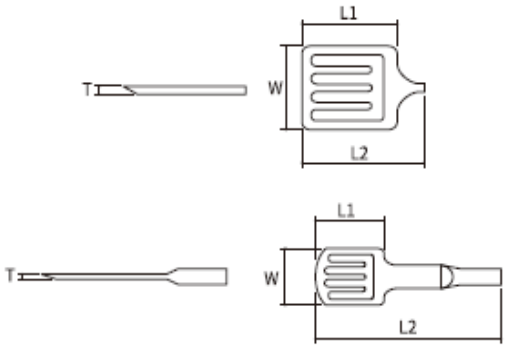
- **Table**

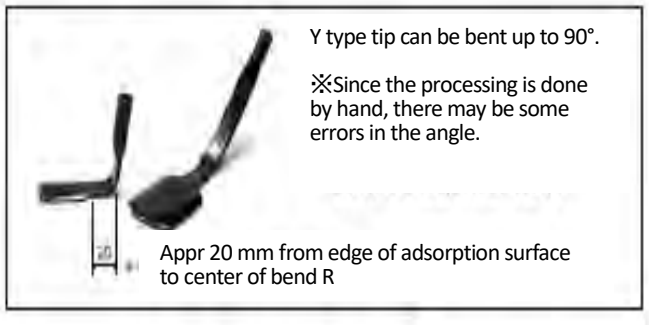
Code No.	Name	Material	Cap	Size (mm)				
			161	T	W	L1	L2	ΦD
64	Conductive porous tip for 3 ~ 5 inch	Conductive PEEK--	●	2.8	16.5	26	82	0.8
66	Conductive porous tip for 8 ~ 12 inch		●	4.3	48	58	151	0.9
67	Conductive porous tip for 6 ~ 8 inch		●	3.5	32	39	128	0.8

Adsorption tip for wafer (F series)

● Adsorption tip for wafer

For dimensions of each part of the product, please refer to the symbols in the dimension drawing and the values in the table below.
※Made for silicon wafer. Please fully evaluate prior to use.
※The color shade may differ slightly from the actual product.





• X / Z type tip for 5 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
02	PEEK	101	**110**	200	2.7	15	27	37

※Insertion type

• X / Z type tip for 5 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
02	PEEK	101	**110**	200	2.5	13.5	21	30

※Insertion type

• X / Z type tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
03	PEEK	101	**110**	200	3	27	32.5	43

※Insertion type

• X / Z type tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
05	PEEK	101	**110**	200	3.8	31	35	41

※Screw type

• X / Z type tip for 4 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
06	PEEK	101	**110**	200	2.6	10	21	30

※Insertion type

• X / Z type tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
09	PEEK	101	**110**	200	3.8	26	31	36

※Screw type

• Y type tip for 12 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
15	PEEK	--	--	131	3.5	47	45	162

※Insertion type

• Y type tip for 5 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
500	PEEK	--	--	131	2.7	16	26	82

※Insertion type

• Y type tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
501	PEEK	--	--	131	3	26	33	89

※Insertion type

• Y type tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
502	PEEK	--	--	131	3	32	39	95

※Insertion type

• X/Z type tip for 6 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
506	PEEK	**106**	110	260	3	27	32	43

※Insertion type

• X/Z type tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
507	PEEK	**100**	111	260	3.7	31	37	43

※Screw type

• Y type tip for 8 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
508	PEEK	--	--	131	3.5	31	39	129

※Insertion type

• Y type tip for 12 inch

Code No.	Material	X axis	Z axis	Cap	Size (mm)			
					T	W	L1	L2
509	PEEK	--	--	131	4.3	48	58	151

※Insertion type

• Table

Code No.	Name	Material	X axis			Z axis		Cap				Size (mm)			
			100	101	106	110	111	131	161	200	260	T	W	L1	L2
01	X/Z tip for 5”	PEEK		●		●				●		2.7	15	27	37
02	X/Z tip for 5”			●		●				●		2.7	13.5	21	30
03	X/Z tip for 6”			●		●				●		3	27	32.5	43
05	X/Z tip for 8”		●				●			●		3.8	31	35	41
06	X/Z tip for 4”			●		●				●		2.6	10	21	30
09	X/Z tip for 6”		●				●			●		3.8	26	31	36
15	Y tip for 12”							●				3.5	47	45	162
500	Y tip for 5”							●				2.7	16	26	82
501	Y tip for 6”							●				3	26	33	89
502	Y tip for 8”							●				3	27	32	43
506	X/Z tip for 6”				●	●					●	3	27	37	43
507	X/Z tip for 8”		●				●				●	3.7	31	37	43
508	Y tip for 8”								●			3.5	31	39	129
509	Y tip for 12”								●			3.5	48	58	151

Adsorption nozzle

Nozzle list

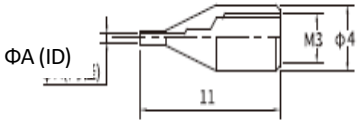
Selectable from a wide lineup to suit the shape of the work.

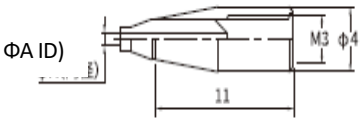
※Blue part is for catch & release vacuum wand only

Code No.	Name	Material	Reference outer size												Remarks
			0.4	0.4	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.4	2.9	3.4	
			Inner size (ΦA) ※Please order by inner diameter size													
			0.05	0.07	0.1	0.2	0.3	0.5	0.7	2.0	1.2	1.5	2.0	2.5	3.0	
21	3F nozzle	3F (PCTFE)					●	●	●	●	●	●	●	●	●	Sales end while stock last
22	3F nozzle (w/cap)	3F (PCTFE)			●	●										
23	PEEK nozzle	PEEK				●	●	●	●	●	●	●	●	●	●	
24	Vespel nozzle	Vespel				●	●	●	●	●	●	●	●	●	●	Made to order
25	Cond PEEK nozzle (w/cap)	Cond PEEK			●	●										
26	Cond PEEK nozzle	Cond PEEK					●	●	●	●	●	●	●	●	●	
28	Cond PEEK nozzle (w/cap)	Cond PEEK														
29	Cond PEEK nozzle (w/cap)	Cond PEEK														
57	Silicone rubber nozzle	※(1)														OD varies slightly due to rubber
59	Cond fluororubber nozzle	※(2)														
	Custom-made nozzle		We manufacture nozzles that can be used for various-type objects to be adsorbed.													Made to order

※(1) Clear silicone rubber + 3F (PCTFE)　(2) Conductive fluororubber + conductive PEEK resin

Shape of code 57, 59





※All nozzles are machined parts

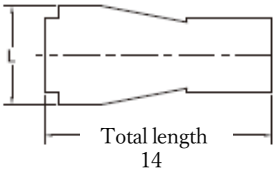
Cup, Slit tip

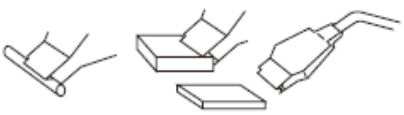
● Cup (Pad) list

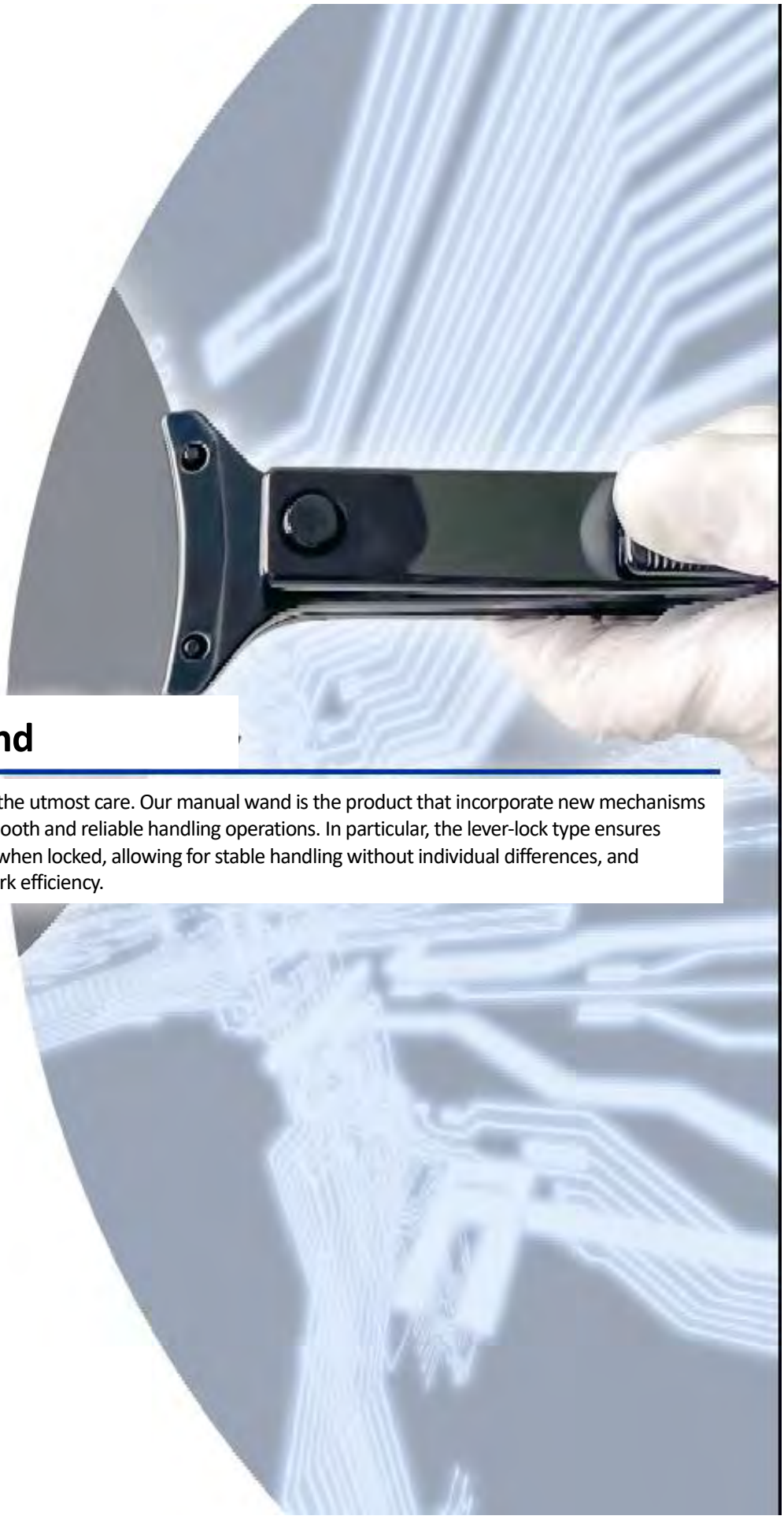
Code No.	Name	Material	Size ΦB (outer diameter)										Remarks
			2.5	3.0	3.5	5.0	8.0	11	15	20	25	30	
41	Silicone rubber pad	Silicone Rubber	●	●	●	●	●	●	●				
42	Fuluororubber pad	Fluororubber	●	●	●	●	●	●	●				
43	Cond silicone pad	Silicone R + carbon	●	●	●	●	●	●	●				
44	Cond fluorine pad	F-rubber + carbon	●	●	●	●	●	●	●				
45	Teflon® pad	Teflon®	●	●	●	●	●	●	●	●	●	●	
47	Comp curved pad	Clear Silicone Rubber			●								

● Slit tip (Edge adsorption tip) list

Code No.	Name	Material	Size L (Height)			Remarks
			3.0	4.5	6.0	
51	3F edge adsorption tip	3F	●	●	●	Sales end while stocks last
55	Cond PEEK adsorption tip	Nano-carbon PEEK	●	●	●	







Manual wand

Wafer handling requires the utmost care. Our manual wand is the product that incorporate new mechanisms throughout to ensure smooth and reliable handling operations. In particular, the lever-lock type ensures constant clamping force when locked, allowing for stable handling without individual differences, and significant increase in work efficiency.

Manual wand

● Features of lever-lock type manual wand

Feature 1 By the principle of leverage, stable gripping force is maintained with less force.

Feature 2 Once gripped, lock mechanism only requires the force to support the weight of wafer.

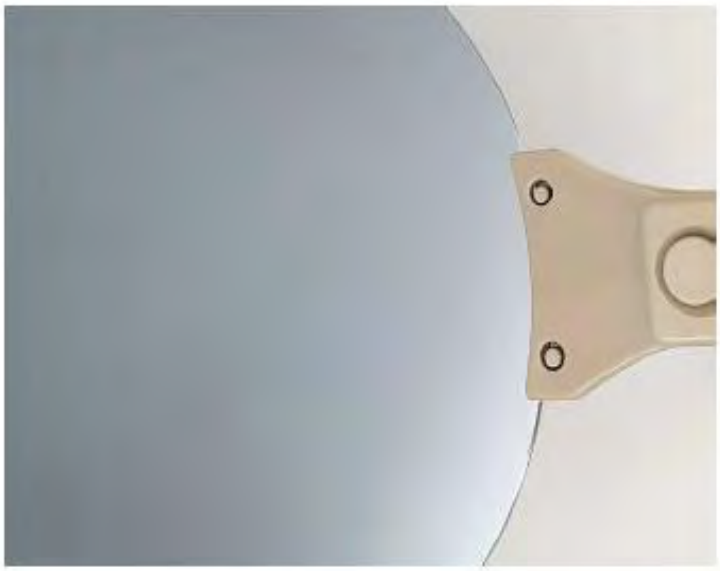
Feature 3 Relieves from the effort to keep holding unlike manual wand.

Feature 4 Easy and stable gripping ensures safe work and increased efficiency.

Feature 5 The gripping surface only has 2-point contact, so contamination to the wafer is minimized.

Feature 6 The material, PEEK, has excellent toughness, heat resistance and chemical resistance.

● Lever-lock type manual wand　Wafer gripping image



※Using 6 inch lever-lock type manual wand (Code No. M100-150L)

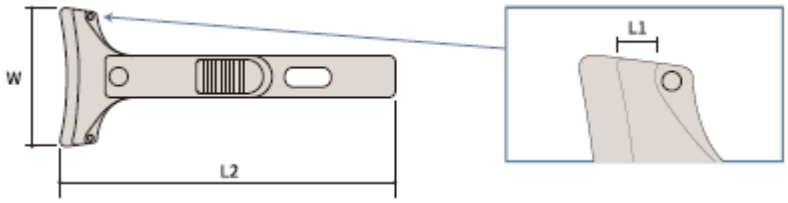
※Image is for illustrative purpose only. When actually gripping and transporting the object, please use with due care not to damage the object and the product.

Lever-lock type manual wand list

For dimensions of each part of the product, please refer to the symbols in the dimension drawing and the values in the table below.

※We will consult and quote on processing of the wand edge, etc. to suit the items to be gripped.

※Made for silicon wafer. Please fully evaluate prior to use.



6 inch lever-lock type manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-150L	PEEK	6	40	3	185	71

8 inch lever-lock type manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-200L	PEEK	8	55	3	180	72

12 inch lever-lock type manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-300L	PEEK	12	75	8	180	77

- **6 inch conductive lever-lock type manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-150L	Cond PEEK	6	40	3	185	71

- **8 inch conductive lever-lock type manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-200L	Cond PEEK	8	55	3	180	72

- **8 inch conductive lever-lock type manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-300L	Cond PEEK	12	75	8	180	77

- **Table**

Code No.	Name	Material	No. of inch	Size (mm)			Weight (g)
				W	L1	L2	
M100-150L	6” lever-lock manual wand	PEEK	6	40	3	185	71
M100-200L	8” lever-lock manual wand		8	55	3	180	72
M100-300L	12” lever-lock manual wand		12	75	8	180	77
E100-150L	6” conductive lever-lock manual wand	Conductive PEEK	6	40	3	185	71
E100-200L	8” conductive lever-lock manual wand	Conductive PEEK	8	55	3	180	72
E100-300L	12” conductive lever-lock manual wand	Conductive PEEK	12	75	8	180	77

※E100 type : For strength reason, the support is made of unfilled PEEK material.

● Features of manual wand L series

Feature 1 The wafer contact surface only has 2-point contact, so contamination to the wafer is minimized.

Feature 2 Unlike conventional metal wand, there is no risk of damaging the wafer.

Feature 3 The unique wafer stopper prevents excess contact with the wafer.

Feature 4 The body contains no adhesives, metals, etc., so can be easily cleaned and kept clean at all times.

Feature 5 Material can be selected according to the application.

● Manual wand L series　Wafer gripping image

4 inch PEEK manual wand
(Code No. M100-100)

8 inch conductive PEEK manual wand
(Code No. E100-200)

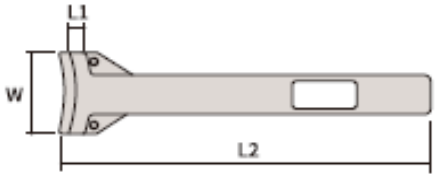
※Image is for illustrative purpose only. When actually gripping and transporting the object, please use with due care not to damage the object and the product.

● Manual wand L series list

For dimensions of each part of the product, please refer to the symbols in the dimension drawing and the values in the table below.

※We will consult and quote on processing of the wand edge, etc. to suit the items to be gripped.

※Made for silicon wafer. Please fully evaluate prior to use.



• 4 inch PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-100L	PEEK	4	16	4	146	30

• 5 inch PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-125	PEEK	5	32	5	148	31

• 6 inch PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-150	PEEK	6	37	6	147	31

• 8 inch PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M100-200	PEEK	8	37	8	147	32

- **4 inch PPS manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M110-100	PPS	4	16	4	146	31

- **5 inch PPS manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M110-125	PPS	5	32	5	148	32

- **6 inch PPS manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M110-150	PPS	6	37	6	147	33

- **6 inch PPS manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
M110-200	PPS	8	37	8	147	33

- **4 inch conductive PEEK manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-100	PEEK	4	16	4	146	31

- **5 inch conductive PEEK manual wand**

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-125	PEEK	5	32	5	148	33

6 inch conductive PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-150	PEEK	6	37	6	147	34

8 inch conductive PEEK manual wand

Code No.	Material	No. of inch	Size (mm)			Weight (g)
			W	L1	L2	
E100-200	PEEK	8	37	8	147	34

Table

Code No.	Description	Material	No. of inch	Size (mm)			Weight (g)
				W	L1	L2	
M100-100	4” PEEK manual wand	PEEK	4	16	4	146	30
M100-125	5” PEEK manual wand		5	32	5	148	31
M100-150	6” PEEK manual wand		6	37	6	147	31
M100-200	8” PEEK manual wand		8	37	8	147	32
M110-100	4” PPS manual wand	PPS	4	16	4	146	31
M110-125	5” PPS manual wand		5	32	5	148	32
M110-150	6” PPS manual wand		6	37	6	147	33
M110-200	8” PPS manual wand		8	37	8	147	33
E100-100	4” conductive PEEK manual wand	Conductive PEEK	4	16	4	146	31
E100-125	5” conductive PEEK manual wand		5	32	5	148	33
E100-150	6” conductive PEEK manual wand		6	37	6	147	34
E100-200	8” conductive PEEK manual wand		8	37	8	147	34

※PEEK (polyether ether ketone)

※PPS (polyphenylene sulfide)

List of material used for manual wand

Material	Material sample	Features of material
PEEK with CNT		PEEK resin blended nanocarbon is conductive and superior in chemical resistance, heat resistance and mechanical strength. But, dissolved in concentrated sulfuric acid. ※PEEK with CNT (carbon nanotube) is the material of Polyplastics-Evonik Corporation.
PEEK		Polyether ether ketone is superior in chemical resistance, heat resistance, and mechanical strength. But, dissolved in concentrated sulfuric acid. ※PEEK (polyether ether ketone) the material of Polyplastics-Evonik Corporation.
PPS Fortron		Unlike PEEK, not dissolved in concentrated sulfuric acid. Chemical resistance, heat resistance and mechanical strength are inferior to PEEK. ※PPS (polyphenylene sulfide) is the material of Polyplastics-Evonik Corporation.

Small size vacuum pump

Our compact vacuum pump has a mechanism that can obtain high vacuum pressure. Due to its maintenance-free structure, quiet design and clean exhaust, it is used in the clean room of semiconductor manufacturing plants, and is also actively incorporated into various automatic machines for adsorption transfer, taking advantage of these characteristics.

Small size vauum pump

● Features of small size vacuum pump

Feature 1 It has the structure enabling multi-step decompression by installing diaphragm in hermetic space, and the mechanism to obtain high vacuum pressure in a compact body has been realized. (except FV-10)

Feature 2 Since it is electromagnetically driven, there is little mechanical wear or contact, so there is almost no need for maintenance, and it is a long-life type that can be used up to the theoretical durability value of the diaphragm.

Feature 3 HEPA filter is installed on the intake and exhaust part. Usable in a clean room. The filter is visible through clear window on the body, so you can know when to replace. (except FV-10)

Feature 4 Operation noise is very quiet due to the hermetic body construction. Compared to motor-drive type, there is no mechanical contact noise and quietness is maintained.

Feature 5 No need of air source such as compressor, so usable anywhere as long as there is 100v outlet. Combining with our vacuum wand expands use application.

Feature 6 Simplified construction promises superior reliability, service life, power consumption compared to comparable vacuum pump.
Inexpensive price of the body can be offered.

● Small size vacuum pump list

Each pump has rated voltage of AC-100V, durability of over 9000 hours, and operating temperature limit is 40°.
※When storing in a place with low room temperature, please operate for about 10 minutes without load prior to use.
※Data in each table are domestic specifications.
※Flow rate and attained suction pressure values for each pump are indicated for 50 Hz. When used at 60 Hz, it is reduced by approximately 20%.

• Type for or minute objects

Code No.	Power consumption	Attained suction pressure	Flow rate	Size (mm)	Weight
FV-10	5.0W	-3~-14kPa or less ※	2.8L/min	155x72x61	600g

※Variable with the dial on the body

• General purpose type

Code No.	Power consumption	Attained suction pressure	Flow rate	Size (mm)	Weight
FV-30	5.0W	-50kPa or less	2.5L/min	137x88x85	800g

• High vacuum type

Code No.	Power consumption	Attained suction pressure	Flow rate	Size (mm)	Weight
FV-60	10.0W	-85kPa or less	2.5L/min	137x88x133	1250g

• High flow rate type

Code No.	Power consumption	Attained suction pressure	Flow rate	Size (mm)	Weight
FV-XP	10.0W	-60kPa or less	5.0L/min	137x88x133	1250g

• Suction/Discharge type

Code No.	Power consumption	Attained suction pressure	Flow rate	Size (mm)	Weight
FV-W	5.0W	-40kPa or less	2.3L/min	137x88x91	800g

This is a dedicated pump made for vacuum wand C-007 and F-007, and capable of suction and discharge with one unit.
Discharge pressure is 0~20kPa, discharge flow rate is 0~2.0L/min.
Discharge pressure can be adjusted and changed with the dial on the body.

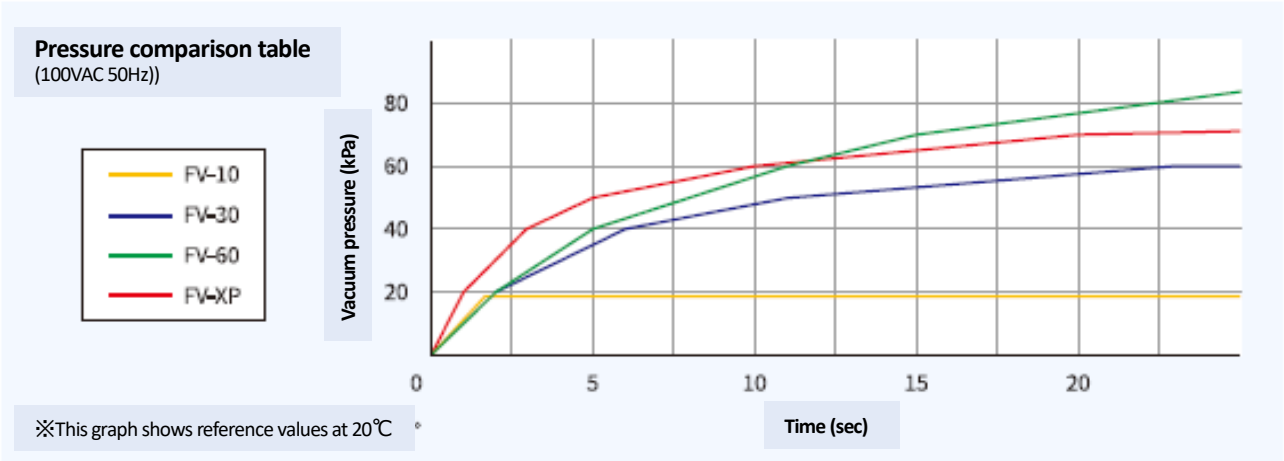
List

Type	For micro parts	General purpose	High vacuum	High flow	Suction/discharge
Code No.	FV-10	FV-30	FV-60	FV-XP	FV-W
Rated voltage	100VAC				
Power consumption	5.0W		10.0W		5.0W
Attained suction pressure ※1	< -3 ~ -14kPa ※2	< -50kPa	< -85kPa	< -60kPa	< -40kPa
Flow rate ※1	2.8L/min	2.5L/min	2.5L/min	5.0L/min	2.3L/min
Discharge pressure	---	---	---	---	0 ~ 20kPa ※2
Discharge flow rate	---	---	---	---	0 ~ 2.0L/min
Size (mm)	155 x 72 x 61	137 x 88 x 85	137 x 88 x 133	137 x 88 x 133	137 x 88 x 91
Weight (g)	600	800	1250	1250	800
Duration	> 9000 hours				
Use limit temperature	Max. 40°C				

※When storing in a place with low room temperature, please operate for about 10 minutes without load prior to use.
※Data in each table are domestic specifications.
※1 Flow rate and attained suction pressure values for each pump are indicated for 50 Hz. When used at 60 Hz, it is reduced by approximately 20%.
※2 Variable with the dial on the body

⚠注意 **Suction of corrosive gas, organic solvent, liquid, use of exhaust, disassembling and impact cause malfunction. In this case, please understand that we do not assume any and all responsibility. In the event of failure, please send it back to the maker.**

Pressure comparison table of FV



● Catch & release vacuum wand

When transporting the minute object, it is common for the object to become stuck at the tip of the adsorption part due to moisture in the air or static electricity.
After all, there are many cases where the work efficiency may be hindered by applying impact to drop it.
It is "catch & lease vacuum wand" utilizing blowout function that can solve such problems.

• Specification of catch & release vacuum wand

The catch & release vacuum wand consists of a set of vacuum pump FV-W, vacuum wand C/F007, and dedicated dual-pipe tubing.

Feature of pump

There is no need to provide separate pumps for suction and discharge; one system serves both purposes, making it possible to create a compact body.
The two circuits for suction and discharge are connected to a single connector (dual piping), making it possible to suction and discharge using only one tube.

Feature of vacuum wand (conductive only)

The main body is made of conductive nylon resin covering fluorocarbon resin valve, making it ideal for ultra-minute object susceptible to static electricity. (system specific resistance value $10^6\Omega$)

Code No.	Conductive FV-W	FV-W
Name	Conductive FV-W pump for both suction and discharge	FV-W pump for both suction and discharge
Rated voltage	100VAC	
Power consmp.	5.0W or less	
Suction pres.	-33 kPa	
Discharge pres.	0～13 kPa	
Flow rate	2.3L/min (at no-load)	
Size (mm)	L137 x W88 x H85	
Weight (g)	800	
Durability	9000 hours or more	
Accessories	Earth (#859) Conductive dual piping tube (#819)  Length : 1.5m	Dual piping tube (#820)  Length : 1.5m

※1 Flow rate and attained suction pressure values for each pump are indicated for 50 Hz. When used at 60 Hz, it is reduced by approximately 20%.

※This data is domestic specification.

Option

Options for vacuum wand, manual wand, and small size vacuum pump are shown here in below.
We offer options that match the functions and characteristics of each product, as well as options that suit the customer's situation, and other products that are "Wow, that's convenient!"

Option for vacuum wand

● Stand for conductive vacuum wand

※All components are conductive.

677
For C001, C003

678
For C001, C003

679
For C002, C007, F002, F007

680
C002, C007, F002, F007

※Code Nos. 677, 679 can be fixed with double-sided tape (conductive) and M4 screws.

Code No.	Name	Material	Size (mm)	Weight (g)	Compatible body code			
					001	002	003	007
677	Wall-mount type stand (w/tape)	Conductive nylon	W85xL40xH50	37	●		●	
678	Desk-top type stand		W120xL150xH95	110	●		●	
679	Wall-mount type stand for C/F002 (w/tape)		W84xL40xH55	36		●		●
680	Desktop type stand for C/F002		W120xL50xH95	105		●		●

● Stand for vacuum wand

651
For C001, C003

652
for C001, C003

658
For C002, C007, F002, F007

659
For C002, C007, F002, F007

601

602

679, 680, 658, 659 Common specification

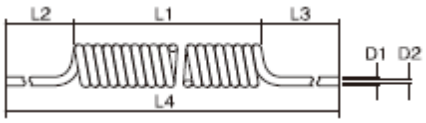
By inserting C002 body, button is pushed and suction is shut off to prevent air waste.

Code No.	Name	Material	Size (mm)	Weight (g)	Compatible body code			
					001	002	003	007
651	Wall-mount type stand (with tape)	Holder : Cond nylon Pedestal : Acrylic	W85xL40xH50	40	●		●	
652	Desktop type stand		W120xL150xH90	106	●		●	
658	Wall-mount type stand for C/F002 (w/tape)		W85xL40xH55	51		●		●
659	Desktop type stand for C/F002		W120xL50xH92	110		●		●
601	Wall-mount type stand (with tape)	Acrylic	W120xL40xH35	55				
602	Desktop type stand		W100xL60xH133	115				

Tube and cable-related

Conductive spiral tube

Code No.	Name	Material	Size (mm)						Weight (g)
			01	02	L1	L2	L3	L4	
677	Conductive spiral tube	Conductive polyurethane elastomer	6	4	500	400	1000	1900	118
678			5	3	500	400	1000	1900	84



Conductive PVC tube

Code No.	Name	Material	Size (mm)	Weight (g)
677	Conductive PVC tube	PVC + SUS + conductive nylon	1500	30

※Dedicated for connection of our vacuum wand and vacuum pump
※For connection of our products only.

Dedicated fitting for conductive PVC tube

Code No.	Name	Material	Size (mm)
852-1	Dedicated fitting for conductive PVC tube	Conductive nylon	60

※Dedicated for connection of our vacuum wand and vacuum pump
※For connection of our products only.

Earth set

Code No.	Name	Material	Size (mm)
858	Earth set	Conductive straight tube (5*3)	1000
		Earth wire	1500

Portable tip inspector

Code No.	Name	Material	Size (mm)	Weight (g)
901	Portable tip inspector	Tips stage : PPS	W90xL120xH1445	30

Capable of checking leak that occurs on the tip when using wand.
Lightweight and compact for easy to carry, so it can be used anywhere.
※This is an instrument for measuring guideline and is not subject to “calibration”.
※Impact is strictly forbidden for precision instrument!

Option for manual wand

● Desktop stand

Code No.	Name	Material	Size (mm)	Weight (g)
670	Desktop stand	Acrylic	W120 x L80 x H170	151

※Compatible with lever-lock type

Option for small size vacuum pump

● Buffer for pump

Code No.	Name	Material	Size (mm)	Weight (g)
700	Buffer for pump	Acrylic	Φ80 x H109.5	330

This is the tank to prevent water from entering the pump.
Usable to transport wafer and adsorbed object on which water is adhering.
※Not usable for catch & release vacuum wand.
※Capacity : 127CC (up to drain line)

● Filter

• HEPA filter kit (FV-XP)

Code No.	Size (mm)	Weight (g)
807	----	----

• HEPA filter kit (FV-30/60)

Code No.	Size (mm)	Weight (g)
808	----	----

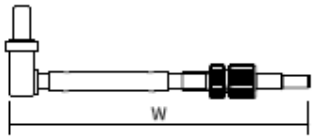
• Dedicated filter for FV-10

Code No.	Size (mm)	Weight (g)
809	Φ24 x H59	8.6

※Dust can be collected by connecting filter.

Joint

For joint dimension, please refer to the symbols in the right dimension drawing and the values in the table.



L-shaped joint with tube therein for FV-30/60 pump

Code No.	Compatible pump code	Size (mm)	Weight (g)
703	FV-30, FV-69	Tube : Φ3*5 1m L-shape : W98	----

L-shaped joint for FV-30/60 pump

Code No.	Compatible pump code	Size (mm)	Weight (g)
703-1	FV-30, FV-60	W98	**4.2**

L-shaped joint for FV-XP pump

Code No.	Compatible pump code	Size (mm)	Weight (g)
703-2	FV-XP	W98	3.8

Manufacturer

Fluoro Mechanic Co., Ltd.

〒132-0035　7-2-1 Hirai, Edogawa-ku- Tokyo
TEL : 03-318-0368　FAX : 03-3618-0380

https://www.fluoro.jp

Distributer

Dainichi Shoji K.K.

Head Office　〒108-0023 4-15-33 Shibaura, Minato-ku, Tokyo
Shibaura Shimizu Bldg.
TEL : 03-3452-7211　FAX : 03-3452-1630

Kyushu Sakes Office　〒860-0801 4-19 Ansei-machi, Kumamoto-shi, Kumamoto Prefecture
M10 Bldg.
TEL : 096-326-2566　FAX : 096-326-5302

Osaka Sakes Office　〒550-0002 1-2-11 Edobashi, Nishi-ku, Osaka-shi, Osaka Prefecture
Daido-seimei Minami-kan
TEL : 06-6441-1969　FAX : 06-6441-1950

Sendai Sales Office　〒981-3133 1-40-8 Izumi-chuo, Izumi-ku, Sendai-shi, Miyagi Prefecture
North Bldg.
TEL : 022-773-4970　FAX : 022-773-4973

※The measured values in this catalog are for reference only. They may vary depending on the customer's use environment and are not guaranteed.
※Please note that the specifications may be changed without notice for the purpose of product improvement.
※All products listed in this catalog are of domestic specifications.