

Wafer Handling Product Catalog



Vacuum Wand

Release Vacuum Wand

Bernoulli Chuck
BC Series

Small diaphragm vacuum pump
FV Series

Manual Wand



Product list

Vacuum Wand | Guarantee reliability for a long time

Realized improvement of work efficiency in wafer process

- Finely processed proprietary valve structure guarantees the stable performance for a long time in repetitious work to chuck and instantaneously release wafer.
- Mirror finished valve inside of wand exhibits superior airtightness and durability. Minimized particle generation when opening/closing button.
- Minimized exposure of metal part for safe handling.
- Chucking tip has highly mirror finished having surface prevents particle generation and maintains stable chucking surface precision even in use for a long time.
- The body is connected to tube by connector and so it is easy to remove from the tube.



Release Vacuum Wand | Propose new form of transfer

Vacuum Pump FV-W & Vacuum Wand

It's common for the conventional vacuum wand to chuck and transfer. Fluoro Mechanic added the blow-out function to securely place work in place.

Conductive for effective antistatic measures.

Vacuum Pump FV-10 & Vacuum Wand

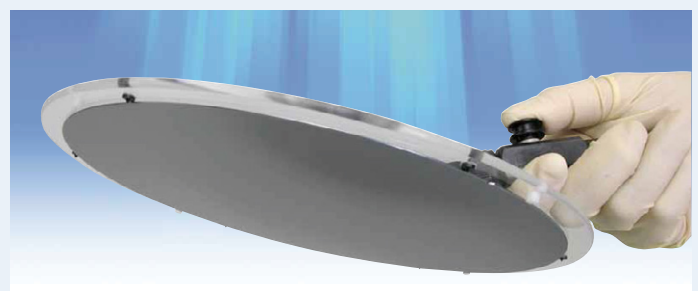
Vacuum wand for transfer of small parts.



Bernoulli Chuck BC Series | For wafer transfer

Wrap with air and transfer gently

Bernoulli chuck generates highly strong suction power by jetting air utilizing the Bernoulli law. Wafer point-contacts the surface edge of Bernoulli chuck and is transferred by the stable holding power without rotating in non-contact condition at the wafer central part. It is designed usable for each wafer size with only a single body.



Small diaphragm vacuum pump FV Series | Easily usable but high performance

Proud of clean, noise reduction design

- Compact and high vacuum pressure
- Long service life and maintenance-free
- Clean discharge
- Noise reduction design for excellent calmness
- Flexible specification
- Cost performance



Manual Wand | Highly enhanced work efficiency

Manual Wand (Lever-Lock Series)

- Utilizing leverage, stable pinching force is sustained with less power.
- Release from labor to keep holding unlike manual wand.
- 2-point contact of pinching face minimizes contamination to wafer.



Manual Wand (L Series)

- 2-point contact minimizes contamination to wafer.
- Eliminates the potential of damage to wafer unlike conventional metal tweezers.
- Proprietary wafer stopper minimizes contact to wafer.



Manual Wand for High Temperature Application (H Series)

- Developed the method to securely bond SUS304 to Vespel. Thus, made pinching part thinner to prevent contact the adjoining wafer.
- Stable performance even under high temperature (288°C). And effective to prevent particle generation.



Transfer by power of the air **Fluoro Mechanic**



Wafer Handling Tools

Conductive C Series

Vacuum Wand

Chemical resistant F Series

Promise reliability for a long time

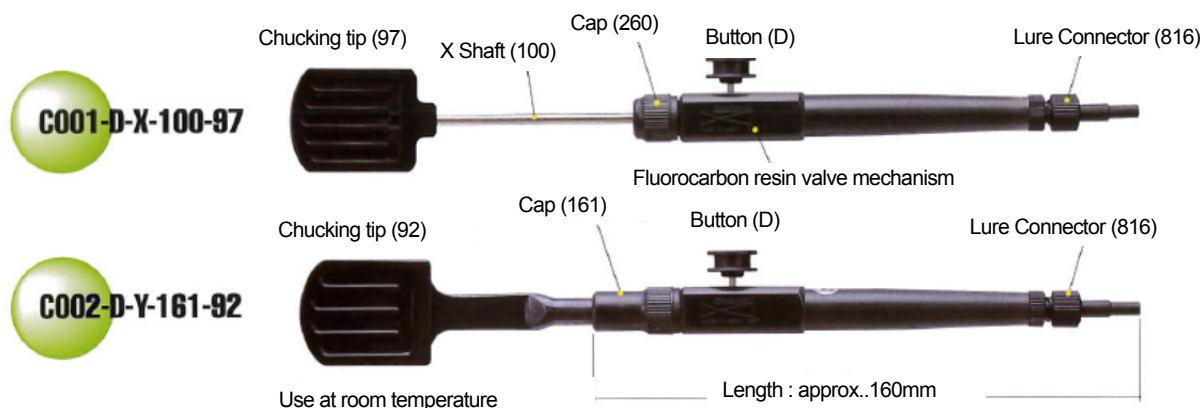
Realized improvement of work efficiency in wafer process

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- The body is connected to tube by connector and so it is easy to remove from the tube.

Conductive

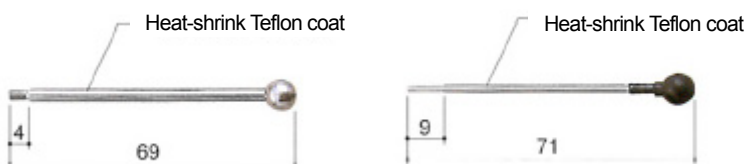
Vacuum Wand C Series

- Material of the body is Nylon resin blended carbon fiber (TORAYCA) having superior physical properties and conductivity. The valve part is made of fluorocarbon resin and covered by Nylon blended carbon fiber by the unique molding method without impairing airtightness. Therefore, similarly to the conventional F series, the nimble opening/closing of valve is possible. (Patented)
- Resistivity of the nylon connector connected to the rear part of the body is $10^{6\pm2}$.
- Chuck tip is made of conductive PEEK blended carbon fiber having superior chemical resistance, heat resistance and resilience, heat-treated and mirror-finished after machining, thus maintains the stable performance even in use for a long time.
- Tips are selectable in various sizes corresponding to each wafer size.



Shaft and Cap

- 100 Screw-on type X shaft 106 Conductive push-on X shaft 161 Conductive Y type cap 260 Conductive X type cap



816
Conductive
lure connector

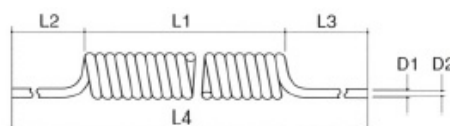
Assemble/disassemble by hand. Do not use tool.

Code No.	Description	Material	Compatible Tip Code												Connection	
			90	91	92	95	96	97	98	99	64	67	68	69	X	Y
100	Screw-on X shaft	SUS						●							●	
106	Cond push-on X shaft	SUS + cond. Nylon				●	●								●	
161	Conductive Y type cap	conductive Nylon	●	●	●				●	●	●	●	●	●		●
260	Conductive X type cap	conductive Nylon				●	●	●							●	
816	Cond lure connector	conductive Nylon														

Conductive Spiral Tube



Code No.	Description	Material	Size (mm)						Weight (g)
			D1	D2	L1	L2	L3	L4	
851-L	Conductive Spiral Tube	Conductive polyurethane elastomer	6	4	500	400	1000	1900	118
851-M			5	3	500	400	1000	1900	84

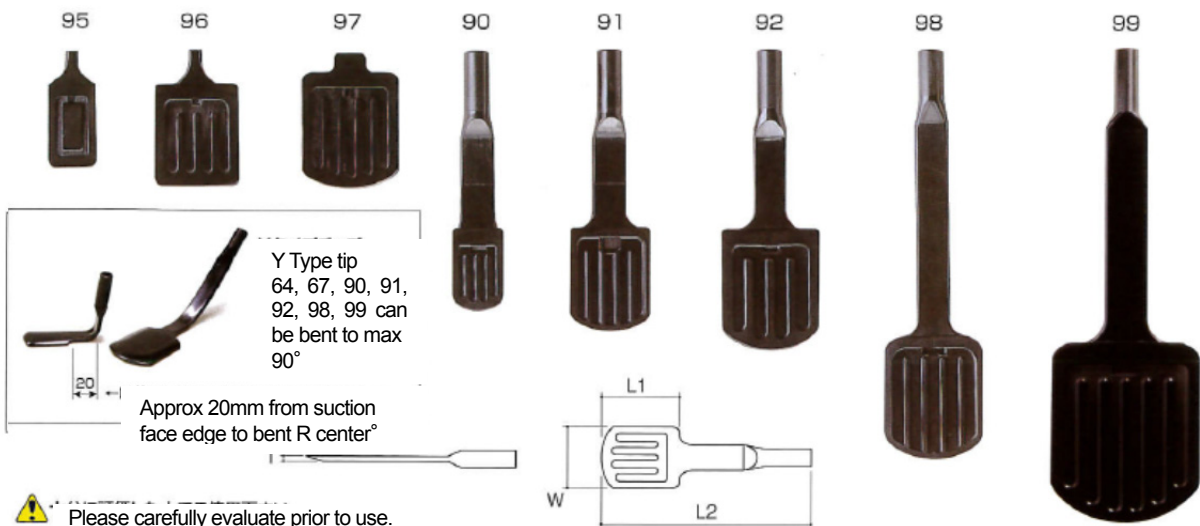


Conductive PVC Tube



No.	Description	Material	Size (mm)	Weight (g)
852	Conductive PVC tube	PVC+SUS+conductive Nylon	1500	30

Wafer Chucking Tip



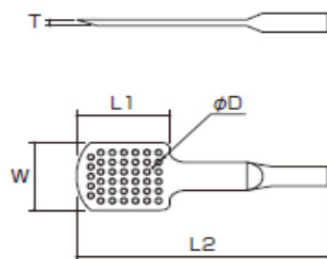
Please carefully evaluate prior to use.

Code No.	Description	Material	Shaft		Cap		Size (mm)			
			100	106	161	260	T	W	L1	L2
90	Conductive Y type tip for 5"	Conductive PEEK			●		2.7	16	26	82
91	Conductive Y type tip for 6"				●		3	26	33	89
92	Conductive Y type tip for 8"				●		3	32	39	95
95	Conductive X type tip for 5"			●		●	2.7	15	27	37
96	Conductive X type tip for 6"			●		●	3	27	32	43
97	Conductive X type tip for 8"		●			●	3.7	31	37	43
98	Conductive Y type tip for 8"				●		3.5	31	39	129
99	Conductive Y type tip for 12"				●		3.5	48	58	148

Ideal for handling thin and fragile wafer!

Conductive Porous Tip ● Ideal for reducing stress in handling compound semiconductor and thin wafer.
Nimble chucking and release response.

No.	Description	Material	Cap	Size (mm)				
			161	T	W	L1	L2	φD
64	Conductive porous tip for 3" - 5"	Conductive PEEK	●	2.7	16	26	82	0.8
66	Conductive porous tip for 8" - 12"		●	3.5	48	58	151	0.8
67	Conductive porous tip for 6" - 8"		●	3.5	31	39	129	0.8

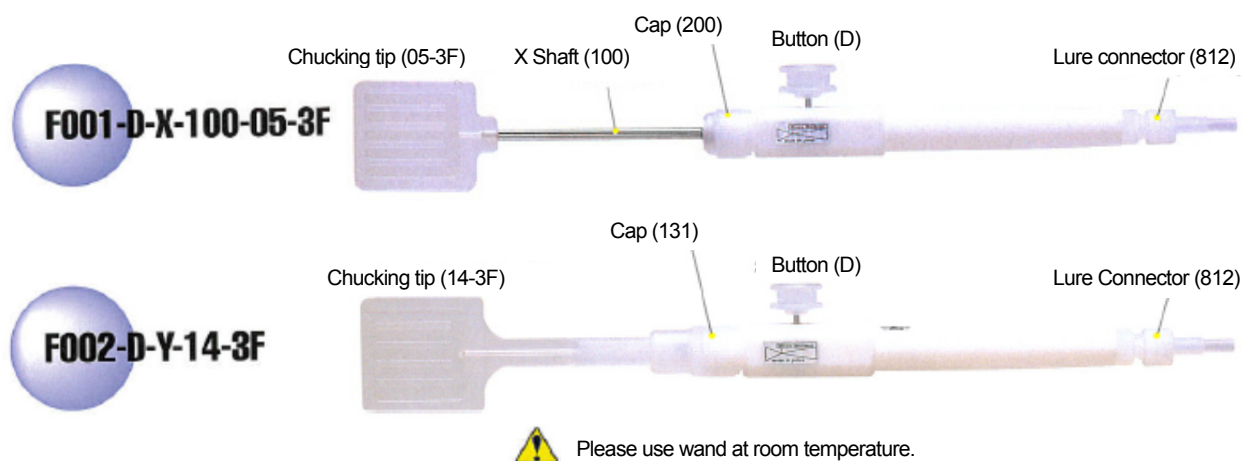


This is made for silicon wafer.
Please carefully evaluate prior to use.

Chemical resistant

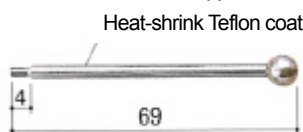
Vacuum Wand F Series

- The material of the body is fluorocarbon resin (4F-PTFE/3F-PCTFE). Precise process combining the superior properties of this material promises stable performance such as airtightness, durability for a long time.
- Chucking tip is made of 3F-PCTFE / PEEK / Vespel superior in chemical resistance, heat resistance, mechanical strength, heat-treated and mirror-finished after machining and maintains stable performance even in use for a long time.
- Chucking tip is selectable in various sizes and materials corresponding to each wafer size.

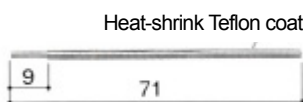


Shaft and Cap

100 Screw-on type X shaft



110 Push-on Z shaft



130-0/1

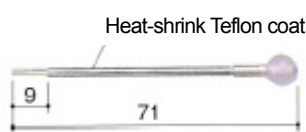
Collet chuck



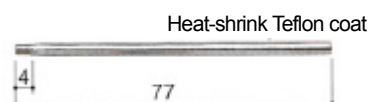
131

Y cap

101 Push-on X shaft



111 Screw-on type Z shaft



200

X-Z cap



812

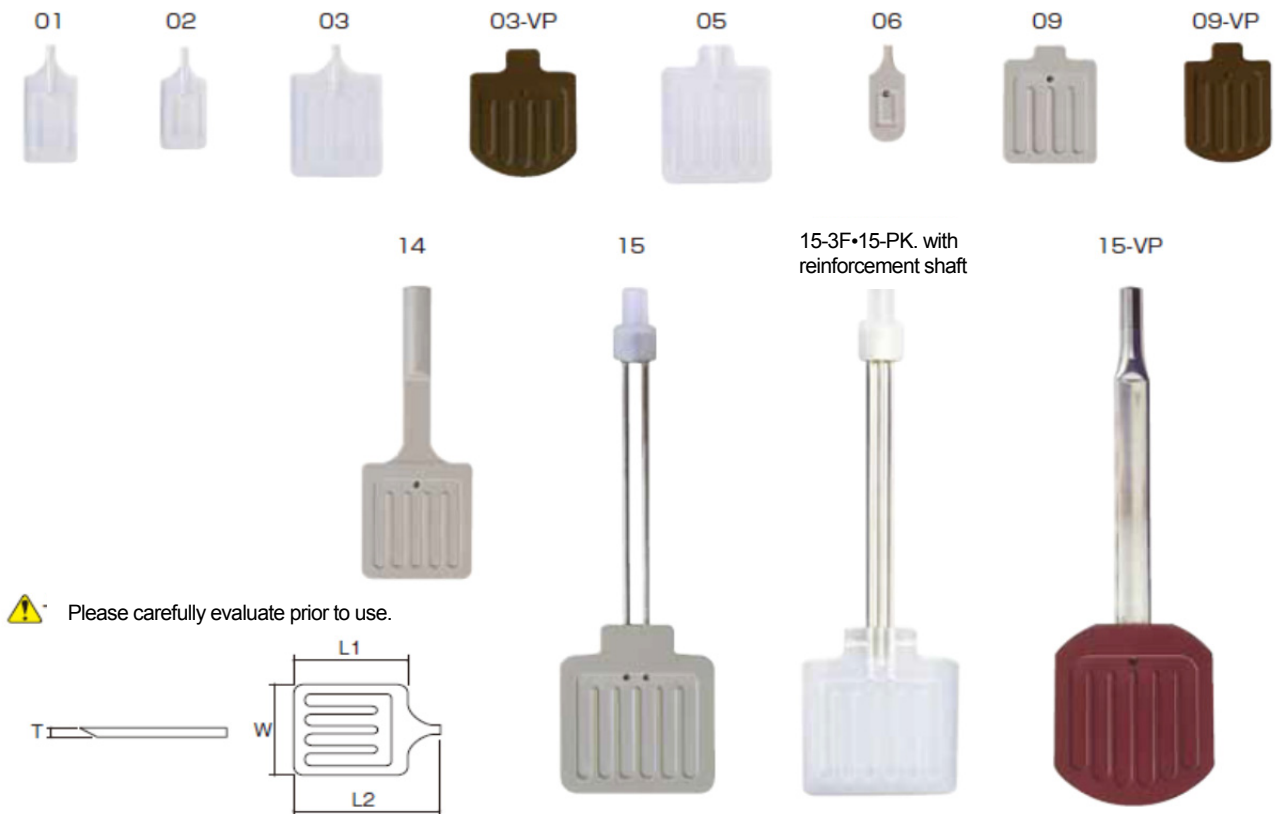
Lure connector

201

Ball seat

[illegible]

Wafer Chucking Tip



Code No.	Description	Material			For X Shaft		For Z Shaf		X•Z type Cap	Y type cap	Size (mm)			
		3F	PK	VP	100	101	110	111	200	131	T	W	L1	L2
01	X•Z type tip for 5"	●	●	●		●	●		●		2.7	15	26	35
02	X•Z type tip for 5"	●	●	●		●	●		●		2.7	13	21	30
03	X•Z type tip for 6"	●	●			●	●		●		2.7	26	31	40
03	X•Z type tip for 6"			●		●	●		●		2.7	30	31	38
05	X•Z type tip for 8"	●	●	●	●			●	●		3.8	31	35	41
06	X•Z type tip for 4"	●	●	●		●	●		●		2.6	10	21	30
09	X•Z type tip for 6"	●	●		●			●	●		3.8	26	31	37
09	X•Z type tip for 6"			●	●			●	●		3.8	26	33	38
14	Y type tip for 8"	●	●							●	3.1	31	34	86
15	Y type tip for 12"	●	●							●	3.5	47	55	162
15	Y type tip for 12"			●						●	3.0	51	61	180

Chucking Tip material sample



Information of material used for vacuum wand

4F-PTFE : Superior in chemical resistance, heat resistance and lubricity

3F-PCTFE : Less heat resistance and chemical resistance than PTFE, but Superior in mechanical Strength

PK-PEEK : Superior in chemical resistance, heat resistance and mechanical strength, but attacked by concentrated sulfuric acid

VP : Polyimide, DuPont's Vespel : Highest heat resistance in all resins, but affected by alkali

Conductive nylon : Nylon 6 blended carbon fiber offers conductivity and tenacity, but affected by alkali

Conductive PEEK : PEEK blended carbon fiber, Superior in chemical resistance, heat resistance and mechanical strength, but attacked by concentrated sulfuric acid

PFA : Fluorocarbon resin having good moldability, and properties comparable to PTFE and PCTFE

SS : Stainless steel (304)

Related Products

All materials of construction are conductive!

●Conductive stand

Wall-mount Type *Fix by double side tape or M4 screw



677
For C001, C003



679
For C002

Table-top Type



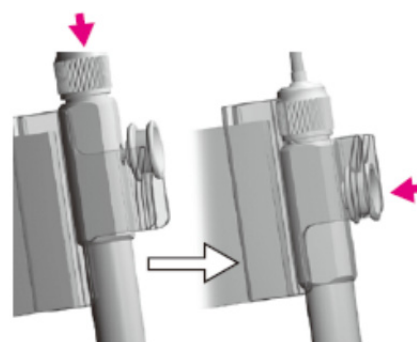
678
For C001, C003



680
For C002

Code No.	Description	Material	Body code		
			001	002	003
677	Wall mount type stand (with tape)	Conductive nylon	●		●
678	Table-top stand		●		●
679	Wall mount type stand for C•F002 (with tape)			●	
680	Table-top stand for C•F002			●	

679, 680, 658, 659
Common Specifications



Inserting C002 body into stand depresses button, shuts off and prevents waste of air

●Stand

Wall-mount Type *Fix by double side tape or M4 screw



651 For C001, C003

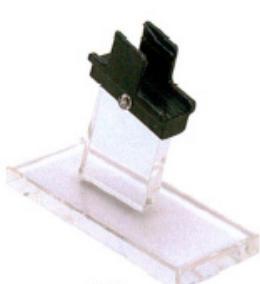


658 For C002, F002

Table-top Type



652 For C001, C003



659 For C002, F002

Wall-mount Type

*Fix by double side tape or M4 screw



601

Table-top Type



602

Code No.	Description	Material	Body Code		
			001	002	003
651	Wall mount type stand (with tape)	Holder : Conductive nylon Base : Acrylic	●		●
652	Table-top stand		●		●
658	Wall-mount type stand for C002•F002 (with tape)			●	
659	Table-top stand for C002•F002			●	
601	Wall mount type stand (with tape)	Acrylic	●	●	●
602	Table-top stand		●	●	●

Related Products

- Portable Tip Inspection Unit
- Inspect leak on tip when using wand.
- Light weight compact size. Usable anywhere.
- Body size : W60xL120xH45 (MM)
- Weight : 350g



901



Precision Instrument. No impact!

※This gives rough estimate. Not product to be calibrated.

Compact•High-Power

- Lever-lock Manual Wand / Manual Wand
 - 2-point contact with wafer surface. Min. wafer contamination
 - Unique wafer stopper minimizes contact with wafer.
 - Adhesive• metal free body washable and always kept clean.
- *Detailed catalog available.

Lever-lock Series



Manual Series



Small-size Diaphragm Vacuum Pump FV Series

- Diaphragm depressurizing structure makes compact body and high vacuum pressure available.
- Long service life to theoretical value of durability of diaphragm.
- HEPA filter for air intake and exhaust allows to use even in cleanroom.
※FV-10 does not have HEPA filter.
- Operating sound is very quiet due to the airtight body construction.
- Usable anywhere if 100V outlet is available.
- Provides superior performance in reliability, service life and power consumption.
※Separate detailed catalog available.

FV-10



Suction pressure variable by dial of the body.

FV-30



FV-60



FV-XP



Specifications

Type	For micro parts	General purpose	High vacuum	High flow
Part No./Description	FV-10	FV-30	FV-60	FV-XP
Rated voltage	100VAC			
Power consumption	5.0W		10.0W	
Ultimate suction pressure	< -14kPa	< -50kPa	< -85kPa	< -60kPa
Flow rate	2.8L/min	2.5L/min	2.5L/min	5.0L/min
Size (mm)	155 x 72 x 54	137 x 88 x 85	137 x 88 x 133	
Weight (g)	600	800	1250	
Durability	> 9000 hours			
Operation temperature	Max. 40°C			

Fluoro Mechanic
Transfer by power of the air



Release Vacuum Wand

Chucking•Blow-out Transfer System

Vacuum Pump FV-W & Vacuum Wand

It's common for the conventional vacuum wand to chuck and transfer.
Fluoro Mechanic added the blow-out function to securely place work in place.
Conductive for effective antistatic measures.

For transfer of small parts ••• **Vacuum Wand**
Vacuum Pump FV-10 & Vacuum Wand

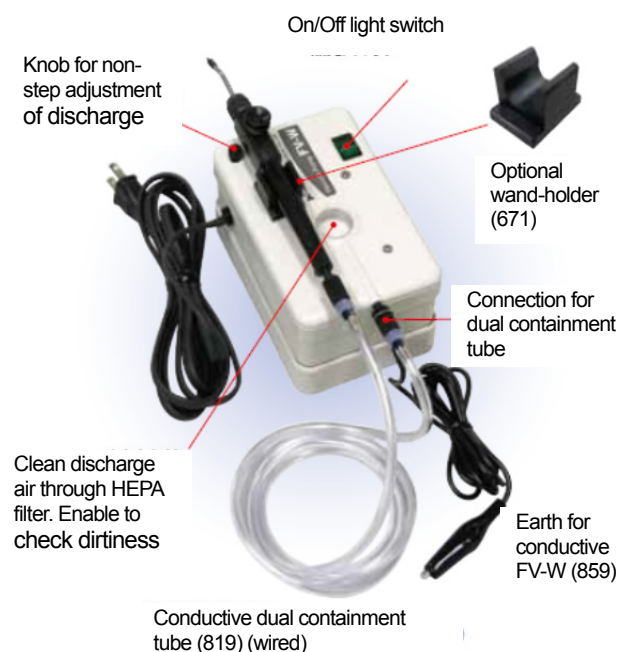


Release Vacuum Wand is • •

While transferring small part, that the object to be transferred does not part from the chucking part end due to airborne moisture or static electricity is often seen. There seem many cases disturbing work efficiency such as eventually applying impact to fall it off. What solves such problems is “Release Vacuum Wand” utilizing the industry’s first blow-out function.



Release Vacuum Wand Specification

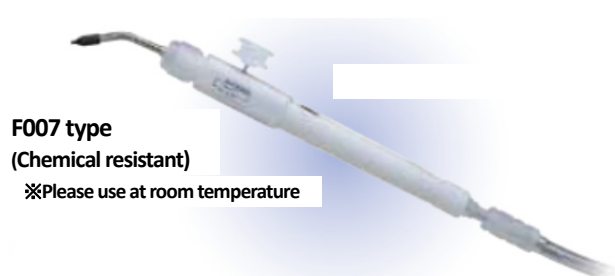
●Composed of a set of vacuum pump FV-W and vacuum wand C007.



Pump

- One compact system for both suction and discharge operations.
- Both suction and discharge are viable with only one dual containment tube.

Part No.	Conductive FV-W	FV-W
Description	Cond. 2-way pump	2-way pump
Rated voltage	100VAC	
Power consmp.	< 5.0W	
Suction pres.	-33 kPa	
Discharge pres.	0~ 13 kPa	
Flow rate	1.3L/min (at no-load)	
Size (mm)	137 x 88 x 85	
Weight (g)	850	
Durability	> 9000 hrs	
Accessories	Earth (859) Cond.dual containment tube (819)	Dual containment tube (820)
		

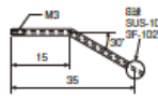


Wand + Attachment Code Description Example

C 007-D-X — 103 — 26 — 0.3

Body Material
F : Teflon
C : conductive Nylon

Angled Shaft
102 : F Series
103 : C Series



Attachment Code
Select according to object to be transferred

Nozzle Tip Size
Select by ID size according to object to be transferred

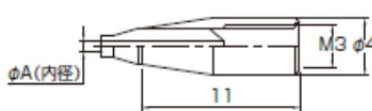
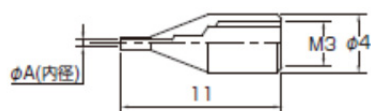
Applicable Nozzle ●Selectable from abundant lineup according to the work shape

※Green part is dedicated to release vacuum wand.



Code	Description	Material	Outside Diameter													Remark
			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	
			Inside Diameter (φA) ※Please order by ID													
			0.05	0.07	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	2.0	2.5	3.0	
21	3F nozzle	3F (PCTFE)					●	●	●	●	●	●	●	●		
22	3F nozzle with cap	3F (PCTFE)			●	●										
23	PEEK nozzle	PEEK				●	●	●	●	●	●	●	●	●		
24	Vespel nozzle	Vespel				●	●	●	●	●	●	●	●	●	Make to order	
25	Cond PEEK nozzle with cap	Cond PEEK			●	●										
26	Cond PEEK nozzle	Cond PEEK					●	●	●	●	●	●	●	●		
28	Cond PEEK nozzle with cap	Conduct PEEK		●												
29	Cond PEEK nozzle with cap	Conduct PEEK	●													
57	Silicone rubber nozzle	Clear silicone rubber + 3F							●	●	●				OD slightly varies due to rubber	
59	Cond Byton rubber nozzle	Cond Byton rubber + Cond PEEK							●	●	●				OD slightly varies due to rubber	
	Custom-made nozzle		Nozzle available according to the objects to be chucked													Make to order

Shape of Code 57, 59



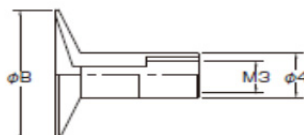
※All nozzles are made by machining.

Applicable Cup (Pad)



Code	Description	Material	Outside Diameter (φB)										Remark
			2.5	3.0	3.5	5.0	8.0	11	15	20	25	30	
41	Silicone rubber pad	Silicone rubber	●	●	●	●	●	●	●				
42	Byton rubber pad	Byton reubber	●	●	●	●	●	●	●				
43	Conductive silicone pad	Silicone rubber + carbon	●	●	●	●	●	●	●				
44	Conductive Byton pad	Byton rubber + carbon	●	●	●	●	●	●	●				
45	Teflon pad	Teflon	●	●	●	●	●	●	●	●	●	●	
47	Complex curved surface chucking pad	Clear silicone rubber			●								

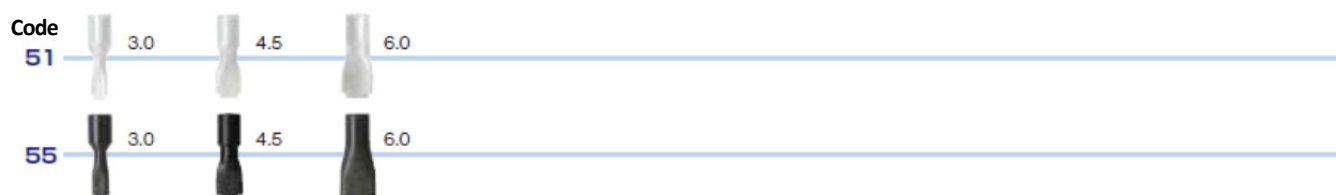
※ID 1.5mm (for 41 ~ 47)



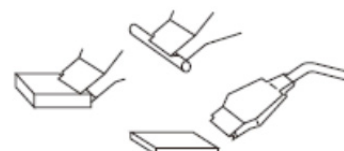
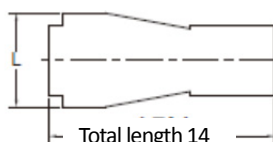
Size φ2.5 ~ 3.5 Shape



Applicable Slit Tip (Edge chucking tip)

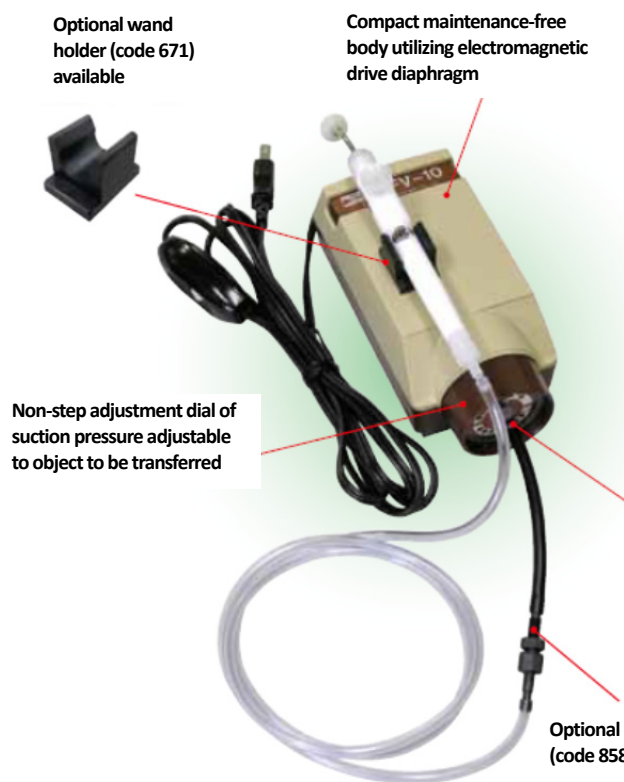


Code	Description	Material	Size L (Length)			Remark
			3.0	4.5	6.0	
51	3F edge chucking tip	3F	●	●	●	
55	Conductive PEEK edge chucking tip	Nano-carbon PEEK	●	●	●	



Vacuum Wand Specification

●Composed of vacuum pump FV-10 and vacuum wand C002/F002



Pump

Vacuum wand is used in extensive market from hobby to industrial use.

- Adopting electromagnetic drive diaphragm, realized quiet operation sound and maintenance-free.

Code	FV-10-110
Description	Vacuum pump FV-10 (with tube)
Rated voltage	100VAC
Power consumption	< 5.0W
Suction pressure	-3~-14kPa (non-step adjustment)
Flow rate	2.8L/min (at no-load)
Size (mm)	155 x 72 x 54
Weight (g)	600
Durability time	> 9000 hours

Optional filter (code 809) available



Wand

C002 type (Antistatic)

- Body with fluorocarbon resin valve covered by conductive nylon resin is ideal for ultra-small parts easy to be affected by static electricity (System resistivity : $10^6 \Omega$)

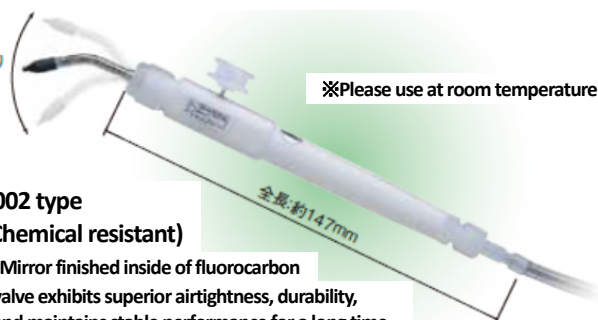


Option : Conductive PVC tube (code 852) (wired) Length : 1.5m

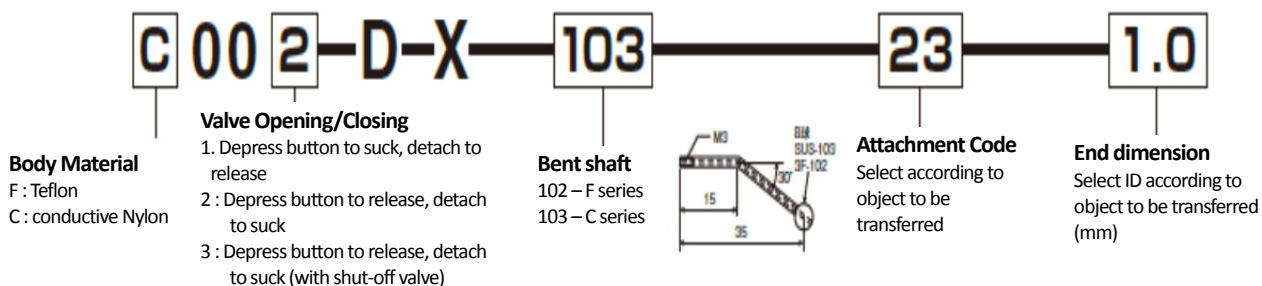
Swing 60°

F002 type (Chemical resistant)

- Mirror finished inside of fluorocarbon valve exhibits superior airtightness, durability, and maintains stable performance for a long time.



Wand + Attachment Code Description Example



Small-size Diaphragm Vacuum Pump FV Series

- Diaphragm depressurizing structure makes compact body and high vacuum pressure available.
- Long service life to theoretical value of durability of diaphragm.
- HEPA filter for air intake and exhaust allows to use even in cleanroom.
- Operating sound is very quiet due to the airtight body construction.
- Usable anywhere if 100V outlet is available.
- Provides superior performance in reliability, service life and power consumption.



FV-30



FV-60



FV-XP

Type	General purpose	High vacuum	High flow
Part No./Description	FV-30	FV-60	FV-XP
Rated voltage	100VAC		
Power consumption	5.0W	10.0W	
Ultimate suction pressure	< -50kPa	< -85kPa	< -60kPa
Flow rate	2.5L/min		5.0L/min
Size (mm)	137 x 88 x 85	137 x 88 x 133	
Weight (g)	800	1250	
Durability	> 9000 hours		
Operation temperature	Max. 40°C		



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

Transfer by power of the air **Fluoro Mechanic**



Wrap with air and transfer gently

For wafer transfer

Bernoulli Chuck BC Series

Bernoulli chuck generates highly strong suction power by jetting air utilizing the Bernoulli law.

Wafer point-contacts the surface edge of Bernoulli chuck and is transferred by the stable holding power without rotating in non-contact condition at the wafer central part.

It is designed so that only a single body is usable for each wafer size.

Please watch video at www.furoro.jp



Feature

- Usable for 2" to 12" wafer by selecting the handle angle of 20, 45 or 90 degree and changing to the guide ring for each wafer size. (As the use angle is the fixed angle, the use angle cannot be changed unless the body is changed.)
- As the guide stopper has gradual taper, it point-contacts the wafer edge.
- The guide ring of ESD safe clear acrylic resin allows visual registration and suction condition check.
- Conductive nylon resin is adopted for the body to make it lighter.
- Capable of handling the thin wafer with printed pattern on both sides and of 50μm in thickness.
- Customized design available for the square or other type object.
- Button or lever switch selectable.

Product Outline

- ◆ Select the body by the use angle of 20, 45 or 90. (See the below picture)
 Usable for various wafers by changing the guide ring. Guide ring is easy to change.



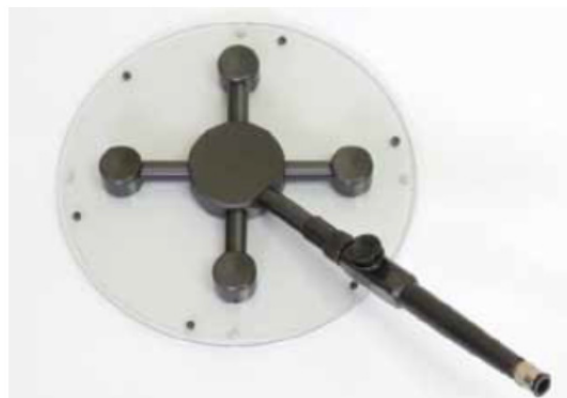
Product Line-up

◆Wide variety of product line-up available for customers' requirements.

For horizontal wafer handling						
Wafer size	2"	3"	4"	5"	6"	8"
Code No.	BC-K2	BC-K3	BC-K4	BC-K5	BC-K6	BC-K8
Material	Body: conductive MC nylon, Guide ring: ESD safe PVC					
Air Pressure (MPa)	0.1		0.15			0.2
Weight	50g	70g	80g	100g	120g	170g
Accessories	Conductive tube 6x4 (1.5m)					
Use angle	20° / 45° / 90°					



For horizontal wafer handling, below 300 micron			
Wafer size	6"	8"	12"
Code No.	BC-K6-300	BC-K8-300	BC-K12-300
Material	Body: conductive MC nylon, Guide ring: ESD safe PVC		
Air Pressure (MPa)	0.15	0.2	0.3
Weight	170g	220g	430g
Accessories	Conductive tube 6x4 (1.5m)		
Use angle	20° / 45°		



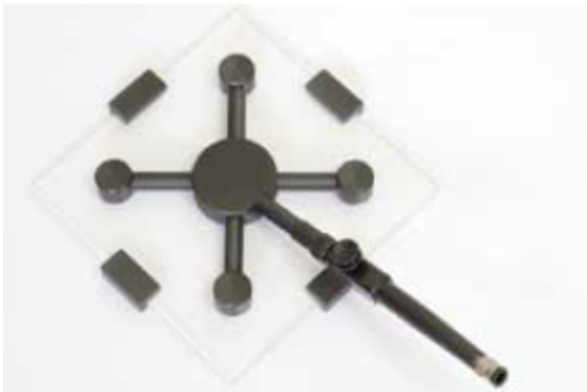
For Protos Carrier, below 300 micron			
Wafer size	6"	8"	12"
Code No.	BC-P6-300	BC-P8-300	BC-P12-300
Material	Body: conductive MC nylon, Guide ring: ESD safe PVC		
Air Pressure (MPa)	0.15	0.2	0.3
Weight	180g	240g	450g
Accessories	Conductive tube 6x4 (1.5m)		
Use angle	45°		



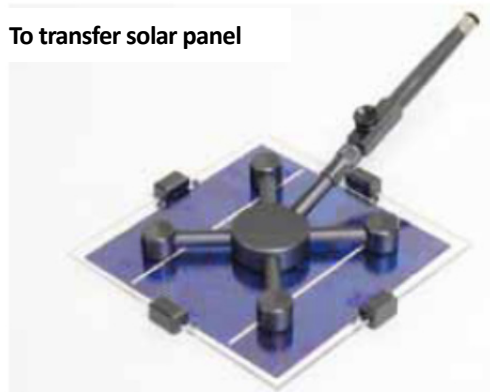
Option

◆ Various options available for making Bernoulli Chuck BC Series more user-friendly.

● **Guide Ring for square substrate** ※ Customized for desired size.



To transfer solar panel



● **Dedicated filter**

Filter for Bernoulli chuck with soft stopper.



● **Dedicated stand**

For Bernoulli chuck for
2"~4" (Button type)
Code No. : 678



For Bernoulli chuck for
vertical and horizontal
carrier and for 2"~12"
wafer (Button
type)
Code No. : 699



For Bernoulli chuck for vertical
and horizontal carrier
(Lever type)
Code No. : 698



Transfer by power of the air

Fluoro Mechanic



Easily usable but high performance

Proud of clean, noise reduction design

Small diaphragm vacuum pump

FV Series

- FV-10
- FV-30
- FV-60
- FV-XP

Active in various markets
In semiconductor process - -
For medical appliances - -
In food manufacturing process- -

**Popular in micro parts
transfer system**



With Suction/discharge function
Vacuum pump FV-W
Please use with vacuum wand

Small Diaphragm Vacuum Pump

10 • 30 • 60 • XP

FV Series

Concept derived from silent operation sound

Light switch enables to visually check ON/OFF (excl. FV-10)

● Compact and high vacuum pressure

Diaphragm is installed in airtight space, which enables multistep decompression. Realized compact body with the mechanism to obtain high vacuum pressure.

● Long service life and maintenance -free

Less mechanical abrasion and contact by electromagnetic drive. Maintenance is almost unnecessary. Long service life usable to theoretical value of durability of diaphragm.

● Clean discharge

HEPA filter for air intake and exhaust allows to use even in cleanroom. Filter is visible through clear window of the body, which tells replacement time. (excl. FV-10)

● Noise reduction design for excellent calmness

Operating sound is very quiet due to the airtight body construction. Compared with motor-drive type, no mechanical contact sound and calmness is maintained.

● Flexible specification

No need of air source such as compressor, so usable anywhere if 100V outlet is available. Combining with our vacuum wand expands use purpose.

● Cost performance

Simplified construction promises superior reliability, service life, power consumption compared with comparable vacuum pump. Inexpensive price can be offered.



FV-10



FV-30

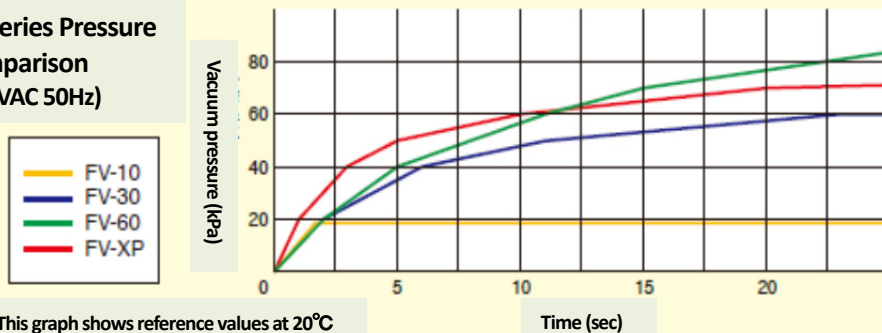


FV-60



FV-XP

FV Series Pressure Comparison (100VAC 50Hz)



This graph shows reference values at 20°C

Time (sec)

Specifications

Type	For micro parts	General purpose	High vacuum	High flow
Part No./Description	FV-10	FV-30	FV-60	FV-XP
Rated voltage	100VAC			
Power consumption	5.0W		10.0W	
Ultimate suction pressure	-3 ~< -14kPa	< -50kPa	< -85kPa	< -60kPa
Flow rate	2.8L/min	2.5L/min	2.5L/min	5.0L/min
Size (mm)	155 x 72 x 54	137 x 88 x 85	137 x 88 x 133	
Weight (g)	600	800	1250	
Durability	> 9000 hours			
Operation temperature	Max. 40°C			



Suction of corrosive gas, organic solvent, liquid, disassembling and impact cause malfunction.

In this case, we do not assume any and all responsibility.

In the event of failure, please send it to the maker.

Conductive Lever-Lock Series Debut!

For wafer handling tool - - -

Extreme care is necessary for wafer handling. Scratch and stain, etc. are one of factors to be paid most attention while handling. Our manual wand is the product having new mechanisms for smooth and secure handling. Lever-lock type ensures stable handling by constant pinching force when locked, and enhances work efficiency.

Lever-Lock Type Manual Wand

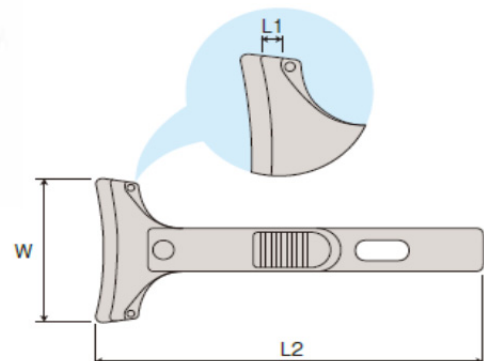
Lever-Lock Series / Conductive Lever-Lock Series

PAT.P

- Utilizing leverage, stable pinching force is sustained with less power.
- Lock mechanism only requires the force to support the weight of wafer after pinching.
- Release from labor to keep holding unlike manual wand.
- Ensures stable gripping and safe and efficient handling.
- 2-point contact of pinching face minimizes contamination to wafer.
- Made of PEEK having superior strength, heat resistance and chemical resistance.
- Conductive lever-lock series is made of conductive PEEK blended with nano-carbon. Effective as antistatic measures for wafer handling.

Code	Description	Material	Size (mm)			Weight (g)
			W	L1	L2	
M100-150L	6" lever-lock manual wand	PEEK	40	3	185	71
M100-200L	8" lever-lock manual wand		55	3	180	72
M100-300L	12" lever-lock manual wand		75	8	180	77
E100-150L	6" conductive lever-lock manual wand	conductive PEEK	40	3	185	71
E100-200L	8" conductive lever-lock manual wand	conductive PEEK	55	3	180	72
E100-300L	12" conductive lever-lock manual wand	conductive PEEK	75	8	180	77

*E100 type : PEEK without filler is used for support to strengthen.



This is made for silicon wafer. Please fully evaluate prior to use.

Manual Wand


L Series PAT.P

- 2-point contact minimizes contamination to wafer.
- Eliminates the potential of damage to wafer unlike conventional metal tweezers.
- Proprietary wafer stopper minimizes contact to wafer.
- Adhesive and metal free body can be cleaned and is kept clean.
- Material suitable for application is available.

Code	Description	Material	Size (mm)			Weight (g)
			W	L1	L2	
M100-100	4" Wand	PEEK	16	4	146	30
M100-125	5" Wand		32	5	148	31
M100-150	6" Wand		37	6	147	31
M100-200	8" Wand		37	8	147	32
M110-100	4" Wand	PPS	16	4	146	31
M110-125	5" Wand		32	5	148	32
M110-150	6" Wand		37	6	147	33
M110-200	8" Wand		37	8	147	33
E100-100	4" Wand	conductive PEEK	16	4	146	31
E100-125	5" Wand		32	5	148	33
E100-150	6" Wand		37	6	147	34
E100-200	8" Wand		37	8	147	34

*PEEK (polyether ether ketone)

*PPS (polyphenylene sulfide)

 This is made for silicon wafer.
Please fully evaluate prior to use.



M100-100



M100-125



M100-150



M100-200

Manual Wand for High Temperature Application (made on order)

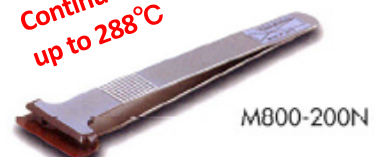
H Series PAT.P

- Developed the method to securely bond SUS304 to Vespel. Thus, made pinching part thinner to prevent contact the adjoining wafer.
 - Stable performance even under high temperature (288°C).
- And effective to prevent particle generation.

Code	Description	Material	Size (mm)			Weight (g)
			W	L1	L2	
M800-200N	6", 8" normal type	Vespel + SUS	35	7	154	47
M800-200S	6", 8" scoop type		35	7	159	47

*Vespel is a registered trademark of U.S. DuPont.

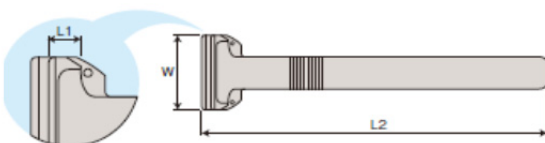
Continuously usable
up to 288°C




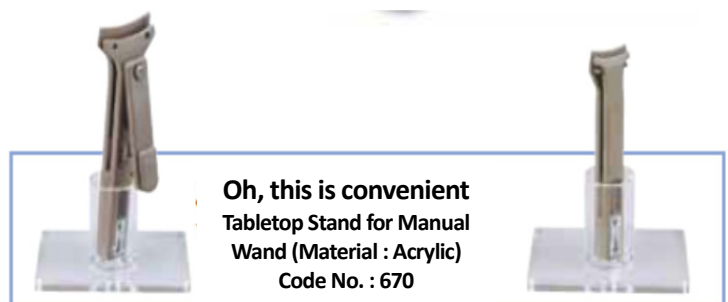
M800-200N



M800-200S



 This is made for silicon wafer.
Please fully evaluate prior to use.



Oh, this is convenient
Tabletop Stand for Manual
Wand (Material : Acrylic)
Code No. : 670