



**Best Suited to Semiconductor Manufacturing
Process for Photoresist Application**

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SB-SH
(SUS, H type)



SB-TV
(PTFE/PFA, V type)

The Iwaki SB series pneumatic drive dispenser suites various applications including photo-resist in semiconductor manufacturing process.

High Accuracy

The SB series dispenser precisely meters/dispenses chemical fluid such as photoresist. Volume per shot is very accurate to ensure the optimal amount of photoresist is applied. Use of an optional suckback prevents dripping from the injection nozzle. There is almost no dead volume in the bellows, so the possibility of solution stagnation is minimized. The sealless and ultra-slow cylinder design allows for low-speed photoresist dosing with less likelihood of trapped air.

Stainless/Fluorine wet ends

Stainless (SUS304) and fluorine (PTFE/PFA) wet ends are available for different liquids and ensure good corrosion resistance and contamination-free delivery. Most suitable for delivery of high resolution/purity photoresist.

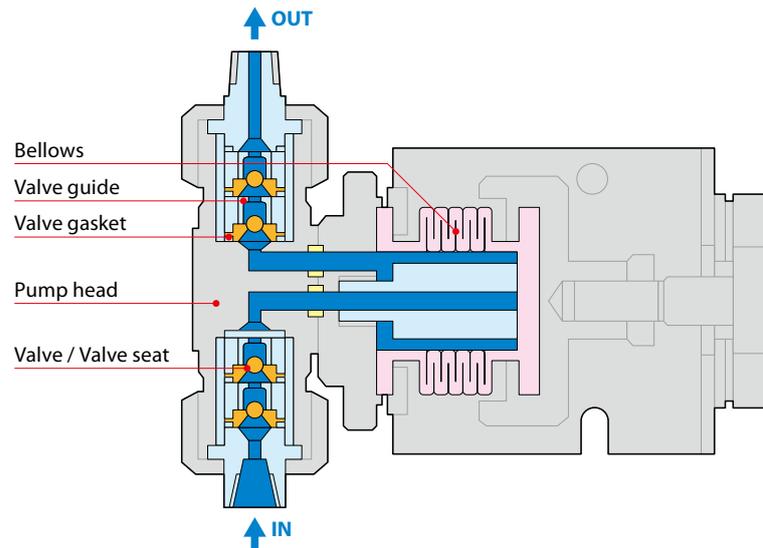
Light and Compact design

The pump can be mounted in both vertical and horizontal directions (except SB-4K/-5/-6), allowing the best system configuration and is compact enough to be fitted in a limited installation space. Also, a mechanical stopper that finely tunes a dosing volume and a position detector that assures correct piston movement in the cylinder are optionally available.

Wet end materials

	S type	T type
Pump head	SUS304	PTFE/PFA
Valve	Hastelloy C276	SiC
Valve seat	SUS304	PCTFE
Valve guide	SUS304	PTFE
Valve gasket		PTFE
Bellows		PTFE

Note: SB-4K, 5 and 6 are only available in S type.



Specifications

Type	Max. discharge capacity (mL/stroke)	Max. discharge pressure (MPa)	Max. stroke length (mm)	Supply air pressure (MPa)	Max. air consumption (NL/stroke)	Pump connection bore		Supply air connection bore
						Suction port	Discharge port	
SB-2	5	0.05	10	0.15 to 0.4	0.02	Rc1/8	R1/8	Rc1/8
SB-3	8		15		0.03			
SB-4	15		25		0.05			
SB-4K		15	0.14					
SB-5	40	0.1	35		0.2			
SB-6	100		40		1.0			

- The value is obtained when pumping clean water at 25 °C.
- Observe the max discharge pressure. Closed-discharge operation will break the limit and cause bellows deformation and performance reduction.
- The value is collected when supply air pressure is 0.3 MPa.

Pump identifications

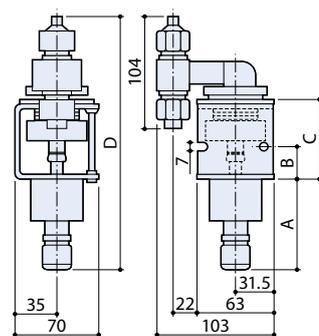
SB - 2 S H - M K - S01

- Series model**
SB series
- Pump size**
(Max. discharge capacity)
2 : 5mL/stroke
3 : 8mL/stroke
4 : 15mL/stroke
5 : 40mL/stroke
6 : 100mL/stroke
- Wet end materials**
S : Stainless steel type
T : Fluoroplastic type
Note: SB-4K/5/6 is S type only.
- Pump setting form**
H : Side form
V : Length form
Note: SB-4K/5/6 is H form only.
- Pneumatic cylinder**
M : With mechanical stopper
ML : With mechanical stopper / switch
Note: SB-4 high viscosity type is M/ML type only.
SB-5/6 is ML type only.
- Liquid viscosity code**
No code : Standard (Max. 150mPa-s)
Note: 'K' : High viscosity type (Max. 500mPa-s)^{Note2}
Note1: K type is SB-4 only.
Note2: 1mPa-s=1cP
- Special code**
No code : Standard
S01/01 : Special order

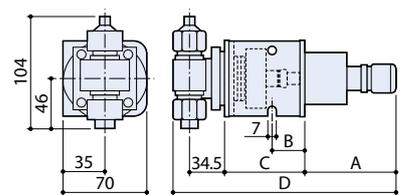
Dimensions (mm)

Type	A	B	C	D	Mass (kg)
SB-2TV	97	25	61	239	1.1
SB-3TV	112	33	73	266	1.2
SB-4TV	142	39	84	307	1.3
SB-2SV	97	25	61	237	1.3
SB-3SV	112	33	73	264	1.4
SB-4SV	142	39	84	305	1.5
SB-2TH	97	25	61	211	1.0
SB-3TH	112	33	73	238	1.1
SB-4TH	142	39	84	279	1.2
SB-2SH	97	25	61	212	1.2
SB-3SH	112	33	73	239	1.3
SB-4SH	142	39	84	280	1.4
SB-4K	130 (MAX)	29	79	260	2.3
SB-5	179 (MAX)	50	100	330	2.7
SB-6	207.5 (MAX)	—	151	417	7.6

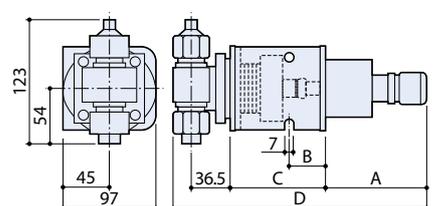
SB-TV/SV (2/3/4)



SB-TH/SH (2/3/4)

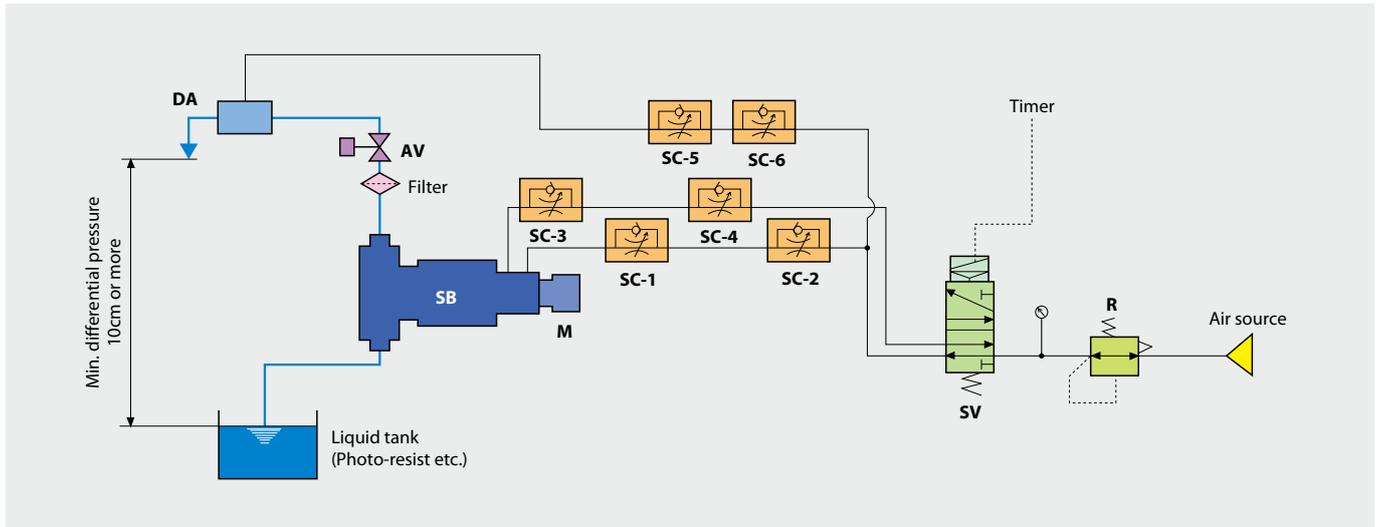


SB-4K/5/6



- SB-2TV to 4SH is size of the ML type.
- SB-4K to 6 is size of the ML/MLK type.

Basic piping diagram



- SB** : SB pump
- M** : Mechanical stopper
- DA** : Suck-back
- SV** : Solenoid valve
- R** : Regulator
- SC** : Speed controller
 - SC-2, SC-3** : For adjusting discharge time of SB
 - SC-1, SC-4** : For adjusting suction time of SB
 - SC-5, SC-6** : For adjusting suck-back time
- AV** : Air operate valve (Shut-off valve)

Size of pump discharge port and suction port

R1/8, Rc1/8, thread (Rc1/4 for SB-6)

Pipe connection

Firmly connect pipes so that air can not be sucked in nor liquid can not leaks. Especially if suction side piping is not perfect, air is sucked in, which may cause decreased pump performance.

Selection of joint and tube

Pay attention to the chemical resistance and pressure resistance of joints and tube when they are selected.

Optional accessory (Suck-back)

The suckback function recovers excess solution (usually in the form of drips) on the tip of the injection nozzle, preventing uncontrolled dripping. Suck-back recovery is performed after completion of each discharge cycle.

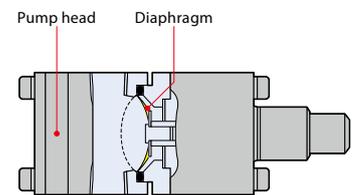
Suckback recovery time is set by speed controller and recovery volume (Max. 0.1mL) by a stopper on the suckback.

Specification

Suck-back capacity	0 to 0.1mL
Control time	Adjustable
Drive power	Compressed air
Supply air pressure	0.15 to 0.2 MPa
Seal method	Diaphragm
Pneumatic cylinder	Single acting type
Stroke adjustment	Manual
Connection bore	Rc 1/8
Supply air connection bore	M5

Wet-end material

Parts	DA-S1	DA-S1-S4
Pump head	PTFE	SUS304
Diaphragm	PTFE	PTFE



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()Country codes

Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly. Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.

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