

*A solution to the problems of continuous cropping,
weeds and pathogens*

Soil Steamer



Improving soil health without chemicals.
Living in harmony with nature

A pioneer of soil disinfection

Faced with the difficulty of farmers to simply and safely deal with pests, we developed a revolutionary method which is now an invaluable and essential element of modern Japanese horticulture.

In 1965 we cooperated with the Shizuoka Prefectural Research Institute of Agriculture and Forestry and JA. Since then we have become the leading supplier to farmers and agricultural businesses all over Japan.



SB-650K type
(self-propelled type)

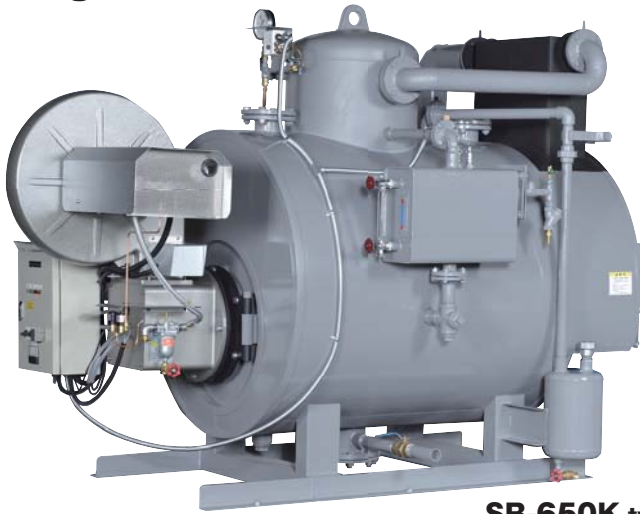
A solution to the problems of continuous cropping, weeds and pathogens

Soil Steamer

Five Benefits

- ▶ Completely non-toxic. Safe for
- ▶ Drastically reduces the number
- ▶ Soil can be used soon after t
- ▶ Effectiveness can easily be c
- ▶ Not only for soils, but can be

Large model SB-650K type



SB-650K type
(stationary type)

Medium model SB-400 type SB-500 type SB-550 type



SB-400 type
(stationary type)

Greenhouse Preparation Procedure



① Lay light hose along center of ridge.



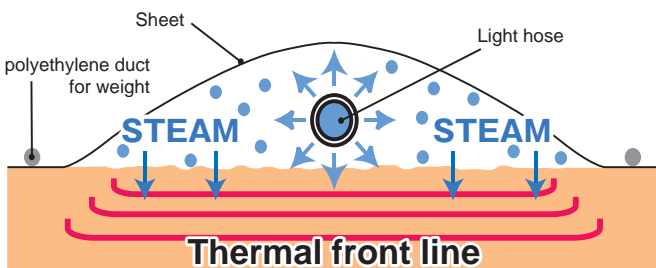
② Cover ground with agricultural polyethylene sheet.



③ Lay polyvinyl tube for weight.



④ Completed preparation.



Lay light hoses on the surface of the soil running along the center of the ridge. Cover with an agricultural polyethylene sheet and weigh it down. Steam is fed into the light hose and is ejected forming a heat front on the surface of the soil. The continuous supply of steam makes the heat front travel down into the soil.

Generally this method is used to treat the whole greenhouse. This technique can be used even for permeable soil containing a lot of organic matter.

It will enable an even temperature distribution and well-treated soil throughout the greenhouse.

High temperature steaming type

List of specifications	Large			Medium				SB-300							
	SB-650K			SB-550			SB-500		SB-400		SB-300				
Equivalent amount of evaporation kg/h 50Hz/60Hz	650			550			500 (60Hz specification)		360/400		270/300				
Maximum pressure used MPa									0.05						
Heat transmission area m ²	3.47			3.47			3.38		3.13						
Boiler application classification	Small Boiler (Certified)														
Power supply V	200V (three-phase)						100V or 200V (three-phase)								
Required power kw 50Hz/60Hz	1.5			0.9			—/0.49		0.49		0.39				
Fuel	Heavy oil A or heating oil														
Fuel consumption l/h	49.6			42.8			—/38.9		28.0/31.1		20.8/22.1				
Control method	ON/OFF automatically controlled (low fire start)														
Safety features	ON/OFF automatically controlled (low water cut-off) / Pressure switch / U-type standpipe														
Installation method	Stationary	Tractor	Self-propelled	Stationary	Tractor	Self-propelled	Stationary	Tractor	Self-propelled	Stationary type	Wheel type	Standpipe type			
External dimensions	Length mm	2,230	3,300	3,100	2,300	3,300	3,160	2,200	3,300	3,060	2,200	3,300	3,060	2,170	2,170
	Width mm	1,430	1,480	1,430	1,360	1,480	1,360	1,360	1,480	1,360	1,280	1,480	1,280	1,140	1,140
	Height mm	1,640	2,260	2,130	1,585	2,205	2,075	1,585	2,205	2,075	1,490	2,110	1,980	1,400	1,610
Product weight kg	711	931	1,238	670	890	1,197	650	870	1,177	631	851	1,158	460	493	
Operating weight kg	1,091	1,311	1,618	1,050	1,270	1,577	1,030	1,250	1,557	961	1,181	1,488	705	738	
Reference	Steaming capability* m ³ /h	8.7			7.3			6.8		4.9/5.4		3.7/4.1			
	Steaming area per hour m ² /h	43 - 58			37 - 49			34 - 45		27 - 36		20 - 27			

※ Assuming soil moisture content of 40%, well-plowed permeable soil, covered with a well-sealed sheet.

● Can be equipped with an (optional) water softening device if needed. ● Requires training prior to use (excluding the SB-200 • SB150). ● Please note that specifications may change without notice.

neighboring crops, nearby livestock and people.
 er of weeds, insects and pathogens.
 eatment.
 nfirming by measuring soil temperature.
 ised on rock wool, pots, tools and more.

Low temperature steaming enables g
 preserving beneficial soil microbes.

Low temperature s

Small model SB-150 type SB-200 type SB-300 type



SB-200 type
 (wheel type)

* For this model, the stationary type is also available.



SB-200PS type
 (wheel type)

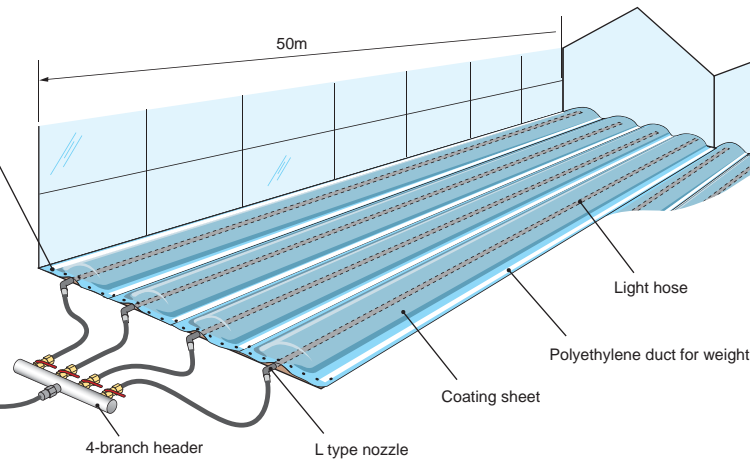
C-2.0 type
 (stationary type)



SB-110VU-1.6 type
 (wheel type)



SB-110VS type
 (wheel type)



Small			
SB-200		SB-150	
200		150	
1.90			
Simple Boiler			
0.39		0.24/0.37	
		Kerosene	
17.1		12.0	
controlled			
ary type	Wheel type	Stationary type	Wheel type
,980	1,980	1,980	1,980
,090	1,090	1,090	1,090
,380	1,590	1,380	1,590
338	370	328	360
548	580	528	560
2.7		2.0	
13 - 18		10 - 13	

Customized to meet your needs.



Self-propelled type (crawler type)



On-vehicle type ※ Fixed on the truck box.



Small self-propelled type (2WD type)



Small wheel type (trolley)



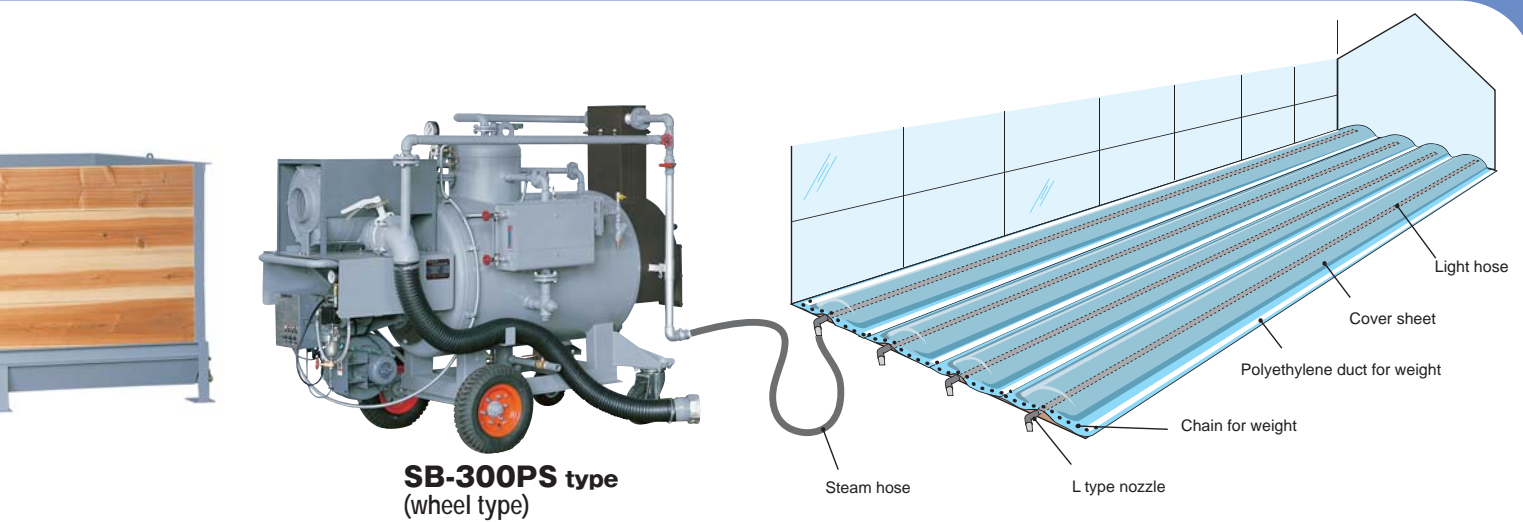
Pallet type

gentle sterilization,

steaming methods

Five Benefits

- ▶ Can preserve beneficial (ie nitrifying) bacteria and enable the quick recovery of microflora.
- ▶ Helps prevent recontamination after treatment.
- ▶ Helps nitrogen mineralization and prevents build-up of ammonium nitrogen.
- ▶ Soil cools quickly and can be used soon after treatment.
- ▶ Promotes plant growth and root health.



● Greenhouse soil can also be treated by using attachments such as a light hose.

Time Required for Low Temperature Steaming (Estimated)

{ SB-110VS type SB-200PS type
SB-150PS type SB-300PS type } + Steaming tank { C-1.2 type C-1.6 type C-2.0 type }

Time to heat to 80°C + forced cooldown to normal temperatures.

Elapsed time (minutes)		0 30min 60min 90min 120min 150min 180min 210min									
Model											
SB-110VS	C-1.2	Preparation work for steaming. Preparation of fuel (kerosene or heavy oil A). Water supply to steamer, connection of power cord. Transfer of soil to steaming tank. (Steam generation time about 10 minutes)	Increases to 80°C (40 min)		Forced draft cooling (80 min)			To seeding / settled planting work			
	C-1.6		Increases to 80°C (53 min)		Forced draft cooling (106 min)			To seeding / settled planting work			
	C-2.0		Increases to 80°C (67 min)		Forced draft cooling (133 min)			To seeding / settled planting work			
SB-150PS	C-1.6		Increases to 80°C (40 min)		Forced draft cooling (80 min)			To seeding / settled planting work			
	C-2.0		Increases to 80°C (50 min)		Forced draft cooling (100 min)			To seeding / settled planting work			
SB-200PS	C-1.6		Increases to 80°C (30 min)		Forced draft cooling (60 min)			To seeding / settled planting work			
	C-2.0		Increases to 80°C (38 min)		Forced draft cooling (76 min)			To seeding / settled planting work			
SB-300PS	C-2.0		Increases to 80°C (25 min)		Forced draft cooling (50 min)			To seeding / settled planting work			

Boiler operation start.

Steam generation and treatment start.

Temp reaches 80°C. Burner stopped / Blower started.

Cooling to normal temperature. Blower stopped.

※Time required will differ depending on soil moisture content, water temperature, soil composition etc.

Dual Purpose Steamers

Low Temperature Steamers

Specifications	Separated						Combined model (boiler + steaming tank)						Separated		
	SB-300PS※		SB-200PS		SB-150PS		SB-110VU-1.2		SB-110VU-1.6		SB-110VU-2.0		SB-110VS		
Equivalent amount of evaporation kgh/50Hz/60Hz	270/300		200		150		110								
Maximum pressure used MPa	3.13		0.05		1.90		0.02								
Heat transmission area m²	1.90		1.90		1.90		1.6								
Boiler application classification	Small boiler		Simplified boiler				Simplified boiler								
Power supply V	200V (three-phase)						200V (three-phase)								
Required power kw 50Hz/60Hz	1.89		1.89		1.74/1.87		1.71								
Fuel	Heavy oil A or kerosene				Kerosene		Kerosene								
Fuel consumption l/h	20.8/22.1		17.1		12.0		8.8								
Control method	ON/OFF automatically controlled						ON/OFF automatically controlled								
Safety features	Combustion control / Dry burning prevention (Low water cut-off) / Pressure switch / U-type standpipe						Combustion control / Dry burning prevention (Low water cut-off) / U-type standpipe								
Installation method	Stationary type	Wheel type	Stationary type	Wheel type	Stationary type	Wheel type	Stationary type	Wheel type	Stationary type	Wheel type	Stationary type	Wheel type	Stationary type	Wheel type	
	Length mm	2,170	2,170	1,980	1,980	1,980	1,980	1,980	2,340	2,490	2,740	2,890	3,140	3,290	
	Width mm	1,140	1,140	1,090	1,090	1,090	1,090	1,440	1,580	1,440	1,580	1,440	1,580	800	860
External dimensions	Height mm	1,400	1,610	1,380	1,590	1,380	1,590	1,085	1,340	1,085	1,340	1,085	1,340	1,060	1,280
	Product weight kg	518	551	396	428	388	420	520	610	560	650	600	690	309	340
Operating weight kg	763	796	606	638	588	620	592	682	632	722	672	762	381	412	
Capacity m³/h	4.4/4.8 (low temperature 80°C) 3.7/4.1 (high temperature)		3.2 (low temperature 80°C) 2.7 (high temperature)		2.4 (low temperature 80°C) 2.0 (high temperature)		1.8 (low temperature 80°C)								

※Requires training prior to use.

●Please note that specifications may change without notice.

Characteristics of Marubun Soil Steamers

Compact and Lightweight Design

Our high-efficiency burners produce great steam flow and steam temperature can easily be controlled.

Can use any water source

Water softener is not required and any scale buildup can be easily removed.

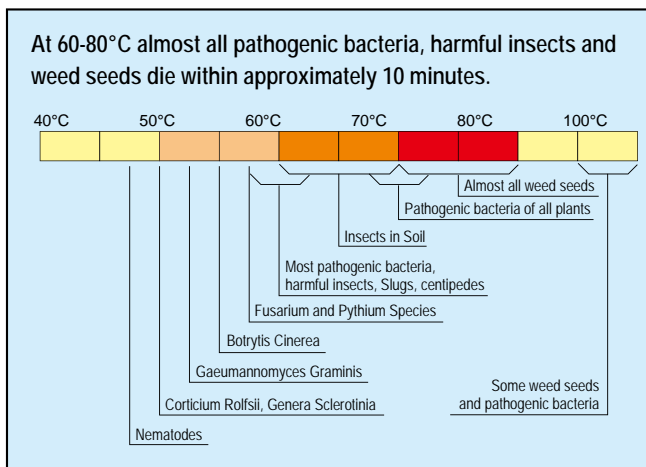
Safe and Easy to use

Built in safety features, and fully automatic operation mean that no license is needed to operate the boiler.

Corrosion resistant

Our aluminized boiler has superior corrosion resistance.

References



Thermal Death Point of Pathogenic Bacteria

Name of pathogenic bacteria	Thermal death point	Name of pathogenic bacteria	Thermal death point
Mycosphaerella melonis	55°C 10min.	Aucuba mosaic virus (TMV)	90°C 10min.
Colletotrichum lagenarium	45°C 10min.	Corticium rolfsii	49°C 10min.
Fusarium oxysporum	Humid 55°C 40min.	Xanthomonas campestris	53°C 10min.
Pseudomonas lacrymans	50°C 10min.	Genera sclerotinia	50°C 5min.
Cucumber green mottle	90°C 10min.	Pseudomonas pisi	50°C 10min.
Botrytis cinerea	55°C 10min.	Colletotrichum lindemuthianum	45°C 10min.
Rhizoctonia solani	52°C 10min.	Pseudomonas phaseoli	50°C 10min.
Pseudomonas tomato	48°C 10min.	Xanthomonas zingiberi	52°C 10min.
Cercospora fuligena	50°C 10min.	Septoria apii	43°C 10min.
Frwinia carotovora	50°C 10min.	Meloidogyne spp.	48~60°C 5min.
Pseudomonas solanacearum	52°C 10min.	Pseudomonas woodsii	50°C 10min.
Septoria lycopersici	37°C 10min.	Erwinia arioideae	51~55°C 10min.
Corynebacterium michiganense	53°C 10min.	Agrobacterium tumefaciens	51°C 10min.
Tobacco mosaic virus	90~93°C 10min.	Xanthomonas antirrhini	51°C 10min.

from Shizuoka prefecture "Report related to steam disinfection 1967"

Disinfection
without chemicals

Styrene Panel Steamer

• High capacity while being space efficient.

Treatment chamber comes in two designs for a 160pcs or 240pcs capacity.
The 240 panel chamber can treat an area of approximately 7.3m².

• Panel carts can also be used as a stocker.

If needed you can use a convenient spare cart to increase productivity.
You can use your existing dollies (depending on material.)

• Temperature control with automatic cut-off.

Can keep the treatment area at a constant 60°C or higher.

• Can also be used for plant factories.

Electric or LPG specifications are also available.

• We can also provide custom treatment chambers to suit the needs of your existing panels.

■ A Quick and Efficient Steaming System



Capacity and Treatment Time

Model	Number of panels	Cart	Size of treatment chamber (mm)	Steamer	Treatment time
160A	160 pcs	40 pcs × 2 shelves × 2 units	2,200 × 2,300 × (H) 1,650	SB-150	Approx. 3 hours
160B	160 pcs	40 pcs × 2 shelves × 2 units	2,200 × 2,300 × (H) 1,650	SB-150	Approx. 3 hours
240A	240 pcs	40 pcs × 2 shelves × 3 units	3,200 × 2,300 × (H) 1,650	SB-200	Approx. 3 hours

● Assuming a 600mm × 900mm × 30mm panel size.

● Model "B" is for LPG gas.

※ "Treatment time" refers to the time spent at a controlled temperature, not the machines total run time.

※ Treatment time will differ depending on panel condition.



Standard attachments

Steam hose



Steam hose (light)



- Approx half the weight of standard hose
- Kink resistant ribbed design.

(May sometimes be less durable than standard hose.)

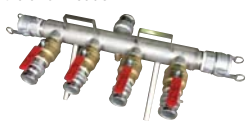
Hose joint



Air suction nozzle (patented)



4-branch header



Water supply hose



Chain for weight



polyvinyl tube for weight



Soil thermometer



Oil hose



Oil feed connection parts



Light hose (patented)



End stopper for light hose



Light hose link



Light hose winding machine



Core for winding light hose



Covering sheet



Covering hose Protection sheet



example usage

Steaming Tank

Allows for efficient even temperature steaming

- Front panel opens for easy access.
- Steam ports are made from durable stainless steel.
- Three sizes available, 1.2m³, 1.6m³ and 2.0m³.



C-1.6 type (stationary type)



C-1.6 type (hand push type)



C-1.6 type (tractor type)

list of specifications	C-1.2			C-1.6			C-2.0		
Maximum treatment volume m ³	1.2			1.6			2.0		
Dimensions in tank									
Width mm	1,210			1,610			2,010		
Depth mm	1,190			1,190			1,190		
Height mm	830			830			830		
Installation method	Stationary type	Hand push	Tractor	Stationary type	Hand push	Tractor	Stationary type	Hand push	Tractor
External dimensions									
Total length mm	1,295	1,835	1,995	1,695	2,235	2,395	2,095	2,635	2,795
Total width mm	1,260	1,500	1,500	1,260	1,500	1,500	1,260	1,500	1,500
Total height mm	1,110	1,150	1,150	1,110	1,150	1,150	1,110	1,150	1,150
Product weight kg	187	279	304	223	315	340	262	351	376

※Please note that the specifications may be changed without notice to improve the product.

Custom Steam Tanks

Designed to meet your exact specifications.



Example of steam chamber



Small truck steam chamber 1.5m³



2t dump truck type (approximately 4m³)



2t dump truck pipe type



Stationary type (Forklift dumping)



Forklift hinge dump type



Concrete type (approximately 8m³)



Concrete pipe type



Thinking about health of human and soil

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