

SX-MD16E Electric Sprayer

User Manual



Notice to Users

This User Manual is a part of the Sprayer. Please keep it in good condition. In order to utilize and maintain the product in good working order, please read the User Manual carefully before operation. If you have any doubts contact the supplier.

The Sprayer should be operated, maintained and repaired by persons who are familiar with its performance and know how to operate it in a safe manner.

The manufacturer shall not be liable for decreased reliability, machine damage and human injury arising from unauthorized modification of the Sprayer.

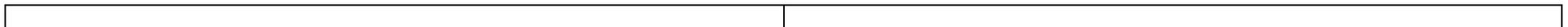


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I. Product Overview

This is a highly-efficient rechargeable sprayer, suitable for applying pesticides, fertilizers and chemicals for controlling weeds and pests in crops, flowers and gardens. The Sprayer is suitable for the sanitizing of livestock and poultry houses, epidemic control and sanitation of public places.

Powered by a 12V/7Ah battery, this sprayer saves time labor and is up to 3 - 4 times more efficient than a manual sprayer.

This sprayer can be operated continuously for up to 6 hours and spray 75 gallons of liquid after one full Charge (based on a new battery).

II. Structure and Features

Structure: This sprayer consists of a tank, base, battery, mini-pump, charger, spraying system, volt meter, rubber tubes, switch, spraying lance, nozzles and straps, and trailer.

Features:

- ① The spray tank is ergonomically designed to fit the human back comfortably or capable of connecting with the trailer for easy towing, it's easy to assemble and disassemble.
- ② Fitted with a high-pressure large flow pump to work with nozzles of various functions, the atomization pressure is between 2-4.5 bar, to suit the demands of many application types, with various nozzles to maximize productivity and cost-savings.
- ③ Equipped with a compact light weight, high pressure, diaphragm pump for even atomization and overload protection to extended service life.
- ④ A voltmeter and low-battery alarm circuit for precise and clear indication of battery voltage. The alarm will give an audible warning when the battery voltage falls below 11V, to indicate the battery requires recharging. The sprayer should be switch off to prevent over-discharging to extend the service life of the battery.
- ⑤ Supplied with a dedicated three-stage battery charger (constant current, constant voltage, float maintaining) The indicator lamp : red — charging ; green — full/stand-by **(Never switch off at mains and leave charger connected to the Sprayer)** this can shorten service life of the battery.
- ⑥ Designed to be low fatigue and user-friendly, the sprayer can be carried on your back or wheeled on its trailer. The trailer features a telescopic handle that can be varied depending on the user height for easy operation.

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III. Technical Parameters

1. **Type:** Knapsack and Wheeled trailer
2. **Overall Size :** 340×300×730mm
3. **Net Weight:** 8.3kg (trailer: 2.2kg)
4. **Capacity of Tank:** 16L
5. **Pump:** Micro diaphragm pump
 Working Pressure : 2.0~4.5 bar
 limit of pump pressure: 4.5-5.0 bar
6. **battery :** 12V7Ah SLA (fully-enclosed, maintenance free)
7. **Charger:** Input AC100-240V~50/60Hz
 Output 12V DC 1.3A

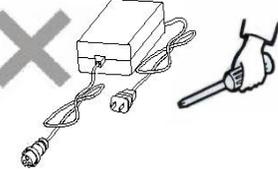
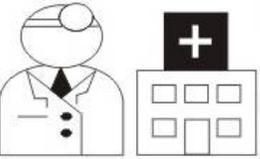
Spraying nozzle type	Pressure bar	Flow L/min	Spraying nozzle type	Pressure bar	Flow L/min
Cone spraying nozzle	3.0~4.5	0.70~0.90	Fan spraying nozzle	0.20~0.40	0.60~1.10
Double spraying nozzle	2.5~4.0	1.30~1.60	Four-hole adjustable spraying nozzle	0.20~0.40	0.60~1.10

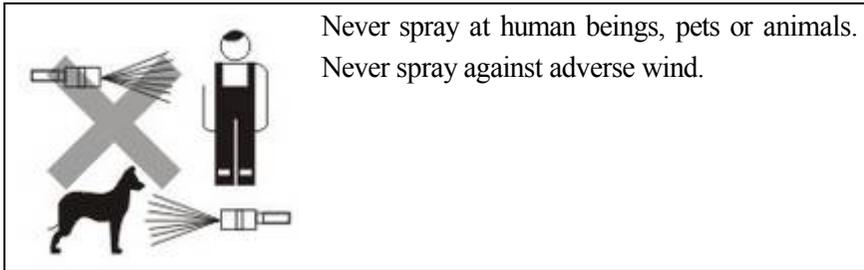
IV. Precautions

- In addition to strictly following the safety instructions given in the Manual, the operator is required to :

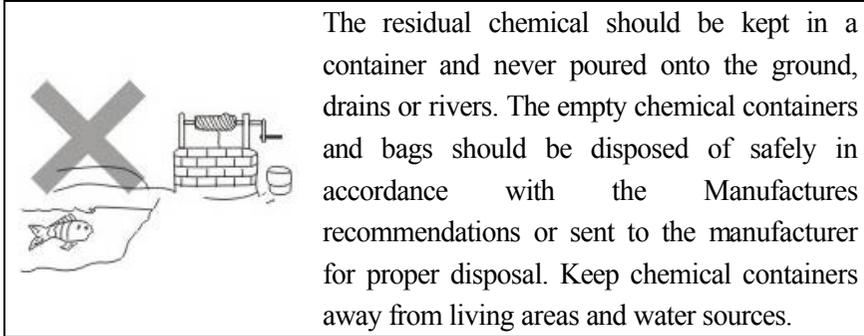
1. Never spray flammable liquid of any kind;
2. Observe the Safety Instruction given by chemical manufacturers before operating the Sprayer.

Hazards

	You are required to read this Manual and follow the instructions for safe operation.
	The operator should wear a respirator mask, safety glasses, protective hat, protective clothes, water-proof gloves and rubber boots etc. during filling and spraying.
	Storage and maintaining of pesticide. Chemicals should be kept out of the reach of children. For safe disposal of pesticide containers follow the safety instructions issued by the chemical manufacturer.
	Disassembly and repairing of charger by non-professionals is prohibited. In case of failure, please contact the distributor. No servicable parts inside!
	In case of inhaling dangerous chemical vapor or direct contact with skin, seek medical attention immediately! Be sure to inform the medical professional of the type of chemical involved.

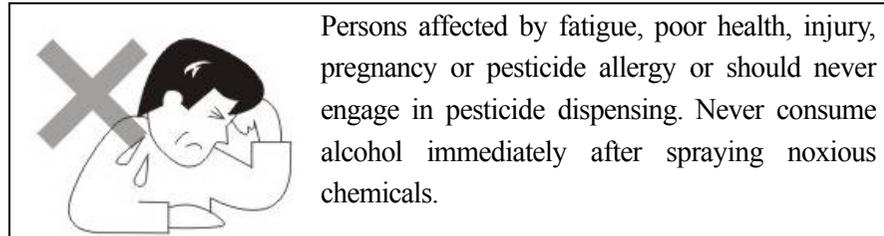


Never spray at human beings, pets or animals.
Never spray against adverse wind.

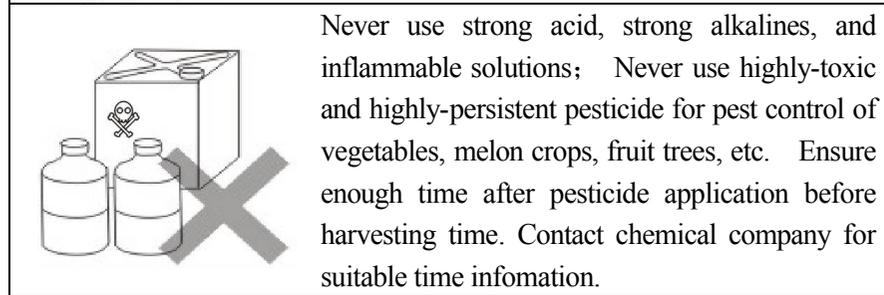


The residual chemical should be kept in a container and never poured onto the ground, drains or rivers. The empty chemical containers and bags should be disposed of safely in accordance with the Manufactures recommendations or sent to the manufacturer for proper disposal. Keep chemical containers away from living areas and water sources.

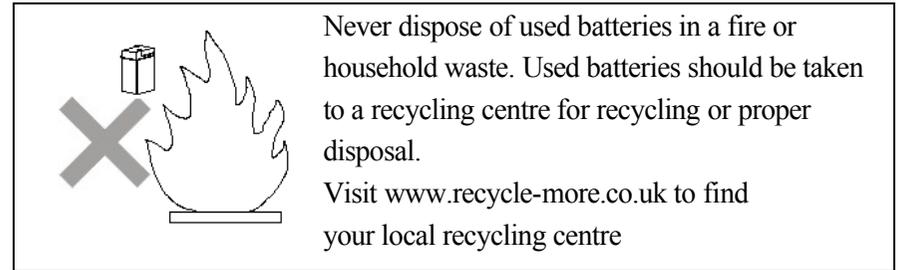
Warning



Persons affected by fatigue, poor health, injury, pregnancy or pesticide allergy or should never engage in pesticide dispensing. Never consume alcohol immediately after spraying noxious chemicals.

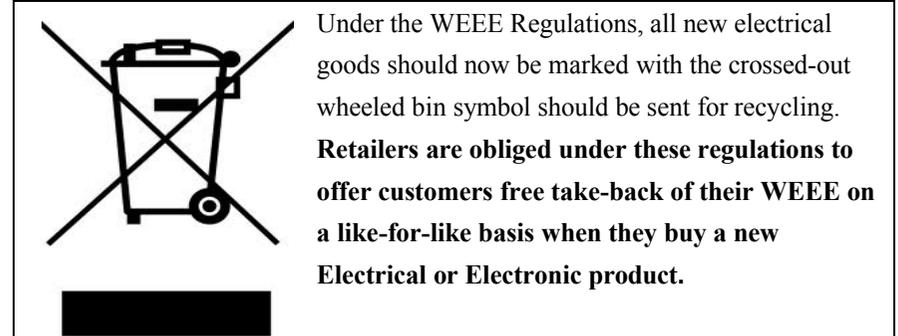


Never use strong acid, strong alkalines, and inflammable solutions; Never use highly-toxic and highly-persistent pesticide for pest control of vegetables, melon crops, fruit trees, etc. Ensure enough time after pesticide application before harvesting time. Contact chemical company for suitable time information.



Never dispose of used batteries in a fire or household waste. Used batteries should be taken to a recycling centre for recycling or proper disposal.

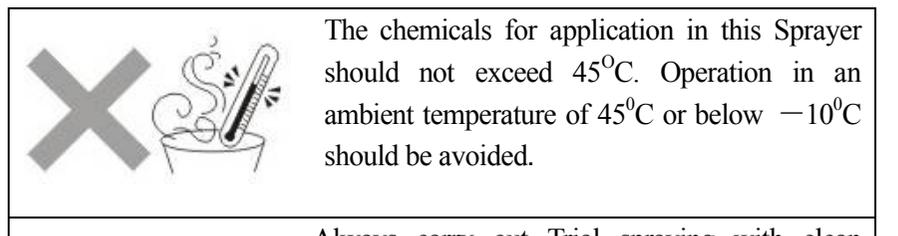
Visit www.recycle-more.co.uk to find your local recycling centre



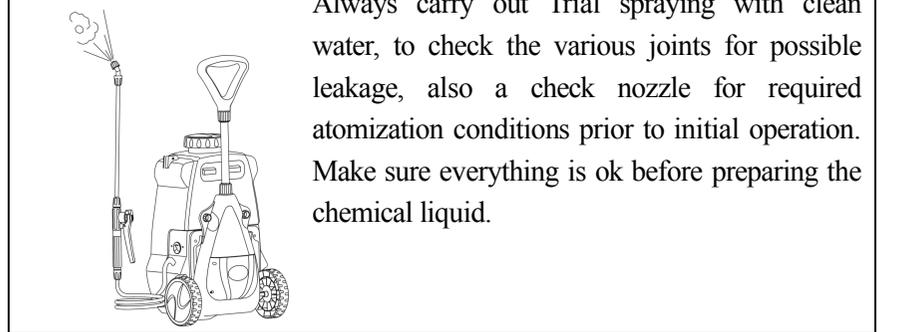
Under the WEEE Regulations, all new electrical goods should now be marked with the crossed-out wheeled bin symbol should be sent for recycling.

Retailers are obliged under these regulations to offer customers free take-back of their WEEE on a like-for-like basis when they buy a new Electrical or Electronic product.

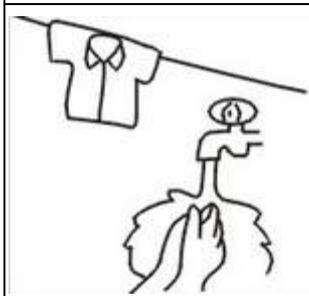
Precautions



The chemicals for application in this Sprayer should not exceed 45°C. Operation in an ambient temperature of 45°C or below -10°C should be avoided.



Always carry out Trial spraying with clean water, to check the various joints for possible leakage, also a check nozzle for required atomization conditions prior to initial operation. Make sure everything is ok before preparing the chemical liquid.

	<p>The preparation of chemicals should follow the instructions and formula published by the chemical manufacturer. Unauthorized altering of the dilution rate of chemical is prohibited, and may endanger human and animal health, or result in the failure of sprayer or pest control.</p>
	<p>Upon completing the operation, it is recommended you change your clothes and wash exposed body parts such as hands and face. In case of highly toxic pesticides and germicide, its recommended to shower after operation to ensure safety.</p>

V. How to Operate the Sprayer

1. Operation of Charger

Make sure that the input voltage of the charger complies with the AC parameters of mains supply. If in doubt please contact the distributor.

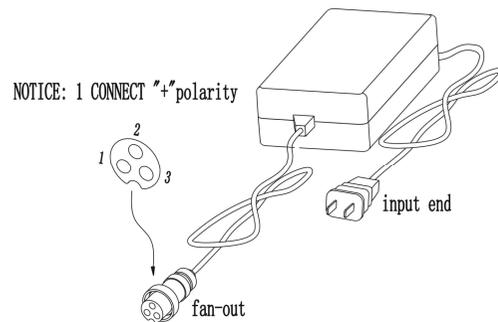


Fig. 1

The battery inside the sprayer has been fully charged

before being delivered. But due to self-discharge during transportation and storage, please check the power level with a voltage meter before operation. If the indicator stays in yellow or red area, (i.e. $\leq 12V$, a supplementary charging is required.

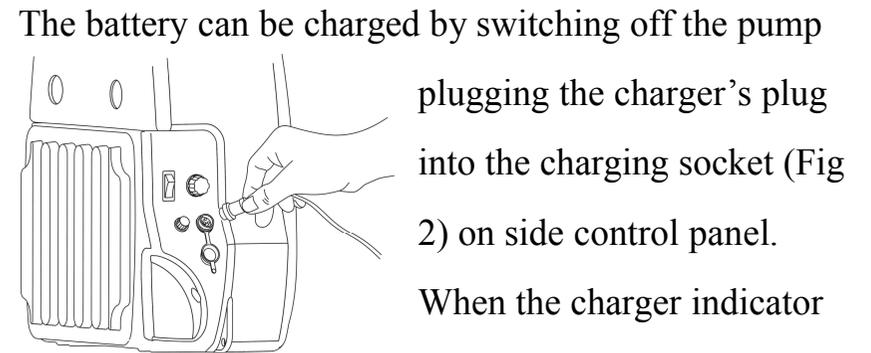


Fig. 2

The battery can be charged by switching off the pump plugging the charger's plug into the charging socket (Fig 2) on side control panel.

When the charger indicator LED turns from RED to GREEN, it indicates that the battery has been fully charged.

A GREEN LED can also indicate the charger is on standby or not connected.

The no-load voltage of full-power battery is 13.8V.
Never leave the charger connected to the sprayer with the power switched off!

2. Voltmeter (Fig. 3)

The Sprayer is equipped with voltmeter measuring voltage between 11V~15V. The green area of color scale indicates full battery, fit for normal operation; Yellow area indicates low voltage but the system can still keep working for a limited time; The red area on the left indicates extremely low power requiring immediate recharging. The lowest working voltage of the Sprayer is DC 11.5v. The alarm will sound to remind the Operator to stop use and charge the battery when the voltage falls below this value.

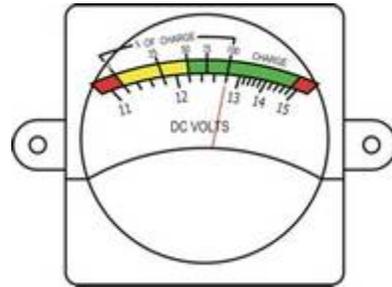


Fig. 3

The charger should be only be operated indoors in a dry, ventilated location 50cm above the ground.

If the Sprayer has been only used for a short time, it is unnecessary to charge if it is to be used again within 1 week. If the Sprayer not required for a long time, it should be discharged then fully charged with a regular charging intervals (such as one month or two months) in a bid to maintain the capacity and service life of the battery.

Filling tank with chemical. Remove the lid on top of sprayer to fill the tank (Fig. 4) with mixed chemical through the strainer provided slowly, then tighten the tank lid carefully.



Fig. 4

Never immerse Sprayer in water for filling or cleaning

4. Spraying

Ensure the trigger is in the off position! Turn on the power switch (“-“ indicates ON, “O” indicates OFF). Point the nozzle to the required area and hold down the trigger bar to start spraying. (Ensure the work area is clear of people and animals first.)

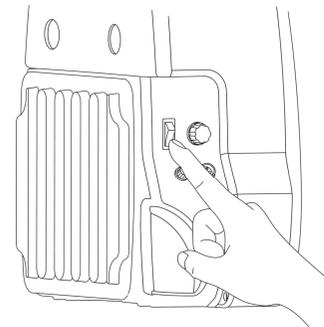
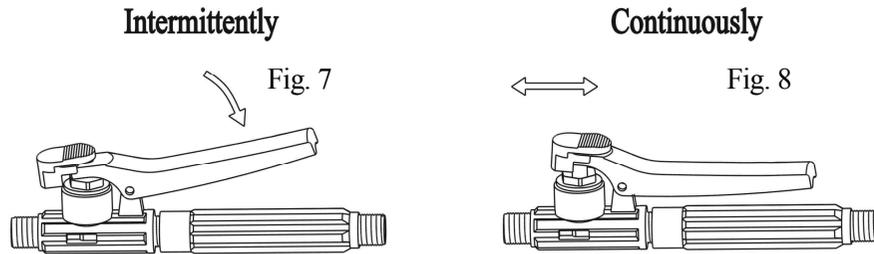


Fig. 5

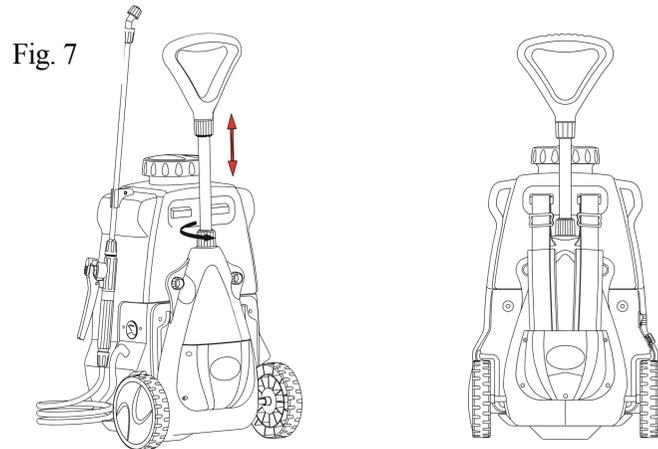
Control of water switch triggers (Fig. 6)

Fig. 6



(II) Spraying on the trailer.

Loosen adjuster at the lower end of the handle bar to suit the height of operator. (Fig. 7) The straps should be folded and stored in the tray provided. (Fig. 8)



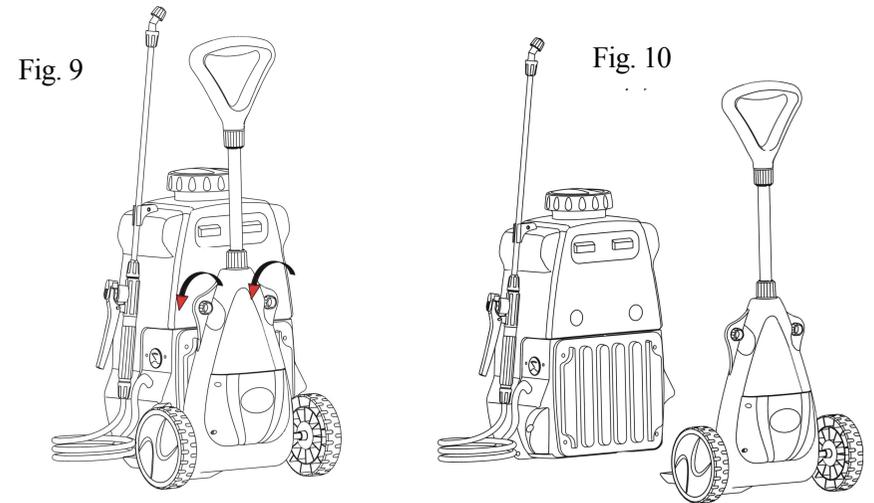
After the spraying starts, the operator can pull the trailer with one hand and move forward while using the spray

boom with the other hand. The spraying should be conducted to the side. The operator should move forward at constant speed to avoid over-spraying or missing areas. Never spray in the direction of the wind. The operator should never stand in the spray drift always walk with the wind behind you.

Spraying in knapsack mode:

(1) Dismounting of trailer.

When spraying on terrain not fit for trailer, the trailer may be dismounted and the Sprayer may be mounted



on the operator's back.

Refer to Fig. 9 for dismounting of trailer. Turn the two locking nuts on the upper part of trailer anti-clockwise to separate the trailer from the Sprayer (Fig. 10)

(2) Fixing of shoulder straps (Fig. 11)



Fig. 11
图11

(IV). Regulating of pressure (Fig. 12)

Turn the regulating knob to change the pump pressure, vary the atomizing size and increase the spray pattern depending on the nozzle or the crops to be sprayed. Turn the regulating knob clockwise to increase the pressure and anticlockwise to decrease pressure and increase the droplet size. (see Fig 12)

The Sprayer has overload protection. When the water switch is closed or the nozzle is blocked, the pump will relieve the pressure automatically.

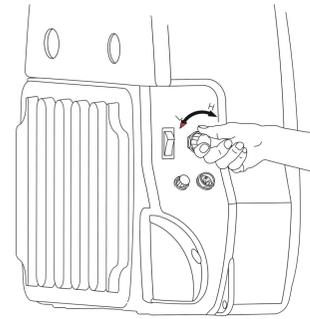


Fig. 12

Never use pressure regulating knob as a power switch!

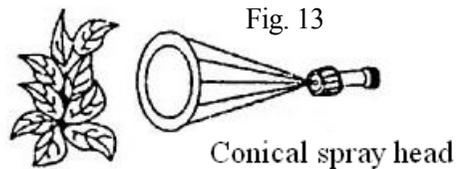
When you have finished spraying, the power switch must be turned off.

To stop the spraying, you press the power switch to turn off the pump, and then de-pressurize the lance by squeezing the trigger unlocking the catch.

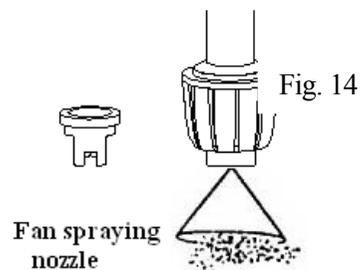
Recommended spray nozzles:

Liquid chemical Solutions (Not Mixed Powders)

The sprayer is supplied with a selection of nozzles which are suitable for the majority of spraying tasks. As a guide we only recommend the Cone Shaped Conical Nozzle Fig 13. for pesticides and weed killers.



For fertilizers and disinfectants the fan nozzle is ideal for application Fig 14

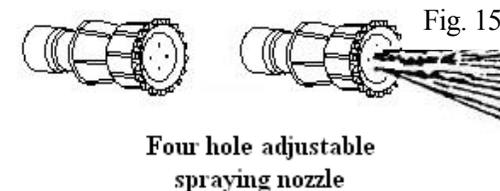


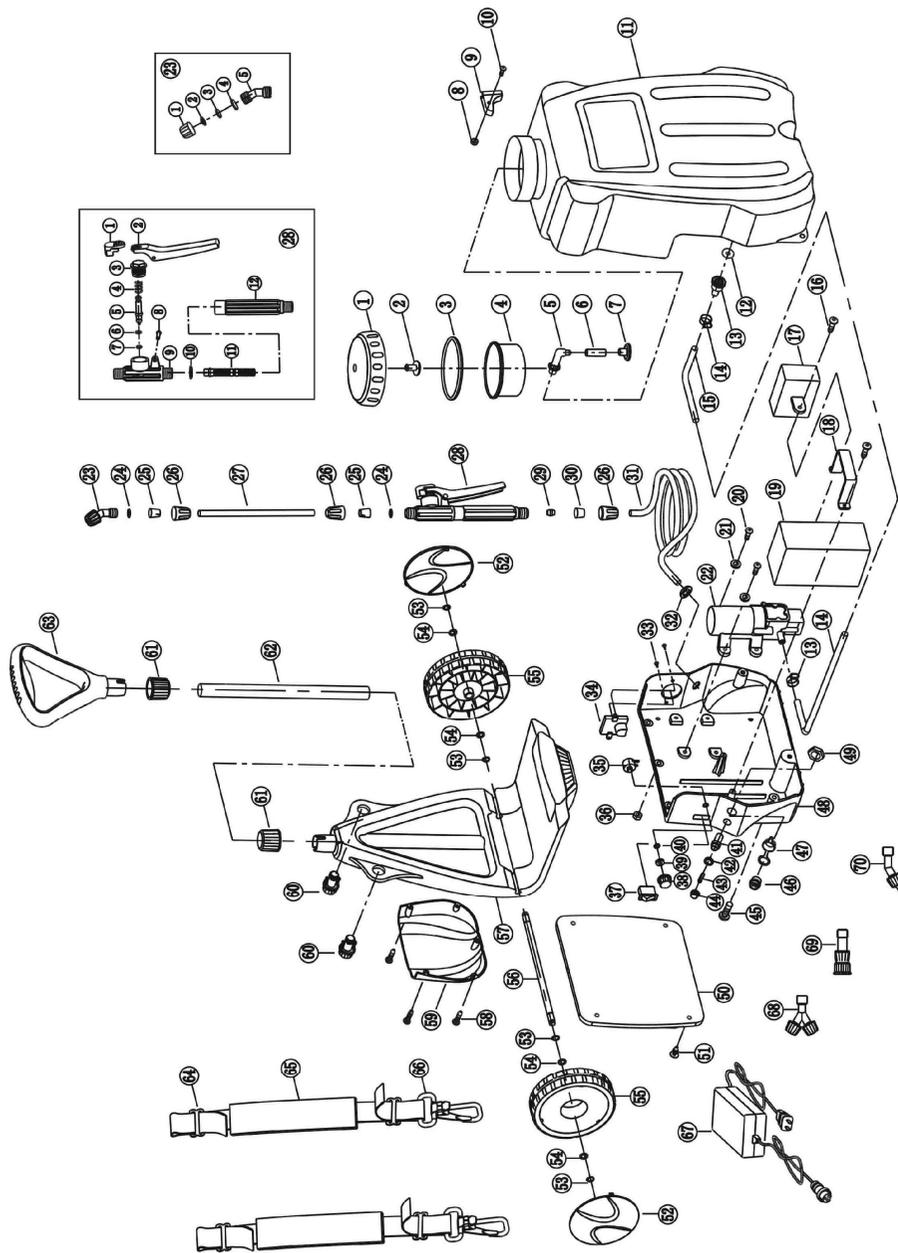
Powder mix chemicals (Pre Mixed Powders)

Never mix chemicals in the sprayer tank!

Always accurately mix powdered chemicals in a suitable container, prior to adding them to the spray tank.

The four hole adjustable spray nozzle is suitable for mixed chemicals. It can be adjusted to suit your desired flow rate. Spray in a uniform pattern evenly with the wind.





SN	Description	Qty	SN	Description	Qty
1	Spray tank cap	1	26	Spray boom nut	3
2	Inlet valve	1	27	Spray boom	1
3	seal ring	1	28	water switch	1
4	big strainer	1	28-1	limit cap	1
5	inlet bend	1	28-2	switch bar	1
6	hose	1	28-3	switch nut	1
7	small strainer	1	28-4	switch spring	1
8	hex nut M4	1	28-5	valve plug	1
9	spray boom clamp	1	28-6	valve plug O-ring ø9.5×1.9	1
10	cross recessed pan head screw M4×12	1	28-7	seal ring ø8.2×ø4×2.5	1
11	spray tank	1	28-8	switch pin	1
12	O-ring Ø20.6×3	1	28-9	switch body	1
13	Rubber tube joint	1	28-10	O-ring Ø20.6×2.65	1
14	Pipe-clip 10-16	3	28-11	switch strainer	1
15	Inlet Pipe	1	28-12	Handle	1
16	cross recessed pan head tapping screw ST4.8×25	2	29	Flared sheath	1
17	Control Module	1	30	rubber hose sheath	1
18	Battery Press Plate	1	31	rubber hose	1
19	Battery 12v7AH	1	32	jacket	1
20	cross recessed pan head screw M5×15	4	33	countersunk head tapping screws ST2.9×14	2
21	Flat washer	4	34	voltmeter	1
22	diaphragm pump	1	35	adjustable potentiometer	1
23	cone spray head	1	36	hex nut M5	4
23-1	Spray head cap	1	37	power switch	1
23-2	cone spray sheet	1	38	pressure-regulating throb	1
23-3	split sheet	1	39	potentiometer nut	1
23-4	seal gasket ø16×ø11×2	1	40	flat washer of potentiometer	1
23-5	bend	1	41	fuse holder	1
24	Spray boom O-ring Ø15×3	2	42	hexagon thin nut	1
25	Fastening sleeve	2	43	Fuse ø5*20 5A	1

SN	Description	Qty	SN	Description	Qty
44	Fuse cap	1	58	cross recessed pan head self-tapping screw ST2.9×16	5
45	cross recessed pan head screw M6×12	6	59	tray	1
46	Charging socket	1	60	locking nut	2
47	water-shield	1	61	locking cap	2
48	end-cover	1	62	pull rod	1
49	socket nut	1	63	Handle	1
50	back pad	1	64	strap lock	4
51	back pad buckle	4	65	strap	2
52	wheel cover	2	66	strap hook	2
57	trailer frame	1	67	Charger 12 V	1
53	circlip for shaft 10	2	68	30° dual spray head	1
54	flat washer 10	2	69	Four-hole adjustable spray head	1
55	wheel	2	70	Cone spray head	1
56	wheel shaft	1			

Cleaning and Maintenance

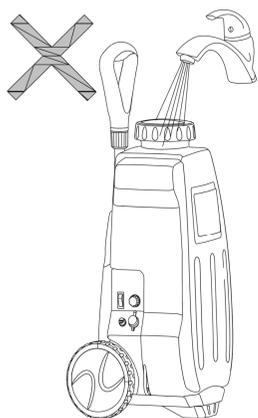


Fig. 16

After every spraying operation, the Sprayer should be cleaned to avoid corrosion of internal parts and blockages of the nozzles caused by chemicals. In addition, proper cleaning can also avoid the risk of contaminating other chemical agents being sprayed in future operations

that may bring harm to plants and crops.

How to clean:

- Clean the outer surface of the Sprayer with a wet cloth. Fill the tank with clean water and replace the lid, shake the sprayer, then turn on the power switch to spray the cleaning water via the nozzle.
- The tank strainer can be removed for cleaning.

Warehousing / Storage



图17

Fig. 17
and charger.

The Sprayer should be stored indoors, upright in a dry place and out of reach of children. Ensure the Pump is switched off; Charge the battery once every 4 weeks. Always disconnect the charging cable from the sprayer control panel after charging to prevent damage to battery

VIII. Troubleshooting

Problems	Causes	Solutions
The motor fails to run after being switched powered on.	<ul style="list-style-type: none"> The pump pressure has been set at the min value. Fuse burnt-out Battery out of power Power switch has been damaged Battery wire connector disconnected Motor damaged Potentiometer has been damaged. 	<ul style="list-style-type: none"> Turn the knob clockwise to increase the pressure. Replace Recharge Replace the switch Disassemble the base to reconnect the wires. Replace the motor Replace the potentiometer.
Abnormal sounds heard while the motor rotates	<ul style="list-style-type: none"> The fastening screws of the pump are loose 	<ul style="list-style-type: none"> Tighten the screws
Leakage occurs to the underside of the base	<ul style="list-style-type: none"> The inlet / outlet pipes of the pump have loosened or broken 	<ul style="list-style-type: none"> Disassemble the base to tighten the pipe clamp / replace pipe.
Poor atomization results	<ul style="list-style-type: none"> Pump pressure too low The holes inside the nozzle tip are blocked. The nozzle hole has worn out. The spraying nozzle sheet has been inversely assembled. Pipe joints may 	<ul style="list-style-type: none"> Turn the knob clockwise to increase the pressure. Remove the impurities Replace the Nozzel. Correct it Tighten the joints

	loosen. <ul style="list-style-type: none"> Battery short of power One inlet valve or outlet valve of the pump has been jammed to reduce the pressure by 50%. 	<ul style="list-style-type: none"> Recharge the battery. Remove the base. Pump clean water while knocking at the pump head gently. Disassemble the pump housing to repair.
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IX. Packing List

S/N	Description	Unit	Qty.	Remarks
1	Sprayer Body	unit	1	In addition, Brass multi-purpose spraying lance and spare nozzles are available for purchasing separately
2	User's Manual	Pc(s)	1	
3	Four hole adjustable spraying nozzle	Pc(s)	1	
4	Fan spraying nozzle	Pc(s)	1	
5	30° Double spraying nozzle	Pc(s)	1	
6	split coupling	Pc(s)	2	
7	spray boom O-ring ø15×3	Pc(s)	2	
8	O-RING ø20.6×3	Pc(s)	1	
9	Valve plug O-RING ø9.5×1.9	Pc(s)	1	
10	Seal Gasket ø16×ø11×2	Pc(s)	2	
11	Seal Ring ø8.2×ø4×2.5	Pc(s)	1	
12	Fuse ø5*20 5A	Pc(s)	1	

CERTIFICATE OF ADEQUACY

Certificate Number : 007646C3
Date of Issue : 23.10.2010
Manufacturer : SHIXIA HOLDING CO., LTD
No.19 Belyuan Road, Huangyan Economic Development Zone,
Taizhou City, China
Certificate Holder : SHIXIA HOLDING CO., LTD
No.19 Belyuan Road, Huangyan Economic Development Zone,
Taizhou City, China
Product Description : ELECTRIC SPRAYER
Product Type or Model : SX-MD15D, SX-MD15DA, SX-MD15DB, SX-MD18D,
SX-MD18DA, SX-MD16E, SX-MD18E, SX-MD20E
European Union Directive : Low-Voltage Directive 2006/95/EC, Annex IV
EMC Directive 2004/108/EC, Annex II
European Standards : EN 60335-1: 2002+A11:2004+A1:2004+A12:2006+A2:2006+A13:2008,
EN 55014-1:2006+A1:2009,
EN 55014-2: 1997+A1:2001+A2:2008,
EN 61000-3-2:2006+A2:2009+A1:2008,
EN 61000-3-3: 2008
Report Number : CHINA CEPREI (SICHUAN) LABORATORY SCC(10)-441-10-LVD / 23.10.2010,
SCC(10)-441-10-EMC / 23.10.2010

Statement

This certification declares that the manufacturer or his authorised representative established in the EU, has draw up and submit the technical file referred to in Annex IV §3 of directive 2006/95/EC and Annex IV of directive 2004/108/EC, for the mentioned above product type.
The Certification Body received and keeps the Technical File for specified period (until 22.10.2013).

Additional Information – Remarks

The certification body should be informed (revision of technical file) for any modification or alterations made to the aforementioned product type(s), including design and manufacture and/or extension to the existing scope of application.

The manufacturer is responsible (within internal production control procedure) for certifying the product and ensuring that all manufactured products are in compliance with the specifications declared in the technical construction file.

The manufacturer is allowed to affix the CE mark to the products under its own responsibility (other EC directives should be considered).

The manufacturer should accompany the product with EC Declaration of Conformity and appropriate operation and maintenance instructions.

This certificate may be reproduced only in a complete form.



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