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Operation Manual



All 'FarmBoy' products are sold without any warranty or guarantee. Please satisfy yourself before buying this product. No returns, exchanges or refunds allowed.

Note: FB-KBS-160/180 and FB-KMB-4180 does not include battery. You must purchase battery in order to operate this sprayer

KisanKraft Machine Tools Pvt. Ltd.

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KisanKraft has a large range of products to serve the farmers. A list of our products is given below:

Brush Cutters and Accessories Brush Cutter/Power Weeder Backpack Brush Cutter Tea Pruner Pole pruner with Engine Reaper Attachment Blades-Circular Blades (2 & 3 points) Baffle Nylon Rope Tap & Go Chainsaws Petrol Chainsaw Electric Chainsaw Chain Sharpening Machine Engines and Water Pumps Engine –Diesel-(Horizontal) Engine –Diesel(Vertical) Engine-Kerosene Water Pump with Petrol Engine Water Pump with Kerosene Engine Water Pump with Diesel Engine Hand Tools Secateurs Folding Saw Garden Rake Garden Shovel Hedge Shear Lopper Telescopic Hedge Shear Telescopic Lopping Shear Tree Pruner Telescopic Steel Pipe & Fruit Picker Bag Sheep Shear Garden Tools Electric Pressure Washer Hedge Trimmer Lawn Mower (Electric, Petrol & Manual) Leaf Blower	Cultivators and Accessories Petrol and Diesel Sprayers and Accessories Battery Sprayer Portable Power Sprayer Trolley Sprayer Manual Knapsack Sprayer Manual Pressure Sprayer Rose Cans Hose Crimping Machine HTP Sprayer HTP Delivery Hose HTP Hose Reel HTP Stand HTP Gun / Lance(Brass Rod) Knapsack Power Sprayer Mister / Duster / Granuel Spreader HTP Sprayer Set with Diesel Engine HTP Sprayer Set with Kerosene Engine Fogging Machine Milking Machine Wood Shredder Fodder Ensiling Chaff Cutter Fodder Grinder Chaff Cutter Fodder Mini Chaff Cutter Harvester Maize Sheller Maize Sheller + Dehusker Maize Combine Harvester Onion Digger Carlotti Italy Tea Leaf Harvester Sugarcane Combine Harvester Sugarcane Leaf Stripper Transplanter and Post Hole Digger Paddy Transplanter (2 & 8 Rows) Transplanter-Vegetable & Tobacco Post Hole Digger(4” to 14” Augers)
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Part .No	Part Name	Part .No	Part Name
1	Operation Arm Clamp	21	Filter Screen
2	Operation Arm Fixed Ring	22	N/A
3	Air Chamber With Cap	23	Container Cap
4	Bowl	24	Nut of hose connector
5	Sealing ball	25	Hose
6	N/A	26	Nut of lance connector
7	Locking cap	27	Ream Cover
8	Operation Arm Cover	28	Switch Assy
9	Split Pin	29	O-ring (Spindle)
10	Rocker Arm Rod	30	Lance
11	Rocker Arm	31	N/A
12	Air Chamber Cover	32	Split Sleeve
13	Felt (Air Chamber Cover)	33	Nozzle (SINGLE HOLE)
14	Air Tube	34	Nozzle (DUAL HEAD)
15	N/A	35	Nozzle (4 HOLE)
16	Container	42	N/A
17	Fixed Buckle	43	Belt
18	N/A	45	Belt Hook
19	N/A	46	Belt Buckle
20	N/A		

BEFORE GETTING STARTED

Thank you for your purchase and use of our products. In order to avoid accidents or injury, **please read this manual carefully** before using. After reading, preserve it for further reference. Please make a note that this product is always improving, maybe the machine you buy does not coincide with the manual, exactly.

APPLICATION

The knapsack manual battery sprayer is the new model sprayer developed by our company **which has the advantage of being operated both manually and with battery**. All our sprayers have a reasonable design, beautiful outlook, reliable character and are economical products. They have advantages of safety, trustiness, energy saving, good misting effect, the high use ratio of pesticide, and wide range of usage. It is suitable for use in prevention of plant diseases and pests, such as cotton, wheat, paddy, fruit trees, and tea trees and so on. It can also be used for the prevention of the pests of garden flower, epidemic prevention near hotels, stations and other public places and poultry.

MODEL INFORMATION

MODEL	FUNCTION
FB-KMS-16L	MANUAL SPRAYER
FB-KBS-160 / 161 / 180 / 181	BATTERY SPRAYER
FB- KMB- 4165 / 4185 / 4169 / 4189 / 4180 / 4181	MANUAL AND BATTERY SPRAYER

1. The model FB-KMS-16L can be operated as MANUAL sprayers.
2. The models FB-160/180 can be operated as BATTERY sprayers. (Battery is not included, you have to buy them separately)
3. The models FB-161/181 can be operated as BATTERY sprayers. (Battery is included).
4. The model FB-KMB-4180 can be operated both as a MANUAL sprayer and BATTERY sprayer. (Battery is not included, you have to buy them separately).
5. The model FB- KMB- 4165 / 4185 / 4169 / 4189 / 4181 can be operated both as a MANUAL sprayer and BATTERY sprayer. (Battery is included).

FEATURES

- The machine adopts subminiature direct current as the power, hence safe and reliable.
- The handgrip adopts linkage-control motor switch, making the operation easy and safe.
- The dissepiment pump of the machine is bi-directional, simple structure and easy maintenance.
- The machine has a high pressure, heavy flow, high spraying effect and good effect in prevention of pests.
- The shape of the nozzle of main spraying parts is F, so it has a broad width and high effect. The overall parts of dissepiment pump are made of plastic, so it has the property of low weight and anti-corrosion.

SAFETY SYMBOLS

In this manual, there are some warning signs which imply different safety information. When you see the sign, please be on guard against the harm that may incur. The introduction of the warning sign in the manual is here under:
 Please follow the safety instructions given in this manual.



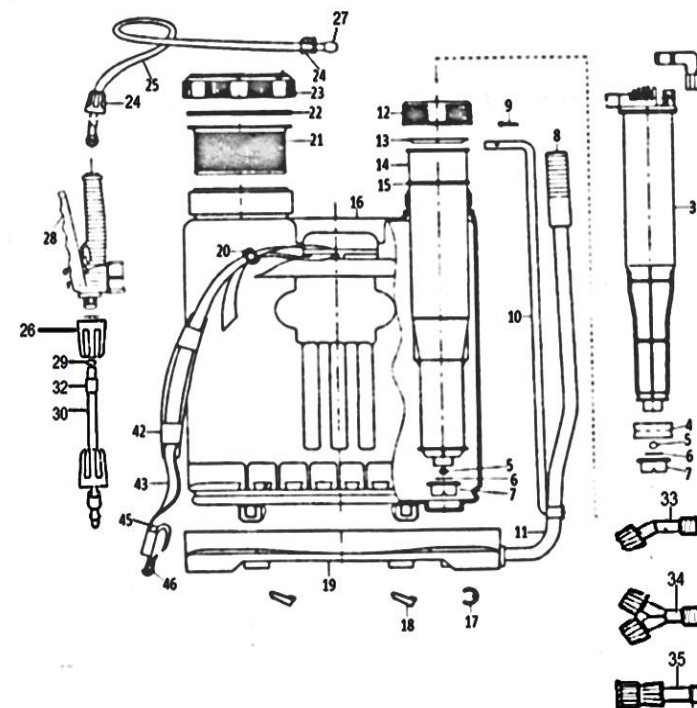
Don't injure yourself or any other person

Don't damage the machine

Use correctly in order not to pollute the environment

Everyone has the duty to protect the environment and save energy!
 While you strictly follow the rule of operating in this manual, you should do set below:
 Don't use the virulent pesticide prohibited by the government.
 Don't use the machine to harm the environment and public profits.
 Please use the machine cautiously without affecting the ecological balance.
 Don't let the deposit pesticide flow arbitrarily in order to avoid the environment pollution.

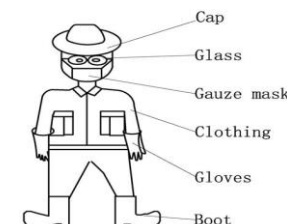
PARTS DIAGRAM & LIST-MANUAL SPRAYER



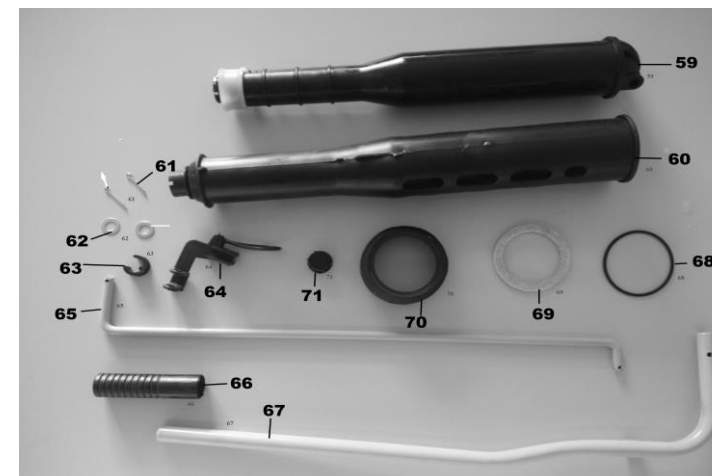
Part No	Part Name	Part No	Part Name
P-14	Motor Cover	B-50	Trigger Assy
P-15	Motor	B-51	Clip-Absorb pipe
P-16	Motor Feet	B-52	Lance Holder
P-17	Pump Up lid	B-53	Screw Motor cover
P-18	Pump Body	B-54	Screw Pump Lid
B-19	Round Bar (Thick)	B-55	Screw Battery holder
B-20	O Ring- Round Bar	B-56	Screw Tank base plate/Lines for recharge
B-21	Split Sleeve	B-57	Screw Back Rest
B-22	Case Nut-Round Bar	B-58	Screw Motor Feet
B-23	Round Bar (Thin)	B-59	Air Chamber
B-24	Hose	B-60	Air Tube
B-25	Hose nut	B-61	Split Pin
B-26	Scarf joint	B-62	washer
B-27	F-Style Spray Head	B-63	Fixed Buckle
B-28	4 Hole Adjustable Spray Head	B-64	Operation Arm Clamp
B-29	Spray Head	B-65	Rocker connecting rod
B-30	Belt-Hook	B-66	Operation Arm Cover
B-31	Belt-Buckle	B-67	rocker
B-32	Fastening Buckle	B-68	Seal
B-33	Charger	B-69	washer
B-34	Shoulder Belt	B-70	Air Chamber Cover
B-35	Back Rest	B-71	Water closing cap

SAFETY INSTRUCTIONS

- Read this manual carefully, be sure you understand how to operate this machine properly before you use it.
- Protective Clothing:
 - Wear flange cap.
 - Wear dirt/fog-proof glasses.
 - Wear gauze mask.
 - Wear long gloves.
 - Wear coat guarding against poisons.
 - Wear boots.
- Following personnel should not use the machine:
 - Mentally challenged.
 - Drunk.
 - Under the age of 18 or older people.
 - Person with no knowledge of the machine.
 - Tired person or patient and others who cannot operate the machine normally.
 - A person who has just exercised strenuously or has not slept enough.
 - Women feeding breast milk to the baby or is pregnant.
- Recharge
 - If the wire/ plug is bad, or the socket is lax, don't use it as there is a risk of an electric shock and even fire.
 - Don't pull the plug with wet hand to avoid electric shock.
 - If the plug wasn't inserted into the socket completely, there is a danger of experiencing an electric shock, and even a fire.
 - Please clear away the dust on the plug. The dust also can cause a fire.
 - Don't lay this machine in a wet or a dusty place to avoid electric shock, heat, split and so on.
 - Don't charge above the set time, or it will cause a battery leak, heat split and so on.
 - When storing the machine avoid direct sunlight, hot environment and avoid things that emit heat of their own. Otherwise, it will speed up the aging of the battery, and may cause weeping, emit heat, craze, or strike fire etc.,
 - Don't charge when the temperature of the battery is low or in the cold weather, as it may cause the battery to leak and will shorten its life.
 - Don't throw the battery into the fire or heat as it will split the battery.
 - If you find any battery leak, colour change and distortion, don't use it any more.
- Spraying
 - It is fine to carry out an operation during cool weather with little wind. For example, early in the mornings or in the late afternoons as this can reduce the evaporation and drift of chemicals and improve the protective effect.
 - The operator should move windward.



- If your mouth or eyes are spattered with chemicals, wash them with clean water and then visit a doctor.
 - If the operator has a headache or dizziness, should stop working at once and consult a doctor immediately.
 - For the operator's safety, misting/dusting must be carried out strictly according to the instruction of the chemicals and agricultural requirements.
 - Spray over, according to pesticide manual to clean out any residual spray mixture in chemical tank.
 - After spraying always wash your hands and face thoroughly.
6. Warning:
- Check if the parts in the package coincide with the packing list.
 - The new machine must be charged before using. It is normal for a new machine and the machine stored for a long time charged incompletely. It will be charged full after releasing repeatedly.
 - Don't charge in a wet room or with wet hands, as you may experience an electric shock.
 - Please be sure to charge after using, and charge fully before storing.
 - Don't use it to spray corrosive liquids, coal, oil and other volatile liquid in order not to catch a fire or get any burns.
 - It will harm persons and crop if the chemical liquid is mixed improper. Please read the introduction of pesticide before using it.
 - It is prohibited to put the pesticide into other containers in order not to prevent any accidental consumption.
 - In order to avoid incidents incurred by clinging to the pesticide, the operator must wear flange cap, fog-proof glasses, gauze mask, long gloves, and coat guarding against poisons, boots and some other protective clothing.
 - After operating, the operator must wash the whole body with water and soap. In the meantime, the operator must wash eyes with clean water, and change clothes every day within the period of operation.
 - Don't let the deposit or the water used for cleaning the machine flow into river, lake, pond, in order not to avoid pollution.
 - The machine should cleaned completely, be dried and charged fully after using, and then should be kept in a cool and windy place.
 - If you are using the sprayer with hazardous or poisonous liquid, use only with directions supplied by manufacturer of the hazardous or poisonous liquid. Please clean the sprayer thoroughly after use





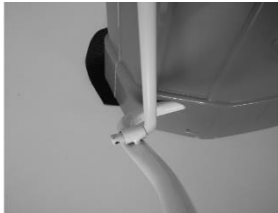
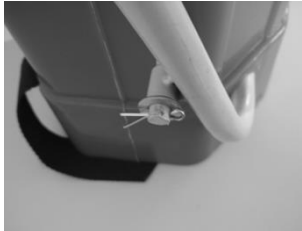
Part No	Part Name	Part No	Part Name
P-1	Diaphragm	B-36	Battery-Holder
P-2	Ring Plastic	B-37	Battery
P-3	Pressure Spring	B-38	Hose connector
P-4	Spring seat	B-39	Motor With Pump (Full Assy)
P-5	Bearing 809	B-40	Absorb Pipe
P-6	Valve Spring	B-41	Tank Base Plate
P-6-1	Valve Inlet Outlet	B-42	Pump speed Adjuster
P-7	Valve Seat-Inlet	B-43	Power Switch
P-7-1	Valve Seat-Outlet	B-44	Lines for recharging
P-8	Pressure Rubber	B-45	Volt Meter
P-9	Pressure Piston	B-46	Water Tank- 16 LTR
P-10	Bearing Move Seat	B-46	Water Tank-18 LTR
P-11	Pump Down Lid	B-47	Large Filter
P-12	Motor Holder	B-48	Little Filter
P-13	Pressure Valve Lid	B-49	Container Cap

PARTS DIAGRAM & LIST-BATTERY SPRAYER



ASSEMBLY INSTRUCTIONS

1. Cut off the plastic cap	
2. Insert the rocker into the hole at the bottom of the tank	
3. Turn the rocker down forwards you and locate the pump handle retaining clip here	
4. Push the rocker retaining clip onto the rocker, ensuring that the notch goes into the hole	

5. Push the long end of the connecting rod through the pump handle, retaining loop fitting and the holes on the top of the plunger	
6. Insert the split pin.	
7. Push the other end of the connecting rod through the hole on the rocker	
8. Fit the washer and the split pin	

b) Maintenance of the battery:

In the course of operation, one should understand the frequency and duration of charge according to the actual condition and referring to usual spray frequency and time. It's better to charge when the battery discharged to 60%--70%, the average charging time is about 8 hours. Longer charging time may cause the battery to lose water, hot and reduce the life.

Never stock the battery without power. If it happens so and you couldn't recharge the battery on time, it will easily get vitriolized to lead sulphate crystal, which jams the path of the electrical ions, and make the power insufficient. Also the capacity of the battery will get reduced. If the battery is without power for a long time, serious damage will be caused. Therefore, even if you are not using the battery for a short period, should charge it once in a month, so as to keep the battery in a good situation.



- It is normal that the charger is little hot while charging.
- Overcharge or over discharge will reduce the life of the battery remarkably.
- Don't connect the battery directly, or it will harm the safety of the battery.

Never try to disassemble and assemble the battery. The battery has the protection equipment and if you alter it, it will make the battery hot and split.

Don't connect the anode and cathode of the battery with any metallic material.

Don't transport battery with a metallic material, which will make the battery leak, hot and split.

The light on the charger will turn on if you recharge immediately after charging is over, it becomes normal. But this will result in overcharge and you should avoid the operation.

Don't throw the battery into the fire or heat it up, or it will make the battery split and electrolyte splashed.

c) Replace the fuse:

In order to protect the wire and electrical machine, this machine is equipped with a fuse. If a blowout happens due to any reason, please unplug the right and left fixed equipment, take out the assembly of battery, lax the packing belt, remove the battery, open the cap of fuse to replace the damaged fuse with a new one. In addition, please find out the cause of the blowout and find a remedy for it. After this, you could operate it once again.

Some causes of blowout:

- The charger doesn't coincide with the battery or has any other trouble.
- The pesticide got stuck to the liquid pump.
- The wire is short circuited due to the damage.
- Incorrect connection.

MAINTENANCE AND STORAGE

Daily maintenance:

The following maintenance should be done after daily job.

1. Cleaning the oil and dust on the surface of the machine.
2. Clean the chemical tank with clean water and wipe it dry.
3. Check if there is any leakage of water or fuel. If there is a leakage, remedy procedures are to be taken.
4. Check to see if the screws are loose or lost. If so, please tighten the screw or replace.
5. The battery must be charged before storage. Charge before every use in case of power shortage.
6. The machine after maintenance should be stored in a place which is dry and has good ventilation. It must be far away from any fire source and sunlight.

Long term Storage:

The machine which is to be stored for a long time should be maintained as follows:





1. Clean the machine surface carefully.
2. Discard any medicine in the tank and the pump, clean them with clean water.
3. The battery must be charged before storage. If stored for a long time, it should be charged every two months.
4. All the plastic parts must neither be exposed to the sunlight nor pressed by heavy matter.
5. Cover the machine with plastic dustcoat and store in a dry and clean place.

a) Cleaning

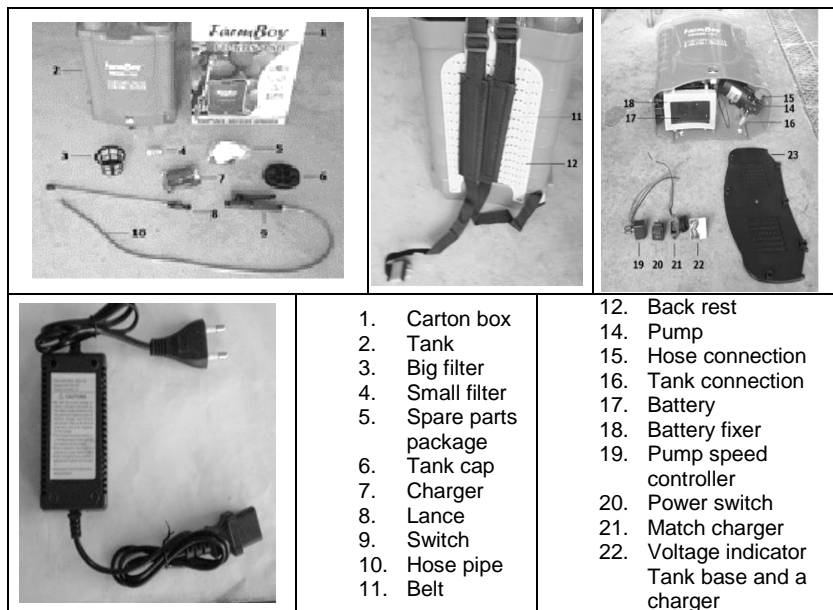
1. Clean chemical container
Discard remaining chemical liquid and wash it thoroughly. Fill one litre of water into the chemical tank and then rinse it slightly.
2. Clean the inside liquid pump
After cleaning the chemical tank, fill with clean water again and start liquid pump to mist so as to clean the whole pipeline.
3. Clean the filter net
 - a) Clean the filter net in the mouth of the chemical tank.
 - b) Clean the filter net of suction inside the chemical tank.
There is a filter net of suction at the bottom of the chemical tank to avoid the dust coming from the filter net of the mouth of the chemical tank to be sucked into the liquid pump. The filter of the suction is jammed to spray abnormally and will infect the liquid pump greatly. So please take out the filter of suction to clean carefully after operating. Fix it carefully after cleaning.



Don't allow the remaining chemical liquids and the water used for washing the machine flow into rivers, lakes, ponds or cloacae in order avoid pollution. Please deal with it innocuously

9. Screw one end of the hose onto the top of plunger, It is for sprayer manual operate	
10. Screw one end of the hose onto the tank pipe, It is for battery power operate.	
11. Screw the other end of the hose onto the bottom of the switch	
12. Screw one end of the lance onto the top of the switch. Attach the nozzle of choice to the other end of the lance	

PARTS OVERVIEW



Problem	Cause	Remedy
Abnormal misting		
does not increase	Inlet nozzle on the tank lid got jammed	Clean the nozzle
	The motor is abnormal	Replace the motor
	Spout wear	Replace
	The pressure switch is not effective	Replace the pressure switch
	The tube is jammed or out of shape	Cleaning or tidying up
	Pressure nut is loose	Tighten the nut
	Pressure spring is not effective	Replace the pressure switch
	Low voltage	Charge or replace the battery
Charge abnormally		
Cannot charge	The battery is abnormal	Replace the battery
	The charger is abnormal	Replace the charger
	Connection line is bad	Reconnection
	Line turned off	Replace or repair the line
The capacity of the Accumulator cannot recover	Time for charge is not enough	Charge for some more time.
	The battery is abnormal	Replace the battery
	The charger is abnormal	Replace the charger
Fuse got melted		
The motor does not Work	The pressure switch is not effective	Replace the pressure switch
	The switch is not connected well	Replace the switch
	Motor runs heavily	Replace the motor

TROUBLESHOOTING-BATTERY SPRAYER

Problem		Cause	Remedy
Abnormal misting			
The motor does Not work		The power switch is in “0”(off)	Switch to “— “(on)
		The plug is lax	Reconnection
		The Switch got damaged	Replace the switch
		The Line is cut off	Replace the line or Reconnect it
		Fuse got melted	Replace the fuse
		The motor is cut out	Replace the motor
		The motor is burned to damage	Replace the motor
		The voltage of the battery is low	Charge or replace the battery
		High pressure on pipe	Open the handle Switch
		The pressure switch is not effective	Replace pressure switch
		Defect in PCB	Check and repair the PCB, replace it if necessary
The motor is running	No spraying	The nozzle got clogged/blocked	Clean the nozzle
		No medicine liquid in the tank	Fill chemical Liquids
		The air valve of the chemical tank lid got clogged	Clean the air valve
		Pump valve got clogged	Clean the pump valve
		The absorbing filter got jammed	Clean the filter
		The nut on the pressure switch is loose	Tighten the nut
		Pump valve got jammed	Clean the pump valve
		Pressure spring is not effective	Replace the pressure spring
		The diaphragm is not effective	Replace the diaphragm
	The pressure	Pump valve got clogged	Clean the pump valve
		The adjusting valve of pressure got jammed	Clean the valve

OPERATION-MANUAL SPRAYER

A. STRUCTURE

The machine is composed of the following:

1. Container of liquid
2. Pump and air chamber
3. Spraying system (including rubber hose and components, switch, sprayer spindle and head)
4. Operation arm and components
5. Backpack belt system

B. CHARACTERISTICS

1. The external form is an imitation of the human backs curve and the combination of the air chamber and pump located in the liquid container makes the whole structure compact and safe with no leakage.
2. The operation arm uses an action connecting style so that it can be installed on both sides. It is convenient and quick in action and the user can accordingly to his habit and usage operate it mutually changeable with the right or left hand reducing the labor intensity.
3. Various spray heads can be fitted for use in different tasks, to achieve a fine spray and sprinkle effects.
4. The chosen materials for the machine are resistant to acid, alkalinity and corrosion. The machine is sealed hermetically and is very durable.

C. WORKING PRINCIPLE

By swinging the operation arm and components, the pump bowl rises up and down which allows the sealing ball to turn on and off. This in turn makes the pressure in the air chamber rise up and down which then forces the medicinal liquid into the chamber, the liquid can then go through the spraying system and spurt out as spray.

D. OPERATION

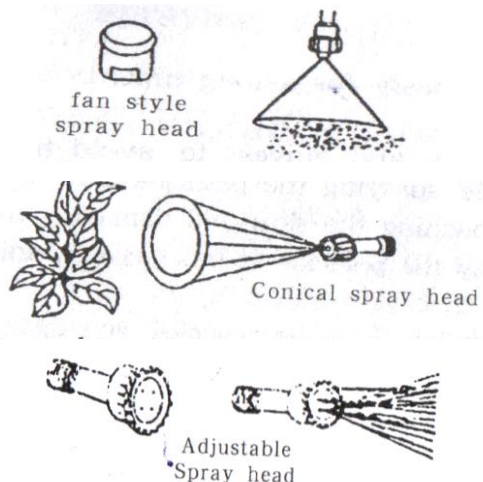
1. After the packing box of new machine is opened please check all the parts conform to the packing list.
2. Then assemble the machine as per the structure sketch. Before use please wrench the cap off the container.
3. Pour the compounded medicinal liquid through the filter into the container slowly, then close the cap tightly and put the machine on your back.
4. After the pressure in the air chamber is boosted swing the operation arm and then press the switch component to begin spray operation.
5. It can be point-spray or it can be continuous spray. At the same time adjust the nut according to the requirement of the crops in order to improve the quality of spraying.

6. Choose the different spray-head for spraying correctly. Along with the machine 3 kinds of spray heads are delivered.

Fan style spray: This sprays evenly and is suitable for spraying on low and short stalked crops and for the spraying of weed killer. Keep the spray head stable and spray in the same direction as the wind.

Conical spray head: This can be used for spraying pesticide and insecticide, to prevent diseases and kill insects. Spray in the same direction as the wind.

4 Hole adjustable spray: This can be used for spraying on the high stalk crops and fruit trees. Its shortcoming is the serious running off the medicinal liquid.



OPERATION-BATTERY SPRAYER

A. CONSTRUCTION

The dissepiment pump: It is the core part of this machine. It influences the property of the whole machine. The power of the machine comes from DC motor which keeps the membrane running. There is a press –control switch on the dissepiment pump, if the operating pressure exceeds the rated pressure, the pump power will be shut off automatically to protect the motor. The dissepiment pump connects with tank by pump holder.

Battery: The specification is DC12V7AH, fixed in the sprayer. The battery is held on the battery seat by the belt. The battery is charged by the charging-line combination, also the fuse on the charging-line combination protects the motor.

Chemical Tank: It is filled with liquids. The tank's design is based on the shape of the person's back, so it is comfortable to wear on the back.

Spraying Part: It accomplishes the spraying work. There is a clique core switch, non-omit and is easy to operate. To start working, turn on the power switch and press the handle switch, the pump will shut down automatically if the handle is released. If you repress the handle, it works again.

Knapsack system: It is composed of straps and pad used for wearing on the back

B. OPERATION

1. Introduction to the function:

Model	FB-KMB-4165	FB-KMB-4185	FB-KMB-4169	FB-KMB-4189
Chemical Tank Capacity (L)	16	18	16	18
Battery	8AH (12V) with 1.0 A charger		12AH (12V) with 1.7 A charger	
Auto-cutoff water pump (L)	3.1		3.6	
Other features	SS telescopic lance, four plastic nozzles & speed regulator,			
				Mobile connector, Round LED light

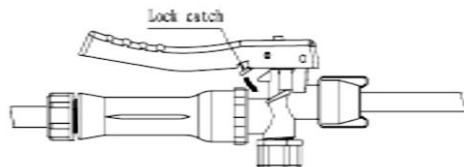
TROUBLESHOOTING-MANUAL SPRAYER

Problem	Cause	Remedy
The sprayer has Leakage and is not spraying well.	Sealing plate is damaged or not wrenched firm	Replace the sealing plate or wrench firm
The operation arm exerts more pressure while pumping	Spray head or filter block up	Clean the filter and spray head, add Vaseline to the activating parts.
Need to apply less pressure while pumping the operation arm feeling	Abrasion of the bowl or the sealing ball.	Change the bowl or sealing ball.
The operation arm exerts no pressure while pumping	Sealing ball is missing or removed	Fix the sealing ball properly

Adjust the switch to the "-". Grasp the handlebar, open the check valve and then spray.

Stopping:

- Adjust the switch to "o", the liquid pump will stop.
- Release the handlebar to stop the operation.



When the charge in the battery is low, the water flow will gradually reduce, indicating a recharge. The battery doesn't have to drain completely to recharge each time, it can be recharged at any moment and even can saturate, which doesn't affect its life.

After spraying, expel out the remaining liquid, wash the inside wall of the chemical container with clean water. Then add clean water into the chemical tank, start liquid pump, rotate for 2~3 minutes. Make sure that the spraying pipe, inside the pump and the nozzle are washed clean, then swill the liquid in the chemical tank. Then, restart the liquid pump to expel out the remaining liquid completely. After that, the power switch is adjusted to place "0".

TECHNICAL SPECIFICATION

Model	FB-KBS-160	FB-KBS-161	FB-KBS-180	FB-KBS-181
Capacity of Chemical Tank(L)	16		18	
Battery	DC12V .7AH			
Pump	DC12V. (1~2) A			
Charger	Input 100V~240V, Output 12V, 1.2A			
Model	FB-KMB-4180			FB-KMB-4181
Chemical Tank Capacity	18L			
Battery	DC12V .7AH			
Pump	DC12V. (1~2) A			
Charger	Input 100V~240V, Output 12V, 1.2A			

As shown in the figure, Control system is installed on the cover: Voltmeter, Speed Regulator, Charging Plug and a Power Switch.

Voltmeter Indicate over-discharge, over-charge and normal service condition.

Speed Regulator : Adjust the rotating speed of the pump to make the pump work stably, achieving the result of spraying stabilization.

Charging plug: Linked with charger to transmit energy to the battery.

Power switch: Control the connection between the power and diaphragm pump.

Under voltage protector (optional) : Linked with speed regulator to protect the battery.

When the battery voltage reached the preset protecting voltage 9.5-10V, buzzer rings indicating that you should stop working to charge battery for maintenance



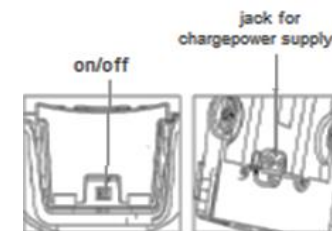
2. Charging the Battery:



- The new machine must be charged before using.
- If a machine is stored for a long time, it must be charged before use.
- Charging with the special charger

Please untie the belt and back mat to disclose the battery completely. There are two plugs on the plate, one is connected to electric power, usually there is a plug connected to an electric pump to supply power, and the other jack is used to connect with the plug of the charger.

When charging, you only insert the output of the charger to the jack and then connect the input with 220V alternating current. The signal light on the charger is red during normal charging. It will change to green when it is fully charged.



The conditions for using the charger:

Standard Pressure
Input Frequency
Using Temperature
Storing Temperature

AC100V~240V
50/60Hz
+10°C~+30°C
-10°C~+40°C

Using Place

Only in inside



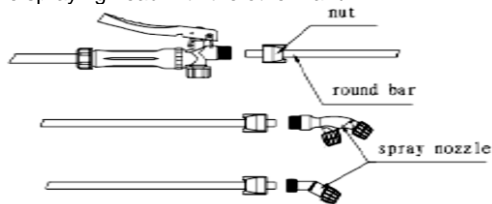
- The time of charging for the new machine or a machine stored for a long time must be 24 hours.
- Don't let the switch in the place of “—” while charging.
- Please pull out the wire of the charger from the jack after the charging is completed.
- An Improper battery wire connection will burn the battery and charger. The red wire should be connected with the red end of the battery.
- Don't charge in a wet room or with wet hands, as it may cause an electric shock.
- Please use the special charger for this machine in order to avoid fire. In addition, it is prohibited to charge any other electrical machines with the special charger of this machine or as a power source.
- Please pull out the wire of the battery from the socket once the charging is completed.
- Don't let this machine exposed to the sun, high temperature conditions and the things radiating heat, which may lead to ageing of the battery, battery leakages, radiate heat, split and even fires.
- If you find the charger abnormal, pull out from the plug immediately in order to avoid electric shock, radiating heat and causing fires.
- Don't adopt generator as the electrical source of charging, which may destroy the charger. Don't pull the wire off the charger forcibly.
- Please clean the electrical pick off of the battery with dry cloth. Bad connection will cut the power supply or may result in charge failure.
- Be sure of the safety, please store this machine in place out of reach of children and infant in order to avoid an electric shock.



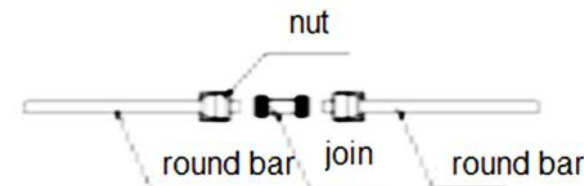
If the battery of this machine needs to be replaced, it must be confirmed by the company. The disabled battery couldn't be thrown away anywhere. Please send it into the proper recycle centre which can deal with it.

3. Connection of the spraying parts:

- a) Fix the spraying pole in the place as shown in the figures.
- b) Insert the spraying pole into the switch and fasten the screw cap.
Caution: Don't fasten the nut with the pliers, or it may harm the nut.
- c) Hold the knob assembly with one hand and adjust the direction of the nozzle by holding the spraying head with the other hand.



- d) If you want to spray higher, you could connect two spraying poles, which will increase the total length.



- e) This machine has three different kinds of nozzles. You could use the nozzle according to different conditions.

Model of the Nozzle	Diameter of the Nozzle (mm)	Flow (L/min)	Working Pressure (MPa)	The amount of Nozzle
Taper Nozzle	1.0	0.8	0.15~0.35	1
Sector Nozzle	0.7	0.48	0.15~0.4	1
F Nozzle	1.5	1.2	0.15~0.25	2

Note: The data in the table is the trial value of our company and not the confirmed value. The amount of spraying mist and working pressure may change with the environment.

4. Add Liquids

- a) Please keep this machine on the actinic ground when adding liquids.
- b) Please use the filter screen when you are adding liquids. The filter screen can protect the liquid plug from jam, for the jam can result in abnormal jet.
- c) Please be slow when adding chemical in order to avoid over brimming. Once over brimmed, please wipe it dry and clean with gauze so that the chemical doesn't flow into the battery and electric pump. The chemical liquids, can corrupt the electric equipment and shorten the life of this machine.
- d) It is strictly prohibited to use menstruums easy to curdle when meeting heat for the heat generated by the working of liquid pump is easy to curdle that menstruum so that the liquid pump doesn't work.

Note:

- Please make sure that the switch of electric power is open before adding the chemical.
- There is a scale on the side of chemical tank, please add chemical liquid according to the quantity of work.
- It is strictly forbidden to spray highly acid liquid, paint and volatile menstruum.

Warning:

Please follow the chemical menstruum recommended by the manufacturer to mix chemical liquid, or it will harm crops and body. Be sure to mix the chemical liquids in proper proportion in other containers. The filter must be used when filling the chemical liquids into the chemical tank. Please fasten the chemical cap after filling is completed.

5. Misting

Warning: Be sure to check the battery after adding water into the chemical tank. The liquid pump must avoid idler revolutions in order not to harm it.

Starting: