



Back Pack Sprayer

Operator's Manual

MODELS **MS - 40**
 MS - 50



WARNING **DANGER**

Read rules for safe operation and all instructions carefully. ECHO provides this Operator's Manual which must be read and understood for proper and safe operation.

INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job dependability. Read and understand this manual. You will find it easy to use and full of helpful operating tips and SAFETY messages.

THE OPERATOR'S MANUAL

Contains specifications and information for safety, assembly, operation, maintenance, storage, troubleshooting, and service specific to this product.

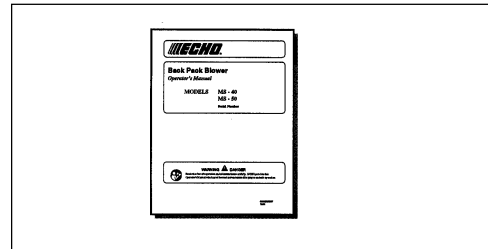


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Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.

OPERATOR SAFETY

WARNING DANGER

- Carefully read and understand the Operator's Manual supplied with this unit prior to filling using, and/or cleaning this sprayer .
- **DO NOT** use flammables in the sprayer. They can ignite or explode causing serious injury .
- Always wear splash goggles and protective gear and clothing when filling, using and/or cleaning the sprayer.
- Oil the rubber cap gasket prior to first usage so the gasket will seal properly.
- Tighten all connections before using the sprayer. Some may not be properly secured and must be tightened to prevent leakage.

WARNING DANGER

BEFORE USING: Oil cap gasket, oil check valve, and maintain breather hole clear of debris. Your failure to oil and to clean check valve, and to maintain breather hole open to allow air into tank, can cause tank to collapse and crack due to vacuum created by the pump.

Read and understand this entire manual before using the sprayer, to avoid a potentially serious situation.

- Always inspect your sprayer thoroughly before and after each use. Check to be sure hose is securely attached and in good condition before pressurizing the tank.
- Do not spray on or near electrical installations.
- Keep the work area clear of people and animals.
- Never use the sprayer during windy conditions.
- Always wear goggles when filling, using and cleaning the sprayer.
- Always wear a mask or respirator when filling, using, and cleaning sprayer, if recommended by the spray material manufacturer.
- Wear protective gear and clothing when filling, using, and cleaning the sprayer.
- Always release pressure in the pump prior to filling, cleaning, or servicing the sprayer.
- Before opening a container of pesticide or other spray material, carefully read, understand, and follow all instructions on the label.
- Do not use flammable materials in the sprayer; they can ignite and/or explode, causing serious injury .
- Never use caustic or corrosive materials in the sprayer, which could result in damage to the unit.
- In case of personal contamination: remove contaminated clothing, remain upright, do not consume liquids or cause vomiting, and get professional help immediately.
- Never attempt to pressurize the unit by any other method than with the pump module provided. Never over-pressurize the unit.
- Do not eat, drink, or smoke while spraying.
- Wash face and hands with soap and water after spraying.
- Clean and rinse tank and spraying assembly after each use to prevent crystallizing, which would later cause clogging and chemical damage to the unit.
- Do not store sprayer under pressure, or with spray solution in tank.
- Do not transfer spray materials to other containers, especially, food and/or drink containers.
- Keep spray materials locked up and out of reach of children and animals.
- Use only original manufacturer's replacement parts.

SPECIFICATIONS

MODEL	MS-40	MS-50
SPRAYER TYPE	Backpack	Backpack
TANK CAPACITY	4	5.4
WEIGHT	10.6 lbs.	12.2 lbs.
SEALS	Special Viton	Special Viton
TANK MOUTH	6"	6"
PUMP TYPE	Internal Piston	Internal Piston
PRESSURE CHAMBER CAPACITY	25.4 oz.	27.4 oz.
WAND TYPE	16" Brass	20" Brass
FLOW CAPACITY AT NOZZLE	0.49 GPM	0.49 GPM
STANDARD NOZZLE	Fan	Fan
PRESSURE RATING	15 TO 168 PSI	15 to 168 PSI
RECOMMENDED APPLICATIONS		
CHLORINE BASE	X	X
FERTILIZERS	X	X
HERBICIDES	X	X
INSECTICIDES	X	X
PESTICIDES	X	X
OIL-BASED SPRAY	X	X
SOLVENT-BASED SPRAY	X	X
STAINS/SEALERS	X	X
DISSOLVABLE POWDERS	X	X

CONTENTS

- _____ Pump Handle and Pump Lever
- _____ Tank Assembly
- _____ Spray Wand
- _____ Parts bag (includes: snap pins and washers)
- _____ Operator's Manual
- _____ Echo Limited Warranty and Warranty Registration forms

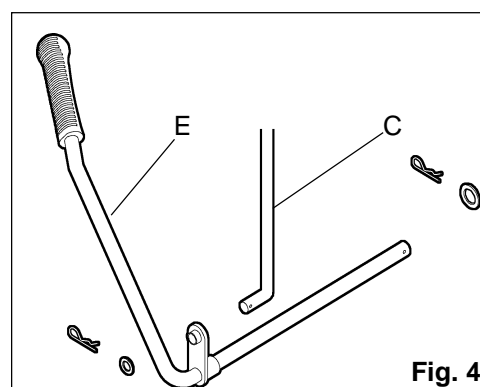
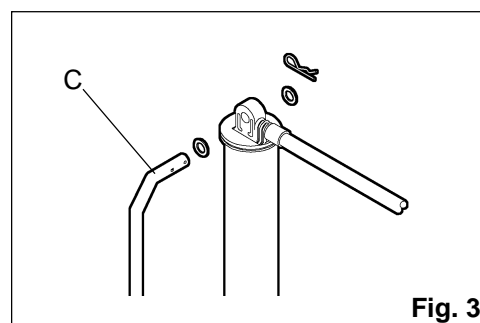
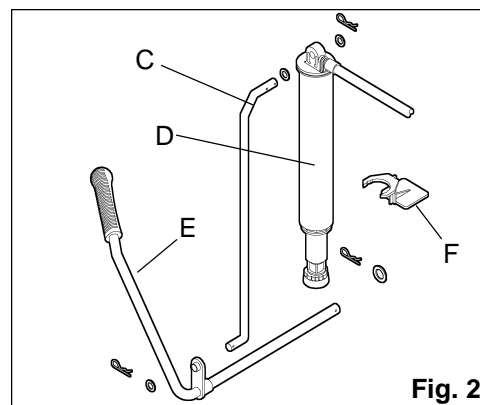
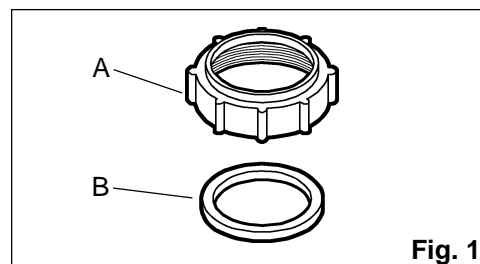
ASSEMBLY AND MAINTENANCE

1. Remove all contents from box.

IMPORTANT

Lubricate felt washer assembly, gasket inside cap, and check valve before initial use, and after each use.

2. Unscrew tank cap and remove strainer. Apply a coating of 5 or 10 weight oil to the tank cap O-ring and check valve.
3. With tank cap removed, disconnect the agitator (F) from the pump module (D) inside the tank.
4. Unscrew pump module cap (A) from the top of the tank.
5. Lift pump module/cap out of tank.
6. Slide cap off pump assembly. - Fig. 1
7. Remove felt washer (B) from cap, and liberally oil by dipping in 5 or 10 weight oil. - Fig. 1
8. Reassemble felt washer to inside of cap, and reinstall on tank. When first contact of felt is made with tank lip, tighten one additional half turn. Do not completely tighten at this time.
9. Install pump module into tank through pump module cap assembly, and tighten cap securely.
10. Snap agitator into pump module groove, with paddle up.
11. Locate the pump lever (C) - Fig. 2 There are two (2) bends on one end of the pump lever. This end is installed on the pump module. - Fig. 3
12. Place one small washer on pump lever before installing on pump module.
13. Insert pump lever through opening on top of pump module.
14. Place second small washer on pump lever and secure lever assembly with snap pin.
15. Insert pump handle through hole at base of the sprayer on pump module side. Before installing handle completely, insert pump lever (C) into bracket on pump handle (E). - Fig. 4
16. Insert pump handle completely. Install small washer and snap pin to secure pump handle to pump lever.
17. Install large washer and snap pin to secure the pump handle at the base. **(The pump handle assembly is now complete.)**
18. Hook the plastic clips attached to the shoulder straps into the openings at the base of the unit.
19. Attach spray wand to spray gun and firmly tighten.



PRE-OPERATION

IMPORTANT

Before using, oil cap gasket, felt pump washer, and check valve, and maintain breather hole clear of debris. Your failure to oil, clean check valve, and maintain breather hole open to allow air into the tank, can cause the tank to collapse and crack, due to vacuum created by pump.

1. Remove cap.
2. Mix solution in a separate container, following the manufacturers' directions.
3. Pour pre-mixed solution through strainer into tank. Reinstall cap tightly.
4. Place sprayer on back and pressurize tank by pumping approximately 5 to 11 times.
5. You will need to pump occasionally to maintain the desired spraying pressure.
6. Always oil the gasket on the cap of the unit, as well as the check valve. This will extend the life of the seal and is important for obtaining a proper seal with no leaks.
7. A unit that has been used with herbicides should never be used to spray insecticides, unless the sprayer has been properly cleaned and all other chemicals neutralized. Failure to do this could cause you to kill plants that have been sprayed. Consult with the manufacturer of the chemicals in use to obtain proper instructions.

MAINTENANCE, STORAGE

1. Remove cap and pour out remaining solution, then rinse all parts thoroughly with clean water.
2. Add 1/2 gallon of fresh water in tank. Pressurize, and flush pumping system by depressing trigger for at least two minutes; then drain all remaining water.
3. Always store tank clean and empty in a dry, shaded location.

TROUBLESHOOTING

PROBLEM:

When you squeeze the trigger on the spray gun, it sticks and is slow in returning to the shut off position when you release the trigger.

CAUSE:

The O-rings have been under chemical attack and have deteriorated.

SOLUTION:

Replace O-rings in spray pistol and on brass spindle inside the spray gun. If these O-rings have deteriorated, you should also replace all other O-rings and seals in your sprayer before leaks or other problems occur.

The pin in the spray pistol sticks when pushed. When you release the trigger, the pin does not come back up to shut off the flow.

The O-rings and washer on the spindle inside the spray pistol have deteriorated from age or chemical attack.

Unscrew cap on bottom of spray pistol. Push up brass spindle and replace the O-rings and washer .

The sprayer will not pressurize. You pump, but no pressure is built up, the unit only sprays when you pump.

1. The pump module (tube) has lost the air pressure head. All the air has escaped from the top of the pump module, due to improperly tightened siphon, nut, hose assembly. The washer that comes with the siphon, nut, hose assembly has deteriorated and is no longer sealing properly.
2. Split or cracked pump module.

1. Empty sprayer of spraying solution. Unscrew cap (nut) from the top of pump module and remove. Turn sprayer upside down in order to empty pump module. Be careful not to lose the plastic ball inside the pump module. Once pump module is empty, place ball back inside pump module and place siphon tube back in pump module, tighten cap (nut) with wrench. Make sure it is very tight. Unit should be ready to operate.
2. Tighten the nut at the bottom of the pump module with a small wrench.
3. If cap is tightened, replace seal and screw P/N 4017000.
4. If pump module is cracked, replace with spare parts through your Echo dealer.

Fluid is leaking from cap where it screws into the tank and should seal with the tank.

Because of capillary action, fluid is being pulled through by pressure.

Cap may be loose. Oil the gasket (any type of 5 - 10 weight oil); this will stop the passage of fluid.

Unit falls onto its side and leaks through the center of the cap where the check valve is.

Deteriorated check valve, or could be dusty or have some dirt or foreign matter.

Pull check valve out. If deteriorated, replace. If not, clean out. Place small drop of oil and reinstall.

Unit works properly, but the tank starts to collapse. You can't unscrew tank cap due to vacuum.

The vent hole in the cap has become clogged with dirt and is not allowing air into the tank.

Take a small wire and push it through the vent hole. This will allow air into the tank and release the vacuum. Take the cap off, clean vent hole, clean the check valve, oil valve and re-install.

SERVICING INFORMATION

PARTS

Genuine ECHO Parts and ECHO REPOWER™ Parts and Assemblies for your ECHO products are available only from an Authorized ECHO Dealer. When you do need to buy parts, **always** have the Model Number of the unit with you. You can find this number on the tank. For future reference, write the model number in the space provided below.

Model No. _____

SERVICE

Service of this product during the warranty period must be performed by an Authorized ECHO Service Dealer. For the name and address of the Authorized ECHO Service Dealer nearest you, ask your retailer or call: 1-800-432-ECHO (3246). Dealer information is also available on our Web Site. When presenting your unit for Warranty service/repairs, proof of purchase is required.

ECHO CONSUMER PRODUCT SUPPORT

If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the ECHO Consumer Product Support Department at 1-800-673-1558 from 8:30 am to 4:30 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit to help your Consumer Product Support Representative.

WARRANTY REGISTRATION

You may register your Echo equipment using the warranty registration card or register on-line at www.echo-usa.com. Registering provides a direct link between you and ECHO if we find it necessary to contact you.

ADDITIONAL OR REPLACEMENT MANUALS

Operator's and Parts Manuals are available by:

- Downloading free from www.echo-usa.com
- Purchasing from your Echo Dealer.
- Sending a check or money order for \$2.00 per Parts Catalog or \$1.50 per Operator's Manual made payable to ECHO, INCORPORATED. State on a sheet of paper the model number of the ECHO unit you have, part number of the manual (if known), your name and address, and mail to the address below.

Available Parts Catalog

MS-40	Part Number	99922202861
MS-50	Part Number	99922203481

DEALER?

Call
1-800-432-ECHO

or

www.echo-usa.com

CONSUMER PRODUCT SUPPORT

1-800-673-1558

8:30 - 4:30 Mon - Fri C.S.T.



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