

OPERATOR'S MANUAL POWER SPRAYER SHR-210



WARNING **DANGER**

**READ INSTRUCTIONS CAREFULLY AND FOLLOW RULES FOR
SAFE OPERATION.**

FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY.

ECHO, INCORPORATED

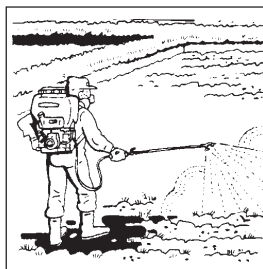
400 Oakwood Road, Lake Zurich, Illinois 60047-1564
Phone : 847-540-8400

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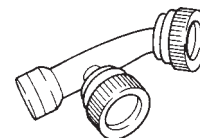
06/07

VARIETY OF NOZZLE FOR ECHO POWER SPRAYER SHR-210

Convenient to use and reliable, the go anywhere SHR-210 power sprayer is highly versatile with a large variety of optional nozzles which adapts it to a wide range of applications. The use of this power sprayer at home, on the farm or in a commercial environment are limitless. Most importantly, what used to take hours takes only minutes with the SHR-210, making it an unequaled value for the homeowner and professional alike.

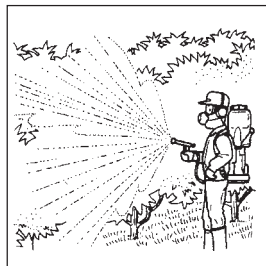


**2-head nozzle
(Standard line type)**

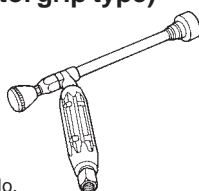


Part No.
224 203-1061 0

Standard

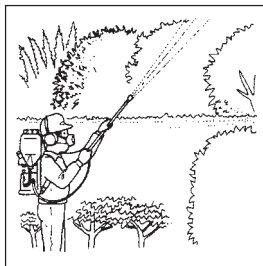


**Adjustable jet nozzle
(Pistol grip type)**

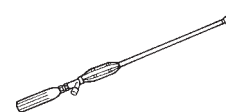


Part No.
224 000-1061 0

Optional

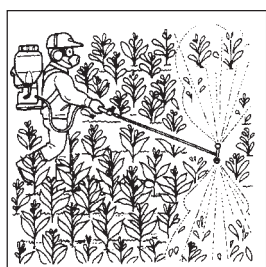


**Adjustable jet nozzle
(Long distance type)**

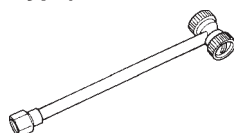


Part No.
224 100-1061 0

Optional

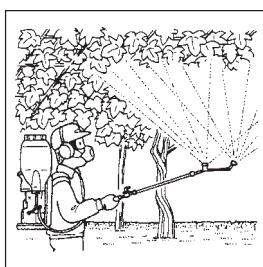


**2-head nozzle
(T-type)**

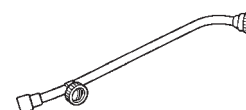


Part No.
224 201-1061 0

Optional

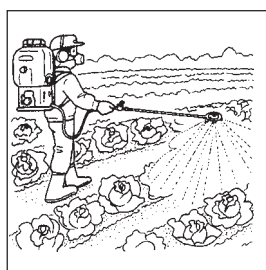


**2-head nozzle
(Line type)**

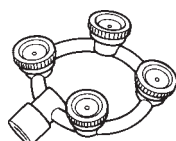


Part No.
224 202-1061 0

Optional

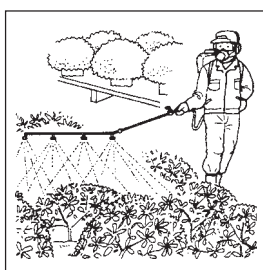


**4-head nozzle
(Ring type)**

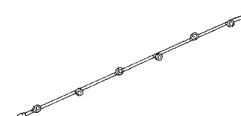


Part No.
224 101-1061 0

Optional



**7-head nozzle
(Line type)**



Part No.
224 104-1061 0

Optional

Nozzle specifications (At 1.0 MPa [10kgf/cm²]: 142.2 psi)

Nozzle	Discharge volume			Spraying distance	
	L/min	Fl oz	US/min	m	ft
2-head nozzle (Standard line type)	2.4		81.2		
Adjustable jet nozzle (Pistol grip type)	Mist: 2.4		81.2	3	10
	Spray: 5.0		169	5	16.7
Adjustable jet nozzle (Long distance type)	Mist: 2.4		81.2	3	10
	Spray: 5.0		169	5	16.7

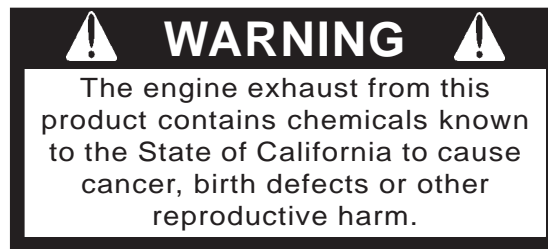
* Optional nozzles are available at extra cost
 • For some country, a optional nozzle is supplied as standard part.

Nozzle	Discharge volume	
	L/min	Fl oz US/min
2-head nozzle (T-type)	2.4	81.2
2-head nozzle (Line type)	4.2	142
4-head nozzle (Ring type)	1.5	50.8
7-head nozzle (Line type)	2.0	67.6

IMPORTANT

RULES FOR SAFE OPERATION

1. Handle gasoline with care. It is highly inflammable.
 - Refuel before starting work.
 - Do not smoke while handling fuel.
 - Do not refuel a hot engine.
 - Avoid spilling fuel or oil. Always wipe unit dry before using.
 - Move at least 3 m (10 feet) away from the fueling point before starting engine.
 - Always store gasoline in an approved container.
2. Do not operate in unventilated area.
3. Do not allow bystanders in work area.
4. Do not point the nozzle in the direction of people.
5. Always wear safety glasses and gloves.
6. Avoid wearing loose clothing or loose scarf.
7. Always use a face filter mask to avoid breathing chemicals.
8. Handle agricultural chemicals with care. It is poisonous.
 - Always remove chemicals from the tank when not in use.
 - Store chemicals in a safety container.



Locate this safety decal on your unit. The complete unit illustration found in the “NOMENCLATURE” section, will help you locate them. Make sure the decal is legible and that you understand and follow the instructions on them. If a decal cannot be read, a new one can be ordered from your ECHO dealer.

WARNING ⚠ DANGER

This sprayer is operated with liquid under pressure. Failure to observe safety precautions or follow instructions for operating and cleaning can cause tank, hose and other parts to be weakened and or rupture under pressure. This can result in **SERIOUS INJURY** from high pressure discharge of liquids or forceable ejection of parts.

WARNING ⚠ DANGER

DO NOT use flammable materials in this sprayer. Material could ignite or explode causing **SERIOUS INJURY**.
 DO NOT use caustics or acids. Either can cause corrosion and weaken hose and gaskets.
 DO NOT use hot water. Excess heat can weaken plastic and rubber components.
 DO NOT use sprayer if hose is frayed, cracked or shows signs of swelling.
 ALWAYS read and understand directions supplied by manufacturer/packager of product to be sprayed.
 ALWAYS wear goggles that meet ANSI Z87.1 specification and protective clothing when using sprayer.
 ALWAYS use ECHO replacement parts. Use of improper parts may lead to a failure and serious injury.
 ALWAYS KEEP SPRAYER AND SPRAY MATERIALS OUT OF THE REACH OF CHILDREN.

IMPORTANT

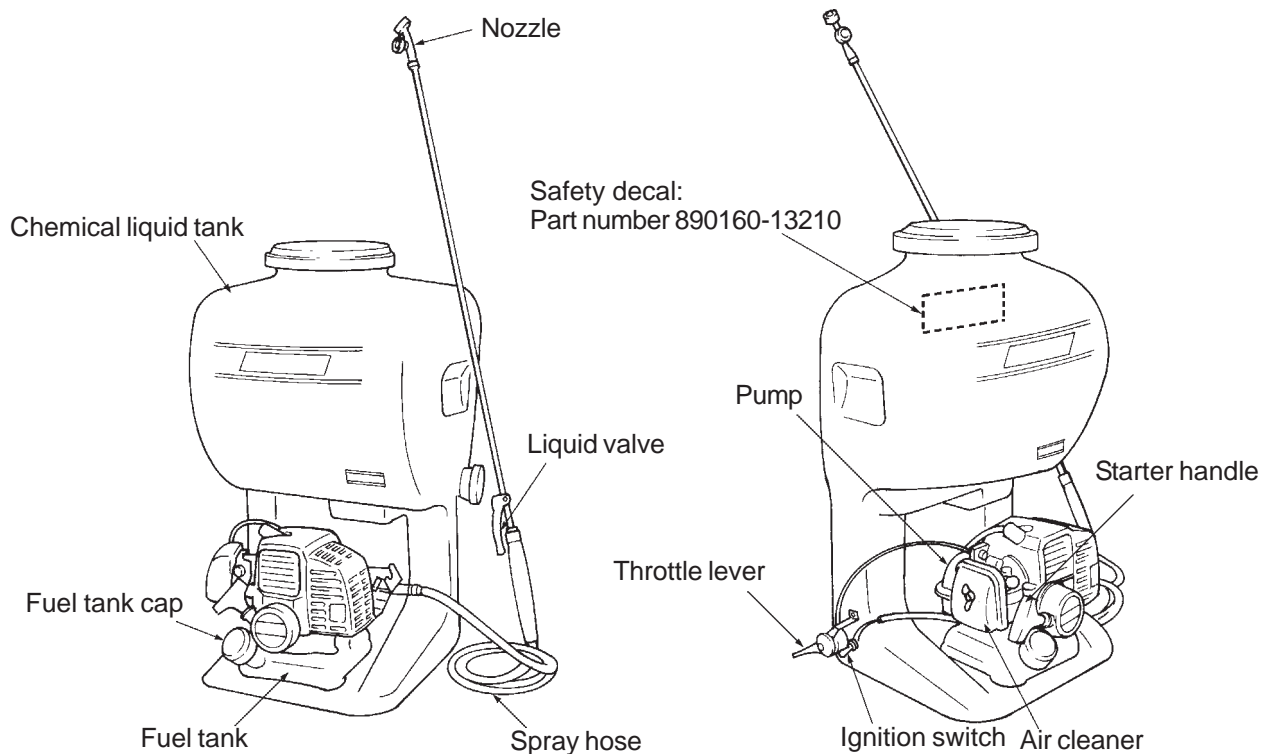
DO NOT operate without liquid in the chemical tank. Damage to the pump will occur.

Safety decal: Part number 890160-13210

CONTENTS

RULES FOR SAFE OPERATION	3
NOMENCLATURE	4
TECHNICAL DATA	4
ASSEMBLING	5
OPERATION	5
MAINTENANCE AND CARE	8
TROUBLE SHOOTING	10
STORAGE AFTER USE	11

NOMENCLATURE



TECHNICAL DATA

Dimension	L × W × H	mm (in.)	330 × 405 × 590 (13.0 × 15.9 × 23.2)
Mass	w/o Spraying hose and nozzle	kg (lb)	7.4 (16.3)
Capacity	Chemical liquid tank	L (gal.US)	19.0 (5.0)
Engine	Type		Air cooled, two stroke single cylinder
	Displacement	mL (cu.in.)	21.2 (1.3)
	Rated speed	r/min	7500
	Carburetor		ZAMA diaphragm type
	Ignition		Flywheel magneto : CDI (Capacitor discharge ignition) system
	Spark plug		NGK BPM8Y
	Starter		Recoil starter
Fuel	Mixing ratio		Mixture of gasoline (unleaded, 89 octane minimum) and specially blended 50 : 1 ECHO two cycle engine oil.
	Tank capacity	L (fl.oz.US)	0.5 (16.9)
Pump	Type		Regenerative pump
	Discharge volume (Nozzle)	L/min (fl.oz.US/min)	0.8 - 7.0 (27 - 236.7)
	Pressure	MPa (kgf/cm ² (psi.))	0.6 - 1.0 (6 - 10 (85.3 - 142.2))
Nozzle			2-head nozzle*
Spraying hose			7.5 mm φ (Inner diameter)

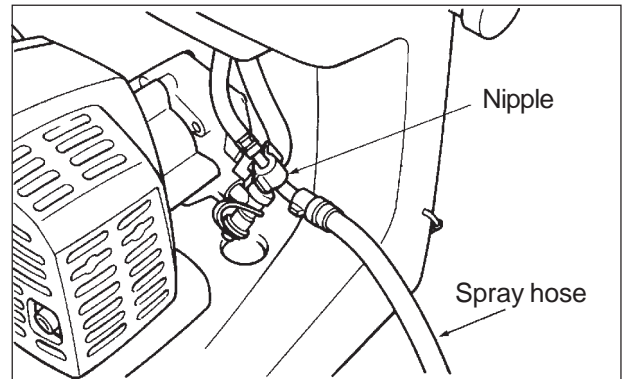
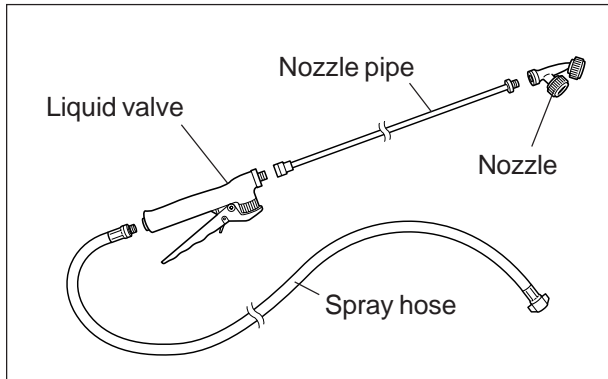
* Technical data may be changed without advance notice.

* Other nozzles are available as optional supply.

ASSEMBLING

SPRAY HOSE AND NOZZLE

- Install spray hose, liquid valve, nozzle pipe and nozzle to the machine.



SHOULDER STRAPS

- Shoulder straps are adjustable to fit any operator.
- Adjust straps so that pads rest comfortably on the operator's shoulders.

OPERATION

GENERAL CHECK

- Ensure that all nuts, screws and bolts installed are properly tightened.



WARNING

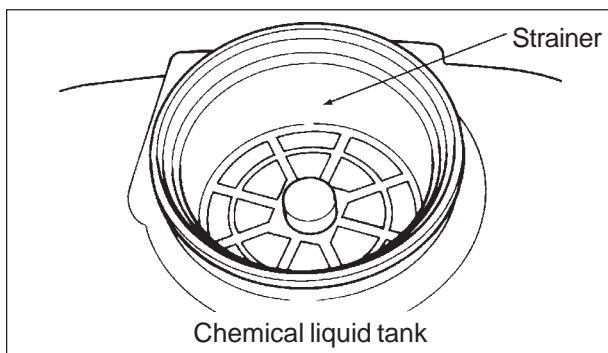
Alternative fuels, such as E-20 (20 % ethanol), E-85 (85 % ethanol) or any fuels not meeting above requirements are **NOT** approved for use in ECHO 2-stroke gasoline engines.

Use of alternative fuels may cause performance problems, loss of power, overheating, fuel vapor lock, and unintended machine operation, including, but not limited to, improper clutch engagement.

Alternative fuels may also cause premature deterioration of fuel lines, gaskets, carburetor and other engine components.

Fuel mix chart (50 : 1)

US		METRIC	
GAS	OIL	GAS	OIL
GAL.	FL.OZ.	L	mL
1	2.6	4	80
2	5.1	8	160
5	12.8	20	400



FUEL STATEMENT

GASOLINE - Use 89 Octane [(R+M)/2] gasoline or gasohol known to be good quality. Gasohol may contain maximum 10 % ethyl (grain) alcohol or 15 % MTBE (methyl tertiary-butyl ether). Gasohol containing methyl (wood) alcohol is not approved.

OIL - ECHO brand premium two-stroke 50 : 1 oil is preferred. Mix oil and gasoline / gasohol according to instructions on the oil container label.

MIXING - Follow directions on the oil container.

NOTE

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

Stored two-stroke fuel may separate. **ALWAYS** shake fuel container thoroughly before each use.

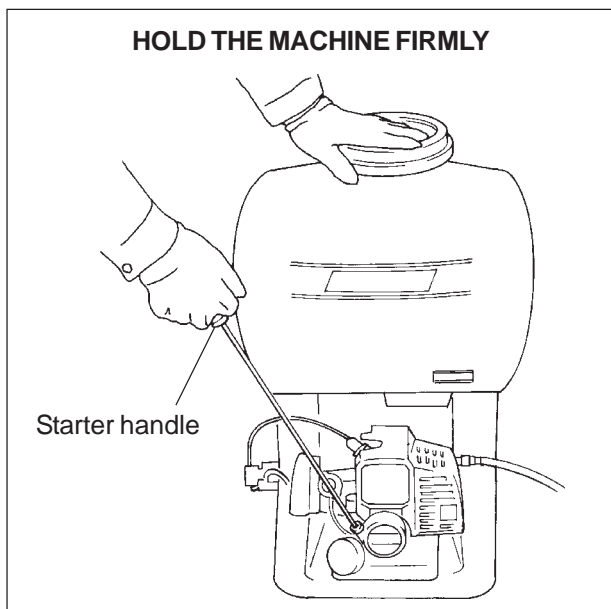
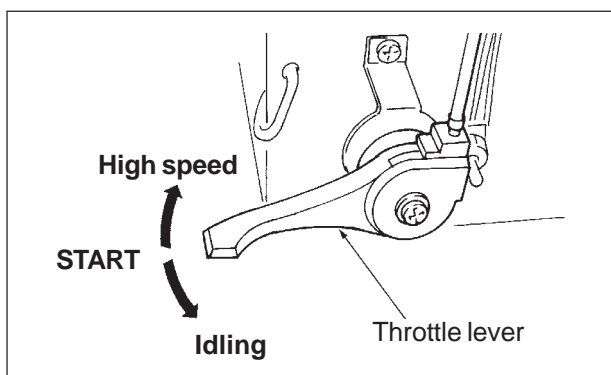
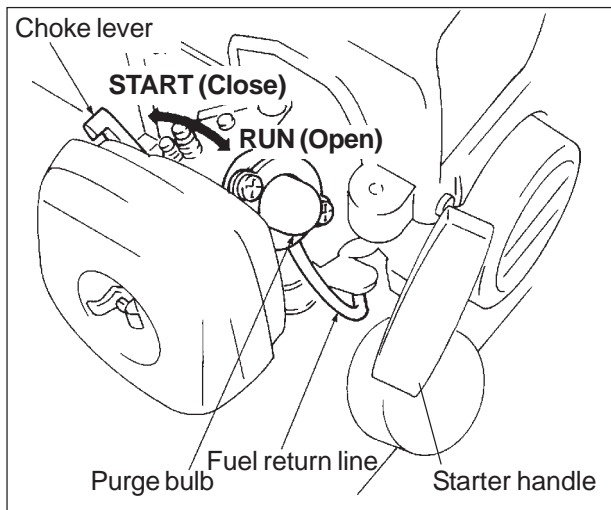
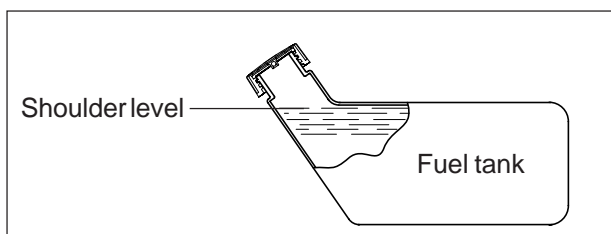
CHEMICAL (Liquid) TANK

- Fill the tank with liquid chemical through the strainer. Do not fill without strainer. (Dust in the tank may cause clogging of the liquid line or pump.)
- The tank contains 19 L (5.0 gal. US) of liquid.

(NOTE)

Each mark on the side of the tank indicates the 5, 10, and 15 L levels.

- Ensure that tank cap is on tightly to avoid chemical leak.
- **It is not necessary to apply grease / oil to pump.**



STARTING ENGINE

Never start and operate engine before filling chemical tank to avoid damage to pump.

WARNING DANGER

- WHEN ENGINE IS STARTED, CONFIRM IF THERE IS NOT ANY ABNORMAL VIBRATION OR SOUND. IF THERE IS ABNORMAL VIBRATION OR SOUND, ASK YOUR DEALER TO REPAIR.
- AFTER REFUELING TIGHTEN FUEL CAP FIRMLY AND CHECK FOR LEAKAGE. IN CASE OF FUEL LEAKAGE REPAIR BEFORE STARTING OPERATION SINCE THERE IS A DANGER OF FIRE.

- Fill fuel tank with fuel.
- It is not permitted to fill fuel above the shoulder level of fuel tank.
- Place ignition switch in START/RUN position.
- Turn choke lever to CLOSE (START) position.
- Keep throttle lever at idle position (in the middle of scale).
- Operate the carburetor's purge bulb several times with your finger (press←→release) to make sure that fuel flows from the fuel return line.
- Pull starter handle until engine starts.

(NOTE)

- Recoil starter: Use short pulls - Do not pull starter rope all the way out, and rewind it back gradually.
- Pull back choke lever (OPEN position) slowly after engine starts, and keep at idle speed for a while to warm it up.
- If temperature is high or engine is warm, keep choke lever half opened or totally opened.

SPRAYING

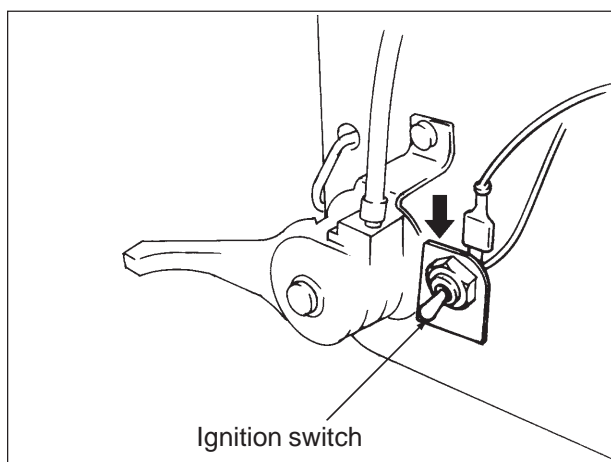
- Ensure that chemical liquid valve is closed before starting engine.
- After engine is warmed up, turn throttle lever to the high speed position (Upper position) and open liquid valve.

(NOTE)

Since this unit is equipped with a centrifugal clutch, sprinkling is not possible when the engine is running at low speeds (idling).

- FOR SAFE OPERATION -

1. Secure the chemical tank cap.
2. Check all connections to avoid chemical leak. (Nozzle, Nozzle pipe, hose etc.)
3. Avoid wearing loose clothing and always wear safety glasses and gloves.
4. Use a face filter mask to avoid breathing chemical.
5. Check wind direction before spraying.
6. Do not point nozzle in the direction of people.
7. Stop the engine when refueling and / or replacing parts.
8. Close fuel chemical liquid valve when not in use.
9. Avoid using at engine speeds where the clutch slips.

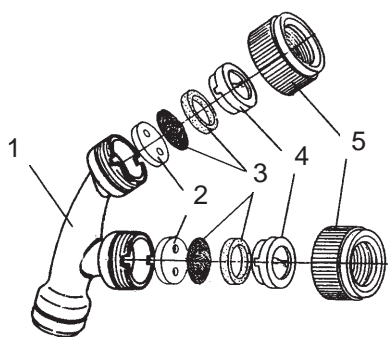


STOPPING ENGINE

- Turn throttle lever to the lowest position and the ignition switch to STOP position.

(CAUTION)

When misting liquid is over, stop the engine. Do not keep engine running, when chemical tank has been emptied.



- | | |
|----------------|-----------|
| 1. Nozzle body | 4. Nozzle |
| 2. Guide | 5. Cap |
| 3. Strainer | |

NOZZLE

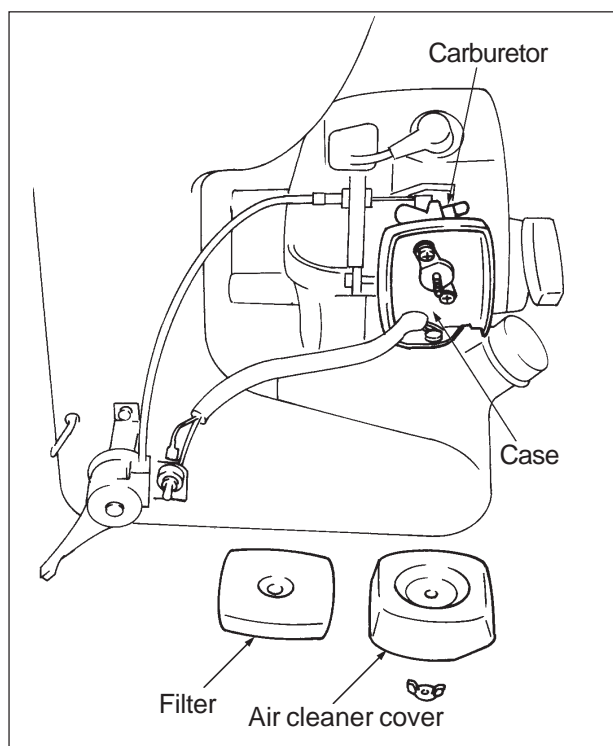
- 2-head nozzle (Standard type) is provided with this power sprayer.
- Standard nozzle discharge volume and pressure are as follows.
Chemical liquid Discharge:
2.4 L/min 81.2 Fl.oz US/min
(1.0 MPa) (142.2 psi)

(NOTE)

- You can use a nozzle other than standard nozzle discharges liquid under 7.0 L at nozzle pressure: 1.0 MPa (10 kgf/cm²) as required.
- Long hose (approx. 100 m) is available as required.
- In this case, use standard nozzle indicated above or less discharge volume nozzle.
- As for variety of optional nozzles, please refer to Page 1.

MAINTENANCE AND CARE

- ALWAYS KEEP THE MACHINE CLEAN -



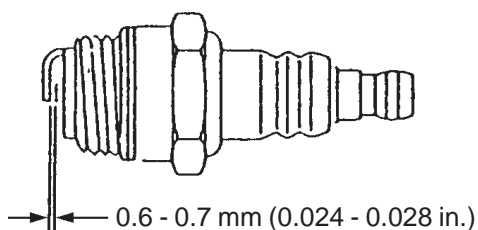
AIR FILTER

- Check before every use.
- Remove filter cover.
 - Remove wing nut.
- Brush off dust lightly or wash in a non-flammable solvent if necessary. Dry well before reinstalling.

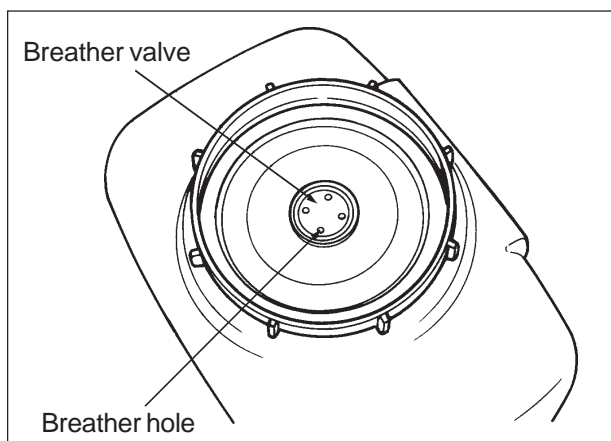
CHECK FUEL SYSTEM

- Check before every use.
- After refueling make sure fuel does not leak or exude from around fuel pipe, fuel grommet or fuel tank cap.
- In case of fuel leakage or exudation there is a danger of fire. Stop using the machine immediately and request your dealer to inspect or replace.

SPARK PLUG

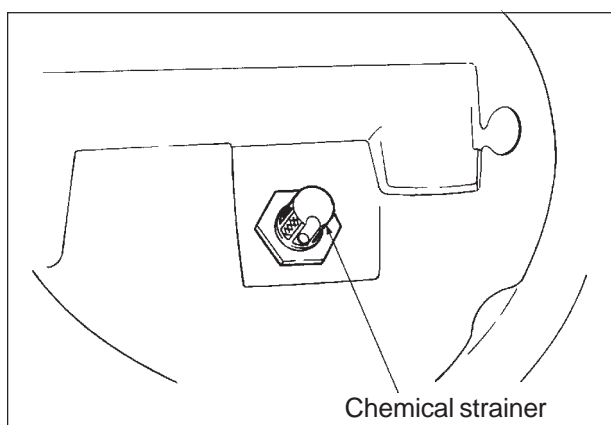


- Clean or replace the plug if fouled with heavy or oily deposits. Replace the plug if the center electrode is worn or rounded at the end.
 - The standard spark gap is 0.6 to 0.7 mm (0.024 to 0.028 in.).
 - Correct the spark gap if it is wider or narrower than the standard gap.
- Fastening torque = 15 to 17 N•m (130 to 145 in•lb.)



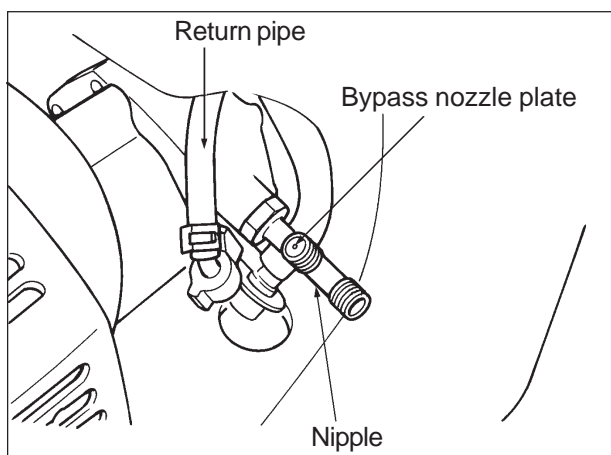
CHEMICAL TANK BREATHER

- Clean breather valve and breather hole periodically.
 - Bad sealing of the breather valve may cause a leakage of the chemical.
- Clogging of the breather hole may cause a “dent” or a breakage of the chemical tank.



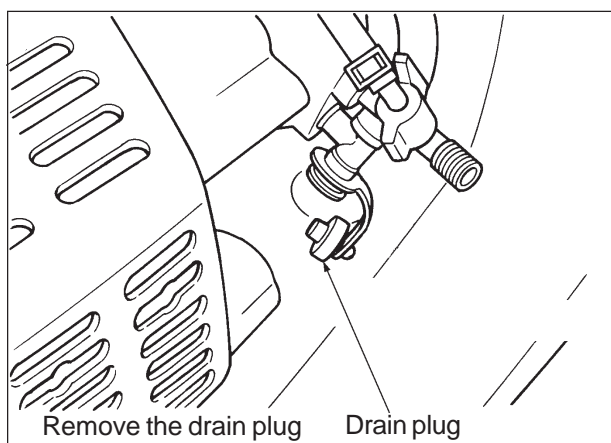
CHEMICAL STRAINER

- Clean chemical strainer periodically.
- Clogging of the chemical strainer may cause insufficient discharge of the chemical.



BYPASS NOZZLE PLATE

- Clean bypass nozzle plate, if liquid chemical is not well stirred-up in the tank.



WHEN SPRAYING IS FINISHED

- Fill chemical tank with water and spray through nozzle for 2 to 3 minutes for cleaning.
- Drain water from the machine through misting nozzle and remove pump drain plug.
- Wipe off the liquid chemical on the machine after use.

TROUBLE SHOOTING

Poor performance of the engine and/or spraying mechanism can normally be prevented by carefully following the above instructions.

Poor performances can easily be corrected even by a beginner.

When the engine does not function properly check the following three (3) points first.

- Is engine compression adequate?
- Is fuel system in good condition and is enough fuel being supplied?
- Is electrical system in good condition and is spark plug operating normally?

When there is serious trouble with the unit, do not try to repair it yourself but have your distributor or dealer do it for you. For detailed **TROUBLE SHOOTING** refer to tables 1 and 2. Locate the problem on the following charts and repair as necessary.

Table 1

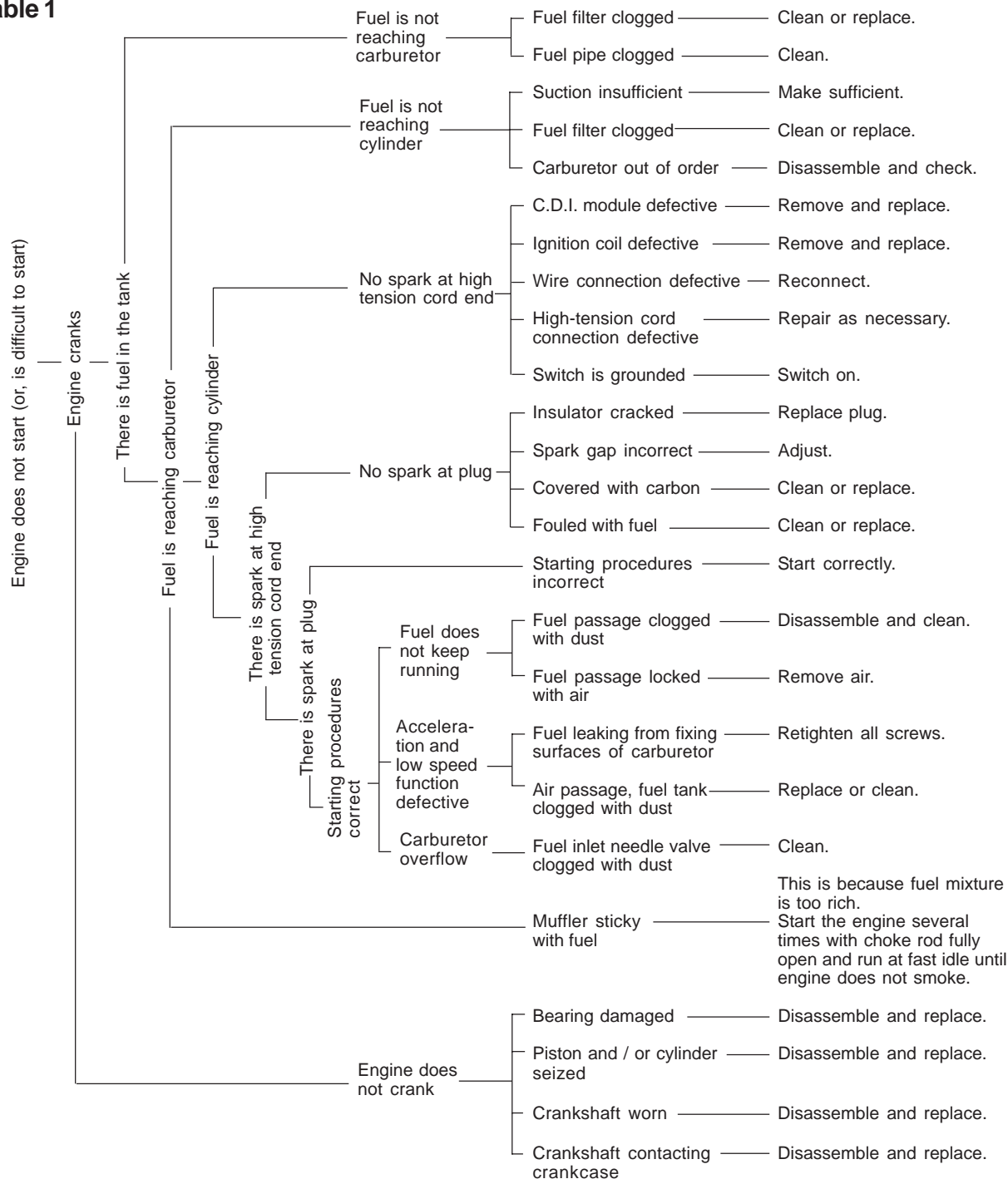
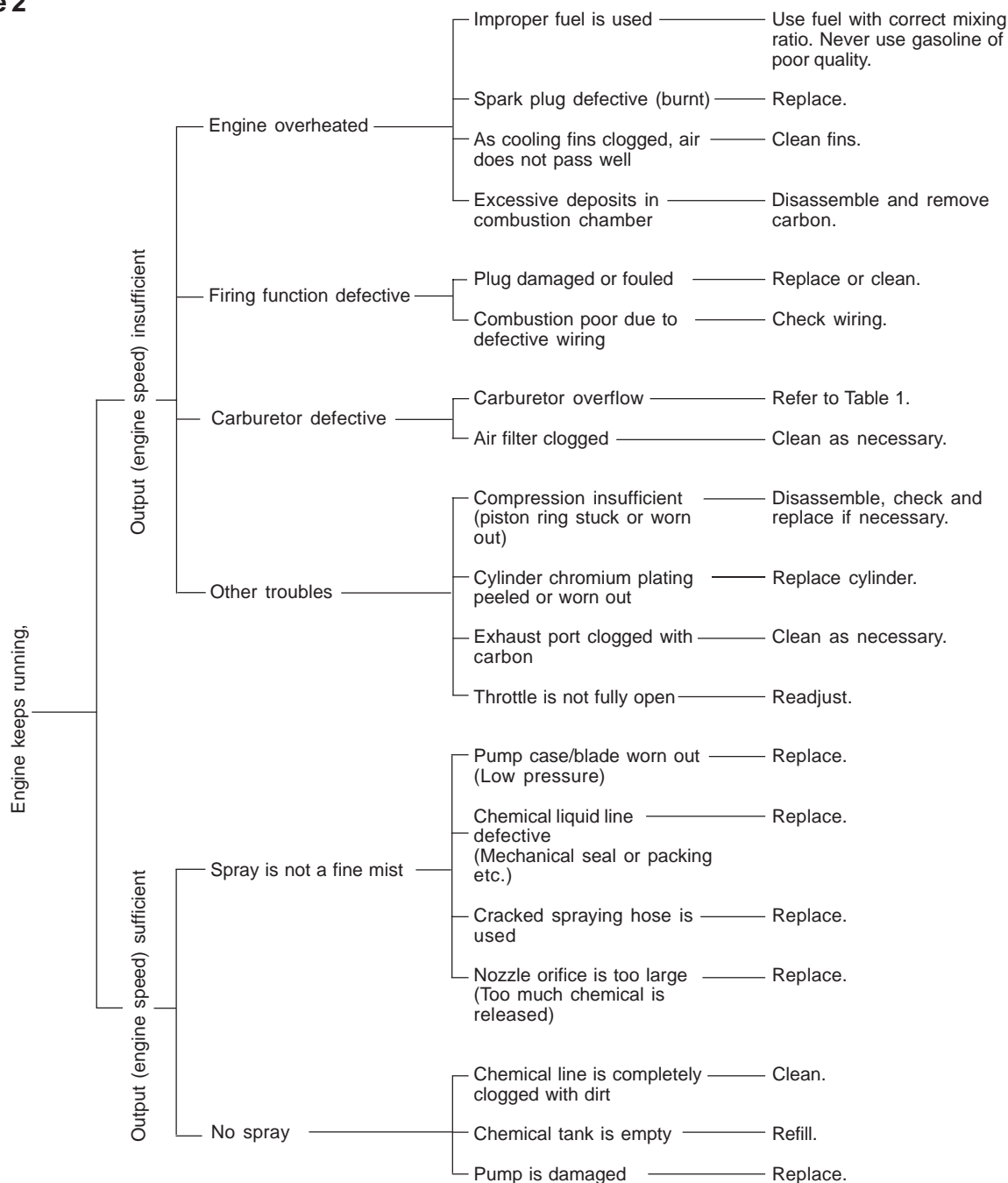


Table 2



WARNING DANGER

FUEL VAPORS ARE EXTREMELY FLAMMABLE AND MAY CAUSE FIRE AND/OR EXPLOSION. NEVER TEST FOR IGNITION SPARK BY GROUNDING SPARK PLUG NEAR CYLINDER PLUG HOLE, OTHERWISE SERIOUS PERSONAL INJURY MAY RESULT.

STORAGE AFTER USE

- Drain remaining liquid out of the chemical tank.
- Inspect and adjust every part of the sprayer.
 - Completely clean every part, and repair, if necessary.
 - Apply thin coating of oil on metal parts to prevent rust.
 - Remove spraying hose and pipe.
- Drain fuel tank, pull starter slowly a few times to drain fuel from carburetor.
- Pour a small amount of clean motor oil into spark plug hole, pull starter and crank the engine until the TOP DEAD CENTER.
- Store in a dry area, free from dust.

SERVICING INFORMATION

PARTS/SERIAL NUMBER

Genuine ECHO Parts and ECHOREPOWER™ 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, Type and Serial Number of the unit with you. You can find these numbers on the engine housing. For future reference, write them in the space provided below.

Model No. _____ Type _____ SN. _____

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

To ensure trouble free warranty coverage it is important that you register your ECHO equipment on-line at www.echo-usa.com. Other registration options are by automated phone at 1-800-432-3246 or by filling out the warranty registration card supplied with your unit. Registering your product confirms your warranty coverage and provides a direct link between you and ECHO if we find it necessary to contact you.

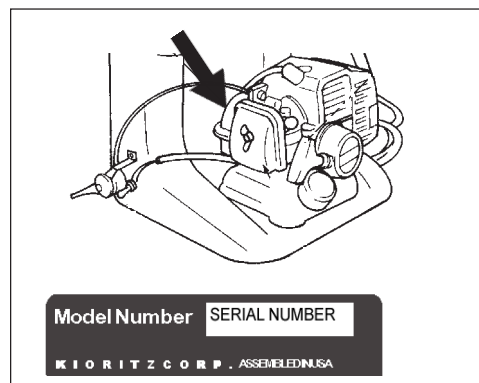
ADDITIONAL OR REPLACEMENT MANUALS

Safety Manuals in English/Spanish or English/French are available, free of charge, from your ECHO dealer or at www.echo-usa.com.

Operator's and Parts Manuals are available by:

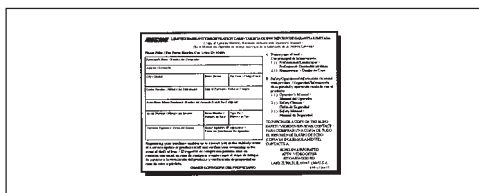
- Downloading free from www.echo-usa.com
- Purchasing from your Echo Dealer.
- Manuals are available by sending a written request stating the model number and serial number of your Echo unit, part number of the manual, your name and address, and mail to the address below.

Safety Videos are available from your Echo dealer. A \$5.00 shipping charge will be required for each video.



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1-800-432-ECHO
1-800-432-3246
or
www.echo-usa.com

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