



# Upright Rammer Operator's Manual VS80-C

# FOR YOUR SAFETY READ AND UNDERSTAND THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE



# **Warranty Registration Form**

Model:	
Serial Number:	
Type of Use:	Business / Domestic
Name:	
Business Name:	
Address:	
Email Address:	
Phone Number:	
Date of	
Purchase:	
Place of	
Purchase:	
Proof of	
Purchase	
enclosed:	

For the warranty to be valid the Warranty Registration Form must be completed and returned to Lumag Distribution Limited within 14 days of the purchase together with a copy of the purchase invoice.

We will use your email to confirm that we have received the completed Warranty Registration Form and contact you about any errors or omissions on the form. We may occasionally use this email address to make you aware of news, technical advice and special offers. If you do not wish to receive such emails please tick this box  $\square$ .

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Specification and part number are subject to change without notice.

# FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.



#### NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the **Model CNCJ-72FW CNCJ-80K Tamping Rammer**. Refer to the engine manufactures instructions for data relative to its safe operation.

Before using this rammer, ensure that the operating individual has read and understand all instructions in this manual.

# SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The three Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, **CAUTION**.



### **DANGER**

You WILL be KILLED or SERIOUSLY INJURED if you DO NOT follow these directions.



### WARNING

You CAN be KILLED or SERIOUSLY INJURED if you DO NOT follow these directions.



# CAUTION

You CAN be INJURED if you DO NOT follow these directions.

### **HAZARDSYMBOLS**

Potential hazards associated with the operation of a CNCJ-72FW CNCJ-80K Tamping Rammer will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.



#### **Lethal Exhaust Gas Hazards**

Engine Exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



#### **Explosive Fuel Hazards**

**Gasoline** is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids.

**DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames.



#### **Burn Hazards**

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. Never operate the engine with heat shields or heat guards removed.



#### **Respiratory Hazards**

ALWAYS wear approved respiratory protection when required.

# **CAUTION**

#### **Rotating Parts Hazards**

NEVER operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.



# CAUTION

### **Accidental Starting Hazards**

**ALWAYS** place the **ON/OFF** switch in the **OFF** position when the rammer is not in use..



# CAUTION

### **Eye and Hearing Hazards**

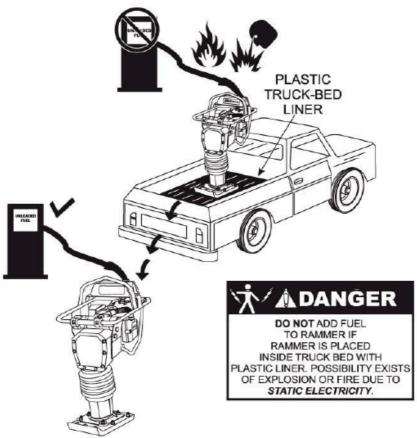
**ALWAYS** wear approved eye and hearing protection.



### **DANGER**

### **Refueling Hazard**

NEVER refuel rammer when placed in truck bed with plastic liner. The possibility exists of explosion due to static electricity. When adding fuel, remove rammer from truck bed and place on ground.





# **Equipment Damage Hazards**

Other important messages are provided throughout this manual to help prevent damage to your light tower, other property, or the surrounding environment.



# CNCJ-72FW CNCJ-80K – RULES FOR SAFE OPERATION

### **DANGER**

#### Read this manual!

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the CNCJ-72FW CNCJ-80K Tamping Rammer:

# **GENERAL SAFETY**

- **DO NOT** operate or service this equipment before reading this entire manual.
- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- NEVER operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** wear proper respiratory (mask), hearing and eye protection equipment when operating the rammer.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or rammer.
- **High Temperatures** Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with **hot!** components can cause serious burns.

# CNCJ-72FW CNCJ-80K – RULES FOR SAFE OPERATION

- The engine section of this rammer requires an adequate free flow of cooling air.

  NEVER operate the rammer in any enclosed or narrow area where free flow of the air is restricted it will cause serious damage to the rammer or engine and may cause injury to people. Remember the rammer's engine gives off DEADLY carbon monoxide gas.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with flammable liquids. When refueling, stop the engine and allow it cool. **DO NOT** <u>smoke</u> around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.
- **NEVER** operate the rammer in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even** death.
- **DO NOT** <u>smoke</u> around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.
- Topping-off to filter port is dangerous, as it tends to spill fuel.
- Stop the engine when leaving the rammer unattended.
- Maintain this equipment in a safe operating condition at all times.
- ALWAYS stop the engine before servicing, adding fuel and oil.
- **NEVER** run engine without air filter. Severe engine may occur.
- **ALWAYS** service air cleaner frequently to prevent carburetor malfunctions.
- ALWAYS check the machine for loosened threads or bolts before starting.
- **ALWAYS** be sure the operator is familiar with proper safety precautions and operations techniques before using rammer.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- **CAUTION** must be exercised while servicing this equipment.
- Keep all inexperienced and unauthorized people away from the equipment at all times
- Unauthorized equipment modifications will void all warranties.
- **NEVER** pour or spray water over the engine.
- Test the engine **ON/OFF** switch before operating. The purpose of this switch is to shut down the engine of the rammer.
- Refer to the **ROBIN Engine Owner's Manuel** for engine technical questions or information recommended by Multiquip for this equipment.

# CNCJ-72FW CNCJ-80K – RULES FOR SAFE OPERATION

# **TRANSPORTING**

- ALWAYS shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel when transporting rammer over long distances or bad roads.
- When placing the rammer inside a truck-bed for transport, always tie-down the rammer.

### **MAINTENANCE**

- **NEVER** lubricate components or attempt service on a running rammer.
- ALWAYS allow the rammer a proper amount of time to cool before servicing.
- Keep the rammer in proper running condition.
- Fix damage to the rammer immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- DO NOT use food or plastic containers to dispose of hazardous waste.

### **EMERGENCIES**

- ALWAYS know the location of the nearest fire extinguisher and first aid kit.
- Sie immer den Standort der nächstgelegenen Feuerlöscher und Verbandskasten.





■ In emergencies always know the location of the nearest phone or keep a phone on the job site. Also know the phone numbers of the nearest ambulance, doctor and fire department. This information will be invaluable in the case of an emergency.









# CNCJ-72FW CNCJ-80K – GENERAL INFORMATION

# **Definition of Tamping Rammer**

The CNCJ-72FW CNCJ-80K tamping rammer is a powerful compacting tool capable of applying a tremendous force in consecutive impacts to a soil surface. Its applications include soil compacting for road, embankments and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

The impact of force of the CNCJ-72FW CNCJ-80K levels and uniformly compacts voids between soil particles to increase dry density.

Circular motion is converted to create impact force. The CNCJ-72FW CNCJ-80K tamping rammer develops a powerful compacting force at the foot of the rammer. To maintain optimum performance, proper operation and service are essential.

# **Construction of Tamping Rammer**

The CNCJ-72FW CNCJ-80K is equipped with an air cooled, four-cycle gasoline engine. Transmission of the power takes place by increasing the engine speed to engage the centrifugal clutch.

# Rammer Gearbox and Spring Cylinder

The CNCJ-72FW CNCJ-80K uses an oil bath lubrication system. Always check the oil level through the oil level sight glass at the rear of the tamper foot

### **Controls**

Before starting the CNCJ-72FW CNCJ-80K Tamping Rammer identify and understand the function of the controls. See Figure 1.

# CNCJ-72FW CNCJ-80K – SPECIFICATIONS

**Table 1 CNCJ-72FW and CNCJ-80K Rammer Specifications** 

	<b>-</b>	
MODEL	CNCJ-72FW	CNCJ-80K
Overall Height	41.1 in. (1,043 mm)	41.1 in. (1,043 mm)
Overall Width	16.2 in. (412 mm)	16.2 in. (412 mm)
Over Length	28.3 in. (720 mm)	28.3 in. (720 mm)
Shoe Size	11.3 in. (288 mm)	11.3 in. (288 mm)
Blows/minute	680	680
Impact Force	3,100 lbs./blow (1,400	3,100 lbs./blow (1,400
Impact Force	kg/blow)	kg/blow)
Clutch	Automatic Centrifugal	Automatic Centrifugal
Operating Weight	161 lbs. (73 kg)	161 lbs. (73 kg)

**Table Engine Specifications** 

MODEL	LC168F-2H
Туре	Air-Cooled 4 Stroke Gasoline Engine
Piston Displacement	7.38 cu.in. (121 <i>cm</i> <sup>3</sup> )
Max. Output	4.0 hp
Max.Governed Speed, No Load	4,000 rpm
Cooling System	Air-Cooled
Lubrication System	Oil Bath – 10W30 Motor Oil
Fuel	Unleaded gasoline
Starting System	Recoil Starter



Specifications are general and are subject to change without notice. If exact measurements are required, equipment should be weighed and measured.

# CNCJ-72FW CNCJ-80K – CONTROLS AND COMPONENTS

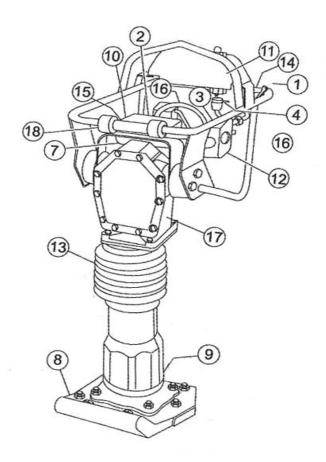


Figure 1 CNCJ-72FW CNCJ-80K Rammer

Figure 1 shows the location of the controls and components for the CNCJ-72FW and CNCJ-80K Tamping Rammer. The function of each control is described below:

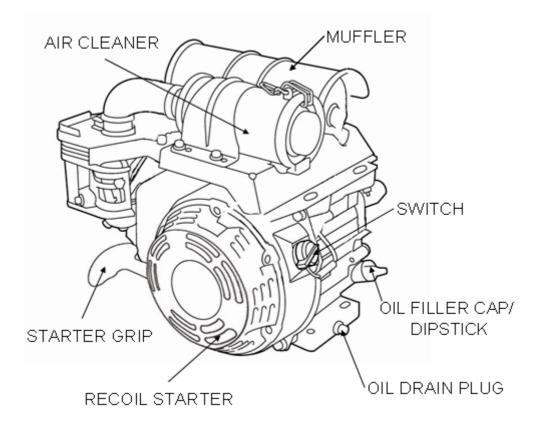
- 1. **Throttle Lever** Controls engine speed and the tamping action of the rammer.
- 2. **Engine Stop Switch** –Controls the starting and stopping of the engine. Switch must be in the "ON" position when starting the engine.
- 3. **Choke Lever** Used when starting the engine. Normally used in cold weather conditions. In cold weather turn the choke lever to the fully closed position, in warm weather set choke lever half way or completely open.
- 4. **Fuel Shut-Off Valve** Supplies fuel from the fuel tank to the engine. To begin fuel flow move the fuel shut-off valve downward.
- 5. **Pre-Cleaner** Pre-cleans (first stage) dirt and other debris from entering the engine.
- 6. **Foot** Laminated wood with tempered steel plate for superior shock absorption.

# CNCJ-72FW CNCJ-80K – CONTROLS

# **AND COMPONENTS**

- 7. **Oil Level Sight Glass** Indicates the level of oil in the oil bath reservoir.
- 8. **Recoil Starting Handle** Used when starting the engine. Pull starter handle sharply and quickly, then return starter handle to starter case before releasing.
- 9. **Fuel Tank/Cap** Poly fuel tank to avoid rust and corrosion, remove this cap to add gasoline.
- 10. **Engine Air Cleaner** Prevents dirt (second stage) and other debris from entering the engine.
- 11. Bellows Reservoir for oil bath.
- 12. **Handle** To operate rammer, grip handle assembly firmly on both sided.
- 13. **Muffler** Used to reduce noise and emissions.
- 14. **Spark Plug** Provides spark to the ignition system, replace with engine manufacturers recommended type spark plug.
- 15. **Nameplate** Displays information regarding the rammer.

# CNCJ-72FW CNCJ-80K -BASIC MOTOR

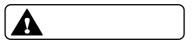


**Figure 1A Engine Controls and Components** 

### INITIAL SERVICING

The engine (Figure 1A) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's Engine manual for instructions & details of operations and servicing.

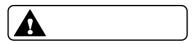
- 1. **Secondary Air Cleaner** Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter canister to gain access to filter element.
- 2. **Choke Lever** Used when starting the engine. Normally used in cold weather conditions. In cold weather turn the choke lever to the fully closed position, in warm weather set choke lever half way or completely open.
- 3. **Spark Plug** Provides spark to the ignition system. Set spark plug gap to 0.6–0.7 mm (0.024–0.028 inch). Clean spark plug once a week.
- 4. **Muffler** Used to reduce noise and emissions.



Engine components can generate extreme heat. To prevent burns, DO NOT touch these areas while the engine is running or immediately after operating. NEVER operate the engine with the muffler removed.

# **CNCJ-72FW CNCJ-80K -BASIC MOTOR**

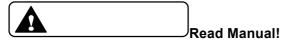
- 5. **Recoil Starter (pull rope)** Manuel-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
- 6. **Engine ON/OFF Switch** Controls the starting and stopping of the engine. Switch must be in the "ON" position when starting the engine.



Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine, causing rapid engine wear.

This section is intended to assist the operator with the initial start-up of the CNCJ-72FW CNCJ-80K Tamping Rammer. It's extremely important that this section be read carefully before attempting to operate the rammer.

**DO NOT** use your rammer until this section is thoroughly understood.

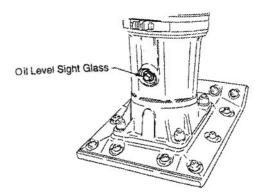


Failure to understand the operation of the CNCJ-72FW CNCJ-80K Tamping Rammer could result in severe damage to the trowel or personal injury.

# Rammer Gearbox and Spring Cylinder Oil Bath

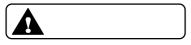
This unit uses an oil bath lubrication system. Perform the following:

1. Check the oil level through the oil level sight glass (Figure 2) at the rear of the tamper foot.



**Figure 2 Foot Housing Sight Glass** 

2. If oil is not visible, add 10W-30 motor oil into the oil fill plug opening (Figure 2). The bath contains approximately 1.7 pints (800 cc.).



The oil level should be kept at the half way point of the sight glass.

# **Engine**

1. Fill the fuel tank (Figure 3) with unleaded gasoline. At the same time, check the engine oil and make it a habit to replenish it often.

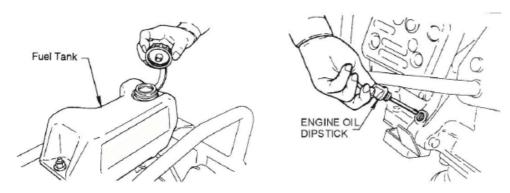


Figure 3 Fuel Tank

Figure 4 Engine Oil Dipstick

- 2. Low levels of oil may result in engine seizure due to high levels of consumption during operations.
- 3. Check the engine oil level and if the engine oil level is low, it should be refilled. Use the proper motor oil as suggested in the Table 3 below.

#### **Table 3 Motor Oil Grade**

Season or Temperature	Grade of motor oil
Geason of Temperature	(higher than MS class)
Spring, Summer or Autumn + 120° F to +15° F	SAE 30
Winter	SAE 30
+ 40° F to +15° F	
Below +15° F	SAE 10w-30

# **Operation**

1. To start the rammer tamping action, move the throttle lever (Figure 9) quickly from IDLE (close) to the FULL OPEN position. DO NOT move the throttle lever slowly as this may cause damage to the clutch or spring.

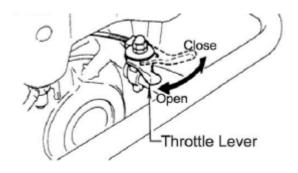


Figure 9 Throttle Lever (FULL OPEN)



Make sure that the throttle lever is moved to the **FULL OPEN** position. Operating the rammer at less than full speeds can result in damage to the clutch springs or foot.

- 2. The CNCJ-72FW and CNCJ-80K Tamping rammer is designed to run at 4.000 rpm. At optimum rpm the foot hits at the rate of 680 impacts per minute. Increasing throttle speed past factory set rpm does not increase impacts and may damage unit. The CNCJ-72FW CNCJ-80K is designed to advance while tamping. For faster advance, pull back slightly on the handle so that rear of foot contacts soil first.
- 3. To stop the tamping action, move throttle lever quickly from the **FULL OPEN** to **IDLE** position.

# **Stopping the Engine**

### **Normal Shutdown**

Move throttle lever quickly from the FULL OPEN to IDLE position (Figure 10) and run
the engine for three minutes at low speed. After the engine cools, turn the engine
start/stop switch to the "STOP" position (Figure 6) until engine comes to a complete
stop.

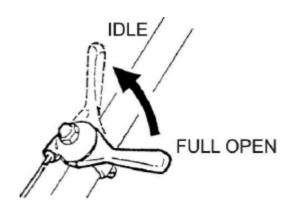


Figure 10 Throttle Lever (IDLE)

Close the fuel shut-off valve by moving the fuel cock lever to the CLOSED position. See Figure 5.

# **Emergency Showdown**

 Move the throttle lever quickly to the IDLE position, and turn the engine START/STOP switch to the STOP position.

# Inspection

- 1. Check all nuts, bolts fasteners for tightness. Retighten as necessary.
- 2. Clean any dirt from the recoil starter and foot pedestal. Wipe the entire unit clean before operating.
- 3. Replace any missing or damage Safety Operations decals.
- 4. Adjust height of handle. Adjust handle by loosening nuts and moving handle to suit operation. Retighten nuts.

# **Initial Start-up**

When starting the 72 FW Tamping Rammer perform the following:

- 1. Open the fuel shut-off valve by moving the fuel cock lever to the open position (Figure 5) then set the engine start/stop switch (Figure 4) to the "Start" position.
- 2. Set the engine ON/OFF switch (Figure 6) to the "ON" position (start).

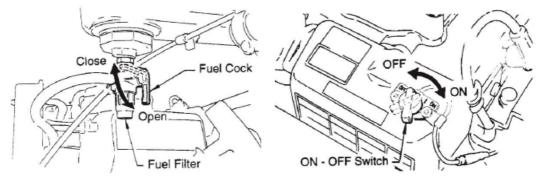


Figure 5 Fuel Cock

Figure 6 On Off Switch

- 3. Close the choke lever (Figure 7) and move the throttle lever to the "Full Open" position. Turning the choke lever 90 degrees clockwise closes the choke. In cold weather, start the unit with choke fully closed. In warm weather or when the engine is warm, the unit can be started with choke halfway or completely open.
- 4. Grip the recoil starter (Figure 8) handle and pull it until you feel a slight resistance. Then pull sharply and quickly. Return the recoil starter handle to the starter case before releasing.

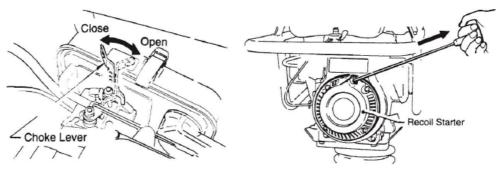


Figure 7 Choke Lever

Figure 8 Recoil Starter

- 5. If engine fails to start, move the choke lever (Figure 7) to the half open position to avoid flooding.
- 6. Repeat steps 1 thru 4.
- 7. If the engine does not start after repeated attempts, check the spark plug for excess fuel. Clean and replace the spark plug as needed.

# CNCJ-72FW CNCJ-80K – MAINTENANCE

### **Maintenance**

Perform the scheduled maintenance procedures as indicated:

# Daily

■ Thoroughly remove dirt and oil from the engine and control area. Clean or replace the air cleaner elements as necessary. Check and retighten all fasteners as necessary. Check the spring box and bellows for oil leaks. Repair or replace as needed.

# Weekly

- Remove the fuel filter cap and clean the inside of the fuel tank.
- Remove or clean the filter at the bottom of the tank.
- Remove and clean the spark plug, then adjust the spark gap to  $0.02\sim0.03$  inch  $(0.6\sim0.7 \text{ mm})$ . This unit has electronic ignition, which requires no adjustments.
- Clean air cleaner cover.
- The air cleaner (Figure 12) on the engine side will hardly be contaminated, if it is, however after cleaning the element with kerosene, dip it in mixed oil consisting of 3 parts of gasoline and 1 part of engine oil. Then tightly squeeze outer primary element (sponge) and shake off well the inner secondary element before installing them.

# CNCJ-72FW CNCJ-80K – MAINTENANCE

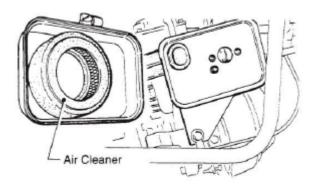
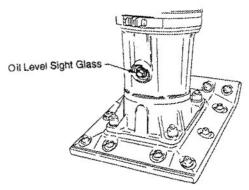


Figure 12 Engine Air Cleaner

# 200 - 300 Hours (Oil Bath)

■ Drain oil reservoir on foot housing (Figure 13). Refill with approximately 1.7 pt. (800cc) of 10W-30 motor oil. Oil should be midway in sight glass. Break in oil should be changed after first 50 hours.



**Figure 13 Foot Housing Drain Plug** 

# **Yearly**

- Check the fuel line and the oil line regularly for damage and to ensure that there are
- Replace the oil and fuel lines every two years to maintain the performance and flexibility lines.

# LONG TERM STORAGE

- Drain fuel from fuel tank, fuel line and carburetor.
- Remove spark plug and pour a few drops of motor oil into cylinder. Crank engine 3 to 4 times so that oil reaches all internal parts.
- Clean exterior with a cloth soaked in clean oil.
- Store unit covered with plastic sheet in moisture free and dust free location out of direct sunlight.

# CNCJ-72FW CNCJ-80K - TROUBLES HOOTING GUIDE

# Table 4 ENGINE TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Difficult to start		
Fuel is available but spark plug will not ignite. (Power available	Ignition plug being bridge?	Check ignition system.
	Carbon deposit at ignition?	Clean or replace ignition.
	Short circuit due to defective insulators?	Replace insulators.
at high tension cable).	Improper spark gap?	Set spark plug gap to the correct gap.
Fuel is available but spark plug will not	Short circuit at stop switch	Check stop switch circuit. Replace stop switch if defective.
ignite. (Power NOT available at high tension cable).	Ignition coil defective?	Replace ignition coil.
Fuel is available and	Muffler clogged with carbon deposits?	Clean or replace muffler.
spark plug ignites	Fuel in use inadequate (water,	Flush fuel system and replace with fresh
(compression <b>normal</b> ).	dust)?	fuel.
	Air Cleaner clogged?	Clean or replace air cleaner.
Fuel is available and	Defective cylinder head	Tighten cylinder head bolts or replace head
spark plug ignites	gasket?	gasket.
(compression <b>low</b> ).	Cylinder worn?	Replace cylinder.
(compression is ii).	Spark plug loose?	Tighten spark plug
Operation not satisf	actory	
	Air cleaner clogged?	Clean or replace air cleaner.
Not enough power	Air in fuel line?	Bleed (remove air) from fuel line.
available (compression normal, no misfiring).	Fuel level in carburetor float chamber improper?	Adjust carburetor float.
	Carbon deposits in cylinder?	Clean or replace cylinder.
Not enough power	Ignition coil defective?	Flush fuel system and replace with fresh fuel.
available (compression	Ignition plug often shorts?	Clean or replace crankcase.
normal, misfiring).	Fuel in use inadequate (water, dust)?	Clean or replace muffler.
	Combustion chamber?	Clean or replace crankcase.
Engine overheats.	Exhaust or muffler clogged with carbon.	Clean or replace muffler.
	Spark plug heat value incorrect?	Replace spark plug with correct type spark plug.

# **CNCJ-72FW CNCJ-80K – TROUBLESHOOTING GUIDE**

SYMPTOM	POSSIBLE PROBLEM	SOLUTION	
Operation not satisfactory			
	Governor adjustment improper?	Adjust governor to correct lever.	
Rotational speed	Governor spring defective?	Clean or replace ignition.	
fluctuates.	Fuel flow erratic?	Check fuel line.	
	Air taken in through suction line?	Check suction line.	
Recoil starter not	Dust in rotating part?	Clean recoil starter assembly.	
working properly.	Spiral spring failure?	Replace spiral spring.	
	Operation speed of throttle lever is incorrectly set?	Set throttle lever to correct position.	
Engine rotates but	Oil in excess?	Drain excess oil. Bring to correct level.	
amplitude not uniform	Clutch slips?	Replace or adjust clutch.	
or does not strike.	Spring Failure?	Replace spiral spring.	
	Speed of engine improper?	Adjust engine speed to correct operating RPM setting.	