

PART No. OW – 655CE(H)

# Operator's Manual

## LX130-7

## LX160-7

## LX190-7

## LX230-7

# Wheel Loader

Serial No.

LX130-7 01101 and up

LX160-7 01101 and up

LX190-7 04101 and up

LX230-7 02101 and up

# HITACHI

## FOREWORD

This Manual was written to provide the owner/operator with information about the safe operation and maintenance of the wheel loader. Read this manual thoroughly and become completely familiar with the loader before using it. If you have any questions, see your dealer.

Due to improvements in design, it is possible that the description contained herein may not completely apply to the loader delivered to you.

Before operating the loader, be sure to read all of the decals on the machine which give advice about safe care and operation of the loader. Damaged or missing decals should be replaced with new ones.

This Manual must be kept with the loader.

Safe operation means the operator must be qualified. A qualified operator must have training and possess any required licenses to operate this machine.

If the loader is to be leased, loaned or sold to anyone, this manual must be with the machine.

Do not try to modify your loader. If any failure or accident occurs due to modification of the loader, without prior written consent by us, you might void your warranty.

This Manual uses the following safety alert symbols. When you see those symbols in the text, follow the safety message to avoid personal injury or death.

### **DANGER**

Failure to follow the instructions in the message will cause a serious accident or death.

### **WARNING**

Failure to follow the instructions in the message might cause a serious accident or death.

### **CAUTION**

Failure to follow the instructions in the message may cause personal injury or damage to the loader.



: Actions which are prohibited or dangerous.



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## SAFETY INSTRUCTIONS



This safety alert symbol is used for important safety messages. When you see this symbol in this manual, follow the precautions given in safety message to avoid personal injury or death.

It is important to abide by safety rules for your fellow workers as well as yourself.


The SAE J153 guidelines contain safety instructions for the operators of off-road working equipment and agricultural tractors under the title of "OPERATOR PRECAUTIONS." The portion of those safety instructions which apply to the operation of wheel loaders is presented on the pages that follow. Read them carefully and follow the instructions.

(source: SAE J153. Revised, May 1987).

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Basic safety instructions are described in pages that follow. Read them carefully and follow the instructions.

This manual also covers "SAFE TRAVELING," "SAFE LOADING OPERATION," and "SAFE SERVICE AND MAINTENANCE". Read them carefully, too, and become familiar with your loader's traveling, loading, and servicing. Safety is your business and an element of profit.

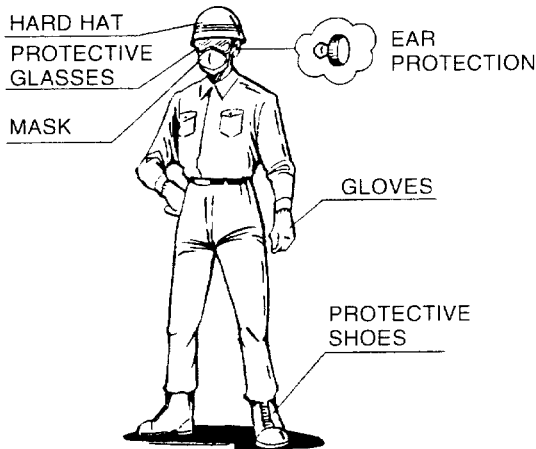
The marking  on the pictures means actions that are prohibited or dangerous.

The pictures have been drawn based on our medium-sized wheel loaders.

## SAFETY INSTRUCTIONS

### 3. PERSONNEL PRECAUTIONS:

- 3.1 Avoid loose fitting clothing, loose or uncovered long hair, jewelry and loose personal articles.
- 3.2 Know and use the protective equipment that is to be worn when operating this loader. Hard hats, protective glasses, protective shoes, gloves, reflector type vests, respirators and ear protection are examples of types of equipment that may be required.

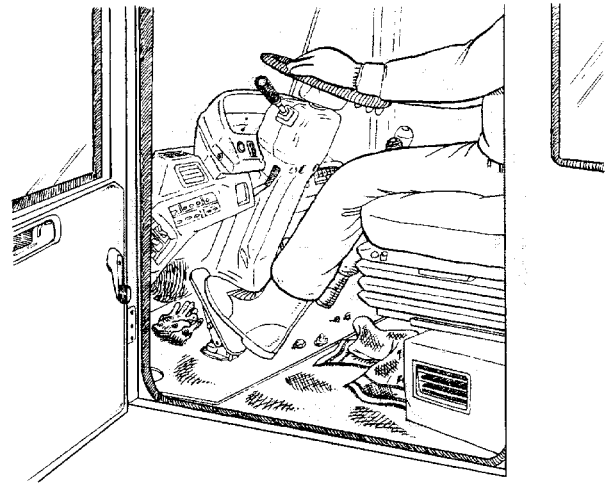


- 3.3 Do not rush. Walk, do not run.
- 3.4 Know and use the hand signals required for particular jobs and know who has the responsibility for signaling.

### 4. OPERATOR - GENERAL PRECAUTIONS:

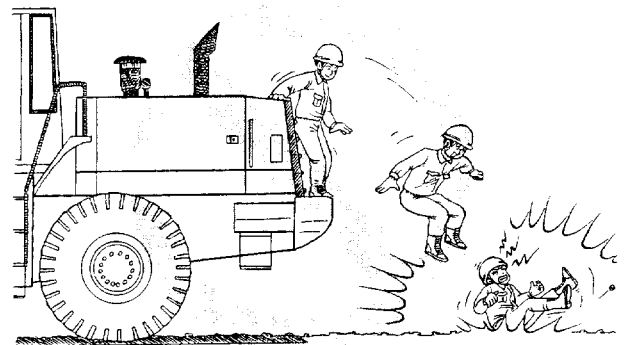
- 4.1 It is the responsibility of the operator to read and understand the Operators Manual and other information provided and use the correct operating procedure. Machines should be operated only by qualified operators.
- 4.2 Wear the seat belt to maximize the protection capability of a ROPS (Roll Over Protective Structure) canopy when the machine is so equipped.
- 4.3 Do not permit riders on the machine if there is no manufacture's designated place for a rider.
- 4.4 Make sure that all protective guards, canopies, doors, etc. are in place and secure.

- 4.5 Remove all loose objects stored in the machine. Remove all objects which do not belong in or on the machine and its equipment.



### 5. MOUNTING AND DISMOUNTING PRECAUTIONS:

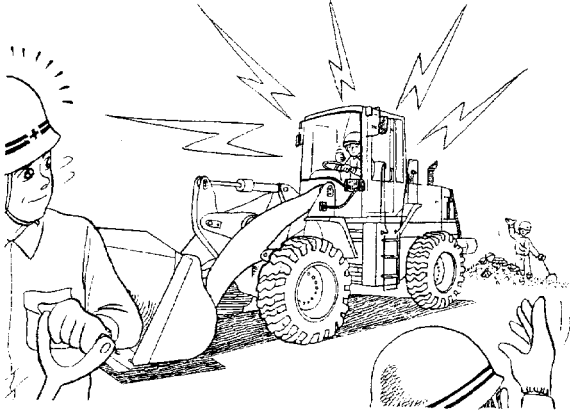
- 5.1 Use the recommended hand holds and steps with at least three points of support when getting on and off the machine. Keep steps and platform clean. Face the access system when climbing up and down.



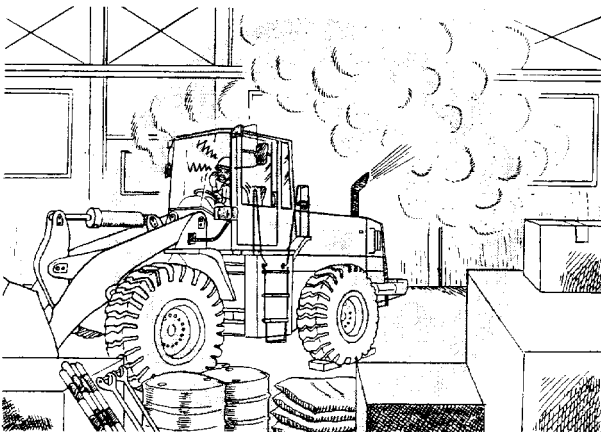
- 5.2 Do not jump off the machine.
- 5.3 Do not dismount while the machine is in motion.

## 6. STARTING AND STOPPING PRECAUTIONS:

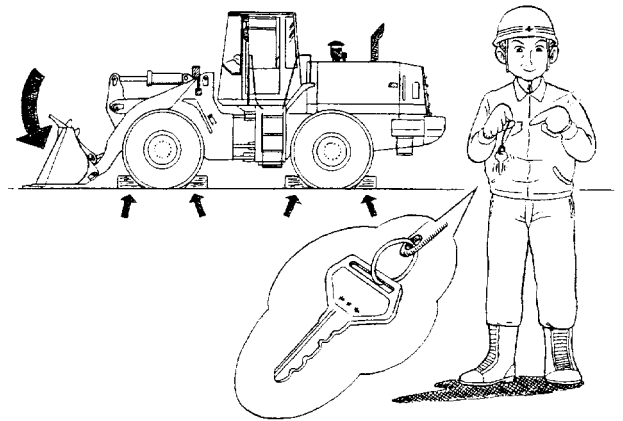
- 6.1 Walk around the machine and warn all personnel who may be servicing the machine or are in the machine's path prior to starting. Do not start until all personnel are clearly away from the machine.



- 6.2 Check that the parking device is applied, place the transmission in neutral or park as specified by the manufacturer, and disengage the PTO before starting the machine.
- 6.3 Adjust, secure and latch the seat and fasten the seat belt (if provided) before starting the machine.
- 6.4 Start and operate the machine only from the operator's station.
- 6.5 Do not bypass the machine's neutral-start system. The neutral-start system must be repaired if it malfunctions.
- 6.6 Use jumper cables only in the recommended manner. Improper use can result in battery explosion or unexpected machine motion.
- 6.7 Do not operate the engine in an enclosed area without adequate ventilation.



- 6.8 Park the machine on level ground whenever possible and apply the parking device. On grades, park the machine with the wheels or track securely blocked.
- 6.9 Before leaving the operator's station, place the transmission in the park position as specified by the manufacturer, lower the equipment to the ground or put in the locked position, disengage the PTO, set the parking device and shut off the engine.
- 6.10 Remove the starter key or disconnect switch key when leaving the machine parked or unattended.



## 7. OPERATING PRECAUTIONS:

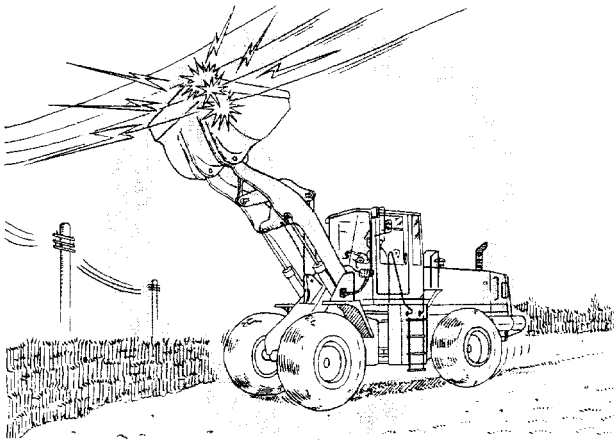
- 7.1 Check brakes, steering and other machine control devices in accordance with the manufacturer's instructions prior to starting operation. Observe all gauges or warning instruments for proper operation. Operate all controls to ensure proper operation. If any malfunctions are found, follow the shutdown procedure of paragraph 6.9, and report the malfunction for resolution.





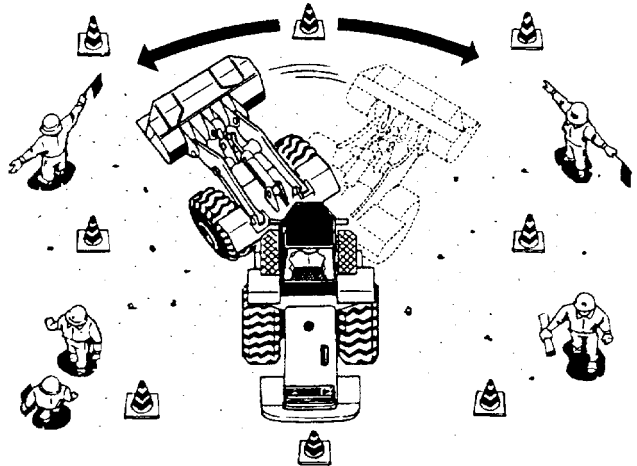
## SAFETY INSTRUCTIONS

- 7.2 If a failure that causes loss of control such as steering, service brakes or engine occurs, stop the machine's motion as quickly as possible, follow the shutdown procedure of paragraph 6.9, and keep machine securely parked until the malfunction is corrected or the machine can be safely towed.
- 7.3 Understand the machine's limitations and keep the machine under control.
- 7.4 Drive the machine with care and at speeds compatible with conditions. Use extra caution when operating over rough ground, on slopes, and when turning the machine.
- 7.5 Note and avoid all hazards and obstructions such as ditches, underground lines, trees, cliffs, overhead electrical wires or areas where there is danger of a slide.



- 7.6 Carry loads in recommended positions for maximum stability.
- 7.7 Never lift loads in excess of capacity.
- 7.8 Use the recommended machine ballast and counter-weighting.
- 7.9 Know and understand the job site traffic flow patterns and obey flagmen, road signs and signals.

- 7.10 Watch for bystanders and never allow anyone to be under or to reach through the machine and its equipment while operating.



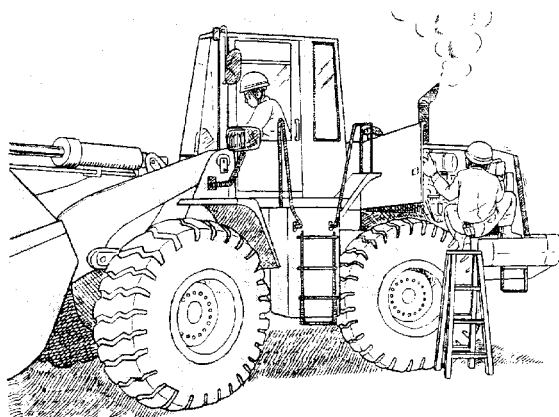
- 7.11 Select a gear that will prevent excessive speed when going downhill. Do not coast downhill.
- 7.12 When roading a machine, know and use the signaling devices required on the machine. Provide an escort for loading where required.
- 7.13 On machines with independently operated wheel brakes, lock the brake pedals together when roading to provide equalized brake application.
- 7.14 Use the recommended transport devices when roading the machine.
- 7.15 Use the approved drawbar and/or attachment point when using the machine for towing. If a cable or chain is used, keep people away from the tow line (see paragraph 8.12).

## 8. MAINTENANCE PRECAUTIONS:

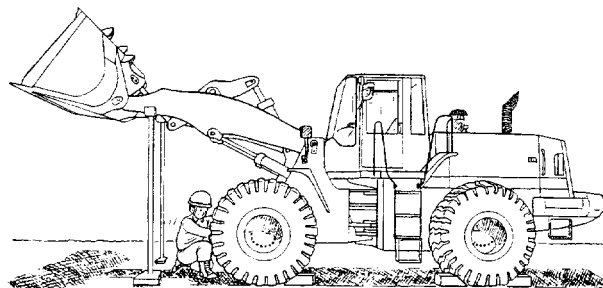
- 8.1 Do not attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.
- 8.2 Wear protective glasses and other required safety equipment when servicing or repairing the machine.
- 8.3 Wear gloves to protect hands when handling cable.
- 8.4 Disconnect the battery before working on the electrical system.

## SAFETY INSTRUCTIONS

- 8.5 Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be in operation to make certain adjustments, place the transmission in neutral, apply the parking device, place the equipment in a safe position, securely block the wheels and use extreme caution.



- 8.6 Securely block the machine or any component that may fall before working on the machine or component.



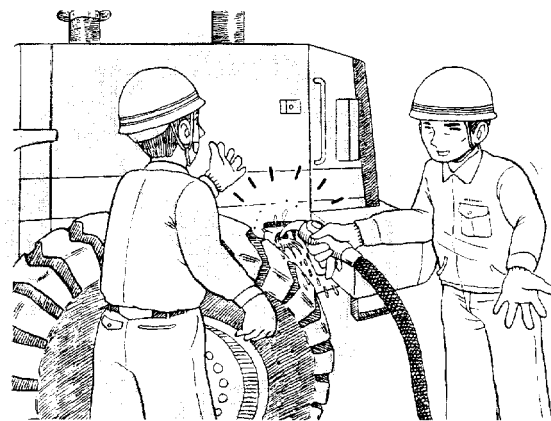
- 8.7 To prevent unexpected movement, securely block working elements when repairing or changing working tool parts such as cutting edges.
- 8.8 Never make repairs on pressurized components, fluid, gas or mechanical until the pressure has been relieved according to the manufacturer's instructions.
- 8.9 Use extreme caution when removing radiator caps, drain plugs, grease fittings or pressure taps. Park the machine and let it cool down before opening a pressurized compartment.
- 8.10 Release all pressure before working on systems which have an accumulator. Use a piece of cardboard or wood to check for pressurized leaks to prevent fluid penetrating the skin. Repressurize accumulators with the proper gas according to manufacturer's recommendations.
- 8.11 When inflating tires, use a self-attaching inflation chuck with remote shutoff and stand clear of the tire.

- 8.12 When necessary to tow the machine, do not exceed the recommended towing speed. Be sure the towing machine has sufficient braking capacity to stop the towed load. If the towed machine cannot be braked, a towbar must be used or two towing machines must be used - one in front pulling and one in the rear to retard. Avoid towing over long distances (see paragraph 7.15).

- 8.13 Observe proper maintenance procedures.
- 8.14 Whenever servicing or replacing hardened pins, etc. use a brass drift or other suitable material between the hammer and pin.
- 8.15 Keep the brakes and steering systems in good operating condition.
- 8.16 Replace all missing, illegible or damaged safety signs. Keep all safety signs clean.

**9. FUEL HANDLING PRECAUTIONS:**

- 9.1 Do not smoke or permit open flames while fueling or near fueling operations.
- 9.2 Never remove the fuel cap or refuel gasoline engine powered machines with the engine running or hot. Never allow fuel to spill on hot machine components.
- 9.3 Maintain control of the fuel filler nozzle when filling the tank.
- 9.4 Do not fill the fuel tank to capacity. Allow room for expansion.



- 9.5 Clean up spilled fuel immediately.
- 9.6 Tighten the fuel tank cap securely. Should the fuel cap be lost, replace it only with the original manufacturer's approved cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.
- 9.7 Never use fuel for cleaning purposes.
- 9.8 Use the correct fuel grade for the operating season.

— END —