

Operation & Maintenance Manual

SEAM002800

LW250-3

ROUGH TERRAIN CRANE

SERIAL NUMBERS LW250 (H-Outrigger)-20001 and up
LW250 (X-Outrigger)-21001

WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

KOMATSU

This manual provides rules and guidelines which will help you use this machine safely and effectively. Keep this manual handy and have all personnel read it periodically. If this manual has been lost or has become dirty and can not be read, request a replacement manual from Komatsu or your Komatsu distributor.

If you sell the machine, be sure to give this manual to the new owners.

Continuing improvements in the design of this machine can lead to changes in detail which may not be reflected in this manual. Consult Komatsu or your Komatsu distributor for the latest available information of your machine or for questions regarding information in this manual.

This manual may contain attachments and optional equipment that are not available in your area. Consult Komatsu or your Komatsu distributor for those items you may require.


 **WARNING**


- **Improper operation and maintenance of this machine can be hazardous and could result in serious injury or death.**
- **Operators and maintenance personnel should read this manual thoroughly before beginning operation or maintenance.**
- **Some actions involved in operation and maintenance of the machine can cause a serious accident, if they are not done in a manner described in this manual.**
- **The procedures and precautions given in this manual apply only to intended uses of the machine. If you use your machine for any unintended uses that are not specifically prohibited, you must be sure that it is safe for you and others. In no event should you or others engage in prohibited uses or actions as described in this manual.**
- **Komatsu delivers machines that comply with all applicable regulations and standards of the country to which it has been shipped. If this machine has been purchased in another country or purchased from someone in another country, it may lack certain safety devices and specifications that are necessary for use in your country. If there is any question about whether your product complies with the applicable standards and regulations of your country, consult Komatsu or your Komatsu distributor before operating the machine.**
- **The description of safety is given in SAFETY INFORMATION on page 0-2 and in SAFETY from page 1-1.**


2. SAFETY INFORMATION

Most accidents are caused by the failure to follow fundamental safety rules for the operation and maintenance of machines. To avoid accidents, read, understand and follow all precautions and warnings in this manual and on the machine before performing operation and maintenance.

To identify safety messages in this manual and on machine labels, the following signal words are used.

 **DANGER** - This word is used on safety messages and safety labels where there is a high probability of serious injury or death if the hazard is not avoided. These safety messages or labels usually describe precautions that must be taken to avoid the hazard. Failure to avoid this hazard may also result in serious damage to the machine.

 **WARNING** - This word is used on safety messages and safety labels where there is a potentially dangerous situation which could result in serious injury or death if the hazard is not avoided. These safety messages or labels usually describe precautions that must be taken to avoid the hazard. Failure to avoid this hazard may also result in serious damage to the machine.

 **CAUTION** - This word is used on safety messages and safety labels for hazards which could result in minor or moderate injury if the hazard is not avoided. This word might also be word for hazards where the only result could be damage to the machine.

NOTICE - This word is used for precautions that must be taken to avoid actions which could shorten the life of the machine.

Safety precautions are described in SAFETY from page 1-1.

Komatsu cannot predict every circumstance that might involve a potential hazard in operation and maintenance. Therefore the safety messages in this manual and on the machine may not include all possible safety precautions. If any procedures or actions not specifically recommended or allowed in this manual are used, you must be sure that you and others can do such procedures and actions safely and without damaging the machine. If you are unsure about the safety of some procedures, contact Komatsu distributor.

3. INTRODUCTION

3.1 FEATURES

Excellent productivity and

ease of operation: Use of 30.5 m boom and power tilt jib with maximum tilt angle of 60°

Superb mobility and

safety in travel: High output, high torque engine and mode selection type fully automatic transmission mounted

Pleasant operating

environment: Comfortable operator's cab with large operating space

Further improved ease of

entry into confined spaces: Addition of rear steering mode and small tail swing width

Safety ensured with

fail-proof of operations: O.S.S. system with automatic detection of outrigger width

3.2 BREAKING IN THE MACHINE

Your Komatsu machine has been thoroughly adjusted and tested before shipment.

However, operating the machine under severe conditions at the beginning can adversely affect the performance and shorten the machine life.

Be sure to break in the machine for the initial 100 hours (as indicated by the service meter.)

During breaking in:

- Idle the engine for 5 minutes after starting it up.
- Avoid operation with heavy loads or at high speeds.
- Avoid sudden starts, sudden acceleration, sudden steering and sudden stops except in cases of emergency.

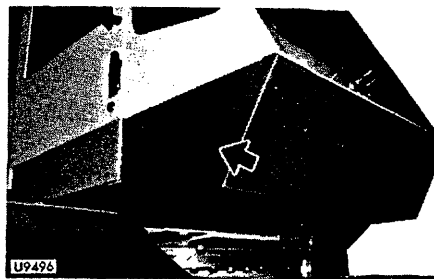
The precautions given in this manual for operating, maintenance, and safety procedures are only those that apply when this product is used for the specified purpose. If the machine is used for a purpose that is not listed in this manual, Komatsu cannot bear any responsibility for safety. All consideration of safety in such operations is the responsibility of the user.

Operations that are prohibited in this manual must never be carried out under any circumstances.

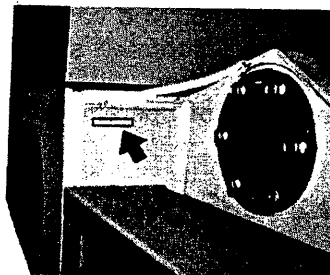
4. LOCATION OF PLATES, TABLE TO ENTER SERIAL NUMBER AND DISTRIBUTOR

4.1 MACHINE SERIAL NUMBER PLATE AND STAMP POSITION

The plate is on the right side face of the cab.

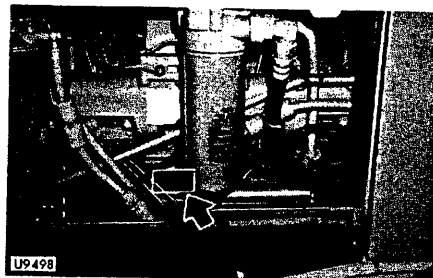


The stamp is on the rear right face of the chassis.

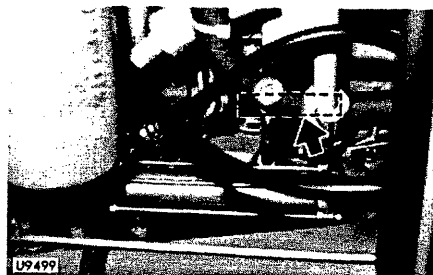


4.2 ENGINE SERIAL NUMBER PLATE AND STAMP POSITION

The plate is on the right side face of the engine cylinder block as seen from the fan.



The stamp is on the right side face of the engine cylinder block as seen from the fan.



4.3 TABLE TO ENTER SERIAL NUMBER AND DISTRIBUTOR

Machine serial No.:

Engine serial No.:

Distributor name:

Address:

Phone:

Service personnel for your machine:

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SAFETY

 **WARNING**

Read and follow all safety precautions. Failure to do so may result in serious injury or death.

This safety section also contains precautions for optional equipment and attachments.

6. GENERAL PRECAUTIONS

⚠ WARNING: For reasons of safety, always follow these safety precautions.

SAFETY RULES

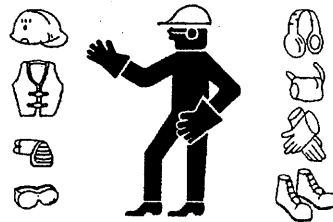
- ONLY trained and authorized personnel can operate and maintain the machine.
- Follow all safety rules, precautions and instructions when operating or performing maintenance on the machine.
- When working with another operator or a person on worksite traffic duty, be sure all personnel understand all hand signals that are to be used.
- Decide on one person who will give the signals. Using more than one person to give signals may actually increase the danger.

SAFETY FEATURES

- Be sure all guards and covers are in their proper position. Have guards and covers repaired if damaged.
- Make sure that you understand the use of safety devices such as the seat belt or lock pin of the winch clutch lever before you use them.
- Never remove any safety device under any circumstances. Take steps to ensure that the safety devices can always function properly.
Lock pin of winch clutch lever → See "12.28 PARKING MACHINE".
Seat belt → See "12.1.3 ADJUSTING BEFORE OPERATION".
- Mistaken use of the safety devices may lead to serious injury or death.
- Before using the seat belt, check that there is no abnormality. Replace the seat belt once every 3 years.

CLOTHING AND PERSONAL PROTECTIVE ITEMS

- Avoid loose clothing, jewelry, and loose long hair. They can catch on controls or in moving parts and cause serious injury or death. Also, do not wear oily clothes because they are flammable.
- Wear a hard hat, safety glasses, safety shoes, mask or gloves when operating or maintaining the machine. Always wear safety goggles, hard hat and heavy gloves if your job involves scattering metal chips or minute materials - this is so particularly when driving pins with a hammer and when cleaning the air cleaner element with compressed air.
Check also that there is no one near the machine.
Cleaning of air cleaner element → See "23.2 WHEN REQUIRED" in service procedure.

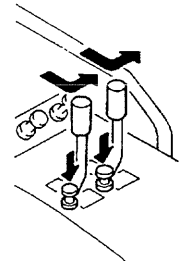


UNAUTHORIZED MODIFICATION

- Any modification made without authorization from Komatsu can create hazards.
- Before making a modification, consult your Komatsu distributor. Komatsu will not be responsible for any injury or damage caused by any unauthorized modification.

ALWAYS APPLY LOCK WHEN STANDING UP FROM OPERATOR'S SEAT

- When standing up from the operator's seat, set the gear shift lever to the N position and turn the parking brake switch ON. If this is not done, the machine may move suddenly and cause serious injury or death.
- When leaving the machine, lower the load completely, place the gear shift lever at the N position, set the lock pin of the winch clutch lever to the LOCK position, then stop the engine. Always remove the key and take it with you.
Posture of work equipment → See "12.28 PARKING MACHINE".

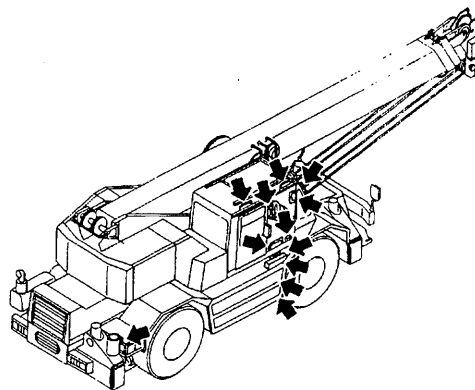
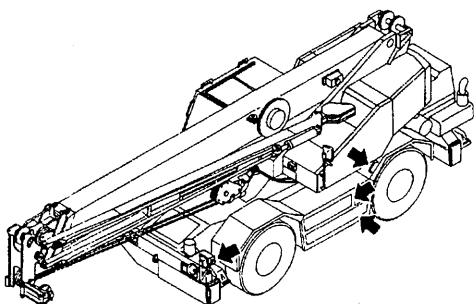


PRECAUTIONS AFTER ADJUSTING OPERATOR'S SEAT

- Check that you can operate the brakes, pedals, and levers properly.
- Install the seat belt securely.
Seat belt → See "12.1.3 ADJUSTING BEFORE OPERATION".

MOUNTING AND DISMOUNTING

- NEVER jump on or off the machine. NEVER get on or off a moving machine.
- When getting on or off the machine, face the machine and use the handhold and steps.
- Never hold any control levers when getting on or off the machine.
- Always maintain three-point contact with the handholds and steps to ensure that you support yourself.
- If there is any oil, grease, or mud on the handholds or steps, wipe it off immediately. Always keep these parts clean. Repair any damage and tighten any loose bolts.

**FIRE PREVENTION FOR FUEL AND OIL**

Fuel, oil, and antifreeze can be ignited by a flame. Fuel is particularly **FLAMMABLE** and can be **HAZARDOUS**.

- Keep a flame away from flammable fluids.
- Stop the engine and do not smoke when refueling.
- Tighten all fuel and oil caps securely.
- Refueling and oiling should be made in well ventilated areas.
- Keep oil and fuel in the determined place and do not allow unauthorized persons to enter.



PRECAUTIONS WHEN HANDLING AT HIGH TEMPERATURES

- Immediately after operations are stopped, the engine coolant, engine oil, and hydraulic oil are at high temperatures, and are still under pressure. Attempting to remove the cap, drain the oil or water, or replace the filters may lead to serious burns. Always wait for the temperature to go down, and follow the specified procedures when carrying out these operations.
- Before removing the radiator cap, stop the engine and let the radiator cool. Turn the cap slowly to release the internal pressure before removing the cap.
- The hydraulic tank is not pressurized, but if the breather (cap) is clogged, pressure may build up inside the tank. As a result, oil may spurt out when the hydraulic tank cap is removed. Always turn the cap slowly to release the internal pressure before removing the cap.

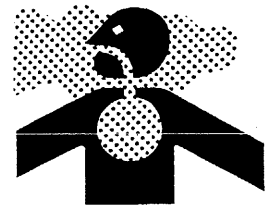


ASBESTOS DUST HAZARD PREVENTION

Asbestos dust can be **HAZARDOUS** to your health if it is inhaled.

If you handle materials containing asbestos fibers, follow these guidelines as given below:

- **NEVER** use compressed air for cleaning.
- Use water for cleaning to keep down the dust.
- Operate the machine with the wind to your back, whenever possible.
- Use an approved respirator if necessary.

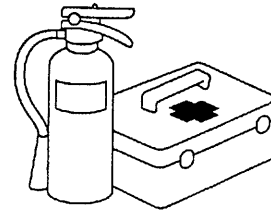


CRUSHING OR CUTTING PREVENTION

- Do not enter, or put your hand or arm or any other part of your body between movable parts such as between the work equipment and cylinders, or between the machine and work equipment. If the work equipment is operated, the clearance will change and this may lead to serious damage or personal injury.

FIRE EXTINGUISHER AND FIRST AID KIT

- Be sure fire extinguishers have been provided and know how to use them.
- Provide a first aid kit at the storage point.
- Know what to do in the event of a fire.
- Be sure you know the phone numbers of persons you should contact in case of an emergency.



PRECAUTIONS FOR ATTACHMENTS

- When installing and using an optional attachment, read the instruction manual for the attachment and the information related to attachments in this manual.
- Do not use attachments that are not authorized by Komatsu or your Komatsu distributor. Use of unauthorized attachments could create a safety problem and adversely affect the proper operation and useful life of the machine.
- Any injuries, accidents, product failures resulting from the use of unauthorized attachments will not be the responsibility of Komatsu.

7. PRECAUTIONS DURING OPERATION

⚠ WARNING: Failure to follow these safety precautions may lead to a serious accident.

7.1 BEFORE STARTING ENGINE

SAFETY AT WORKSITE

- Before starting operations, thoroughly check the area for any unusual conditions that could be dangerous.
- Check the condition of the road surface at the worksite, and determine the best and safest method of operation.
- Select a ground surface that is as hard and horizontal as possible when carrying out operations.
- If you need to operate on a street, protect pedestrians and cars by designating a person for worksite traffic duty or by installing fences around the worksite.
- Check the depth and flow of water before operating in water or crossing a river. NEVER be in water which is in excess of the permissible water depth.
- The operator himself must carry out the final visual check to confirm the operating position, route, and existence of any obstacles before starting operations.

FIRE PREVENTION

- Thoroughly remove wood chips, leaves, paper and other flammable things accumulated on the engine compartment. They could cause a fire.
- Check fuel, lubrication, and hydraulic systems for leaks. Have any leaks repaired. Wipe up any excess oil, fuel or other flammable fluids.
Check point → See "12.1.1 WALK-AROUND CHECK".
- Be sure a fire extinguisher is present and working.

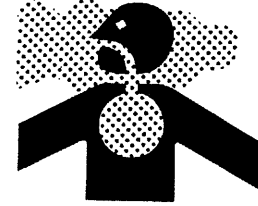


IN OPERATOR'S CAB

- Do not leave tools or spare parts lying around in the operator's compartment. They may damage or break the control levers or switches. Always put them in the tool box on the right side of the machine.
- Keep the cab floor, controls, steps and handrails free of oil, grease, snow, and excess dirt.
- Check the seat belt, buckle and hardware for damage or wear. Replace any worn or damaged parts. Always use seat belts when operating your machine.
Seat belts → See "12.1.3 ADJUSTING BEFORE OPERATION".

VENTILATION FOR ENCLOSED AREAS

- If it is necessary to start the engine within an enclosed area, provide adequate ventilation. Exhaust fumes from the engine can KILL.



PRECAUTIONS FOR MIRRORS, WINDOWS AND LIGHTS

- Remove all dirt from the surface of the windows and lights to ensure that you can see well.
- Adjust the side mirror so that you can see clearly from the operator's seat, and always keep the surface of the mirror clean. If any glass is broken, replace it with a new part.
- Check that the head lamps and working lamps are installed to match the operating conditions. Check also that they light up properly.

7.2 OPERATING MACHINE

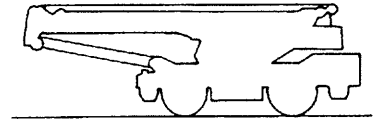
WHEN STARTING ENGINE

- Walk around your machine again just before mounting it, checking for people and objects that might be in the way.
- NEVER start the engine if a warning tag has been attached to the control.
- When starting the engine, sound the horn as an alert.
- Start and operate the machine only while seated.

CHECK DIRECTION BEFORE STARTING MACHINE

Before driving the machine, always check the direction of the chassis frame.

Procedure when traveling → See "12.5 MOVING MACHINE OFF".



CHECK FOR ABNORMALITIES

If there is any abnormal noise, vibration, heat, or smell, or any abnormality in the operation of the gauges, or if there is leakage of air, oil, or fuel, move the machine immediately to a safe place, and repair the problem.

TEST DRIVE BEFORE TRAVELING

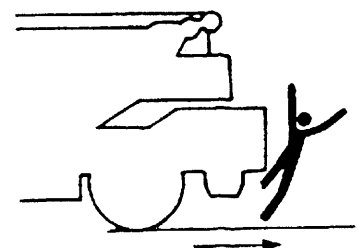
Test drive the machine at a safe place to check that the travel condition (travel speed, forward and reverse travel, operation of steering, braking effect) is normal before starting operations.

CHECK WHEN SWINGING OR TRAVELING IN REVERSE

Before operating the machine or work equipment, do as follows.

- Sound the horn to warn people in the area.
- Check that there is no one near the machine. Be particularly careful to check behind the machine.
- If necessary, designate a person to check the safety. This is particularly necessary when traveling in reverse.
- When operating in areas that may be hazardous or have poor visibility, designate a person to direct worksite traffic.
- Ensure that no unauthorized person can come within the turning radius or direction of travel. If necessary, put up fences.

The above precautions must be followed at all times even when using machines equipped with a backup alarm or mirror.



DO NOT HIT WORK EQUIPMENT

- When working in places where there are height limits, such as in tunnels, under bridges, under electric cables, or in garages, be extremely careful not to hit the boom or arm.

AVOID CONTACT

- When working in confined spaces or inside buildings, be careful not to hit anything around or above the machine.

ENSURE GOOD VISIBILITY

- When working in dark places, install working lamps and head lamps, and set up lighting in the work area if necessary.
- Stop operations if the visibility is poor, such as in mist, snow, or rain, and wait for the weather to improve to a condition that allows the operation to be carried out safely.

WORKING ON SNOW

- Snow-covered and frozen ground may cause the machine to slip sideways, even if the grade is not steep. Slow down the machine when traveling on such ground, and avoid sudden starting, stopping, and steering.
In addition, fit chains to the rear wheels, and use the 4-wheel drive for traveling.

WORKING ON LOOSE GROUND


- Avoid operating your machine too close to the edge of cliffs, overhangs, and deep ditches. If these areas collapse, your machine could fall or tip over and result in serious injury or death. Remember that the soil after heavy rain or blasting is weakened in these areas.
- Earth laid on the ground and the soil near ditches are loose. They can collapse under the weight or vibration of your machine.
- Before traveling across bridges or over other structures, check first that the structure can support the weight of the machine.

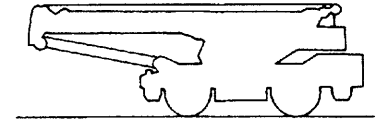
PRECAUTIONS IN COLD AREAS

- Check the operation of the safety devices, switches, and sensors, and remove snow or carry out defrosting if necessary.
- Remove the snow and carry out the defrosting of the swing circle, outriggers, boom, and winch, and check that these parts move properly before starting operations.
- Always drain the water from the air tank.
- When operating the service brake or parking brake, if there is no sound of air escaping, check the pressure in the air tank and remove the snow or carry out the defrosting of the area around the brake valve.
- Warm up the engine properly before starting operations. Do not raise the engine speed immediately after starting the engine.
- Check that the winch brake and clutch work properly.

7.3 PRECAUTIONS WHEN TRAVELING

SET TO TRAVEL POSTURE

- Set the work equipment to the travel posture shown in the diagram on the right before traveling.
- Stow the boom and hook in the specified position.
- Place all control levers at the neutral position.
- Stow the outriggers.
Check that the outrigger EXTEND/STOW selector switch is at neutral, and that the outrigger switch pilot lamp is off.
- Set the steering mode switch to the "  " position and set to front 2-wheel steering.
- Set the swing lock lever to the LOCK position.
- When swinging, set the boom angle so that the boom does not contact the mirror or other parts.



PRECAUTIONS BEFORE TRAVELING

- Check that the air pressure gauge reading is 5 – 10 kg/cm² (71 – 142 psi).
- Always be aware of the condition of the brake wear.
- Check that all the monitor lamps are working normally.
- Check the operation and lighting up of the brake lamp.
- Check that the working lamp is not on.
If you drive on roads with the working lamp on, this will cause problems for other traffic. It is prohibited to travel on roads with the working lamp on.
- On public roads, it is prohibited to use 4-wheel steering.
- On public roads, do not use 4-wheel drive unless there are special conditions (the road is covered with snow). Using the 4-wheel drive will cause premature wear of the tires.
- Always keep the door of the operator's cab closed.
If you travel with the door open, there is danger that the door may come out of the detent or suddenly slam shut if the brakes are applied suddenly or if the machine goes down a steep hill.

PRECAUTIONS WHEN TRAVELING

- When traveling on uneven ground, slow down the machine and avoid sudden movement of the steering.
- Avoid riding over obstacles as much as possible. If you must ride over obstacles, travel at low speed. Never travel over obstacles which cause the machine to tilt excessively (more than 10°). Riding over such large obstacles could cause the machine to tip over on its side.
- Never turn the key in the starting switch to the OFF position when traveling.
- If the engine should stall while the machine is traveling, the steering wheel will become heavy. Move the machine immediately to a safe position and stop the machine.
- If the reverse steering switch is turned ON when the machine is traveling forward, the direction of turning will be the reverse of the direction of operation of the steering wheel, so never touch the reverse steering switch when traveling.
- Always stop the machine before switching between 2-wheel drive and 4-wheel drive.
- Always keep the door of the operator's cab closed when traveling.

TRAVELING ON SLOPES

- Traveling on slopes could result in the machine tipping over or slipping.
Method of traveling on slopes → See "12.14 PRECAUTIONS WHEN TRAVELING".
- Do not travel on grass, fallen leaves, or wet steel plates. Even slight slopes may cause the machine to slip to the side, so travel at low speed and make sure that the machine is always traveling directly up or down the slope.
- When traveling down slopes, shift the gear shift lever to (2) or (L) to match the grade. Use the braking force of the engine together with the exhaust brake and retarder brake (option) to control the machine speed.

LEAVE SPACE WHEN STOPPING

To prevent the front of the machine from crossing the stop line, always leave a space when stopping.