

Operation & Maintenance Manual

PC360LC-11

PC390LC-11

SERIAL NUMBERS	PC360LC-11 A35001 and up PC390LC-11 A30401 and up
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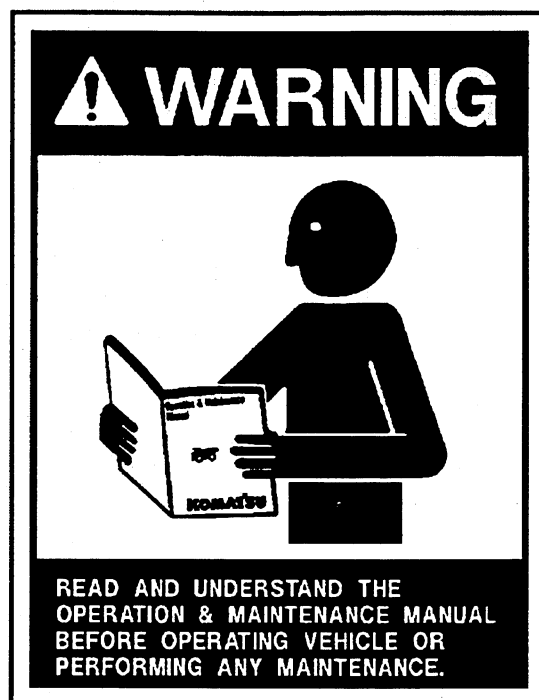
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⚠ WARNING

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 come in contact with it.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects and reproductive harm. Wash hands after handling.

FOREWORD



WARNING

Komatsu recommends that any service parts used for maintenance, repair or replacement of emission control systems be genuine new Komatsu or Komatsu approved parts or Komatsu approved rebuilt parts or assemblies or others parts of equivalent quality, and that the engine be serviced by an authorized Komatsu distributor. Failure to follow these recommendations could result in ineffective service, damage to the product, or safety risks (including serious personal injury or death).

In the United States, the owner may choose to have maintenance, replacement or repair of the emissions-related parts performed by a facility other than an authorized Komatsu distributor.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Wash hands after handling.

BEFORE READING THIS MANUAL

This manual gives details of the operation and methods of inspection and maintenance for this machine that must be obeyed in order to use the machine safely. Most accidents are caused by the failure to follow fundamental safety rules for the operation and maintenance of machines.

Read, understand and follow all precautions and warnings in this manual and on the machine before performing operation and maintenance. Failure to do so may result in serious injury or death.

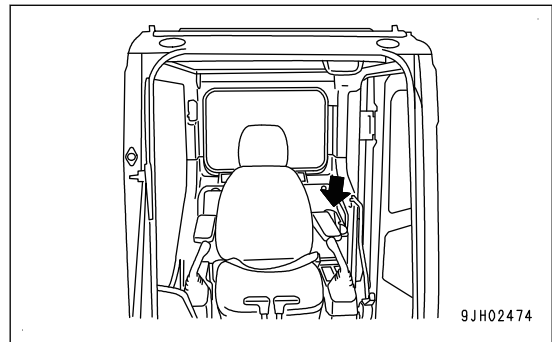
Komatsu cannot predict every circumstance that might involve a potential hazard when the machine is used. Therefore, the safety messages in this manual and on the machine may not include all possible safety precautions.

If you perform any operation, inspection, or maintenance under conditions that are not described in this manual, understand that it is your responsibility to take the necessary precautions to ensure safety. In no event should you or others engage in the prohibited uses or actions described in this manual. It is dangerous to perform improper operation and maintenance of the machine. It may cause serious injury or death.

If you sell the machine, be sure to give this manual to the new owner together with the machine.

Always keep this Operation and Maintenance Manual in the indicated location so that all relevant personnel can read it at any time.

Keep it in the magazine box on the left side of the operator's seat.



If this manual is lost or damaged, contact Komatsu or your Komatsu distributor and tell them about the machine model name and the serial No. immediately to arrange for its replacement.

For details regarding the machine model name and the serial No., see the machine serial No. plate. In order to arrange the proper Operation and Maintenance Manual, you will need to provide the machine model name and the serial No.

This manual uses the International System of Units (SI) for units of measurement. For reference, units that have been used in the past are given in { }.

The explanations, values, and illustrations in this manual have been prepared based on the latest information available as of the date of its publication. Continuing improvements in the design of this machine may lead to additional changes that are not reflected in this manual. If there is any question or suggestion, consult your Komatsu distributor.

The numbers in the illustrations correspond to the numbers in () in the text. (Example: 1 → (1))

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, 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 your Komatsu distributor before operating the machine.

SAFETY INFORMATION

To enable you to use the machine safely, and to prevent personal injury to operators, service personnel or bystanders, the precautions and warnings included in this manual and the safety signs attached to the machine must always be observed.

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

The "Safety Alert Symbol" identifies important safety messages on machines, in manuals, and elsewhere. When you see this symbol, be alert to the risk of personal injury or death. Follow the instructions in the safety message.



This signal word indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This signal word indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that may cause property damage.

The following signal words are used to alert you to information that must be followed to avoid damage to the machine.

NOTICE

If precautions described are not observed, the machine may be damaged or the service life may be reduced.

REMARK

This word is used for information that is useful to know.

INTRODUCTION

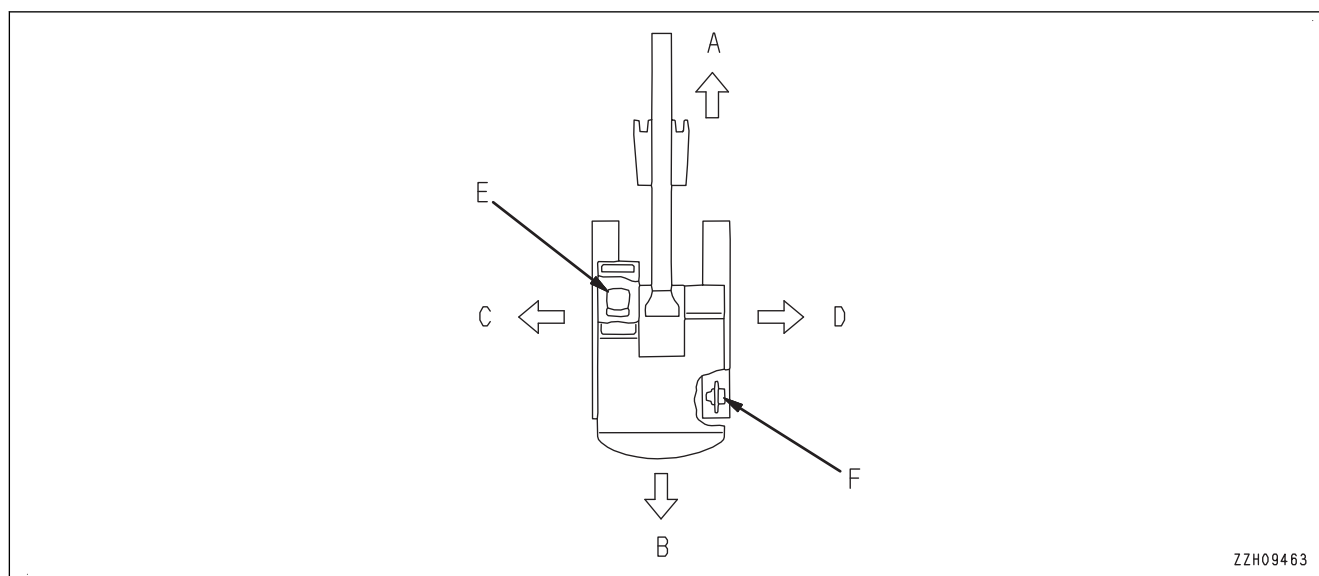
MAIN USE OF MACHINE

This Komatsu machine is designed to be used mainly for the following work:

- Digging work
- Ditching work
- Loading work
- Leveling work
- Demolition work

For details of work procedure, see MACHINE OPERATIONS AND CONTROLS “RECOMMENDED APPLICATIONS (3-218)”.

DIRECTIONS OF MACHINE



ZZH09463

(A) Front

(B) Rear

(C) Left

(D) Right

(E) Operator's seat

(F) Sprocket

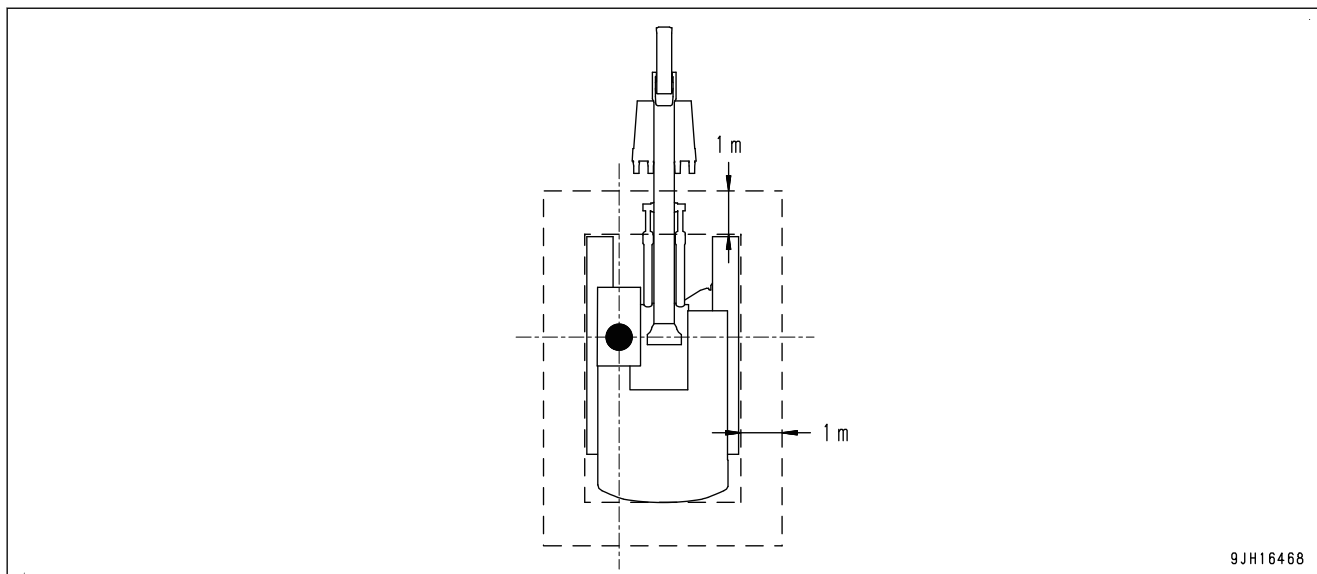
In this manual, the terms front, rear, left, and right refer to the travel direction as seen from the operator's seat when the operator's seat is facing the front and the sprocket is at the rear of the machine.

VISIBILITY FROM OPERATOR'S SEAT

The visibility of this machine required by visibility standards (ISO 5006) are shown in the drawing below.

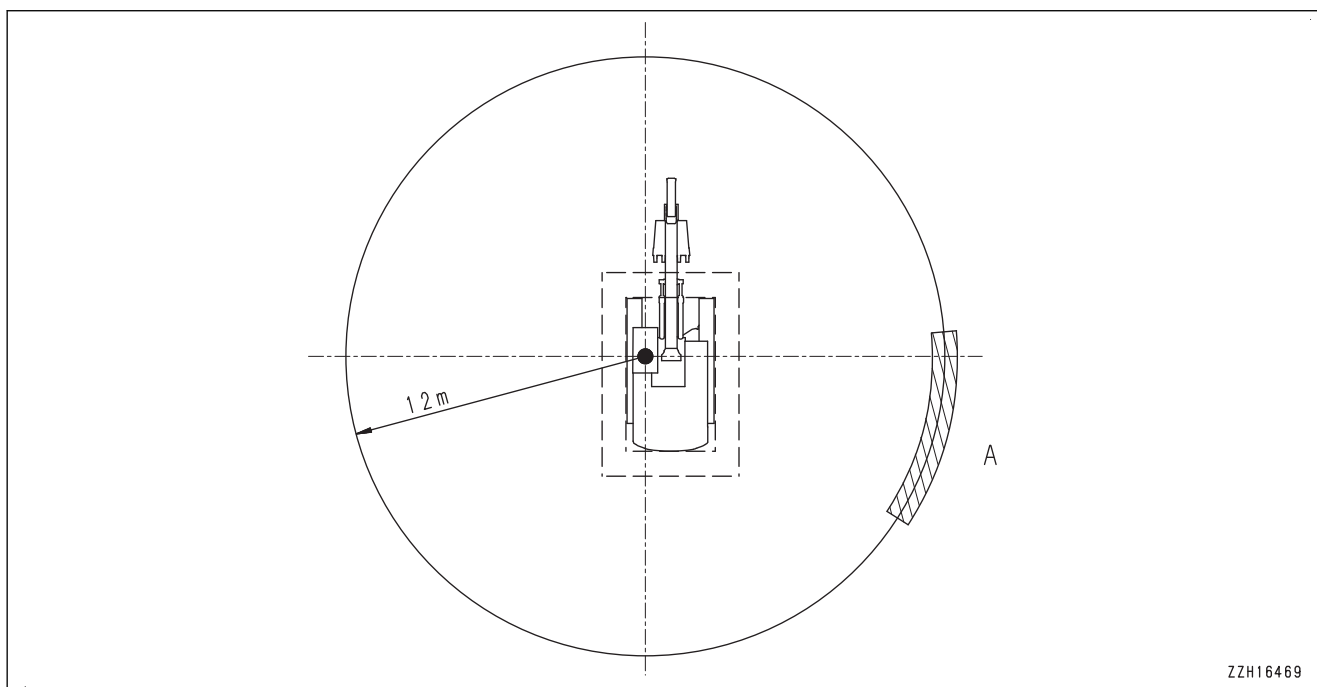
Proximity visibility

The figure below shows a visibility from the machine at a spot 1.0 m away from outside the machine and 1.5 m above the ground.



12 m radius visibility

The figure below shows a visibility from the machine for a radius of 12 m. Shaded area (A) in the figure shows an area whose view is blocked when the machine is equipped with the mirrors and other visibility assistant devices. Be fully aware that there is an area where the operator cannot see when operating the machine.



Protective structures

This machine is equipped with a structure to protect the operator (ROPS) conforming to ISO12117-2.

ENGINE TECHNOLOGY TO CONFORM EXHAUST GAS EMISSION

About Engine Technology

This engine technology combines a Komatsu Diesel Particulate Filter (KDPF) and Komatsu's Urea Selective Catalytic Reduction (SCR) to conform EPA Tier4 Final emission regulation in North America.

- Komatsu Diesel Particulate Filter (KDPF): A device which captures diesel particular matter or soot in the exhaust gas to purify exhaust gas. If soot is accumulated to a certain level in the filter, a purification process to burn the soot is performed automatically to keep the filtering performance of KDPF high.
- Komatsu's Urea SCR system: A device which decomposes the toxic nitrogen oxides (NOx) mixed in the exhaust gas into harmless nitrogen and water. Spraying the reagent (Diesel Exhaust Fluid) into the exhaust gas produces a reaction between the nitrogen oxides and ammonia generated from the urea solution and decomposes the nitrogen oxides into nitrogen and water.

About Diesel Exhaust Fluid (DEF)

Diesel Exhaust Fluid is the aqueous urea solution for the SCR system.

DEF is the abbreviation for Diesel Exhaust Fluid, and is represented as DEF throughout this manual.

DEF is a colorless transparent and aqueous urea solution made with 32.5 % urea (AUS32) and 67.5 % deionized water. Urea as main constituent is a material which is used for cosmetics, medical and pharmaceutical products, and fertilizer, etc.

Commercial DEF, that is API (American Petroleum Institute) certified and fulfills the quality requirements in accordance with ISO 22241-1, is to be used. The certified DEF has the API DIESEL EXHAUST FLUID Certification Mark shown as follows. Look for the API DEF Certification Mark when purchasing DEF.

API Diesel Exhaust Fluid Certification Mark is the trade mark of API (American Petroleum Institute).



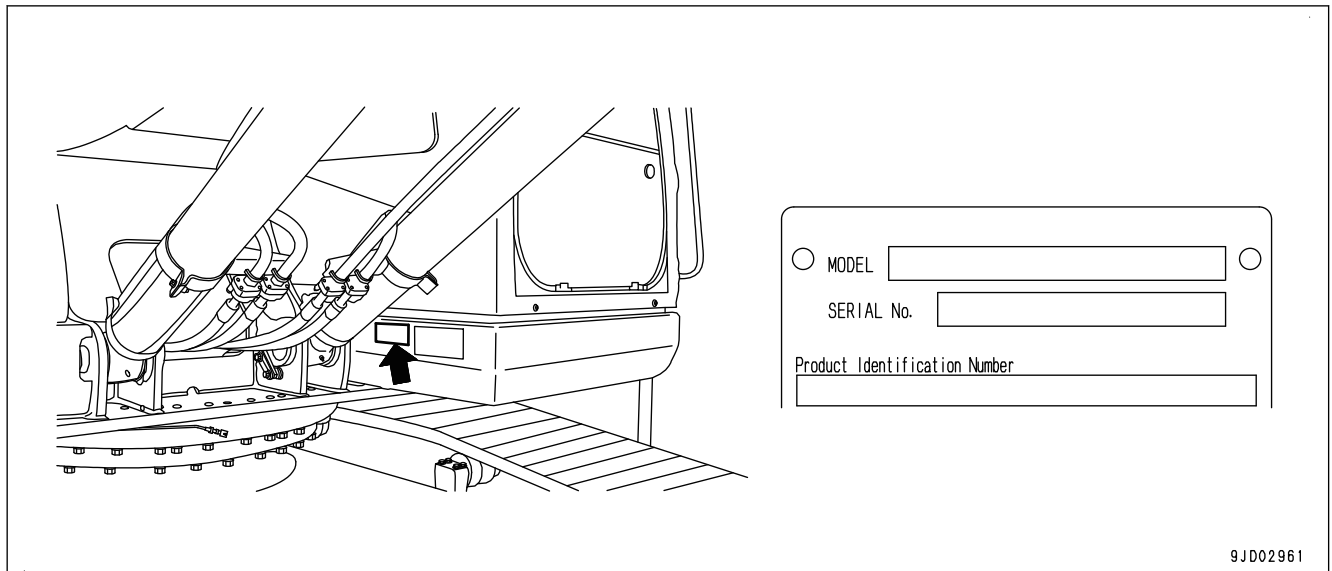
PRODUCT INFORMATION

When requesting service or ordering replacement parts, inform your Komatsu distributor of the following items.

LOCATION OF PRODUCT IDENTIFICATION NUMBER (PIN)/MACHINE SERIAL NO. PLATE

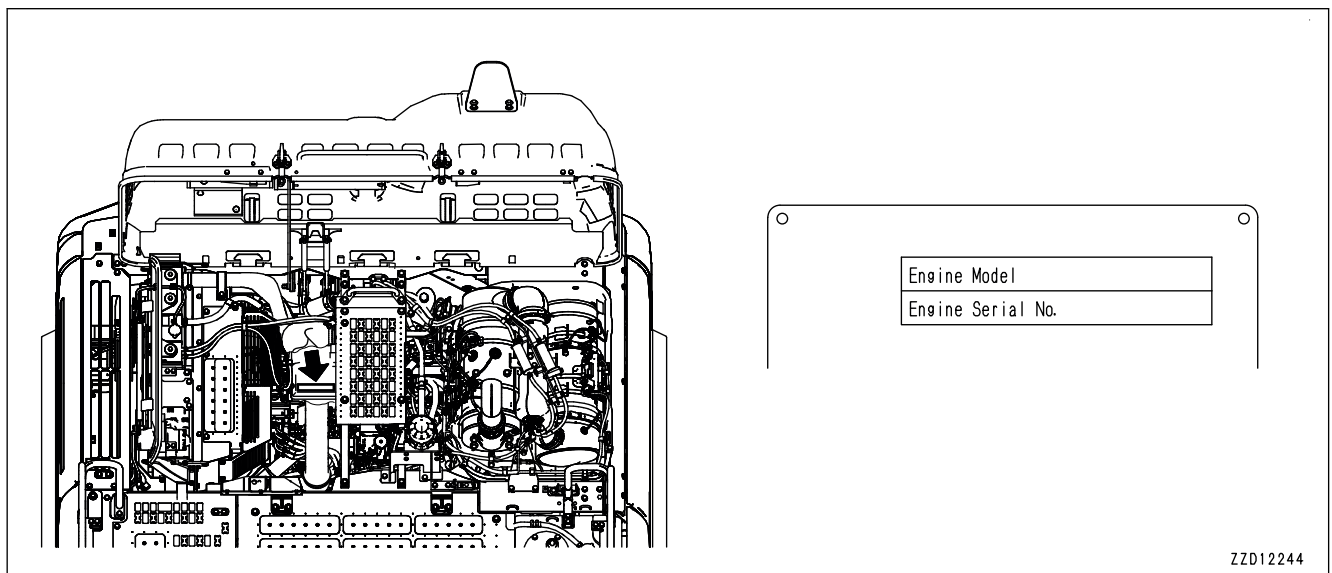
It is located on the right bottom of the operator's cab.

The design of the nameplate differs according to the district.



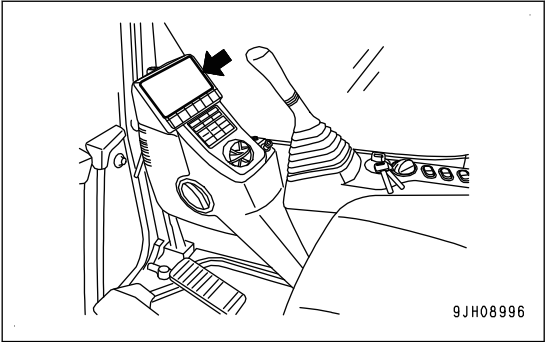
LOCATION OF ENGINE NUMBER PLATE

They are on top of the engine cylinder head cover.



SERVICE METER LOCATION

This is displayed on the machine monitor.



YOUR MACHINE SERIAL NUMBERS AND DISTRIBUTOR

Machine serial No.	
Engine serial No.	
Product identification number (PIN)	
Distributor name	
Address	
Phone/Fax	
Service personnel	

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SAFETY

WARNING

Please read and make sure that you fully understand the precautions described in this manual and the safety labels on the machine. When operating or servicing the machine, always follow these precautions strictly.

SAFETY

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SAFETY LABELS

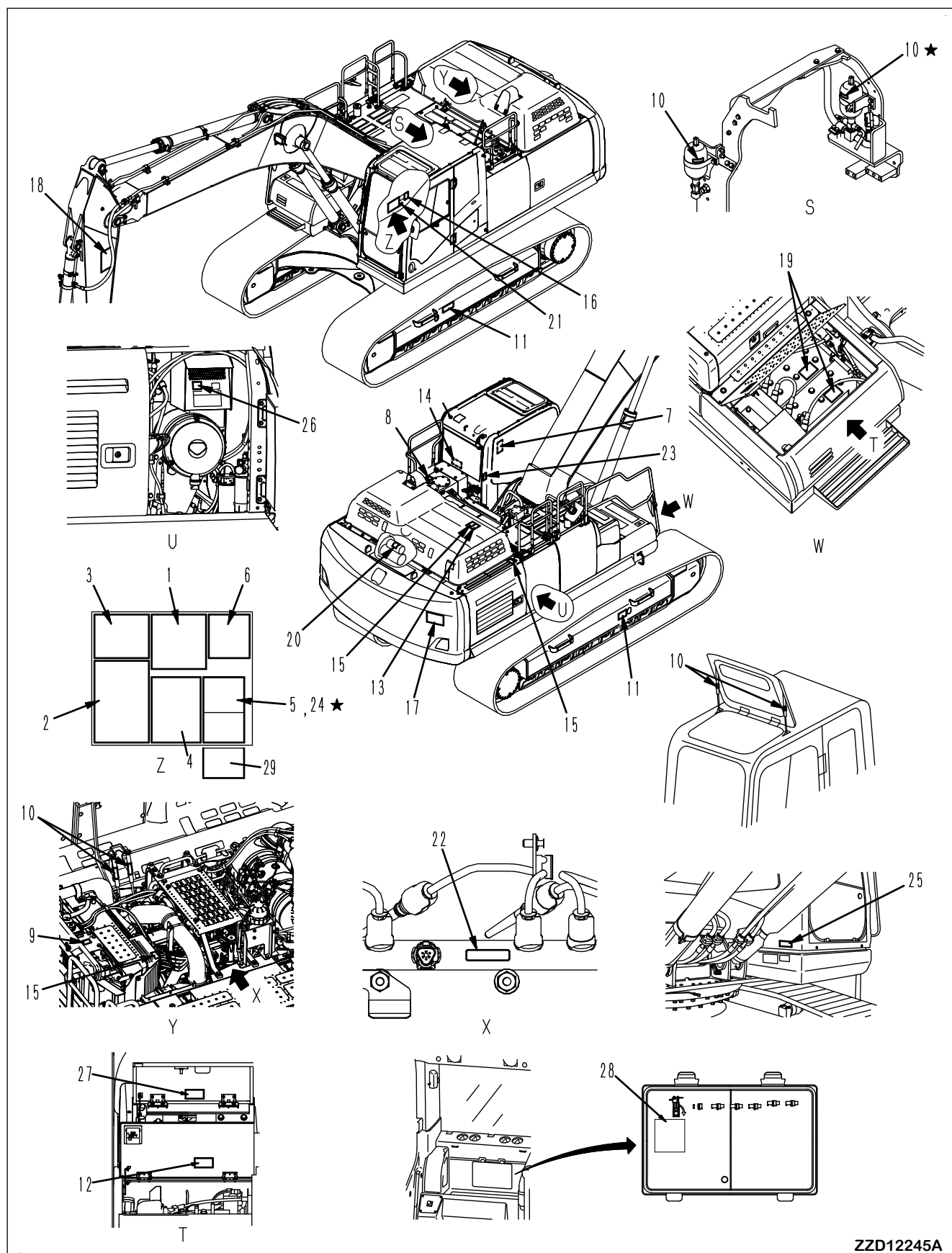
WARNING

Be sure that you fully understand the correct position, content and how to avoid a danger shown in the safety labels.

Handle the warning signs and safety labels used on this machine as follows.

- Always keep the safety labels clean so that you can read it properly. When cleaning the safety labels, do not use organic solvents or gasoline. These may cause the labels to peel off.
- If the safety labels are damaged, lost, or cannot be read properly, replace them with new ones. For details of the part numbers for the safety labels, see this manual or the actual label, and place an order to your Komatsu distributor.
- There are also other labels in addition to the warning signs and safety labels. Handle those labels in the same way.

LOCATION OF SAFETY LABELS



ZZD12245A


Options are shown with ★ marks in the figure.

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CONTENTS OF SAFETY LABELS


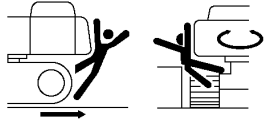
Caution for operation, inspection and maintenance

"09651-03001"

 WARNING
<p>Improper operation and maintenance can cause serious injury or death.</p> <p>Read manual and labels before operation and maintenance. Follow instructions and warnings in manual and in labels on machine.</p> <p>Keep manual in machine cab near operator. Contact Komatsu distributor for a replacement manual.</p>
09651-03001


Caution before operating

"09802-03000"

 WARNING

<p>To prevent SEVERE INJURY or DEATH, do the following before moving machine or its attachments:</p> <ul style="list-style-type: none"> • Honk horn to alert people nearby. • Be sure no one is on or near machine or in swing area. • Rotate cab for full view of travel path if it can be done safely. • Use spotter if view is obstructed. <p>Follow above even if machine is equipped with travel alarm and mirrors.</p>
09802-03000


Caution when leaving operator's seat

"09654-03001"


 WARNING
<p>To avoid hitting unlocked operation levers, lower equipment to ground and move LOCK LEVER (located near seat) to LOCK position before standing up from operator's seat.</p> <p>Sudden and unwanted machine movement can cause serious injury or death.</p>
09654-03001

Caution for high-voltage cables

“09801-03002”



DANGER



Electrocution Hazard

Serious injury or death will occur if machine or attachments are not kept away from electric lines.
Maintain a minimum clearance in accordance with this chart.


VOLTAGE	MIN. DISTANCE
50 kV or Less	3.1 m (10 ft)
50 kV to 200 kV	4.6 m (15 ft)
200 kV to 350 kV	6.1 m (20 ft)
350 kV to 500 kV	7.7 m (25 ft)
500 kV to 750 kV	10.7 m (35 ft)
750 kV to 1,000 kV	13.8 m (45 ft)

09801-03002

Caution for control pattern

Standard machine

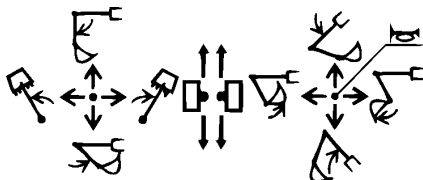
“09822-03000”



WARNING

In order to prevent an accident resulting in injury or death caused by error-operation, confirm the machine motion and indicated operating pattern, when operating machines. Pay attention to the circumference and operate slowly when confirming the machine motion.

ISO pattern



09822-03000

Machine equipped with control pattern change-over valve

"21K-00-71270"

**WARNING**

This machine is equipped with a control pattern selector valve. To prevent personal injury caused by mistaken operation, always check that the movement of the machine matches the pattern shown on the control pattern card before starting operations.

- When checking the movement of the machine, check that the surrounding area is safe and operate the machine slowly.
- If the movement does not match the control pattern card, replace the card with the card showing the correct control pattern.

Always do as follows when changing the control pattern.

- Lower the work equipment to the ground, stop the engine, and set the lock lever to the LOCK position. Then change the control pattern.

21K-00-71270

Caution when opening or closing front window

"09839-03001"

**WARNING**

Accidental contact with control levers may cause unintended machine movement resulting in injury or death. Always lower attachments to ground, set lock lever to LOCK position and stop engine before:

- opening or closing front window, ceiling window or door
- attaching or detaching bottom window
- adjusting seat position
- standing up, etc.

09839-03001

Caution when stowing front window

"09803-03000"

**WARNING**

When raising window, lock it in place with lock pins on both sides.

Falling window can cause injury.

09803-03000

Caution for high-temperature oil

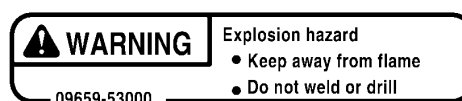
"09653-03001"

**Caution for high-temperature coolant**

"09668-03001"

**Caution for handling accumulator and gas spring**

"09659-53000"

**Caution for adjusting track tension**

"09657-03003"



Caution for handling cable

"09808-03001"

**WARNING**

Improper use of jumper cables and battery cables can cause an explosion resulting in serious injury or death.

- Follow instructions in manual when using jumper cable and battery cables.

09808-03001

Stop rotation during inspection and maintenance

"09667-03001"

**CAUTION**

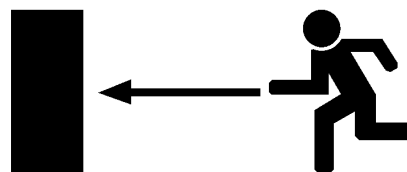
While engine is running:

1. Do not open cover.
2. Keep away from fan and fan-belt.

09667-03001

Emergency escape

"09844-00050"



09844-00050

This is an emergency exit when the cab door will not open. In emergency, smash the window pane with an equipped hammer and get through there.

Caution against falling

"09805-13000"

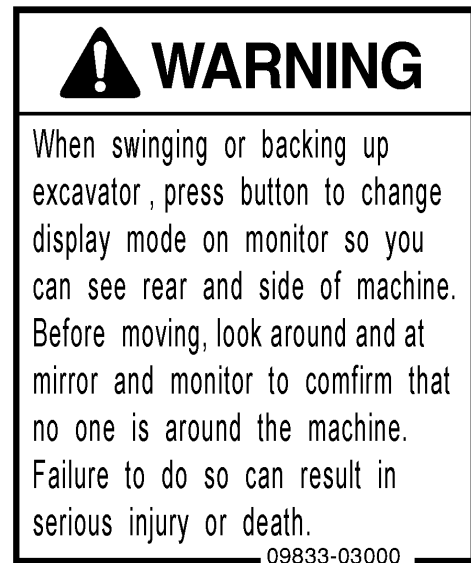
**CAUTION**

NEVER be on this hood.

09805-13000

Caution when swinging and traveling in reverse

"09833-03000"



Prohibition of entering within swing range

"09133-23000"



Caution for work equipment

"09134-A1681"

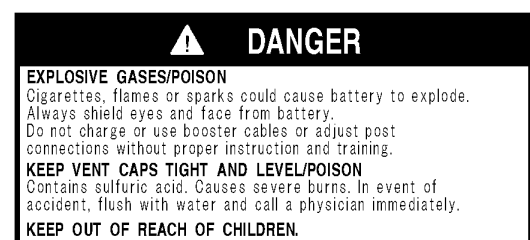


Sign indicates a hazard of being hit by the working device of the machine.

Keep away from machine during operation.

Caution for handling battery

"09664-30013"



Prohibition of start by short-circuiting

“09842-A0481”

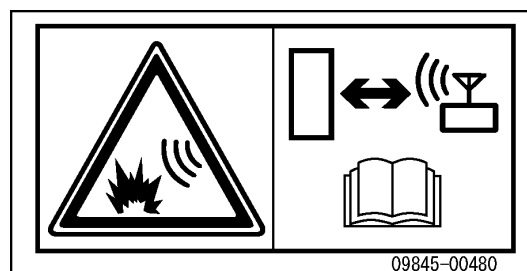


Start the engine only after sitting down in the operator's seat.

Do not attempt to start the engine by short-circuiting the engine starting circuit. Such an act may cause a serious bodily injury or fire.

Caution for blast site

“09845-00480”



Sign indicates an explosion hazard caused by active radio transmitter at a blast zone.

Keep machine at a safe distance from a blast zone and detonator.

Caution for high-pressure fuel

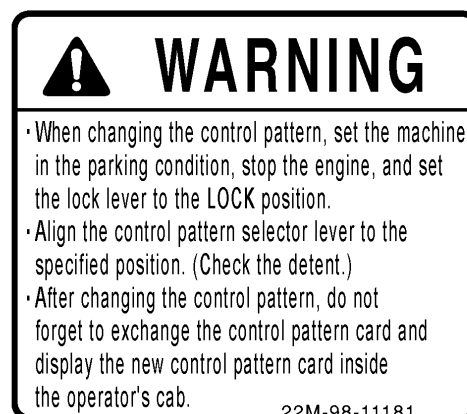
“6754-71-1991”



Caution for changing control patterns

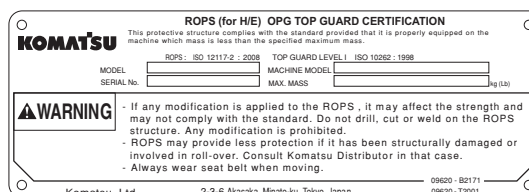
Machine equipped with control pattern change-over valve

“22M-98-11181”



Caution for handling ROPS

“09620-T2001”, “09620-B2171”



Prohibition of use of ether

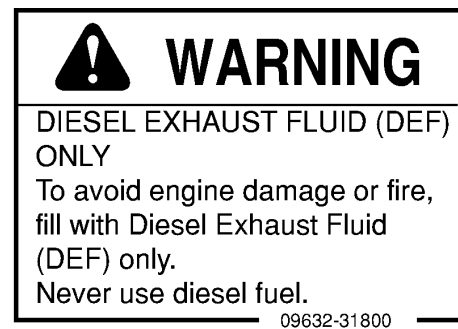
“6732-81-4630”



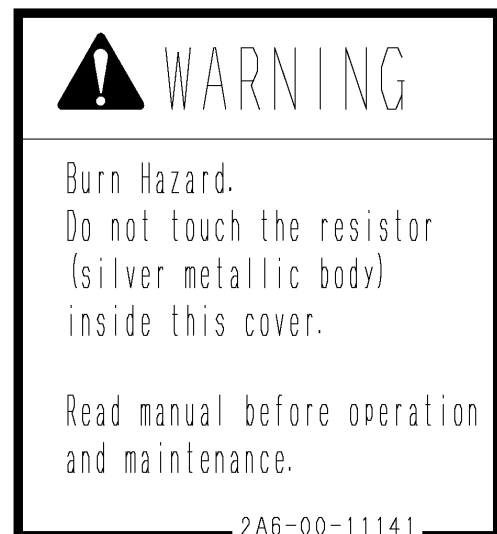
You may get injured from explosion.
Do not use starting aid such as ethel liquid
spray etc. when starting engine.

Caution for handling DEF

“09632-31800”



**Caution for high-temperature resistance**

“2A6-00-11141”



Caution for straight travel system (STS) (Option)

"20Y-62-A2760"

	WARNING
	
<p>This machine has a Straight Travel System (STS)</p> <p>STS is actuated using the STS pedal.</p> <p>When the machine is not being operated set the STS pedal in LOCKED position.</p> <p>Read Operator's Manual for Safety precautions.</p> <p>Improper use of STS pedal could cause injury or death.</p>	
20Y-62-A2760	

GENERAL PRECAUTIONS COMMON TO OPERATION AND MAINTENANCE

Mistakes in operation, inspection, or maintenance may result in serious personal injury or death. Before performing operation, inspection, or maintenance, always read this manual and the safety labels on the machine carefully and obey the warnings.

PRECAUTIONS BEFORE STARTING OPERATION

ENSURE SAFE OPERATION

- Only trained and authorized personnel can operate and maintain the machine.
- Follow all safety, precautions, and instructions in this manual when operating or performing inspection or maintenance on the machine.
- If you are not feeling well, or if you are under the influence of alcohol or medication, your ability to safely operate or repair your machine may be severely impaired, putting yourself and everyone else on your job site in danger.
- When working with another operator or with the person on the worksite traffic duty, discuss the content of the operation beforehand and use the determined signals when performing the operation.

UNDERSTAND THE MACHINE

Before operating the machine, read this manual thoroughly. If there is any place in this manual that you do not understand, ask the person in charge of safety for explanation.

PREPARATIONS FOR SAFE OPERATION

PRECAUTIONS FOR SAFETY-RELATED EQUIPMENT

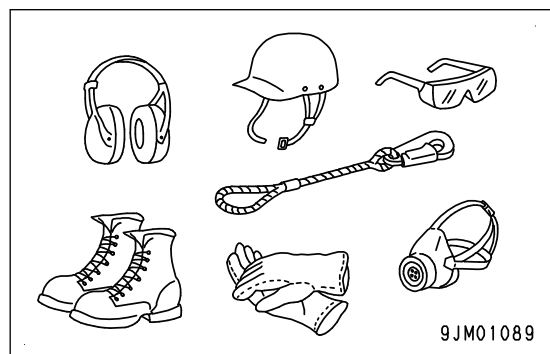
- Be sure that all guards, covers, cameras, and mirrors are in their proper position. Repair them immediately if they are damaged.
- Understand the using method of the safety related devices and use them properly.
- Never remove any safety related devices. Always keep them in good operating condition.

INSPECT MACHINE

Check the machine before starting operations. If any abnormality is found, do not operate the machine until repairs of the problem location have been completed.

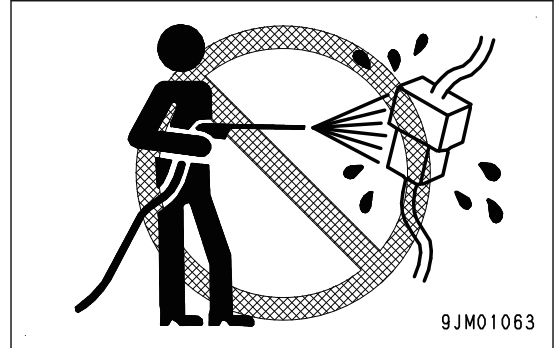
WEAR WELL-FITTING CLOTHES AND PROTECTIVE EQUIPMENT

- Do not wear loose clothes or any accessories. If any of these catch the control levers or protruding parts, it may cause the machine to move unexpectedly, it is extremely dangerous.
- Always wear a hard hat and safety shoes. Wear protective eyeglasses, mask, gloves, ear plugs, and safety belt depending on the work.
- Long hair hanging out from the hard hat is dangerous that it may get caught up in the machine. Tie the hair up and be careful not to be caught.
- Check that all personal protective items function properly before using them.



KEEP MACHINE CLEAN

- If you get on or off the machine or perform inspection and maintenance on the machine with mud or oil, you may slip and fall, and it is dangerous. Wipe off any mud or oil from the machine. Always keep the machine clean.
- If water gets into the electrical system, electric devices will cause malfunctions, and the machine will cause error. If the machine cause error, it may move unexpectedly and cause serious personal injury or death. When washing the machine with water or steam, do not allow the water or steam to come into direct contact with electrical components.
- If high-pressure water is sprayed directly onto camera, it may cause failure. Defective camera cannot monitor surrounding area. When cleaning, do not allow the high-pressure water to get into camera directly, and wipe off any dirt with soft cloth.
- When cleaning camera, if you stand on an unstable place, or take an unstable posture, you may fall and be injured. Put proper stepladder or step on the level and firm ground, and clean the camera in secure posture.



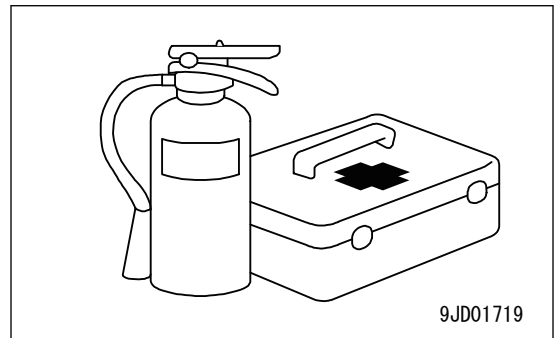
PRECAUTIONS FOR INSIDE OPERATOR'S COMPARTMENT

- When entering the operator's compartment, always remove all mud and oil from the soles of your shoes. If you operate the pedal with mud or oil affixed to your shoes, your foot may slip and this may cause a serious accident.
- Do not leave tools or machine parts lying around inside the operator's compartment. If tools or parts get into the control devices, it may obstruct operation and cause the machine to move unexpectedly, resulting in serious personal injury or death.
- Do not stick suction pads to the window glass. Suction pads act as a lens and may cause fire.
- Do not use a cellular phone when driving or operating the machine. This may lead to mistakes in operation, and may cause serious personal injury or death.
- Never bring any dangerous objects such as flammable or explosive items into the operator's compartment.

PROVIDE FIRE EXTINGUISHER AND FIRST AID KIT

Observe the following precautions to prepare for action if any serious personal injury or death or fire should occur.

- Be sure that fire extinguishers have been provided and read the labels to ensure that you know how to use them for the possibility of fires.
- Perform periodic inspection and maintenance to ensure that the fire extinguisher can always be used.
- Provide a first aid kit in the storage point. Perform periodic checks and add to the contents if necessary.



IF ANY PROBLEM IS FOUND

If you find any problem in the machine during operation or maintenance (noise, vibration, smell, incorrect gauges, smoke, oil leakage, etc., or any abnormal display on the warning devices or monitor), report to the person in charge and take the necessary action. Do not operate the machine until the problem has been corrected.

PRECAUTIONS TO PREVENT FIRE

ACTIONS IF FIRE OCCURS

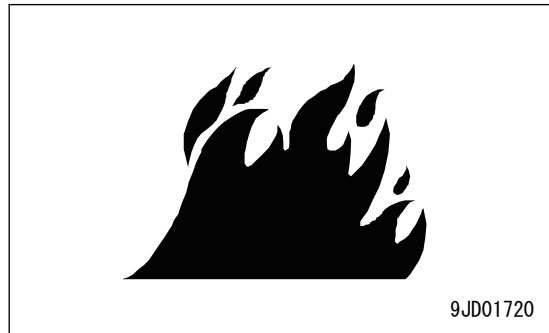
- Turn the starting switch to OFF position, and stop the engine.
- Use the handrails and steps to escape from the machine.
- Do not jump off the machine. There is the danger of falling and it may cause personal injury.
- The fume generated by a fire contains harmful materials which have a bad influence on your body when they are inhaled.
Do not breathe the fumes.
- After a fire, harmful compounds may be left. If it touches your skin, it may have a bad influence on your body.
Be sure to wear rubber gloves when handle the materials left after the fire.
The material of the gloves, which is recommended is polychloroprene (Neoprene) or polyvinyl chloride (in the lower temperature environment).
When wearing cotton work gloves, wear rubber gloves under them.

PREVENT FIRE

Fire caused by fuel, oil, coolant, or window washer fluid

Do not bring any open flame close to flammable substances such as fuel, oil, coolant, or window washer fluid. There is a danger that they may catch fire. Always observe the following.

- Do not smoke or use any open flame near fuel or other flammable substances.
- Shut down the engine before adding fuel.
- Do not leave the machine when adding fuel or oil.
- Tighten all the fuel and oil caps securely.
- Be careful not to spill fuel on overheated surfaces or on parts of the electrical system.
- After adding fuel or oil, wipe up any spilled fuel or oil.
- Put greasy rags and other combustible materials into a safe container to maintain safety at the workplace.
- When washing parts with oil, use a non-flammable oil. Do not use diesel fuel or gasoline. There is danger that they may catch fire.
- Do not weld or use a cutting torch to cut any pipes or tubes that contain combustible liquids.
- Determine well-ventilated areas for storing oil and fuel.
Keep the oil and fuel in the specified place and do not allow unauthorized persons to enter.
- When performing grinding or welding work on the machine, move any flammable materials to a safe place before starting.



Fire caused by accumulation of combustible material

- Remove any dry leaves, chips, pieces of paper, coal dust, or any other combustible materials accumulated or affixed around the engine exhaust manifold, muffler, or battery, or inside the undercovers.
- To prevent fires from spreading sparks or burning particles from other fires, remove any combustible materials such as dry leaves, chips, pieces of paper, coal dust, or any other combustible materials accumulated around the cooling system (radiator, oil cooler) or inside the undercover.

Fire coming from electric wiring

Short circuits in the electrical system can cause fire. Always observe the following.

- Keep all the electric wiring connections clean and securely tightened.

- Check the wiring every day for looseness or damage. Reconnect any loose connectors or refasten wiring clamps. Repair or replace any damaged wiring.

Fire caused from piping

Check that all the hose and tube clamps, guards, and cushions are securely fixed in position.

If they are loose, they may vibrate during operation and rub against other parts. There is danger that this may lead to damage to the hoses and cause high-pressure oil to spurt out, leading to fire and serious personal injury.

Fire around the machine due to highly heated exhaust gas

This machine is equipped with Komatsu Diesel Particulate Filter (hereafter KDPF).

KDPF is a device to purify the soot in the exhaust gas. Exhaust gas temperature may increase during the purification process (regeneration). Do not bring any combustible material close to the outlet of the exhaust pipe.

When there are thatched houses, dry leaves or pieces of paper near the job site, set the system to the regeneration disable to prevent fire hazards due to highly heated exhaust gas during the aftertreatment devices regeneration. For the setting procedure, see "HANDLE Komatsu Diesel Particulate Filter (KDPF) (3-120)".

Explosion caused by lighting equipment

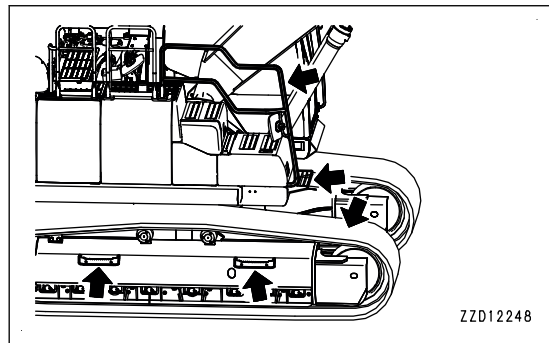
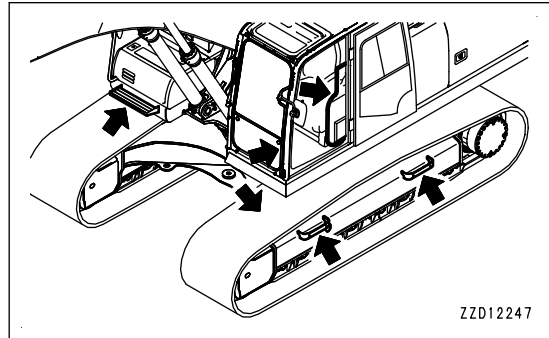
- When checking fuel, oil, battery electrolyte, or coolant, always use lighting with anti-explosion specifications.
- When taking the electrical power for the lighting equipment from the machine, see "POWER SUPPLY OUTLET (3-114)".

PRECAUTIONS WHEN GETTING ON OR OFF MACHINE

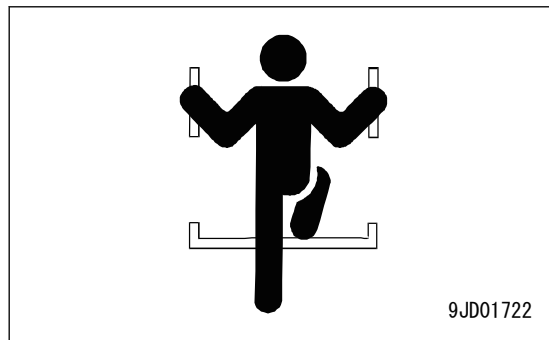
USE HANDRAILS AND STEPS WHEN GETTING ON OR OFF MACHINE

To prevent personal injury caused by slipping or falling off the machine, always observe the following.

- Use the handrails and steps marked by arrows in the figure on the right when getting on and off the machine.



- Always face the machine and maintain at least three-point contact (both feet and one hand, or both hands and one foot) with the handrails and steps to ensure that you support yourself.
- Before getting on and off the machine, check the handrails and steps if there is any oil, grease, or mud on them. Wipe it off immediately not to slip if any. In addition, tighten any loose bolt of the handrails and steps. If the handrails and steps are damaged or deformed, they need to be repaired immediately. Ask your Komatsu distributor to perform this work.



- Do not grip the control levers or lock lever when getting on or off the machine.
- Never climb on the engine hood or covers where there are no non-slip pads.
- Do not get on or off the machine with tools in your hand.
- Do not grab a foldable mirror as a handrail since it turns.

NO JUMPING ON OR OFF MACHINE

Getting on or off the moving machine can cause serious personal injury or death. Always observe the following.

- Never jump on or off the machine. Never get on or off a moving machine.
- If the machine starts to move when there is no operator on the machine, do not jump on to the machine and try to stop it.

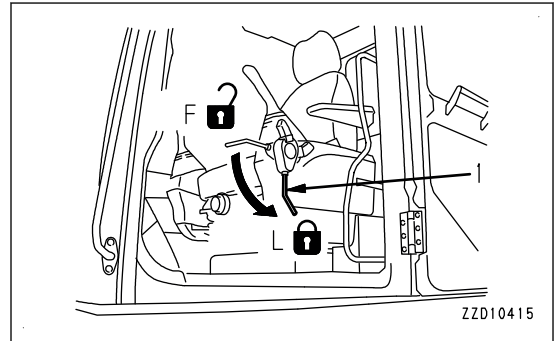
NO PEOPLE ON ATTACHMENTS

Never let anyone ride on the work equipment or other attachments. There is a hazard of falling and suffering serious personal injury or death.

PRECAUTIONS WHEN STANDING UP FROM OPERATOR'S SEAT

Before standing up from the operator's seat, such as when opening or closing the front window or ceiling window, when removing or installing the bottom window, or adjusting the position of the seat, always lower the work equipment to the ground, set lock lever (1) to LOCK position (L), and stop the engine.

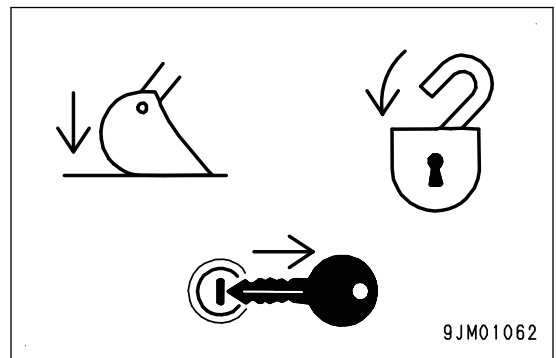
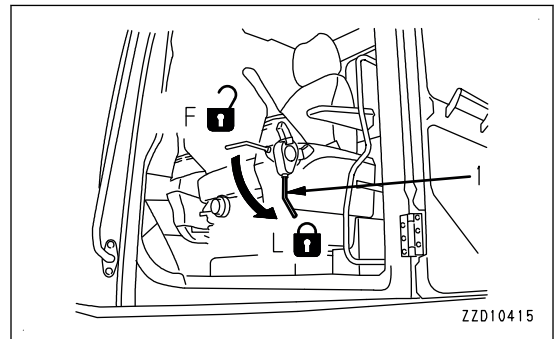
If the control levers are touched by mistake, there is danger that the machine may suddenly move and cause serious personal injury or death.



PRECAUTIONS WHEN LEAVING MACHINE

If the proper procedures are not taken when parking the machine, the machine may suddenly move off by itself, and this may lead to serious personal injury or death. Always observe the following.

When leaving the machine, always lower the work equipment to the ground, set lock lever (1) to LOCK position (L), and stop the engine. In addition, lock all places and always take the key with you and keep it in the specified location.



EMERGENCY EXIT FROM OPERATOR'S CAB

- If it should be impossible to open the door of the cab, break the window glass with the hammer supplied and use the window as an emergency escape.
For details, see "EMERGENCY ESCAPE HAMMER (3-111)" in this manual.
- When escaping, remove the pieces of glass from the window frame first and be careful not to cut yourself on the glass. Be careful also not to slip on the broken pieces of glass on the ground.

DO NOT GET CAUGHT IN WORK EQUIPMENT

The clearance in the area around the work equipment changes according to the movement of the link. If you are caught, this may lead to serious personal injury or death. Do not allow anyone near any of the rotating or telescopic parts.

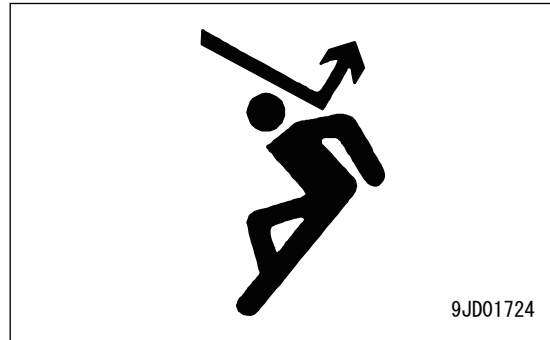
PRECAUTIONS RELATED TO PROTECTIVE STRUCTURES

The operator's compartment is equipped with a structure (such as ROPS, OPG) to protect the operator by absorbing the impact energy.

As for the machine equipped with ROPS, if the machine weight (mass) exceeds the certified value (shown on ROLL-OVER PROTECTIVE STRUCTURE (ROPS) CERTIFICATION plate), ROPS will not be able to fulfill its function. Do not increase machine weight beyond the certified value by modifying the machine or by installing attachments to the machine.

Also, if the function of the protective equipment is impeded, the protective equipment will not be able to protect the operator, and the operator may suffer injury. Always observe the following.

- If the machine is equipped with a protective structure, do not remove the protective structure and perform operations without it.
- If the protective structure is welded, or holes are drilled in it, or it is modified in any other way, its strength may drop. Any modification is prohibited.
- If the protective structure is damaged or deformed by falling objects or by rolling over, its strength will be reduced and it will not be able to fulfill its function properly. In such cases, always consult your Komatsu distributor.
- Even if the protective structure is installed, always fasten your seat belt properly when operating the machine. If you do not fasten your seatbelt properly, it cannot display its effect. Always fasten your seat belt while operating the machine.



PROTECTION AGAINST FALLING, FLYING OR INTRUDING OBJECTS

On jobsite where there is a danger of falling objects, scattering fragments, and things which may intrude into operator's cab, install the necessary equipment to protect the operator depending on the working conditions.

- When operating on jobsite, such as mines or quarries where there is a hazard of falling rocks, install falling object protective structure (FOPS) and a front guard, and always keep all the windows and doors closed when operating. In addition, always check that there is no one except the operator in the surrounding area where there is a danger of falling objects, scattering fragments.
- When performing demolition or breaker operations, install a front guard and always keep all the windows closed during operation. In addition, always check that there is no one except the operator in the surrounding area where there is a danger of falling objects, scattering fragments.

Above precautions are developed for the standard jobsite. Depending on the conditions of the jobsite, installation of additional guards is necessary.

Do not operate the machine without the necessary guards. Be sure to consult with your Komatsu distributor about necessary guards.



UNAUTHORIZED MODIFICATION

- Komatsu will not be responsible for any personal injuries, product failures, physical loss or damage, or influence on the environment resulting from modifications made without authorization from Komatsu.
- Any modification made without authorization from Komatsu can create hazards. Before making a modification, consult your Komatsu distributor.

PRECAUTIONS RELATED TO ATTACHMENTS AND OPTIONS

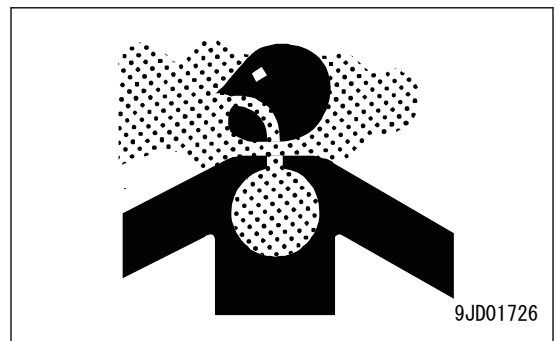
- Any personal injuries, product failures, physical loss or damage, or influence on the environment resulting from the use of unauthorized attachments or parts will not be the responsibility of Komatsu.
- When installing optional parts or attachments, contact your Komatsu distributor for advice to any potential problems or safety and legal requirements.
- The machine weight will not exceed ROPS certified value as long as the optional attachments written in the attachment combination table of this manual are installed. When installing optional parts or attachments which are not written in this manual, the machine weight must not exceed ROPS certified value. Always contact your Komatsu distributor before installing.
- Installing some work equipment combinations may cause interference and damage with the cab or other parts of the machine during operation and could cause serious personal injury or death. Before using unfamiliar work equipment, always check for potential interference while operating the machine. Always ensure the operator's safety when working with unfamiliar work equipment.
- When installing and using optional attachments, always read the instruction manual for the attachment, and the general information related to attachments in this manual.

PRECAUTIONS RELATED TO CAB GLASS

- If the cab glass is broken during operations, stop operations and repair the cab glass immediately.
- If the cab glass on the work equipment side is broken, there is a hazard that the operator may be directly hit or caught in the work equipment. If the glass is broken, stop operation immediately and replace the glass.
- The ceiling window is made of plastic, so if it is scratched, the visibility will become poor and there is danger that it may break. If the ceiling window is scratched, replace it with the new one as soon as possible. If the ceiling window is scratched and is not replaced, there is a danger that any rocks falling on it will cause it to break, leading to injury to the operator.

PRECAUTIONS WHEN RUNNING ENGINE INSIDE BUILDING

The engine exhaust gas contains substances that may damage your health or even cause death. Start or operate the engine in a place where there is good ventilation. If the engine or machine must be operated inside a building or underground, where the ventilation is poor, take steps to ensure that the engine exhaust gas is removed and that ample fresh air is brought in.



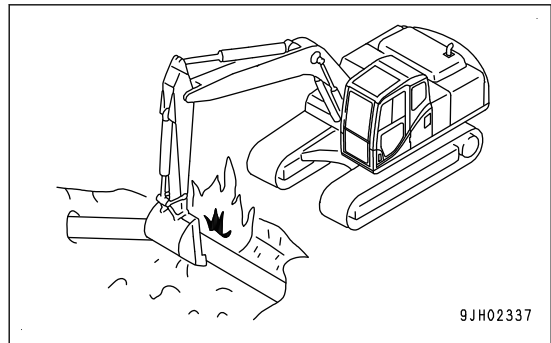
PRECAUTIONS FOR OPERATION

PRECAUTIONS FOR JOBSITE

INVESTIGATE AND CONFIRM JOBSITE CONDITIONS

On the jobsite, there are various hidden dangers that may lead to serious personal injury or death. Before starting operations, always check the following to confirm that there is no danger on the jobsite.

- Always be careful when performing operations near materials such as thatched houses, dry leaves or dry grass, because they are easily combustible and may cause fire.
- Check the terrain and condition of the ground at the jobsite, and determine the safest method of operation. Do not operate in a dangerous area where landslides or rockfall may occur.
- If water lines, gas lines, or high-voltage electrical lines may be buried under the jobsite, contact the management company to identify their locations, and be careful not to damage any of these lines.
- Take necessary measures to prohibit anyone other than the operator from coming close to the machine during operation.
- In particular, if you need to operate on a road, protect pedestrian and cars by designating a person for jobsite traffic duty or by installing fences around the jobsite.
- When traveling or operating in shallow water or on soft ground, check the water depth, speed of the current, condition of bedrock, and shape of the ground beforehand. Always avoid any place that will obstruct travel.



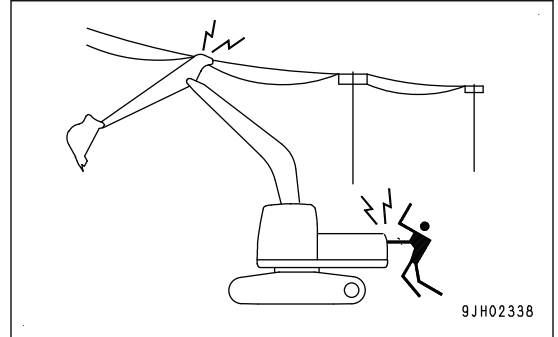
PRECAUTIONS WHEN WORKING ON LOOSE GROUND

- Avoid driving or operating the machine near the edge of cliffs, road edges, and deep ditches. The ground may be weak in such areas. If the ground should collapse under the weight or vibration of the machine, there is a hazard that the machine may fall or tip over. Remember that the soil is weak in these areas, after heavy rain or blasting or after earthquakes.
- When working on embankments or near excavated ditches, there is a hazard that the weight and vibration of the machine will cause the soil to collapse. Before starting operations, take steps to ensure that the ground is safe and to prevent the machine from rolling over or falling.

DO NOT GO CLOSE TO HIGH-VOLTAGE CABLES

Do not travel or operate the machine near electric cables. There is a hazard of electric shock, which may cause serious personal injury or death. On jobsites where the machine may go close to electric cables, always observe the following.

- Before starting work near electric cables, inform the local power company of the work to be performed, and ask them to take the necessary action.
- Even going close to high-voltage cables can cause electric shock. Always maintain a safe distance (see the table) between the machine and the electric cable. Check with the local power company about the voltage of cables and safe operating procedure before starting operations.



VOLTAGE	MIN. DISTANCE
50 kV or Less	3.1 m (10 ft)
50 kV to 200 kV	4.6 m (15 ft)
200 kV to 350 kV	6.1 m (20 ft)
350 kV to 500 kV	7.7 m (25 ft)
500 kV to 750 kV	10.7 m (35 ft)
750 kV to 1,000 kV	13.8 m (45 ft)

- To prepare for any possible emergencies, wear rubber shoes and gloves. Lay a rubber sheet on the operator's seat, and be careful not to touch the chassis with any exposed part of your body.
- Use a signalman to give warning if the machine approaches too close to the electric cables.
- When performing operations near high voltage cables, prohibit anyone other than related persons to come close to the machine during operation.
- If the machine should come too close or touch the electric cable, to prevent electric shock, the operator should not leave the operator's compartment until it has been confirmed that the electricity has been shut off. Also, prohibit any other persons to come close to the machine.

ENSURE GOOD VISIBILITY

Although this machine is equipped with mirrors and cameras to ensure good visibility, there are places that cannot be seen from the operator's seat. Be careful when performing operation.

When driving the machine or performing operations in places with poor visibility, it is dangerous and may cause serious personal injury or death because it is difficult to check for obstacles and condition of the jobsite. When driving the machine or performing operations in places with poor visibility, always observe the following.

- Allocate a signalman for jobsite duty if there are areas where the visibility is poor.
- Only one signalman should give signals.
- When working in dark places, turn on the working lamp and headlamps installed to the machine, and set up additional lighting in the work area if necessary.
- Stop operations if the visibility is poor because of mist, snow, rain, or dust.
- When checking the mirrors installed to the machine, remove all dirt and adjust the angle of the mirror to ensure good visibility.
- Clean off any dirt from the lens of cameras installed to the machine, and make sure that the camera gives a clear view.

CHECK SIGNS AND SIGNALMAN'S SIGNALS

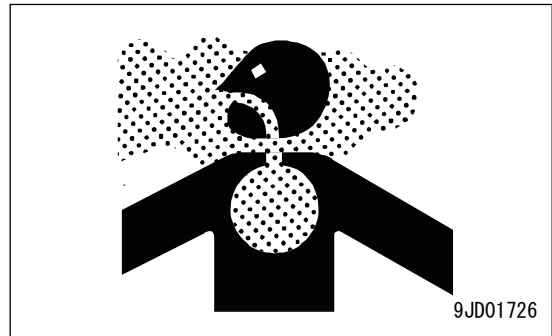
If signals and labels are not clear, serious personal injury can result from downward slip, overturn or accidental contact with nearby people or obstacles. Always observe the following.

- Set up labels to inform of road edges and soft ground. If the visibility is not good, position a conductor if necessary. Operator should pay careful attention to the labels and follow the instructions from the conductor.
- Only one signalman should give signals.
- Make sure that all workers understand the meaning of all signals, signs, and labels before starting work.

BEWARE OF ASBESTOS DUST

Asbestos dust in the air can cause lung cancer if it is inhaled. There is danger of inhaling asbestos when working on jobsite where demolition work is performed or industrial waste is handled. Always observe the following.

- Spray water to keep down the dust.
- Do not use compressed air.
- If there is danger that there may be asbestos dust in the air, always operate the machine from an upwind position, and make sure that all workers operate on the upwind side.
- All workers should use anti-dust masks.
- Prohibit anyone other than the operator from coming close to the machine during operation.
- Always observe the regulations for jobsite and environmental standards.



This machine does not contain asbestos, but any part which is not the genuine part, it has risk of containing asbestos. Always use Komatsu genuine parts.

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