

TB153 **FR**

TB180 **FR**

Hydraulic Excavator

Serial No.

- TB153FR: 15820004~
- TB180FR: 17830004~

Book No. AL5E001

OPERATOR'S MANUAL

 **WARNING**

Read and understand these instructions.
Failure to do so can cause injury or death.

TAKEUCHI



SAFETY ALERT SYMBOL

This symbol means Attention! Be Alert! Your Safety Is Involved. The message that follows the symbol contains important information about safety.

Read and understand the message to avoid personal injury or death.

- **It is the owner or employer's responsibility to fully instruct each operator in the proper and safe operation of all equipment. All persons using this machine should thoroughly familiarize themselves with the following sections.**
- **All operators must be instructed on the proper functions of the excavator before running the machine.**
- **Learn and practice correct use of the machine controls in a safe, clear area before operating this machine on a job site.**

 CAUTION	
	Improper operation, inspection and maintenance of this machine can cause injury or death. Read and understand this manual before performing any operation, inspection or maintenance on this machine.

- **Always store this manual near at hand preferably on the machine itself. If it should be lost or damaged, immediately order a new one from your Takeuchi dealer. When transferring ownership of this machine, be sure to provide this manual to the next owner.**
- **Takeuchi supplies machines complying to the local regulations and standards of the country of export. If your machine has been purchased in another country or from a person or company of another country, it may not have the safety devices or safety standards required for use in your country. Should you have any question about whether your machine complies with the regulations and standards of your country, contact a Takeuchi dealer.**
- **Please note that the contents and diagrams included in this manual may not match your machine exactly.**

It is your responsibility to observe all pertinent laws and regulations and to follow the manufacturer’s instructions on machine operation, inspection and maintenance.

Virtually all accidents occur as the result of a failure to observe basic safety rules and precautions. An accident can often be avoided by recognizing potentially hazardous situations beforehand. Read and understand all of the safety messages which explain how to prevent these accidents from occurring. Do not operate the machine until you are sure that you have gained a proper understanding of its operation, inspection and maintenance.

■ SIGNAL WORDS

Safety messages appearing in this manual and on machine decals are identified by the words “DANGER”, “WARNING” and “CAUTION”. These signal words mean the following:

 DANGER	 WARNING	 CAUTION
The word “DANGER” indicates an imminently hazardous situation which, if not avoided, can result in serious injury or death.	The word “WARNING” indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.	The word “CAUTION” indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

IMPORTANT: The word “IMPORTANT” is used to alert against operators and maintenance personnel about situations which can result in possible damage to the machine and its components.

It is impossible to foresee every possible circumstance that might involve a potential hazard. The warnings in this manual or on the machine can not cover all possible contingencies. You must exercise all due care and follow normal safety procedures when operating the machine so as to ensure that no damage occurs to the machine, its operators or other persons.

■ EXPLANATION OF GRAPHICAL SYMBOLS

Following is an explanation of symbols used in this manual.

 , X prohibition

 /  Lock

 /  Unlock

INTRODUCTION

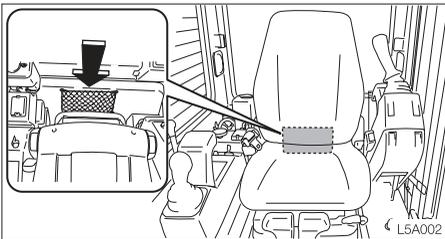
Foreword

This manual describes operation, inspection and maintenance of the machine, as well as safety instructions to be heeded during these operations.

If you have any questions about the machine, please contact a Takeuchi sales or service outlet.

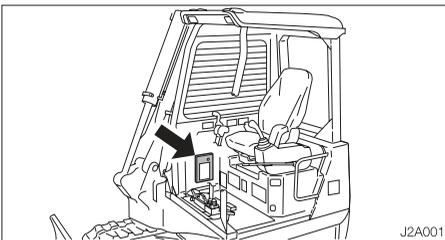
■ Manual storage compartment

A compartment for storing this manual is provided at the position shown on the diagram below.



1. After using the manual, place it in the plastic pouch and store it back in the manual storage compartment.

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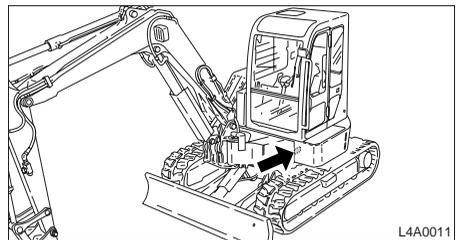


1. Insert the starter key and turn it counterclockwise to unlock the manual storage compartment.

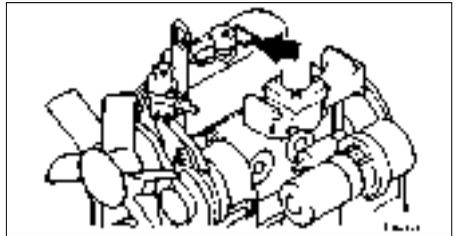
■ Serial numbers

Check the serial numbers of the machine and the engine and write them in the spaces provided below.

Machine number :



Engine number :



MACHINE DESCRIPTION

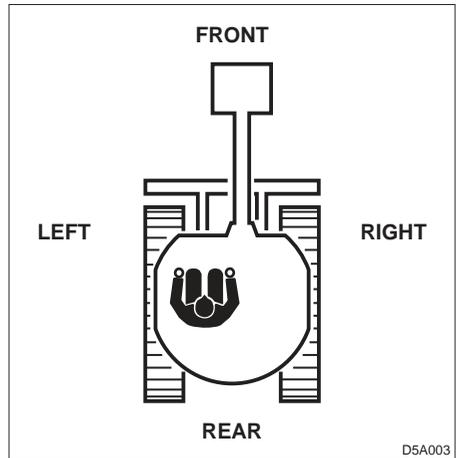
■ Front, rear, left and right

This manual refers the front, rear, left and right of the machine as seen when sitting in the operator's seat with the dozer blade visible to the front.

■ Designated operations

Use this machine primarily for the following operations:

- Excavating
- Digging ditches
- Digging side ditches
- Leveling
- Loading



■ Features

- A unique adjustable offset boom system
- Short tail swing radius
- Short pitch rubber crawler
- Low engine noise and exhaust emissions
- Pilot operated joystick controls
- One touch engine deceleration button
- Slew cushioning system for easy bucket positioning
- Engine emergency stop / idle system
- Tilt-up operators platform for easy access to major compartment

■ Break-in period

When the machine is new, heed the instructions below when operating the machine for the first 100 hours (as indicated on the hour meter).

Using a new machine roughly without breaking it in will lead to quicker deterioration of machine performance and may shorten the machine's service life.

- Warm up the engine and hydraulic oil sufficiently.
- Avoid heavy loads and rapid operations. Operate with a load of about 80% the maximum load.
- Do not start up, accelerate, change directions, or stop abruptly unless necessary.

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SAFETY

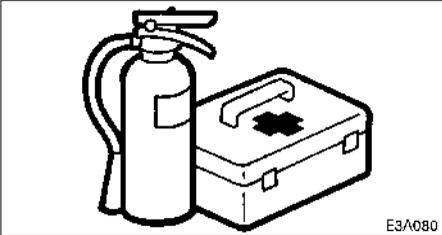
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**Observe all safety rules**

- Operation, inspection and maintenance of this machine must be performed only by a trained and qualified person.
- All rules, regulations, precautions and safety procedures must be understood and followed when performing operation, inspection and maintenance of this machine.
- Do not perform any operation, inspection and maintenance of this machine when under the adverse influence of alcohol, drugs, medication, fatigue, or insufficient sleep.

Wear appropriate clothing and personal protective equipment

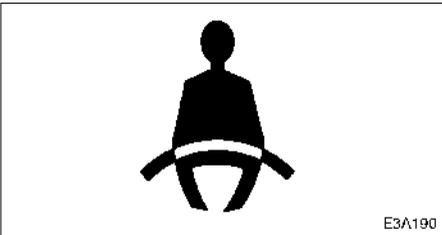
- Do not wear loose clothing or any accessory that can catch on controls or in moving parts.
- Do not wear oily or fuel stained clothing that can catch fire.
- Wear a hard hat, safety shoes, safety glasses, filter mask, heavy gloves, ear protection and other protective equipment as required by job conditions. Wear required appropriate equipment such as safety glasses and filter mask when using grinders, hammers or compressed air, as metal fragments or other objects can fly and cause serious injury.
- Use hearing protection when operating the machine. Loud prolonged noise can cause hearing impairments, even the total loss of hearing.

**Provide a fire extinguisher and first aid kit**

- Know where a fire extinguisher and first aid kit are located and understand how to use them.
- Know how to contact emergency assistance and first aid help.

Never remove safety equipment

- Make sure all protective guards, canopies, doors, etc., are in place and secure. Repair or replace damaged components before operating the machine.



- Know how to use the safety lock lever, seat belt and other safety equipment and use them properly.
- Never remove any safety equipment except for service. Keep all safety equipment in good operating condition.

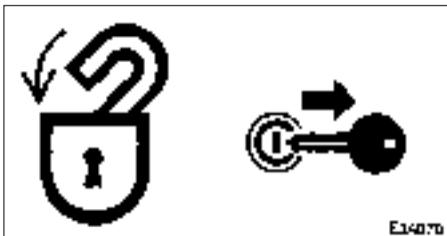
Use a signal person and flagman

Know and use the hand signals required for particular jobs and make sure who has the responsibility for signaling.

- All personnel must fully understand all the signals.
- The operator shall respond to signals only from the appointed signal person, but shall obey a stop signal at any time from anyone.
- The signal person must stand in a clearly visible location when giving signals.



Be sure to lock the safety lock lever before leaving the operator's seat



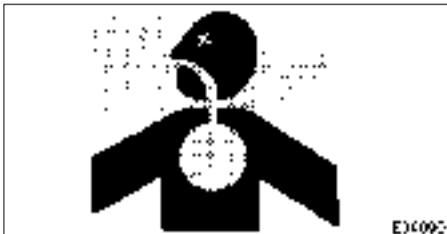
- Before leaving the operator's seat, raise the safety lock lever to engage the lock and stop the engine. If any controls should be touched accidentally when the safety lock lever is lowered, the machine will move suddenly, and cause serious injury or death.
- < TB153FR > : Note that the dozer blade control is not locked, even when the safety lock lever is set to the lock position. Do not touch this control accidentally.
- Before leaving the operator's seat, lower the working equipment, raise the safety lock lever to engage the lock and stop the engine. Also, be sure to remove the key and take it with you.

Avoid fire and explosion hazards



Keep flames away from fuel, hydraulic fluid, oil, grease and antifreeze. Fuel is particularly flammable and dangerous.

- When handling these combustible materials, keep lit cigarettes, matches, lighters and other flames or sources of flames away.
- Do not smoke or permit open flames while fueling or near fueling operations.
- Never remove the fuel cap or refuel with the engine running or hot. Never allow fuel to spill on hot machine components.
- Clean up spilled fuel, oil or other flammable fluids immediately.
- Check for fuel, oil or hydraulic fluid leaks. Stop all leaks and clean the machine before operating.
- Do not cut or weld on pipes or tubes that contain flammable fluids. Clean thoroughly with nonflammable solvent before cutting or welding.
- Remove all trash or debris from the machine. Make sure that oily rags or other flammable material are not stored on the machine.
- Handle all solvents and dry chemicals according to procedures identified on manufacturers' containers. Work in a well-ventilated area.
- Never use fuel for cleaning purposes. Always use a nonflammable solvent.
- Store all flammable fluids and materials in a safe and well-ventilated place.

**Exhaust fumes from the engine can kill**

- Do not operate the engine in an enclosed area without adequate ventilation.
- If natural ventilation is poor, install ventilators, fans, exhaust extension pipes or other artificial venting devices.

Be careful not to get crushed or cut

Never put your hands, feet or other parts of your body between the upperstructure and the undercarriage or tracks, between the machine body and working equipment, or between a cylinder and moving part. The size of these gaps change when the machine moves and if caught a person can suffer severe injury or death.

Handling asbestos dust

Inhaling asbestos dust has been linked to lung cancer. When handling materials which may contain asbestos, take the following precautions:

- Never use compressed air for cleaning.
- Avoid brushing or grinding of the materials.
- For clean up, use wet methods or a vacuum equipped with a high efficiency particulate air (HEPA) filter.
- Wear an approved respirator if there is no other way to control the dust. When working indoors, install a ventilation system with a macro molecular filter.

Using optional products

- Consult with a Takeuchi dealer before installing optional attachments.
- Do not use attachments that have not been approved by Takeuchi or a Takeuchi dealer. Doing so may compromise safety or adversely affect the machine's operation or service life.
- Takeuchi will not be held responsible for any injuries, accidents or damage to its products caused by the use of a non-approved attachment.

Never modify the machine

Unauthorized modifications to this machine can cause injury or death. Never make unauthorized modifications to any part of this machine.



Know the working area

Before starting operation, know the working area to ensure safety.

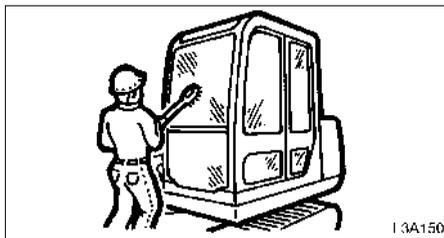
- Check the topography and ground condition of the working area, or the structure of the building when working indoors, and take the necessary safety measures in dangerous spots.
- Note and avoid all hazards and obstructions such as ditches, underground lines, trees, cliffs, overhead electrical wires or areas where there is danger of a slide.



- Check with the local utilities for the locations of buried gas and water pipes and buried power cables. Determine jointly what specific precautions must be taken to insure safety.
- When working on roads, be sure to take into account the safety of pedestrians and vehicles.
 - Use a flagman and / or signals.
 - Fence off the working area and prohibit entry to unauthorized persons.
- When working in water or crossing shallow streams or creeks, check the depth of the water, the solidity of the ground, and the speed of the current beforehand. Make sure the water is not deeper than the allowable depth.

Refer to the section titled "Cautions on Operating" for further instructions.

Always keep the machine clean



- Clean windows, mirrors and lights to ensure good visibility.
- Wipe off any oil, grease, mud, snow or ice, to prevent accidents due to slipping.
- Remove all loose objects stored in the machine and all objects which do not belong in or on the machine and its equipment.
- Remove any dirt, oil or grease from the engine area, to prevent fires.
- Clean the area around the operator's seat, removing any potential obstacles.



SAFETY

Preparing Precautions

Perform inspection and maintenance daily



Failure to notice or repair machine irregularities or damage can lead to accidents.

- Before operating, perform the prescribed inspections and make repairs immediately should any irregularities be found.
- If a failure that causes loss of control such as steering, service brakes or engine occurs, stop the machine motion as quickly as possible, follow the shutdown procedure, and keep machine securely parked until the malfunction is corrected.



Maintain three point contact when mounting and dismounting

- Do not jump on or off the machine. Never attempt to mount or dismount a moving machine.
- When mounting and dismounting the cab, first open the door fully to the locked position and check that it does not move. (For machines with cabs)



- Always face the access system and maintain a three point contact with the recommended handrails and steps while getting on and off the machine. Keep steps and platform clean.
- Never use the safety lock lever or control levers as hand holds.

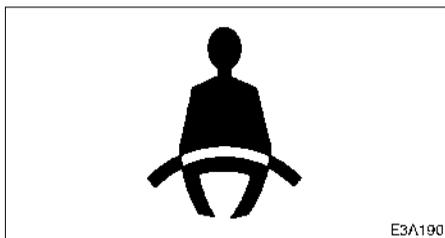
Clear the area of other persons before starting the machine

Do not start the engine until you are sure it is safe. Before starting, check or perform the following.

- Walk around the machine and warn all personnel who may be servicing the machine or are in the machine path. Do not start until all personnel are clearly away from the machine.
- Check for any “DO NOT OPERATE” tags or similar warning notices on the cab door, controls or starter switch.
- Sound horn to alert everyone around the machine.

Start the engine from the operator’s seat

- Adjust, secure and latch the operator’s seat.



- Fasten the seat belt.
- Check that the parking device is applied and place all controls in the neutral position.
- Check that the safety lock lever is in the lock position.
- Clear the area of all persons.
- Start and operate the engine from the operator’s seat only.
- Never attempt to start the engine by shorting across the starter terminals.



SAFETY

Starting Precautions

Starting with jumper cables



Use jumper cables only in the recommended manner. Improper use of jumper cables can result in battery explosion or unexpected machine motion.

Refer to the section titled “If the Battery Goes Dead” for proper instructions.

After starting the engine

After starting the engine, perform the following operations and checks in a safe place with no persons or obstacles in the area. If any malfunctions are found, follow the shutdown procedure and report the malfunction.

- Warm up the engine and hydraulic fluid.
- Observe all gauges or warning instruments for proper operation.
- Listen for unusual noises.
- Test engine speed control.
- Operate each control to insure proper operation.

In cold weather



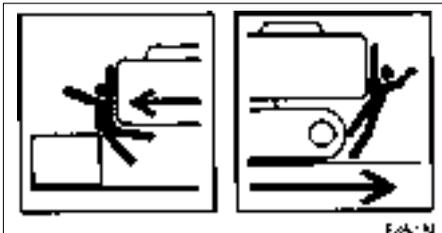
- Be careful of slippery conditions on freezing ground, steps and hand holds.
- In severe cold weather, do not touch any metal parts of the machine with exposed flesh, as flesh can freeze to the metal and Cause injury.
- Do not use ether or starting fluids on this engine. These starting aids can cause explosion and serious injury or death.
- Warm up the engine and hydraulic fluid before operating.

**Ensure good visibility**

- When working in dark places, turn on the machine's working lights and headlights and/or provide extra stationary lighting if necessary.
- When visibility is poor due to severe weather (fog, snow or rain), stop operating the machine and wait until conditions improves.

Do not permit riders on the machine

- Do not allow anyone to ride on any part of the machine at any time while traveling.
- Do not allow anyone to be on any part of the machine while operating.

Check for safety in the surrounding area before starting

- Understand the machine limitations.
- Use a signal person where clearances are close or your vision is obstructed.
- Never allow anyone to enter the slewing (swing) radius and machine path.
- Signal your intention to move by sounding the horn.
- There are blind spots to the rear of the machine.

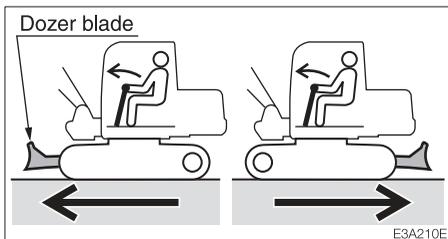
If necessary, swing the cab around before backing up to check that the area is safe and clear.



SAFETY

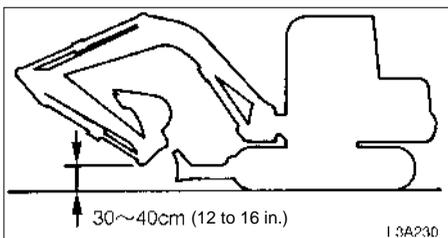
Operating Precautions

Check the position of the undercarriage (tracks) before traveling



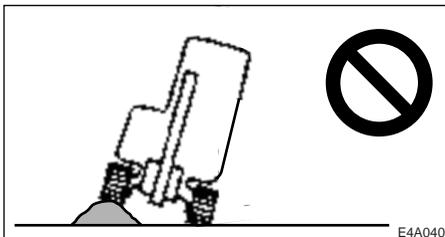
Before operating the travel levers, check to make sure that the dozer blade is to the front of the operator's seat. **BE AWARE** that when the dozer blade is to the rear of the operator's seat, the travel levers operate in the opposite direction to when the dozer blade is in the front.

Travel safety



- Travel with the dozer blade up, the hoe attachment folded as shown on the diagram, and the bucket raised 30 to 40 cm (12 to 16 in.) from the ground.
- Do not slew (swing) while traveling. If you must operate the hoe attachment while traveling, operate at speeds slow enough so you have complete control at all times.

- When a load greater than a set value is applied during 2nd speed (high speed) travel, the speed will automatically slow down by switching to 1st speed (low speed). Thereafter, when the load becomes lighter, the speed will increase by returning to 2nd speed (high speed). Exercise due caution since the travel speed changes automatically.



- Avoid crossing over obstacles whenever possible. If you must do so, keep the hoe attachment close to the ground and travel slowly. Never cross obstacles if they will seriously tilt the machine (to an angle of 10° or greater).
- On uneven ground, travel at low speed and avoid accelerating, stopping or changing directions abruptly.
- When roading a machine, know and use the signaling devices required on the machine. Provide an escort for road travel when required.



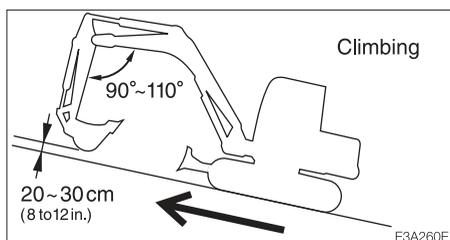
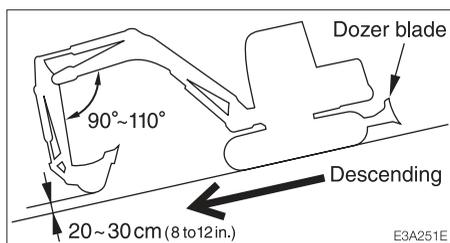
SAFETY

Operating Precautions

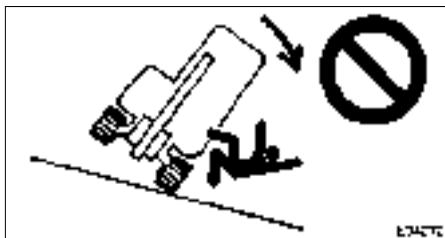
Cautions on traveling on slopes

When traveling on slopes or grades, be careful that the machine does not tip (roll) over or slide.

- Never exceed the machine's stability capabilities (maximum gradeability - 30°, lateral tipping angle - 15°). Also note that when actual working area conditions are poor the machine's stability capabilities may be lower.



- When traveling on slopes or grades, lower the bucket to a height of 20 to 30 cm (8 to 12 in.) off the ground. In emergencies, lower the bucket to the ground and stop the machine.
- When traveling on slopes or grades, move slowly in first gear (low speed).
- Do not travel down slopes in reverse.
- On grass, dead leaves, wet metal or frozen surfaces, the machine may slide sideways even on very gentle slopes. Make sure the machine never faces sideways with respect to the slope.



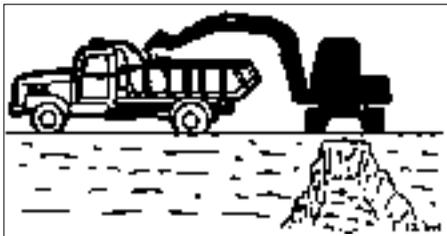
- Do not change directions or cross slopes sideways. First return to a flat surface then redirect the machine.

Operate on snow or ice with extra care

- When traveling on snow or frozen surfaces, keep the machine travel speed down and avoid accelerating, stopping or changing directions abruptly.
- Remember that the road shoulder, fences, etc., may be buried in the snow and not visible.
- Lower the dozer blade when parked on unsure ground conditions.



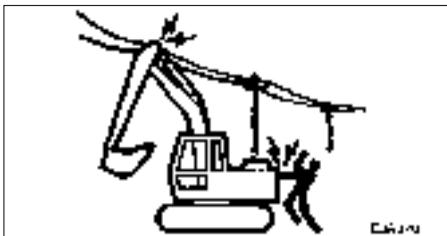
Insure driver safety before loading trucks



Do not load a truck unless the driver is in a safe place.

- Never swing or position the bucket over personnel or truck cabs.
- Load the truck from the rear.

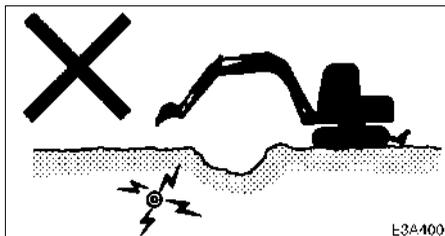
Keep a safe distance from electrical power lines



Never approach power lines with any part of the machine and its load unless all local and national required safety precautions have been taken. Electrocutation and death can result from arcing, touching or even being close to a machine that is in contact with or near an electrical source.

- Maintain the maximum possible distance from power lines and never violate the minimum clearance.

- Always contact the nearest electric utility and determine jointly what specific precautions must be taken to insure safety.
- Consider all lines to be power lines and treat all power lines as energized even though it is known or believed that the power is shut off and the line is visibly grounded.
- Use a signal person to observe the approach of any part of the machine or load to the power line.
- Caution all ground personnel to stand clear of the machine and the load at all times.
- If the machine should come in contact with a live electrical source, do not leave the operator's seat. Do not allow anyone to approach or touch the machine.



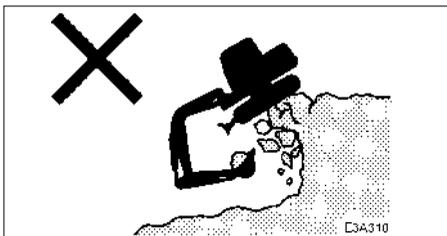
- Be especially careful of buried high voltage power lines.



Watch out for hazardous working conditions



- Never undercut a high bank. Be particularly alert for the possibility of a cave-in.
- Do not operate in places where there is a danger of falling rocks.



- Keep machine well back from the edge of an excavation. Avoid undercutting the machine.

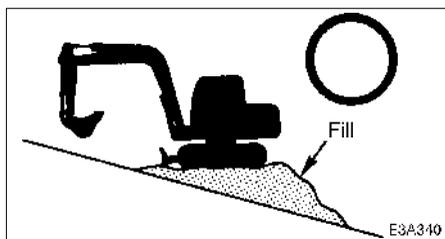


- Do not approach unstable surfaces (cliffs, road shoulders, deep trenches, etc.). The ground may give way under the machine's weight or vibrations, causing the machine to tip over.

- The ground is weak after rain or explosions.
- The ground is also unstable on banks and near dugout trenches.

Operating on slopes is dangerous

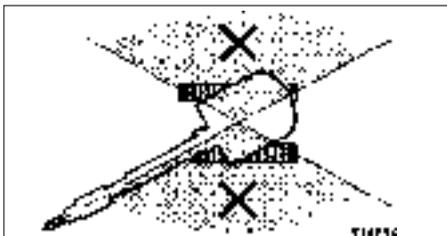
When operating on slopes or grades, slewing (swinging) or operating working equipment may cause the machine to lose stability and tip over. Avoid operating on slopes whenever possible.



- Level off the work area.

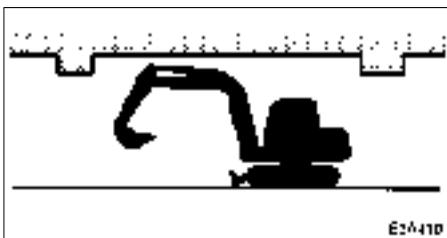


- Avoid swinging the loaded bucket in a downhill direction. This will reduce the stability of the machine.

**Never slew (swing) sideways with excessive weights**

The machine can tip over more easily in the lateral direction than in the longitudinal direction.

- Do not slew (swing) sideways with excessive weight at the front.
In particular do not slew sideways on slopes.
- The front is heavier for machines equipped with breakers, crushers or telescopic arms than for machines equipped with the standard bucket. Do not operate such machines sideways especially with the digging arm (boom) downhill.

Watch boom clearance

When operating under bridges, in tunnels, near power lines or indoors, be careful not to hit the boom or arm against overhead objects.

Excavators are not designed for lifting loads

The machine is specifically designed for excavation work and has no safety devices for crane operation. Extreme caution should be used if the excavator is used for lifting.

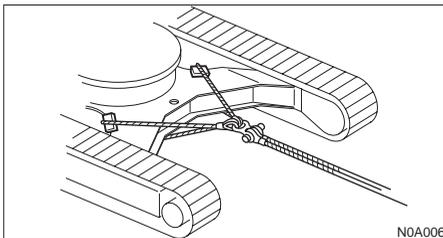
- Never lift loads in excess of capacity.
Overload will cause the machine to roll and can result in serious injury or death.
- All rated lift capacities are based on the machine being level and on a firm supporting surface. For safe working loads, the user is expected to make due allowance for the particular job conditions such as soft or uneven ground, non-level condition, side loads, dynamic or jerked loads, hazardous conditions, experience of personnel, etc. The operator and other personnel should fully acquaint themselves with the operator's manual before operating this machine, and rules for safe operation of equipment shall be adhered to at all times.
- Failure of the bucket linkage or slings could result if chains or slings are incorrectly attached, resulting in serious injury or death.
- Do not attempt to pull stumps out of the ground while using the machine as a crane. The loads imposed on the machine under this use are completely unknown.
- Never allow any personnel to stand on or under lifted loads or even within the maneuvering area.



Danger of flying objects

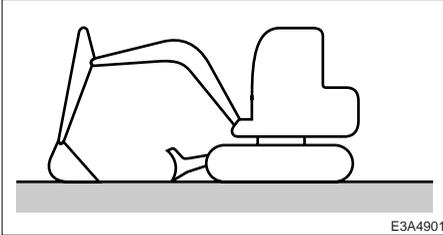
This machine is not equipped with protective guards to protect the operator from flying objects. Do not use the machine in places where there are risks of the operator being hit by flying objects.

Cautions on towing

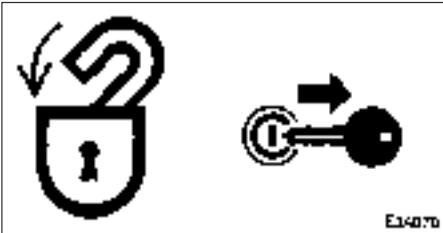


When towing, selecting the wrong wire rope, inspecting improperly, or towing in the wrong way could lead to accidents resulting in serious injury or death.

- The wire rope breaking or coming detached could be extremely dangerous. Use a wire rope suited for the required towing force.
- Do not use a wire rope that is kinked, twisted or otherwise damaged.
- Do not apply strong loads abruptly to the wire rope.
- Use safety gloves when handling the wire rope.
- Make sure there is an operator on the machine being towed as well as on the machine that is towing.
- Never tow on slopes.
- Do not let anyone near the wire rope while towing.

**Park safely**

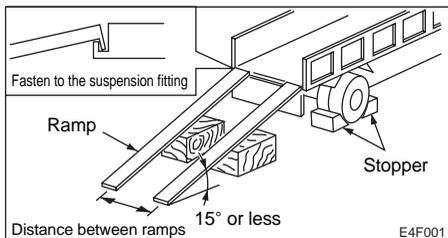
- Park the machine on firm, level ground and apply the parking device.
- When parking on streets, use barriers, caution signs, lights, etc., so that the machine can easily be seen even at night to avoid collision with other vehicles.



- Before leaving the machine, do the following:
 1. Lower the bucket and dozer blade to the ground.
 2. Raise the safety lock lever to engage the lock.
 3. Stop the engine and remove the key.
 4. Lock the cab and covers.



Load and unload the machine safely



The machine may roll or tip over or fall while loading or unloading it. Take the following precautions:

- Select a firm, level surface and keep sufficient distance from road shoulders.
- Use loading ramps of adequate strength and size. Maintain the slope of loading ramps within 15 degrees.
- Secure the ramps to the truck bed.
- Keep the truck bed and loading ramps clean of oil, clay, ice, snow, and other materials which can become slippery. Clean the tracks.
- Block the transport vehicle so it can not move.
- Use a signal person when loading and unloading the machine, and travel slowly in first gear (low speed).
- Never change course on the ramp.
- Do not slew (swing) on ramps. The machine may tip over.
- When slewing (swinging) on the truck bed, do so slowly as the footing can be unstable.
- Engage the slew (swing) lock after loading.
- Block both tracks and secure the machine to the truck bed with load binders.

Hoist the machine safely

- Know and use correct crane signals.
- Inspect the hoisting equipment daily for damaged or missing parts.
- When hoisting, use a wire rope with sufficient strength with respect to the machine's weight.
- Do not hoist with the machine in a posture other than the one described in the procedure below. Doing so is dangerous as it may result in the machine losing its balance.
Refer to the section titled "Hoisting the Machine" for further instructions.
- Do not hoist the machine with an operator (s) on it.
- When hoisting, hoist slowly so that the machine does not tip.
- Keep all other persons out of the area when hoisting. Do not move the machine over the heads of the persons.

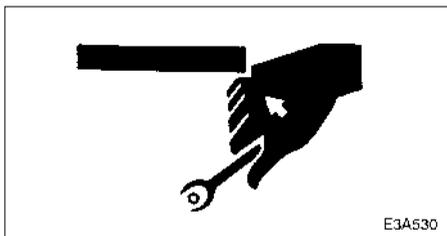
Transport the machine safely

- Know and follow the safety rules, vehicle code and traffic laws when transporting the machine.
- Consider the length, width, height and weight of the truck with the machine loaded on it when determining the best route.

**Attach a “DO NOT OPERATE” tag**

Severe injury could result if an unauthorized person should start the engine or touch controls during inspection or maintenance.

- Stop the engine and remove the key before performing maintenance.
- Attach a “DO NOT OPERATE” tag to the starter switch or control lever.

Use the correct tools

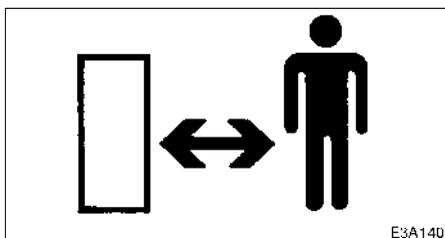
Do not use damaged or weakened tools or tools designed for other purposes. Use tools suited for the operation at hand.

Replace important safety parts periodically

- Replace fuel hoses periodically. Fuel hoses become weaker over time, even if they appear to be in good shape.
- Replace important safety parts whenever an irregularity is found, even if it is before the normal time for replacement. Refer to the section titled “Important Parts” for further details.

Anti-explosive lighting

Use anti-explosive electrical fixtures and lights when inspecting fuel, oil, coolant, battery fluid, etc. If lighting that is not anti-explosive should break, the substance could ignite, resulting in serious injury or death.

Do not allow unauthorized personnel in the work area

Do not allow unauthorized personnel in the work area. Chips or other debris can fly off machine parts when grinding, welding or using a hammer.



Prepare the work area

- Select a firm, level work area. Make sure there is adequate light and, if indoors, ventilation.
- Clear obstacles and dangerous objects. Eliminate slippery areas.

Stop the engine before performing maintenance

- Avoid lubrication or mechanical adjustments with the machine in motion or with the engine running while stationary.
- If maintenance must be performed with the engine running, always work as a two person team with one person sitting in the operator's seat while the other works on the machine.
 - When performing maintenance, be sure to keep your body and clothing away from moving parts.

Always clean the machine



- Clean the machine before performing maintenance.
- Stop the engine and cover electrical parts when washing the machine. Water on electrical parts could cause short-circuits or malfunctions.

Do not use water or steam to wash the battery, sensors, connectors or the operator's seat area.

Stay clear of moving parts



- Stay clear of all rotating and moving parts. Wrapping or entanglement may result in serious injury or death.
- Keep hands, clothing and tools away from the rotating fan and running fan belts.

**Securely block the machine or any component that may fall**

- Before performing maintenance or repairs under the machine, set all working equipment against the ground or in the lowermost position.
- Securely block the tracks.
- If you must work beneath the raised machine or equipment, always use wood blocks, jack-stands or other rigid and stable supports. Never get under the machine or working equipment if they are not sufficiently supported. This procedure is especially important when working on hydraulic cylinders.

Securely block the working equipment

To prevent unexpected movement, securely block the working equipment when repairing or replacing the cutting edges or bucket teeth.

Secure the engine hood or cover when opened

Be sure to secure the engine hood or cover when opening it. Do not open the engine hood or cover on slopes or in strong wind.

Cautions on tilting up the platform

- Raising or lowering the platform while the engine is running may cause the machine to move, and cause serious injury or death. Lower the working equipment to the ground and stop the engine before raising or lowering the platform.
- When the floor is tilted up, support it firmly with the stopper to prevent it from falling.

Place heavy objects in a stable position

When removing or installing the hoe attachment, place it in a stable position so that it does not tip over.

**Use caution when fueling**

- Do not smoke or permit open flames while fueling or near fueling operations.
- Never remove the fuel cap or refuel with the engine running or hot. Never allow fuel to spill on hot machine components.
- Maintain control of the fuel filler nozzle when filling the tank.
- Do not fill the fuel tank to capacity. Allow room for expansion.
- Clean up spilled fuel immediately.
- 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.
- Never use fuel for cleaning purposes.
- Use the correct fuel grade for the operating season.

Handling of hoses

Fuel, oil or hydraulic fluid leaks can cause a fire.

- Do not twist, bend or hit the hoses.
- Never use twisted, bent or cracked hoses, tubes and pipes. They may burst.
- Retighten loose connections.

Be careful with hot and pressurized components

Stop the engine and allow the machine to cool down before performing inspection and maintenance.

- The engine, muffler, radiator, hydraulic lines, sliding parts and many other parts of the machine are hot directly after the engine is stopped. Touching these parts will cause burns.
- The engine coolant, oil and hydraulic fluid are also hot and under high pressure. Be careful when loosening caps and plugs. Working on the machine under these conditions could result in burns or injuries due to the hot oil spurting out.

Be careful with hot cooling systems

Do not remove the radiator cap or drain plugs when the coolant is hot. Stop the engine, let the engine and radiator cool and loosen the radiator cap or drain plugs slowly.



Be careful with fluids under pressure

Pressure can be maintained in the hydraulic circuit long after the engine has been shut down.

- Release all pressure before working on the hydraulic system.



- Hydraulic fluid under pressure can penetrate the skin or eyes and cause injury, blindness or death. Fluid escaping from a small hole can be almost invisible. Wear a safety goggles and heavy gloves and use a piece of cardboard or wood to search for suspected leaks.

If fluid is injected into the skin, it must be removed within a few hours by a doctor familiar with this type of injury.

Release all pressure before working on the hydraulic system

Oil may spurt out if caps or filters are removed or pipes disconnected before releasing the pressure in the hydraulic system.

- Gradually press the air breather button to relieve tank pressure.
- Move all the control levers and pedals several times in all directions to release the pressure from the working equipment circuitry. (When equipped with accumulator)
- When removing plugs or screws or disconnecting hoses, stand to the side and loosen slowly to gradually release the internal pressure before removing.

Handling of the accumulator



N0A0051

High pressure nitrogen gas is enclosed in the accumulator and incorrect handling could possibly bring about serious personal injury due to explosion. The following matters should be strictly observed :

- Do not disassemble.
- Do not bring close to fire or throw into a fire.
- Do not make hole, weld, or fuse.
- Do not subject to shock such as hitting or rolling.
- At time of disposal, it will be necessary to release the enclosed gas. Please contact a Takeuchi sales or service outlet.

**Be careful with grease under pressure < TB153FR >**

The track adjuster contains highly pressurized grease. If the tension is adjusted without following the prescribed procedure, the grease discharge valve may fly off, resulting in injury.

- Do not loosen the grease nipple.
- Loosen the grease discharge valve slowly.
- Do not put your face, arms, legs or body in front of the grease discharge valve.
- If no grease is expelled when grease discharge valve is loosened, there is a problem. Contact your nearest service outlet for repairs. DO NOT disassemble, as this is very dangerous.

Disconnect the battery

Disconnect the battery before working on the electrical system or doing any welding. Remove the negative (-) battery cable first. When reconnecting the battery, connect the negative (-) battery cable last.

Avoid battery hazards

- Batteries contain sulfuric acid which will damage eyes or skin on contact.
 - If acid contacts eyes, flush immediately with clean water and get prompt medical attention.
 - If acid is accidentally swallowed, drink large quantities of water or milk and call a physician immediately.
 - If acid contacts skin or clothing, wash off immediately with clean water.
- Wear safety glasses and gloves when working with batteries.
- Batteries generate flammable and explosive gases. Keep arcs, sparks, flames and lighted tobacco away.
- Use a flashlight to check battery electrolyte level.
- Stop the engine and shut off electrical equipment while inspecting or handling the battery.
- Do not short circuit the battery posts with metal items.
- Always unfasten the negative (-) battery cable first when disconnecting the battery cable. Always connect the negative (-) battery cable last when fastening the battery cable.
- Loose battery terminals may result in sparks. Be sure to fasten terminals tightly.
- Make sure the vent caps are tightened securely.
- Do not charge a battery or jump-start the engine if the battery is frozen. Warm to 15°C (60°F) or the battery may explode.
- Do not use the battery when the fluid level is below the lower level. Doing so will hasten the deterioration of the internal portions of the battery and shorten the battery life, and can also cause rupturing (or an explosion).
- Do not fill the battery above the upper level. Doing so could cause the fluid to leak, contact and damage the skin, or cause parts to corrode.



Have a Takeuchi service agent repair welding cracks or other damage

Ask a Takeuchi service agent to repair any welding problems which are detected. If not feasible, make sure the welding is done by a qualified person in a properly equipped workplace.

Vibrations to which the operator is subjected

According to the results of the tests carried out to determine the vibrations transmitted to the operator by the machine, the upper limbs are subjected to vibrations lower than 2.5 m (8.2 ft) / sq.sec. while the seated part of the body is subjected to vibrations lower than 0.5 m (1.64ft) / sq.sec.

Checks after maintenance

- Gradually raise the engine speed from a low idle to maximum speed and check that no oil or water is leaking from serviced parts.
- Move the controls and check that the machine is operating properly.

Disposing of wastes

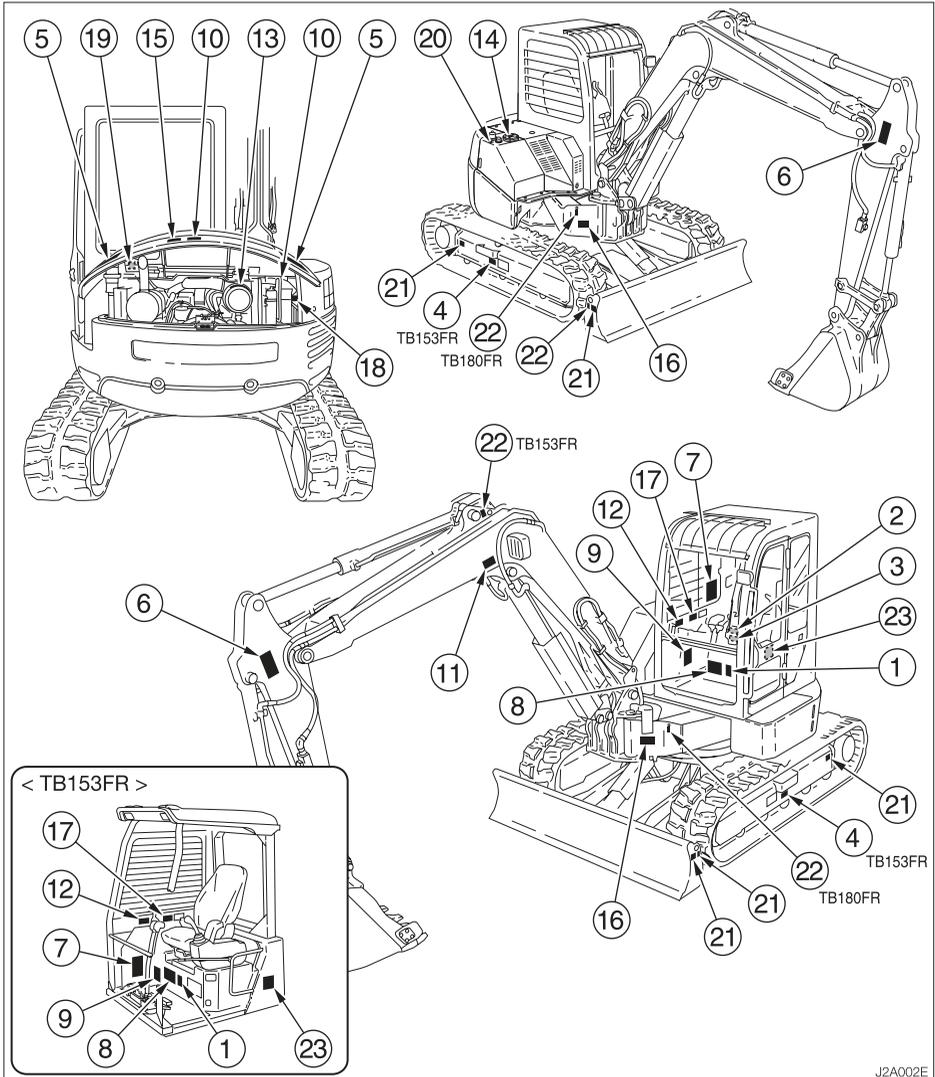


- Funnel spent fluids from the machine into containers. Disposing of fluids improperly destroys the environment.
- Follow the prescribed regulations when disposing of oil, fuel, engine coolant, refrigerant, solvents, filters, batteries or other harmful substances.



The following safety signs (decals) have been placed on your machine in the areas indicated. They are intended for the personal safety of you, and those working with you. Please take this manual, walk around your machine and note the content and location of these safety signs. Review these signs and the operating instructions in this manual with your machine operators.

- Keep the signs legible. If they are not, obtain replacements from your Service outlet.





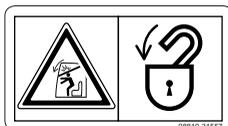
SAFETY

Safety Signs (Decals)

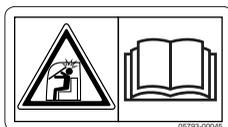


1. No.08810-31556
Warning
Read and understand this manual before performing any operation, inspection or maintenance on this machine.

2. No.08810-31557
Hazard from falling window.
After raising window, be sure to lock it in place with lock pins.



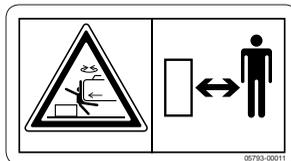
3. No.05793-00045
Hazard at lifting or lowering window
When the front window is opened or closed, it will come close to the head.
Be careful that the window does not strike the head.



4. No.05793-00052 <TB153FR >
Hazard of a flying plug from track adjuster
Read manual before adjusting track for safe and proper handling.



5. No.05793-00011
Safety Distance
Do not get near or stand within the machine working area.



6. No.05793-00049
Safety Distance
Hazard of being hit by the working device of the machine.
Keep away from machine during operation.



7. No.05693-52506

WARNING

Handling the interference prevention system
To ensure operator safety, this excavator is equipped with a system which automatically stops boom or bucket when it approaches the cab to prevent it from hitting the cab.

CAUTIONS ON USE
Do not disassemble or damage the sensors installed on the boom and main body.
In addition, do not install attachments other than those designated by Takeuchi. The interference prevention system may not function properly if other attachments are installed.

Operation when the boom has stopped automatically

① If the boom has stopped while rising:
Operate the boom downward.

② If the boom has stopped while offsetting to the left:
1. Operate the boom downward to move it outside the automatic stop range.
2. Offset to the left.
* Offsetting to the right is possible regardless of the boom's posture.

Preliminary Inspection
Perform the inspection operation operations described below and check that the bucket, arm and boom do not touch the cab when the boom or bucket is moved near the cab and stops automatically.

① Upper part of cab
Offset the boom to the front of the operator's seat and move the boom near the cab.

② Offset
Offset the boom to the right and move the bucket near the cab.

③ Offset
Offset the boom fully to the right and check that it can be set to the maximum rear inclination.

④ Offset to the left in the posture in ③ above.

05693-52506



SAFETY

Safety Signs (Decals)

8. No.03593-13700

WARNING

- 1 - This machine, if improperly operated or maintained can cause bodily harm, or even DEATH.
- 2 - Read and understand the owners manual supplied with this machine before operating.
- 3 - Keep all safety devices in place and functional.
- 4 - Do not operate the machine unless the seat belt is properly fastened around you.
- 5 - Follow the instructions in the Operator's Manual when hoisting the machine or fastening it to the transport vehicle.

03593-13700

9. No.03793-37300

WARNING

If the platform is raised or lowered while the engine is running, the machine may start moving. Be sure to stop the engine first. If you need to run the engine while the platform is raised, follow the instructions below.
(Refer to the Instruction Manual.)

1. Place the machine on a stable, level surface, and stop the engine.
2. Lock the operating lever.
3. Tilt-up the platform.
4. Insert the stopper to prevent platform from dropping.
5. Make sure that all levers and pedals are in neutral positions.
6. Push the throttle lever fully forward. (Low idling)
7. Start the engine.
8. After inspection and maintenance is complete, stop the engine.

03793-37300

10. No.03593-07400

CAUTION

STOP ENGINE BEFORE OPENING

11. No.03593-47010

WARNING

THIS EXCAVATOR MUST NOT BE USED AS A CRANE

03593-47010

12. No.03393-68100

WARNING

WHEN BUCKETS WIDER THAN STANDARD ARE FITTED TO THIS MACHINE, CAB(CANOPY) DAMAGE MAY OCCUR WHEN FULL RIGHT HAND BOOM OFFSET IS USED.

03393-68100

13. No.03393-75040

CAUTION

DO NOT USE ETHER USAGE OF ETHER FOR STARTING PURPOSES MAY CAUSE INTERNAL ENGINE DAMAGE.

03393-75040

14. No.03393-75050

CAUTION

HYDRAULIC TANK MUST REMAIN PRESSURIZED TO AVOID DAMAGE TO PUMPS. SEE OPERATOR'S MANUAL FOR INSTRUCTIONS.

03393-75050

15. No.05693-21980

WARNING

Engine may be HOT

16. No.03993-52302

WARNING

DO NOT ENTER INTO PINCH AREA.

03993-52302

for USA

17. No.03993-52303

WARNING

Failure to properly set the Attachment Interference Switch can result in equipment damage, bodily harm, or death.

03993-52303

for USA

23. Noise Outside the Cab / for EU

This value indicates the noise level outside the machine and refers to the noise perceived by the persons who are in the vicinity of the work area.

< TB153FR >
No.03393-41031

L_{WA}

96 dB

03393-41031

< TB180FR >
No.05693-49035

L_{WA}

98 dB

05693-49035

18. No.05693-53810

CAUTION

Setting this switch to the "OFF" position will shut down all of the electrical circuits and the memory of the radio preset tuning buttons will be deleted.

05693-53810

19. No.03593-06600
Diesel Fuel



20. No.03593-06700
Hydraulic oil



21. No.08810-31549
Tie down point



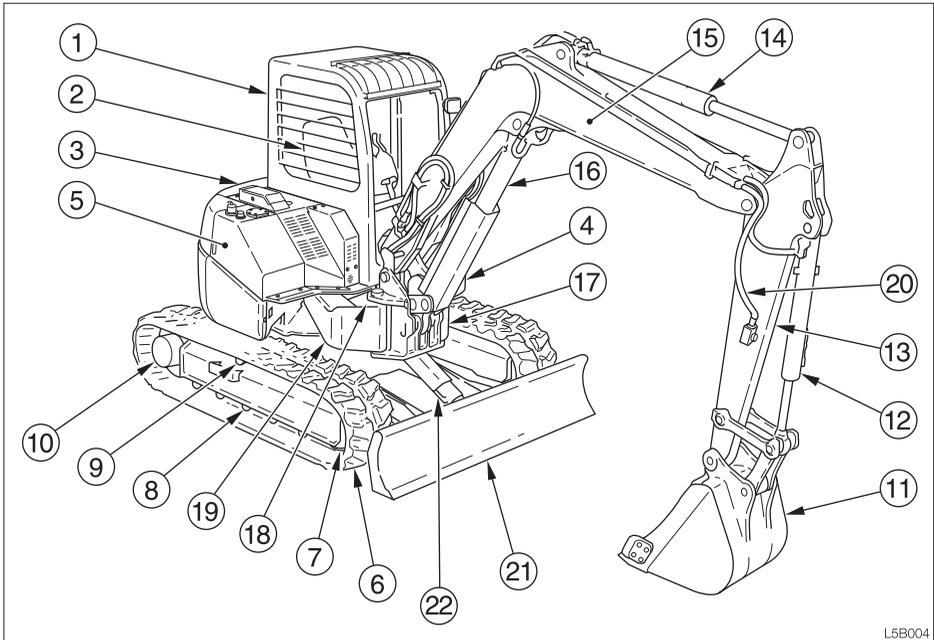
22. No.03993-00500
Position of Hoisting





CONTROLS

Names of Components	36
Doors and Covers	38
Seat and Seat Belt	44
Instrument Cluster	46
Switches	48
Levers and Pedals	53
Accessories	56



L5B004

Upperstructure

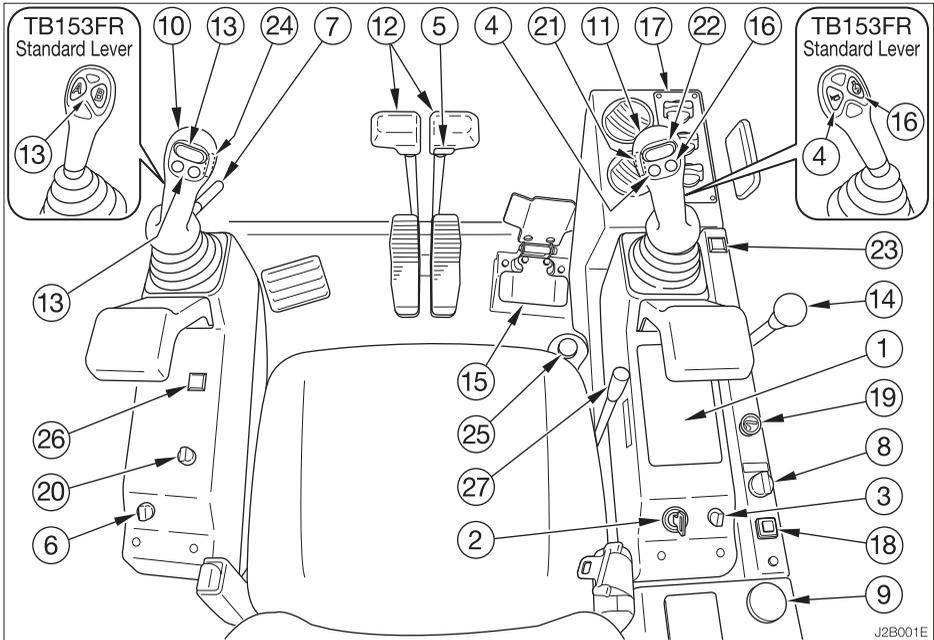
1. Cab
2. Seat
3. Engine hood
4. Fuel tank
5. Hydraulic tank

Undercarriage

6. Crawler belt
7. Idler
8. Track roller
9. Carrier roller
10. Travel motor

Working equipment

11. Bucket
12. Bucket cylinder
13. Arm
14. Arm cylinder
15. Boom
16. Boom cylinder
17. Boom bracket
18. Offset cylinder
19. Right link arm
20. Auxiliary hydraulic lines
21. Dozer blade
22. Blade cylinder

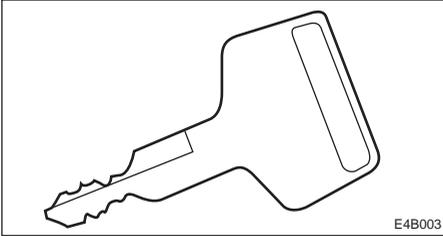


J2B001E

1. Instrument cluster
2. Starter switch
3. Light switch
4. Horn button
5. Travel speed switch
6. Wiper switch (Cab)
7. Safety lock lever
8. Attachment Interference switch
9. Throttle controller < TB180FR >
10. Left operating lever
11. Right operating lever
12. Travel levers
13. First Auxiliary hydraulic switches
14. Blade lever
15. Offset pedal
16. Decel. button
17. Heater & AC control panel
18. Automatic decel. button < TB180FR >
19. Cigarette lighter
20. Overload warning switch (Option)
21. Selector button (2nd or 4th Aux.) (Option) < TB180FR >
22. Second / fourth auxiliary hydraulic switch (Option)
23. Second auxiliary hydraulics operation indicator lamp (Option) < TB180FR >
24. Third auxiliary hydraulic button (Option)
25. Third auxiliary hydraulic switch (Option)
26. Third auxiliary hydraulics warning lamp (Option)
27. Throttle lever < TB153FR >



Starter Key



The starter key is used not only to start and stop the engine, but also to lock and unlock the following places :

- Cab door
- Fuel filler cap
- Rear cover
- Rear cover
- Tool box
- Manual storage compartment (Canopy)

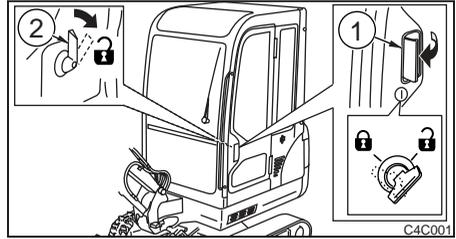
Cab Door

**WARNING**

When mounting and dismounting the cab, first open the door fully to the locked position and check that it does not move.

Open the door fully and press it against the catch at the back of the door to lock it in place. Always lock the door when mounting and dismounting and when operating the machine.

Lock and unlock

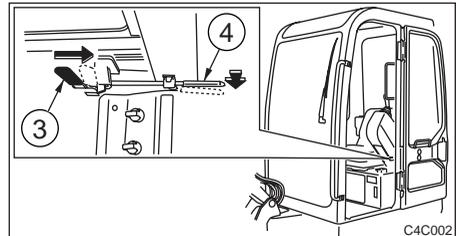


1. Insert and turn the starter key.

Opening

1. Pull the knob (1) towards you and open the door.
To open the door from inside the cab, push the lever (2) to the front.
2. Open the door fully and press it against the cab to lock it in place.

Closing



1. Either push release lever (3) to the front or lower release lever (4).
2. Close the released door.

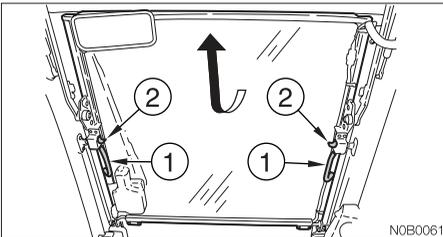


Front Window (Cab)

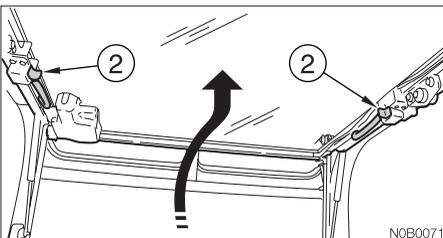
WARNING

- Grasp the handles firmly with both hands when opening and closing the front window. Your head or hands may get caught if they slip.
- When the front window is opened or closed, it will come close to the head. Be careful that the window does not strike the head.
- If you open the front window, be sure to lock it in place with the knobs (latch) (2) on the left and right sides. The window may fall if it is not locked in place.

Opening



1. Grasp the left and right handles (1) and press the knobs (2) with your thumb to release the lock.
2. Pull the front window toward you and lift while doing so.

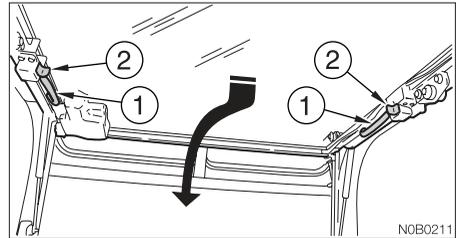


3. Lift the front window fully and then release your thumb from the knobs (2) and lock the front window.

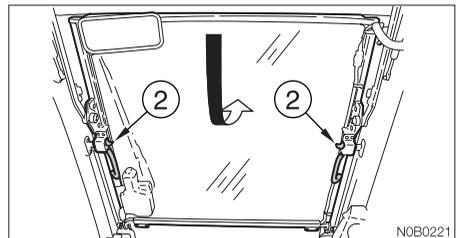
Closing

WARNING

When closing the front window, lower the window slowly so as not to hit your head. Lowering the window abruptly may result in injury or damage the front window.



1. Grasp the left and right handles (1) and press the knobs (2) with your thumb to release the lock.
2. Pull down the front window and while doing so, slide it to the front and slowly lower it.

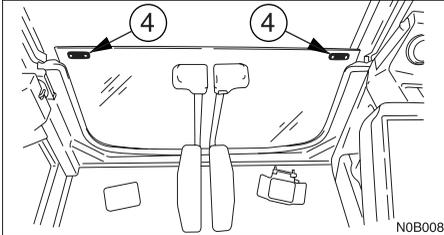


3. Lower the front window fully and then release your thumb from the knobs (2) and lock the front window.

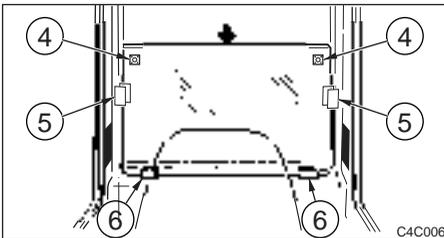


Lower Front Window (Cab)

Removing

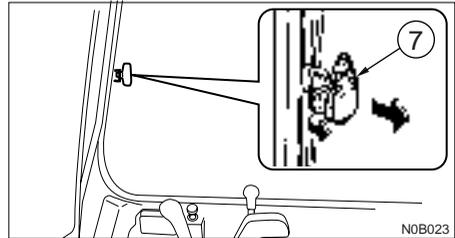


1. Open the front window and stow it in the ceiling.
2. Grasp the protruding parts (4) on the left and right with your fingers and slowly lift the lower front window off.



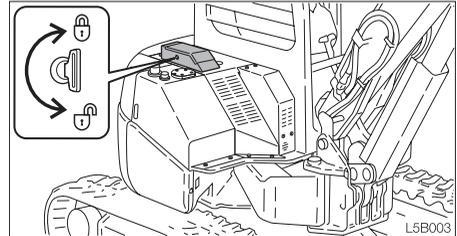
3. Hold the glass firmly, place the lower front window through the guides (5) at the rear, then set it on the supports (6) and fasten it in place.

Side Window (Cab)



1. Grasp the catch (7), unlock it and open the side window.
2. To close the side window, close it until a click is heard.

Tool Case



Lock and unlock

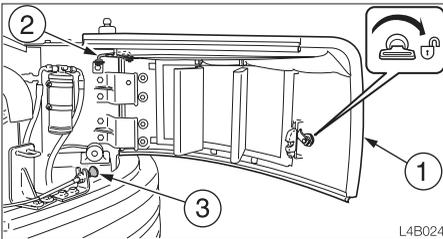
1. Insert and turn the starter key counterclockwise (clockwise) to unlock (lock).



Rear Cover

⚠ CAUTION

- When opening the rear cover, open it firmly to the locked position.
- When opening and closing the rear cover, be careful not to get your hands or other parts of your body caught.



Opening

1. Insert the starter key and turn it clockwise to unlock the rear cover (1).
2. Open the rear cover (1) fully until it stops. (It locks automatically)
3. Check that the rear cover (1) is securely locked in place.

Engine hood unlock knob (3) is located behind the rear cover (1).

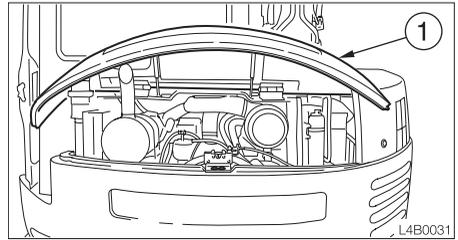
Closing

1. Raise the stay (2) to unlock the rear cover (1).
2. Close the rear cover (1) and press it inside until a click is heard at the front.

Engine Hood

⚠ WARNING

Before opening the engine hood, be sure to stop the engine. If your hands or tools should get caught in the fan or fan belt while the engine is running they may be severed.



Opening

1. Open the rear cover and pull the unlock knob (3). Refer to "Rear Cover".
2. Lift the engine hood (1) fully.

Closing

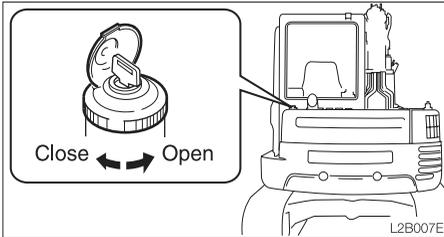
1. Close the engine hood and press it down until a click is heard at the front.



Fuel Filler Cap

WARNING

- Do not smoke or permit open flames while fueling or near fueling operations.
- Supply fuel in a well ventilated place and with the engine stopped.
- Clean up spilled fuel immediately.
- Do not fill the fuel tank to capacity. Allow room for expansion.
- Tighten the fuel filler cap securely.



Opening

1. Open the key cover, insert and turn the key counterclockwise to unlock the fuel cap.
2. Turn the fuel cap counterclockwise and remove it.

Closing

1. Set the fuel cap in place and turn it clockwise.
2. Turn the key clockwise to lock the fuel cap, then remove the key.

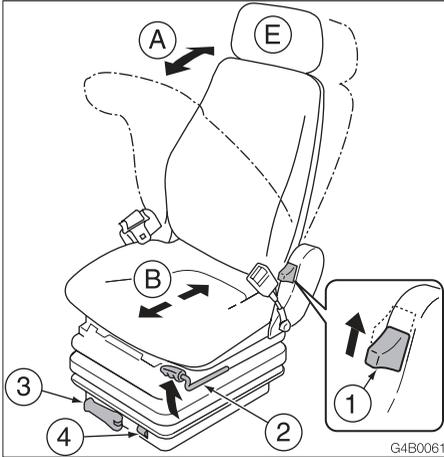
MEMO



Seat

⚠ WARNING

Adjust, secure and latch the operator's seat.



G4B0061

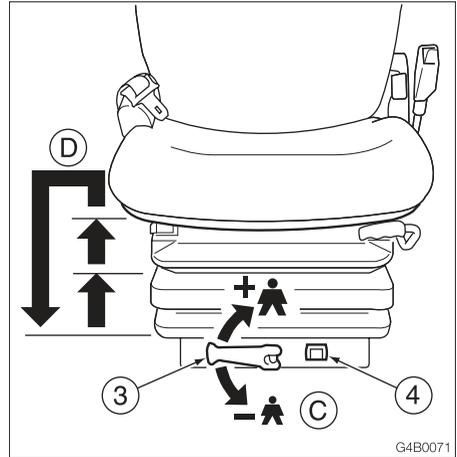
(A) Back angle adjustment**⚠ WARNING**

- Do not set the seat back to its maximum reclining position and slide the seat backwards at the same time. Doing so may break the rear window glass, resulting in injury.
- Be careful not to allow the force of the spring to bring the seat back sharply forward.

1. Raising your torso, sitting down firmly in the seat.
2. Pulling lever (1) allows you to use the pressure of the springs in the seat pressing against your back to adjust the reclining angle of the seat back. Release the lever (1) at the desired angle and the seat back will be locked in that position.

(B) Fore-and-aft adjustment

1. Pull on lever (2) and slide the seat backward or forward to bring it to the optimum position for operating the machine.
 2. Release the lever (2) at the desired position and the seat will be locked there.
- Adjustment stroke: 15 steps, 150 mm (5.9 in.)



G4B0071

(C) Weight adjustment

1. Turn handle (3) until the indicator (4) will show the operator's weight.
May be set to any value from 10 kg steps, 50 to 130 kg (110 to 287 lbs.)

(D) Adjusting the height of the seat

Upward

1. Lift the seat to first or second position click-stop.

Downward

1. First lift the seat to highest position, then the seat can be lowered to lowest position.

(E) Headrest adjustment (Option)

The position of the headrest can be adjusted in the vertical and front/back directions.

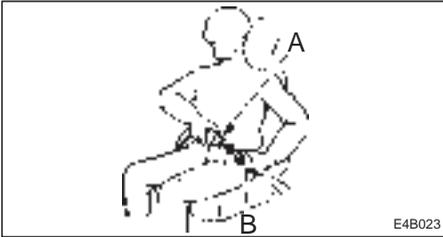
1. To adjust in the vertical direction, grasp the headrest with both hands and move it upwards or downwards.
2. To adjust in the front/back direction, grasp the headrest with hands and move it forwards or backwards.

**Seat Belt****⚠ CAUTION**

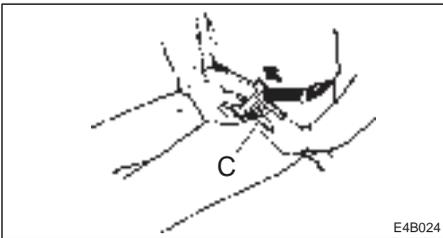
Always fasten the seat belt securely before starting the engine.

Fastening the seat belt

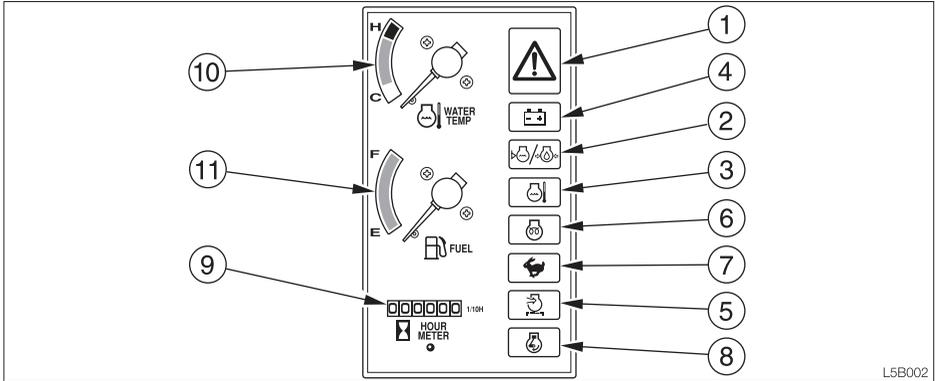
1. Adjust the seat to the optimum position for operating, raise your torso, and sit back firmly into the seat.
2. Pull the seat belt to the desired length.



3. Make sure that the belt is not twisted and then insert the tongue plate (A) into the buckle (B) of the seat belt until you hear a clicking sound as it locks in place.

Releasing the seat belt

1. To remove the seat belt, simply press the button (C) located on the buckle. The seat belt is automatically stowed away.



L5B002

Warning Lamps

IMPORTANT: If a warning lamp flashes and an alarm is sounded, stop all operations immediately and inspect and maintain the appropriate part.

Refer to page 169 “Troubleshooting”.

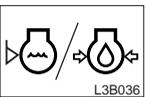
1. Engine Emergency Lamp



This lamp flashes and an alarm is sounded if the engine oil pressure or the coolant level in the radiator

drops or the coolant temperature rises abnormally while the engine is running. After approximately 5 seconds, the engine stops or low idling automatically.

2. Engine Oil Pressure / Coolant Level Warning Lamp



This lamp flashes and an alarm is sounded if the lubricant oil pressure or coolant level in the radiator

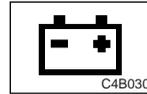
drops abnormally while the engine is running.

3. Coolant Temperature Warning Lamp



This lamp flashes and an alarm is sounded if the engine coolant temperature rises abnormally while the engine is running.

4. Battery Charge Warning Lamp



This lamp flashes and an alarm is sounded if a problem arises in the charging system while the engine is running.

5. Air Cleaner Warning Lamp



This lamp flashes and an alarm is sounded if the air cleaner filter is clogged while the engine is running.



Indicators

6. Glow Lamp



This lamp turns off when engine preheating is completed.

7. Travel Speed Lamp



This lamp lights when the travel speed is set to 2nd (high speed).

8. Decel. Lamp



This lamp lights when decel. switch pressed, the engine speed decreases.

Meters

9. Hour Meter



This displays the total engine running time in hours.

The rightmost digit indicates tenths of hours (6 minutes).

Set the inspection and maintenance intervals according to the time displayed on the hour meter.

10. Water Temperature Gauge



This gauge indicates the temperature of the engine coolant water.

The needle should be within the green range during machine operation. The red range indicates overheating.

11. Fuel Gauge

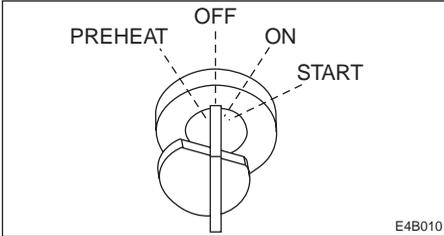


This gauge indicates the amount of fuel in the tank.

Be sure to top off the tank before running out of fuel.



Starter Switch

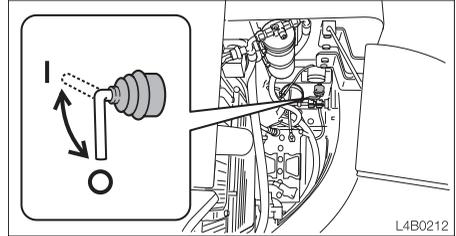


IMPORTANT: Do not repeatedly switch the key from OFF to ON and ON to OFF over a short period. Doing so will cause engine breakdown.

- PREHEAT Position for preheating the engine.
- OFF Position for stopping the engine and inserting or removing the key.
- ON Position in which the engine is running. At this position, all the electrical equipment is functional.
- START Position for starting the engine. When the key is released, the switch automatically returns to the ON position.

Battery Switch

IMPORTANT: Never set this switch to the OFF (O) position while the engine is running. Doing so might cause damage to the electrical system.



1. Open the rear cover.
- OFF (O) Switches off the electrical circuit. Be sure to set this switch to the OFF (O) position when storing the machine for a long period, or when performing maintenance of the electrical system.
 - ON (I) Connects the electrical system. Check that this switch is in the ON (I) position before starting the engine.

Supplement: Setting this switch to the OFF (O) position will shut down all of the electrical circuits and the memory of the radio preset tuning buttons will be deleted.



Horn Button

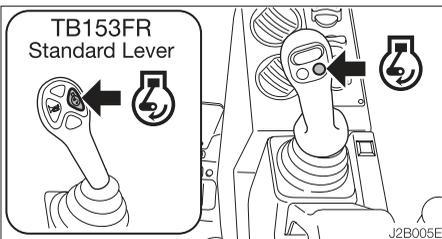


Press the button on the right operating lever to blow the horn.

Decel. Button

**WARNING**

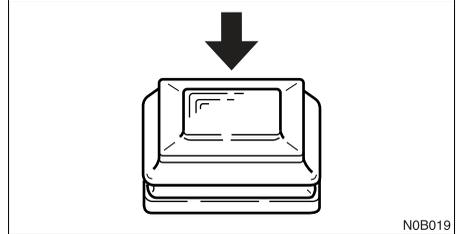
Set the operating and travel levers to neutral before operating the decel. button. The machine's operating speed will change abruptly if the switch is operated while the levers are engaged.



Press the button on the right operating lever to lower the engine speed to low idling. Press the button again to return to the engine speed set with the throttle controller.

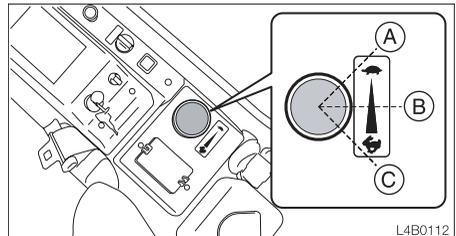
Supplement: The one-touch decelerator is a device for lowering the engine speed and reducing fuel consumption when little engine output is required, for example when the operating and travel levers are in neutral.

Automatic Decel. Button < TB180FR >



Pressing this button to the ON position will cause the lamp to light and will activate the deceleration function. Use of the deceleration button will not be possible at this time. After about 4 seconds with the control levers set to neutral, the engine speed will automatically drop to Low idling to reduce fuel consumption. Moving the control levers will cause the speed to return to the original engine speed.

Throttle Controller < TB180FR >



This controls the engine speed.

- (A) Low idling
- (B) Middle speed
- (C) Maximum speed



Attachment Interference Switch

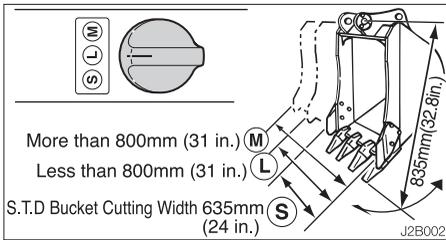
WARNING

- Failure to properly set the Attachment Interference Switch can result in equipment damage, serious injury, or death.
- Ensure that all buckets used in the standard position are no longer than a standard bucket when measured from pin to tooth.

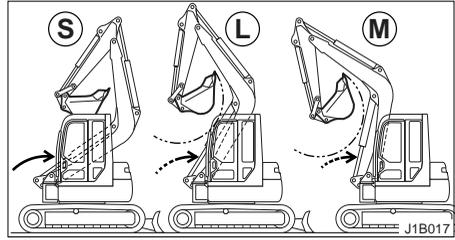
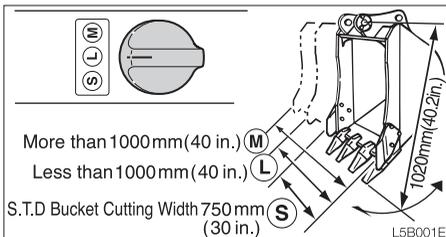
The Attachment Interference Switch (AIS) is automatically set to the M mode by the interference Prevention System (IPS) when the engine is started.

To use the minimal front radius feature, reset the AIS to the M position then select the appropriate attachment width (S.L or M).

< TB153FR >



< TB180FR >



Modes of Operation

< TB153FR >

- S** Standard bucket attachment less than 635mm (24 inches) wide
- L** Bucket attachment more than 635mm (24 inches) and less than 800mm (31 inches) wide
- M** Bucket attachment more than 800mm (31 inches) wide or any other approved attachment

< TB180FR >

- S** Standard bucket attachment less than 750mm (30 inches) wide
- L** Bucket attachment more than 750mm (30 inches) and less than 1000mm (40 inches) wide
- M** Bucket attachment more than 1000mm (40 inches) wide or any other approved attachment

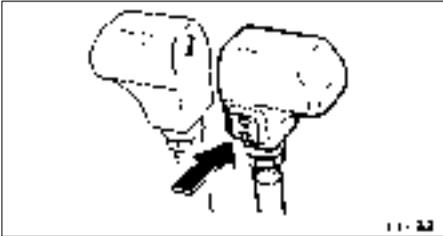
Refer to page 82 "Attachment Interference Switch / Interference Prevention System".



Travel Speed Switch

WARNING

When a load greater than a set value is applied during 2nd speed (high speed) travel, the speed will automatically slow down by switching to 1st speed (low speed). Thereafter, when the load becomes lighter, the speed will increase by returning to 2nd speed (high speed). Exercise due caution since the travel speed changes automatically.

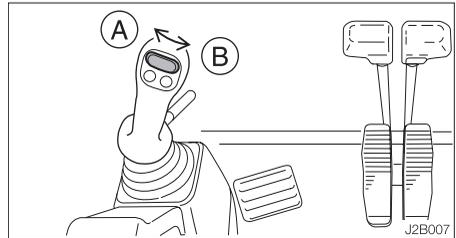


Press this switch to set the travel speed to 2nd speed (high speed). Press again to return to 1st speed (low speed).

First Auxiliary Hydraulic Switches

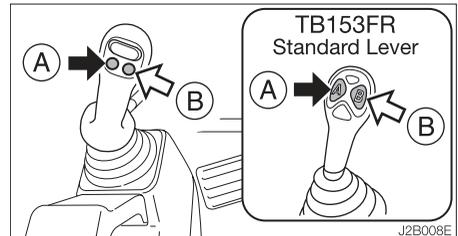
Slider Switch (Proportional control)

Proportional control allows for slow-to-fast movement of auxiliary functions. Example: If you move the slider switch half way, the auxiliary function will move at approximately one-half speed.



Move this switch to control the flow of the oil in the first auxiliary hydraulic lines.

Auxiliary Hydraulic Buttons



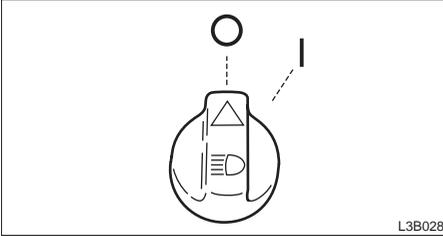
Press those buttons to control the flow of the oil in the first auxiliary hydraulic lines.

- Proportional control of the auxiliary hydraulic circuit is not possible.

- (A) ... Hydraulic oil flows to left auxiliary line(a)
- (B) ... Hydraulic oil flows to right auxiliary line(b)



Light Switch



When this switch is turned while the starter switch is at ON, the lights turn on as follows :

O Off

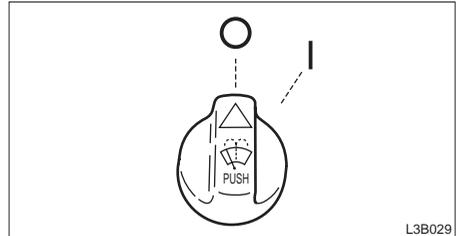
I Meter light, front light and boom light turn on.

Wiper Switch (Cab)

IMPORTANT: If no washer fluid is discharged, do not operate the washer. Doing so may damage the pump.

IMPORTANT: Operating the wiper with no moisture on the windshield will scratch the glass. Apply water or washer fluid when operating the wiper.

IMPORTANT: In cold seasons, the wiper blade may freeze to the glass. Operating the wiper forcibly may damage the wiper motor.



O Off

I Wiper operates.

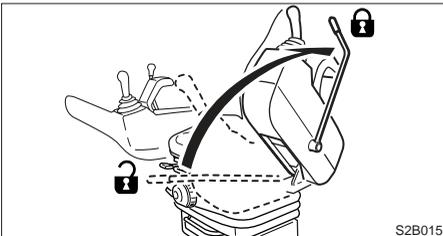
PUSH Washer fluid is squirted from the nozzle while pressed, and stops when released.



Safety Lock Lever

WARNING

- Before leaving the operator's seat, raise the safety lock lever to engage the lock and stop the engine. If any controls should be touched accidentally when the safety lock lever is lowered, the machine will move suddenly, and cause serious injury or death.
- < TB153FR > : Note that the dozer blade control is not locked, even when the safety lock lever is set to the lock position. Do not touch this control accidentally.
- Be careful not to touch the operating levers when raising and lowering the safety lock lever.



This device is for locking the working equipment, auxiliary hydraulic control, slewing and traveling.

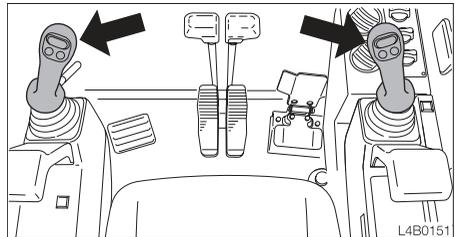
When the lever is raised, the lever stand springs up and the lever is locked.

- < TB153FR > : Note that the dozer blade control is not locked, even when the safety lock lever is set to the lock position. Do not touch this control accidentally.

Operating Levers

WARNING

- Be careful to check which pattern of lever control arrangement you are operating with before beginning operations.
- The explanations in this manual are for the ISO pattern.



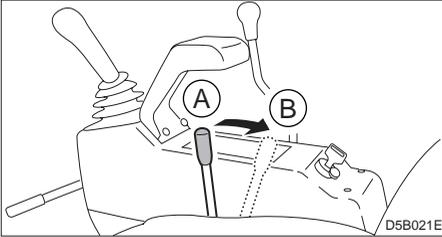
Use these levers to operate the boom, arm, bucket and upperstructure (slew).

Refer to page 74 "Lever Pattern".

Refer to page 84 "Operating the Working Equipment".



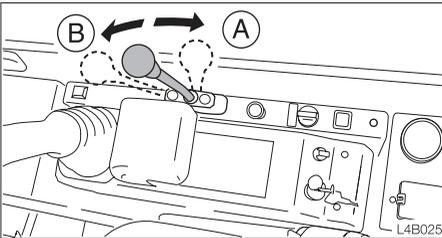
Throttle Lever < TB153FR >



This controls the engine speed.

- (A) Low idling
- (B) Maximum speed

Blade Lever



Use this lever to operate the dozer blade.

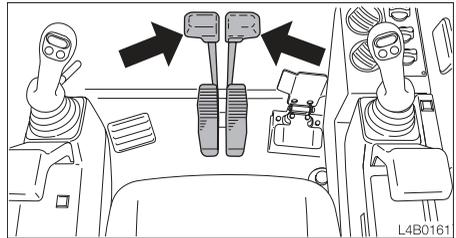
- (A) Blade up
- (B) Blade down

Refer to page 85 "Operating the Dozer Blade".

Travel Levers

WARNING

Before operating the travel levers, check to make sure that the dozer blade is to the front of the operator's seat. **BE AWARE** that when the dozer blade is to the rear of the operator's seat, the travel levers operate in the opposite direction to when the dozer blade is in the front.

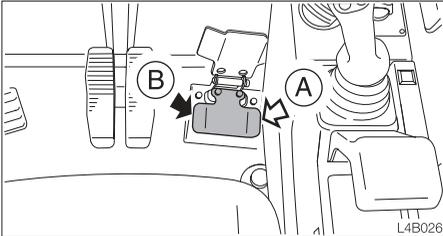


Use these to move forward and backward and to change directions.

Refer to page 79 "Operating the Travel Levers".



Offset Pedal



Use this pedal to operate the boom offset.

(A) Boom offset right

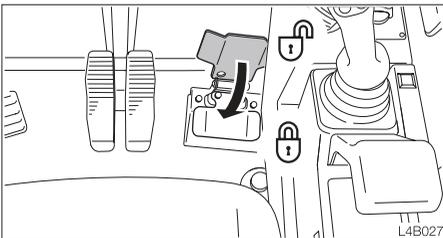
(B) Boom offset left

Refer to page 85 "Operating the Boom Offset".

Pedal Lock



When not using the pedal, set the pedal lock to the locked position. Stepping on a pedal accidentally when it is not locked may lead to unexpected accidents.



This device is for locking the offset pedal.
Set the pedal lock over the pedal to lock it.

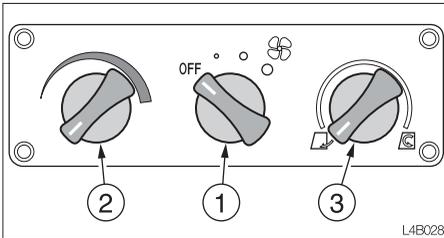


Heater (Cab)

WARNING

- Always be sure to allow sufficient ventilation.
- Do not place combustible or explosive objects near the air outlets.

Control panel



Fan Switch (1)

Use this switch to adjust the fan speed in three steps.

- OFF Fan off
- Low
 - Medium
 - High

Temperature Control Dial (2)

Use this dial to adjust the air temperature.
Counterclockwise

..... To lower the temperature
Clockwise To increase the temperature

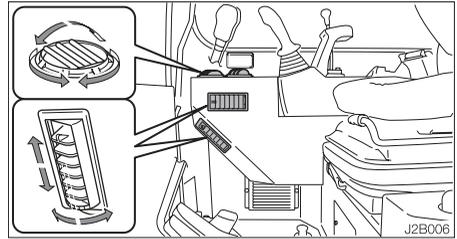
Supplement: No warm air is emitted if the temperature of the engine coolant is low.

Airflow mode control dial (3)

Use this dial to select recirculation or fresh air intake.

- Recirculation
 - To cool or heat the cab quickly
 - When external air is dirty
- CENTER 50% fresh air intake
 - To ventilate while heating the cab slowly
- Fresh air intake
 - To remove fog from the windows
 - To ventilate while heating the cab

Outlets



Move the louvers up and down or left and right to adjust the air flow direction and amount.

Supplement: Use the heater with care in warm seasons. Coolant circulates in the heater even when the heater switch is turned off.

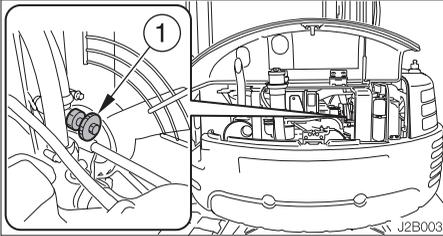
When the heater is no longer needed, stop coolant circulation as follows :

IMPORTANT: Use the valve (1) either fully open or fully closed.

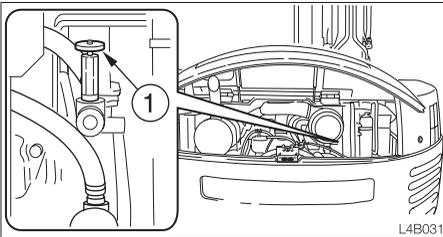
Cooling water could leak when the valve is set at a halfway position.



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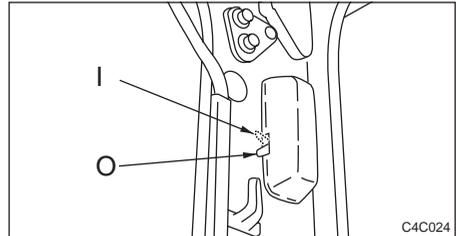
< TB180FR >



1. Park on a flat surface and stop the engine.
2. Open the engine hood.
3. Turn the valve (1) clockwise until it stops to close it.

Interior Light (Cab)

IMPORTANT: The battery capacity will decrease if the interior light is left on for long periods of time the engine stopped. Turn the lamp off when leaving the machine.



O Off

I Lit



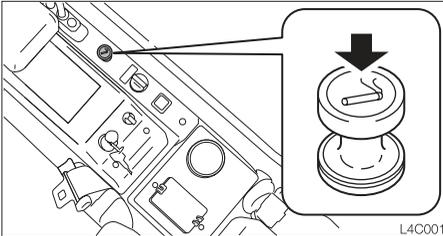
Cigarette Lighter (Cab)

WARNING

- Do not leave the cigarette lighter's knob pressed in. Doing so heats up the lighter, and could be dangerous.
- If the knob does not pop out after 30 seconds, it may be broken. Pull it out by hand.
- Do not use other cigarette lighters, as they may get stuck.
- Only use applicable electric products with this socket.
- Do not touch metal parts of the lighter. Doing so could cause burns.

This is the cigarette lighter and internal power supply socket.

When using the wiper and this socket simultaneously, be careful not to exceed 12V / 10A.

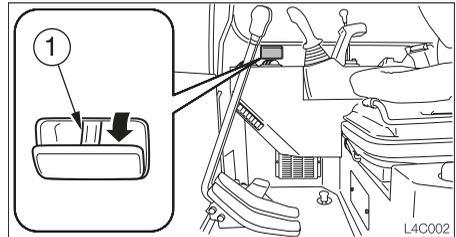


1. Press the lighter in.
2. Release the lighter and wait for it to pop out. The lighter pops out automatically when the heater becomes red.
3. Once the lighter pops out, pull it out.

Ashtray (Cab)

WARNING

- Be sure to extinguish cigarettes and matches completely before putting them in the ashtray, and always close the ashtray afterwards.
- Do not overfill the ashtray with cigarette butts or put in paper or other easily burnable objects. Doing so could lead to fire.



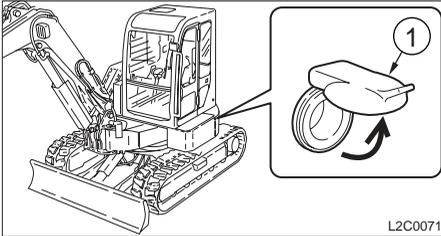
Pull the ashtray out towards you to use it.
To clean, press the ash discharge button (1) and pull out the ashtray.



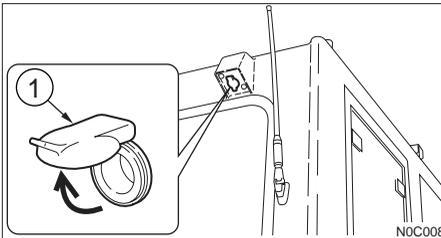
External Power Sockets (for EU)

WARNING

Only use applicable electric products with these sockets.



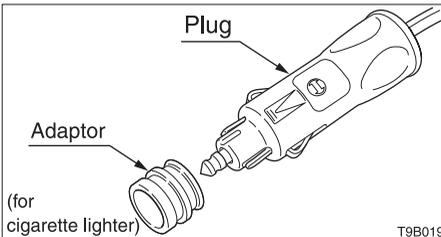
for Beacon



Use these sockets as an external power supply. When using these sockets, be careful not to exceed 12V / 10A.

To use, raise the cap (1).

Applicable plug: BOSCH 0352321007



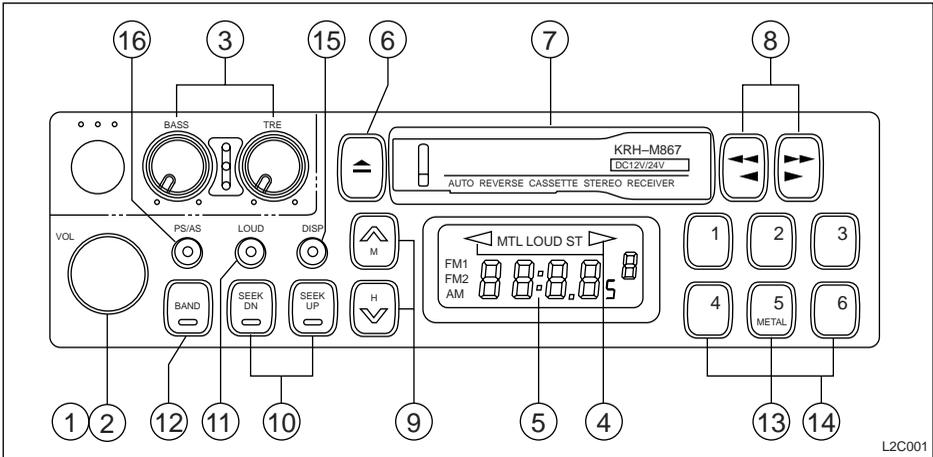


Radio

Operating precautions

- To ensure safe operation of the machine, always be sure to keep the volume of the radio down to a level where you can easily hear sounds from outside the machine.
- Do not keep the radio playing for long periods of time with the engine stopped. Doing so will drain the battery of its charge and make it difficult or impossible to restart the engine.
- Be careful not to allow water or other liquids to come into contact with the radio . Doing so may result in it being rendered inoperable.
- Be careful not to insert cassette tapes backward. Doing so may damage the cassette player. Insert tapes with the head of the tape facing to the right.
- Always remove the cassette from the player when not in use.

Names of components



(1) (2) Power switch / volume control knob

Turn this knob clockwise. The “click” sound indicates that the power supply is turned on. Further turning increases the speaker volume. If a tape is loaded in the radio, eject the tape to switch to the radio.

(3) Tone control

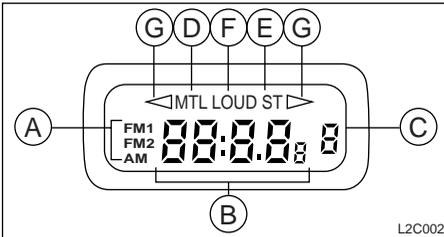
- Bass control knob
- Treble control knob



(4) Program indicators

Indicates tape direction. When ► lamp is on. Upper side of a tape is playback, ◀ indicates playback of lower side.

(5) Display



- (A) Band
- (B) Time / Frequency
- (C) Memory channel (1–6)
- (D) Metal
- (E) FM Stereo
- (F) Loudness
- (G) Tape direction

(6) Eject button

Push this button to eject the cassette tape.

- To change over to radio while listening to a cassette tape, press the EJECT button to stop the tape and the system will automatically change over to radio.

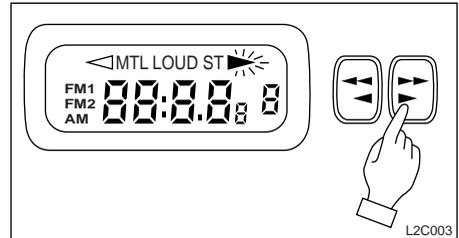
(7) Cassette door

Insert the cassette tape with the exposed magnetic tape side facing to the right.

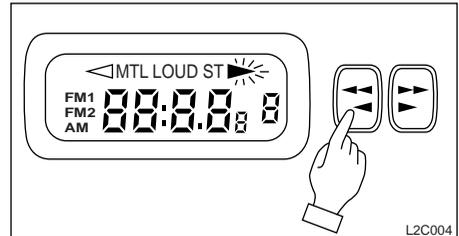
- Simply insert a tape to change over to the cassette tape mode while listening to the radio.

(8) Fast-forward / rewind / program changeover button

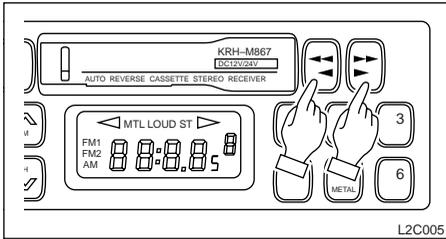
Fast-forward



Fast-rewind / Stop



To fast-forward the tape, push the button matching the direction of program indication and to rewind, push the other button. To stop fast-forwarding or rewinding, lightly press the button which is not locked to cancel the operation. The system will then start playing the tape again normally.



To change the program, press the fast-forward and rewind buttons simultaneously. The direction of tape feed will reverse.

- When the tape ends in one direction, the system automatically reverses the tape and plays the other side.
- To stop fast-forwarding or rewinding, lightly touch the unlocked key. This frees the locked key and normal playing resumes.

(9) Tuner switch (Manual tuning)

Pressing the shaped TUNER button raises the receiving frequency. Pressing the shaped TUNER button lowers the receiving frequency similarly. Pressing either of these buttons continuously shifts the receiving frequency continuously.

(10) SEEK switch

Pressing the “SEEK” button shifts the receiving frequency in the higher or lower frequency direction before automatically stopping at a position where a station is picked up.

(11) LOUD switch

This button is used to operate the system at a lower sound volume but with enhanced bass and treble sound. (“LOUD” indication appears on the display.)

(12) Band select switch

Pressing the “BAND” button changes over between FM1, FM2 and AM (MW) bands. The display indicates the receiving band name and frequency.

(13) Metal switch

Press the “MTL” (5) button before playing a metal or CrO₂ tape.

The “MTL” indication appears on the display.

(14) Preset switch keys

One station each in the FM1, FM2 and AM(MW) bands, respectively, can be preset for each of these preset keys.

When listening to a preset station, select either of the AM, FM1, FM2 bands using the band select switch, then simply press the number key corresponding to the preset selected station.

The system can memorize 6 stations in AM band and 12 stations in FM bands (FM1: 6 stations and FM2: 6 stations).

Manual Memory

Use manual tuning button or seek tuning button to choose a radio station if a broadcasting station is wanted to be recorded. For 2 seconds press 1–6 preset key when the indication of frequency has already shown and the frequency is recorded. Flash stops and channel starts functioning.

- If the main power supply is interrupted, such as when exchanging machine battery, all presettings will be erased. Repeat the presetting procedure in such case.



(15) DISP (Time / Frequency) button

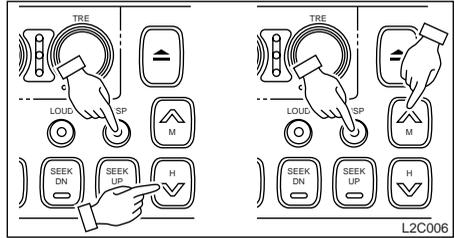
This system is equipped with a clock which can show the accurate time. Even if the radio is off, the clock still shows the time.

(16) PS / AS switch

Push this button 2 sec below will automatically operates to show the memorized station from 1 to 6. The signal scanning start by pushing this button momentarily. When a station is received the scanning automatically stops there for 5 seconds FLASHLY and then resumes scanning. As soon as the desired station is found, press the this button again.

If you will auto memory push this button over 5 sec so initiates a scan of the band. Station frequencies are either stored in order of low of frequency for FM, or in sequence for AM, starting from preset channel 1. If all of the preset channels have not been filled up after one scan, the remaining preset channels are left unchanged, and channel 1 is recalled. Channel 8 flashes during A.

● Set the time



After pressing DISP button, press tuner button or to correct the time. Press tuner button to set the “hour” and tuner button for setting the “minute”. Set the time when the time is shown.



First Auxiliary Hydraulic Lines

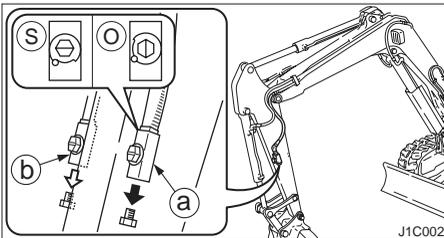
WARNING

Oil may spurt out if caps or filters are removed or pipes disconnected before releasing the pressure in the hydraulic system.

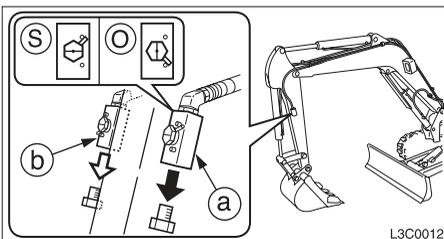
- When disconnecting hoses, release the internal pressure before removing.

These lines deliver the hydraulic oil necessary for operating a hydraulic breaker, crusher or other attachments.

< TB153FR >



< TB180FR >



Stop valve (S) : Closed (O) : Open

Connecting the Hydraulic Circuits

To connect the attachment hydraulic lines, use the following procedures:

1. Release the pressure remaining in the lines then close the stop valve.
Refer to "Releasing the residual pressure".

2. Remove the plugs.
3. Connect the attachment hydraulic lines to ports (a) and (b).
When fitted with a hydraulic breaker, connect the return circuit to port (b) and the supply circuit to port (a).
4. Open the stop valves.
When fitted with a hydraulic breaker, open the selector valve (1).
Refer to page 65 "Selector valve".
5. When connecting is complete, purge air from the hydraulic lines.
 - a. Start and run the engine at low idle with no load for 10 minutes.
 - b. With the engine running at low idle operate the auxiliary hydraulic switches repeatedly (approx. 10 times) to purge air from the hydraulic lines.
 - c. Stop the engine and wait for more than 5 minutes until bubbles escape from the hydraulic oil in the tank.

IMPORTANT: Follow the procedures for purging air as instructed by the attachment manufacturer if specified to do so.

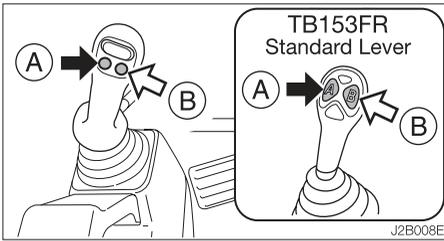
6. Check for leaks.

Disconnecting the hydraulic circuits

1. Release the pressure remaining in the lines then close the stop valve.
Refer to "Releasing the residual pressure".
2. Disconnect the lines from ports (a) and (b).
3. Install the plugs.

Releasing the residual pressure

After using the auxiliary hydraulic circuits, pressure remains in the circuits. This is called the residual pressure. Release this residual pressure before disconnecting the lines.



1. Start the engine and press the auxiliary hydraulic button (B).

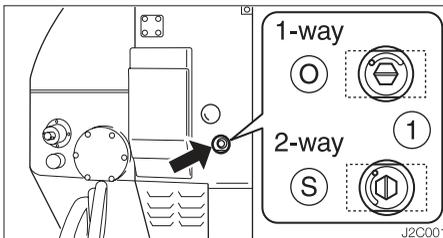
(The residual pressure is released from the (a) port line, and pressure is generated in the (b) port.)

2. Stop the engine and open the selector valve (1) on the machine body.

(The residual pressure is released from the (b) port line.)

When equipped with accumulator (option) :
Refer to page 204 "Releasing the residual pressure".

Selector valve



⊙: Open When using a hydraulic breaker (1-way flow)

Ⓢ: Closed When using a reversible attachment (2-way flow)

Change the direction of the hydraulic oil flow by opening or closing the selector valve on the machine body.



OPERATION

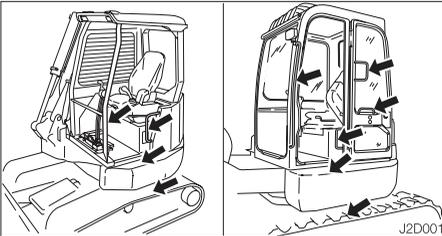
Before Starting Operation	68
Starting and Stopping the Engine	
<TB153FR>	70
Starting and Stopping the Engine	
<TB180FR>	72
Machine Operation	74
Operating Procedures	88
Parking the Machine	96
Handling in Cold Weather	97
Handling Rubber Crawlers	98



Mounting and Dismounting

WARNING

- Do not jump on or off the machine. Never attempt to mount or dismount a moving machine.
- When mounting and dismounting the cab, first open the door fully to the locked position and check that it does not move. (For machines with cabs)



- Always face the access system and maintain a three point contact with the recommended handrails and steps while getting on and off the machine. Keep steps and platform clean.
- Never use the safety lock lever or control levers as hand holds.

Walk-Around Inspection

Perform the walk-around inspections once a day before starting the engine the first time that day.

Perform the inspections as described under “Maintenance - Walk-Around Inspection” (pages 118 and 119).

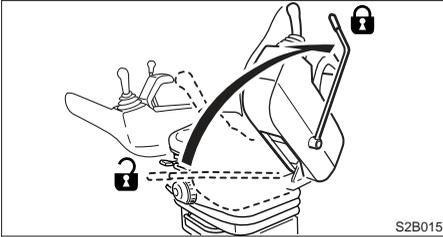
Daily Inspection

Perform the daily inspections once a day before starting the engine the first time that day.

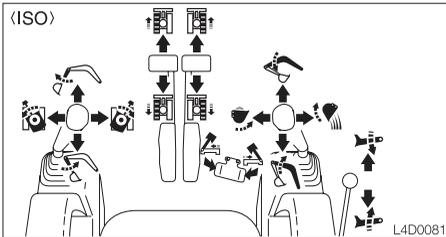
Perform the inspections as described under “Maintenance - Daily Inspection” (pages 120 to 124).

**Before Starting the Engine**

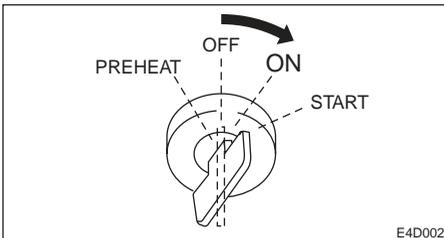
1. Adjust the seat for a comfortable operating position.
2. Fasten the seat belt.



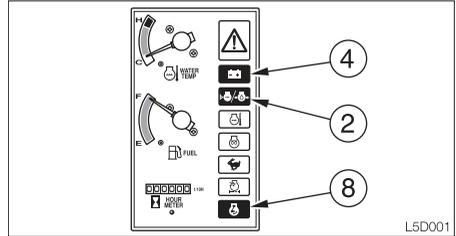
3. Check that the safety lock lever is in the locked position.



4. Check that all the levers and pedals are in the neutral position.



5. Insert the key into the starter switch, turn it to the ON position, then perform the following inspection :



- All the warning lamps flash and an alarm is sounded for 2 seconds. The meters also start functioning. After 2 seconds, only the battery charge warning lamp (4) and engine oil pressure / coolant level warning lamp (2) flash, and the other lamps turn off.
- < TB180FR > : Check that the decel. lamp (8) is lit.
- Turn the light switch to check that the boom light, front light and meter light turn on.
- Check the fuel level.

If a lamp does not light or the alarm is not sounded, the bulb may be burnt out or a wire may be damaged. Contact a Takeuchi sales or service outlet for repairs.



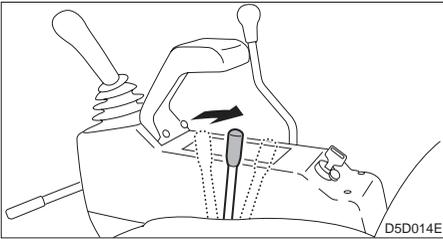
Starting the Engine

WARNING

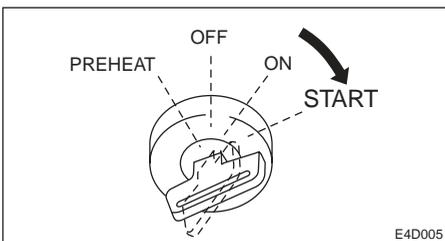
- Clear the area of all persons.
- Sound horn to alert everyone around the machine.

IMPORTANT: Do not run the starter motor for more than 15 consecutive seconds. If the engine fails to start, wait for 30 seconds to protect the battery, and then try again to start the engine.

Normal Starting

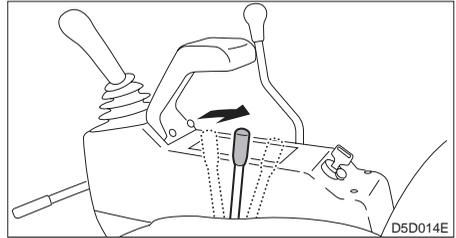


1. Pull the throttle lever to the middle position.

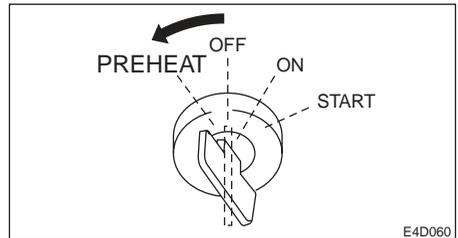


2. Turn the key to the START position and start the engine.
3. Once the engine starts, release the key. The key automatically returns to the ON position.
4. Check that the warning lamps are off.
5. Return the throttle lever and warm up the engine.
Refer to page 71 "Warming Up the Engine".

Starting in Cold Weather



1. Pull the throttle lever to the middle position.



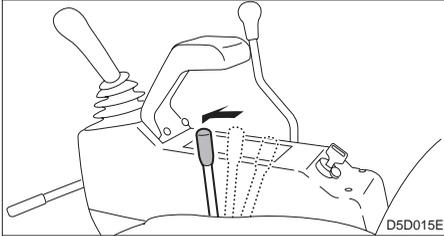
2. Turn the key to the PREHEAT position and hold it there while the glow lamp is lit (about 15 seconds).
3. After the glow lamp turns off, then turn it to the START position and start the engine.
4. Once the engine starts, release the key. The key automatically returns to the ON position.
5. Check that the warning lamps are off.
6. Return the throttle lever and warm up the engine.
Refer to page 71 "Warming Up the Engine".



Warming Up the Engine

IMPORTANT: Avoid racing the engine until it is warmed up.

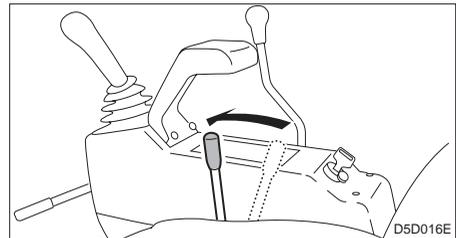
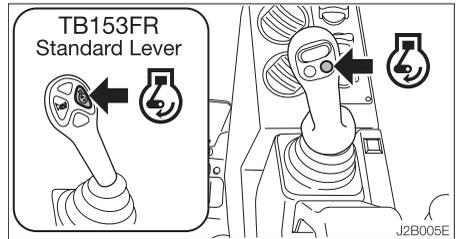
Do not warm up the engine for long periods of time (20 minutes or more).



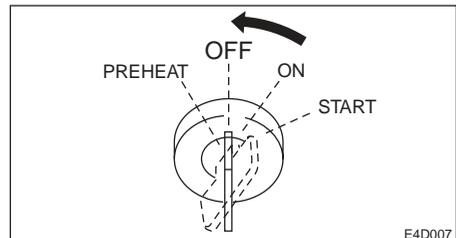
1. Return the throttle lever, then idle the engine and run it for about 5 minutes with no load.

Stopping the Engine

IMPORTANT: Do not stop the engine suddenly when operating with heavy loads or at maximum speed. Doing so may cause the engine to overheat or seize. Never bring the engine to a sudden stop except in the case of a true emergency.



1. Press the decel. button or return the throttle lever.
2. Idle the engine for about 5 minutes to gradually let it cool.



3. Turn the key to the OFF position to stop the engine.



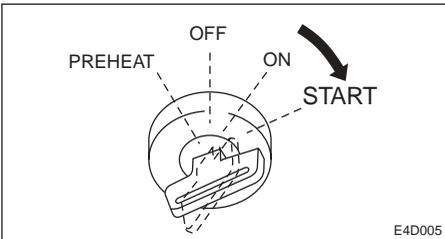
Starting the Engine

WARNING

- Clear the area of all persons.
- Sound horn to alert everyone around the machine.

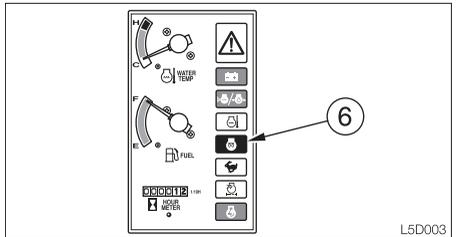
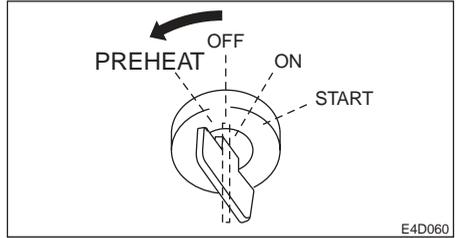
IMPORTANT: Do not run the starter motor for more than 15 consecutive seconds. If the engine fails to start, wait for 30 seconds to protect the battery, and then try again to start the engine.

Normal Starting



1. Turn the key to the START position and start the engine.
2. Once the engine starts, release the key. The key automatically returns to the ON position.
3. Check that the warning lamps are off.
4. Warm up the engine :
Refer to page 73 "Warming Up the Engine".

Starting in Cold Weather



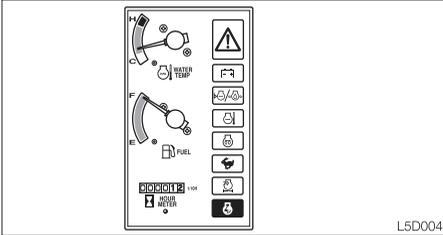
1. Turn the key to the PREHEAT position and hold it there while the glow lamp (6) is lit (about 15 seconds).
2. After the glow lamp (6) turns off, then turn it to the START position and start the engine.
3. Once the engine starts, release the key. The key automatically returns to the ON position.
4. Check that the warning lamps are off.
5. Warm up the engine :
Refer to page 73 "Warming Up the Engine".



Warming Up the Engine

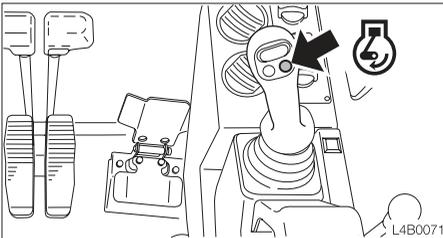
IMPORTANT: Avoid racing the engine until it is warmed up.

Do not warm up the engine for long periods of time (20 minutes or more).



L5D004

1. Idle the engine and run it for about 5 minutes with no load.

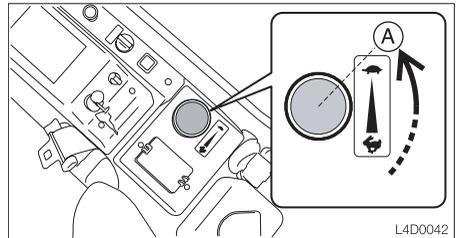


L4B0071

2. Press the decel. button to return to the engine speed set with the throttle controller.

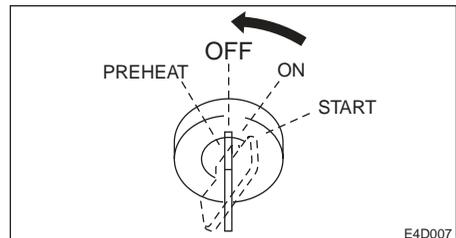
Stopping the Engine

IMPORTANT: Do not stop the engine suddenly when operating with heavy loads or at maximum speed. Doing so may cause the engine to overheat or seize. Never bring the engine to a sudden stop except in the case of a true emergency.



L4D0042

1. Press the decel. button or return the throttle controller.
2. Idle the engine for about 5 minutes to gradually let it cool.



E4D007

3. Turn the key to the OFF position to stop the engine.

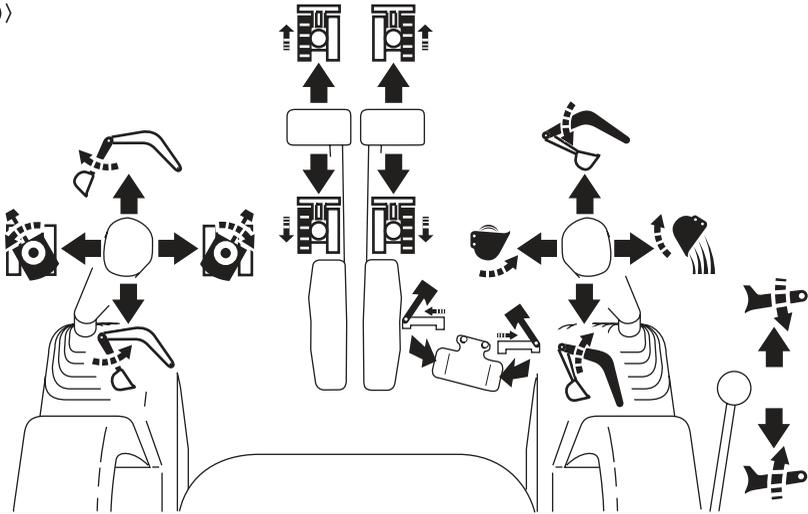


Lever Pattern (ISO Pattern)

WARNING

- Be careful to check which pattern of lever control arrangement you are operating with before beginning operations.
- The explanations in this manual are for the ISO pattern.

(ISO)



L4D0111

	Left Crawler Forward		Right Crawler Forward
	Left Crawler Reverse		Right Crawler Reverse
	Arm Out		Boom Lower
	Arm In		Boom Raise
	Upperstructure Left Slew		Bucket Load
	Upperstructure Right Slew		Bucket Dump
	Boom Offset Left		Dozer Blade Lower
	Boom Offset Right		Dozer Blade Raise

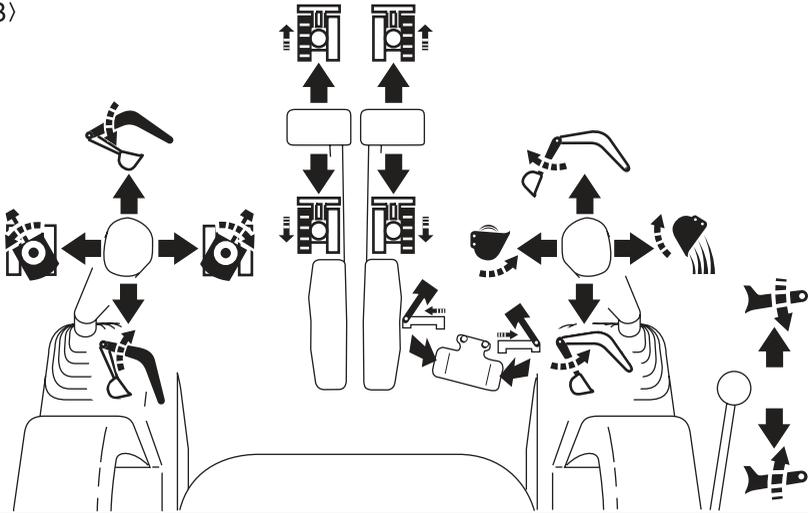


Lever Pattern (JCB Pattern)

WARNING

- Be careful to check which pattern of lever control arrangement you are operating with before beginning operations.
- The explanations in this manual are for the ISO pattern.

<JCB>



L4D0071

	Left Crawler Forward		Right Crawler Forward
	Left Crawler Reverse		Right Crawler Reverse
	Boom Lower		Arm Out
	Boom Raise		Arm In
	Upperstructure Left Slew		Bucket Load
	Upperstructure Right Slew		Bucket Dump
	Boom Offset Left		Dozer Blade Lower
	Boom Offset Right		Dozer Blade Raise



Warming Up the Machine (Hydraulic Oil)

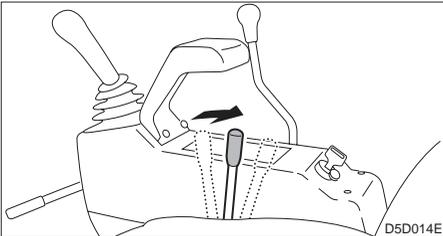
⚠ WARNING

Operating the working equipment without warming up the machine (hydraulic oil) is dangerous, as response will be slow and the equipment may move in unexpected ways. Be sure to sufficiently warm up the machine.

IMPORTANT: Do not operate the levers suddenly when the hydraulic oil temperature is below 20°C (68°F). The proper hydraulic oil temperature during operation is 50 to 80°C (122 to 176°F), but if operations must be performed at lower temperatures, heat up the hydraulic oil to at least 20°C (68°F).

Normal Warm-up

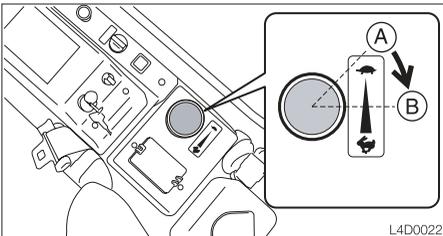
< TB153FR >



D5D014E

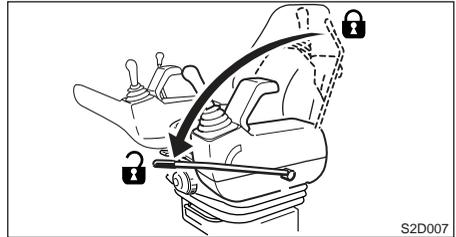
1. Pull the throttle lever to the middle position.

< TB180FR >



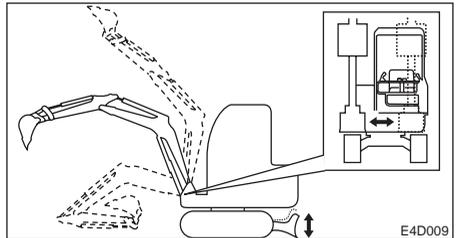
L4D0022

1. Turn the throttle controller to the middle position (B).
2. Run the engine at medium speed for about 5 minutes with no load.



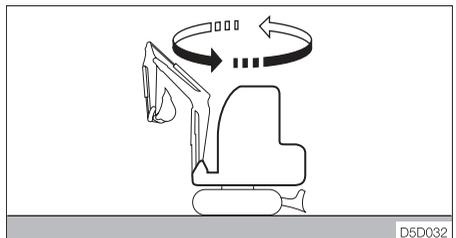
S2D007

3. Fully lower the safety lock lever to disengage the lock and raise the pedal lock to disengage the lock.



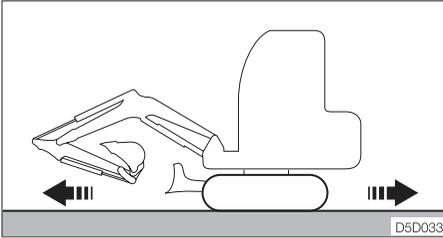
E4D009

4. Lift the bucket from the ground.
5. Extend and retract each of the cylinders several times with no load.



D5D032

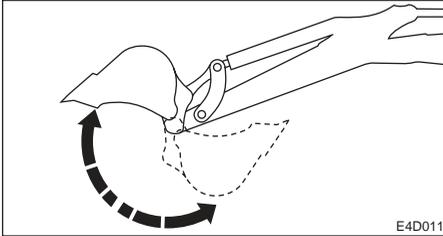
6. Slew slowly left and right several times.



7. Travel slowly forward and backward several times.

Warming Up in Cold Weather

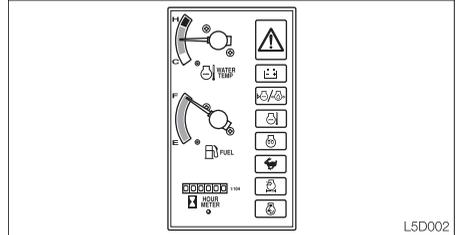
1. Perform the normal warm-up procedure.



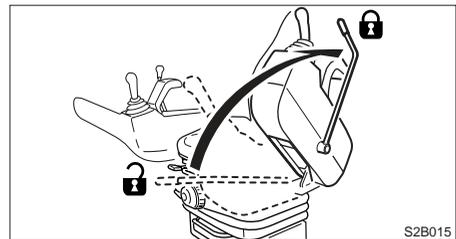
2. Set the bucket cylinder at the stroke end and keep it there.
Do not do this for more than 30 seconds.
3. Repeat step 2 until the bucket operating speed is normal.

Inspection After Warm-up

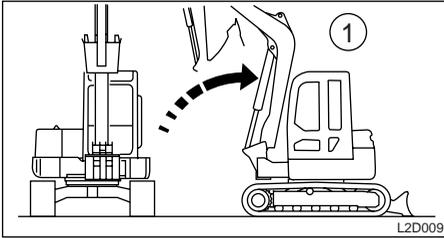
After warming up the engine and hydraulic oil, perform the checks and inspections described below, and repair if there is a problem.



1. Check that the warning lamps and meters are as follows :
- Are all the warning lamps off?
 - Is the water temperature gauge's needle within the green range?
2. Check that there are no irregularities in the exhaust color, sound and vibrations.

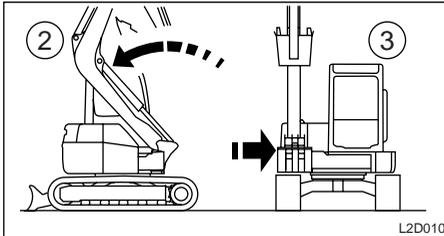


3. Raise the safety lock lever to engage the lock and check that the operating, offset, dozer blade and travel levers are locked.
- < TB153FR >: Note that the dozer blade control is not locked, even when the safety lock lever is set to the lock position.
4. Perform the inspection operations described below and check that the bucket, arm and boom do not touch the cab when the boom or bucket is moved near the cab and stops automatically.



- (1) Offset the boom to the front of the operator's seat and move the boom near the cab.

Offset the boom to the right and move the bucket near the cab.



- (2) Offset the boom fully to the right and check that it can be set to the maximum rear inclination.
- (3) Offset to the left in the posture in (2) above

Operation when the boom has stopped automatically

1. If the boom has stopped while rising:
Operate the boom downward.
2. If the boom has stopped while offsetting to the left:
 - a. Operate the boom downward to move it outside the automatic stop range.
 - b. Offset to the left.
Offsetting to the right is possible regardless of the boom's posture.

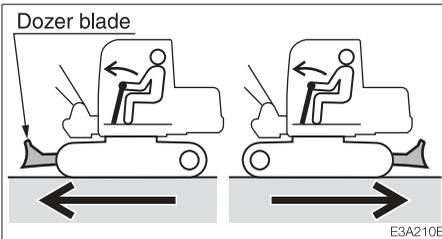


Operating the Travel Levers

WARNING

- Never allow anyone to enter the slewing (swing) radius and machine path.
- Signal your intention to move by sounding the horn.
- There are blind spots to the rear of the machine.

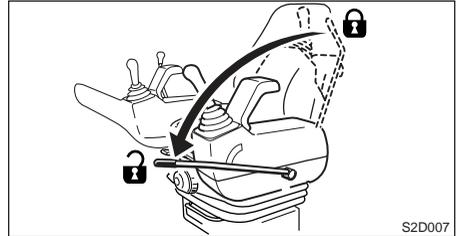
If necessary, swing the cab around before backing up to check that the area is safe and clear.



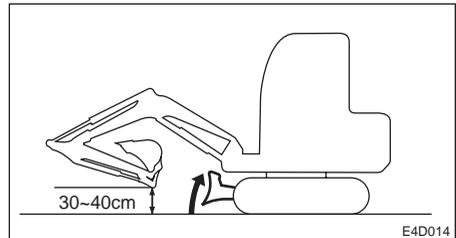
- Before operating the travel levers, check to make sure that the dozer blade is to the front of the operator's seat. **BE AWARE** that when the dozer blade is to the rear of the operator's seat, the travel levers operate in the opposite direction to when the dozer blade is in the front.
- Remove any obstacles in the machine's path.

Traveling Forward and Backward

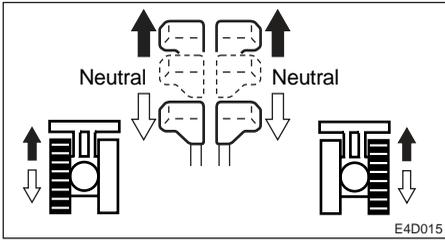
1. Increase the engine speed.



2. Fully lower the safety lock lever to disengage the lock.

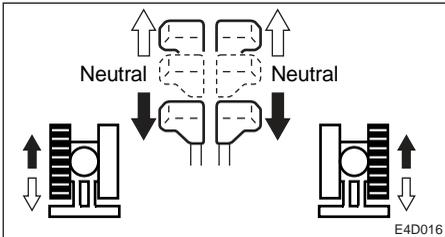


3. Fold the hoe attachment and lower it to 30 to 40 cm (12 to 16 in.) above the ground.
4. Lift the dozer blade.
5. Operate the left and right travel levers as described below.



When the dozer blade is in front of the operator's seat :

- ➔ To move forward :
Tilt the levers forward.
- ⇨ To move backward :
Tilt the levers backward.



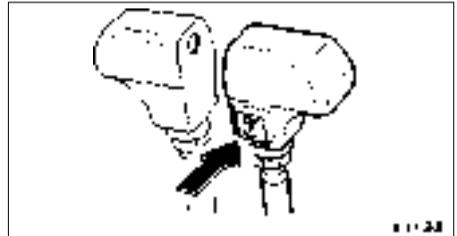
When the dozer blade is behind the operator's seat :

- ➔ To move forward :
Tilt the levers backward.
- ⇨ To move backward :
Tilt the levers forward.

Traveling in 2nd (High) Speed

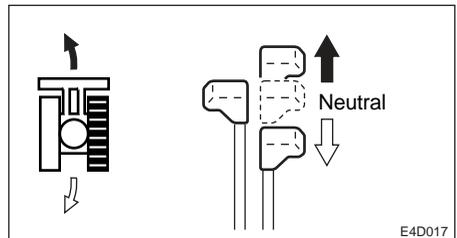
! WARNING

When a load greater than a set value is applied during 2nd speed (high speed) travel, the speed will automatically slow down by switching to 1st speed (low speed). Thereafter, when the load becomes lighter, the speed will increase by returning to 2nd speed (high speed). Exercise due caution since the travel speed changes automatically.



Press the travel speed switch on the right travel lever to switch to 2nd (high) speed, and press it again to return to 1st speed (low speed).

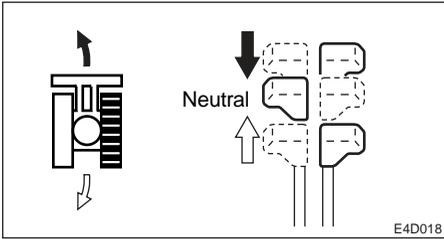
Pivot Turn



Turning to the left when stopped :

- ➔ To turn forward to the left :
Tilt the right lever forward.
- ⇨ To turn backward to the left :
Tilt the right lever backward.

To turn to the right, operate the left lever in the same way.



Turning to the left while traveling :

➔ To turn left while traveling forward :

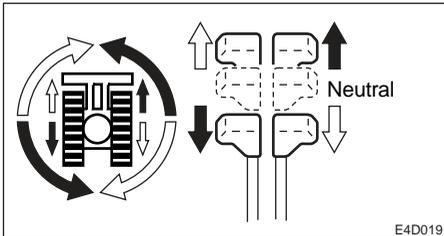
Set the left lever to neutral.

⇨ To turn left while traveling backward :

Set the left lever to neutral.

To turn to the right while traveling, operate the right lever in the same way.

Spin Turn



➔ To spin left :

Tilt the left lever backward and the right lever forward.

⇨ To spin right :

Tilt the right lever backward and the left lever forward.

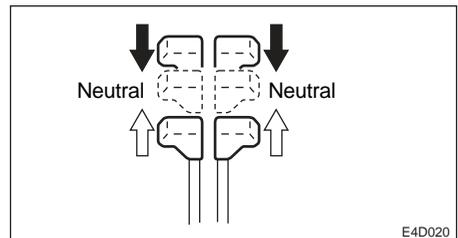
Stopping Travel

WARNING

- Park the machine on firm, level ground and apply the parking device. If you must park on a slope or incline, block the machine securely to prevent movement.
- If any controls should be touched accidentally when the safety lock lever is lowered, the machine will move suddenly, and cause serious injury or death.
- < TB153FR > : Note that the dozer blade control is not locked, even when the safety lock lever is set to the lock position. Do not touch this control accidentally.

CAUTION

Never bring the machine to a sudden stop except in the case of a true emergency. Stop as gently as possible.



1. Slowly set the left and right travel levers to the neutral position. The machine stops.



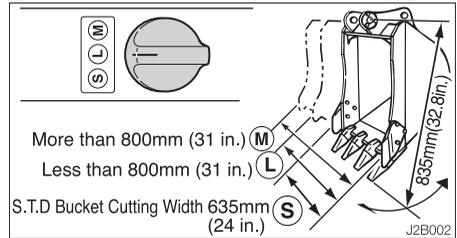
Attachment Interference Switch / Interference Prevention System

⚠ WARNING

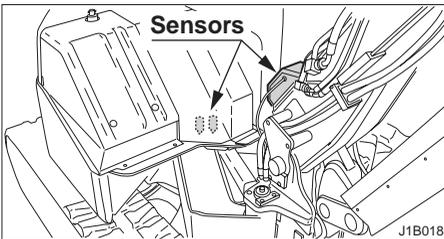
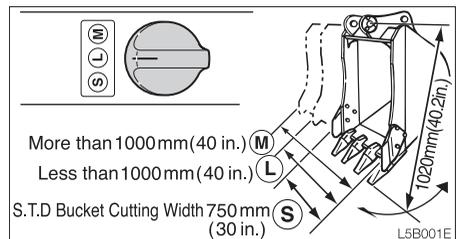
- All attachments other than a bucket should be used with the AIS set to the M mode.
- Ensure that all buckets used in the standard position are no longer than a standard bucket when measured from pin to tooth.
- Failure to properly set the Attachment Interference Switch can result in equipment damage, serious injury, or death.
- Do not disassemble or damage the sensors installed on the boom and main body. Doing so may cause the Interference Prevention System to malfunction. If there is a problem, contact a Takeuchi sales or service outlet for inspection or repair.

The Attachment Interference Switch (AIS) allows the operator to select the attachment size used on the excavator. The Interference Prevention System uses the operator's AIS selection to limit the movement of the boom (raising, lowering, and offsetting) to prevent the cab from being struck by the boom, attachment, or the material being handled. The Interference Prevention System (IPS) is automatically set to the M mode when the engine is started to provide the maximum operator protection.

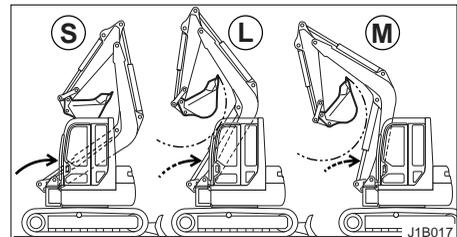
< TB153FR >



< TB180FR >



- The interference prevention system may not function properly if attachments other than Takeuchi approved attachments are installed. Do not install other non-approved attachments.





To properly set the AIS :
Reset the AIS to the M position
Select the appropriate attachment width

< TB153FR >

- S** Standard bucket attachment less than 635mm (24 inches) wide
- L** Bucket attachment more than 635mm (24 inches) and less than 800mm (31 inches) wide
- M** Bucket attachment more than 800mm (31 inches) wide or any other approved attachment

< TB180FR >

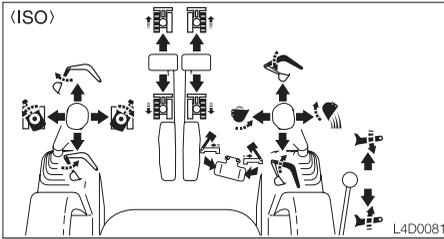
- S** Standard bucket attachment less than 750mm (30 inches) wide
- L** Bucket attachment more than 750mm (30 inches) and less than 1000mm (40 inches) wide
- M** Bucket attachment more than 1000mm (40 inches) wide or any other approved attachment

Operate excavator

The minimal front radius feature is only available for the standard bucket attachment 635mm (24 inches) TB153FR / 750mm (30 inches) TB180FR or smaller.

**Operating the Working Equipment****⚠ WARNING**

- Be careful to check which pattern of lever control arrangement you are operating with before beginning operations.
- The explanations in this manual are for the ISO pattern.



Use the right operating lever to operate the boom and bucket.

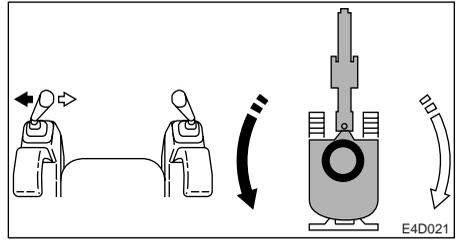
Use the left operating lever to operate the arm and for slewing.

Return the operating levers to the neutral position to stop the hoe attachments.

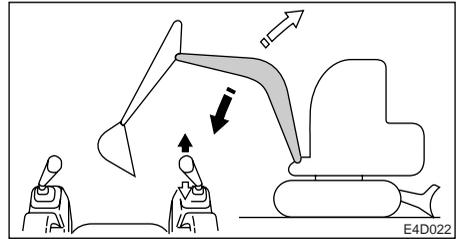
1. Fully lower the safety lock lever to disengage the lock.
2. Raise the pedal lock to disengage the lock.

Slewing**⚠ WARNING**

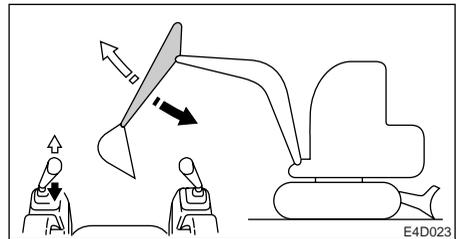
Check the surrounding area for safety before slewing.



- ➔ To slew left :
Tilt the left operating lever to the left.
- ⇨ To slew right :
Tilt the left operating lever to the right.

Operating the Boom

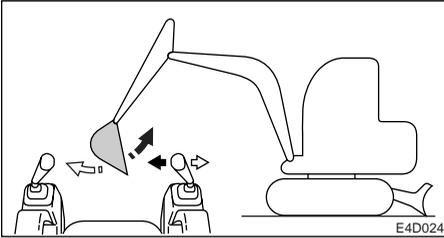
- ➔ To lower the boom :
Tilt the right operating lever forward.
- ⇨ To raise the boom :
Tilt the right operating lever backward.

Operating the Arm

- ➔ To contract the arm :
Tilt the left operating lever backward.
- ⇨ To extend the arm :
Tilt the left operating lever forward.

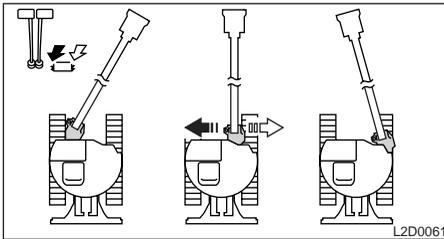


Operating the Bucket



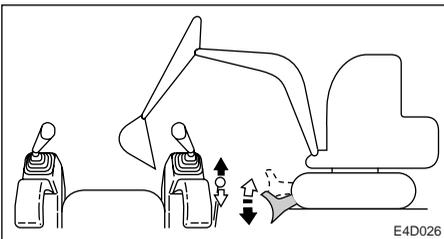
- ➔ To dig :
Tilt the right operating lever to the left.
- ⇨ To dump :
Tilt the right operating lever to the right.

Operating the Boom Offset



- ➔ To offset left :
Press the left side of the pedal.
- ⇨ To offset right :
Press the right side of the pedal.

Operating the Dozer Blade



- ➔ To lower the dozer blade :
Tilt the lever forward.
- ⇨ To raise the dozer blade :
Tilt the lever backward.

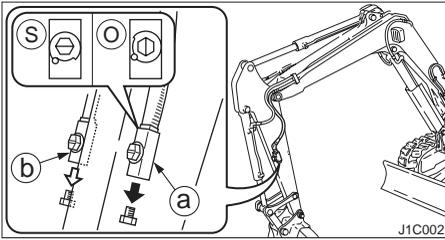


Operating the First Auxiliary Hydraulics

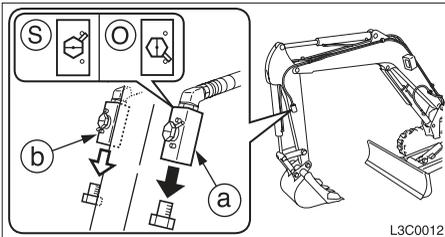
Use this to operate a breaker, crusher or other attachment.

Two methods of operation are permitted: operation with the auxiliary hydraulic buttons and operation with the slider switch (proportional control).

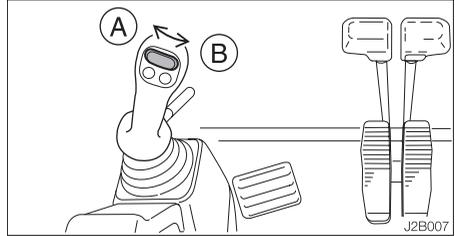
< TB153FR >



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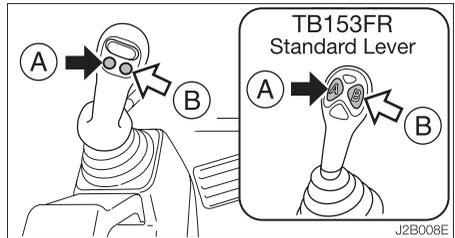


Operating With the Slider Switch (Proportional Control)



- ➔ To deliver hydraulic oil to port (a): Move the switch to the left (A).
- ⇨ To deliver hydraulic oil to port (b): Move the switch to the right (B).

Operating With the Auxiliary Hydraulic Buttons



- ➔ To deliver hydraulic oil to port (a): Press (A).
- ⇨ To deliver hydraulic oil to port (b): Press (B).

MEMO

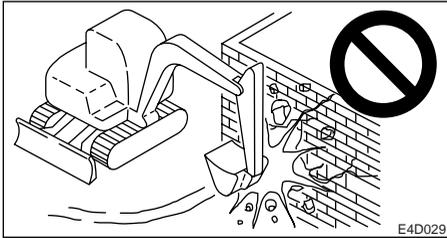


Prohibited Operations

WARNING

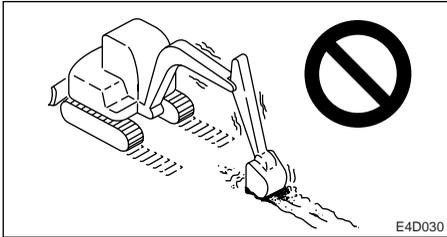
- Do not operate on base rock (hard or soft).
- Do not slew (swing) while traveling. If you must operate the hoe attachment while traveling, operate at speeds slow enough so you have complete control at all times.

Do not perform breaking or leveling operations using slew force



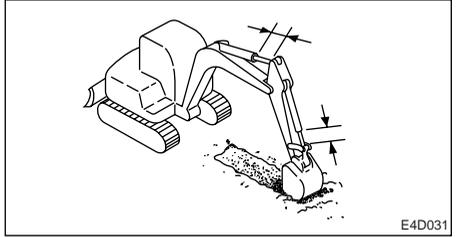
Do not break down walls or level ground using slew force. Also, do not dig the bucket teeth into the ground during slewing. Doing so will damage the hoe attachment.

Do not Dig while Traveling

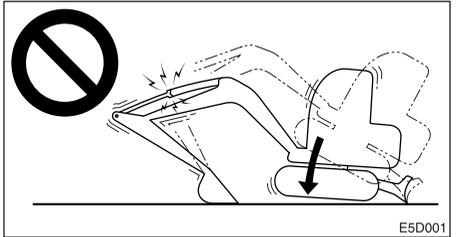


Do not dig the bucket into the ground and use the traveling force to dig.

Be Gentle on the Hydraulic Cylinders

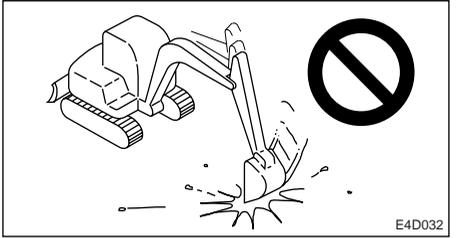


Do not extend the hydraulic cylinders to the stroke ends. Operate them with leeway.



Do not support the machine body with the hoe attachment as it is lowering with the arm cylinder fully extended. Doing so concentrates the load on the arm cylinder and could damage the arm cylinder.

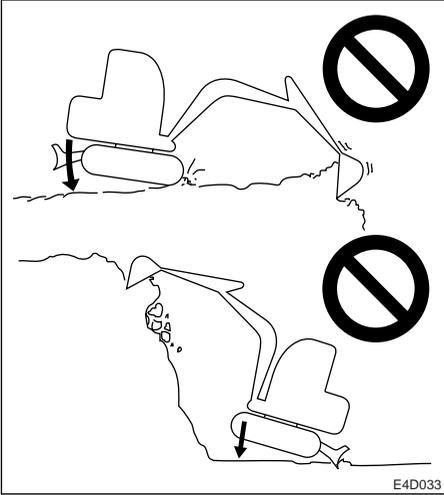
Do not Drive Piles with the Bucket or Dig with it Using Shock Force



Doing so will shorten the service life of the hoe attachment. Use hydraulic force to dig.

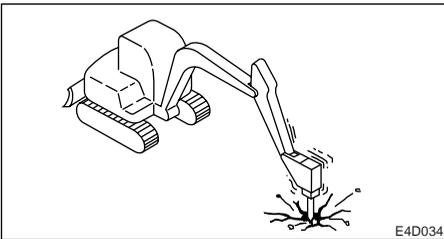


Do not Perform Operations Using the Machine's Dropping Force



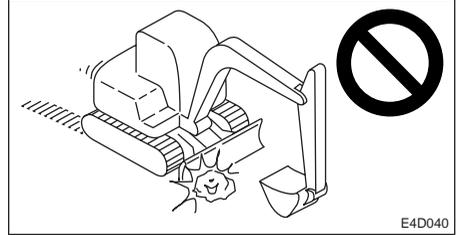
Putting excessive strain on the machine will shorten its service life. Use the hydraulic force of the cylinders and always dig with shallow, long strokes.

Digging Base Rock



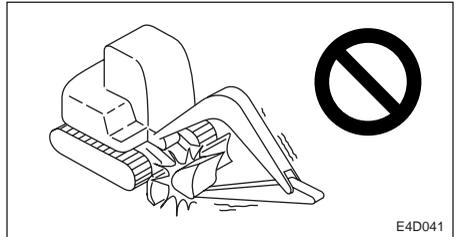
For hard base rock, break the rock up into small pieces with a breaker, etc., before digging. This prevents damage to the machine and is thus more economical in the end.

Caution on Exposing the Dozer Blade to Shocks



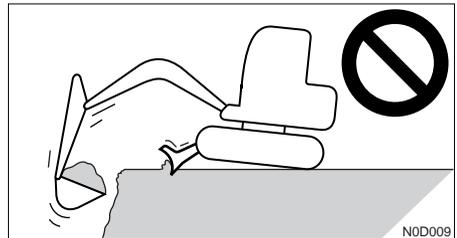
Hitting the dozer blade against rocks, etc., could damage the dozer blade or the blade cylinder.

Caution on Folding the Hoe Attachment



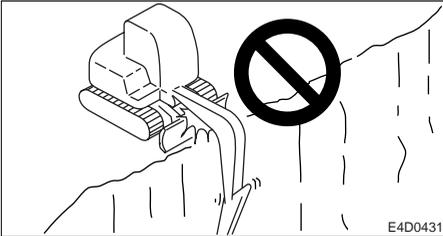
Be careful not to hit the bucket or dozer blade when folding the hoe attachment.

Do not use the Dozer Blade as an Outrigger





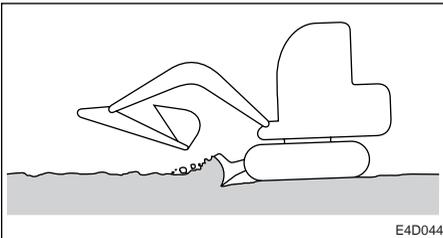
Pay Attention to the Dozer Blade when Digging



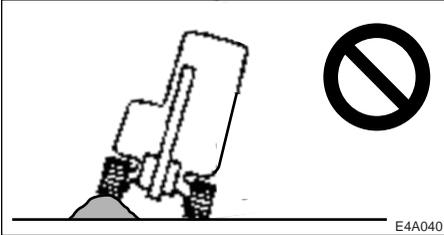
When digging deeply with the dozer blade positioned at the front, be careful that the boom cylinder and bucket do not hit the dozer blade.

Operate with the dozer blade at the rear whenever possible.

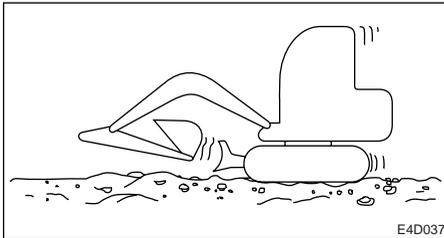
Caution on Digging Down with the Dozer Blade



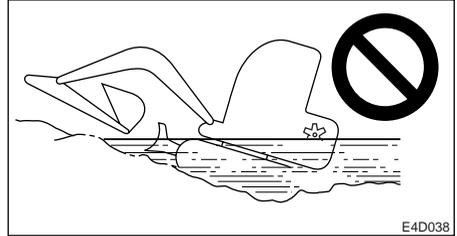
This dozer blade is designed for simple earth pushing. Do not dig down deeply with the dozer blade. Doing so could damage the dozer blade and lower body.

**Cautions on Operating****Cautions on Traveling**

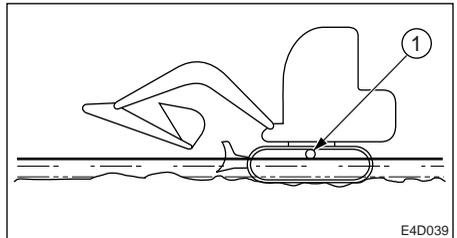
Traveling over obstacles (rocks, stumps, etc.) may subject the body to strong shocks and result in damage. Avoid traveling over obstacles whenever possible. If you must do so, keep the hoe attachment near the ground, travel at low speed, and go over the obstacle at the center of the crawler.

Cautions on Traveling in 2nd (High) Speed

On uneven ground, travel at low speed and avoid accelerating, stopping or changing directions abruptly. Also, when traveling in 2nd speed, do so with the dozer blade at the front.

Cautions on Use in Water

If you leave water at a sharp angle, the rear of the machine may be submerged, exposing the radiator fan to water and damaging them. Do not let the rear of the machine get submerged.



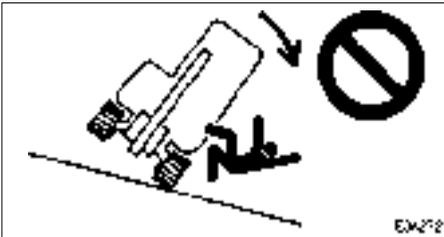
- Allowable water depth

In water, only use the machine up to a depth at which the water comes up to the middle of the carrier roller (1).

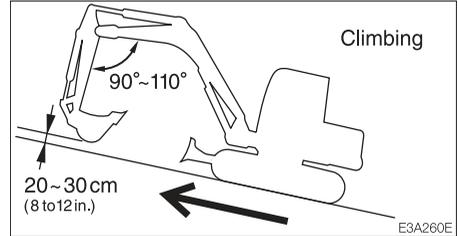
- When greasing places used under water for long periods of time, apply enough grease so that the old grease is expelled.
- Never submerge the slew bearing or main body in water or sand. If the slew bearing or main body should get submerged, contact a Takeuchi sales or service outlet for inspection.

**Cautions on Traveling on Slopes****⚠ WARNING**

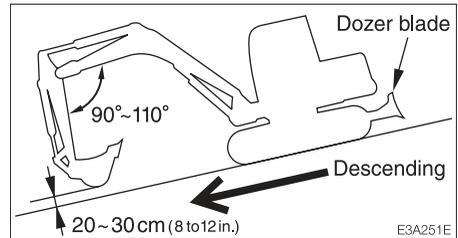
- Never exceed the machine's stability capabilities (maximum gradeability – 30°, lateral tipping angle – 15°). Also note that when actual working area conditions are poor the machine's stability capabilities may be lower.
- When traveling on slopes or grades, lower the bucket to a height of 20 to 30 cm (8 to 12 in.) off the ground. In emergencies, lower the bucket to the ground and stop the machine.
- When traveling on slopes or grades, move slowly in first gear (low speed).
- Do not travel down slopes in reverse.



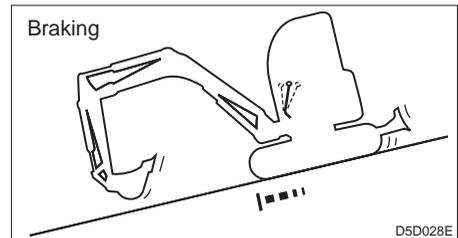
- Do not change directions or cross slopes sideways. First return to a flat surface then redirect the machine.
- On grass, dead leaves, wet metal or frozen surfaces, the machine may slide sideways even on very gentle slopes. Make sure the machine never faces sideways with respect to the slope.

**Traveling Posture
Traveling up slopes**

When traveling up slopes at an angle of 15° or greater, travel in the posture shown in the diagram above.

Traveling down slopes

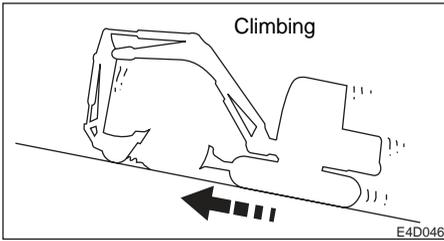
When traveling down slopes at an angle of 15° or greater, lower the engine speed and travel in the posture shown in the diagram above.

Braking when traveling down slopes

When traveling down slopes, the brakes are applied automatically when the travel levers are returned to the neutral position.

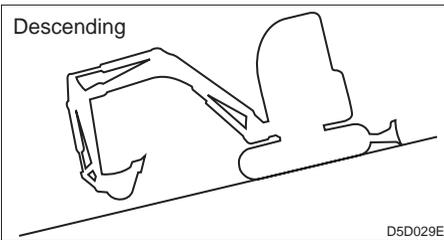


If the crawlers slip



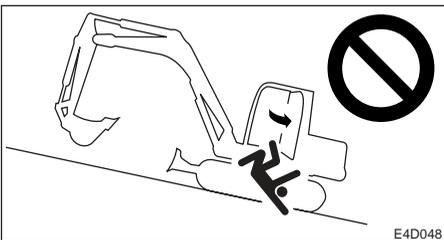
If the crawlers slip while traveling up a slope, use the pulling force of the arm to climb the slope.

If the engine stops



If the engine stops when traveling down a slope, set the travel levers to the neutral position, stop the machine, then start the engine.

Do not open the door while traveling on slopes



Opening the door while traveling on slopes is dangerous, as the force required to open and close the door changes abruptly. Always keep the door closed when traveling on slopes.



Getting Out of Mud

If the machine gets stuck in mud, use the procedure below to get it out.

If one crawler is stuck



1. Slew the bucket to the side which is stuck.
2. Set the arm and boom to an angle of 90 to 110°.
3. Press the bottom of the bucket (not the teeth) against the ground.
4. Place a plank, etc., under the lifted crawler.
5. Lift the bucket and slowly move out of the mud.

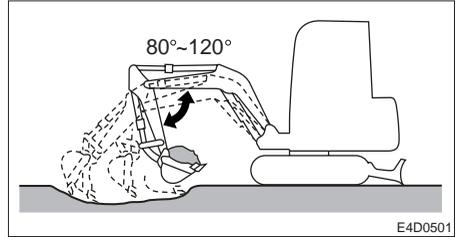
If both crawlers are stuck

1. Perform steps 1 to 4 above for both crawlers.
2. Dig the bucket into the ground in front of the machine.
3. Pull with the arm and travel forward simultaneously to slowly move out of the mud.



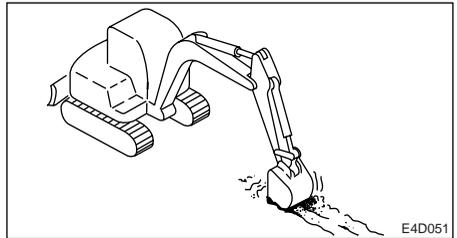
Operations Possible with this Machine

Excavating



1. Set the dozer blade on the side opposite the side you want to dig on.
2. Use the arm and bucket and dig with shallow, long strokes. The digging force is strongest when the boom and arm angle is 80 to 120°. Use this angle for effective digging.

Digging Ditches

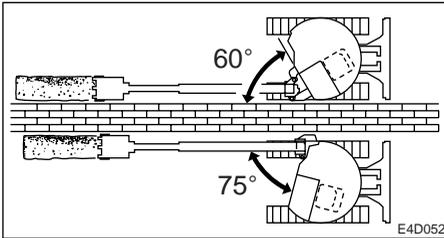


Mount a bucket suited for digging ditches and set the crawlers parallel to the ditch to be dug for greater efficiency.

When digging wide ditches, dig the sides first, the center later.



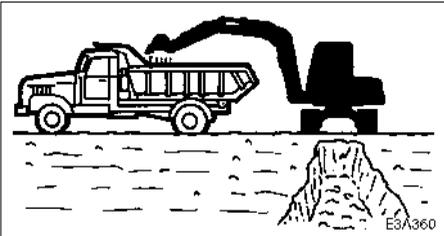
Digging Side Ditches



Use the boom swing function to dig side ditches as shown in the diagram.

3. Once the mound is low, remove the dirt from the top. If the load on the body is too heavy, adjust by raising or lowering the dozer blade.

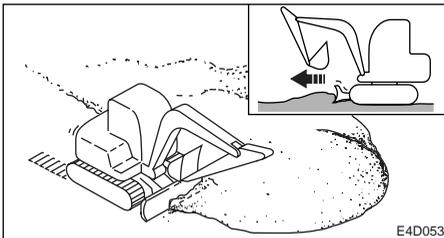
Loading



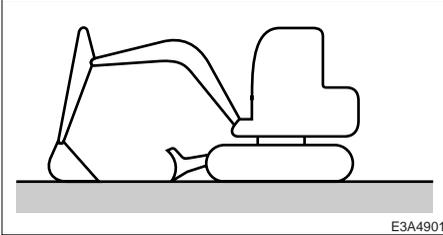
When loading dirt in a truck, starting from the back of the truck's bed makes for easier loading and increases the amount of dirt that can be loaded.

Also, use a small slewing angle for greater efficiency.

Leveling



1. Bring the hoe attachment close to the body.
2. Gradually remove the dirt from the side of the mound.

**Parking****⚠ WARNING**

- **Park the machine on firm, level ground and apply the parking device.**
- **Before leaving the operator's seat, raise the safety lock lever to engage the lock and stop the engine. If any controls should be touched accidentally when the safety lock lever is lowered, the machine will move suddenly, and cause serious injury or death.**

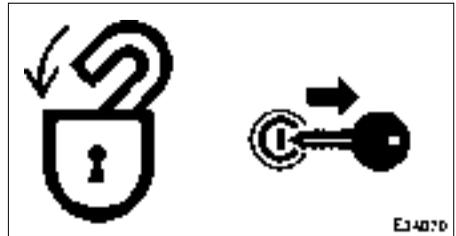
1. Set the left and right travel levers to the neutral position.
2. Return the throttle lever or controller and idle the engine at low speed.
3. Lower the bucket and dozer blade to the ground.
4. Raise the safety lock lever to engage the lock.
5. Stop the engine and remove the key.
Refer to page 71 or 73 "Stopping the Engine".

Inspection and Checks After Stopping the Engine

1. Check for oil and water leakage and inspect the working equipment, covers and lower body. If any irregularities are found, repair.
2. Fill the fuel tank.
Refer to page 122 "Inspecting the Fuel Level".
3. Remove any paper scraps or dirt from the engine room.
4. Remove any mud from the lower body.

Locking

Be sure to lock the following places :



- Cab door
- Fuel filler cap
- Rear cover
- Tool box
- Manual storage compartment (Canopy)



Preparing for Cold Weather

In cold weather, it may be difficult to start the engine and the coolant may freeze. Make the preparations described below.

Changing the Fuel and Lubricant

Change the fuel, hydraulic oil and engine oil to types suited for cold conditions.

Refer to page 110 "Lubricant and Fuel Chart".

Engine Coolant



The coolant is combustible. Keep flames away.

Use long-life coolant (antifreeze) and tap water for the engine coolant.

Supplement: New machines are delivered with JIS Type 2 long-life coolant (antifreeze) at a concentration of 50%.

Refer to page 110 "Lubricant and Fuel Chart".

Battery

As the temperature drops, the battery performance decreases.

Inspect the battery. If the charge is low, contact a Takeuchi sales or service outlet to have the battery charged.

Refer to page 131 "Inspecting the Battery Fluid Level and Replenishing".

Cautions after Completing Operations

Heed the following in order to prevent dirt, water, or other objects stuck on the machine as well as the lower body from freezing :

- Remove any dirt or water from the body.
In particular, water droplets on the hydraulic cylinder rod surfaces could freeze, and if dirt enters into the seals along with this, the seals could break.
- Park the machine on a dry, hard surface. If no appropriate place can be found, put boards down and park the machine on them.
- Drain any water from the fuel tank to prevent freezing.
Refer to page 132 "Draining the Fuel Tank".
- To prevent decreased battery performance, place a cover over the battery or remove it from the machine and store it in a warm place.
Also add battery fluid before starting the next morning. If battery fluid is added after completing operations, the distilled water may not mix, resulting in freezing.

After Cold Weather is Over

Perform the following after cold weather is over :

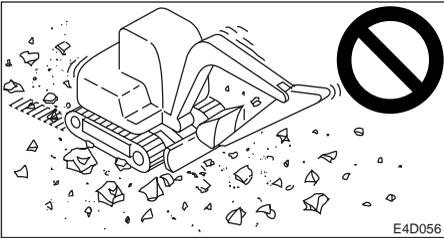
- Change the fuel and the oils for the different devices with those specified on the Lubricant and Fuel Chart.
Refer to page 110 "Lubricant and Fuel Chart".
- When using one-season type antifreeze coolant, completely drain the antifreeze coolant, carefully clean the inside of the coolant system, then add tap water.
Refer to page 138 "Cleaning the Engine Cooling System".



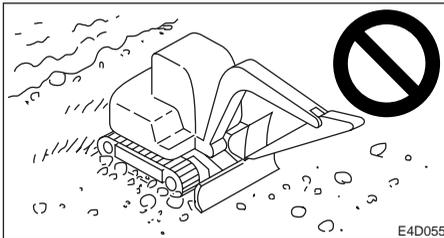
Rubber crawlers have an inherent weakness due to their use of rubber. Be sure to heed the prohibitions and cautions below so as to prevent damage to the crawlers and crawler slippage.

Prohibited Actions

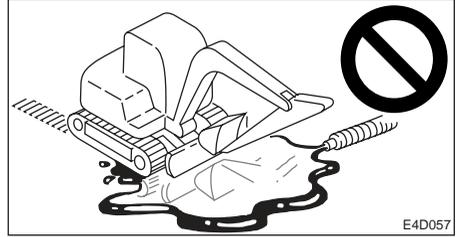
Do not travel or operate the machine in the following places :



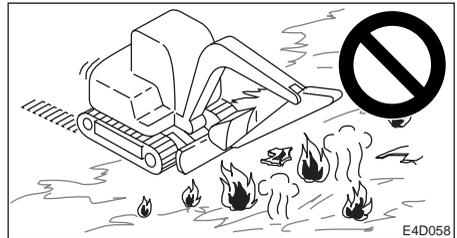
- Traveling or slewing on broken stone, jagged base rock, iron rods, iron scraps or the edges of iron sheets may damage or cut the crawlers.



- Traveling on riverbeds or places with many soft rocks may cause the crawlers to slip off or be damaged due to rocks getting stuck in them.
- Do not use on the seashore. The salt may corrode the metal cores.



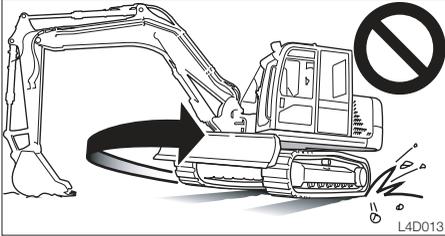
- Do not let fuel, oil, salt or chemical solvents get on the crawlers. These substances may corrode the couplings of the crawlers' metal cores, resulting in rust or peeling. If these substances should get on the crawlers, wipe them off immediately using water.



- Traveling on roads directly after asphaltting or on hot surfaces such as over fires or on iron sheets under strong sunlight may result in irregular wear or damage of the lugs.
- Do not move earth in places where the rubber crawlers may slip. Doing so may speed up lug wear.

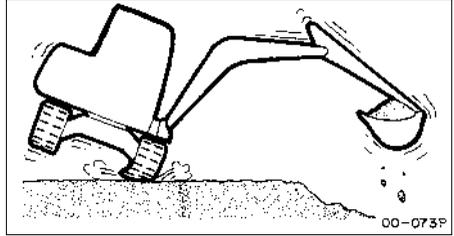
**Cautions**

Heed the following cautions when operating the machine :



- Do not turn the undercarriage with the front of the machine body lifted using the hoe attachment and the upperstructure left in this posture. Doing so will twist the crawler with the load concentrated on a single point on the crawler belt, rapidly leading to damage.
- Avoid changing course abruptly and spinning on concrete surfaces whenever possible. Doing so may wear or damage the rubber crawlers.
- Avoid drops that may expose the rubber crawlers to strong shocks.
- Salt, potassium chloride, ammonium sulfate, potassium sulfate, and triple superphosphate of lime can damage the crawler belts. If any of these substances should get on the crawler belts, wash them off thoroughly with water.
- Do not let the sides of the rubber crawlers rub against concrete or walls.
- Do not damage the rubber crawlers by hitting the bucket against them.
- Be especially careful in the winter on snowy or frozen surfaces as the crawler belts tend to slip.
- Use rubber crawler belts at temperatures between -25°C to $+55^{\circ}\text{C}$ (-14°F to 131°F).

- When storing the rubber crawlers for long periods of time (3 months or more), do so indoors in a place not exposed to direct sunlight or rain.

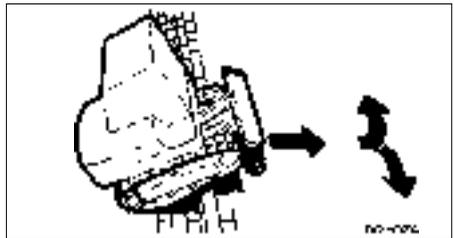


- Rubber crawler belts are not as stable as steel crawler belts since the entire lug is rubber. Be very careful when slewing and swinging sideways.

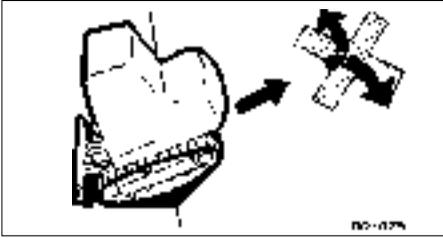
Preventing the Rubber Crawlers from Slipping Off

Heed the following in order to prevent the rubber crawlers from slipping off:

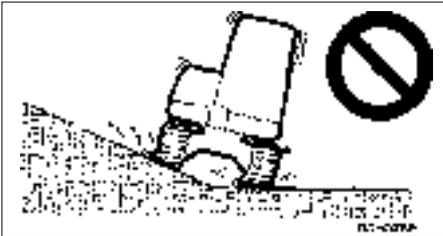
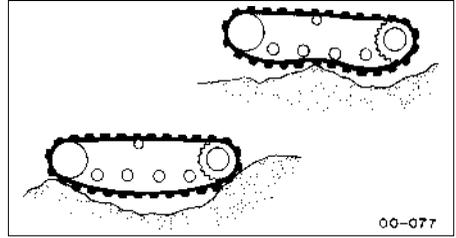
- Always keep the crawlers at the proper tension.



- When traveling up large cobblestone or rock steps (20 cm (8 in.) or greater), climb up the step at a direct angle and do not change course on top of the step.



- When climbing in reverse, do not change course at the point where the slope starts.



- Avoid traveling with one crawler on a slope or projecting object and the other crawler on a flat surface (with the machine at a tilt of 10° or greater). Travel with both crawlers on flat surfaces.

- Do not change directions when the crawler belts are slack as shown in the diagram.



TRANSPORT

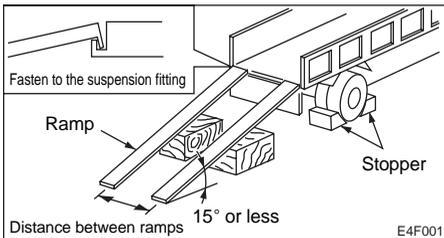
Loading and Unloading	102
Hoisting the Machine < TB153FR >	103
Hoisting the Machine < TB180FR >	104
Securing the Machine	105
Cautions on Transporting	105

**⚠ WARNING**

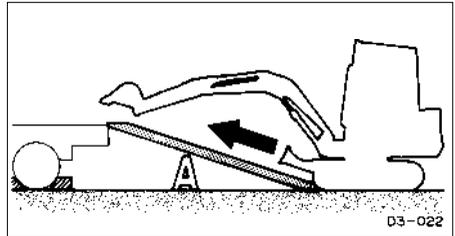
The machine may roll or tip over or fall while loading or unloading it. Take the following precautions :

- Select a firm, level surface and keep sufficient distance from road shoulders.
- Use loading ramps of adequate strength and size. Maintain the slope of loading ramps within 15 degrees.
- Keep the truck bed and loading ramps clean of oil, clay, ice, snow, and other materials which can become slippery. Clean the tracks.
- Never change course on the ramp.
- Do not slew (swing) on ramps. The machine may tip over.
- When slewing (swinging) on the truck bed, do so slowly as the footing can be unstable.

When loading or unloading the machine, be sure to use ramps and following the procedure below.



1. Apply the truck's parking brake and place stoppers against its tires.
2. Fasten the ramps securely to the truck bed so that they will not come off. Set the ramps to an angle of 15° or less.
3. Line up the center of the truck bed with the center of the machine and the center of the ramps with the center of the crawlers.
4. Make sure the dozer blade does not hit the ramps.
5. Lower the hoe attachment as much as possible, making sure it will not hit the truck.
6. Lower the engine speed.



7. Determine the direction on the ramps, then slowly travel up or down the ramps in 1st speed (low speed), following the signals of a flagman.
8. Load the machine properly at the prescribed position on the bed. Refer to page 105 "Transporting Posture".

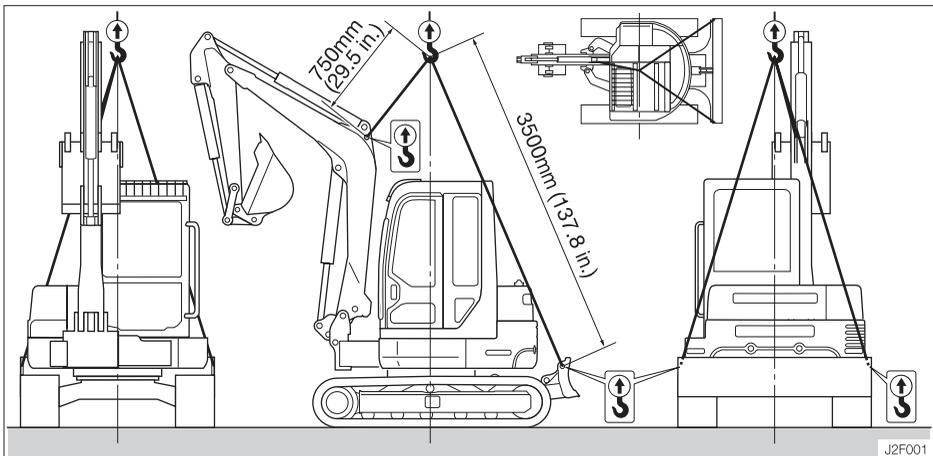
**⚠ WARNING**

- Know and use correct crane signals.
- Inspect the hoisting equipment daily for damaged or missing parts.
- When hoisting, use a wire rope with sufficient strength with respect to the machine's weight.
- Do not hoist with the machine in a posture other than the one described in the procedure below. Doing so is dangerous as it may result in the machine losing its balance.
- Do not hoist the machine with an operator (s) on it.
- When hoisting, hoist slowly so that the machine does not tip.
- Keep all other persons out of the area when hoisting. Do not move the machine over the heads of the persons.

IMPORTANT: This hoisting method applies to machines with standard specifications.

The center of gravity differs according to the attachments and options that are mounted.

Consult a Takeuchi sales or service outlet.

Hoisting posture**Hoisting**

1. Slew the upper structure so that the dozer blade is positioned to the rear of the body (so that the crawler frame and upper structure are parallel).
2. Raise the dozer blade fully.
3. Fully extend the bucket and arm cylinders and fully raise the boom.
4. If the boom is swung to either the left or right side, set it so that it is straight ahead.
5. Raise the safety lock lever to engage the lock.
6. Stop the engine and remove the starter key and get off the machine.
7. Install the sling as shown on the diagram below.
Suspend in such a way that the sling and Lifting tool do not touch the body.
8. Hoist slowly until the machine just leaves the ground.
9. Stop hoisting until the machine is stable and hoist slowly.