OPERATOR'S MANUAL

Original instructions



Serial No. 195000005~

Book No. AAD0EN015

OENTB395W_I-XP

HYDRAULIC EXCAVATOR

TAKEUCHI

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

05692-00087

SAFETY ALERT SYMBOL



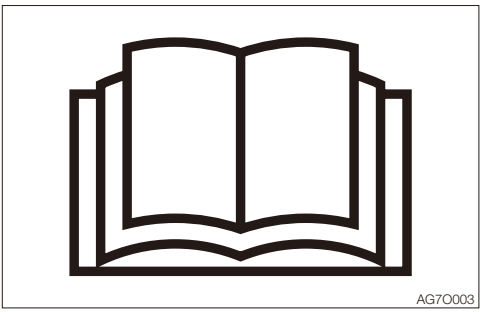
This symbol represents the safety alert. The message that follows the symbol contains important information about safety.
Read and understand the message to avoid personal injury or death.

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 contents of this manual.

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.

⚠ WARNING



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 hand this manual to the next owner.

Takeuchi supplies machines complying with 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.

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

DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor moderate injury.

IMPORTANT: The word IMPORTANT is used to alert operators and maintenance personnel about situations which could result in 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.

INTRODUCTION

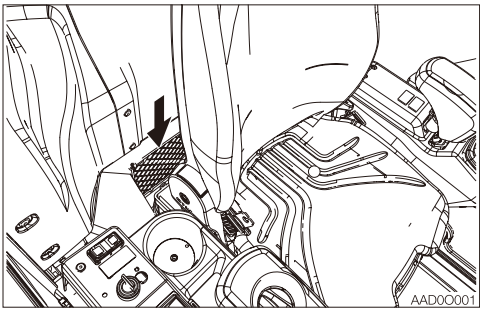
FOREWORD

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.

- Some details in this manual may differ from those provided in the machine you are using.
- Please note that the information and specifications in this manual are subject to change without prior notice.

MANUAL STORAGE COMPARTMENT

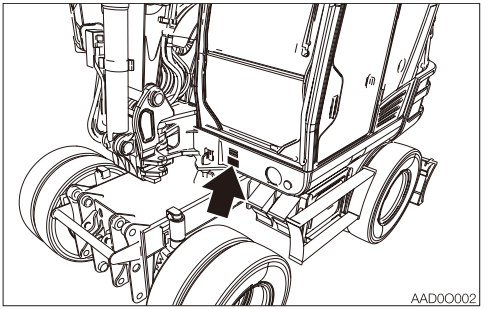
A compartment for storing this manual is provided at the position shown on the diagram below.



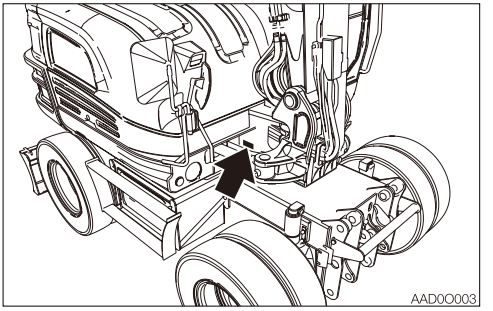
SERIAL NUMBERS

IMPORTANT: Do not remove the machine name plate with the serial number. Check the serial numbers of the machine and engine and write them down in the spaces below.

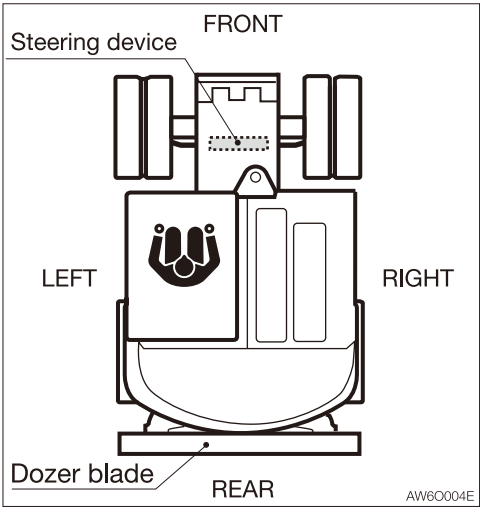
Machine number:



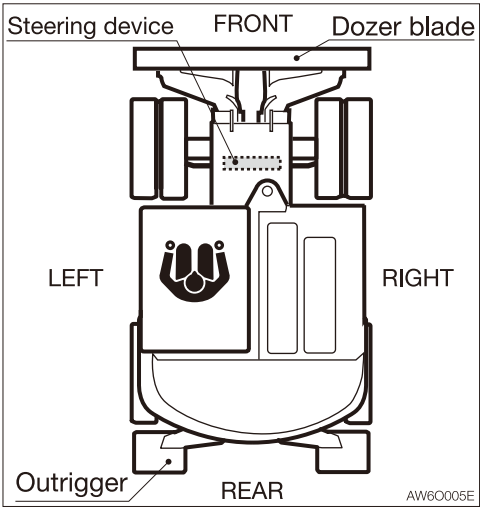
Engine number:



FRONT, REAR, LEFT AND RIGHT



Equipped with outrigger



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

BREAK-IN PERIOD

When the machine is new, operate the machine for the first 100 hours (as indicated on the hour meter) by following the instructions below.
Using a new machine without a break-in period will lead to quicker deterioration of machine performance and may shorten the machine's service life.

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

NOTES ON READING THIS MANUAL

Please note that the descriptions and diagrams included in this manual may not be applicable to your machine.
The numbers used in the illustration are with circles around them. The same numbers appear between the parentheses in the text. (Example: ① → (1))

Symbols used in this manual
The symbols used in this manual have the following meanings.
⃠, ✕..... Prohibition
..... Lock
..... Unlock

ABBREVIATION USED IN THIS MANUAL

The abbreviations used in this manual are described below.

DPF ..... Diesel Particulate Filter
PM ..... Particulate Matter
SCR ..... Selective Catalytic Reduction
DEF ..... Diesel Exhaust Fluid
AdBlue® . Registered trademark of the Verband der Automobilindustrie e.V. in Germany.
ECU ..... Engine Control Unit
DQC ..... DEUTZ Quality Class

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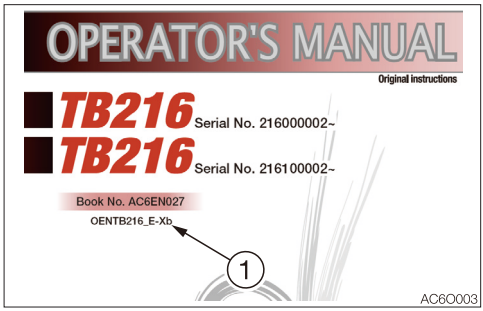
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REVISION HISTORY

When checking the revision history, refer to the book code (1) on the cover page.

Example:
O EN TB216_E-X b

- b: Revision history (A to Z, a to z)
- TB216_E-X: Model code
- EN: Language
- O: Type
  - O: Operator's Manual
  - W: Workshop Manual



Revision history	Date	Description	Importance
L	04/2025	Changed:	
		Lifting Capacities 7-16	High
M	07/2025	Changed:	
		Safety signs (decals) 1-45	High
		Right side cover.....2-6	High
		Lifting Capacities 7-16	High
N	11/2025	Changed:	
		Names of components 2-2	High
		Home screen.....2-20	High
		Auto digging brake switch (if equipped).....2-74	High
		Service data 5-4	High
		Vehicle error code list.....6-20	High
O	11/2025	Changed:	
		Multi-information display 2-20	High
		If a warning lamp flashes 6-16	High
P	01/2026	Changed:	
		Names of components 2-2	High
		Multi-information display 2-20	High
		Boom suspension switch.....2-71	High
		List of consumables.....5-11	High
		Replacing the air breather filter 5-68	High
		Inspecting the accumulator.....5-72	High

SAFETY



GENERAL PRECAUTIONS

It is your responsibility to observe all pertinent laws and regulations and to follow the manufacture'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.
Most accidents can be prevented by identifying the potentially hazardous situations beforehand.
Read and understand all safety messages which describe how to prevent accidents.
Do not operate the machine until you are sure that you have gained a proper understanding of its operation, inspection and maintenance.

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.

When a problem is found on the machine

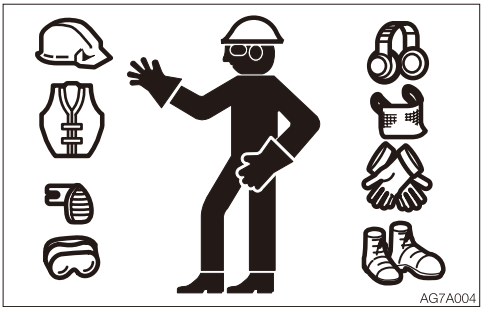
If any problem (noise, vibration, smell, disorder of instrument, smoke, oil leak, wrong indication of alarm or unusual indication in the multi-information display, etc.) is detected during the operation or inspection and maintenance of the machine, immediately inform your sales or service dealer and take proper actions. Do not operate the machine until the trouble is cleared.

Operating temperature range

To maintain the performance of machine and to prevent it from early wear, observe the following operating conditions.

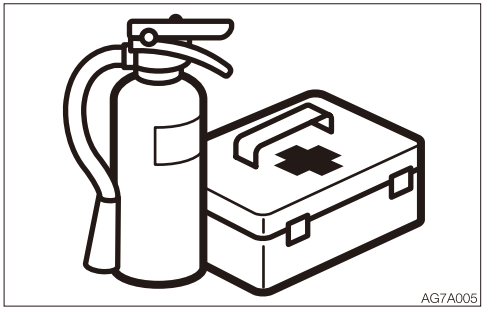
- Do not operate the machine if the ambient temperature is higher than +45°C (+113°F) or lower than –15°C (+5°F).
  - If operated at an ambient temperature of higher than +45°C (+113°F), the engine may overheat and cause the engine oil to degrade. Also, the hydraulic oil may become very hot, causing damage to the hydraulic equipment.
  - If operated at an ambient temperature of lower than –15°C (+5°F), the parts made of rubber such as gaskets may get hardened to cause an early wear or damage to the machine.
  - If the machine is to be used outside the ambient temperature range described above, consult your sales or a service dealer.

Wear appropriate clothing and 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 easily 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.

Install a fire extinguisher and first aid kit



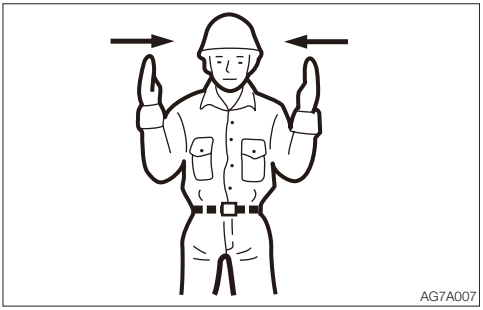
Be prepared for fire and accidents

- Install an extinguisher and a first aid kit, and learn how to use them.
- Lean how to fight a fire and how to deal with accidents.
- Know how to contact emergency assistance and make a list of emergency contacts.

Never remove safety equipment

- Make sure all protective guards, covers and doors are in place and secured. Repair or replace damaged parts 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 servicing. Keep all safety equipment in good operating condition.

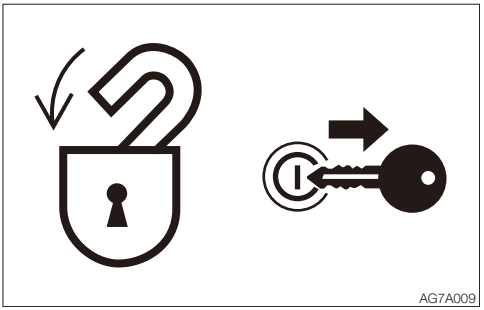
Use a signal person and a flag person



Learn how to 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 must respond to signals only from the appointed signal person, but must obey a stop signal at any time from anyone.
- The signal person must stand in a clearly visible location when giving signals.

Cautions when standing up from or leaving the operator's seat



- Before standing up from the operator's seat to open/close the window or remove/install the lower window, lower the working equipment to the ground, raise the safety lock lever to engage the lock and stop the engine. If any controls should be accidentally touched when the safety lock lever is lowered (unlocked), the machine will suddenly move and cause serious injury or death.
- Be careful not to touch the operating levers when raising or lowering the safety lock lever.
- Before leaving the operator's seat, lower the working equipment to the ground, set the locking devices securely to the lock position and stop the engine. Also, be sure to remove the key, lock the cab, and covers, take the key with you and store it in a specified place.

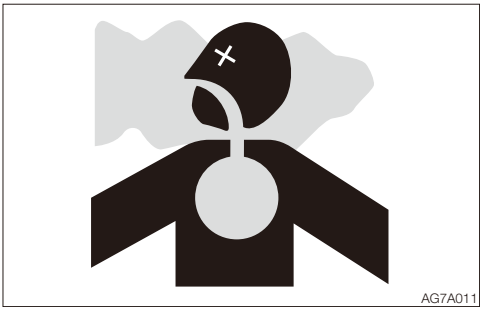
Avoid fire and explosion hazards



Keep flames away from fuel, 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 handling fuel or working on the fuel system.
- Do not leave the location while refilling with fuel or oil.
- Never remove the fuel cap or add fuel when the engine is running or still hot. Also, do not spill the fuel on the hot surface of the machine or the component of the electric system.
- Clean up spilled fuel or oil immediately.
- Check for fuel, oil leak. Stop all leaks and clean the machine before operating.
- When operating with grinder or welding, move inflammables to a safe place.
- 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 (foam type fire extinguisher) according to procedures identified on manufacturer's containers. Work in a well-ventilated area.
- Never use fuel for cleaning purposes. Always use a nonflammable solvent.
- When handling the fuel, washing oil or paint, open the door and windows to ventilate thoroughly.
- Store all flammable fluids and materials in a safe and well-ventilated place.
- The short circuit of the electric system may cause the fire. Check for any loosened connections or damage to the wires every day. Retighten the loosened connector and wire clamp. Fix or change the damaged wire.
- Fire from the pipes:
  Make sure that the clamps, guards and cushions of the hoses and tubes are securely fixed. If not, hoses or tubes may be damaged due to vibration or contact with other parts during operation. This can cause the high-pressure oil to spurt out, resulting in the fire or injury.
- Do not perform the standstill regeneration if the machine is surrounded by flammable items such as plants, trees, dry grass, wastepaper, oil and waste tires. There is a risk of fire due to the high-temperature exhaust gas emitted from the muffler.

Exhaust fumes from the engine are poisonous



- Do not operate the engine in an enclosed area without adequate ventilation.
- If natural ventilation is not possible, install ventilators, fans, exhaust extension pipes or other venting devices.
- Do not perform the DPF regeneration in poorly-ventilated indoor spaces, as smoke could be generated during the DPF regeneration or carbon monoxide poisoning could result.
- Ammonia not held by the SCR catalyst could be discharged into the exhaust gas. Be careful of the potential ammonia odor when the system is excessively operated.

Handling asbestos dust

Inhaling asbestos dust can cause lung cancer. When handling the materials which may contain asbestos, take the following precautions:

- Never use compressed air for cleaning.
- Avoid brushing or grinding parts containing asbestos.
- For clean up, use a vacuum equipped with a high efficiency particulate air filter (HEPA).
- Wear the stipulated respirator if there is no other way to control the dust. When working indoors, install a ventilation system with a macromolecular filter.
- Do not allow unauthorized personnel in the work area while working.
- Follow the rules and environmental standard applicable to the work area.

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 tires, between the machine body and working equipment, or between a cylinder and a moving part on the working equipment. The sizes of these gaps change when the machine moves, and a person can suffer severe injury or death.

Using optional products

- Consult with Takeuchi before installing optional attachments. Depending on the type of attachments or the combination of them, the attachment may come into contact with the operator's compartment or the other parts of the machine. Make sure that the optional attachment installed is not contacted with other parts before use.
- Do not use attachments that have not been approved by Takeuchi. 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 by a non-approved attachment.

Never modify the machine

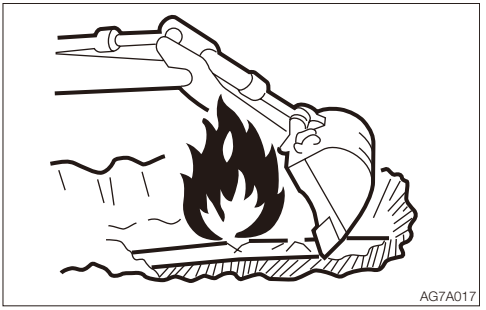
Unauthorized modifications to this machine can cause injury or death. Never make unauthorized modifications to any part of this machine.
If you modify or alter the configuration of the machine in a way which results in a restriction of the operator's field of vision, a new risk assessment will need to be performed. If this becomes necessary, contact your Takeuchi service or sales dealer.

PRECAUTIONS WHEN PREPARING

Know the work area

Before starting operation, know the working area condition to ensure safe operation.

- Inspect the topography and ground condition of the working area, or the structure of the building when working indoors, and take the safety precautions as necessary.
- Be sure to avoid all hazards and obstructions such as ditches, underground lines, trees, cliffs, overhead electrical wires, or places where there is a danger of falling rocks or slides.


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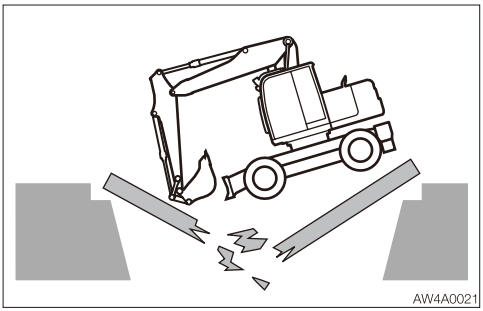
- Check with the administrator for the locations of buried gas pipes, water pipes and power cables. If necessary, determine what specific precautions must be taken to insure safety by consulting with the administrator.
- When working on roads, be sure to consider the safety of pedestrians and vehicles.
  - · Use a flag person and/or a signal.
  - · Fence off the working area and keep off 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 water flow speed beforehand.
  Refer to “Precautions for operation” for further instructions.


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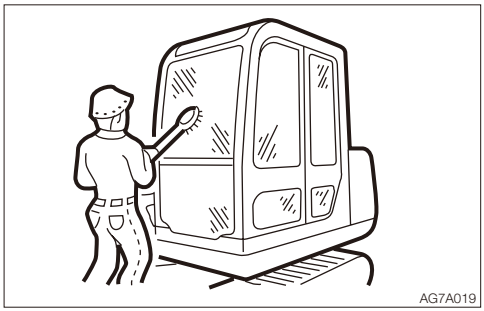
- Do not perform the standstill regeneration if the machine is surrounded by flammable items such as plants, trees, dry grass, wastepaper, oil and waste tires. There is a risk of fire due to the high-temperature exhaust gas emitted from the muffler.
- The machine may automatically perform the regeneration while the engine is left running. Make sure that there are no flammable items around the machine and the exhaust line, and also that the engine hood is closed to prevent fire. Be careful not to burn yourself on the high-temperature exhaust gas.
- Do not perform the DPF regeneration in poorly-ventilated indoor spaces, as smoke could be generated during the DPF regeneration or carbon monoxide poisoning could result.

Check the strength of the bridge

When traveling over a bridge or a structure, check the permissible load. If the strength is insufficient, reinforce the bridge or the structure.

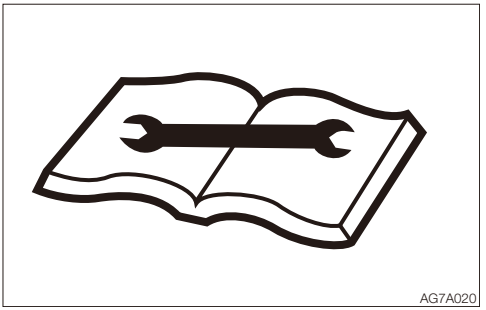

AW4A0021

Always keep the machine clean


AG7A019

- Wipe off any oil, grease, mud, snow or ice, to prevent accidents due to slipping.
- Remove all loose objects and unnecessary devices from the machine.
- Remove any dirt, oil or grease from the engine area to prevent fires.
- Clean around the operator's seat and remove any unnecessary object from the machine.

Perform inspection and maintenance every day



Failure to identify or repair the irregularities or damage on machine can lead to accidents.

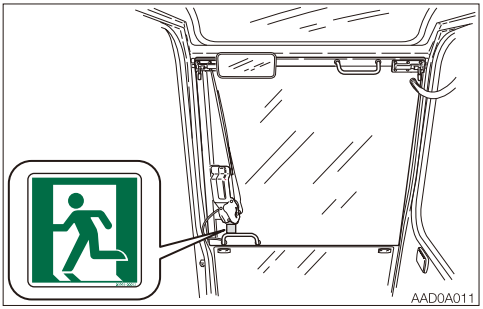
- Before operating, perform the specified inspection and make prompt repairs where necessary.
- If a failure occurs and the operation becomes impossible or the engine fails, immediately stop the machine by following the shutdown procedure, and keep machine securely parked until the malfunction is corrected.

Cautions in the operator's compartment

- Remove mud and grease from shoe soles before entering the operator's compartment. Pedaling the machine with the shoes with mud and grease will cause a slip accident.
- Do not leave the parts or tools around the operator's seat.
- Do not leave any plastic bottles in the operator's compartment or attach any suction cups on the window glass. The plastic bottle or suction cup act as a lens and can cause fire.
- Do not use the mobile phone during traveling or working.
- Do not bring combustibles or explosives into the operator's compartment.
- Do not leave the cigarette lighter in the operator's compartment. When the room temperature rises, the lighter may explore.

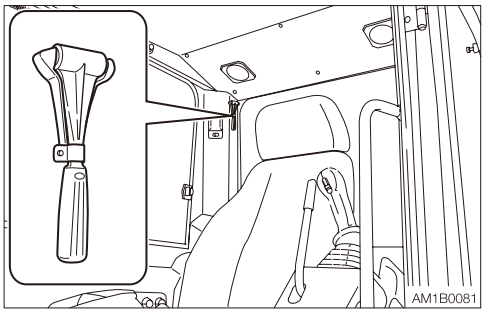
Emergency exit

Front window (excluding machines with a front guard)



If you should become trapped inside the cab, open the front window to get out.

Emergency hammer (optional)



An emergency hammer is installed to be used to escape from the cab in an emergency. When escaping, break the windows with the hammer.

- When breaking the window pane with a hammer, take great care not to injure yourself with the broken glass pieces.
- Remove the glass pieces from the window sill so as not to cut yourself when evacuating. Broken glass will fall from the window, so be careful of your footing and do not slip on the glass.

PRECAUTIONS WHEN STARTING

Support your weight in a three point secure stance when getting on/off the machine

- Do not jump on or down from the machine. Never attempt to get on or off the moving machine.
- When getting on or off the cab, first fully open the door to the locked position and check that it does not move (for machines with cab).



- Climb up/down the steps facing the machine and holding the handrail to support your weight in a three point secure stance (hand and feet).
- Never use the safety lock lever or control levers as hand holds.

Before starting the machine, ask any unauthorized personnel to leave the area

Do not start the engine until you are sure it is safe to start the machine by checking the following items.

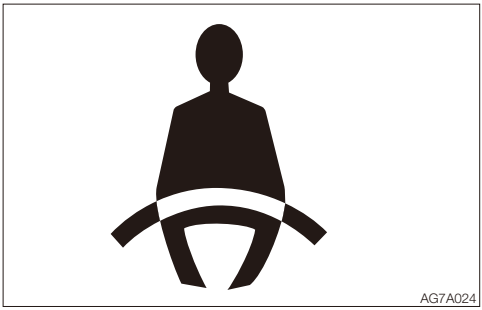
- Walk around the machine and warn the person who is servicing the machine or is walking near the machine. Do not start the machine until you are certain that no one is around the machine.



- Check if there is a “DO NOT OPERATE” alert sign or similar sign is on the cab door, controls or starter switch. If there is one, do not start the engine or touch any levers.
- Sound the horn to warn people around the machine.

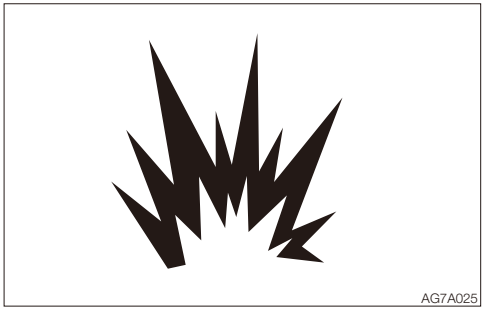
Sit in the operator's seat and start the engine

- Adjust the seat to securely latch it.


AG7A024

- Fasten the seat belt.
- Check if the parking brake is on and all control levers and pedals are in the neutral position.
- Check if the safety lock lever is in the lock position.
- Make sure that no one is near the machine.
- Start and operate the machine only from the operator's seat.
- Never attempt to start the engine by shorting across the starter terminals.

Starting with jumper cables


AG7A025

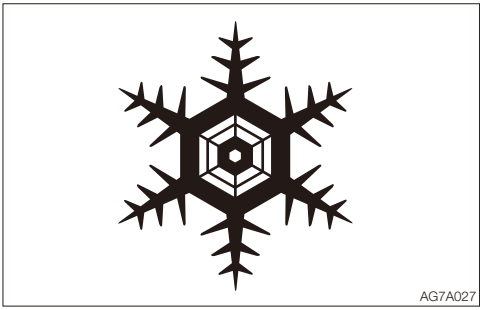
Use jumper cables only in the recommended manner. Improper use of jumper cables can result in battery explosion or unexpected machine motion.
Refer to "If the battery goes dead" for further instructions.

After starting the engine

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

- Warm up the engine and hydraulic oil.
- Check if all gauges and warning devices are properly working.
- Check for any noises.
- Test the engine speed control.
- Operate each control to ensure they are properly working.

In cold climates



- Be careful of slippery conditions on freezing ground, steps and hand holds.
- In severe cold climates, do not touch any metal parts of the machine with bare hands. The skin will freeze to the metal, resulting in severe injury.
- Do not use ether or starting fluid on this engine. The starting fluids can cause explosion and serious injury or death.
- Warm up the engine and hydraulic oil. If the levers are operated without warming, the machine will not react or move promptly or properly, resulting in accident.

PRECAUTIONS WHEN OPERATING

Ensure good visibility

Check the field of view before operating the machine.

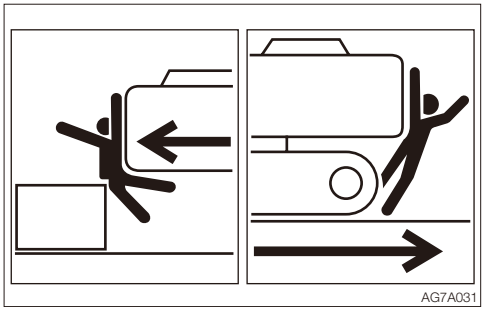
- When working in dark places, turn on the machine's working lights and headlights and additional lighting equipment installed, as necessary.
- When visibility is poor due to bad weather (fog, snow, rain or a cloud of dust), stop operating the machine and wait until visibility improves.
- Clean the windows, mirrors, lights and camera to ensure good visibility. Adjust the mirror and camera to the best positions so that the operator can see the rear view (blind spots) from the operator's seat.
- Unauthorized machine modifications or installation of unapproved attachments could impair the visibility. The operator's field of view must conform to ISO 5006.

Do not permit riders on the machine



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

Check if the work area is safe and secure before operation

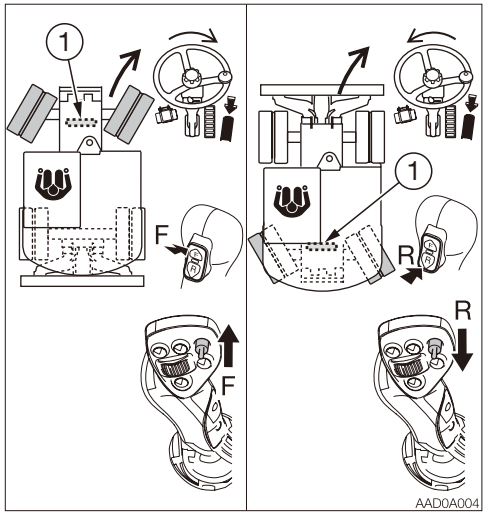


- Confirm the performance limits of the machine.
- Use a signal person at road shoulders, narrow places or where your vision is obstructed.
- Never allow anyone to enter the machine's slewing radius and path.
- Signal your intention to move by sounding the horn.
- There is a blind spot in the rear of the machine. Check that the area is safe and clear for yourself. When necessary, use the rear camera.

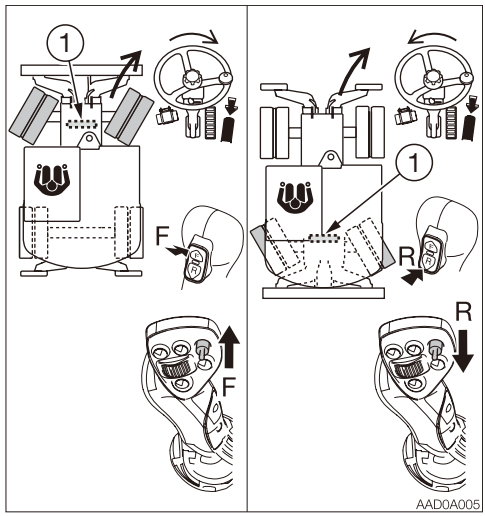
Safety precautions when performing the standstill regeneration

The machine may automatically perform the regeneration while the engine is left running. Make sure that there are no flammable items around the machine and the exhaust line, and also that the engine hood is closed to prevent fire. Be careful not to burn yourself on the high-temperature exhaust gas.

Check the position of the undercarriage (steering device) before start traveling

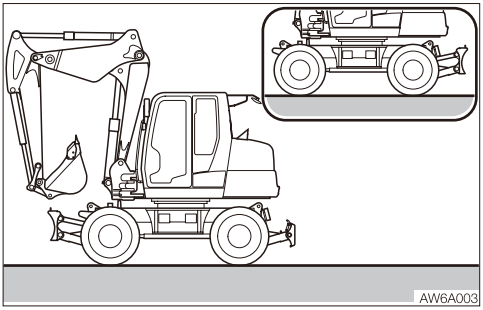


Equipped with outrigger

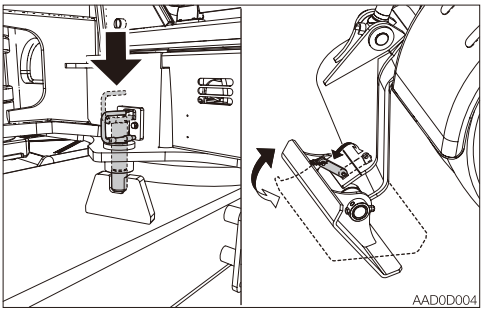


Before operating the travel pedal, make sure that the steering device (1) is to the front of the operator's seat. Remember that when the steering device (1) is to the rear of the operator's seat, the steering wheel must be operated in the reverse direction from when it is to the front.

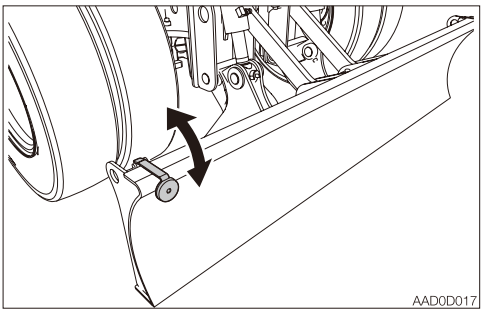
Travel safely



- Before traveling, set the machine to the “travel posture”.
  Refer to “Preparing for travel” for further details.
- When traveling on a road, be sure to lock the working equipment. If any of the controls is accidentally touched when it is unlocked, the machine may suddenly move and cause serious injury or death.
- Keep in mind that the steering wheel operation is not possible when the engine is stopped or if the steering pump becomes faulty.

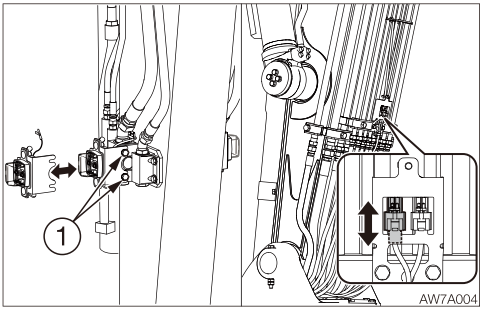


- When traveling on a public road, be sure to lock slewing/swinging with the slew/swing lock pin. For machines with outriggers, retract the outriggers and install the stoppers.

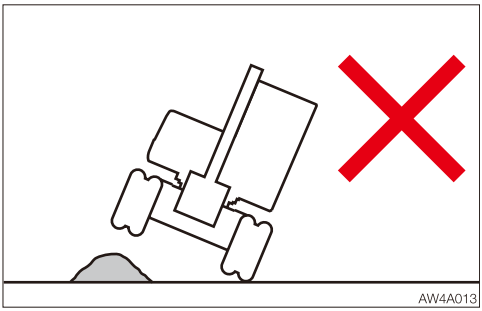


- Before traveling on a road, tilt the reflector. When operating at a job site, raise the reflector to prevent it from being damaged.
- When traveling on a public road while an attachment is installed, the machine weight must not exceed the maximum operating mass. Also, do apply loads more than the allowable limit on the front and rear axles.
  Maximum operating mass: 12000 kg
  Allowable limit on front axle: 6500 kg
  Allowable limit on rear axle: 7000 kg

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- When traveling during nighttime hours, be sure to install the position lights.
  Loosen the bolts (1) and install the lights and wiring the harness.
  To prevent damage, remove the position lights (including the brackets and harness) before working at the site.
- Do not slew while traveling. If slewed, the upperstructure position warning lamp lights up to alert the operator to the danger. If you must operate the hoe attachment while traveling, operate at speeds slow enough so you have complete control at all times.
- Do not raise the safety lock lever or turn the starter switch to the OFF position while traveling. Doing so is dangerous because it activates the parking brake and causes the machine to stop suddenly.

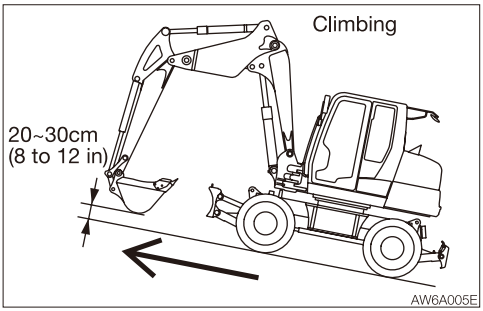


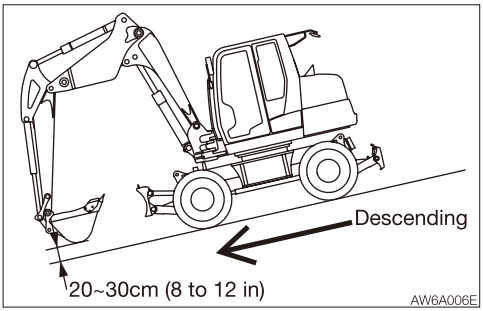
- Avoid crossing over obstacles whenever possible. If you must do so, keep the hoe attachment close to the ground level and travel slowly. Never cross obstacles which will tilt the machine to an angle of 10° or greater.
- Avoid starting, stopping or changing directions abruptly and maintain a proper speed. Otherwise, the working equipment may come in contact with the ground, causing the machine to lose its balance and get damaged or to damage the structures in the surrounding area.
- When traveling on the uneven road or sharp slope, turn off the auto-deceleration switch. If the machine is operated on such roads with the switch turned on, the engine speed may increase, causing the machine speed to suddenly increase (machines with the auto-deceleration switch).
- When traveling on a road, know and use the signaling devices required on the machine. Use an escort vehicle for road travel when required.

Cautions on traveling on slopes

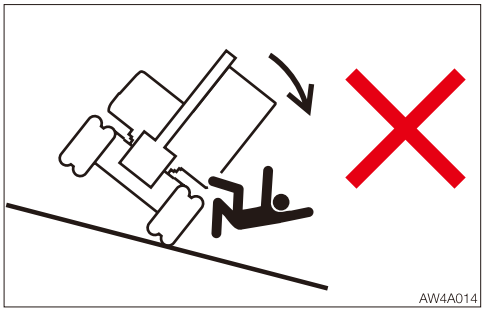
When traveling on slopes or grades, be careful that the machine does not tip (roll) over or slide.

- Never travel on slopes that are too steep for the machine to maintain its stability (maximum gradeability: 35°, lateral tipping angle: 15°). Note that in reality, the machine's stability becomes lower than the above values depending on the working condition.





- When climbing a hill, keep the operator's seat facing the hillside. When descending a hill, keep the operator's seat facing the downhill direction. In either case, travel must be done while paying attention to the ground in front of the machine.
- When traveling on slopes, lower the bucket to a height of 20 to 30 cm (8 to 12 in.) above the ground. When climbing a steep slope, extend the hoe attachment to the front. In emergencies, lower the bucket to the ground and stop the machine.
- When traveling on slopes or grades, travel slowly in low gear. When descending a slope, slow down the engine speed.
- Do not travel at speeds of over 20 km/h (12.4 mph) on long down slopes. Release the travel pedal from time to time to protect the travel motor and ensure travel stability.
- Do not descend slopes in reverse.



- Do not change directions on slopes or traverse slopes. First return to a flat surface, and then take an alternative path.
- The machine may slip sideways even on a slight slope if the ground is covered with grass or dead leaves, or when traveling on a wet metal plate or frozen surfaces. Make sure the machine is never positioned sideways on slopes.
- If the machine is stalled on the slope, return each operating lever to the neutral position before restarting the engine.

Operate the machine on snow or ice with extra care

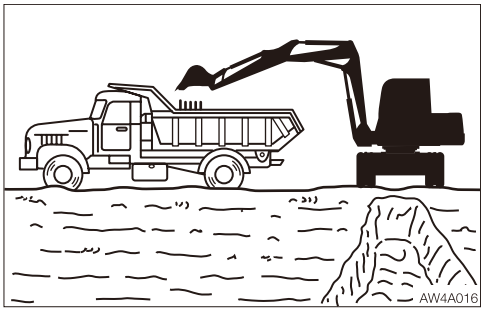
- When traveling on snow or on frozen surfaces, drive at a low speed and avoid starting, stopping or changing directions abruptly.
- In the snowy area, the road shoulder and objects placed beside the road are buried in the snow and cannot be seen. There is a hazard of the machine tipping over or hitting covered objects, so always carry out operations carefully.
- If the machine enters deep snow, there is a hazard that it may tip over or become buried in the snow.
  Be careful not to drive beyond the road shoulder or to get trapped in a snow drift.
- With frozen ground surfaces, the ground becomes soft when the temperature rises, and this may cause the machine to tip over, resulting in an operator trapped inside the machine.
- When parking the machine on an unstable ground, lower the dozer blade.

Do not move the bucket over the heads of people



Moving the bucket over the heads of people entails the danger of the load spilling or the sudden dropping of the bucket.

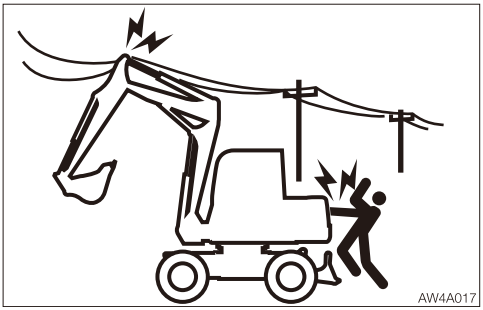
Ensure driver's safety when loading



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

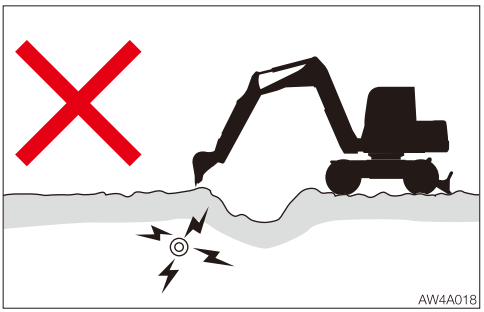
- Never swing or position the bucket over a person or the cab room.
- Load the truck from the rear.

Keep a safe distance from the overhead high-voltage cables



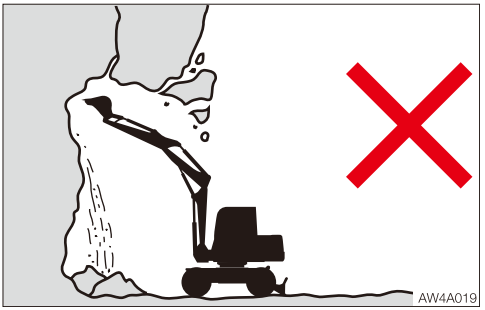
Never bring any part of the machine or loaded material to near to the high voltage cables unless all safety precautions required by the local and national authorities have been installed. If a person comes near to the machine that is discharging sparks or located near to or in contact with the power source, there is a hazard of electric shock and death.

- Always maintain a safe distance between the machine and the high-voltage electric cable.
- Check with the local power company about safe operating procedure before starting operations.
- Consider all cables to be high-voltage cables and treat all cables as energized even though it is known or believed that the power is shut off and the cables are visibly grounded.
- Use a signal person to give warning if the machine approaches too close to the high-voltage electric cables.
- Caution all personnel in the work area not to come close to the machine or the loaded material.



- Pay also careful attention to the high-voltage electric cables buried underground.

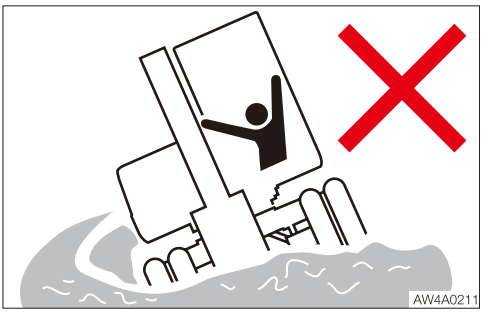
Watch out for hazardous working conditions



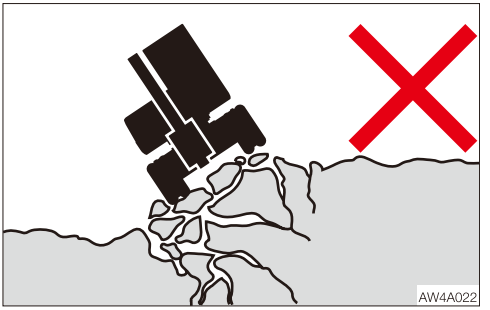
- Never undercut a high bank. Doing so is dangerous as it may cause ground collapse.
- Do not operate in places where there is a danger of falling rocks.



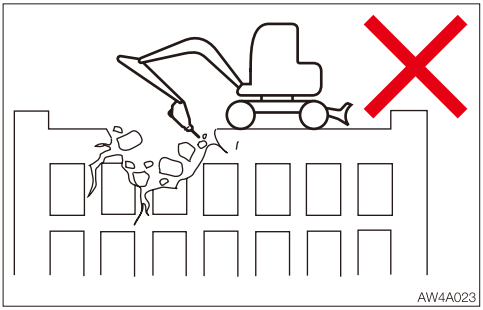
- Maintain a safe distance between the machine and the edge of the digging site. Do not dig the ground under the front of the machine.
- When working close to the cliffs or road shoulders, set the tires at right angles to the cliff or road shoulder and the dozer blade to the front so that it is easier to escape in case of an emergency.



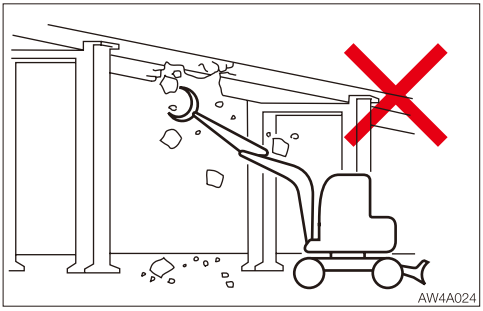
- Do not enter areas where there is soft ground. Doing so could cause the machine to tilt under its own weight, resulting in a machine tipping over or sinking into the ground.



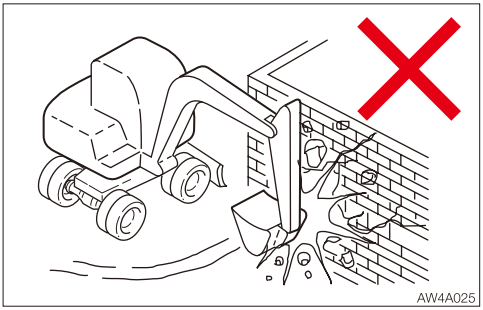
- Do not come close to unstable grounds (cliffs, road shoulders, deep ditches). If the ground should collapse under the weight or vibration of the machine, there is a hazard that the machine may fall or tip over.
  - Remember that the soil after heavy rain or blasting is weak.
  - The ground of top of the embankment and of the circumferences of the excavated ditches are also weak.



- Do not perform demolition work under the machine. There is a hazard that the machine may fall down, because the ground becomes unstable.
- When working on or from the top of buildings or other structures, check the strength and the structure before starting operations. If a building or structure collapses, serious injury or damage will result.



- When doing demolition work, do not perform demolition above your head. There is a hazard of broken parts falling or of the building collapsing and causing serious injury or damage.



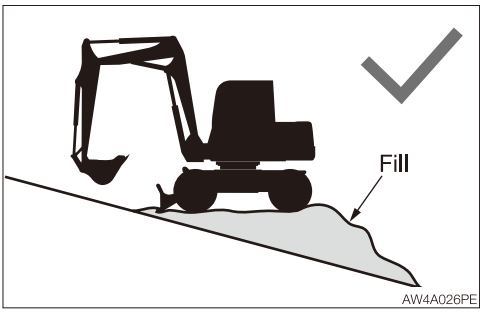
- Do not use the impact force of the hoe attachment for breaking work. There is a hazard of serious injury being caused by flying pieces of broken materials and by the damaged hoe attachment.

Be careful with flying objects

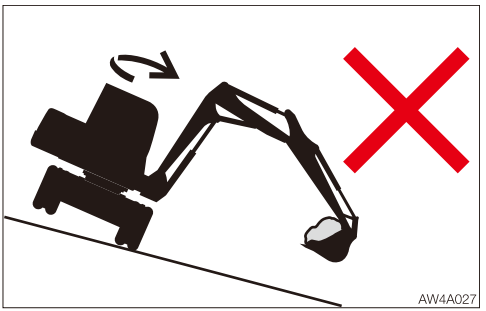
This machine is not equipped with protective equipment to protect the operator from flying objects. Do not use this machine in places where there are risks of the operator being hit by flying objects.

Operating on slopes is dangerous

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

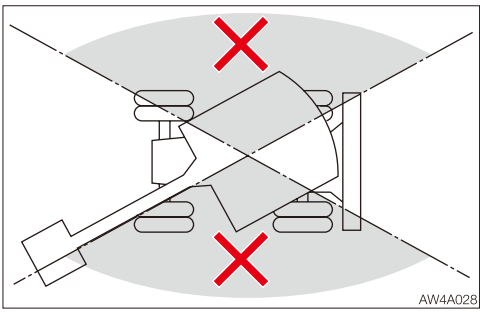


- Level off the work area.



- Avoid slewing to the downhill direction with the bucket full of loaded material. This will reduce the stability of the machine and may result in tipping over.

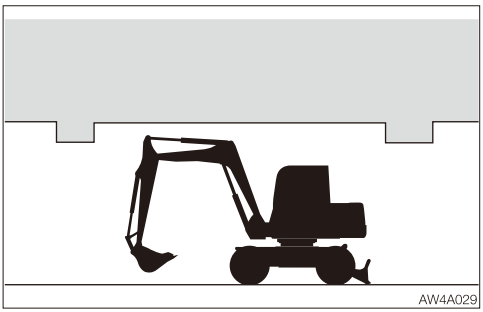
Never slew sideways with a heavy load



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

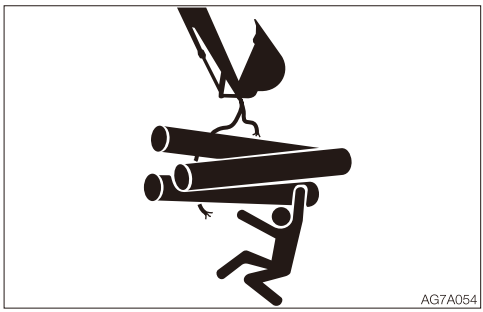
- Do not slew sideways with a heavy load at the tip of the hoe attachment. In particular, do not slew sideways on slopes.
- The tip of the attachment is heavier for machines equipped with breakers, crushers or long arms than for machines equipped with the standard bucket. For such machines with heavier tips, do not perform excavation with the digging arm (boom) facing the downhill direction or operate toward sideways.

Be careful with the overhead objects



When operating under bridges, in tunnels, near electric cables or indoors, be careful not to let the boom or arm hit overhead objects.

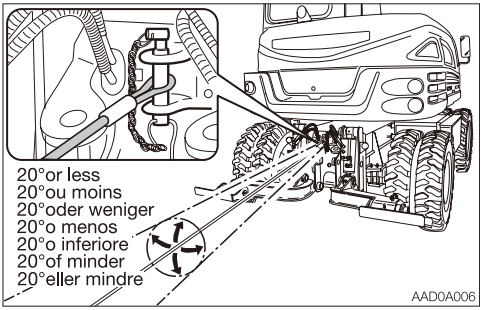
Cautions when lifting loads



If the machine is used for lifting, it must be equipped with an emergency shut-off valve on the arm and the boom (mono-boom machine). For a 2-piece boom machine, an emergency shut-off valve must be installed on the first boom, the second boom and the arm, respectively. Great care is needed 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 determined by using a machine placed on a stable and flat ground. For a safe lifting work, the user is expected to make due allowance for the particular job conditions. They include, soft or uneven ground, non-level condition, side loads, dynamic or jerked loads, hazardous conditions, and experience of personnel. 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.
- The bucket linkage or lifting device may fail if chains or lifting device are incorrectly attached, resulting in serious injury or death.
- Do not attempt to pull stumps out of the ground when using the machine as a crane. The loads imposed on the machine under this use are completely unknown.
- Do not allow anyone to stand on or under the lifted loads or come close to the work area.

Cautions when towing



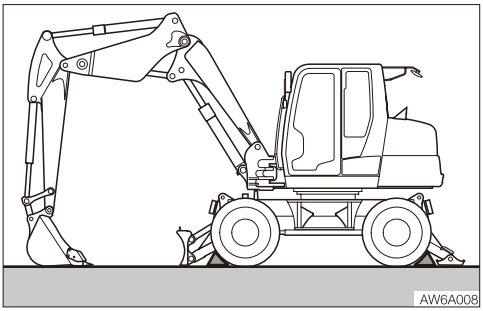
When towing, serious injury or death could result, if performed incorrectly or the wire rope being used is inappropriate or not properly inspected.

- It becomes dangerous if the wire rope breaks or becomes disengaged. Use a wire rope appropriate for the required tractive force.
- Do not use a wire rope that is kinked, twisted or otherwise damaged.
- Do not apply heavy loads abruptly to the wire rope.
- Wear 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 come near to the wire rope while towing.
- The machine should be towed only when it gets stuck in mud.
- Be sure to use a towing truck with sufficient braking power.

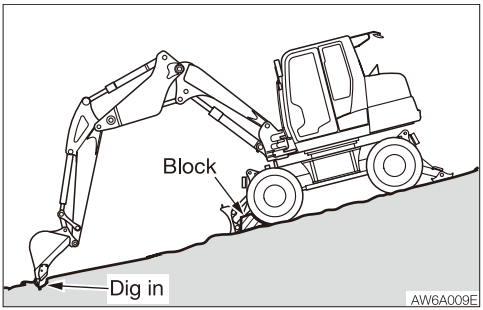
Refer to “Towing” for further instructions.

PRECAUTIONS WHEN STOPPING

Park safely



- Park the machine on a flat, rigid and safe ground. Set the parking brake, brake pedal lock and wheel stoppers.



If you must park on a slope, chock the wheels to block the machine.

- When parking on a street, 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 operator's seat, safely park the machine by referring to "Parking procedures" below.

Parking procedures

1. Slowly step on the brake pedal to stop the machine, and then further depress the pedal down to lock it.
2. Press the deceleration button to idle the engine at low speed.
3. Lower the bucket and the dozer blade to the ground.
   When replacing the attachment or performing the inspection and maintenance on it, follow the procedure "Releasing the residual pressure from the working equipment circuit" described below, as necessary.
4. Raise the safety lock lever to the lock position.
5. Stop the engine and remove the starter key.
   Refer to "Stopping the engine" on page 3-6.
6. Lock the cab and covers, take the key with you and store it in a specified place.

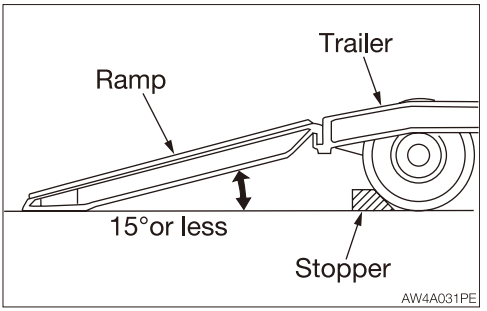
Releasing the residual pressure from the working equipment circuit

Perform the operation of releasing the residual pressure within 30 minutes after the engine comes to a complete stop.

1. Stop the engine.
2. Turn the starter switch to the ON position.
3. Lower the safety lock lever to the unlock position.
4. Release the lock of the attachment lock button.
5. Move all the control levers, pedals and auxiliary hydraulic switches several times in all directions to release the residual pressure in the working equipment circuit.

PRECAUTIONS WHEN TRANSPORTING

Load/unload the machine safely



The machine may roll or tip over or fall while being loaded or unloaded. Take the following precautions:

- Select a firm, level surface and keep sufficient distance from road shoulders.
- Secure the ramps of adequate strength and size to the truck bed. The slope of the ramps must not exceed 15°. If the rumps are bowed down too low, support them with poles or blocks.
- Never use the working equipment to load or unload the machine. Doing so may result in tipping over or falling down of the machine.
- Keep the truck bed and loading ramps clean of oil, soil, ice, snow and other materials to prevent the machine from sliding sideways. Clean the tires too.
- Chock the transporter wheels to prevent movement.
- Turn off the deceleration switch and auto-deceleration switch. Otherwise, the engine speed may suddenly increase to cause troubles.
- When being loaded or unloaded, travel slowly in low gear while following the signal from the signal person.
- Never change courses on the ramps.
- Do not slew/swing on the ramps. The machine may tip over.
- When slewing/swinging on the truck bed, do it slowly as the footing should be unstable.
- Lock the cab door after being loaded, if applicable. Otherwise, the door may open during transport.
- Lock the slewing after loading.
- Chock the wheels and secure the machine to the truck bed with wire rope or chain.

Hoist the machine safely

- Know and use correct crane signals.
- Check the hoisting equipment for damaged or missing parts on a daily basis and replace as necessary.
- When hoisting, use a wire rope capable of lifting the machine mass.
- Hoist the machine in such a manner described in the procedure below. Do not do it in any other manner, as it may result in the machine losing its balance.
  Refer to “Hoisting the machine” for further instructions.
- Do not hoist the machine with an operator on it.
- When hoisting, hoist slowly so that the machine does not tip.
- Keep everyone 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 applicable safety rules, vehicle code and traffic laws when transporting the machine.
- Select the best transport route by considering the length, width, height and weight of the truck with the machine loaded on it.
- Never abruptly start or stop or run at a high speed at the sharp curves during transport. Doing so will move or lose the balance of the loaded machine.

PRECAUTIONS ON MAINTENANCE

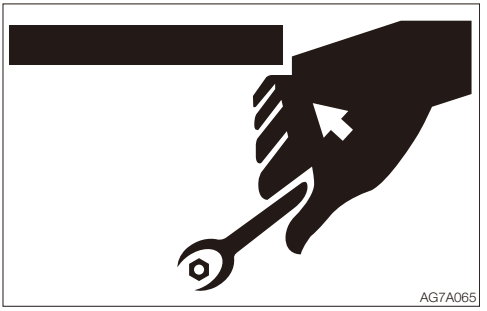
Display a “DO NOT OPERATE” alert sign

Severe injury could result if an unauthorized person should start the engine or touch controls during inspection or maintenance.
- Before performing maintenance, stop the engine, remove the key and take it with you.



- Display a “DO NOT OPERATE” alert sign on easy-to-see locations such as on the starter switch or on control levers.

Use the correct tools



Do not use damaged or weakened tools or tools designed for other purposes. Use tools appropriate for the work involved.

Replace safety-critical parts periodically

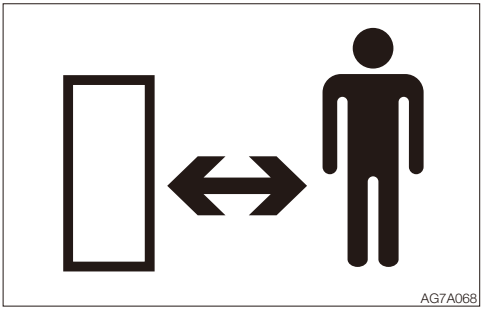
- Replace fuel hoses periodically. Fuel hoses wear out over time, even if they do not show any symptom of wear.
- Regardless of the replacement schedule, replace immediately if a symptom of wear is found.
  Refer to “List of safety-critical parts” for further details.

Explosionproof lighting



To prevent an ignition or explosion, use explosion-proof lights when inspecting fuel, oil, coolant or battery fluid. Otherwise, explosion could result causing serious injury or death.

Prohibit access by unauthorized persons



Do not allow unauthorized personnel in the work area while working. Be careful when grinding, welding or using a hammer. You could be injured by flying debris from the machine.

Prepare work area

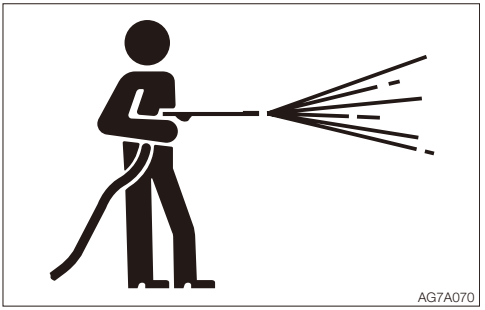
- Select a firm, level work area. Make sure there is adequate light and, if indoors, ventilation.
- Clear obstacles and dangerous objects. Eliminate slippery areas.

Precautions on working on top of the work bench



- Before performing maintenance on top of the work bench, clean the footing and observe the following precautions to prevent falling.
  - Do not spill oil or grease.
  - Do not leave tools scattered around.
  - Watch your step when walking.
- Never jump down from the machine or the work bench. When getting on or off the machine or work bench, use the steps, handrails or work bench to support your body. Your weight should be evenly distributed among the three contact points (one hand and two feet or two hands and one foot).
- Do not stand on the dozer blade and perform maintenance work. Doing so is dangerous because of the unsteady foothold. Use the work bench.

Always keep the machine clean

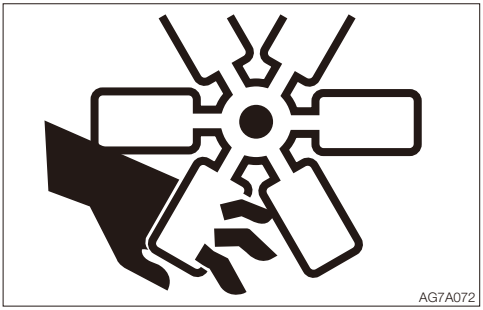


- Clean the machine before performing maintenance.
- Stop the engine before washing the machine. Cover the electrical parts so that water cannot enter. Water on electrical parts could cause short-circuits or malfunctions. Do not use water or steam to wash the battery, electronic control components, sensors, connectors or the operator's compartment.

Stop the engine before performing maintenance

- Avoid lubrication or mechanical adjustments while the machine is moving or while the engine is running when the machine is not moving.
- If maintenance must be performed with the engine running, always work as a two person team communicating each other.
  - One person must sit in the operator's seat so that he/she can immediately stop the engine when necessary. He/she must take care not to touch the lever or pedal unless necessary.
  - The one who performs maintenance must make sure to keep his/her body or clothing away from the moving part of the machine.

Stay clear of the moving parts



- Stay clear of all rotating and moving parts. If a hand or tool becomes trapped in the rotating or moving part, serious injury or death could result.
- If a tool or other objects is dropped or inserted in the fan or fan belt, it will be flown or cut in pieces. Do not drop or insert anything in the fan or fan belt.

Firmly secure the machine or any component that may fall



- Before performing maintenance or repairs under the machine, lower all moveable working equipment to the ground or in the lowermost position.
- Chock the tires.
- 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.

Secure the working equipment

To prevent unexpected movement, firmly secure the working equipment when repairing or replacing the bucket teeth or side cutter.

Secure the engine hood or cover when opened

Be sure to secure the engine hood or cover before working the inside. Do not keep the hood or cover open on a windy day or if the machine is parked on a slope.

Place heavy objects in a stable position



When it is necessary to temporally place a heavy object or an attachment on the ground during removal or installation, be sure to place it in a stable position. Keep unauthorized persons from the storage place for such object.

Cautions when refueling



- Do not smoke or permit open flames while fueling or near fueling operations.
- Never remove the fuel cap or add fuel when the engine is running or still hot. Do not spill fuel on the hot surface of the machine.
- Fill the fuel tank in a well ventilated place.
- Do not fill the fuel tank to capacity. Allow room for oil expansion.
- Clean up spilled fuel immediately.
- Securely tighten the fuel filler cap. If the fuel cap is lost, replace it only with the genuine cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.
- Never use fuel for cleaning.
- Use the correct grade of fuel for the operating season.

Handling of hoses

Oil leak or fuel leak can cause a fire.
- Do not twist, bend or hit the hoses.
- Never use twisted, bent or cracked pipes, tubes or hoses; otherwise, they may burst.
- Retighten loose connection.

Be careful with hot and pressurized components



Stop the engine and allow the machine to cool down before performing maintenance.
- The engine, muffler, radiator, hydraulic lines, sliding parts and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
- The engine coolant, hydraulic oil and other oils are also hot and under high pressure. Be careful not to touch the hydraulic oil when loosening the cap or plug. Working on the machine under these conditions could result in burns or injuries due to the hot oil spurting out.
- The machine and the exhaust gas emitted from the exhaust line can be very hot while the engine is running or the regeneration is under way, as well as immediately after the engine is stopped. Be careful not to accidentally touch them; doing so could cause burns.

Be careful with hot cooling systems



Do not remove the radiator cap or the drain plug when the cooling water is hot. Stop the engine and wait until the engine and the cooling water cool. Then, slowly loosen the radiator cap to release the internal pressure and remove it.

Be careful with oil internal pressure

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

- Completely relieve the internal pressure before performing maintenance work.



- The hydraulic oil is high enough pressure to penetrate the skin or eyes and cause serious injury, blindness or death. Remember that the hydraulic oil escaping from a small hole is almost invisible. When checking for leaks, wear protective goggle and thick gloves, and use a paperboard or plywood to keep your skin from oil spurting.
  If oil penetrates the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury.

Release pressure before working on the hydraulic system

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

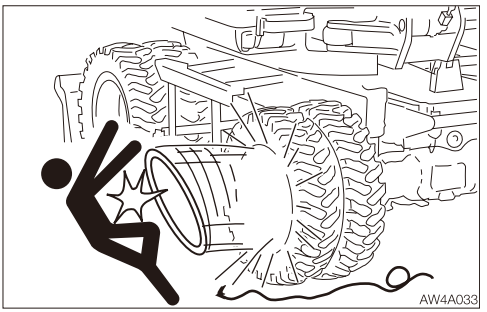
- Immediately after the engine is stopped and while the safety lock lever is in the unlock position, turn the starter switch to ON and move all the control levers, pedals and auxiliary hydraulic switches several times all the way in each direction to release the pressure from the working equipment circuitry.
- Press the air breather button to relieve the internal pressure from the tank.
- When removing plugs or screws, or when disconnecting hoses, stand to the side and loosen them slowly to gradually release the internal pressure before removing.
- Oil or plug may spurt out according to the pressure in the travel motor case. Loosen the plug slowly and release the internal pressure.

Be careful with debris when the hammer is being used

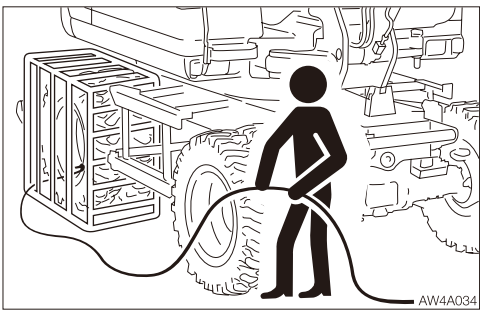
When using a hammer, pins may fly out or metal particles may be scattered. This may lead to serious injury.

- If hard metal parts such as pins, bucket teeth, side cutter or bearings are hit with a hammer, wear protective gear such as safety goggles and gloves.
- When hitting pins or bucket teeth, always check that there is no one in the surrounding area.

Tire maintenance



- Disassembling a tire or rim can cause an explosion, resulting in serious injury or death. Always ask a service shop or dealer for maintenance.
- Special tools and procedures are required to change tires. To do it safely, it must be done correctly. Changing tires is a job better done by your tire service company.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.
- Inspect tires and wheels every day. Do not operate the machine if the tire is underinflated or has cuts or bubbles, or if the rim is damaged.
- Replace the tire with a new one if there is a portion with no grooves.
- A rise in tire pressure during operation is normal, and should NOT be reduced.



- When putting air in a tire, do so from a distance. Use a long hose with self-attaching chuck. Always stand behind the tread when adjusting tire pressure.
- Do not inflate tires with flammable gases or from systems using an alcohol injector.
- Never cut or weld on a wheel with an inflated tire mounted on it. This could cause an explosive decompression.
- Tires should be replaced only by an authorized person using the proper procedures and safety equipment. New or replacement tires and wheels should always be checked for proper size before mounting.
- Always use a cable restraint device or safety cage when reinflating a repaired tire.

Cautions when servicing the air conditioner

If the refrigerant comes in contact with eyes, it damages your eyesight. If the refrigerant comes in contact with skin, it may cause frostbite. Never touch the refrigerant.

Handling of the accumulator



Be sure to handle the high-pressure nitrogen gas enclosed in the accumulator with care. If handled incorrectly, it could explode and cause serious injury. Strictly observe the following precautions:

- Do not disassemble.
- Do not touch or loosen the gas valve.
- The accumulator may become hot. Be careful not to burn yourself.
- The accumulator may become electrically charged and generate sparks. Be careful to prevent fire.
- Do not allow flame near or throw it into a fire.
- Do not drill, weld or fuse.
- Do not subject it to physical shock such as hitting, rolling or dropping.
- Before disposing of the unit, the sealed gas must be drained. Contact a Takeuchi service agent for help.
- A large amount of nitrogen may be released during disposal. Be careful of the risk of suffocation.

Disconnect the battery wiring



- Disconnect the battery wiring before working on the electrical system or doing electric welding. Disconnect the negative (–) battery cable first. When reconnecting, connect the negative (–) battery cable last.
- The SCR system operates for up to 2 minutes after the starter switch is turned to the OFF position.
  When removing the batteries or electrical connectors for inspection or maintenance, wait for at least 2 minutes after the starter switch is turned to the OFF position. Otherwise, the system could fail.

Precautions for handling DEF/AdBlue®

DEF/AdBlue® is a colorless, transparent, odorless and non-hazardous aqueous solution (32.5% urea, 67.5% water, freezes at –11°C), and is harmless to the human body. In very rare cases, however, inflammation could occur in some people, and proper actions should be taken as follows.

- If skin contact occurs, flush with water. If there are changes in the skin condition or if there is pain, immediately seek medical attention.
- If accidentally swallowed, drink one or two glasses of water or milk and immediately seek medical attention.
- If eye contact occurs, immediately flush with a large amount of clean water and seek medical attention.
- Although DEF/AdBlue® itself is a noninflammable liquid, a pungent odor may be produced if heated in a fire. In case of fire, immediately evacuate the area and go to a safe place.
- Do not use expired DEF/AdBlue® solution (including solution left in the tank) stored for a long period. Doing so could cause ammonia slip, degraded NOx conversion efficiency or device damage.
- When handling DEF/AdBlue®, do not use anything such as cotton work-gloves whose fibers could get into the solution. Doing so could cause clogging of the DEF/AdBlue® filter or urea deposit at the DM injection port.

Use caution when handling batteries

- Do not allow persons (such as children) to come into contact with the product unless they fully understand the handling methods and risks.
- Batteries contain sulfuric acid which will damage the eyes or skin in case of contact.
  - If eye contact occurs, flush immediately with clean water and get prompt medical attention.
  - If accidentally swallowed, drink large quantities of water or milk and call a physician immediately.
  - If acid contacts skin or clothing, wash off immediately with a lot of water.
- Wear protective goggle and gloves when working with batteries.
- Batteries generate flammable hydrogen gas which may explode. Keep away from flame, sparks, fire or lighted cigarettes.
- When checking the level of the battery fluid, use a flashlight.
- Be sure to stop the engine by turning off the starter switch before inspecting or handling the battery.
- Be careful not to let metal tools or any metal objects come into contact with the battery terminals and cause a short circuit.
- Loose battery terminals may result in sparks. Be sure to fasten terminals tightly.
- Make sure the battery caps are tightened securely.
- Do not charge a battery or jump-start the engine if the battery is frozen; otherwise it may explode. Warm the frozen battery to 15°C (60°F) before use.
- Do not use the battery when the fluid level is below the lower level limit. Doing so will hasten the deterioration of the internal portions of the battery and shorten the battery life. It also can cause rupturing (explosion).
- Do not add the distilled water above the upper level limit. Doing so could cause the fluid to leak. This fluid can cause skin damage if contacted, or can cause the machine components to corrode.
- Use a dampened cloth to clean around the fluid level line and check the fluid level. Do not clean with a dry cloth; otherwise it could cause static electricity to build up, resulting in ignition or explosion.

Periodically replace the safety-critical parts

- To use the machine safely for a longer period, periodically add oil and perform inspection and maintenance. To improving the safely, replace the safety-critical parts like hoses and seat belts periodically. Refer to “Safety-critical parts to be replaced periodically” for further details.
- The “Safety-critical parts to be replaced periodically” are the parts which deteriorate, wear and fatigue after repeated use and whose properties change over time. While these characters of these parts could cause serious physical or personal damage, judging the remaining life of these part are difficult from external inspection or the feeling when operating.
- Replace the “Safety-critical parts to be replaced periodically” if any defect is found from external inspection, even when they have not reached the time specified interval.

Jump starting with booster cables

- When starting the engine using the booster cables, be sure to connect the cables in the proper order described below. Wrongly connected cables can result in sparking and battery explosion.
  - Do not allow the “machine in trouble” and “rescue machine” to touch each other.
  - Do not allow the positive (+) and negative (–) clips of the booster cables to touch each other or to come in contact with the machine.
  - When connecting, attach the positive booster cable to the positive (+) terminals first. When disconnecting, remove the negative cable from the negative (–) terminal (ground) first.
  - Be sure to connect the clips securely.
  - Connect the last clip of the booster cable to a point as far away from the battery as possible.
- Always wear the protective goggle and gloves when starting the engine by using the booster cables.
- Use the booster cables and clips of a size suited to the capacity of battery. Do not use damaged or corroded booster cables and clips.
- Be sure that the battery of the “rescue machine” has the same capacity as the battery of the “machine in trouble”.

Have a Takeuchi service agent repair welding

If welding must be performed, make sure that it is done by a qualified person in a properly equipped workplace. To prevent any part from breaking down or being damaged due to overcurrent or sparks, observe the following.

- Disconnect the wiring from the battery before doing electric welding.
- Do not continuously apply 200 V or more.
- The earth ground must be connected within one meter from the welding section. Do not connect the earth ground near to an electronically controlled device/ instrument or connectors.
- Make sure that there are no seals or bearings between the welding section and the earth ground.
- Do not connect the earth ground around the pins for the working equipment or hydraulic cylinders.
- When welding is to be done on the machine body, disconnect the connectors for the electronically controlled devices before working.

Vibrations operators are subject to

According to the results of the tests conducted to determine the vibrations transmitted to the operator by the machine, the upper limbs are subjected to vibrations lower than 2.5 m/s^2 (8.2 ft/s^2) while the seated part of the body is subjected to vibrations lower than 0.5 m/s^2 (1.64 ft/s^2).

Checks after maintenance

- Gradually increase the engine speed from a low idle to maximum speed and check that there is no oil or water leaking from the serviced parts.
- Operate each control lever and check that the machine is operating properly.

Disposing of wastes



- Always collect oil that is drained from the machine in containers. Improperly disposed waste oil can cause environmental harm.
- Follow appropriate laws and regulations when disposing of harmful objects such as oil, fuel, coolant, solvent, DEF/AdBlue®, filters and batteries.
- When disposing of a machine that is no longer usable, dispose of it in accordance with the latest national and local regulations applicable at the time.

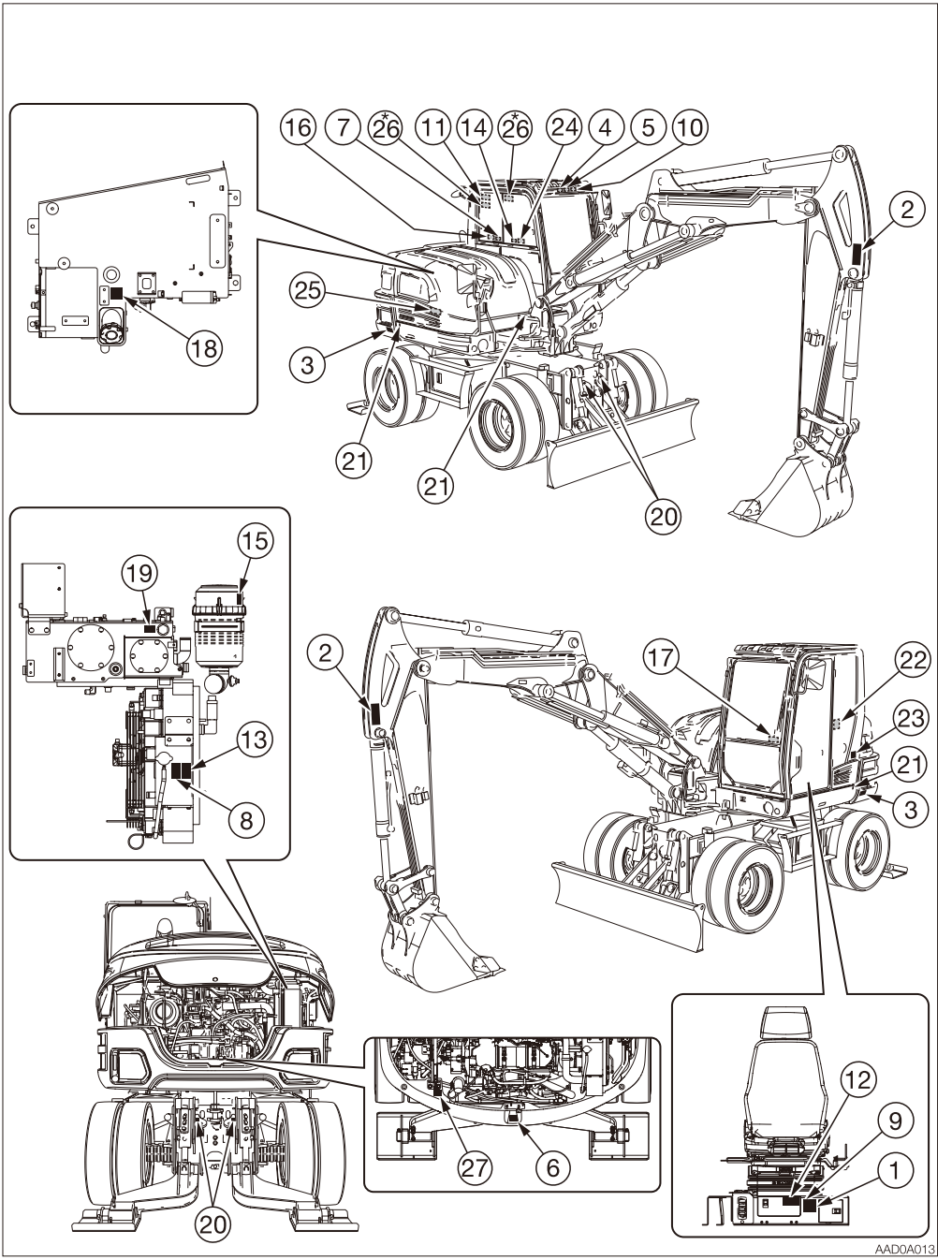
Handling of poisonous chemicals

Poisonous chemicals will cause serious injury if directly contacted.
Poisonous chemistry used in this machine includes grease, battery solution, coolant, DEF/AdBlue®, paint and adhesive agent.
Handle the poisonous chemicals properly with care.

SAFETY SIGNS (DECALS)

For the safety of the operator and the personnel working around the site, safety signs (decals) are placed at certain locations on the machine as shown below. Walk around the machine with this manual, and check 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 clean and legible. If any of the safety labels is peeling or damaged and becomes difficult to read, replace it with a new one. Please include your product serial number when ordering a new sign from the Takeuchi service agent.
- When a part/unit to which a safety sign is attached is replenished, a new sign must be attached to the new part/unit.



*: If applicable

1. No.08810-31556



Warning
Read and understand this manual before performing any operation, inspection or maintenance on this machine.

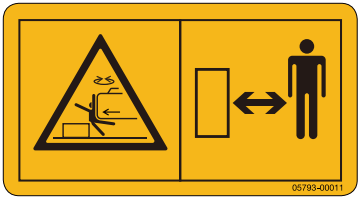
2. No.05793-00049

Safety Distance
Hazard of being hit by the working device of the machine.
Keep away from machine during operation.



3. No.05793-00011

Safety Distance
Do not get near or stand within the machine working area.



4. No.08810-31557

Hazard from falling window
After raising window, be sure to lock it in place with lock pins.



5. 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.



6. No.03793-66006

Hazard of rotating parts
Turn off before inspection and maintenance.



7. No.05693-68009 (If equipped)

Before starting lifting operation, be sure to turn on the lift overload warning switch.
An alarm sounds if an excessive weight is lifted.



8. No.05793-03630



Sign indicates a burn hazard from touching heated parts, such as engine, pump, or muffler during or right after operation.
Never touch when hot.

9. No.05793-03643



Be careful about the hoe attachment interference
When lowering the hoe attachment, be careful not to let it hit the undercarriage or dozer blade.
Also, make sure that the boom cylinder hose does not contact the chassis.

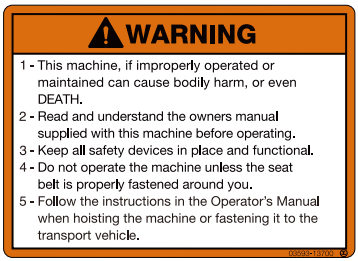
AAD0A009EN

10. No.05693-00201



When opening or closing the front window, be sure that the steering wheel is at the seat side. Otherwise, the front window could bump against the steering wheel and break.

11. No.03593-13700



12. No.03293-00066

When a bucket wider than a standard one is installed, the cab (canopy) may be damaged if the bucket is fully offset to the left.



13. No.03393-50070



Sign indicates a burn hazard from spurting hot water or oil if radiator or hydraulic tank is uncapped while hot. Allow radiator or hydraulic tank to cool before removing cap.

14. No.05693-00423

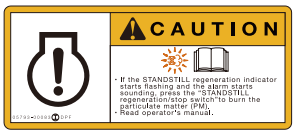
Before leaving the operator's seat, stop the engine and apply the parking brake.



15. No.03393-75040



16. No.05793-00083



AAD0A002EN

17. No.03993-00052
Position of Emergency Exit



18. No.06993-00154



19. No.03593-06700
Hydraulic oil



20. No.08810-31549
Tie down point



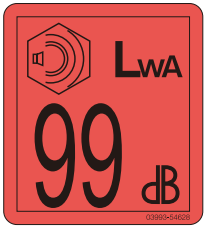
21. No.03393-00295
Position of hoisting



22. No.03993-00400
For EU
Position of Fire extinguisher



23. No.03993-54628 (If equipped)
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.



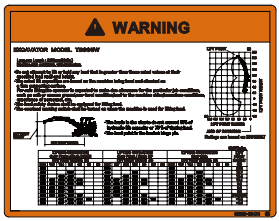
24. No.03593-32300 (If equipped)



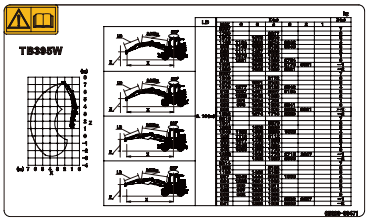
25. No.05593-00175



26. No.05693-00476
For USA



26. No.05693-00471
(If equipped)



AAD0A015EN

27. No.07193-00023



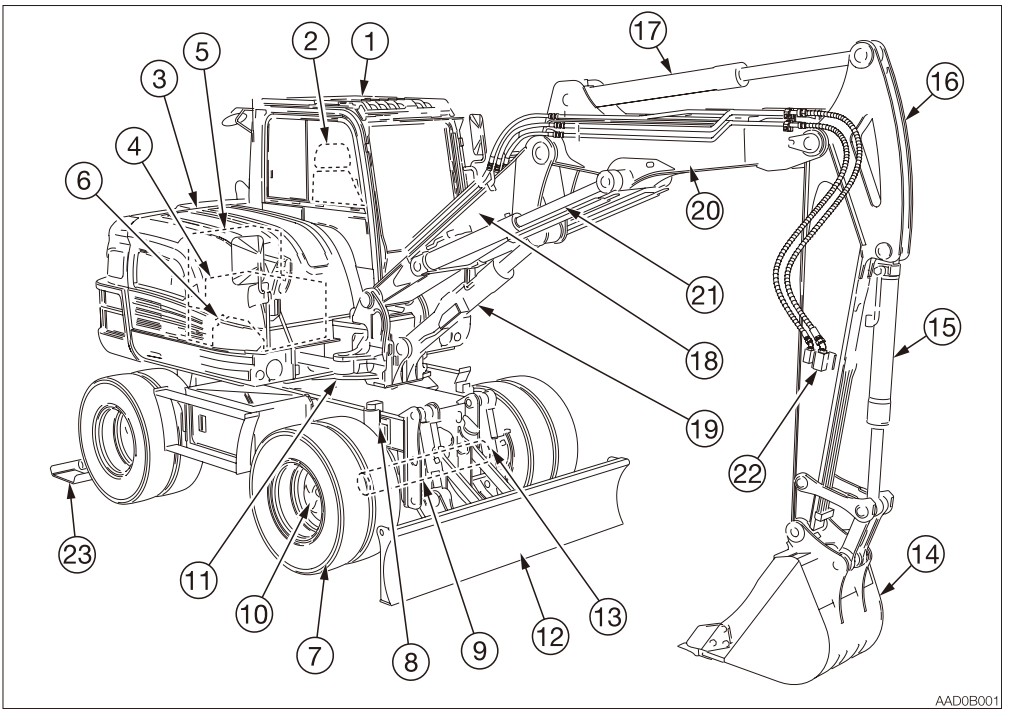
Sign indicates a burn hazard from touching heated parts, such as engine, pump, or muffler during or right after operation.
Never touch when hot.

AAD0A014EN

CONTROLS



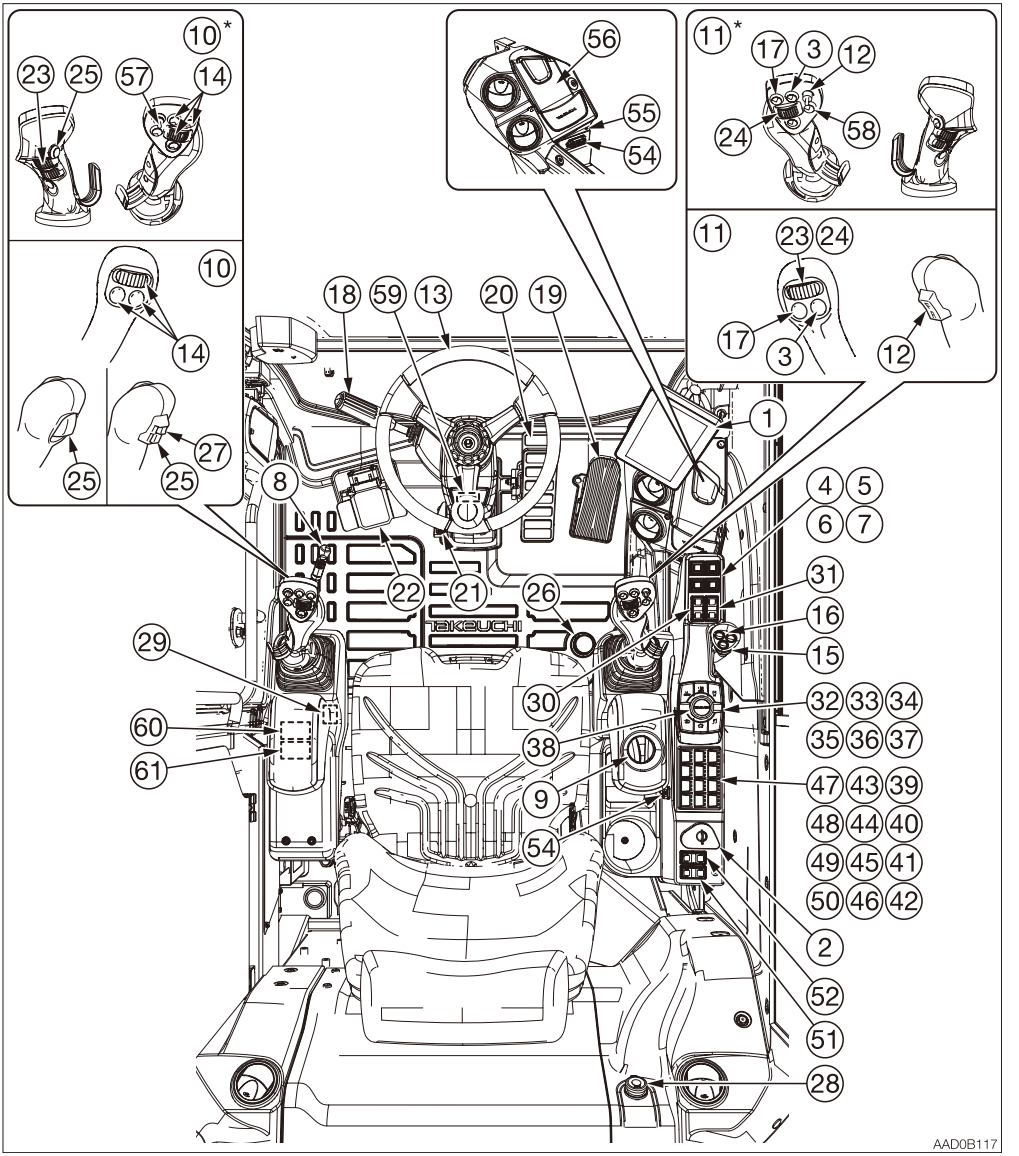
NAMES OF COMPONENTS

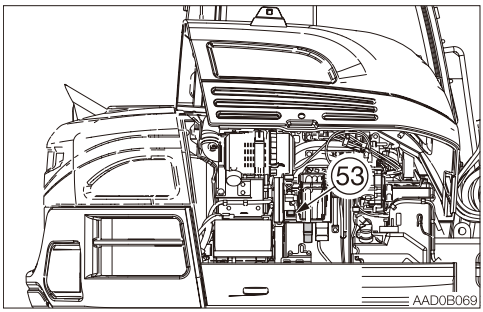


Upperstructure
1. Cab
2. Seat
3. Engine hood
4. Fuel tank
5. Hydraulic oil tank
6. DEF/AdBlue® tank

Undercarriage
7. Tire
8. Ram lock cylinder
9. Steering device
10. Hub
11. Chassis

Working equipment
12. Dozer blade
13. Blade cylinder
14. Bucket
15. Bucket cylinder
16. Arm
17. Arm cylinder
18. Boom
19. Boom cylinder
20. Second boom
21. Second boom cylinder
22. Auxiliary hydraulic line
23. Outrigger (If equipped)


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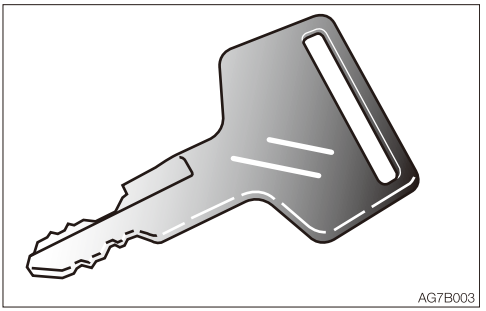


1. Multi-information display
2. Starter switch
3. Deceleration button
4. Hazard switch
5. Parking brake switch
6. Attachment lock button
7. Travel pedal button
8. Safety lock lever
9. Throttle controller
10. Left operating lever
11. Right operating lever
12. Travel select button/lever
13. Steering wheel
14. Auxiliary 1st switches
15. Blade/Outrigger lever*
16. Outrigger switch*
17. Horn button
18. Turn signal lever
19. Travel pedal
20. Brake pedal
21. Tilt steering pedal
22. Boom swing/Second boom pedal*
23. Auxiliary 2nd switch
24. Auxiliary 4th switch
25. Third auxiliary hydraulic button*
26. Third auxiliary hydraulic switch*
27. Aux. 2/4 select button*
28. Power supply socket (24V)
29. Engine shutdown switch
30. Low/High-speed travel switch
31. Cruise control switch
32. Air conditioner (A/C) menu switch
33. Air conditioner AUTO switch
34. Air conditioner OFF switch
35. Return switch
36. Home switch
37. Radio switch
38. Dial
39. Headlights/Position light switch
40. Light switch
41. Gear shift switch
42. Beacon lamp switch
43. ECO mode switch
44. Detent mode switch
45. Lift overload warning switch
46. Camera image switch
47. Standstill regeneration switch
48. Standstill regeneration stop switch
49. Diff- lock switch
50. Swing/Second boom select switch
51. Ram lock switch
52. 2WS/4WS select switch*
53. Refill switch
54. USB port
55. Microphone jack
56. Smartphone holder
57. Cruise control lever
58. Mute button
59. Joystick steering switch*
60. Auto digging brake switch*
61. Boom suspension switch*

*: Subject to the specifications or optional products selected

COVERS

STARTER KEY



The starter key is used to start and stop the engine, as well as to lock and unlock the following components:
- Cab door
- Engine hood
- Covers
- Tool box

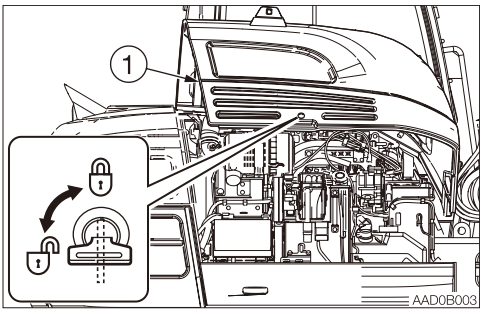
RIGHT SIDE COVER

⚠ WARNING

- **Stop the engine and allow the machine to cool down before performing maintenance.**
- **Do not keep the right side cover open on a windy day or if the machine is parked on a slope.**
- **When opening and closing the right side cover, be careful not to get your hands or other parts of your body caught by the cover.**

For inspection and maintenance of the hydraulic oil system, fuel system, electrical system or window washer, open this cover. The fuel supply pump is stored under the cover.

Opening



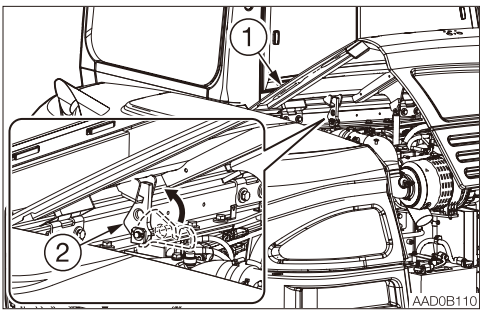
1. Insert the starter key and turn it counterclockwise to unlock the right side cover (1).
2. Push in the key hole with your thumb and open the right side cover (1) all the way.

Closing

1. Close the right side cover (1) and press it down until a click is heard.
2. Insert the starter key and turn it clockwise to lock the right side cover (1).

<Applicable machine models 195001728 or later>

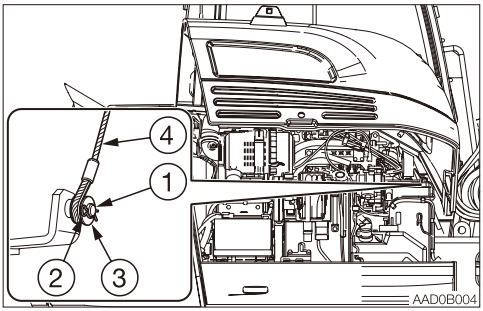
Stopper



When it is necessary to leave the side cover (1) open for a long time for servicing or inspecting, use the stopper (2) to prevent the side cover (1) from closing.

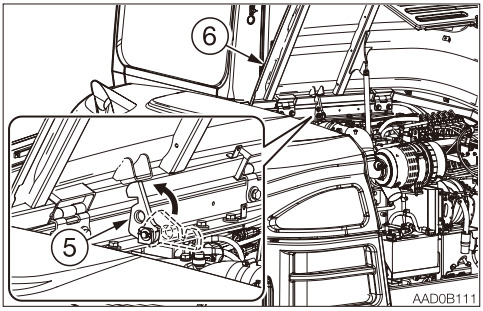
Releasing the stopper (wire rope)

To widely open the right side cover, follow the steps below to release the stopper.



1. Pull out the R-pin (2) from the fixing pin (1) and remove the washer (3).
2. Remove the stopper (4) from the fixing pin (1).
   The right side cover now opens 60°.
   To limit the right side cover opening to 40°, follow the above steps in the reverse order.

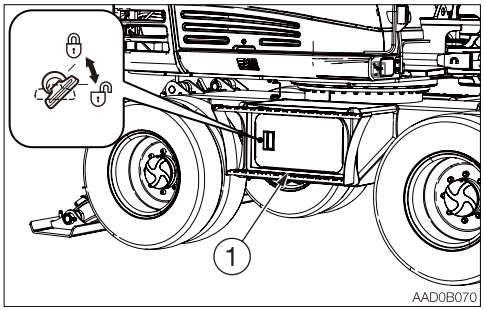
Stopper



When it is necessary to leave the side cover (1) open for a long time for servicing or inspecting, use the stopper (5) to prevent the side cover (6) from closing.

TOOL BOX

Opening



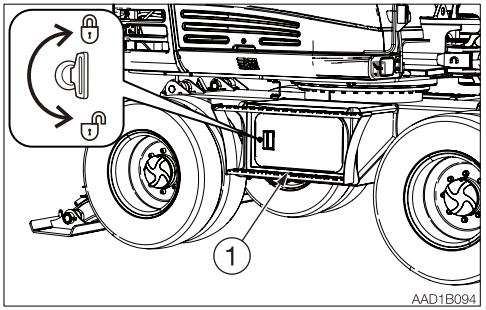
1. Insert the starter key and turn it counterclockwise to unlock the tool box cover (1).
2. Open the cover (1).

Closing

1. After using tools, store them back in the tool box.
2. Close the cover (1).
   - Maximum permissible load (one side): 75 kg (165 lb.)

<Applicable machine models 195000269 or later>

Opening



1. Insert the starter key and turn it counterclockwise to unlock the tool box cover (1).
2. Push in the key hole with your thumb and open the cover (1).

Closing

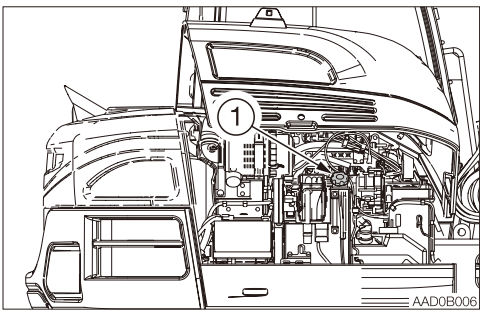
1. After using tools, store them back in the tool box.
2. Close the cover (1).
3. Insert the starter key and turn it clockwise to lock the cover (1).
   - Maximum permissible load (one side): 75 kg (165 lb.)

FUEL FILLER PORT

⚠ WARNING

- **Never jump down from the machine or the work bench. When getting on or off the machine or work bench, use the steps, handrails or work bench to support your body. Your weight should be evenly distributed among the three contact points (one hand and two feet or two hands and one foot).**
- **Do not smoke and keep away from heat or flame while filling the fuel tank.**
- **Fill the fuel tank in a well ventilated place, with the engine turned off.**
- **Clean up spilled fuel immediately.**
- **Do not fill the fuel tank to capacity. Allow room for oil expansion.**
- **Securely tighten the fuel filler cap.**

Opening



1. Open the right side cover.
2. Turn the fuel cap (1) counterclockwise and remove it.

Closing

1. Turn the fuel cap (1) it clockwise and close it.
2. Close the right side cover and lock it.

DEF/ADBLUE® REFILL PORT

⚠ WARNING

- When removing the cap from the DEF/AdBlue® tank, take care not to inhale steam.
- Do not put anything else other than DEF/AdBlue® solution in the DEF/AdBlue® tank. Putting liquids, particularly light oil or gasoline, in the tank could cause a fire or damage the SCR system. If this is accidentally done, contact a Takeuchi service dealer.

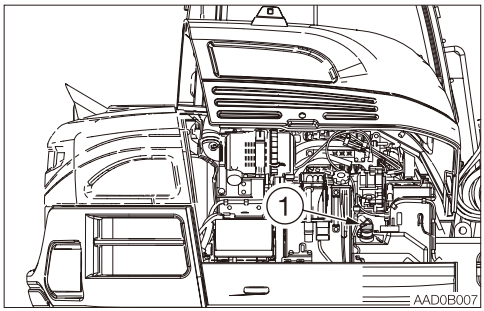
⚠ CAUTION

- DEF/AdBlue® is a colorless, transparent, odorless and non-hazardous aqueous solution (32.5% urea, 67.5% water, freezes at –11°C), and is harmless to the human body. In very rare cases, however, inflammation could occur in some people, and thus proper actions should be taken as follows.
- If skin contact occurs, flush with water. If there are changes in the skin condition or if there is pain, immediately seek medical attention.
- If accidentally swallowed, drink one or two glasses of water or milk and immediately seek medical attention.
- If eye contact occurs, immediately flush with a large amount of clean water and seek medical attention.

IMPORTANT:

- Do not use expired DEF/AdBlue® solution (including solution left in the tank) stored for a long period. Doing so could cause ammonia slip, degraded NOx conversion efficiency or device damage.
- When handling DEF/AdBlue®, do not use anything such as cotton work-gloves whose fibers could get into the solution. Doing so could cause clogging of the DEF/AdBlue® filter or urea deposit at the DM injection port.

Opening



1. Open the right side cover.
2. Turn the DEF/AdBlue® tank cap (1) counterclockwise and remove it.

Closing

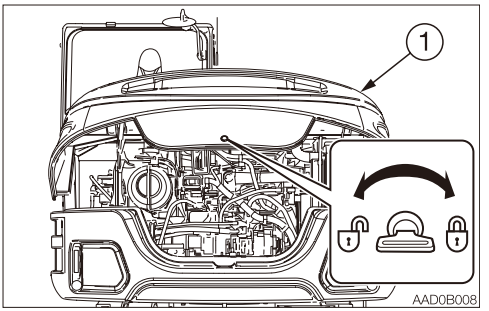
1. Install the DEF/AdBlue® tank cap (1) on the filler port, and then turn the cap clockwise to close.
2. Close the right side cover.

ENGINE HOOD

⚠ WARNING

- **Before opening the engine hood, be sure to stop the engine. If a hand or tool becomes trapped in the rotating or moving part, serious injury could result.**
- **Do not leave the engine hood open on a windy day or if the machine is parked on a slope.**
- **When opening or closing the engine hood, be careful not to get your hands or other parts of your body caught by it.**

Opening



1. Insert the starter key and turn it counterclockwise to unlock the engine hood (1).
2. Push in the key hole with your thumb and open the engine hood (1).

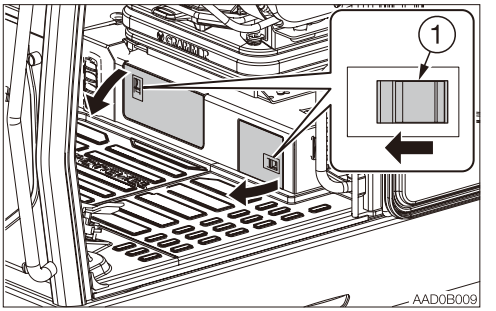
Closing

1. Close the engine hood (1) and press down the edge of it until a click is heard.
2. Insert the starter key and turn it clockwise to lock the engine hood (1).

MAINTENANCE COVERS

For inspection and maintenance of the air conditioner filter, open this cover.
The port for connecting to a computer during maintenance is inside the cover.

Opening



1. Push the knob (1) to unlock it.
2. Pull the cover toward you and open it.

Closing

1. Close the cover until it is locked.

CAB

CAB DOOR

⚠ WARNING

When getting on or off the cab, first open the door all the way until it is secured in the catch and check that it does not move.

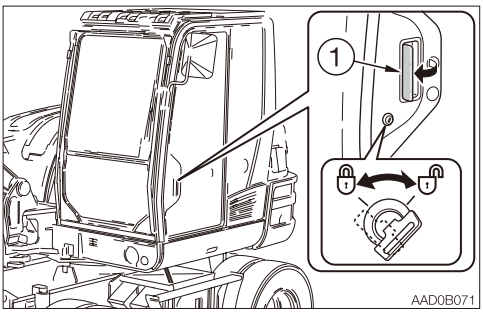
⚠ CAUTION

When opening the cab door from outside the machine, observe the following precautions.

- **Do not open the cab door while you stay on the steps of the machine.**
- **When opening the cab door, make sure that the footing is stable.**
- **Put your both feet on the ground, and hold the handrail with your left hand to secure yourself at 3-point, and then open the cab door.**

Open the door fully and press it against the catch at the back of the door to secure it in place.
The door must be locked when getting on or off the machine and while in operation.

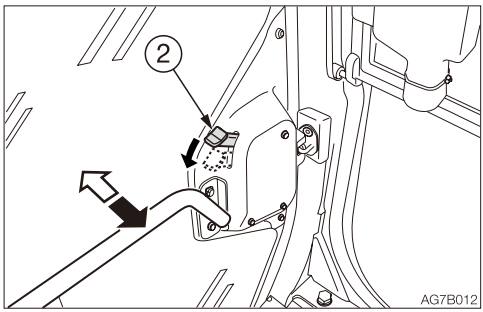
Locking and unlocking



Insert the starter key and turn it.

Opening

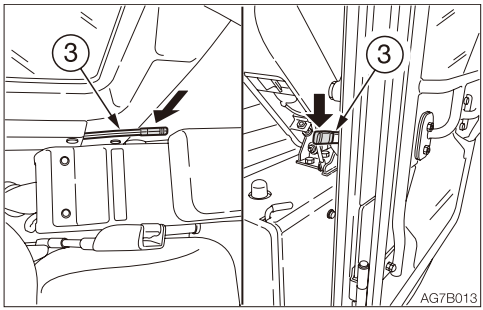
1. Pull the knob (1) towards you and open the door.



To open the door from inside the cab, push the lever (2) to the lower.

2. Open the door fully and press it against the cab to secure it in place.

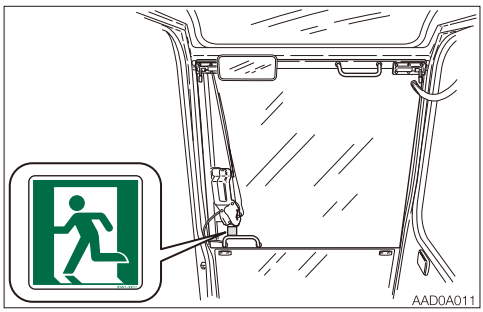
Closing



1. Push the release lever (3) to the lower.
2. Close the released door.

EMERGENCY EXIT

Front window (excluding machines with a front guard)



If you should become trapped inside the cab, open the front window to get out.

FRONT WINDOW

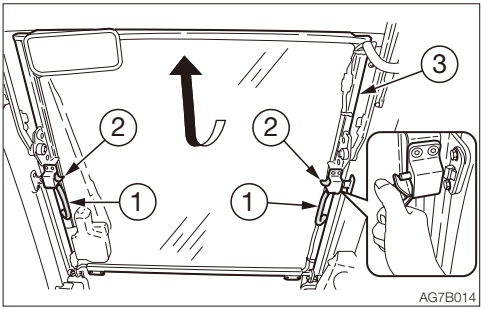
⚠ WARNING

- **Grasp the handles firmly with both hands when opening and closing the front window. Your head or hands may get caught if it slips from your hands.**
- **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.**
- **When you open the front window, be sure to lock it in place with the lock pins on the left and right sides. The window may fall if it is not locked in place.**

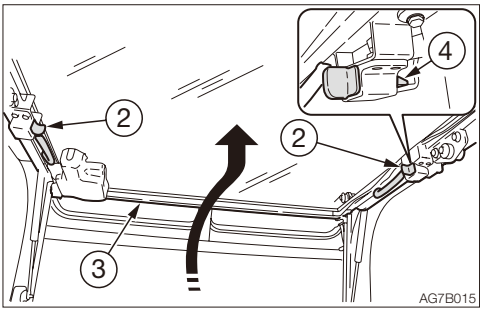
⚠ CAUTION

When opening or closing the front window, be sure that the steering wheel is at the seat side. Otherwise, the front window could bump against the steering wheel and break.

Opening



1. Park on a level surface and stop the engine.
2. Set the safety lock lever to the locked position.
3. Set the steering wheel to the seat side.
4. Grasp the left and right handles (1) and press the knobs (2) with your thumb to release the lock.
5. Pull the front window (3) toward you and lift while doing so.

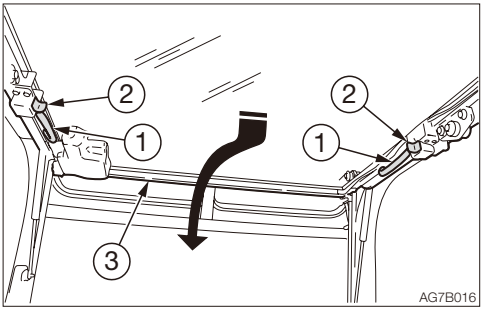


6. Release your thumb from the knobs (2) and then lift the front window (3) fully and lock the front window with lock pin (4).

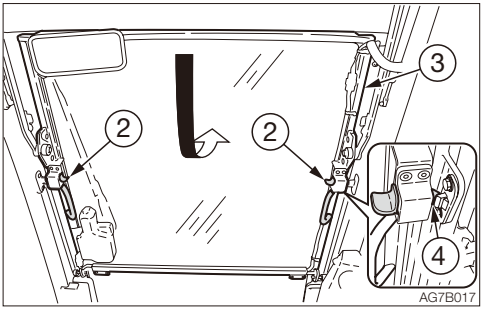
Closing

⚠ WARNING

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



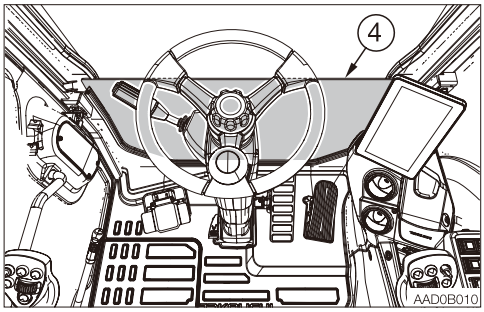
1. Set the steering wheel to the seat side.
2. Grasp the left and right handles (1) and press the knobs (2) with your thumb to release the lock.
3. Pull down the front window (3) and while doing so, slide it to the front and slowly lower it.



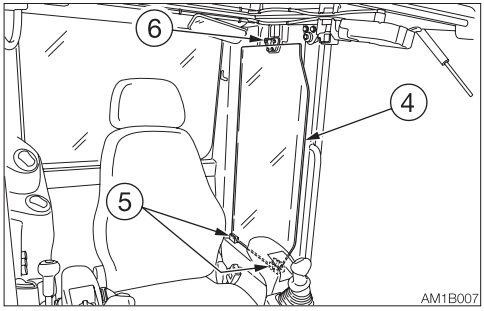
4. Release your thumb from the knobs (2) and then press the front window toward front and lock the front window with lock pin (4).

LOWER FRONT WINDOW

Removing

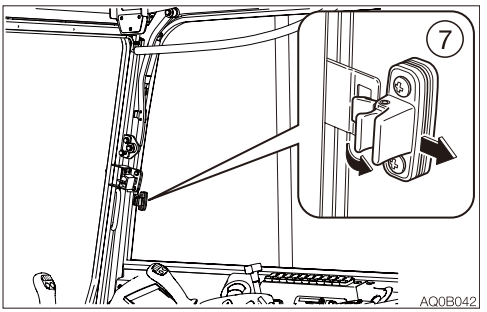


1. Open the front window and stow it in the ceiling.
2. Slowly lift the lower front window (4).



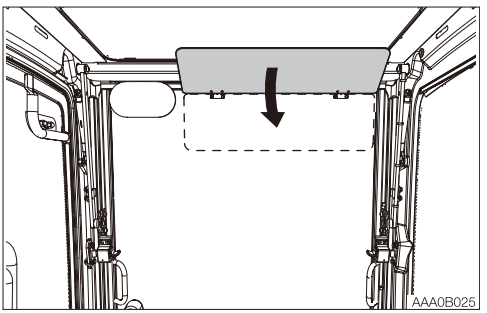
3. Hold the window in a vertical position (the bottom of the window should be in front of you), place it through the guide (5) on the left side of the cab, and then secure it with the support (6).

SIDE WINDOW



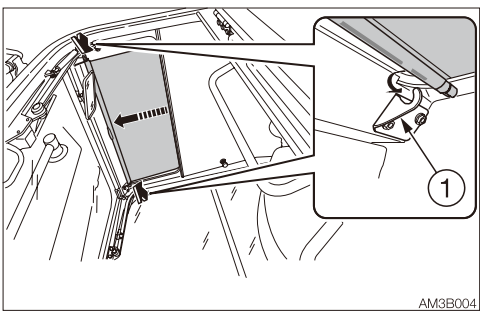
1. Grasp the catch (7), unlock it and open the side window.
2. To close the side window, close it until a click is heard.

SUN VISOR (IF EQUIPPED)



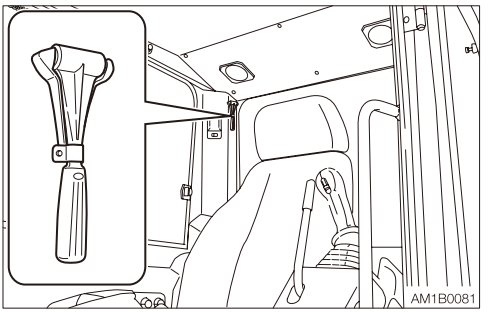
Use this device when the sunlight from the front is dazzling.

SUN SHADE (IF EQUIPPED)



1. Pull out the sun shade forward.
2. Hook the sun shade to the two catches (1).

EMERGENCY HAMMER (OPTIONAL)



An emergency hammer is installed to be used to escape from the cab in an emergency. When escaping, break the windows with the hammer.

- When breaking the window pane with a hammer, take great care not to injure yourself with the broken glass pieces.
- Remove the glass pieces from the window sill so as not to cut yourself when evacuating. Broken glass will fall from the window, so be careful of your footing and do not slip on the glass.

SEAT AND SEAT BELT

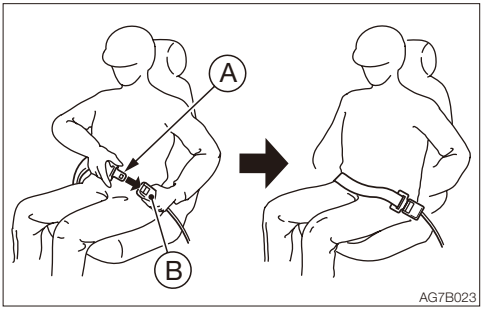
SEAT BELT

⚠ WARNING

Be sure to fasten the seat belt securely before starting the engine.

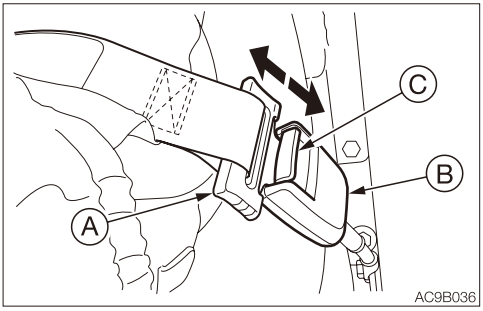
Fastening the seat belt

1. Adjust the seat to the desired position for operation, sit up and sit back in the chair.
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.
4. Check if the belt is securely locked by pulling it, and arrange the belt around your waist.

Releasing the seat belt

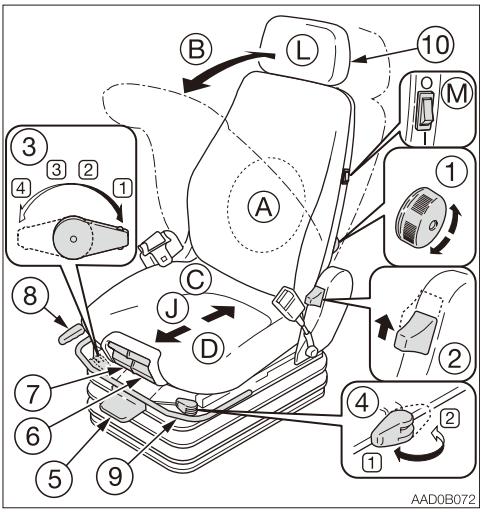


1. Grasp the tongue plate (A) and press the button (C) on the buckle (B).
   The seat belt retracts back into its original position.

AIR SUSPENSION SEAT

⚠ WARNING

- **Adjust and secure the seat.**
- **Do not make any adjustments while operating the machine.**
- **Do not set the backrest to its maximum reclining position and slide the seat backwards at the same time. Doing so may damage the rear window or cause injury.**
- **Remember that the backrest returns to the forward position abruptly due to the spring force.**



(A) Adjusting the lumber support

1. Turning the knob (1) in the direction of the arrow causes the lumber of the backrest to curve outwards.
2. Turning the knob (1) further removes the curve and returns the seat to its original position.

(B) Adjusting the backrest angle

1. Sit up and sit back in the chair.
2. Pull up the lever (2), adjust the backrest rear angle by using the spring force on the chair back. Release the lever (2) at the desired angle to secure the backrest.

(C) Adjusting the absorber

The seat adjustment using the absorber is applicable for various traveling conditions on roads or off roads. The cushioning effect can be individually set for each case.
Turn the lever (3) to the desired position and release.

Positions between
1: Soft cushioning
and
4: Hard cushioning

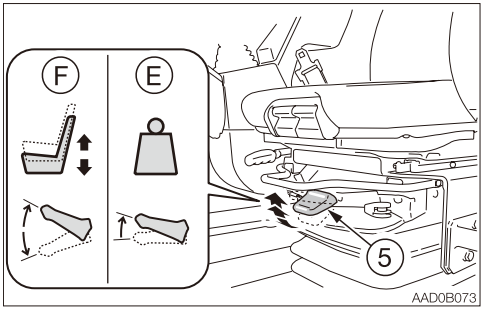
(D) The fore/aft isolator

It is activated under certain conditions such as crashing. Impacts of crash applied in the operating direction can be well absorbed by the operator's seat. Switching can be done with the lever (4).

Position 1: Fore/aft isolator on
Position 2: Fore/aft isolator off

(E) Adjusting according to operator's weight

IMPORTANT: Before performing the adjustment by weight, stop the machine and remain seated. Otherwise, the weight cannot be detected, resulting in malfunction.
IMPORTANT: Be sure to set the absorber to the soft cushioning position (1) when performing the adjustment by weight.



The seat should be adjusted according to the operator's weight. Briefly pull the actuator lever (5) of the automatic weight and height adjuster.

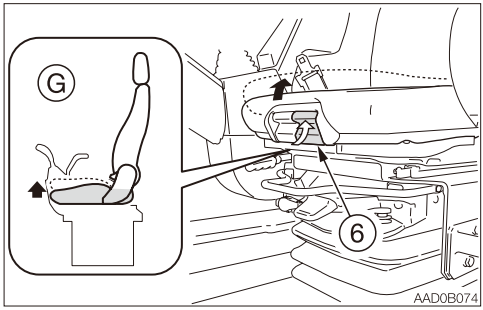
(F) Adjusting the seat height

IMPORTANT: Be sure to set the absorber to the soft position (1) when performing the height adjustment.
IMPORTANT: Do not operate the lever (5) (compressor) for one minute or more. Doing so will cause compressor failure. To protect the compressor, wait for at least three minutes before operating the lever (5) again.
IMPORTANT: If the height adjustment function fails, first lower the seat to the lowest position. Then, adjust the height again.

The seat height can be steplessly adjusted using the pneumatic mechanism.

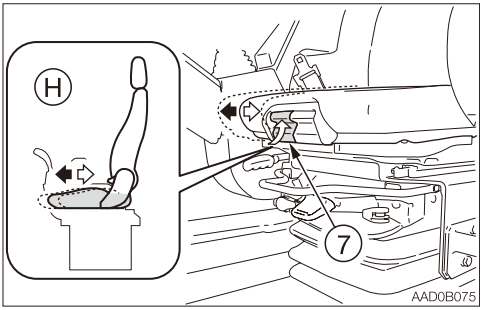
To adjust, push up or push down the lever (5) all the way up or down. When the seat reaches the level where it cannot be raised anymore even the lever (5) is pushed up, that level is the highest. If this happens, the height is automatically lowered a small distance to maintain the stroke of suspension.
Adjustment stroke: 80 mm (3.1 in.)

(G) Adjusting the seat pan angle



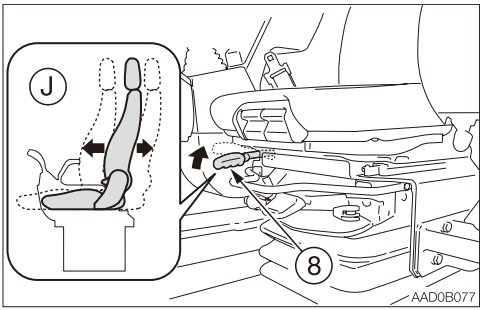
The angle of the seat pan can be individually adjusted.
To adjust, lift the left side handle (6). Use the pressure applied to the seat to set the seat pan to the desired angle.

(H) Adjusting the seat depth



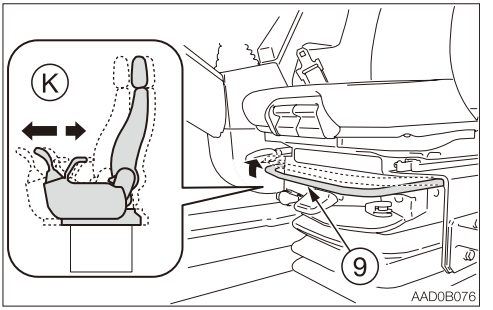
The depth of the seat pan can be individually adjusted.
To adjust, lift the right side handle (7). Move the seat cushion forward or backward until the desired seat depth is obtained.

(J) Adjusting fore-and-aft



1. Pull up the lever (8) and slide the seat backward or forward to the optimum position for operation.
2. Release the lever (8) at the optimum position to secure the seat.
   Adjustment range: 22 positions, in 210 mm (8.3 in.)

(K) Adjusting the operating lever stand



1. Pull up the lever (9) and slide the lever stand (seat).
2. Release the lever (9) at the optimum position to secure the lever stand (seat).
   Adjustment range: 10 positions, in 90 mm (3.5 in.)

(L) Adjusting the headrest height

1. Grab the headrest (10) with both hands, and move upward and downward. Adjust the height so that the headrest center is positioned behind your ears.

(M) Seat heater

⚠ CAUTION

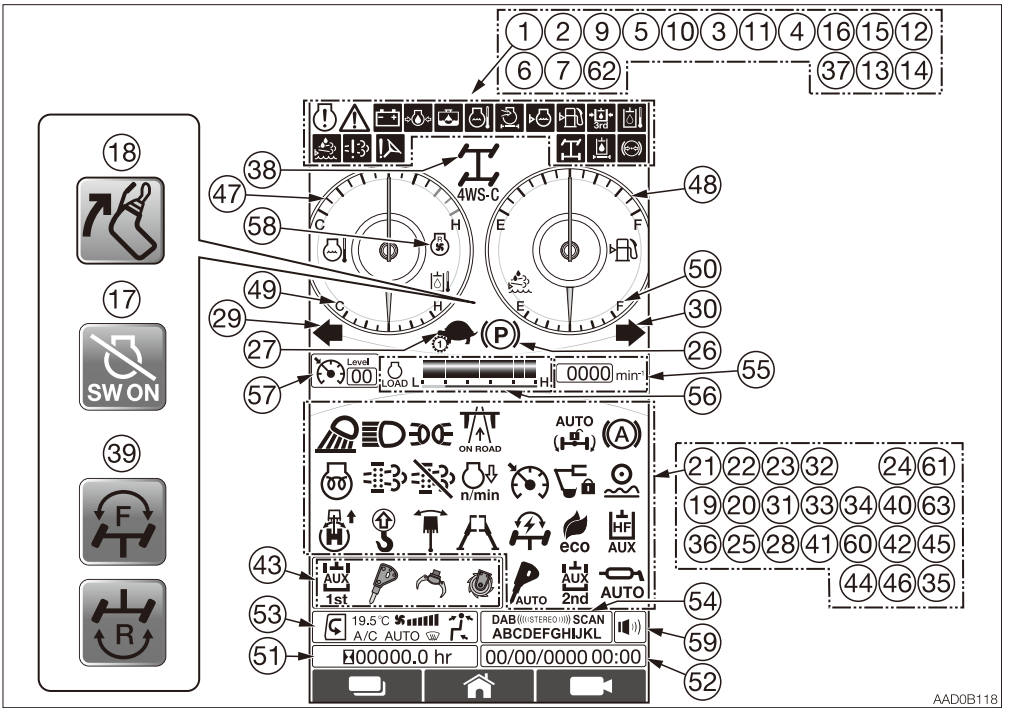
- Using the seat heater over an extended period of time may cause burns. People feeling ill or having sensitive skin, in particular, should be careful not to do so.
- Do not use it with a blanket or cushion placed on the seat.
- Clean up spilled water or soft drink immediately with a dry cloth. Dry the seat well before using the heater again.

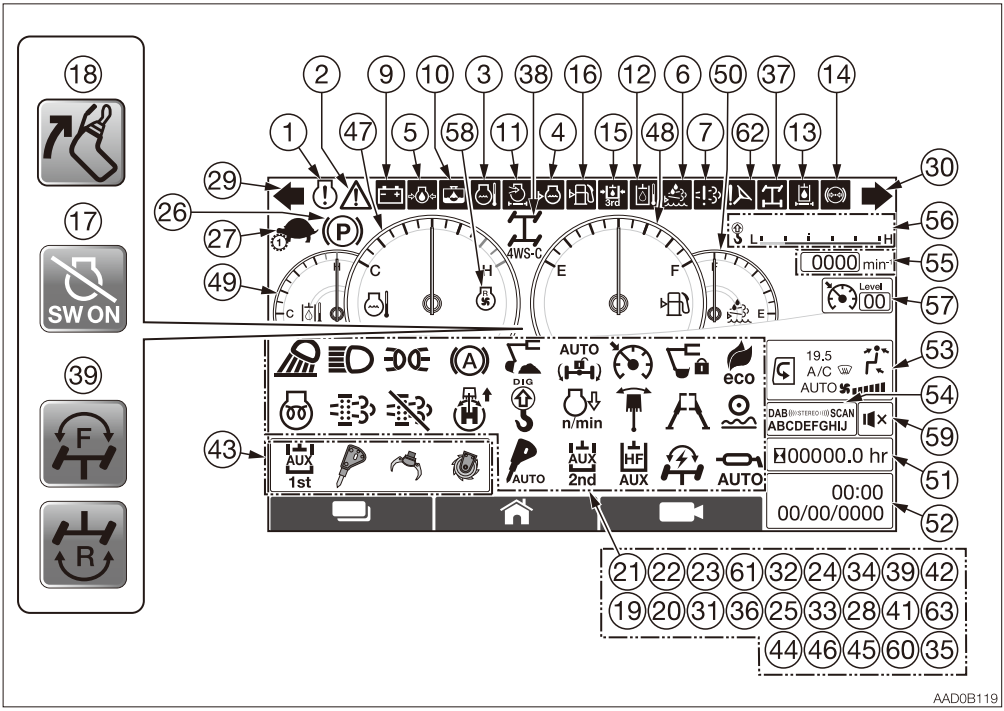
IMPORTANT: The battery voltage becomes low if the seat heater is left on for a long time when the engine is stopped.

O..... OFF
I ..... ON

MULTI-INFORMATION DISPLAY

HOME SCREEN





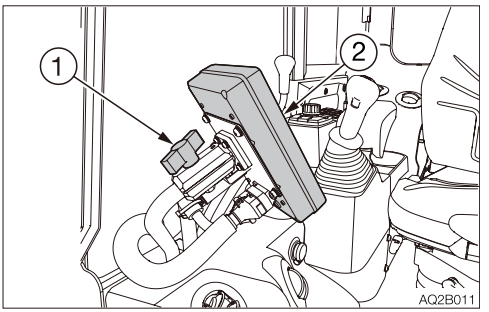
For explanation purposes, all lamps on the screen image above are in the lit condition. This screen image is different from that of the real operation. In the actual operation, if a warning is given or any function is selected, the corresponding symbol appears enlarged at the center of the display.

When the starter switch is set to ON, the Home screen appears with the third auxiliary hydraulic warning lamp and battery charge warning lamp lit. The machine system is normal if the lamps go off after the engine is started.

Note: Depending on the specifications, the camera screen is displayed automatically when the safety lock lever is lowered to the Release position.

Note: The display differs according to the specifications.

ROTATING THE DISPLAY



The display can be set to landscape view.
1. Turn the bar knob (1) counterclockwise.
2. Rotate the display (2) clockwise.
3. Turn the bar knob (1) clockwise to secure the display.

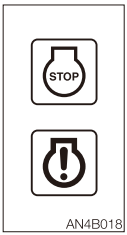
Note: This function can be manually turned on or off. For setting the display rotation, refer to “6. ON/OFF setting” on page 2-56.

WARNING LAMPS

If a warning is given, the corresponding warning lamp is displayed. If multiple warnings are given at the same time, only the warning lamp with the smallest symbol number is displayed enlarged. Other warning lamps are displayed at their original locations. If any other warning occurs while one warning lamp is being displayed enlarged, the enlarged display changes to the subsequent warning.

IMPORTANT: If a warning lamp flashes and an alarm is sounded, immediately stop all operations and check the corresponding component.
Refer to "If a warning lamp flashes" on pages 6-16 to 6-19.

1. Engine stop request/ECM error warning lamp



..... While the starter switch is ON, if a serious engine problem occurs and thus immediate engine stop is required, this warning lamp starts flashing. Immediately stop the engine and inspect the problem.

.... This warning lamp flashes and an alarm is sounded if the Electronic Control Module (ECM) detects an engine problem while the starter switch is in the ON position. The problem detected is recorded as an ECM error.
Refer to "Engine error code list" on pages 6-24 to 6-56.

2. Vehicle and engine emergency lamp
This lamp appears enlarged and flashes with an alarm sound if there is a problem with the machine. Go to "(7) Error code display" from the Menu screen, get the vehicle or engine error code number, and consult your sales or service dealer referring to the "Vehicle error code list" or "Engine error code list" in this manual.
Refer to "Menu screen" on page 2-39.
Refer to "(7) Error code display" on page 2-60.
Refer to "Vehicle error code list" on pages 6-20 to 6-23.
Refer to "Engine error code list" on pages 6-24 to 6-56.

3. Coolant temperature warning lamp
This lamp flashes and an alarm is sounded if the engine coolant temperature becomes abnormally high while the engine is running.

4. Coolant level warning lamp
This lamp flashes if the coolant level falls below a certain point while the engine is running.

5. Engine oil pressure warning lamp
This lamp flashes and an alarm is sounded if the engine oil pressure becomes abnormally low while the engine is running.

6. DEF/AdBlue® level warning lamp

If the level of DEF/AdBlue® substantially decreases while the engine is running, this lamp either lights up or flashes and the buzzer sounds.

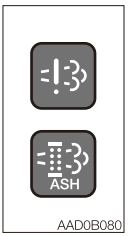


..... Orange: The lamp lights up if the level of DEF/AdBlue® decreases to less than 15% (Mode 1).
The lamp starts flashing if the level of DEF/AdBlue® decreases to less than 10% (Mode 2).
The buzzer starts sounding if the level of DEF/AdBlue® decreases to less than 5% (Mode 3).
From 10 minutes after the detection of “less than 5%”, the lamp continues to flash and the buzzer continues to sound for 5 minutes. The engine speed is limited (Mode 4).

..... Red: From 15 minutes after the detection of “less than 5%”, the lamp continues to flash and the buzzer continues to sound for 5 minutes. The engine speed is limited (Mode 5).
From 20 minutes after the detection of “less than 5%”, the lamp continues to flash and the buzzer continues to sound. The engine is practically in the idling stage (Mode 6).

Note: The Selective Catalytic Reduction (SCR) system is a system to reduce NOx emissions into the atmosphere, by spraying the DEF/AdBlue® solution (reduction agent) into the exhaust gas.

7. SCR system warning lamp/ASH accumulation warning lamp



..... SCR system warning lamp(Red)

..... ASH accumulation warning lamp

- **SCR system warning lamp**
  If an abnormality is detected in the SCR system while the engine is running, this lamp either lights up or flashes and the buzzer sounds.

- **ASH accumulation warning lamp**
  The lamp lights up if the ash load exceeds 100% (Mode 1).
  The lamp starts flashing and the buzzer starts sounding if the ash load exceeds 105% (Mode 2).
  The lamp continues to flash and the buzzer continues to sound if the ash load exceeds 110%.
  The ECM error warning indicator lamp also flashes (Mode 3).
  This lamp lights up or flashes to indicate that the DPF must be replaced.
  Refer to “Replacing the diesel particulate filter” on page 5-88.

8. Combinations of lighting pattern of SCR system warning lamp and engine speed control

<table>
<tr><td>DEF/AdBlue® remaining level</td><td>Engine speed</td><td>!</td><td>STOP</td><td>Buzzer</td><td>Orange</td><td>Red</td></tr>
<tr><td>Exceed 15%</td><td rowspan="5">-</td><td rowspan="3">-</td><td rowspan="5">-</td><td rowspan="3">-</td><td>-</td><td>-</td><td rowspan="5">-</td></tr>
<tr><td>Less than 15%</td><td rowspan="2">-</td><td>Light up</td><td>Light up</td></tr>
<tr><td>Less than 10%</td><td rowspan="3">Flash(1-second interval)</td><td rowspan="3">Flash(1-second interval)</td></tr>
<tr><td>Less than 5%</td><td rowspan="3">Light up</td><td rowspan="3">1-second interval</td></tr>
<tr><td>Less than 5% After 10 minutes</td><td rowspan="3">Limited</td></tr>
<tr><td>Less than 5% After 15 minutes</td><td rowspan="2">-</td><td rowspan="2">Flash</td><td rowspan="2">0.6-second interval</td><td rowspan="2">Flash(0.6-second interval)</td><td rowspan="2">-</td><td>Flash(1-second interval)</td></tr>
<tr><td>Less than 5% After 20 minutes</td><td>Low idle</td><td>Flash(0.6-second interval)</td></tr>
<tr><td>DEF/AdBlue® quality</td><td>Engine speed</td><td>!</td><td>STOP</td><td>Buzzer</td><td>Orange</td><td>Red</td></tr>
<tr><td>Normal</td><td rowspan="4">-</td><td>-</td><td rowspan="4">-</td><td>-</td><td>-</td><td rowspan="4">-</td><td rowspan="4">-</td></tr>
<tr><td>Too low is detected</td><td rowspan="2">Light up</td><td rowspan="3">1-second interval</td><td rowspan="3">Light up</td></tr>
<tr><td>3 hours and 15 minutes after Too low is detected</td></tr>
<tr><td>3 hours and 25 minutes after Too low is detected</td><td rowspan="2">Limited</td></tr>
<tr><td>3 hours and 45 minutes after Too low is detected</td><td rowspan="2">-</td><td rowspan="2">Flash</td><td rowspan="2">0.6-second interval</td></tr>
<tr><td>3 hours and 55 minutes after Too low is detected</td><td>Low idle</td></tr>
<tr><td>SCR system tampering</td><td>Engine speed</td><td>!</td><td>STOP</td><td>Buzzer</td><td>Orange</td><td>Red</td></tr>
<tr><td>Normal</td><td rowspan="4">-</td><td>-</td><td rowspan="4">-</td><td>-</td><td>-</td><td rowspan="4">-</td><td rowspan="4">-</td></tr>
<tr><td>Detected</td><td rowspan="2">Light up</td><td rowspan="3">1-second interval</td><td rowspan="3">Light up</td></tr>
<tr><td>3 hours and 15 minutes after detected</td></tr>
<tr><td>3 hours and 25 minutes after detected</td><td>Limited</td></tr>
<tr><td>3 hours and 45 minutes after detected</td><td>Limited</td><td rowspan="2">-</td><td rowspan="2">Flash</td><td rowspan="2">0.6-second interval</td></tr>
<tr><td>3 hours and 55 minutes after detected</td><td>Low idle</td></tr>
<tr><td>SCR system error</td><td>Engine speed</td><td>!</td><td>STOP</td><td>Buzzer</td><td>Orange</td><td>Red</td></tr>
<tr><td>Normal</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td rowspan="2">-</td><td rowspan="2">-</td></tr>
<tr><td>Error occurred</td><td colspan="5">Varies depending on the error contents</td></tr>
</table>

9. Battery charge warning lamp
This lamp flashes and an alarm is sounded if a problem rises in the charging system while the engine is running.

10. Water separator warning lamp
This lamp flashes if the water is detected within the water separator while the starter switch is in the ON position.

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

12. Hydraulic oil temperature warning lamp
This lamp flashes if the hydraulic oil temperature becomes abnormally high while the engine is running.

13. Travel line filter warning lamp
This lamp flashes if the travel line filter is clogged while the engine is running. This lamp may flashes directly after the engine in started in cold weather. This is not a malfunction. The lamp will turn off as the engine warms up.

14. Brake oil pressure warning lamp

⚠ CAUTION

Wait five seconds after this lamp goes out before operating the machine.
If this lamp is lit while traveling on a road, pull off the road as soon as possible.

This lamp lights when the brake oil pressure becomes abnormally low while the engine is running.

15. Third auxiliary hydraulic warning lamp
This lamp starts flashing and an alarm sounds if the fixed side (left “e”) pressure of the auxiliary 3rd drops abnormally while the engine is running, or while the quick-hitch is being removed or installed.

16. Fuel level warning lamp
This lamp flashes when the fuel level is low while the starter switch is in the ON position.

17. Engine shutdown switch warning lamp (If equipped)



This warning lamp appears enlarged on the display and an alarm sounds if the engine is started when the engine shutdown switch is ON. The engine cannot be started. First, turn off the engine shutdown switch, and then start the engine.

18. Safety start warning lamp



This lamp appears enlarged on the display and the buzzer sounds if the engine is started when the safety lock lever is in the unlock position. The engine cannot be started. First, set the safety lock lever to the lock position, and then start the engine.

19. Exhaust temperature alarm indicator lamp/Glow indicator lamp



..... This indicator lights up to warn if the exhaust temperature is abnormally increased. Check for any flammable items around the exhaust piping.

This indicator lamp turns off when the engine preheating is completed.

62. Emergency steering warning lamp (If equipped)

This warning lamp flashes and an alarm sounds if a problem occurs in the steering hydraulic system while the engine is running.

INDICATORS

20. Standstill regeneration in process/ Demand indicator lamp

In the SCR system, when crystallization is detected or soot is accumulated in the DPF, this indicator lamp starts flashing to indicate that the standstill regeneration must be performed. The lamp changes from flashing to solid when the standstill regeneration is started, and it goes off when the regeneration is ended.
If the machine continues to operate without performing standstill regeneration, the flashing becomes rapid to indicate that it is no longer possible to start the standstill regeneration by operating the switch. In this case, ask your sales or service dealer for help.
The time interval between the two regeneration requests is shortened in proportion to the number of regenerations performed.
Very short intervals between the two requests for standstill regeneration can be an indication of a defect. In this case, ask your sales or service dealer for help.

21. Working light indicator



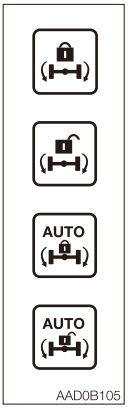
..... Turns on when the boom light, working lights, front light, side lights, tail lamps and switch lamps are turned on.

..... Turns on when the boom light, working lights, front light, rear light, side lights, tail lamps and switch lamps are turned on.

22. High beam indicator lamp
This lamp lights to indicate that the high beams are lit. It also lights when the passing operation is in progress.

23. Position lamp indicator lamp
Lights up when the position lamps are lit.

24. Ram lock indicator lamps



..... Lock: Digging

..... Release: Traveling

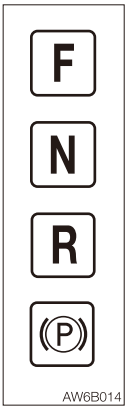
..... Automatic (blue): Traveling at low speed (ram lock)

..... Automatic (orange): Traveling at low speed (ram lock release)

Refer to “Ram lock switch” on page 2-75.

25. Lift overload warning indicator lamp
This lamp turns on when the lift overload warning switch is turned on.

26. Travel gear position/PB indicator lamp



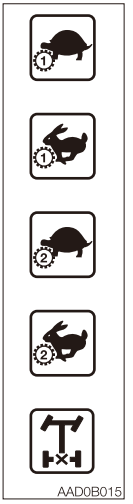
..... Travel Forward

..... Neutral

..... Travel in Reverse

..... Parking brake is on.

27. Travel speed/Diff- lock indicator lamp



..... Low-speed travel 1

..... High-speed travel 1

..... Low-speed travel 2

..... High-speed travel 2

..... Differential gear lock (Diff-lock)

This lamp turns on either when the travel speed is changed or the Diff-lock switch is pressed.

28. Swing/Second boom indicator lamp



..... Swing is selected.

..... Second boom is selected.

29. Turn signal indicator lamp (L)
This lamp lights to indicate that the left turn signal indicator is flashing.

30. Turn signal indicator lamp (R)
This lamp lights to indicate that the right turn signal indicator is flashing.

31. DPF auto regeneration/Standstill regeneration stop indicator lamp/Low coolant temperature indicator lamp



..... DPF auto regeneration under way

..... Standstill regeneration stop

..... Low coolant temperature indicator lamp

- **DPF auto regeneration under way**
  The DPF regeneration is automatically performed by the engine when certain criteria are met. The operator only has to check the display.

- **Standstill regeneration stop**
  This lamp lights up when the standstill regeneration or the auto regeneration is stopped. The DPF auto regeneration is not performed while the lamp is lit. Perform the standstill regeneration if the Standstill generation in process/ Demand indicator lamp is flashing. Refer to “Standstill regeneration/Stop switch” on page 2-76.

- **Low coolant temperature indicator lamp**
  The low coolant temperature indicator lamp turns on if the engine protection function is activated due to low coolant temperature.

Indicator lamp	Coolant temperature	Machine control
Lit	Low	Engine RPM and engine load factor limited*
Out	Normal	Normal operation enabled

*: The engine RPM and engine load factor are limited to protect the engine. Upon reaching the time limit set according to the temperature at the engine start, the low coolant temperature indicator lamp goes out and the speed is gradually increased up to the RPM set by the throttle controller.

32. Traveling /Digging mode indicator lamp



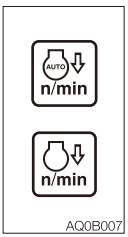
..... Traveling mode

..... Digging mode

- **Traveling mode**
  The icon representing traveling is displayed.
  To switch to the traveling mode, set to the low-speed or high-speed travel 2 and release the brake pedal lock.

- **Digging mode**
  The machine is in the digging mode unless it is in the traveling mode.

33. Deceleration indicator lamp



..... Automatic deceleration indicator

..... Deceleration indicator

- **Automatic deceleration indicator**
  It lights up when the automatic deceleration is selected in the ON/OFF setting, and remains lit while in the deceleration mode.
  Refer to “6. ON/OFF setting” on page 2-56.

- **Deceleration indicator**
  This lamp turns on when the deceleration button is pressed.
  The lamp lights up to indicate that the engine is in the deceleration mode at low idling speed.
  Refer to “Deceleration button” on page 2-70.

34. Auto-cruise/Foot accelerator mode indicator lamp



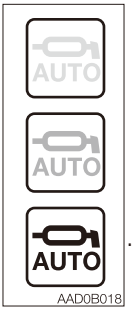
..... Auto-cruise mode

..... Foot accelerator mode

- **Auto-cruise mode**
  This lamp turns on when the cruise control switch is pressed.
  Refer to “Cruise control switch” on page 2-67.

- **Foot accelerator mode**
  This lamp turns on when the travel pedal button is pressed. It remains lit as long as the foot accelerator mode is selected.
  Refer to “Travel pedal button” on page 2-68.

35. Auto greasing indicator lamp

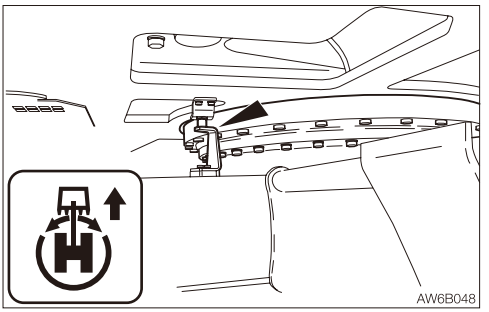


..... White: Auto greasing is enabled.

..... Green: Auto greasing is being operated.

..... Red: Greasing is disabled. Grease tank is empty or fuse is blown.
Refer to “If a warning lamp flashes” on page 6-16.

36. Upperstructure position warning lamp (traveling mode)

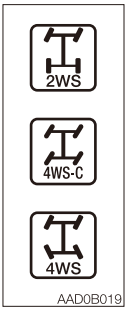


This lamp lights if the upperstructure and the undercarriage become misaligned to the right or left while traveling.

37. 2WS mode rear wheels out of neutral range indicator lamp

This lamp turns on when the rear wheels are not set to the neutral position in the 2WS mode. Visually check the rear wheels. If the machine cannot travel properly, change the 2WS mode to the 4WS or 4WS-C mode, and then set the rear wheels to the neutral position.

38. 2WS/4WS indicator lamp



..... 2WS mode

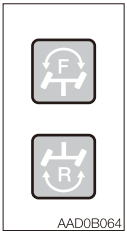
..... 4WS-C mode

..... 4WS mode

Operate the steering and 2WS/4WS select switch to change the mode between the 2WS mode and 4WS or 4WS-C mode. This lamp flashes during the switching operation. The switching operation is available only in the digging mode (Low-speed travel 1 or High-speed travel 1).
Refer to “2WS/4WS select switch” on page 2-83.

- **2WS mode**
  The machine travels with the rear wheels set in the travel direction.
- **4WS-C mode**
  The front wheels and rear wheels are set in the same direction and the machine travels right or left while it faces to the front.
- **4WS mode**
  The front wheels and rear wheels are set in the opposite direction and the machine turns sharply with less turning radius difference compared with the 2WS mode. (The rear end of the machine extrudes to the outside.)

39. Steering indicator lamp



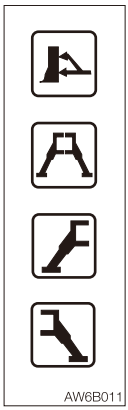
..... Front wheel steering indicator

..... Rear wheel steering indicator

- **Front wheel steering indicator**
  The indicator is displayed when the front wheels are not set to the neutral position while switching the mode from the 2WS mode to the 4WS or 4WS-C mode. The indicator goes off after setting the front wheels to the neutral position with the steering operation and the mode changes to the 4WS or 4WS-C mode.
- **Rear wheel steering indicator**
  This indicator is displayed when the rear wheels are not set to the neutral position while switching the mode from the 4WS or 4WS-C mode to the 2WS mode. The indicator goes off after setting the rear wheels to the neutral position with the steering operation and the mode changes to the 2WS mode.

40. Attachment lock indicator lamp
This lamp lights to indicate that the operation of working equipment is locked.

41. Blade/Outriggers indicator lamp (Digging mode)



..... Dozer blade operation

..... Outrigger operation (both sides)

..... Outrigger operation (left side)

..... Outrigger operation (right side)

This lamp turns on when the blade or outrigger button is pressed. It remains lit while in the blade or outrigger mode.
Refer to “Blade/Outrigger lever (if equipped)” on page 2-90.

42. ECO mode indicator lamp
This lamp turns on when the ECO mode switch is turned on. The machine drives with reduced RPM for lower fuel consumption, without compromising workability.