

OPERATOR'S MANUAL

Original instructions

TCR50

Serial No. 305300003~

Book No. AS7E002

OETCR50_3-XC

CRAWLER DUMPER

TAKEUCHI



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

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.

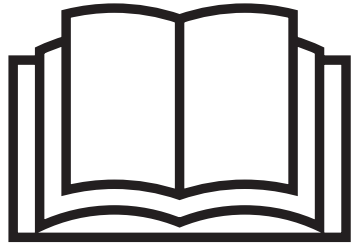
It is the owner or employer's responsibility to fully instruct each operator in the proper and safe operation of all equipment. All persons using this machine should thoroughly familiarize themselves with the contents of this manual.

All operators must be instructed on the proper functions of this machine 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

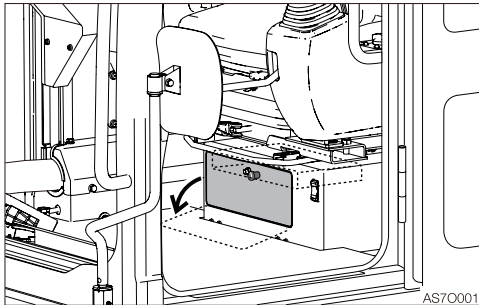
FOREWORD

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.

MANUAL STORAGE COMPARTMENT

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

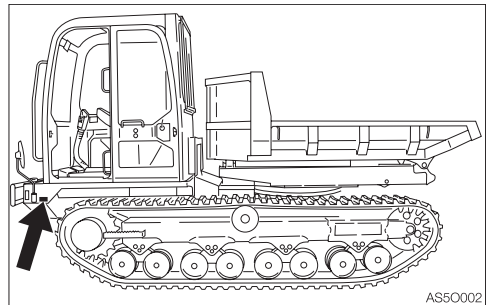


1. To open the lid under the seat, push the button.
2. After using the manual, place it in the plastic pouch and store it back in the manual storage compartment.

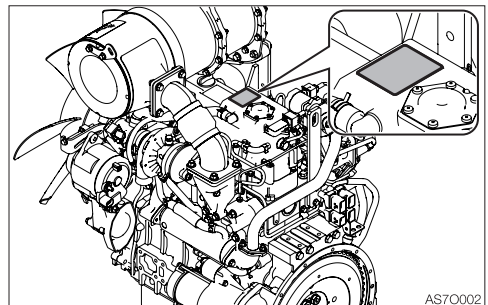
SERIAL NUMBERS

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:

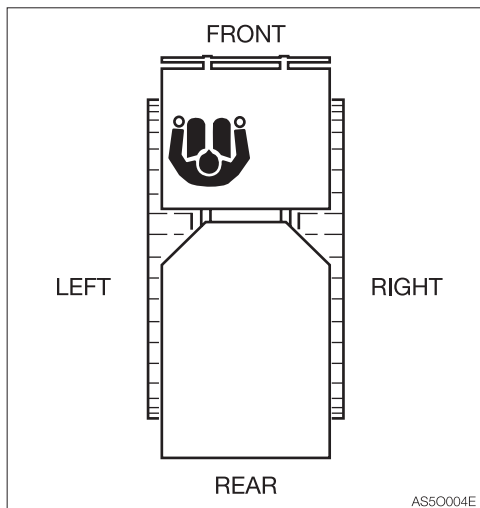


Engine number:



MACHINE DESCRIPTION

FRONT, REAR, LEFT AND RIGHT



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

DESIGNATED OPERATIONS

Use this machine primarily for the following operations:

- Hauling over rough terrain

FEATURES

- Hydrostatic drive system
- Safety structure cab with ROPS/FOPS
- Engine emergency stop system
- Dump body with 90-degree right/left swing
- Low engine noise and exhaust emissions

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

CONTENTS

Introduction	0-2
---------------------------	------------

Machine description	0-3
----------------------------------	------------

Safety	1-1
---------------------	------------

General precautions	1-2
Precautions when preparing	1-11
Precautions when starting	1-14
Precautions when operating	1-16
Precautions when stopping	1-24
Precautions when transporting	1-25
Precautions on maintenance	1-26
Safety signs (decals)	1-35

Controls	2-1
-----------------------	------------

Names of components	2-2
Covers	2-4
Ignition key	2-4
Fuel filler port	2-4
Engine hood	2-5
Side cover (tool box)	2-6
Battery cover	2-6
Dump body prop	2-7
Cab	2-8
Cab door	2-8
Emergency exit	2-8
Front window	2-9
Lower front window	2-10
Side window	2-11
Emergency hammer (optional)	2-11
Seat and seat belt	2-12
Seat	2-12
Seat belt	2-13
Multi-information display	2-14
Main Menu screen	2-14
Warning lamps	2-15
Indicators	2-16
Screen control key	2-20
Screen navigation	2-22
Switching images	2-26
Switches	2-27
Ignition switch	2-27
Engine shutdown switch	2-27
Throttle controller	2-27
Horn button	2-28
Deceleration button	2-28
Turn signal buttons	2-28
Travel speed button	2-29
Automatic deceleration switch	2-29

DPF manual regeneration/inhibit select switch	2-30
Parking brake switch	2-32
Working light switch	2-32
Wiper switch	2-33
Washer switch	2-33
Beacon lamp switch (If equipped)	2-33
Levers and Pedals	2-34
Safety lock lever	2-34
Control levers	2-34
Throttle pedal (optional)	2-35
Accessories	2-36
Air conditioner (If equipped)	2-36
Ashtray	2-42
Power supply socket	2-42
External power socket	2-43
Interior light	2-43
Mirrors	2-43
Radio (for cab)	2-44
Fuel Supply Pump	2-48

Operation	3-1
------------------------	------------

Before starting operation	3-2
Getting on or off the machine	3-2
Walk-around inspection	3-2
Daily inspection	3-2
Starting and stopping the engine	3-3
Before starting the engine	3-3
Starting the Engine	3-4
Warming up the engine	3-5
Stopping the engine	3-5
Operating the machine	3-6
Lever pattern	3-6
Warming up the machine (hydraulic oil)	3-8
Inspection after warm-up	3-9
Traveling the machine	3-10
Stopping travel	3-12
Operating the dump body	3-13
Operating procedures	3-14
Cautions on operating	3-14
Precautions on using the machine in water	3-15
Precautions when traveling on slopes	3-16
Operations possible with this machine	3-17
Parking the machine	3-18
Parking	3-18
Inspection and checks after stopping the engine	3-19
Handling in cold climates	3-20

Preparing for cold climates	3-20
Cautions after operations.....	3-20
After the cold climate.....	3-20
Handling rubber tracks	3-21
Prohibitions.....	3-21
Cautions.....	3-22
Preventing the rubber tracks from coming off	3-22

Transport4-1

Loading and unloading	4-2
Hoisting the machine	4-3
Securing the machine.....	4-4

Maintenance5-1

General.....	5-2
Maintenance overview	5-2
Cautions on maintenance	5-2
Service data	5-4
Fuel and lubricant table.....	5-4
List of consumables.....	5-7
List of tools (If equipped).....	5-8
List of tightening torques	5-9
Safety-critical parts.....	5-10
Maintenance list.....	5-12
Walk-around inspection	5-14
Inspecting by opening the engine hood and covers.....	5-14
Inspecting by walking around the machine.....	5-15
Inspecting while sitting in the operator's seat.....	5-15
Daily inspection (every 10 hours).....	5-16
Inspecting and replenishing the coolant	5-16
Inspecting and replenishing the engine oil	5-17
Inspecting the water separator	5-18
Inspecting the fuel level.....	5-19
Inspecting the hydraulic oil tank level and replenishing	5-20
Lubricating the dump body and track rollers.....	5-21
After the initial 50 hours (only for new machines).....	5-22
Replacing the hydraulic oil return filter	5-22
Replacing the pilot line filter.....	5-23
Inspecting and adjusting the fan belt..	5-24
Inspecting and adjusting the compressor belt (Air conditioner).....	5-26

Every 50 hours	5-28
Inspecting the track tension	5-28
Draining the water from the fuel tank..	5-29
Inspecting the battery fluid level and replenishing	5-30
After the initial 250 hours (only for new machines)	5-32
Replacing the travel motor gear oil.....	5-32
Every 250 hours	5-33
Inspecting and adjusting the fan belt..	5-33
Inspecting and adjusting the compressor belt (Air conditioner).....	5-33
Cleaning the air cleaner	5-34
Cleaning the radiator fins and the oil cooler fins.....	5-36
Cleaning the condenser (Air conditioner).....	5-36
Cleaning the air filters (Air conditioner)	5-37
Inspecting the refrigerant (gas) level (Air conditioner).....	5-38
Lubricating the swing bearing	5-40
Every 500 hours	5-42
Replacing the pilot line filter.....	5-42
Replacing the engine oil and the oil filter	5-42
Replacing the fuel filter.....	5-44
Replacing the water separator filter	5-45
Every 1000 hours	5-46
Replacing the hydraulic oil return filter	5-46
Replacing the travel motor gear oil.....	5-46
Replacing the air cleaner element	5-46
Replacing the hydraulic oil and cleaning the suction strainer	5-48
Inspecting and adjusting the engine valve clearance	5-50
Inspecting the radiator cap	5-50
Every 1500 hours	5-51
Inspecting the crankcase breather system	5-51
Every 2000 hours	5-52
Cleaning the engine cooling system...	5-52
Every 3000 hours	5-54
Inspecting the turbocharger (blow wash as necessary)	5-54
Inspecting, cleaning and checking operation of the EGR valve	5-54
Cleaning the EGR lead valve.....	5-54
Cleaning the EGR cooler (cleaning the water side and exhaust air passage blower).....	5-54

Inspecting the operation of the air intake throttle valve	5-54
Inspecting and cleaning the fuel injector	5-54
When required	5-55
Inspecting and replenishing the windshield washer fluid	5-55
Lubricating the levers.....	5-55
Draining the water from the water separator	5-56
Inspecting and cleaning the DPF soot filter	5-56
Inspecting the rubber tracks	5-57
Replacing the rubber tracks	5-58
Every 2 years	5-60
Replacing the receiver dryer.....	5-60
Maintenance during extended storage period.....	5-61

Troubleshooting6-1

Symptoms that are not malfunctions	6-2
If the engine overheats.....	6-3
If the battery goes dead.....	6-4
If a fuse blows	6-6
Inspecting and replacing the fuse.....	6-6
Inspecting the fusible link	6-7
Restarting after adding fuel	6-8
Bleeding air from the fuel system	6-8
If a warning lamp flashes	6-10
Vehicle error code list.....	6-12
Engine error code list	6-14
Other symptoms.....	6-20
Towing.....	6-24
Lowering the dump body.....	6-25
If the cab is damaged	6-26

Specifications7-1

Basic Specifications.....	7-2
Machine dimensions.....	7-4
Operating ranges.....	7-6

Options8-1

General precautions	8-2
Safety precautions	8-2
Cautions when installing attachments ..	8-2
Precautions when operating attachments	8-3
Optional equipment mass	8-4





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 or wrong indication of alarm and panel, etc.) is detected during the operation or inspection and maintenance of the machine, please inform the administrator 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.



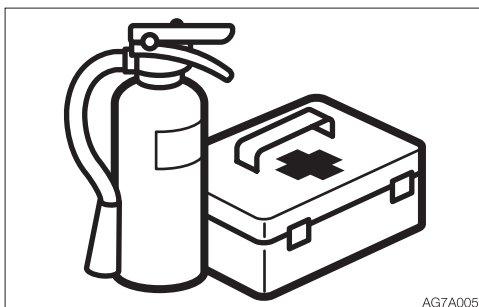
SAFETY GENERAL PRECAUTIONS

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.

- Learn 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, cab and doors are in place and secured. Repair or replace damaged parts before operating the machine.

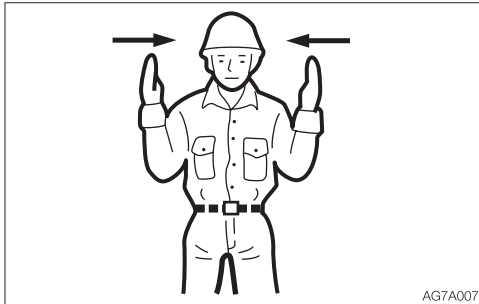


- Know how to use the safety lock lever, seat belt, dump body prop and other safety equipment and use them properly.
- Never remove any safety equipment except for servicing. Keep all safety equipment in good operating condition.



SAFETY GENERAL PRECAUTIONS

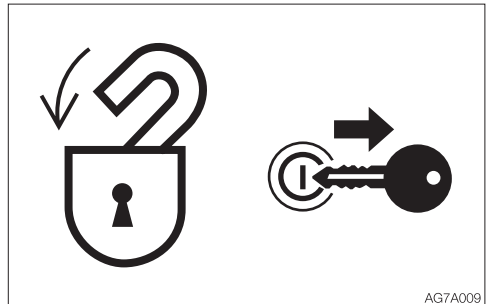
Use a signal person and a flag person



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, remove/install the lower window or adjust the operator's seat, lower the dump body all the way, raise the safety lock lever to engage the lock and stop the engine. If any control is accidentally touched when the safety lock lever is lowered (unlocked), the machine will suddenly move and cause serious injury or death. If it is absolutely necessary to leave the raised dump body unattended, be sure to engage the dump body prop to prevent the dump body from dropping.
- Be careful not to touch the operating levers when raising or lowering the safety lock lever.
- Before leaving the operator's seat, fully lower the dump body, raise the safety lock lever to engage the lock and stop the engine. Also, be sure to remove the key, lock the door 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 DPF 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 DPF.
DPF: Diesel Particulate Filter

**Fire prevention**

When working in a certain environment, it is impossible to prevent combustible debris from collecting in the machine. This debris, in itself, may cause a fire; however, when mixed with fuel, oil or grease in a hot or confined place, the danger of fire is greatly increased. The following fire prevention guidelines should be used to supplement the operator's fire prevention efforts. In no case should the guidelines be used, or assumed, as replacements for diligent operator efforts at preventing fires (that include regular schedule of cleaning and inspecting the machine as conditions require).

The following guidelines will help to keep your equipment up and running efficiently and keep the risk of fire to a minimum.

1. Maintain a CHARGED fire extinguisher on or near the machine at all times and **KNOW HOW TO USE IT**.
2. Remove debris and blow out dust regularly from side air intake areas, engine radiator, hydraulic oil cooler, air conditioning condenser core to prevent overheating of the engine and hydraulics and to maintain efficient operation of the machine.
3. Blow off all accumulated debris near hot engine exhaust components (turbocharger and exhaust manifold as well as exhaust pipes and muffler) at the completion of each work shift or more frequently when working in severe conditions where large amounts of combustible debris are present. Engine exhaust systems provide numerous small pockets where flammable debris can gather. Even small accumulations close to hot exhaust components can ignite and smolder.
4. Clean out all accumulated debris (twigs, pine needles, branches, bark, leaves, saw dust, small wood chips) and any other combustible materials from the under covers inside the machine or the lower machine structure, as well as from areas in proximity to the engine, fuel and hydraulic oil systems, after the completion of each work shift or more frequently.
5. Inspect the machine regularly for any signs of diesel fuel or hydraulic system leakage. Check for worn or damaged fuel or hydraulic lines before starting up any equipment.
6. Clean up any grease, diesel fuel, hydraulic and lubricating oil accumulation and spillage immediately.
7. Steam clean the areas of engine and the under covers at least once a month or more frequently when working in severe conditions where large amounts of combustible debris are present.
8. Use only nonflammable solutions for cleaning the machine and components.
9. Inspect the exhaust system daily for any signs of leakage. Check for worn, cracked, broken or damaged pipes or muffler. Also check for missing or damaged bolts or clamps. Should any exhaust leaks or defective parts be found, repairs must be made immediately. Engine exhaust leaks can cause fires. Do not operate the machine until the exhaust leak is repaired.



10. During daily operation of the machine, the occurrence of exhaust leaks are usually accompanied by a change or increase in engine exhaust noise levels. These audible warnings cannot be ignored. Should any exhaust leaks occur during operation, the machine must be shut down immediately and not put back to work until the necessary repairs have been completed.
11. Before starting repair work, such as welding, the surrounding area should be cleaned and a fire extinguisher should be close by.
12. Do not use the machine on top of or to push piles of burning timber. A machine fire will likely result.

What to do to prepare for a machine fire

- Prevent the fire from happening in the first place by ensuring that all machine systems are frequently inspected and always well maintained.
- Ensure that any hand held fire extinguishers are charged and in working order. Fire extinguishers require routine care. Follow the manufacturer's instructions for inspection and maintenance shown on the label of the fire extinguisher and in the extinguisher manufacturer's manual.
- Ensure that you follow all national, state / provincial and local regulations dealing with fire fighting in effect in your specific geographic region.
- Ensure that all information necessary for you to immediately contact all sources of help (local fire department, etc) in the event of a fire emergency is recorded and readily available at all times.

What to do if a machine fire occurs

If operating the machine when a fire occurs:

1. Fully lower the dump body.
2. Shut the engine off.
3. Exit the machine. Call for help. Be certain to report a fire immediately.
4. At all times ensure your own personal safety and the safety of anyone that may be in the area. Approach any fire with extreme caution. All fires can be very dangerous and life threatening.

Before deciding to fight the fire, be certain that:

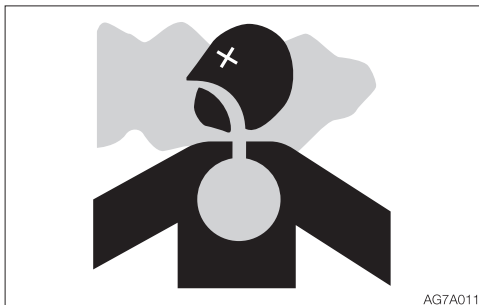
1. The fire is small and not rapidly spreading.
 2. There is always a clear, safe escape route.
 3. You have received training in the use of the available fire extinguishing devices and are confident that you can operate them effectively.
- Be aware that engine coolant, diesel fuel or hydraulic hoses could fail during a fire. If this happens, hot coolant, fuel or oil could possibly be ignited by the fire.
 - If in any doubt about whether or not to fight the fire ? DON'T. Instead stand well clear of the fire and wait for help to arrive.



- Use the **PASS** method. This is the most effective use of a fire extinguisher.
 - **P**ull the pin at the top of the extinguisher that keeps the handle from being pressed. Break the plastic seal as the pin is pulled.
 - **A**im the nozzle at the base of the fire. Do not aim the nozzle at the flames. In order to put out the fire, you must extinguish the fuel, not the flames. Hose nozzles are often clipped to the extinguisher body. Release the hose before taking aim.
 - **S**queeze the handle to release the pressurized extinguishing agent. The handle can be released at any time to stop the discharge.
 - **S**weep from side to side at the base of the fire until the fire is completely out or the fire extinguisher is empty
- Only if you can safely do so, open the access panels to the machine in the area of the fire.
- Failing all attempts to access the machine compartment, discharge the extinguisher through the mesh or any available openings on the machine.
- Ensure that the machine and all components have cooled down sufficiently after a fire so that re-ignition does not occur.
- Remain in the area until help arrives.

What to do after a machine fire has occurred

- Before returning the machine to work.
 1. Ensure that the cause of the fire is determined and all appropriate repairs are completed.
 2. Ensure that all extinguishers used in fighting the fire are replaced or recharged.
- Notify your equipment dealer and/or Takeuchi Manufacturing.

**Exhaust fumes from the engine is 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.

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 dump body and the machine body or between the cylinder and the dump body. The sizes of these gaps change when the dump body moves, and a person could 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.



PRECAUTIONS WHEN PREPARING

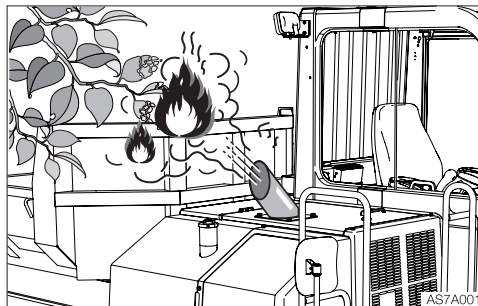
Know the work area

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



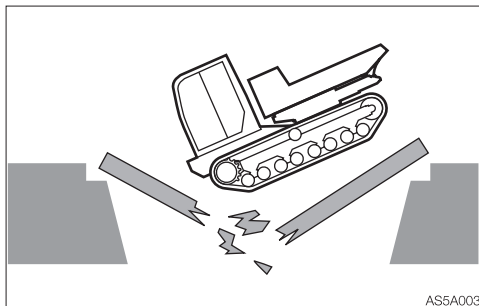
- Be sure to avoid all hazards and obstructions such as ditches, trees, cliffs, overhead electrical wires, or places where there is a danger of falling rocks or landslides.
- When working on roads, be sure to consider the safety of pedestrians and vehicles.
 - Use a flag person and/or a signal.
 - Fence 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 “Cautions on operating” for further instructions.



- Do not perform the DPF 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 DPF. DPF: Diesel Particulate Filter
- The DPF may automatically perform the regeneration while the engine is left running. Make sure that there are no flammable items around the DPF 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 may be generated during the regeneration.

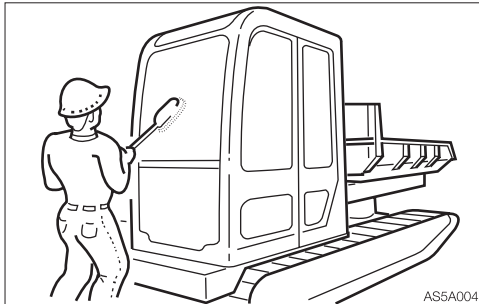
Check the strength of the bridge

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



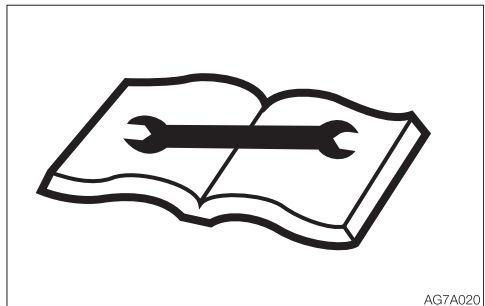


Always keep the machine clean



- Clean windows, mirrors and lights to ensure good visibility.
Adjust the mirror to the best position for the operator to see the rear view (blind spot) from the operator's seat.
- 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.

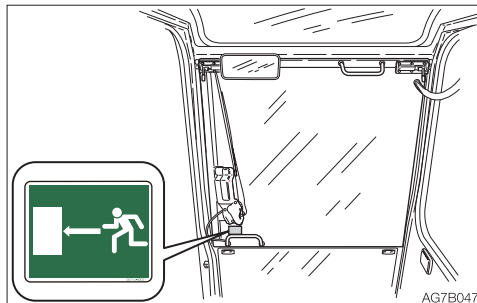


Cautions in the operator's compartment

- 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.
- After smoking, be sure to tightly close the lid of the ashtray to put out the match or cigarette.
- Do not leave the cigarette lighter in the operator's compartment. When the room temperature rises, the lighter may explore.

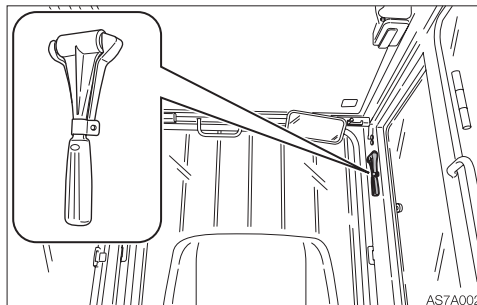
Emergency exit

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.



- 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 ignition 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

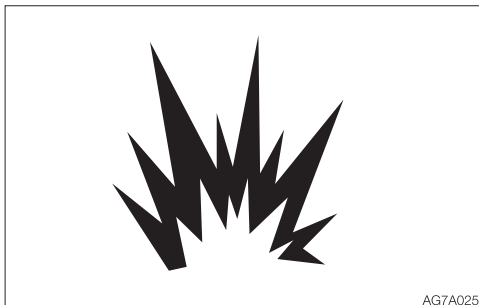
- Adjust the seat to securely latch it.



- Fasten the seat belt.
- Check if the parking brake is on and the control levers 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



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

- 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.

Do not permit riders on the machine

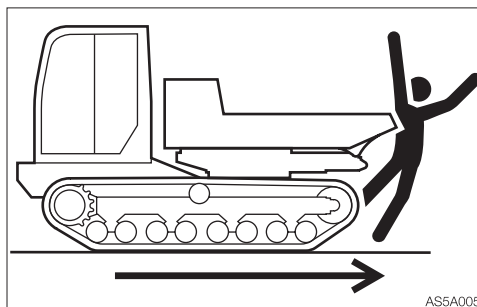


Do not allow anyone to ride on any part of the machine at any time while traveling or operating.

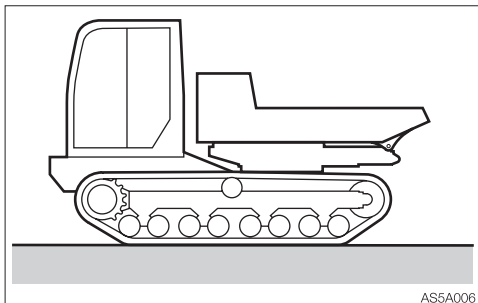
Operate the machine only from the operator's seat

When operating any lever or switch, always do it while sitting in the operator's seat. Failure to do so may be very dangerous.

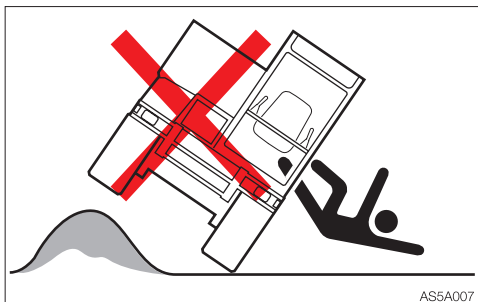
Check if the work area is safe and secure before operation



- 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 swing radius and path.
- Signal your intention to move by sounding the horn.
- There is a blind spot in the rear of the machine. Before traveling in reverse, check that the area is safe and clear.

**Precautions on traveling and turning**

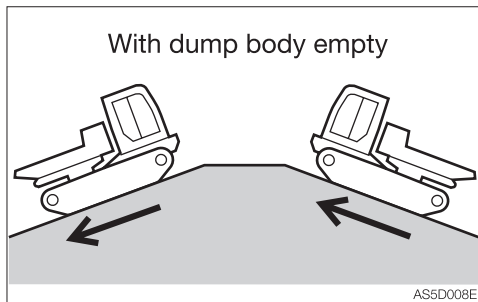
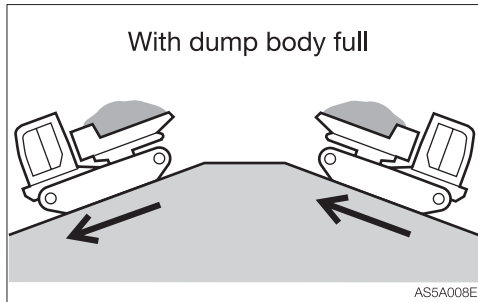
- Do not travel while the dump body is being swung or raised. Doing so is dangerous because it causes the machine to become unstable. Fully lower the dump body and make it parallel to the main frame.
- Avoid sudden starting, stopping and turning. Otherwise, the loaded material could be shifted to cause the machine to lose its balance, or the structures in the surrounding area could be damaged by the material fallen from the dump body.
- Do not raise the safety lock lever while traveling. Doing so is dangerous; the parking brake will be activated and the machine will stop abruptly.
- Do not switch off the ignition switch while traveling. Doing so is dangerous; the machine will stop abruptly.
- Before traveling in reverse, visually check if the rear view is clear. Failure to do so could result in contact with a worker or obstacle.
- When hauling materials or when traveling over rough terrain or slippery road surface, slow down the travel speed and drive carefully.



- Avoid crossing over obstacles whenever possible. If you must do so, try to go over the obstacle at a right angle to it at a low speed. Never cross obstacles which will tilt the machine to an angle of 10° or greater.

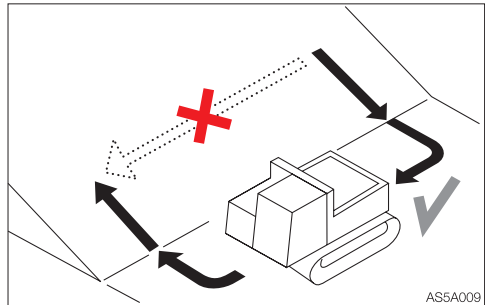
**Precautions when traveling on slopes**

When traveling on slopes, do it carefully so that the machine does not tip (roll) over or slide.



When traveling on slopes of 15 degrees or more, position the heavier end of the machine (front or back, whichever is heavier) pointing up the slope.

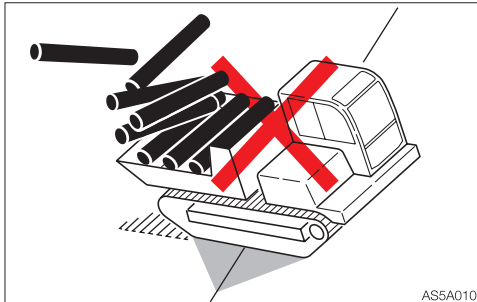
- Never travel on slopes that are too steep for the machine to maintain its stability. Note that in reality, the machine's performance decreases on slopes due to its poor working condition.
- When traveling on slopes or grades, drive slowly in 1st (low) speed. Especially on down slopes, slow down the engine speed and limit the stroke length of the left control lever to less than half. Going down a slope at high speed may lead to loss of control.
- Braking abruptly on slopes could result in the machine losing its balance and tipping over.



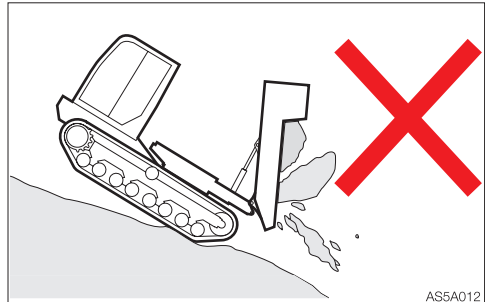
- Do not change directions on slopes or traverse slopes. First return to a flat surface, and then take an alternative path.
- The machine may slip sideways even on a slight slope if the ground is covered with grass or dead leaves, or when traveling on a wet metal plate or frozen surfaces. Make sure the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

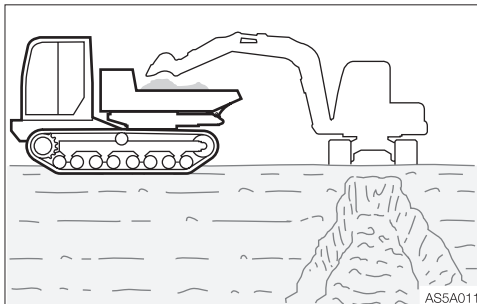
**Take care when handling unstable loads**

Unstable load such as round items, cylindrical items and stacked plates may fall from the dump body. When handling unstable load, be sure to secure it for hauling.

Precautions when dumping

Do not perform the following dumping operations. The machine may tip over due to the shift of the center of gravity.

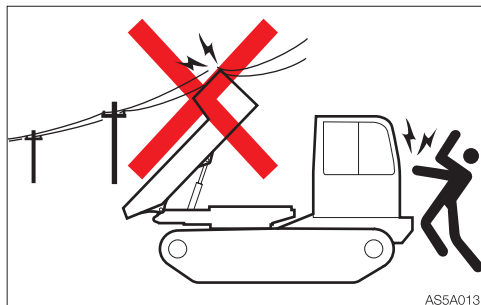
- Dumping on slopes or bumpy terrain
- Dumping while swing the dump body
- Dumping while traveling

Precautions when loading material

When loading earth or sand, make sure that the machine operator is safe. Do not load material on slopes. Do it only on a firm ground.

Improper loading is dangerous, as it could cause the machine to tip over or result in the load shifting.

- Do not exceed the maximum loading capacity (3700 kg, 8155 lb).
- Load the material so that it is evenly distributed in the dump body.
- Be sure to properly secure the unstable load onto the dump body.

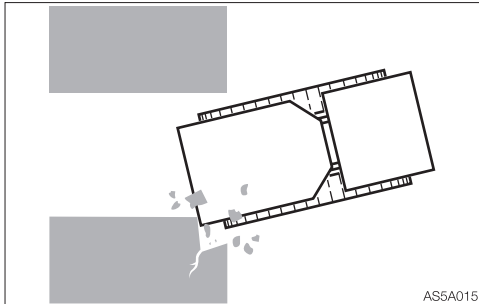
**Keep a safe distance from the overhead high-voltage cables**

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.

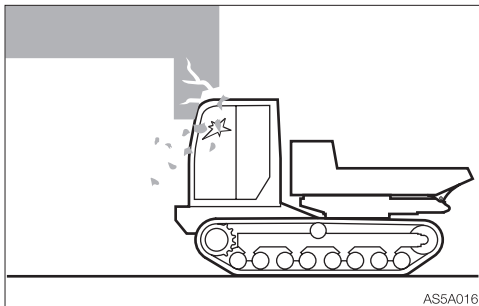
- Always maintain a safe distance between the machine and the high-voltage electric cable.
- Check with the local power company about safe operating procedure before starting operations.
- Consider all cables to be high-voltage cables and treat all cables as energized even though it is known or believed 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.

Watch out for hazardous working conditions

- Never operate the machine under the cliff. Doing so is dangerous as it could cause landslides.
- Do not operate in places where there is a danger of falling rocks.
- 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.

**Travel in narrow or crowded places**

When traveling in narrow sites, crowded places or indoors, operate the machine while carefully looking around the area and maintaining the safe speed to avoid contact accidents.

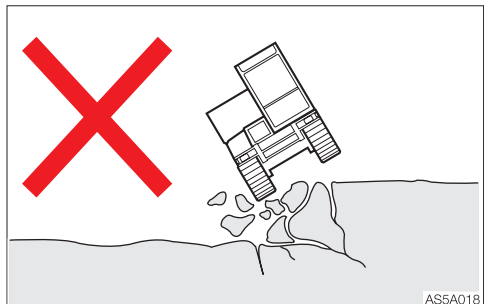
Precautions when passing through tunnels or going under bridges

Check the height limit and width limit of tunnels and bridges beforehand to avoid the machine from contact with the ceiling or walls. If contacted, it could result in a serious accident.

Do not enter areas where there is soft ground.

Driving on the soft ground could cause the machine to tilt under its own weight, resulting in a machine tipping over or sinking into the ground.

Do not drive on soft surface such as a back-filled ground.

Do not come close to unstable grounds

Working on unstable grounds is dangerous because the machine is likely to tip over.

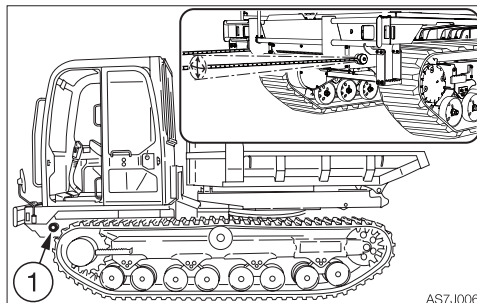
- Avoid coming close to cliffs, road shoulders and ditches because they are surrounded by soft ground.
- Take care when working over the embankment/mound; the weight or the vibration of the machine could cause the embankment/mound to collapse or the machine to suddenly tilt over.
- Remember that the soil after heavy rain or blasting is weak.



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.

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.

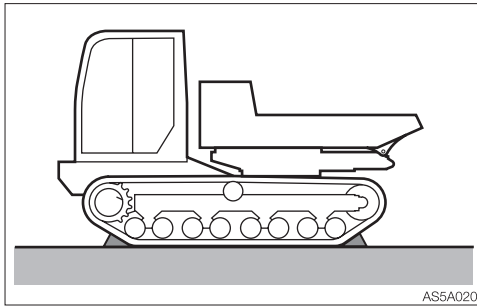
- Do not tow using only a towing hook or hole on one side.
- It becomes dangerous if the wire rope breaks or becomes disengaged. Use a wire rope appropriate for the required tractive force.
- Do not use a wire rope that is kinked, twisted or otherwise damaged.
- Do not apply heavy loads abruptly to the 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.

Refer to “Towing” for further instructions.

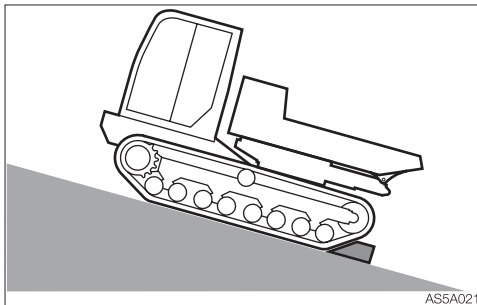


PRECAUTIONS WHEN STOPPING

Park safely

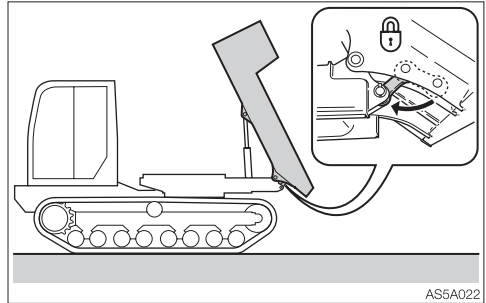


- Park the machine on a flat, rigid and safe ground. Set the parking brake.

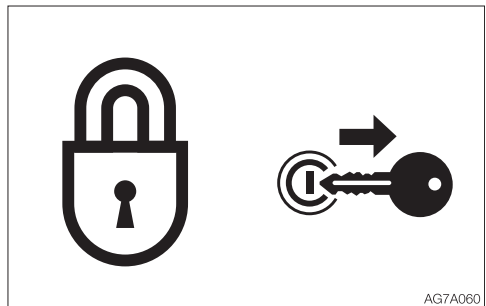


If you must park on a slope or incline, park the machine securely and block the movement of the machine.

- 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, raise the safety lock lever to engage the lock and stop the engine.



- Do not leave the machine while the dump body is being raised. If it is absolutely necessary to leave the raised dump body unattended, be sure to engage the dump body prop to prevent the dump body from dropping.

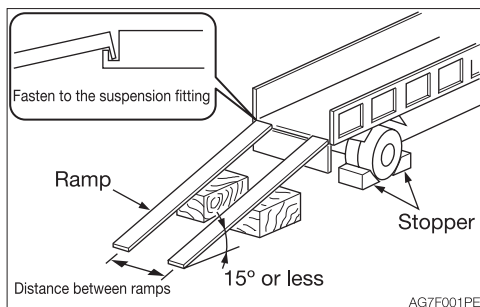


- Before leaving the machine, do the followings:
 1. Fully lower the dump body and make it parallel to the main frame.
 2. Raise the safety lock lever to the lock position.
 3. Stop the engine and remove the ignition key.
 4. Lock the cab and covers and take the key with you.



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 ramps are bowed down too low, support them with poles or blocks.
- 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 tracks.
- Chock the transporter wheels to prevent movement.
- When being loaded or unloaded, travel slowly in 1st (low) gear by following the signal from the signal person.
- Never change courses on the ramp. If it is necessary, move down from the ramps, change the course and then get on the ramps again.
- Do not swing or raise the dump body on the ramps. The machine may tip over.
- When raising the dump body 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.
- Chock the tracks 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

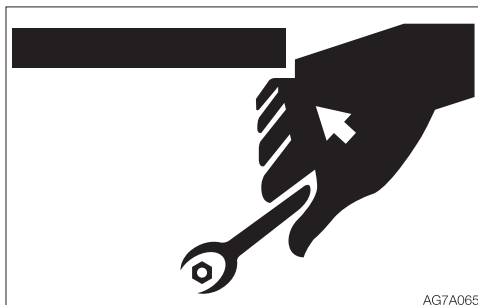
Severe injury could result if an unauthorized person should start the engine or touch controls during inspection or maintenance.

- Before performing maintenance, stop the engine and remove the ignition key which will be kept by the maintenance personnel.



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

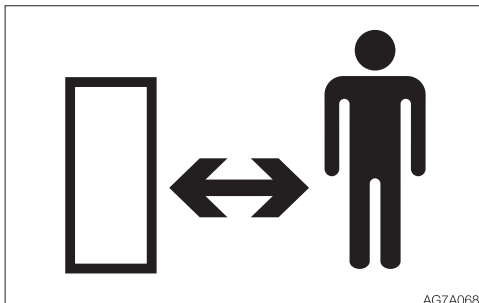
Replace safety-critical parts periodically

- 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.

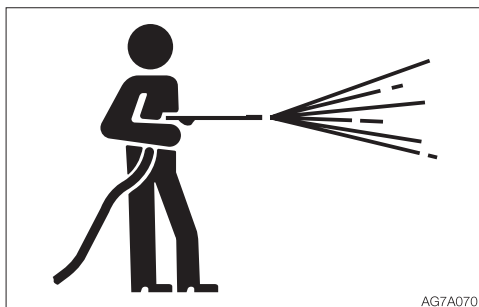
Prepare work area

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

Cautions on working on top of the machine

- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following to prevent falling.
 - Do not spill oil or grease.
 - Do not leave tools scattered around.
 - Watch your step when walking.

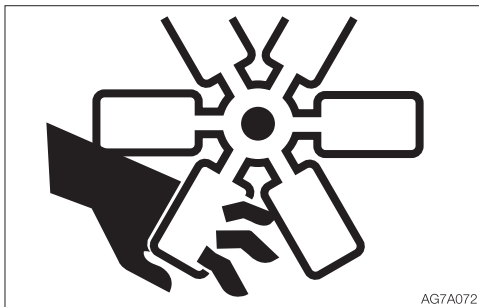
- Never jump down from the machine. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.
- Do not stand on the track and perform maintenance work. Doing so is dangerous because of the unsteady foothold. Use the work 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**

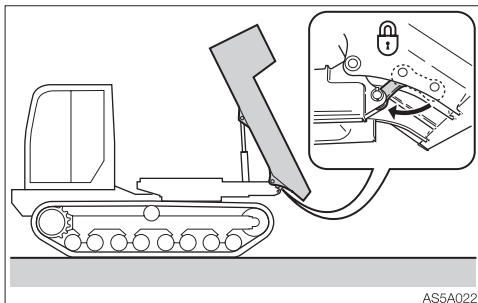
- Avoid lubrication or mechanical adjustments while the machine is moving or while the engine is running when the machine is not moving.
- If maintenance must be performed with the engine running, always work as a two person team communicating each other.
 - One person must sit in the operator's seat 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 the dump body completely.
- Chock the tracks.
- If you must work under the raised machine or its components, always use the dump body prop, wood blocks, jack-stands or other rigid and stable supports to keep the machine or its components raised. Never get under the machine or its components if they are not sufficiently supported. This procedure is especially important when working on hydraulic cylinders.
- The support device provided on the machine is designed assuming that there is no load. Remove the load before using the support device.

**Precautions when raising the dump body**

- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.
- Disconnecting or loosening any faulty hydraulic line, hose, fitting or component could cause the dump body to fall.
- Repair or replace the dump body prop if it is damaged or any part is missing. Failure to do so may cause the dump body to fall, resulting in a serious injury or death.

Secure the engine hood or covers when opened.

Be sure to secure the engine hood or covers when they are left open. Do not leave the engine 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 temporarily place a heavy machine part or an attachment on the ground during removal or installation, be sure to place it in a stable position. Keep off unauthorized persons from the storage place for such object.



Cautions when refueling



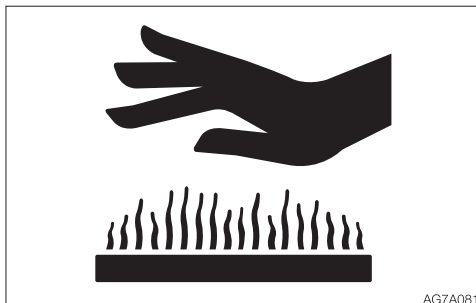
- Do not smoke or permit open flames while fueling or near fueling operations.
- Never remove the fuel cap or add fuel when the engine is running or still hot. Do not spill fuel on the hot surface of the machine.
- Fill the fuel tank in a well ventilated place.
- Do not fill the fuel tank to capacity. 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.



SAFETY

PRECAUTIONS ON MAINTENANCE

Be careful with hot cooling systems

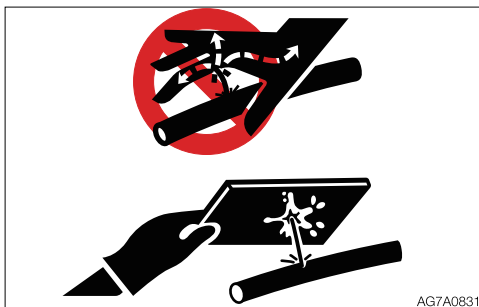


Do not remove the radiator cap or the drain plug when the cooling water is hot. Stop the engine and wait until the engine and the cooling water cool. Then, slowly loosen the radiator cap to release the internal pressure and remove it.

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 goggles 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.

- 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.

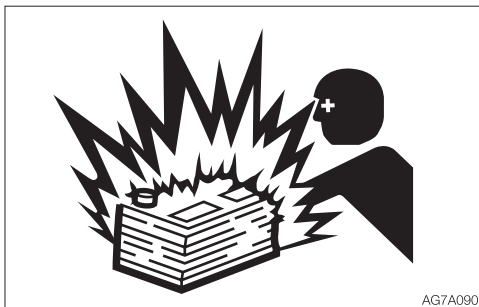
**Be careful with debris when the hammer is being used**

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 and bearings are hit with a hammer, wear protective gear such as safety goggles and gloves.
- When hitting pins, always check that there is no one in the surrounding area.

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.

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.

Use caution when handling batteries

- 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 ignition 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 improve the safety, 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 characteristics of these parts could cause serious physical or personal damage, judging the remaining life of these parts 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 goggles 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 in the dump body 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, filters and batteries.

Handling of poisonous chemicals

Poisonous chemicals will cause serious injury if directly contacted.

Poisonous chemistry used in this machine includes grease, battery solution, coolant, paint and adhesive agent.

Handle the poisonous chemicals properly with care.



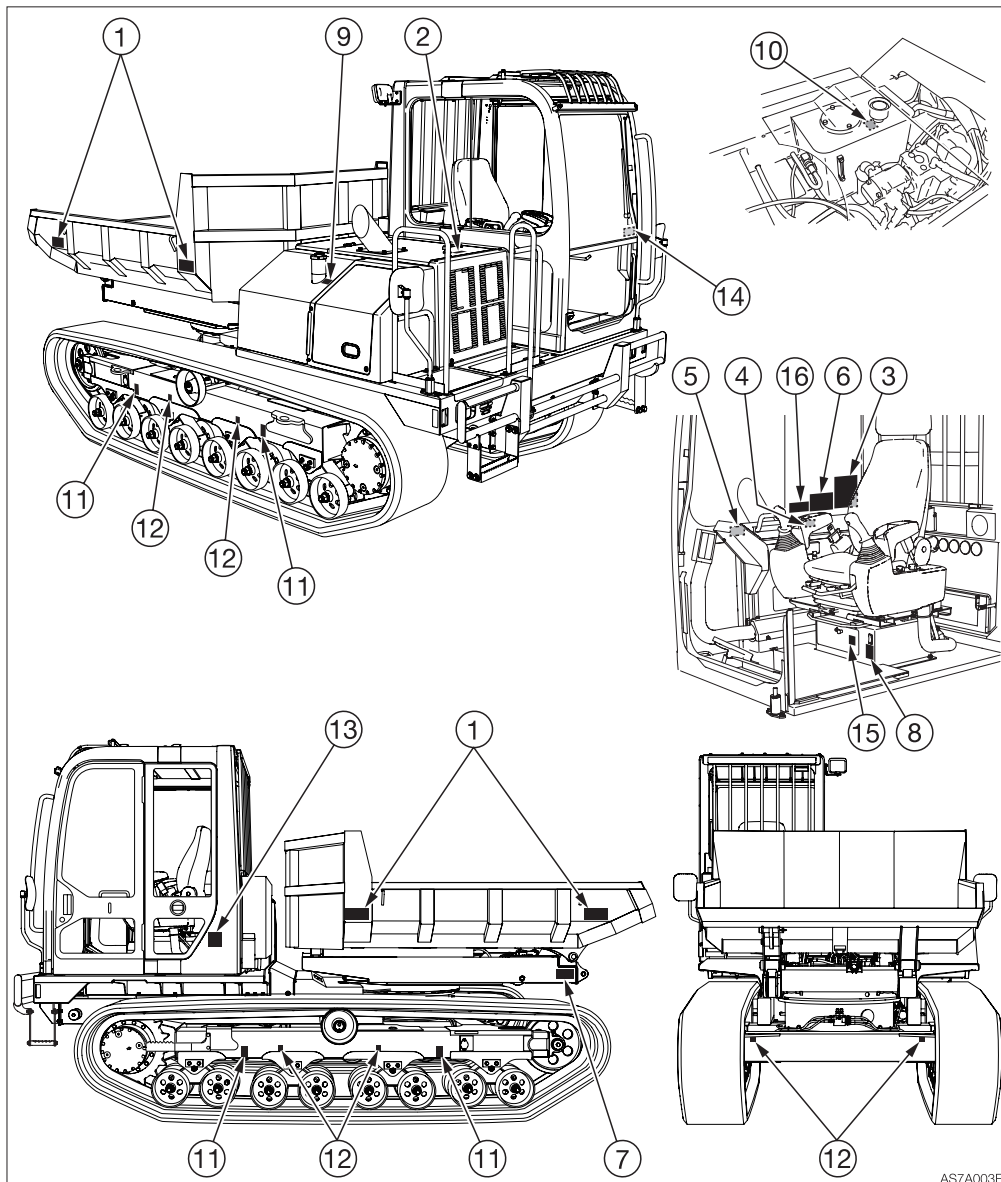
SAFETY SIGNS (DECALS)

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, replenish 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.



SAFETY
SAFETY SIGNS (DECALS)



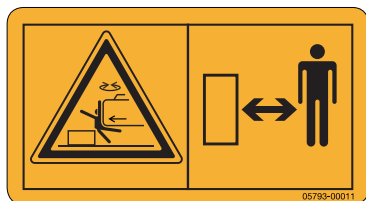
AS7A003E



1. No.05793-00011

Safety Distance

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



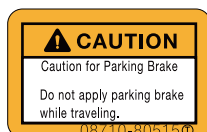
2. No.03793-66006

Hazard of rotating parts.

Turn off before inspection and maintenance.



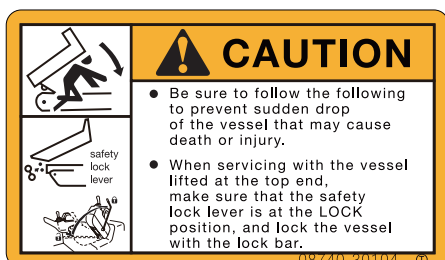
4. No.08710-80515



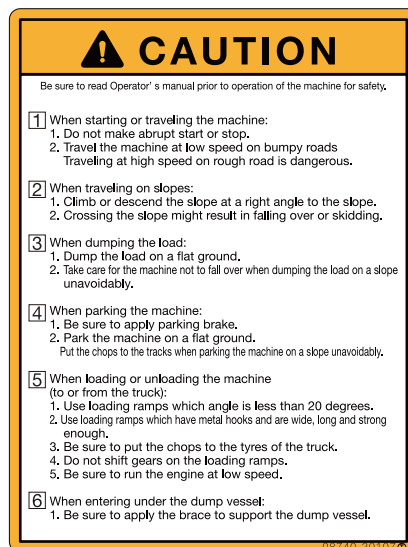
5. No.08710-83006



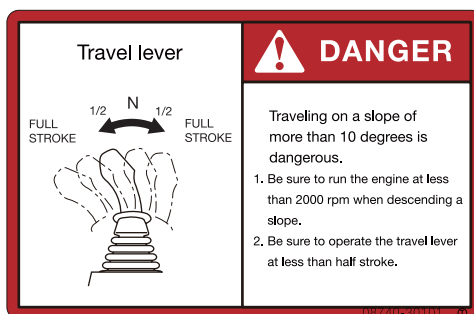
7. No.08740-30104



3. No.08740-30107



6. No.08740-30101



8. No.03993-00400

Position of Fire extinguisher





SAFETY SAFETY SIGNS (DECALS)

9. No.03593-06600

Diesel Fuel



10. No.03593-06700

Hydraulic oil



11. No.03993-00500

Position of Hoisting



12. No.08810-31549

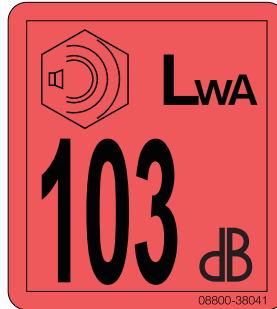
Tie down point



13. No.08800-38041

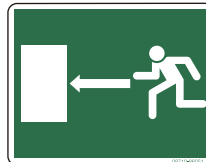
Noise Outside the Cab (If equipped)

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.



14. No.08710-86051

Position of Emergency Exit

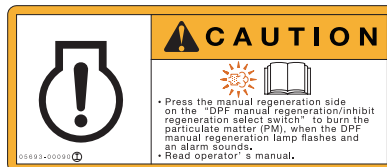


15. No.05693-34080

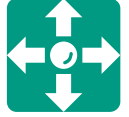
Position of First Aid Kit



16. No.05693-00090

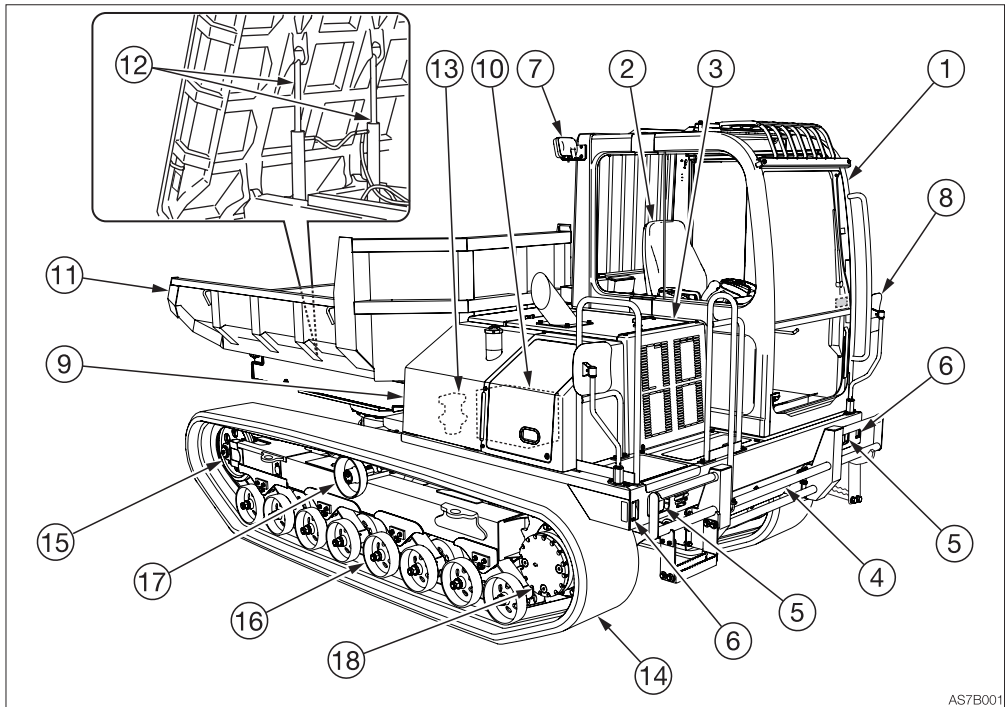


CONTROLS





NAMES OF COMPONENTS

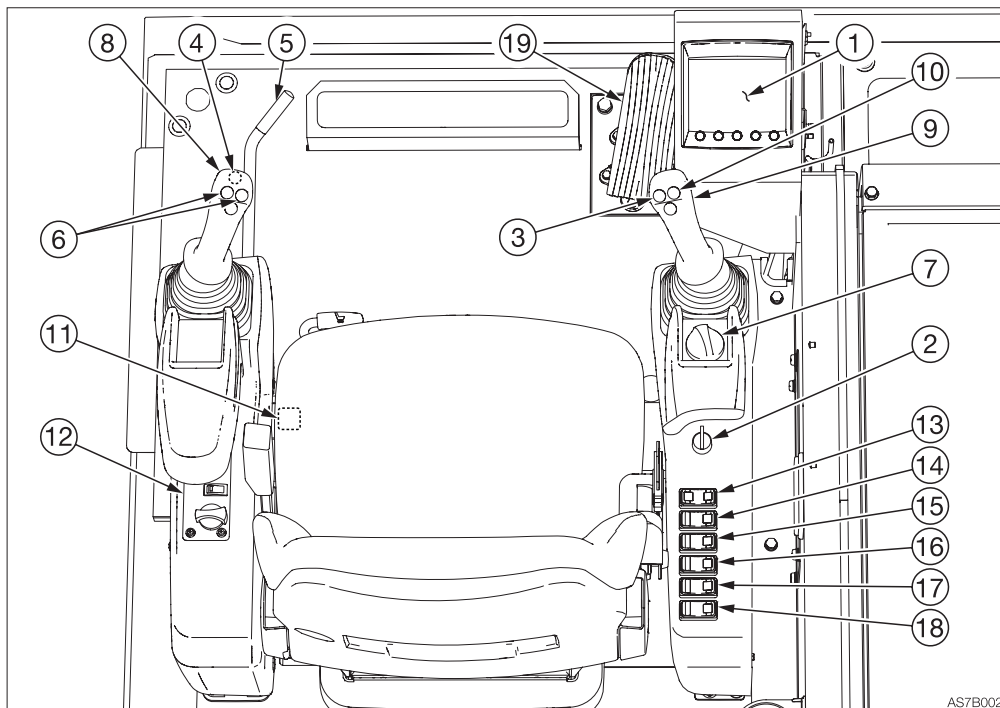


AS7B001

- | | |
|------------------------|--------------------|
| 1. Cab | 11. Dump body |
| 2. Seat | 12. Dump cylinder |
| 3. Engine hood | 13. Swing motor |
| 4. Bumper | 14. Rubber track |
| 5. Front light | 15. Idler |
| 6. Turn signal light | 16. Track roller |
| 7. Rear light | 17. Carrier roller |
| 8. Rear view mirror | 18. Travel motor |
| 9. Fuel tank | |
| 10. Hydraulic oil tank | |



CONTROLS NAMES OF COMPONENTS



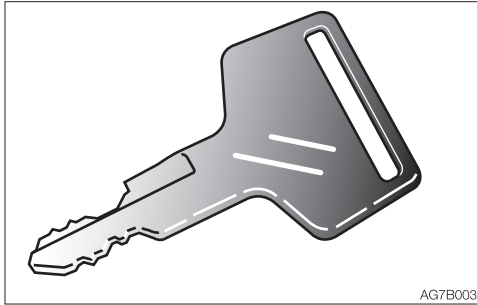
- | | |
|------------------------------|---|
| 1. Multi-information display | 11. Engine shutdown switch* |
| 2. Ignition switch | 12. Air conditioner control panel* |
| 3. Horn button | 13. DPF manual regeneration/inhibit select switch |
| 4. Travel speed button | 14. Parking brake switch |
| 5. Safety lock lever | 15. Working light switch |
| 6. Turn signal buttons | 16. Wiper switch |
| 7. Throttle controller | 17. Washer switch |
| 8. Left control lever | 18. Beacon lamp switch |
| 9. Right control lever | 19. Throttle pedal* |
| 10. Deceleration button | |

*: Subject to the specifications or optional products selected



COVERS

IGNITION KEY



The ignition key is used to start and stop the engine, as well as to lock and unlock the following components:

- Fuel filler cap
- Cab door
- Engine hood
- Side cover
- Battery cover

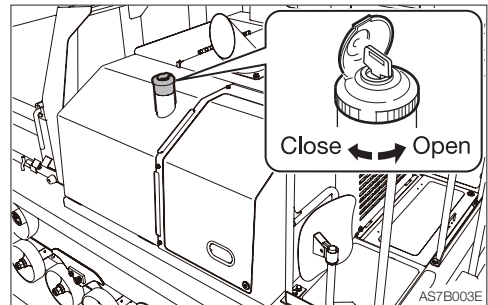
FUEL FILLER PORT



WARNING

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

Closing

1. Install the fuel filler cap to the fuel filler port, and then turn the cap clockwise to close it.
2. Lock the fuel filler cap.

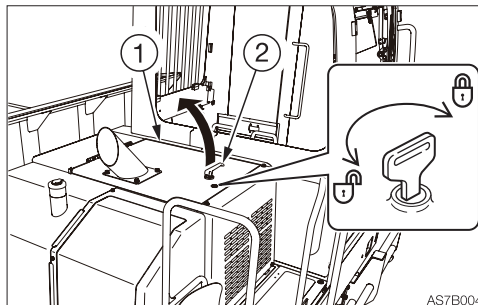


ENGINE HOOD

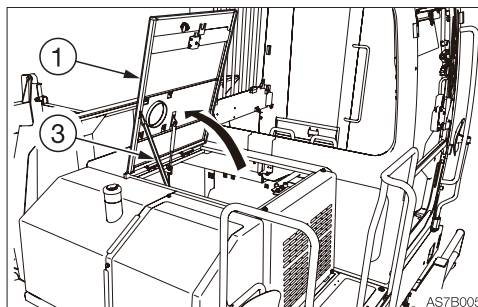
WARNING

- 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.
- Be sure to secure the engine hood before working under the engine hood. Do not leave the engine hood or cover 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.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.

Opening



1. Insert the ignition key and turn it counterclockwise to unlock the engine hood (1).
2. Turn the handle (2) clockwise and lift the engine hood (1).



3. Raise the stay (3) and insert it into the stay holder to support the engine hood (1).

Closing

1. Support the engine hood (1) by hand, and then release the stay (3) to return it to the original position.
2. Close the engine hood (1) and press down the edge of it until a click is heard.
3. Insert the ignition key and turn it clockwise to lock the engine hood (1).



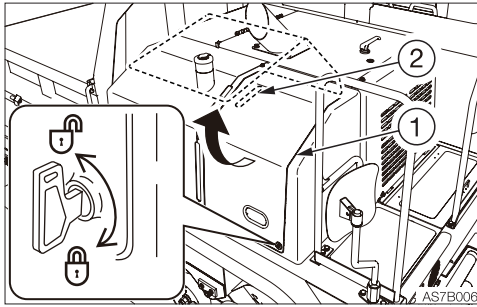
SIDE COVER (TOOL BOX)

CAUTION

- When opening the side cover, open it all the way to the position where it is securely stopped.
- When opening or closing the side cover, be careful not to get your hands or other parts of your body caught by the cover.

The grease gun and the tools are stored under the cover.

Opening



1. Insert the ignition key and turn it counterclockwise to unlock the side cover (1).
2. Open the side cover (1) until it stops.

Closing

1. Support the side cover (1) by hand and release the stay (2).
2. Close the side cover (1).
3. Insert the ignition key and turn it clockwise to lock the side cover (1).

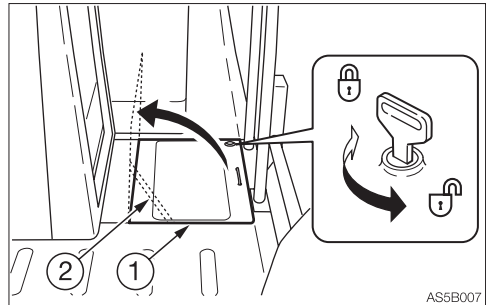
BATTERY COVER

CAUTION

- When opening the battery cover, open it all the way to the position where it is securely stopped.
- When opening or closing the battery cover, be careful not to get your hands or other parts of your body caught by the cover.

Perform the maintenance of the battery and the fusible links.

Opening



1. Insert the ignition key and turn it counterclockwise to unlock the battery cover (1).
2. Open the battery cover (1) until it stops.

Closing

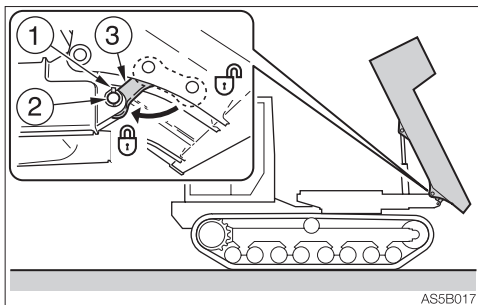
1. Support the battery cover (1) by hand and release the stay (2).
2. Close the battery cover (1).
3. Insert the ignition key and turn it clockwise to lock the battery cover (1).



DUMP BODY PROP

WARNING

If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.



Engaging the dump body prop

1. Fully raise the dump body.
2. Raise the safety lock lever to the lock position and stop the engine.
3. Pull up the ring and disengage the lock pin (1), and then remove the pin (2).
4. Pull the disconnected end of the prop (3) toward the lock hole, and then insert the pin (2) into the lock hole.
5. Attach the lock pin (1) and push down the ring.

Disengaging the dump body prop

1. Move the right control lever to raise the dump body.
2. Disengage the dump body prop (3) and put it back in place.



CAB

CAB DOOR

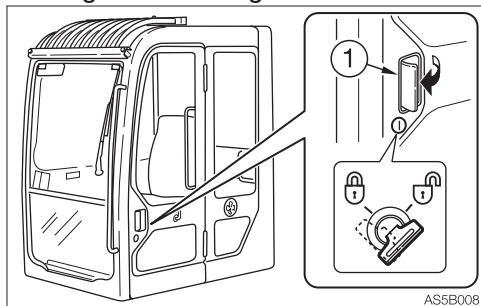
WARNING

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.

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.

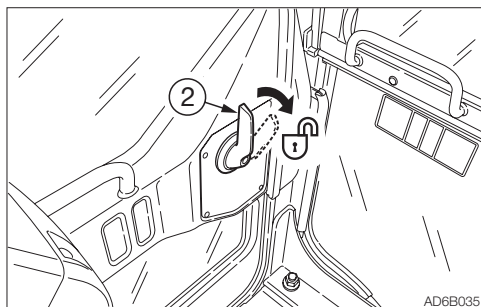
Locking and unlocking



Insert the ignition key and turn it.

Opening

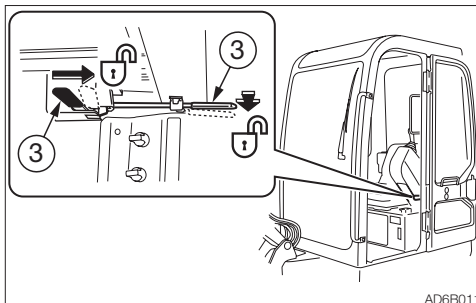
1. Pull the knob (1) towards you and open the door.



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.

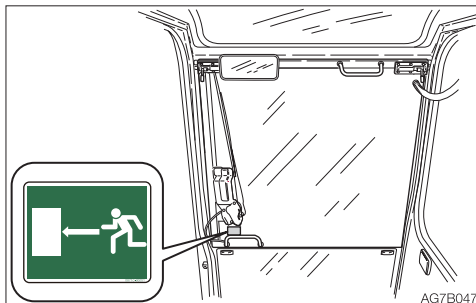
Closing



1. Push the release lever (3) downward.
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.



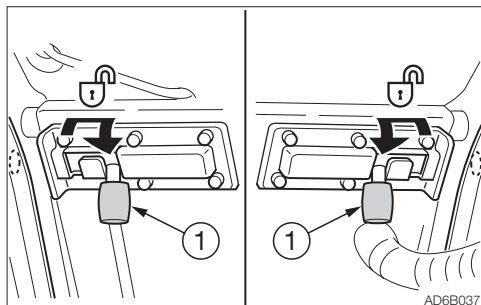
FRONT WINDOW

WARNING

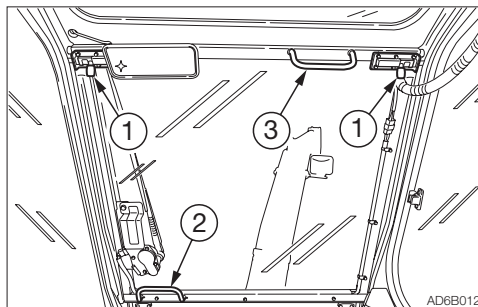
- Grasp the handles firmly with both hands when opening and closing the front window. Your head or hands may get caught if it slips from your hands.
- When the front window is opened or closed, it will come close to the head. Be careful that the window does not strike the head.
- When you open the front 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.

Opening

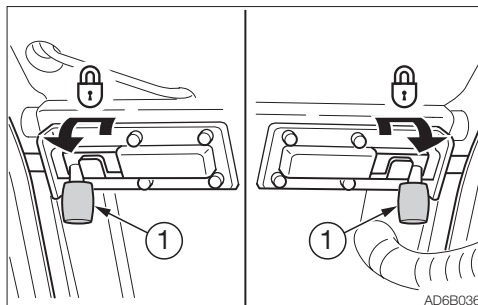
1. Park on a level surface and stop the engine.
2. Set the safety lock lever to the locked position.



3. Unlock the window by pulling the lock pins (1) (right and left) inward. Be sure that the lock pins (1) are turned until they are secured.



4. Grasp the lower handle (2) with your left hand and the upper handle (3) with your right hand.
5. Lift the front window by pulling it toward you.



6. When the window frame hits against the stopper, move the lock pins (1) outward to lock the window.

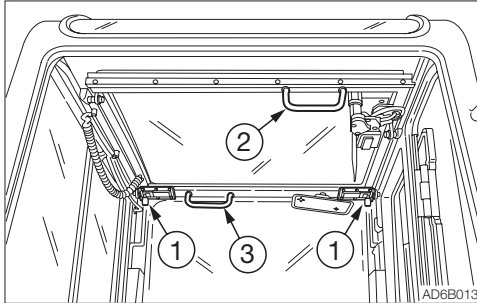


Closing



WARNING

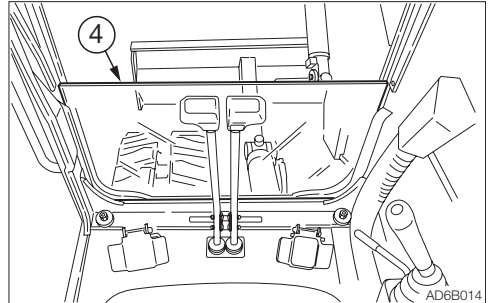
When closing the front window slowly so as not to hit your head. Lowering the window abruptly may result injury or damage the front window.



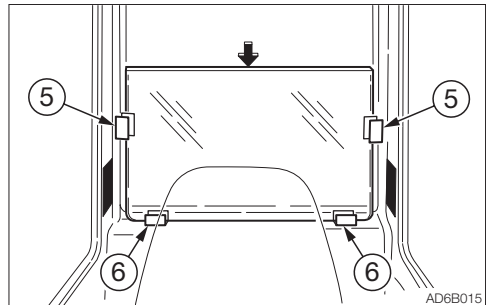
1. Pull the right and left lock pins (1) inward and turn them to the secured position to unlock the window.
2. Grasp the front handle (2) with your left hand and the back handle (3) with your right hand.
3. Slowly pull down the front window by sliding it forward.
4. Move the right and left lock pins (1) outward to lock the window.

LOWER FRONT WINDOW

Removing



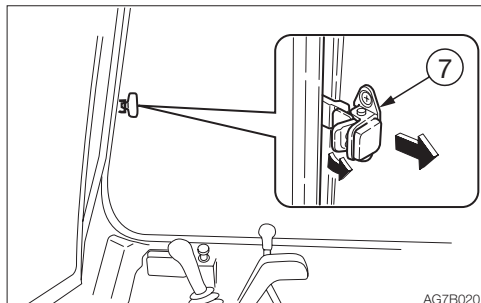
1. Open the front window and stow it in the ceiling.
2. Slowly lift the lower front window (4).



3. Place the lower front window through the guides (5) at the rear, and then set it on the guide (6).

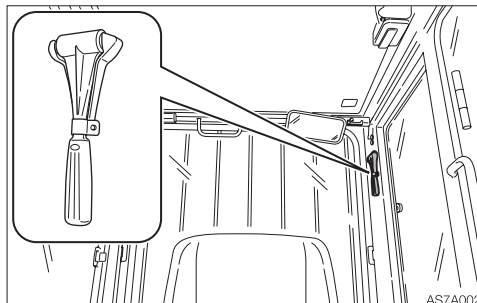


SIDE WINDOW



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.

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.

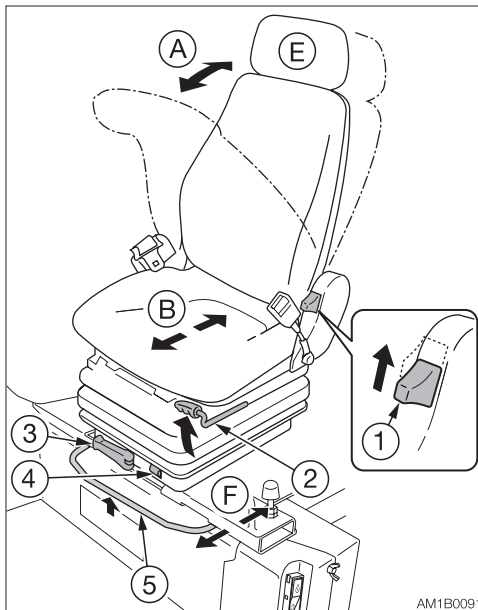


SEAT AND SEAT BELT

SEAT

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.

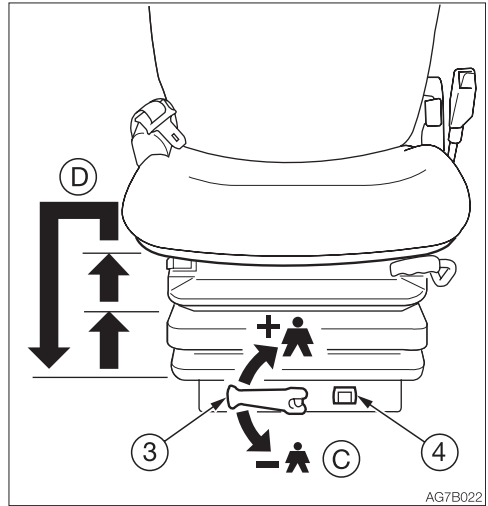


(A) Adjusting the backrest angle

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

(B) Fore-and-aft adjustment

1. Pull up the lever (2) and slide the seat backward or forward to the desired position for operation of machine.
2. Release the lever (2) at the desired position to secure the seat.
Adjustment range: 15 positions, in 150 mm (5.9 in.)



(C) Adjusting according to operator's weight

1. Turn the handle (3) until the scale (4) indicates the weight of operator.
Adjustment range: 50 to 130 kg (110 to 287 lbs)

(D) Adjusting the height of the seat

Upward

1. Lift the seat to first or second position click-stop.
Adjustment ranges: 2 positions, in 60mm (2.36 in.)

Downward

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

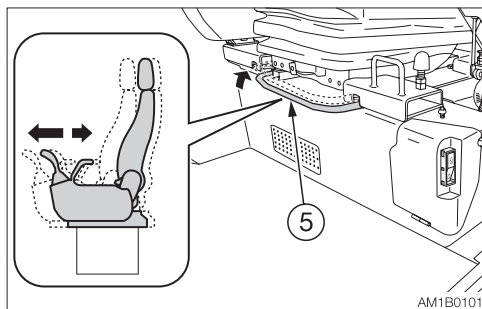


(E) Adjusting the headrest (Option)

The headrest (E) can be moved upward or downward.

1. Grab the headrest (E) with both hands, and move upward or downward to the desired position.

(F) Adjusting the operating lever stand



1. Pull up the lever (5) and slide the lever stand (seat).
2. Release the lever (5) at the desired angle to secure the lever stand (seat).
Adjustment range: 9 positions, in 90 mm (3.5 in.)

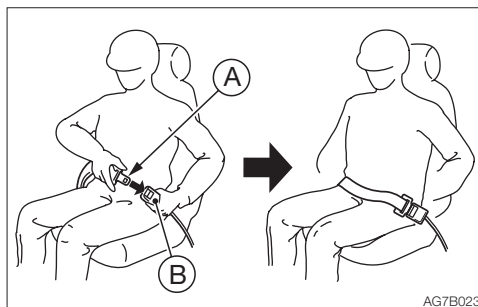
SEAT BELT

WARNING

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

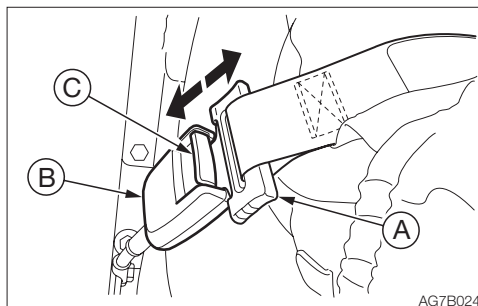
Fastening the seat belt

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

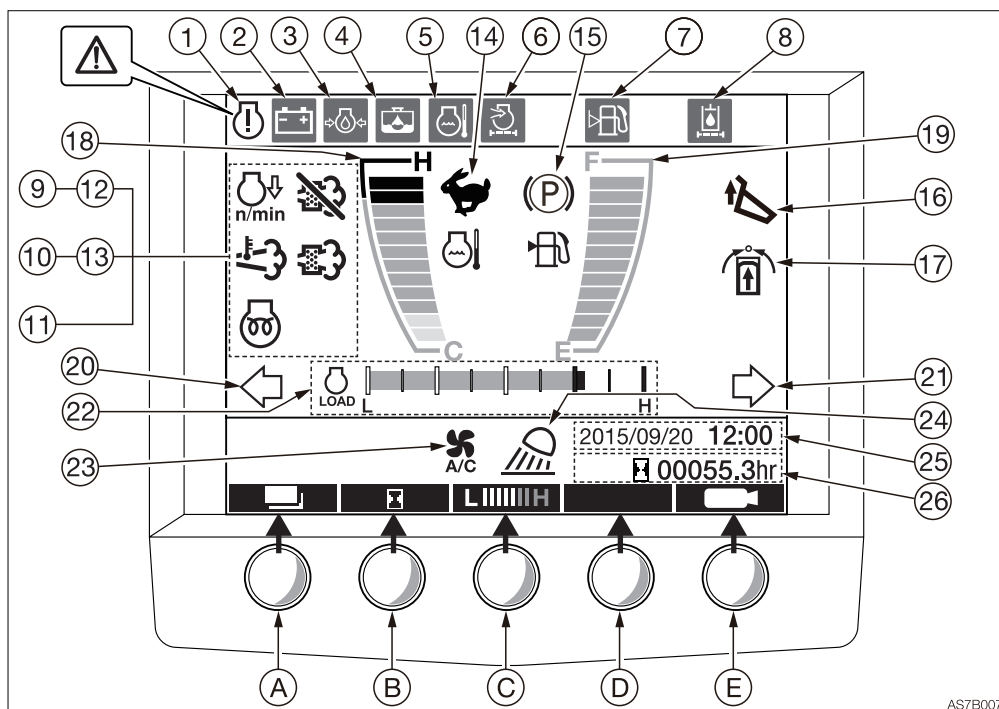


1. Grasp the tongue plate (A) and press the button (C) on the buckle (B).
The seat belt retracts back into its original position.



MULTI-INFORMATION DISPLAY

MAIN MENU SCREEN



AS7B007

For explanation purposes, all lamps on this page are in the lit condition. This screen image is quite 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 for approx. one second.

When the starter switch is set to ON, the battery charge warning lamp and the engine oil pressure warning lamp first appear enlarged, and then turn on with an alarm at their original locations. The machine system is normal if the lamps turn off after the engine is started.



WARNING LAMPS

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 6-10 and 6-11.

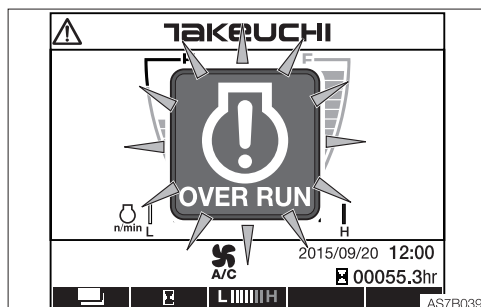
1. ECU error warning lamp

This warning lamp flashes if the Electronic Control Unit (ECU) detects an engine problem while the ignition switch is in the ON position. The problem detected is recorded as an ECU error. Refer to “Engine error code list” on pages 6-14 to 6-19.

1-1. Vehicle and engine emergency lamp

This lamp is displayed enlarged for one second, and then flashes and an alarm sounds if there is a problem with the machine. Go to the (4) 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 2-22. Refer to “Error code display” on page 2-24. Refer to “Vehicle error code list” on pages 6-12 and 6-13. Refer to “Engine error code list” on pages 6-14 to 6-19.

1-2. Overrun warning indicator



If the engine revolution becomes too high to cause the engine to overrun, the vehicle and engine emergency lamp lights up and the buzzer sounds. Also, the overrun warning indicator is displayed on the LCD as shown in the figure. If the engine revolution is further increased, the buzzer sound changes from intermittent to continuous. The main cause of overrun could be that the machine is descending slopes at high speed or that the overloaded machine is descending the slopes. If the indicator appears on the LCD, stop the machine and observe the following procedures.

- Move to a more gentle slope to descend.
- Keep the low speed by minimizing the travel lever inclination angle.
- Travel with the accelerator dial set to the half throttle or less.
- The machine may be overloaded. Reduce the load and travel.

2. 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.

3. Engine oil pressure warning lamp

This lamp flashes and an alarm is sounded if the lubricant oil pressure abnormally low while the engine is running.

4. 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.

5. 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.

6. Air cleaner warning lamp

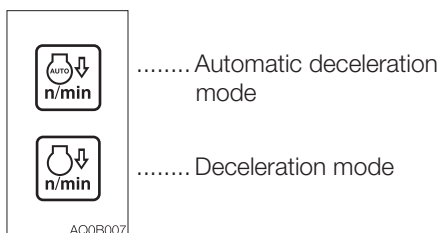
This lamp flashes and an alarm is sounded if the air cleaner filter is clogged while the engine is running.

**7. Fuel level warning lamp**

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

8. Pilot line filter warning lamp

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

INDICATORS**9. Deceleration indicator lamp****Automatic deceleration mode**

When the ignition switch is turned to ON, this lamp turns on to indicate that the engine is in the automatic deceleration mode.

The engine speed automatically drops to low idle (deceleration mode) four seconds after the control levers are set to neutral, to reduce fuel consumption. Moving the control levers will cause the speed to return to the original engine speed.

Deceleration mode

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 (1200 rpm).

Refer to “Deceleration button” on page 2-28.

10. Exhaust temperature warning indicator lamp

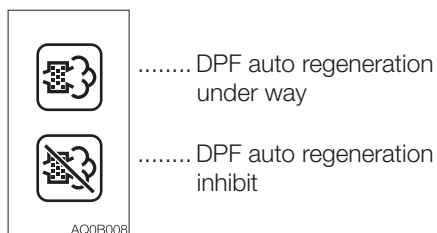
This indicator lights up to warn if the exhaust temperature is abnormally increased. Check for any flammable items around the exhaust piping.

11. Glow indicator lamp

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



12. DPF auto regeneration/inhibit 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.

DPF auto regeneration inhibit

The DPF manual regeneration inhibit symbol appears on the display when the DPF manual regeneration under way or the DPF auto regeneration under way is cancelled.

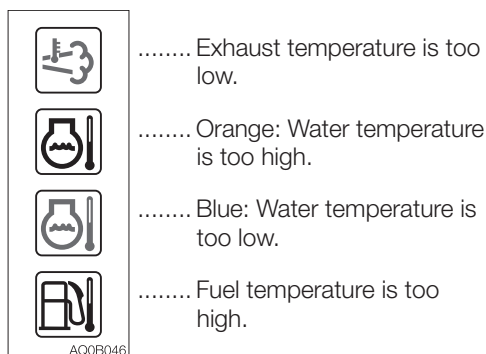
Refer to “DPF manual regeneration/inhibit select switch” on page 2-30.

13. DPF manual regeneration under way/regeneration promoting/DPF manual regeneration error indicator lamp

The indicator starts flashing and an alarm starts sounding, if the accumulated PM exceeds the limited amount on the DPF. Immediately perform the manual DPF regeneration.

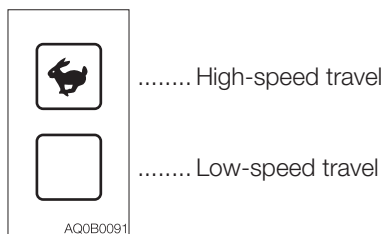
Refer to “DPF manual regeneration/inhibit select switch” on page 2-30.

Note: When the DPF manual regeneration is started, there may be a case that the symbol corresponding to the error source is repeatedly displayed, resulting in DPF manual regeneration error. This problem will disappear after a while. If it continues for more than 15 minutes, contact your sales or service dealer for repair.





14. Travel speed indicator lamp

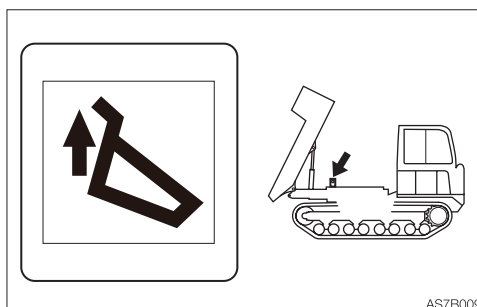


This lamp turns on when the travel speed button is set to the 2nd (high) speed.

15. Parking brake indicator lamp

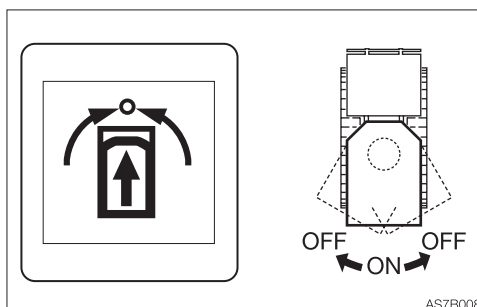
This lamp turns on when the parking brake switch is pressed.

16. Dump body raising indicator lamp



This lamp lights up when the dump body is raised and moves out of the sensor's range. It goes out when the dump body is lowered all the way down.

17. Dump body alignment indicator lamp



This lamp lights up when the orientation of the dump body is parallel to the main frame. The lamp goes out when the dump body swings to the left or right.



18. Water temperature gauge

Indicates the temperature of the engine coolant water. The indicator level must be within the green range during machine operation. The red range indicates overheating.

19. Fuel gauge

Indicates the amount of fuel in the tank. Be sure to fill up the tank before running out of fuel.

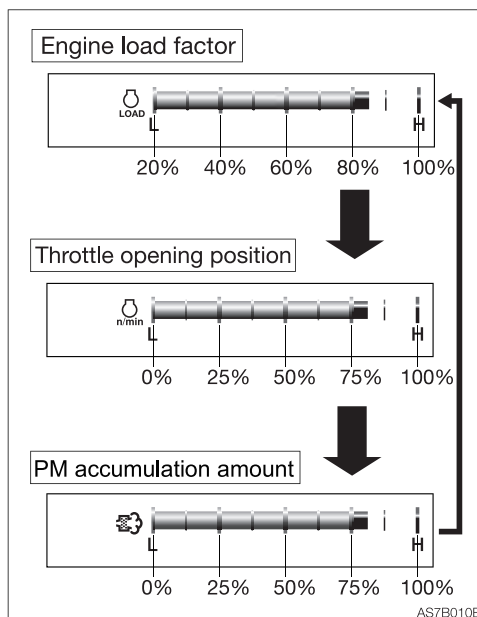
20. Turn signal indicator lamp (L)

This lamp lights to indicate that the left turn signal indicator is flashing.

21. Turn signal indicator lamp (R)

This lamp lights to indicate that the right turn signal indicator is flashing.

22. Engine load factor indicator



This gauge displays the load condition of the work. When the gauge is in the green range, the work load is light to medium. When the gauge is in the red range (75% or more), the work load is high. When the button (C) (Bar meter key) is pressed in a normal screen, the display changes in the following order: the engine load factor, throttle opening position and PM accumulation amount indicator.

Note: The machine is not faulty if the gauge is in the red range. Operating the machine with the gauge being in the green range is energy-saving and will help conserve the global environment.

- The throttle opening position is displayed if there is a change in the throttle opening position.

23. Air conditioner indicator lamp

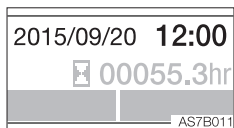
Lights up while the air conditioner is operating.

24. Working lights indicator lamp

Lights up when the working light is turned on.



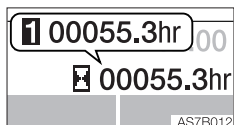
25. Date and time indicator



Displays the date and time set. Refer to “Date and time setting” on page 2-23.

26. Hour meter/Trip meter

• Hour meter



Displays the total engine running time in hours. The rightmost digit indicates tenths of

hours (6 minutes).

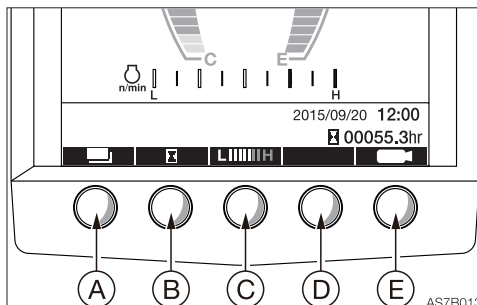
Set the inspection and maintenance intervals according to the time displayed on the hour meter.

• Trip meter

Three patterns of desired operating hours can be displayed.

Refer to “Trip meter setting” on page 2-23.

SCREEN CONTROL KEY



Note: Do not press the symbol keys on the display. The LCD could be damaged if the symbol keys are pressed hard. For actual operation, press the push button keys located at the bottom of the screen.

A. Menu key

Use this key to switch between the Home screen and the Menu screen. This key is also used to cancel changes made in each setting. The screen returns to the Home screen if this key is pressed in the information screen.

B. Hour meter key

This hour meter symbol is displayed in the initial screen. Pressing this key changes the meter display in the following order: the trip meter 1, trip meter 2, trip meter 3 and hour meter.

Down (↓) key

Use this key to move the cursor ► downward and to decrease the value in each setting. Press and hold this key for one second to rapidly decrease the value.



C. Bar meter key

This bar meter symbol is displayed in the initial screen. Pressing the key changes the meter display in the following order: the engine load factor, throttle opening position and PM accumulation amount.

Up (↑) key

Use this key to move the cursor ► upward and to increase the value in each setting. Press and hold this key for one second to rapidly increase the value.

D. Enter key

Use this key to confirm or execute the setting made by each key.

To clear the trip meter being displayed, press and hold this key for three seconds.

E. Camera image key (option)

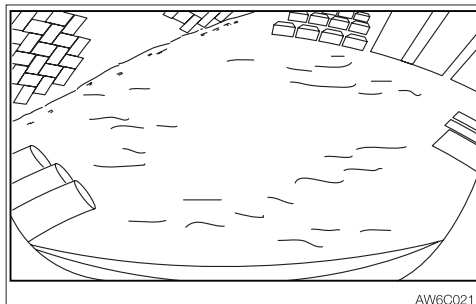


WARNING

Do not look at the images produced by the camera when traveling in reverse. Move in reverse while visually looking at the direction of travel.

Since the camera is installed at the back of the dump body, the screen can be used to check the position or condition of dumping, as well as to display the rear view image.

Note: When the screen is used as a rear view monitor while traveling, make sure that the dump body is parallel to the main frame and the dump body alignment indicator lamp is on. It is dangerous to use the monitor when the dump body is swung.



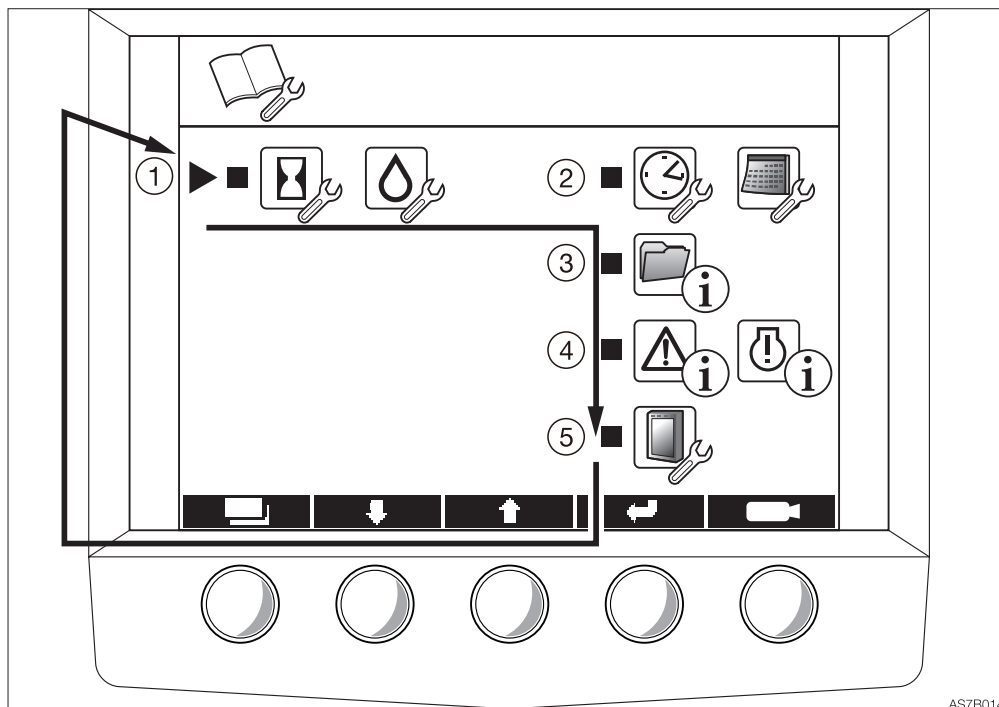
AW6C0211

1. Press the Camera key in the Main screen to display the images taken by the rear camera.
2. Press the Camera key again or other key to return to the Main screen.



SCREEN NAVIGATION

• Menu screen



AS7B014

Press the Menu key to go the Menu screen while in the Home screen.

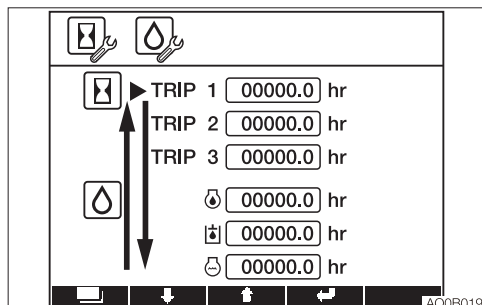
- (1) Trip meter setting
- (2) Date and time setting
- (3) Data display
- (4) Error code display
- (5) LCD setting

Move the cursor ► with the Up (↑) or Down (↓) key to go to the desired item to be set, and then press the Enter key to confirm. To return to the Menu screen, press the Menu key.

The wrench symbol indicates the “setting is possible state” and the (i) mark indicates information only.



(1) TRIP METER SETTING



Six patterns of desired operating hours can be set.

To start setting, press the Enter key. The value flashes while being set.

Up (↑) key: Increases the value or moves the cursor ► upward. Rapidly increases the value when pressed and held for one second.

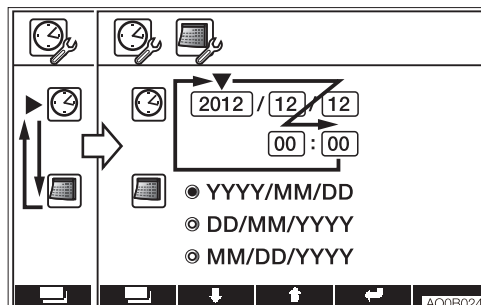
Down (↓) key: Decreases the value or moves the cursor ► downward. Rapidly decreases the value when pressed and held for one second.

Enter key: Confirms setting

Menu key: Cancels setting or returns to the Menu screen.

Pressing and holding the Enter key for three seconds clears the trip meter pointed by the cursor.

(2) DATE AND TIME SETTING



The year, month, date, hour and minute can be set. (Effective year range: 2010 to 2099)

- Move the cursor ► to the clock symbol, and then press the Enter key. The cursor ▼ will be shifted to the place for setting the year.

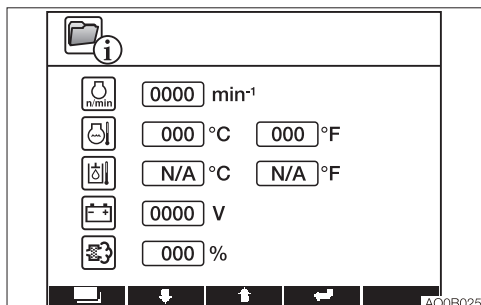
Press the Enter key again, and then enter the year. (The year display keeps flashing during editing.)

Press the Enter key to confirm. The month, date, hour and minute can be set using the same procedure for the year.

- Move the cursor ► to the calendar symbol, and then press the Enter key to change the format of “Year-Month-Date” to “Date-Month-Year” or “Month-Date-Year”. Refer to the trip meter setting for the key operation.



(3) DATA DISPLAY

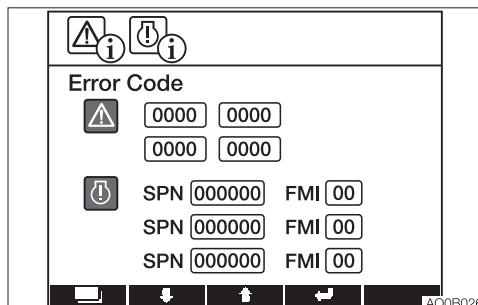


Displays various data. The setting cannot be changed.

Display items

- Engine RPM
- Coolant temperature
- Hydraulic oil temperature
- Battery voltage
- PM accumulation amount

(4) ERROR CODE DISPLAY



⚠.....Vehicle error code

Displays four error codes, with the latest code in the upper left.

Refer to “Vehicle error code list” on pages 6-12 to 6-13.

🔧.....ECU error code

Engine Control Unit (ECU) error code

Displays three error codes, with the latest code at the top.

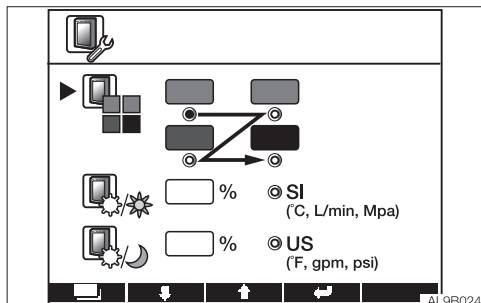
Refer to “Engine error code list” on pages 6-14 to 6-19.

IMPORTANT: If an error code appears, immediately stop the operation and contact a Takeuchi sales or service outlet for help.



(5) LCD SETTING

• Background color setting



Move the cursor ► to the background color symbol, and then press the Enter key. The blue flashing light moves from blue gray to gray, blue and black, in this order. Move the blue flashing light to the desired color position, and then press the Enter key to confirm.

The background color can be changed in this screen, regardless of mode (day or night).

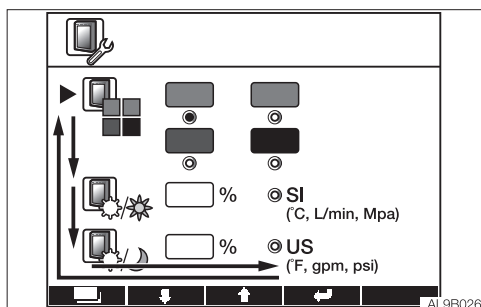
• Unit setting

Switch between SI unit and US units.

Move the blue flashing light to the desired unit position, and then press the Enter key to confirm.

Menu key: returns to the Menu screen.

Pressing the Menu key again returns to the Home screen.



• The brightness of the LCD is set to between 0 and 100%.

The brightness changes each time the adjustment is made.

Day mode: initial setting value is 50%

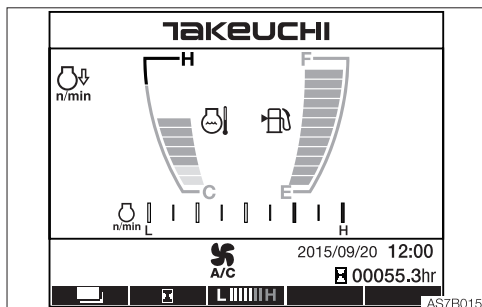
Night mode: initial setting value is 50%

While in the day (night) mode, adjustment is possible only for the brightness set to the night (day) mode.

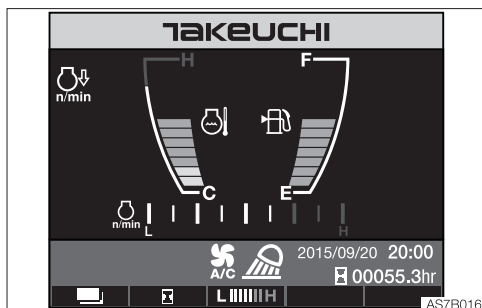
Refer to the trip meter setting for the key operation.



SWITCHING IMAGES



- Changing the background color (day/night)

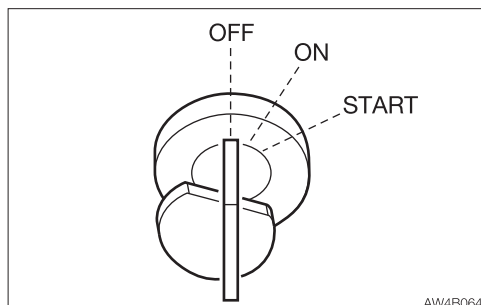


Turn on the light switch on any screen to decrease the display brightness and to enter the “evening mode”.



SWITCHES

IGNITION SWITCH



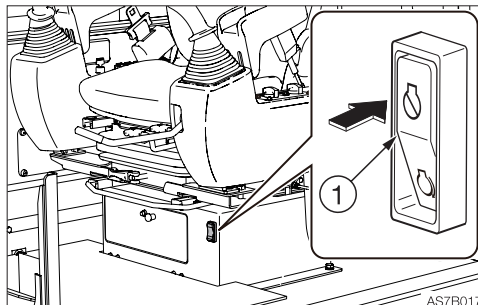
IMPORTANT: Do not repeatedly switch the key from OFF to ON and ON to OFF over a short period. Doing so will cause engine breakdown.

OFF Position for stopping the engine and inserting or removing the key.

ON Position in which the engine is running. At this position, all the electrical equipment is functional. When the coolant temperature is too low, the engine is automatically preheated.

START Position for starting the engine. When the key is released, the switch automatically returns to the ON position.

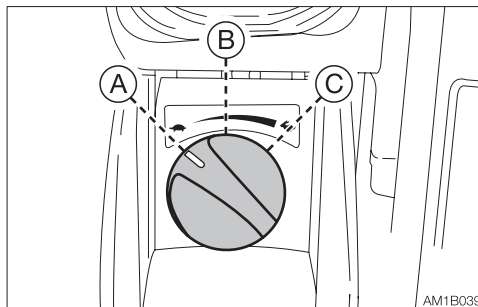
ENGINE SHUTDOWN SWITCH



This switch is used to shutdown the engine if it fails to stop, due to machine failure or breakage, when the ignition switch is set to the OFF position.

1. Press the switch (1).
2. After use, reset the switch (1).

THROTTLE CONTROLLER

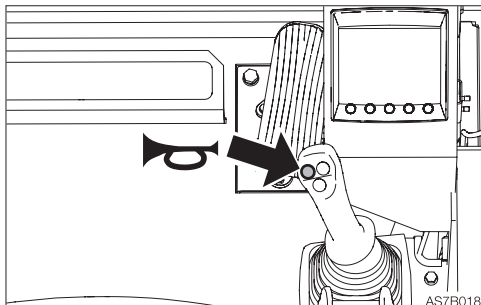


This dial controls the engine speed.

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



HORN BUTTON



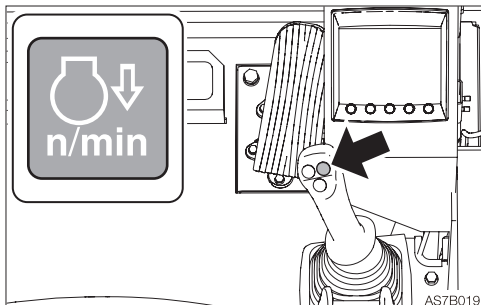
Press the button situated on the right operating lever to blow the horn.

DECELERATION BUTTON



WARNING

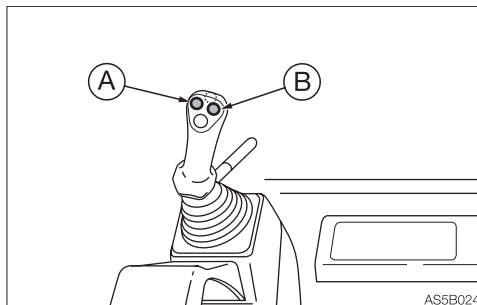
Before operating the deceleration button, set the operating lever to the neutral position and take your foot off the pedals. If the deceleration button is pressed while driving, the machine's operating speed will abruptly change to result in a dangerous situation.



Press this button on the right operating lever to lower the engine speed to low idling. Press the button again to return to the engine speed set with the throttle controller. For safety reasons, it is designed that the deceleration function is activated to set the engine revolutions to low idling whenever the engine is started. Cancel the deceleration mode by pressing the deceleration button as necessary.

Note: This deceleration button is capable of decreasing the engine speed and reducing the fuel consumption, with a simple operation, in a situation such as when little engine output is required and thus the operating or the travel levers are in neutral.

TURN SIGNAL BUTTONS

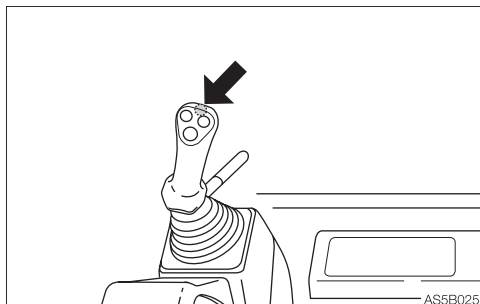


The turn signal starts flashing and an alarm is sounded once any of the buttons is pressed.

- (A).....Left turn lights
- (B)Right turn lights

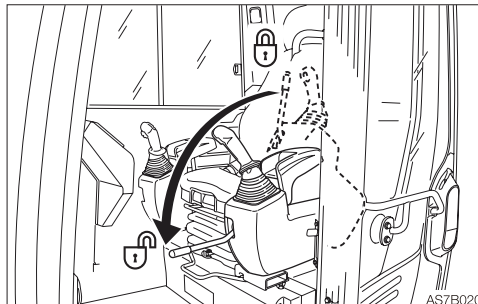


TRAVEL SPEED BUTTON



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

AUTOMATIC DECELERATION SWITCH

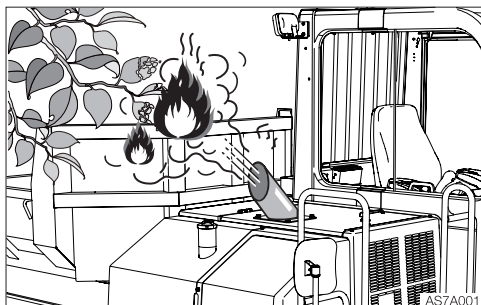


When the safety lock lever is lowered to the unlock position, the deceleration lamp in the instrument cluster flashes. This flashing stops when the deceleration function starts working, and the lamp remains lit while in the deceleration mode. The engine speed automatically drops to low idle (deceleration mode) four seconds after the control levers are set to neutral, to reduce fuel consumption. Moving the control levers will cause the speed to return to the original engine speed.

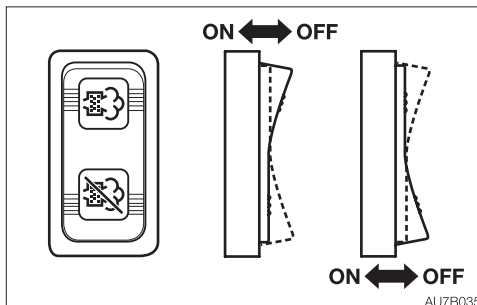


DPF MANUAL REGENERATION/INHIBIT SELECT SWITCH

WARNING



- The DPF 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.
- Do not perform the DPF 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 DPF.
- Do not perform the DPF regeneration in poorly-ventilated indoor spaces, as smoke may be generated during the regeneration.
- Do not perform regeneration when the engine hood is open. There is a risk of fire due to the high-temperature exhaust gas emitted from the DPF.

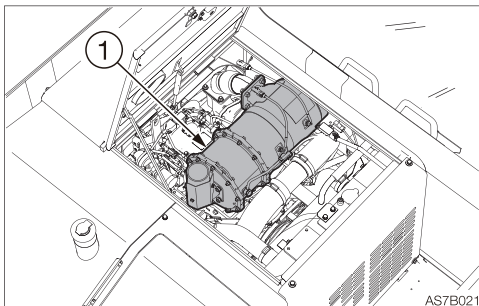


IMPORTANT: Press the manual regeneration side on the DPF manual regeneration/inhibit select switch to burn the particulate matter (PM), when the DPF manual regeneration lamp flashes and an alarm sounds. If the machine continues to be operated without performing the manual regeneration, the engine power will decrease and eventually the engine will stop running. The ECM warning display will also flash if the DPF needs to be repaired. A number appears on the engine error code screen. Refer to the “Engine error code list” and contact a Takeuchi sales or service dealer for repair.

• DPF manual regeneration

When the DPF manual regeneration symbol on the display starts flashing and an alarm starts sounding, perform the DPF manual regeneration by following the procedure below.

1. Park the machine in a safe place where there is no fire hazard.
2. Raise the safety lock lever to the lock position.
 - Do not lower the safety lock lever and move the control levers during regeneration. Doing so interrupts the regeneration.
3. Decrease the engine speed to low idling.
4. Press and hold the manual regeneration side on the DPF manual regeneration/inhibit select switch.



5. The manual regeneration symbol stops flashing and remains lit to indicate that the engine RPM is automatically increased and the DPF (1) regeneration (PM burning) has started.
6. Release the switch. Do not leave the machine during regeneration. It takes approximately 25 to 30 minutes, depending on the ambient temperature, to complete the regeneration operation.
7. The manual regeneration symbol goes off to indicate the end of manual regeneration.

Note:

- Since the exhaust gas is cleaned through the catalyst fitted inside the DPF, it has a smell different from that of the conventional diesel engine.
- In some cases smoke may be emitted from the tail pipe while the DPF regeneration is being performed. This is not a failure; it is due to burning of the particulate matter (PM).
- It is normal that a sound is produced when the DPF regeneration is started or completed; This is to adjust the air-intake throttle and EGR opening position.
- In some cases the noise associated with the DPF regeneration operation or cancel operation may change; this is not a failure.
- The DPF manual regeneration can be completed faster while the machine engine is warm rather than cold. Note that the manual regeneration does not start unless the coolant temperature is higher than a set value. The coolant temperature may increase while manual regeneration is being performed.

- Since the DPF regeneration is designed to work only when the accumulated particulate matter (PM) in the filter exceeds a certain amount, it will not start otherwise, even if you attempt to perform manual regeneration.

• **DPF regeneration inhibit (cancel)**

To cancel the DPF regeneration currently being processed (manual or auto), press the regeneration inhibit symbol side.

The DPF regeneration inhibit symbol appears on the display, and the regeneration operation must be performed again. Start the manual regeneration procedure from Step (1) above, as soon as possible. Do not press the DPF regeneration inhibit switch unless there is a risk of fire.

To cancel, press the switch again. Turning the ignition switch to OFF will also cancel the operation.

Refer to “DPF auto regeneration/inhibit indicator lamp” and “DPF manual regeneration under way/regeneration promoting/DPF manual regeneration error indicator lamp” on page 2-17.

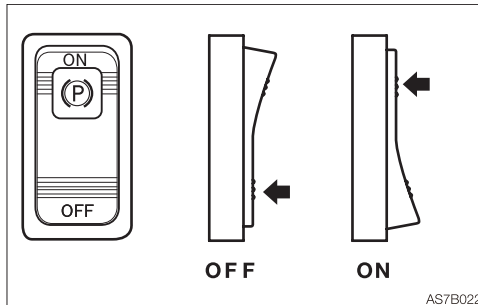


PARKING BRAKE SWITCH



WARNING

It is dangerous to press this button while traveling, as it causes the machine to stop abruptly. It may also damage the travel motors. Do not press this button while traveling except in emergency.



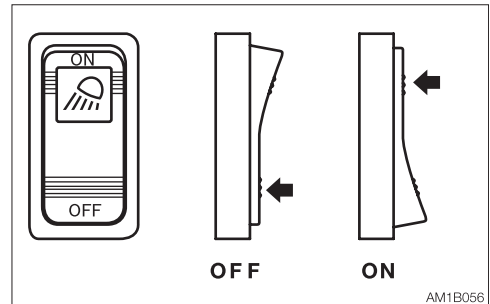
Pressing this button will light up the indicator and activate the parking brake.

ONForced activation of the parking brake

OFFAutomatic activation of the parking brake.

Even when this button is OFF, the parking brake is automatically activated when the machine stops traveling.

WORKING LIGHT SWITCH



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

OFFOff

ONSwitch lamps, front light and rear light will be lit.

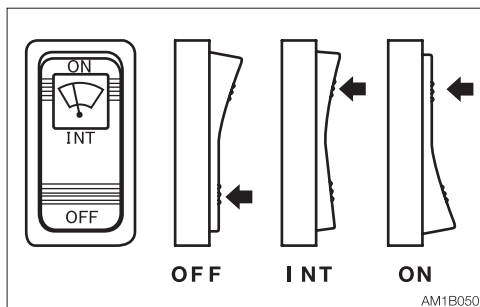


WIPER SWITCH

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

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

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

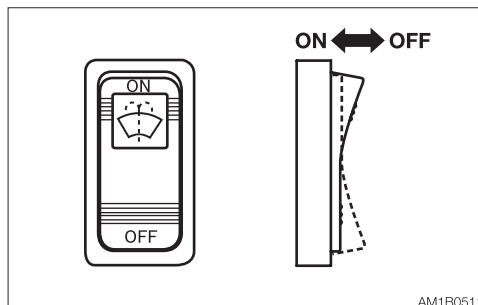


OFFOff

INTIntermittence operation

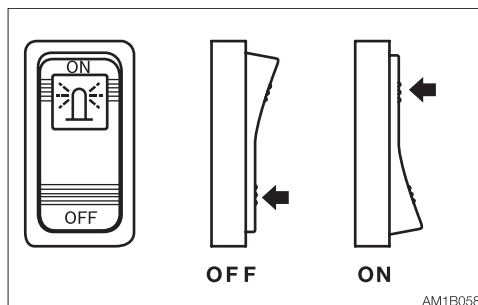
ONContinuous operation

WASHER SWITCH



ONPressing the ON side of the switch causes the washer to spray washer fluid. To stop spraying, release the switch.

BEACON LAMP SWITCH (IF EQUIPPED)



When this switch is turned on while the starter switch is at ON, the lamp turns on as follows:

OFFOff

ONBeacon lamp is lit

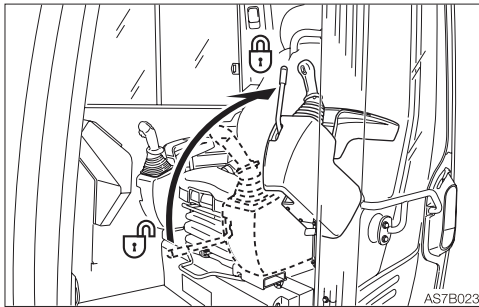


LEVERS AND PEDALS

SAFETY LOCK LEVER

WARNING

- Before standing up from the operator's seat to open/close the window, remove/install the lower window or adjust the operator's seat, lower the dump body all the way, raise the safety lock lever to engage the lock and stop the engine. If any control is 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, fully lower the dump body, raise the safety lock lever to engage the lock and stop the engine. Also, be sure to remove the key, lock the cab, fuel filler cap and covers, take the key with you and store it in a specified place.



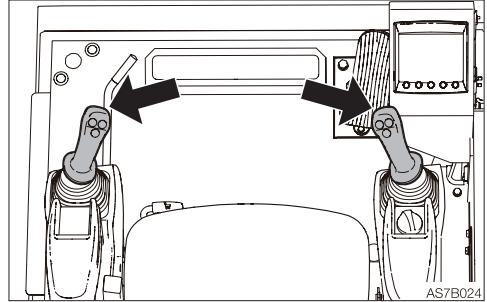
This device is for locking the dump body and travel operation.

When the lever is raised, the lever stand springs up to lock the lever.

CONTROL LEVERS

WARNING

Before starting operation, carefully check which lever pattern you are going to use.



Right control lever

Use this lever to operate the dump body.

Refer to "Lever pattern" on page 3-6.

Refer to "Operating the dump body" on page 3-13.

Left control lever

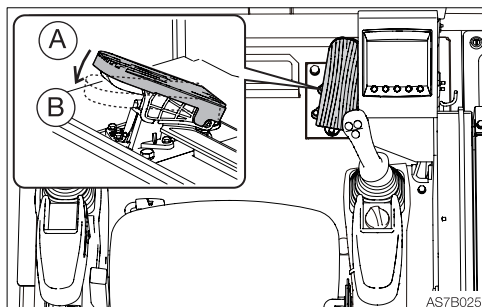
Use this lever to move forward and in reverse and to change directions.

Refer to "Lever pattern" on page 3-6.

Refer to "Traveling the machine" on page 3-10.



THROTTLE PEDAL (OPTIONAL)



Releasing the pedal will return to the engine speed set with the throttle controller.

(A).....Low idling

(B)Maximum speed



ACCESSORIES

AIR CONDITIONER (IF EQUIPPED)

CAUTIONS ON USE

Ventilate periodically

- When using the air conditioner over an extended period of time, open the windows about once each hour to let in fresh air.
- Your eyes may become irritated if you smoke while using the air conditioner. If this happens, open the windows to let in fresh air. Smoking particularly irritates the eyes when the air conditioner is being used. Since the humidity in the cab drops, the cornea becomes dry.
- If the outside air is dirty, set the air conditioner to the circulation mode.

Always maintain good visibility

Working with the dirty windows or fogged windows restricts visibility and is dangerous. Always clean dirt and moisture off the windows before working.

- The windows tend to get foggy when the humidity is high. If this happens, turn on the air conditioner to use outside air and the defroster to get rid of the fog.
- If the air conditioner is set to high when using the defroster, the difference between the external and internal temperatures increases, resulting in frost on the outside of the windows. If this happens, either turn the air conditioner off or turn the temperature control dial clockwise to increase the internal temperature.
- Mist may blow out of the air outlets. This is not a malfunction. When moist air passes through the evaporator on the air conditioner unit, water particles in the air freeze and are emitted as mist.

Do not overcool

For health reasons, the air inside the cab should be kept at a temperature at which you feel a little cool when entering the cab from outside (a difference of 5 to 6°C (41 to 43°F)). Remember to adjust the temperature properly.

Do not turn on the air conditioner until the engine is started

To avoid placing an excessive load on the compressor, wait until the engine is started and is running smoothly before turning on the air conditioner.

Let hot air out first

If the machine has been parked in the sun, open the windows and door to let the hot air out of the cab before using the air conditioner.

Caution on refrigerant (gas)

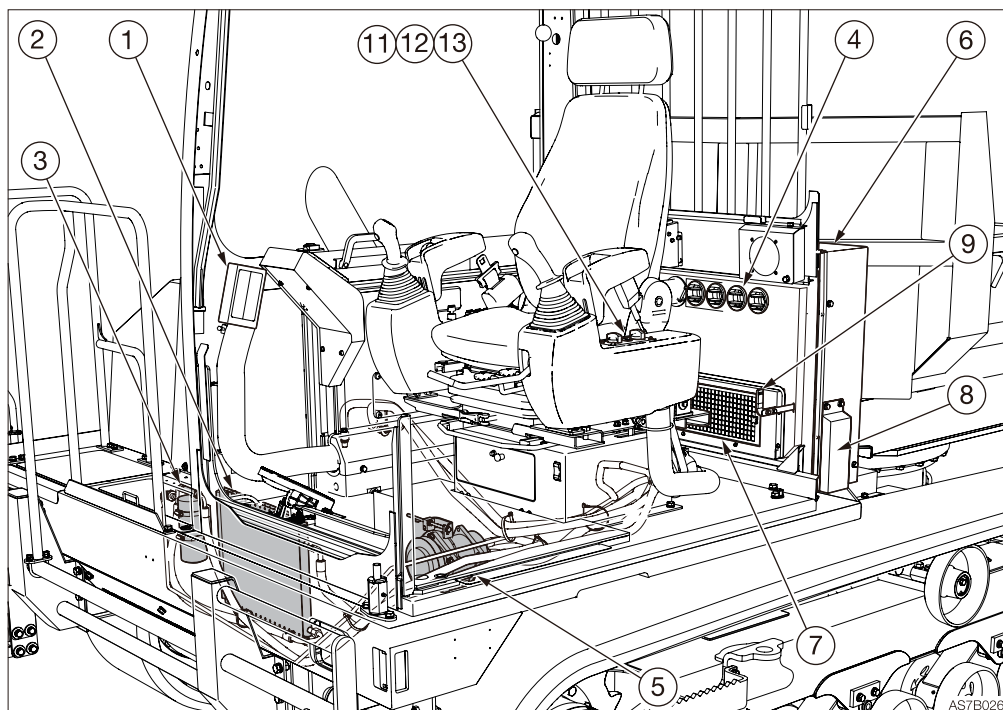
If the refrigerant comes in contact with skin or eyes, it may cause frostbite or eye damage. Never touch the refrigerant or loosen the parts on the cooling circuit. If the refrigerant gas leaks, keep flames away.

Off-season inspection

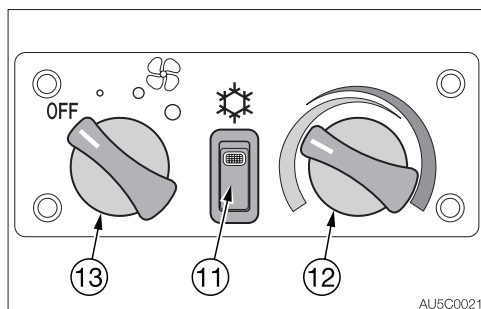
Even off season, run the air conditioner for 3 to 5 minutes at least once a week to maintain oil in the various parts of the compressor.



NAMES OF COMPONENTS



1. Defroster
2. Condenser
3. Receiver dryer
4. Outlets
5. Compressor
6. Air conditioner unit
7. Circulation filter
8. Ventilation filter
9. Ventilation/Circulation select lever
10. —



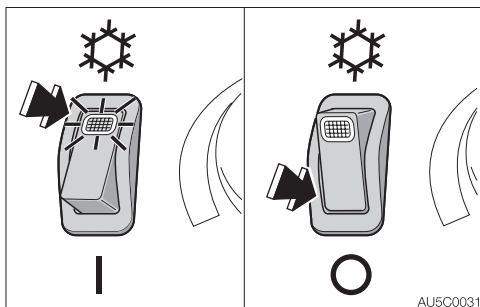
Control panel

11. Air conditioner switch
12. Temperature control dial
13. Fan dial



Air conditioner switch

IMPORTANT: To avoid placing an excessive load on the compressor, wait until the engine is started and is running smoothly before turning on the air conditioner.



Use this switch to turn on or off the cooling/dehumidifying function. When this switch is pressed while the engine is running with the fan dial set to ON, the lamp lights up and the cooling/dehumidifying function is turned on. Press this switch again or turn the fan dial to OFF to turn off the cooling/dehumidifying function.

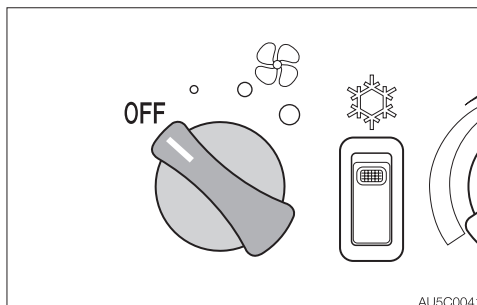
Lamp is off OFF

Lamp is on ON

Note: To prevent leakage of refrigerant gas from the compressor's seal, operate the air conditioner at least once a week, regardless of the season.

Note: The air conditioner will not function if the temperature in the cab is low (3°C (38°F) or lower).

Fan dial



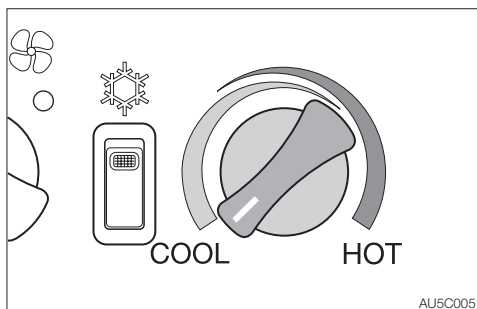
Use this dial to select the fan speed from the three levels. Turning this dial to the OFF position turns off the air conditioner. OFFTurning off the fan and the air conditioner.

○Low

○Medium

○High

Temperature control dial



Use this dial to adjust the air temperature.

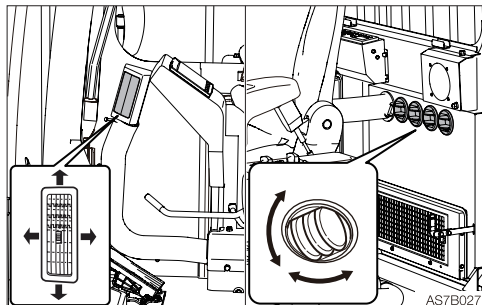
COOL..... Decreases the temperature

HOT Increases the temperature

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

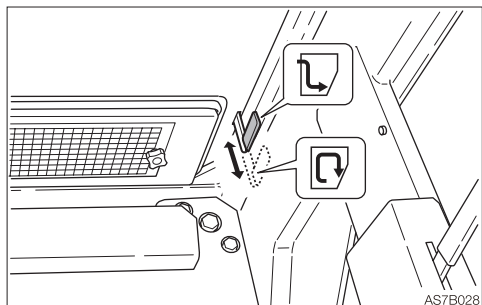


Outlets



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

Ventilation/Circulation select lever



Use this lever to select between Ventilation and Circulation.

..... Circulation

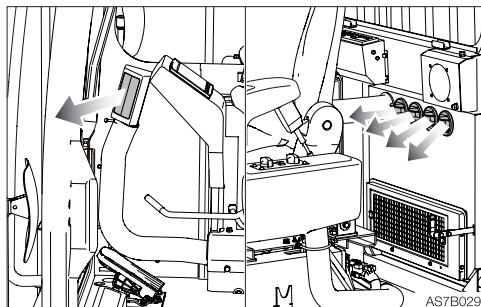
- Cool or heat the cab quickly
- When external air is dirty

..... Ventilation

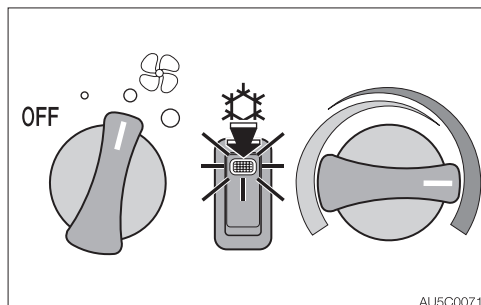
- Lets in fresh air
- Removes frosting from the windows
- Ventilates while cooling or heating

Operation

Dehumidifying and Heating (in cold climates or when the humidity is high)



Arrange the foot outlets and the defroster so that they are directed to the front window. Let the dehumidified warm air blow on the front window, to prevent frosting.



1. Set the desired temperature by turning the temperature control dial to between the center and the right end (HOT).
2. Set the fan dial to the desired position.

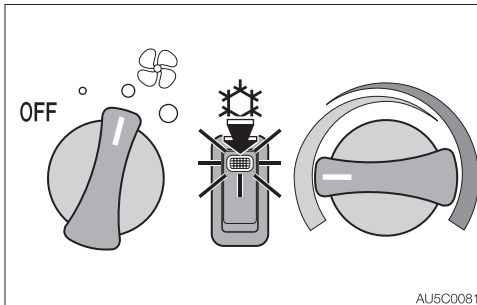


Cooling

CAUTION

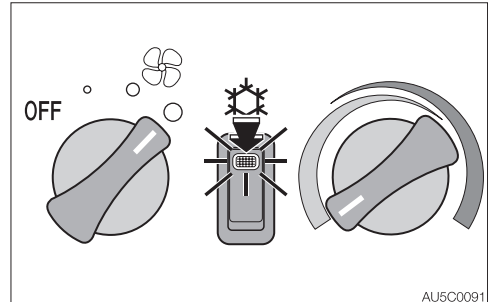
- When the air conditioner is set to the circulation mode, the air in the cab gradually becomes dirty. Switch to the “ventilation” to ventilate once a comfortable temperature is obtained.
- Excessive cooling can be harmful to your health. It is best to keep the air inside the cab only about 5 to 6°C (41 to 43°F) cooler than the outside air.

Note: If the machine has been parked in the sun, open the windows and door to let the hot air out of the cab before using the air conditioner.



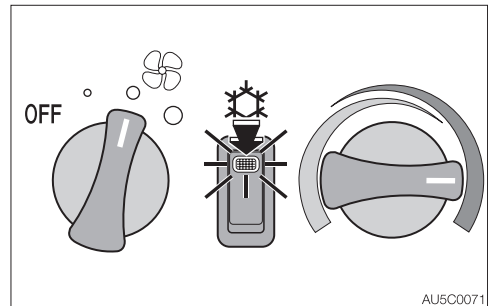
1. Set the fan outlet to the desired position.
2. Set the desired temperature by turning the temperature control dial to between the center and the left end (COOL).
3. Set the fan dial to the desired position.

Quick cooling



1. Set the fan outlet to the desired position.
2. Set the desired temperature by turning the temperature control dial to between the center and the left end (COOL).
3. Turn the fan dial to “High”.
4. Move the Ventilation/Circulation select lever to the right to select “Circulation”.

Heating

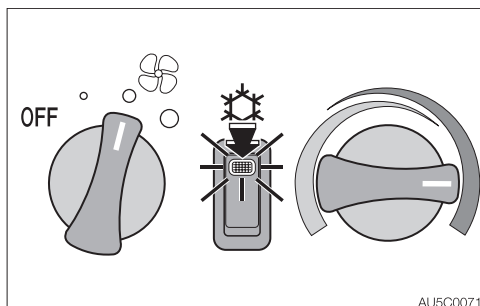


1. Arrange the outlet louvers so that air can be directed to the feet.
2. Set the fan dial to the desired position.
3. Set the desired temperature by turning the temperature control dial to between the center and the right end (HOT).
For the highest temperature, turn the dial all the way to the right.
4. Turn the fan dial to the OFF position to turn off heating.



Defrosting or defogging the windows

Note: If the air conditioner fan is set to High when using the defroster, the difference between the external and internal temperatures increases, resulting in frost on the outside of the windows. If this happens, either turn off the air conditioner or turn the temperature control dial clockwise to increase the internal temperature.



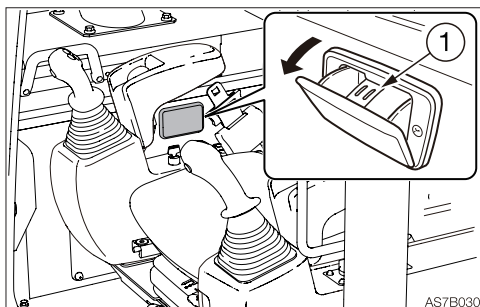
1. Set the desired temperature by turning the temperature control dial to between the center and the right end (HOT).
2. Set the fan dial to the desired position.
3. Move the Ventilation/Circulation select lever to the left to select "Ventilation".
4. Arrange the foot and defroster outlets so that they are directed to the front window.



ASHTRAY

WARNING

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

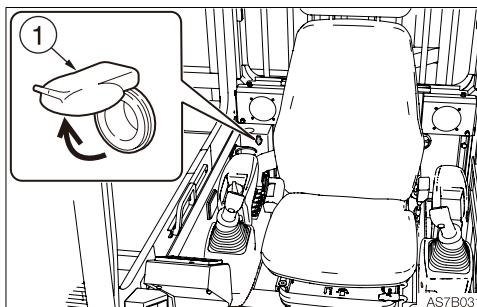


Pull the ashtray out towards you to use it. To clean, press the ash discharge button (1) and pull out the ashtray.

POWER SUPPLY SOCKET

WARNING

Use only those electric products which comply with the specifications of this socket.



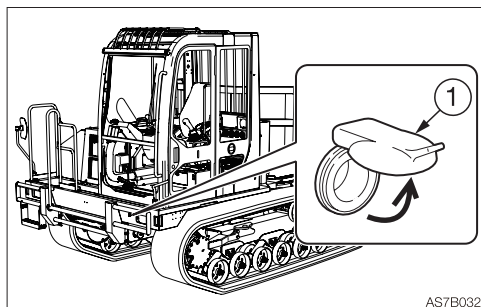
This socket is used to supply power to the devices inside the machine. When using, be careful not to exceed 12 V/ 5A.
To use, open the cap (1).



EXTERNAL POWER SOCKET

WARNING

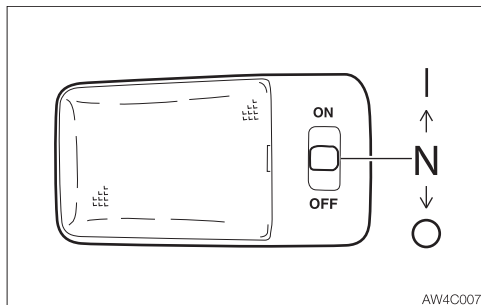
Use only those electric products which comply with the specifications of this socket.



This socket is used to supply power to the devices outside the machine. When using, be careful not to exceed 12 V/ 5A. After use, pull out the plug and close the cap (1).

INTERIOR LIGHT

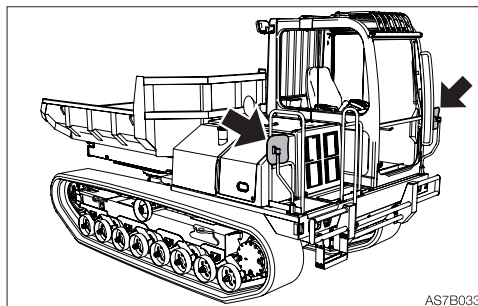
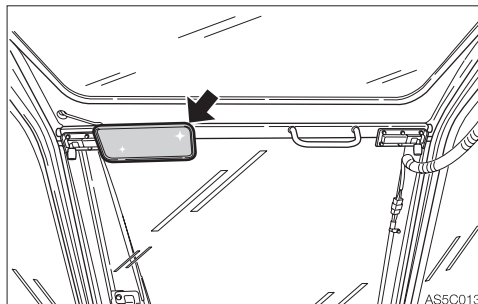
IMPORTANT: The battery capacity decreases if the interior light is left on for a long time when the engine is stopped.



O.....Remains off all the time.

I.....Lights up all the time.

MIRRORS



Adjust the rear view mirrors to have a better rear view before operation.

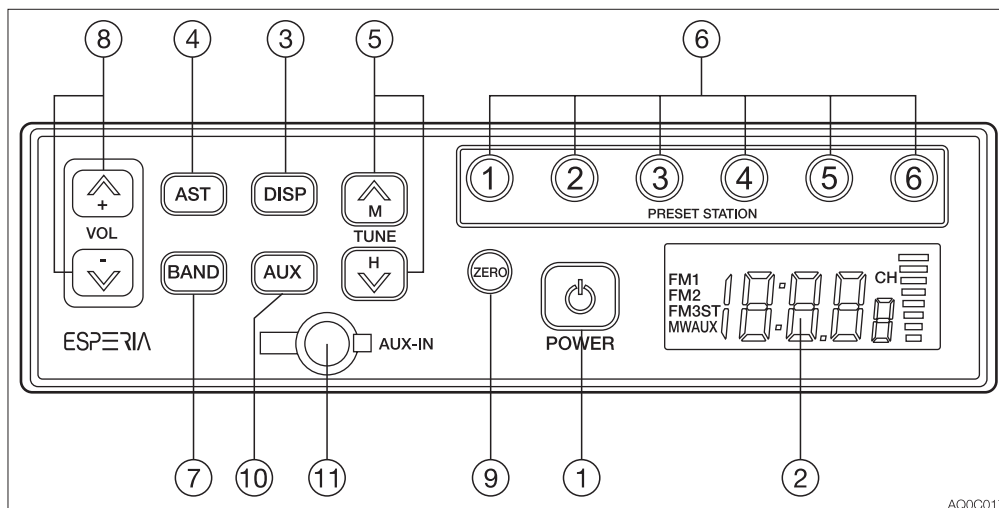


RADIO (FOR CAB)

CAUTIONS ON USE

- To ensure safe operation of the machine, always be sure to keep the volume of the radio down to a level where you can easily hear sounds from outside the machine.
- Do not use the radio for a long time when the engine is stopped. Doing so will drain the battery and make it difficult or impossible to restart the engine.
- Be careful not to allow water or other liquids to come into contact with the radio. Otherwise, it may result in malfunction.

NAMES OF COMPONENTS



(1) POWER button

Use this button to turn on or off the radio.

(2) LCD

Displays the time/the receiving frequency and the operation mode.





(3) Display button (DISP)

Pressing this button while the frequency is displayed on the LCD changes the display to the clock. Pressing the button again returns to the frequency. If the button is not pressed for five seconds, the display returns to the frequency.

(4) Auto store/Auto seek station (AST)

Press this button to automatically assign receivable radio stations to preset buttons (1 to 6).

(5) Tuning button (TUNE

Press and hold this button ( or ) for one second or more to start seeking the receivable stations. The seeking stops when a station is found. To cancel tuning halfway, press the button again. Pressing the TUNE button () starts seeking stations with higher frequency. Pressing the TUNE button () starts seeking stations with lower frequency. The frequency changes as either button is pressed in one second intervals.





(6) Preset buttons (1 to 6) (PRESET STATION)

Each button can store three FM stations (FM1, FM2, FM3) and one MW (AM) station. For how to set these buttons, refer to "Presetting stations".

(7) Band button (BAND)

Pressing this button changes the band from FM1 to FM2, FM3 and MW (AM) in this order. The received band and its frequency appear on the display.

(8) VOL buttons

Use these buttons to control the sound volume. Press the button  to increase the volume and the button  to decrease the sound volume. Press and hold each button to continuously increase/decrease the volume.

(9) Clock zero set button (ZERO)

Use this button to set the minute to "00" when it is between "55" to "59" or "01" to "05".

The LCD returns to the frequency display if no more operation is performed for five seconds.

(10) Auxiliary input select button (AUX)

Pressing this button changes the input source to the external device connected to the AUX-IN (11) jack. The display of "AUX" appears on the LCD. Pressing the button again returns to the radio.

(11) Auxiliary input jack (AUX-IN)



Use this jack to connect an external audio source such as a portable music player. Pull off the rubber cap and connect the output terminal (headphone jack) of the portable player to the AUX-IN with the stereo mini-plug (3.5 mm) cord.

Be sure that jack is closed with the rubber cap when not in use.



Playing the radio

1. Turn the ignition key to the ACC or ON position, and then press the power button (1) to turn on the radio.
2. Select the band, FM or MW (AM) by pressing the BAND button.
3. Select the station with the preset button or the tuning button, and adjust the volume with the volume button.
4. To turn off the radio, press the power button.

Selecting a station-auto select

Press and hold the TUNE button  for one second or more to start seeking stations in the higher frequencies direction. Press and hold the TUNE button  for one second or more to start seeking stations in the lower frequencies direction. The radio will stop seeking when it finds an receivable station and start playing.

Selecting a station-manual select

The selection can be done manually. Press the tune  button to seek stations with higher frequencies. Press the tune  button to seek stations with lower frequencies.



Presetting stations

1. Press the BAND button to select a band (MW (AM) or FM), and then select the station by pressing the TUNE button for seeking.
2. To assign the selected station to a preset button, press and hold the button to be assigned for one second or more. The number of the preset button appears on the LCD.
3. For more stations to preset, repeat the steps 1 and 2 above.
 - If the preset button on which a station has been assigned is pressed and held for one second or more, the preset information will be modified.
 - If the stored information is erased during battery replacement on the vehicle, assign the stations again to the preset buttons.
 - Each preset button (1 to 6) can store three FM stations (one from each FM1, FM2, FM3) and one AM station.

Auto storing (AST)

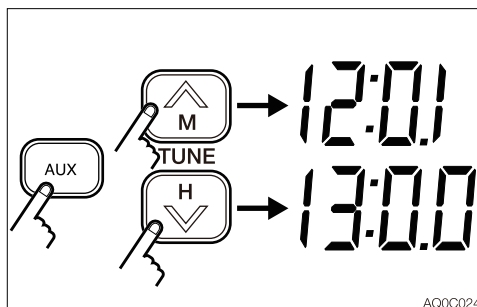
Press the AST button while playing the radio. The radio automatically starts seeking the receivable stations within the band currently selected and assign each preset button (1 to 6) a station.

Note: The previous stations stored will be cleared (cancelled) by the auto storing. If the station stored in the preset button is not desirable, try to preset the station manually.

Auxiliary input (AUX)

- Connect a portable audio player and listen to your favorite music.
- Plug a patch cord (without resistor) into the headphone jack of the audio player.
- Plug a stereo mini plug (3.5 mm) into the AUX-IN jack on the radio.
- To listen to an external portable audio player, press the AUX button. (The “AUX” display appears on the LCD and the frequency display is changed to the clock display.)
- To return to the radio, press the AUX button again.
- When connecting, adjust the sound volume level of the audio player so that it is same as that of the radio.
- Adjust the sound volume of the audio player by using the volume control buttons on the radio.
- Do not connect a device with a larger output compared with a portable audio player.

Setting the clock



- If a frequency is displayed on the LCD, press the AUX button (auxiliary input) to display the clock.
- Use the tune (M) button to set the minute. Use the tune (H) button to set the hour.
- To set the minute digits to “00” when they are from “55” to “59” or from “01” to “05”, press the ZERO button.



Resetting

(North, Central and South America)

If there are any problems, such as the abnormal display of frequency or failure of selection, reset the radio by pressing the “3” button* while pressing the AST button and the AUX button together. Then, “US”** and the clock display appear on the LCD, indicating that the radio is turned off. Note that the memory stored in the preset button is cleared.

*: “6” button – (Europe, Asia, Oceania)

“5” button – (China)

** : EU – (Europe, Asia, Oceania)

CH - (China)

Switching the volume mode when the radio is on

Switch the modes between SU and FI by pressing the (1) button while pressing the AST and AUX buttons together, when the radio is on.

The SU or FI display appears on the LCD, followed by the radio turning off by itself.

SU mode:The volume at power-off is retained.

FI mode:The volume at power-off is reset.

SPECIFICATIONS

Power source: 12/24 VDC (negative ground)

Maximum power consumption:

..... 3A or less (at max. volume, 24 V)

Maximum output power:

..... 16 W + 16 W (4Ω) (at 28.8 VDC input)

5W+5W (4Ω) (at 14.4 VDC input)

Rated output power:

..... 12 W + 12 W (10% distortion, 4Ω) (at 28.8 VDC input)

3.5 W + 3.5 W (10% distortion, 4Ω) (at 14.4 VDC input)

Dimensions: 178 (W) x 50 (H) x 65 (D) mm (excluding protrusions)

Receiving frequency:

..... MW (AM) 531 to 1602 kHz (Europe, Asia), 530 to 1710 kHz (North, Central and South America)
FM 87.5 to 108 MHz (Europe, Asia), 87.9 to 108 MHz (North, Central and South America)

Practical sensitivity:

..... MW (AM) 32 dB or less (S/N 20 dB)
FM 12 dB or less (S/N 30 dB)

S/N ratio: MW (AM) 40 dB or more
FM 50 dB or more

AUX IN: Stereo mini jack (3.5 mm); rated input, 90 mV; 20 kΩ impedance

Note: Specifications and dimensions may be changed without notice.



FUEL SUPPLY PUMP



DANGER

Do not use the fuel supply pump for gasoline or hydraulic oil. Doing so could result in explosion or damage.

Only use the fuel supply pump for diesel fuel.

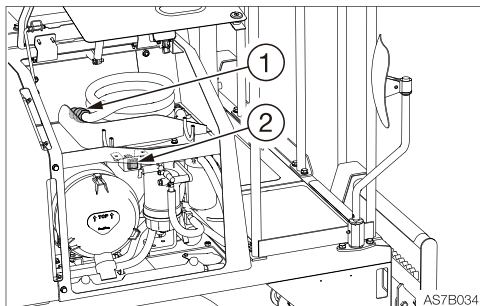


CAUTION

Do not fill the tank with additional fuel after the fuel supply pump stops.

Doing so could cause the fuel to spurt out.

This device automatically supplies fuel to the fuel tank and stops automatically when the fuel tank is full.



1. Open the side cover.
2. Insert the pump's nozzle (1) in the fuel supply tank.
3. Press the switch (2).
The pump stops automatically once the fuel tank is full.
4. Turn off the switch.
5. Store the nozzle.

OPERATION



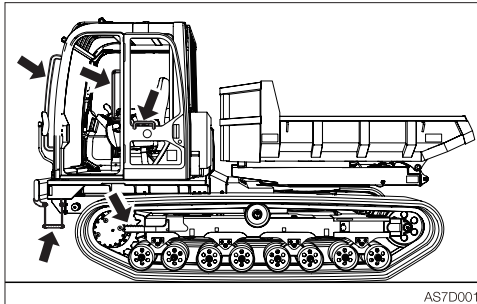


BEFORE STARTING OPERATION

GETTING ON OR OFF THE MACHINE

WARNING

- 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.



- Climb up/down the steps 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.

WALK-AROUND INSPECTION

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

Refer to "MAINTENANCE, Walk-around inspection", on pages 5-14 and 5-15.

DAILY INSPECTION

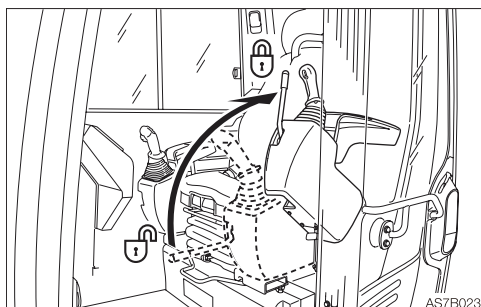
Perform the daily inspections once a day before starting the engine for the first time. Refer to "MAINTENANCE, Daily inspection", on pages 5-16 to 5-21.



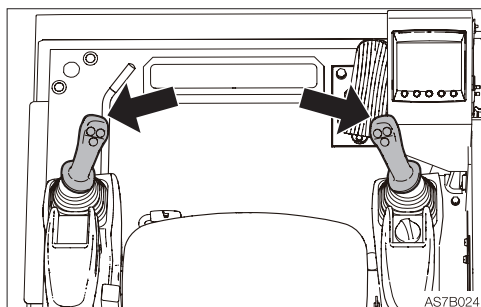
STARTING AND STOPPING THE ENGINE

BEFORE STARTING THE ENGINE

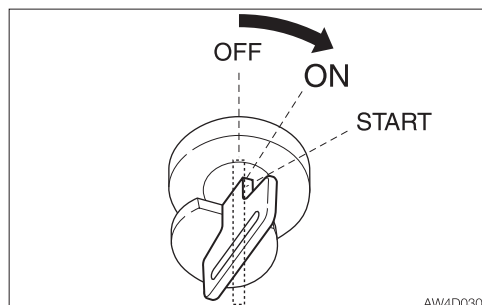
1. Adjust the seat for a comfortable operating position.
2. Fasten the seat belt.



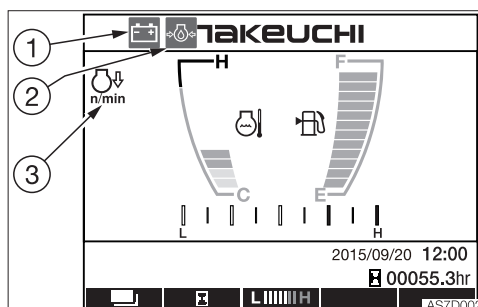
3. Check that the safety lock lever is in the locked position.



4. Check that the control levers are in the neutral position.



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



- All warning lamps flash and an alarm is sounded for two seconds. The meters also start functioning. After two seconds, the deceleration lamp (3) stops flashing and remains lit, while the battery charge warning lamp (1) and engine oil pressure warning lamp (2) remain flashing. The other lamps go out.
- Turn the light switch to check that the front light, rear light and meter light turn on.
- Operate the turn signal buttons and check if the turn signal lights flash and an alarm sounds.
- Press the horn button to check that the horn sounds
- Check the fuel level.

If a lamp does not light or the alarm is not sounded, the bulb may be burnt out or a wire may be damaged. Ask a Takeuchi service agent for repair.



STARTING THE ENGINE

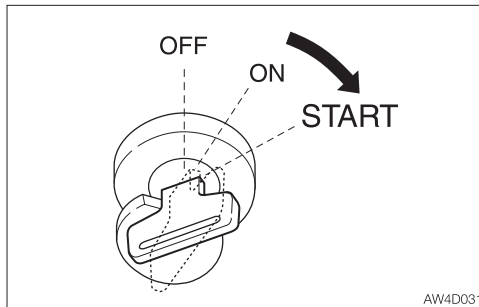
WARNING

- Clear all personnel from the work area.
- Sound the horn to warn people around the machine.

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

IMPORTANT: If the engine stalls due to fuel shortage, add fuel, turn the key to the ON position for 60 seconds, and then turn it to the START position. Running the starter for a long time before there is enough fuel is going through can cause the starter to fail.

Normal starting



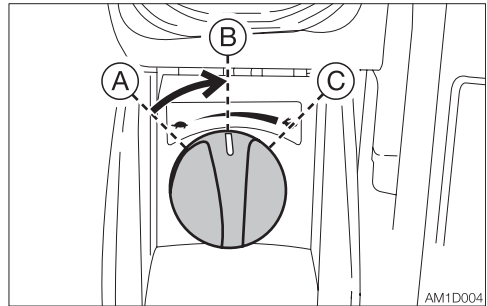
1. Turn the ignition key to the START position and start the engine.
2. Once the engine starts, release the key. The key automatically returns to the ON position.
3. Check that the warning lamps are off. For safety reasons, it is designed that the deceleration function is activated to set the engine revolutions to low idling whenever the engine is started. Cancel the deceleration mode by pressing the deceleration button as necessary.
4. Warm up the engine. Refer to "Warming up the engine" on page 3-5.
5. After the completion of the warming up,

press the deceleration button to cancel the deceleration mode.

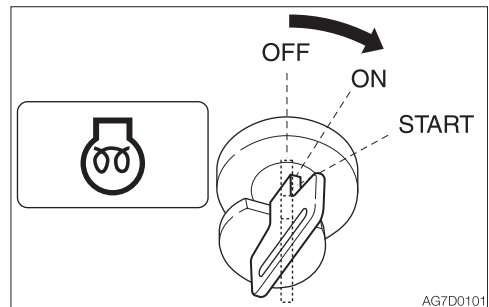
Starting in cold climates

WARNING

Never use starting fluid on this engine, as the starting fluid could cause an explosion.



1. Turn the throttle controller to the middle position.



2. Turn the ignition key to the ON position, and confirm that the glow lamp is on. (The glow lamp stays lit for 15 seconds when the coolant temperature is -10°C (14°F).)
3. After the glow lamp goes out, press the deceleration button (to cancel the deceleration mode), and then turn the key to the START position to start the engine.



4. Once the engine starts, release the key.
The key automatically returns to the ON position.
5. Check that the warning lamps are off.
6. Return the throttle controller to the original position and warm up the engine.
Refer to "Warming up the engine".

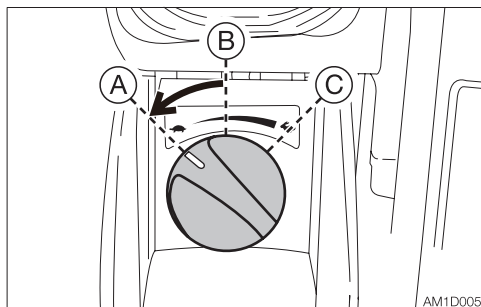
Note: If the engine is started at -15°C (5°F), the revolution speed is controlled to 1500 min⁻¹ (rpm). After 10 seconds, the throttle controller operation becomes available.

Note: The glow lamp turns on if the coolant temperature is low after the engine is started.

WARMING UP THE ENGINE

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

Do not warm up the engine for a long time (20 minutes or more). When idling is required, occasionally place a load or run the engine at medium speed.

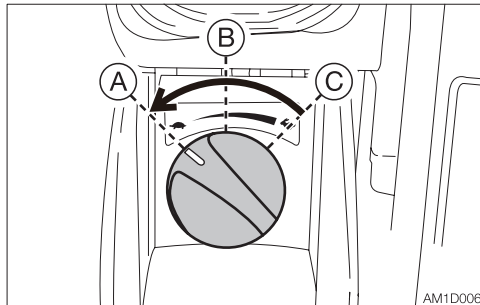


AM1D005

1. Return the throttle controller, and then run at a low idle with no load for 5 minutes.

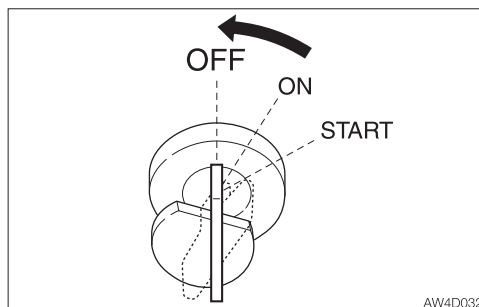
STOPPING THE ENGINE

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



AM1D006

1. Return the throttle controller.
2. Idle the engine for about 5 minutes to gradually let it cool.



AW4D032

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



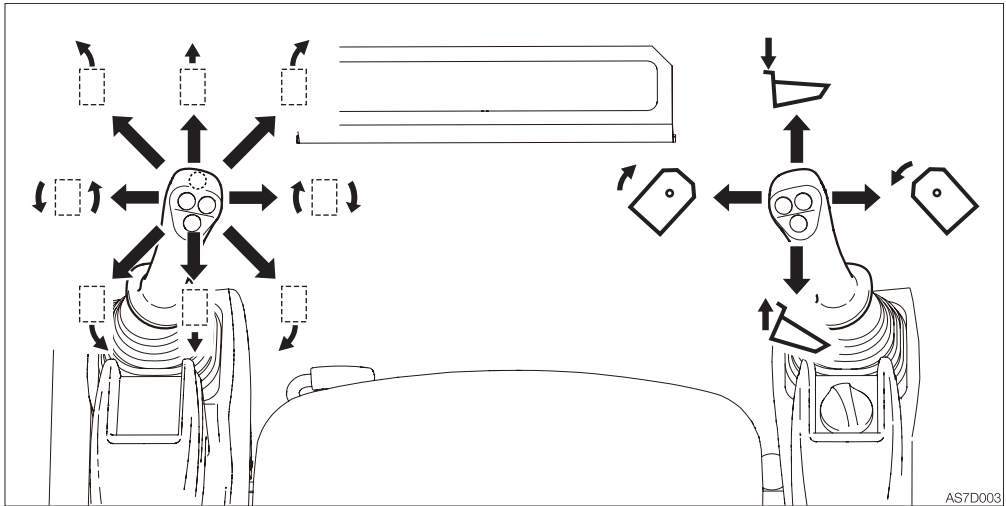
OPERATING THE MACHINE













LEVER PATTERN

WARNING

Before starting operation, be sure to check which lever pattern you are going to use.

This manual explains the operation by using the pattern described below.



	Travel Forward		Dump body lower
	Travel Reverse		Dump body raise
	Left Spin Turn		Dump body left swing
	Right Spin Turn		Dump body right swing
	Left Pivot Turn		
	Right Pivot Turn		
	Right Pivot Turn Reverse		
	Left Pivot Turn Reverse		



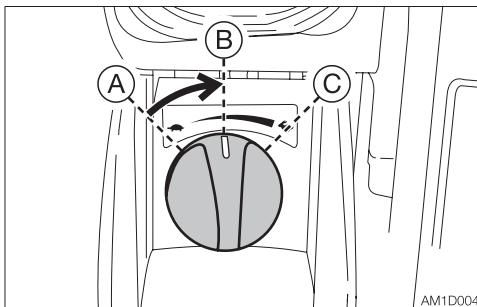
WARMING UP THE MACHINE (HYDRAULIC OIL)

WARNING

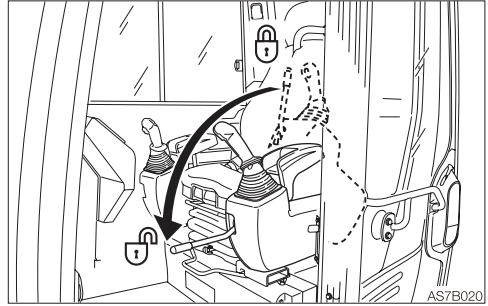
Operating the working equipment without warming up the machine (hydraulic oil) is dangerous, as the working equipment cannot respond to controls quickly or may move in unexpected ways, and the safety devices may not operate properly. Be sure to sufficiently warm up the machine.

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

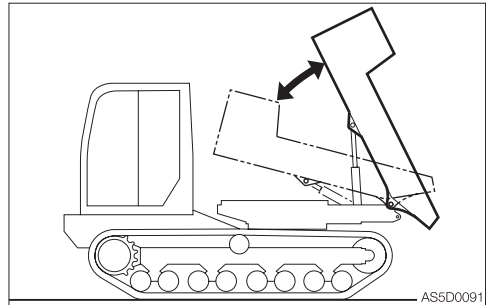
Normal warm-up



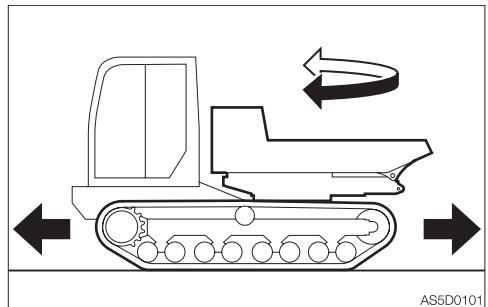
1. Turn the throttle controller to the middle position, and then run the engine at medium speed for about 5 minutes with no load.



2. Fully lower the safety lock lever to the unlock position.



3. Extend and retract the dump cylinders slowly several times with no load.

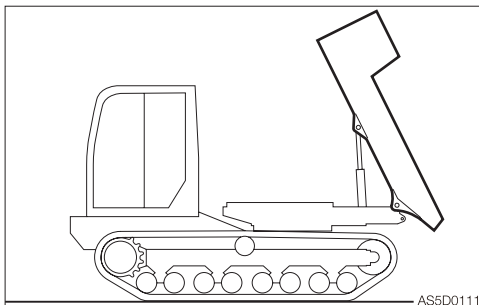


4. Slowly swing the dump body to the left and right.
5. Travel slowly forward and in reverse several times.



Warm-up in cold climates

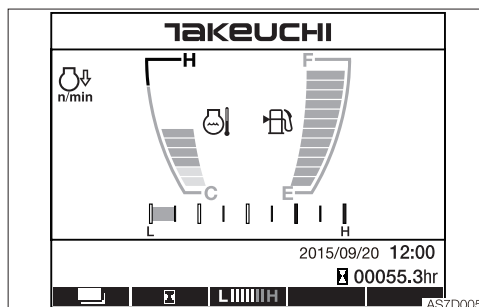
1. Perform the normal warm-up procedure.



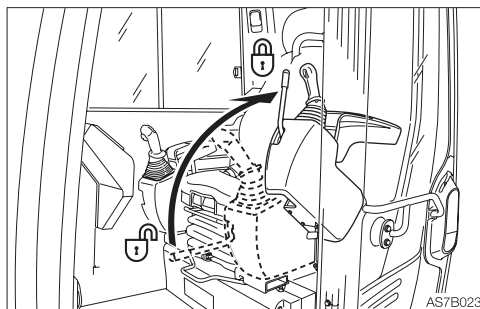
2. Set the dump cylinders at the stroke end and keep it there.
Do not keep this condition for more than 30 seconds.
3. Repeat the step 2 until the dump body operating speed becomes normal.

INSPECTION AFTER WARM-UP

After warming up the engine and machine (hydraulic oil), perform the checks and inspections described below, and repair if necessary.



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



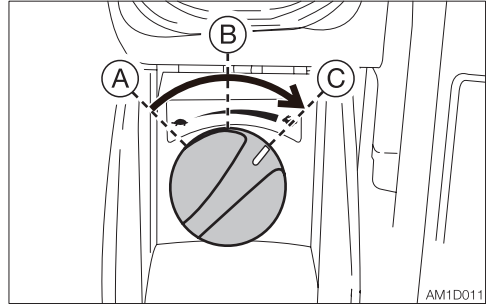
3. Raise the safety lock lever to the lock position, and then check that the control levers are locked.



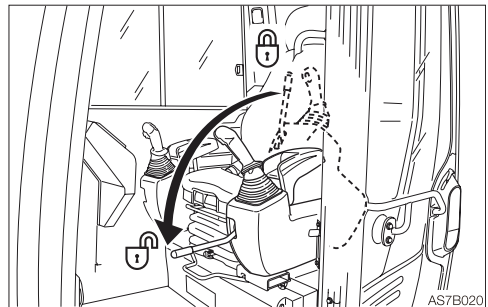
TRAVELING THE MACHINE

WARNING

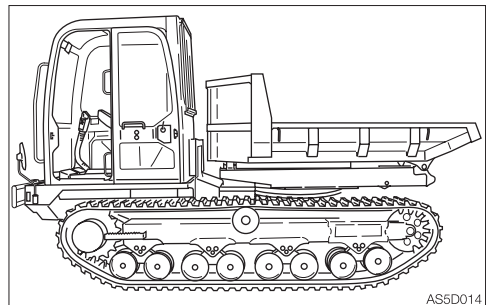
- Never allow anyone to enter the machine's swing radius and path.
- Signal your intention to move by sounding the horn.
- Do not travel while the dump body is being swung or raised. Doing so is dangerous because it causes the machine to become unstable. Fully lower the dump body and make it parallel to the main frame.
- Avoid sudden starting, stopping and turning. Otherwise, the loaded material could be shifted to cause the machine to lose its balance, or the structures in the surrounding area could be damaged by the material fallen from the dump body.
- Do not raise the safety lock lever while traveling. Doing so is dangerous; the parking brake will be activated and the machine will stop abruptly.
- Do not switch off the ignition switch while traveling. Doing so is dangerous; the machine will stop abruptly.
- Before traveling in reverse, visually check if the rear view is clear. Failure to do so could result in contact with a worker or obstacle.
- When hauling materials or when traveling over rough terrain or slippery road surface, slow down the travel speed and drive carefully.
- Avoid crossing over obstacles whenever possible. If you must do so, try to go over the obstacle at a right angle to it at a low speed. Never cross obstacles which will tilt the machine to an angle of 10° or greater.
- Clear all obstacles from the path of the machine.



1. Turn the throttle controller and increase the engine speed.



2. Fully lower the safety lock lever to the unlock position.



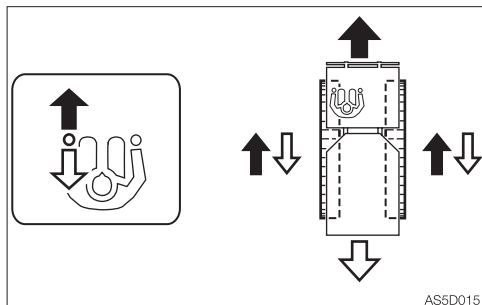
3. Fully lower the dump body and make it parallel to the main frame.



OPERATION OPERATING THE MACHINE

Moving the machine forward and backward

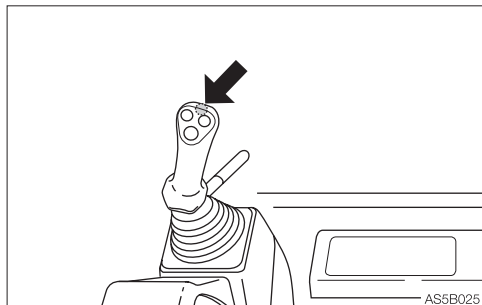
1. Operate the left control lever as below.



AS5D015

- ➔ To move forward:
Push the left control lever forward.
- ⇨ To move backward:
Pull the left control lever backward.

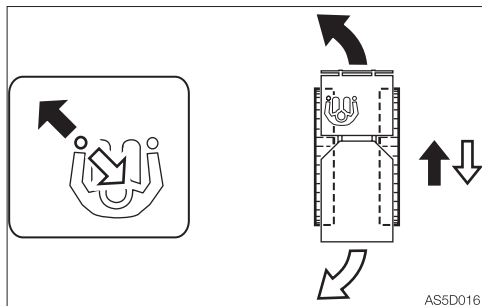
Traveling in 2nd (High) speed



AS5B025

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

Left turn

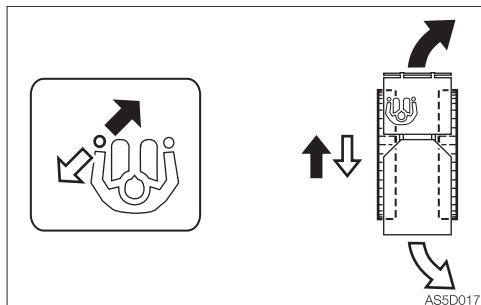


AS5D016

Turning to the left:

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

Right turn

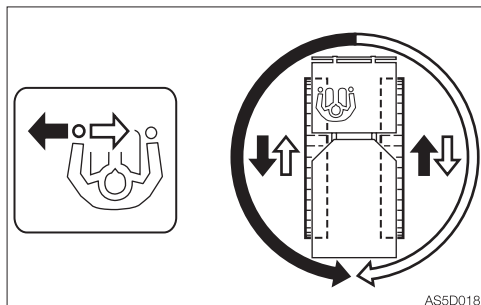


AS5D017

Turning to the right:

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

Spin turn



AS5D018

- ➔ To spin left:
Tilt the left control lever to the left.
- ⇨ To spin right:
Tilt the left control lever to the right.



STOPPING TRAVEL



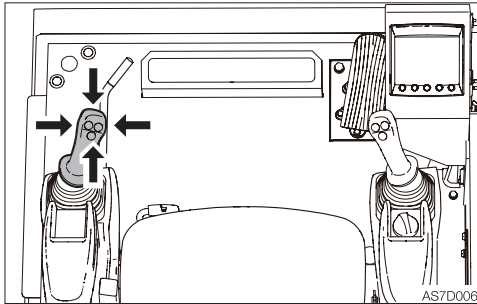
WARNING

- Park the machine on a flat, rigid and safe ground. Set the parking brake. If you must park on a slope, chock the tracks to block the machine.
- Before standing up from the operator's seat, raise the safety lock lever to engage the lock. If any controls are accidentally touched when the safety lock lever is not locked, the machine will suddenly move and cause serious injury or death.



CAUTION

Never stop running the machine suddenly except in emergency. Stop in good time, if possible.



1. Set the left control lever slowly to the neutral position. The machine stops. Braking is automatically applied by the hydrostatic drive system when the left control lever is returned to the neutral position. Full braking is achieved when the safety lock lever is raised



OPERATING THE DUMP BODY

WARNING

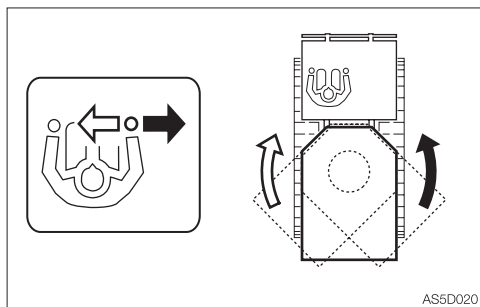
- Before starting operation, be sure to check which lever pattern you are going to use.
- Before operating the dump body, check that the surrounding area of the machine is safe and clear.
- Do not travel while the dump body is being swung or raised. Doing so is dangerous because it causes the machine to become unstable. Fully lower the dump body and make it parallel to the main frame.

Use the right control lever to operate the dump body.

Return the right control lever to the neutral position to stop the dump body.

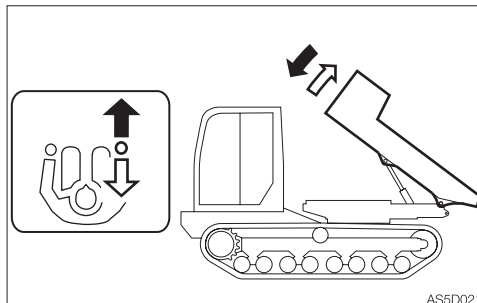
1. Lower the safety lock lever to the unlock position.

Operating the dump body swing



- ➔ To swing left:
Tilt the right control lever to the right
- ⇨ To swing right:
Tilt the right control lever to the left.

Dump body operation



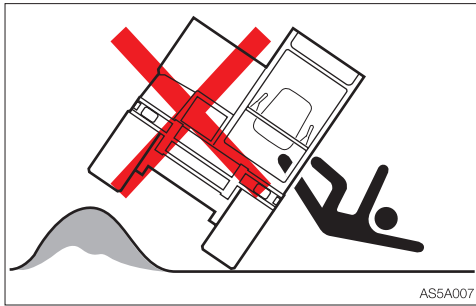
- ➔ To lower the dump body:
Push the right control lever forward.
- ⇨ To raise (dump) the dump body:
Pull the right control lever backward.



OPERATING PROCEDURES

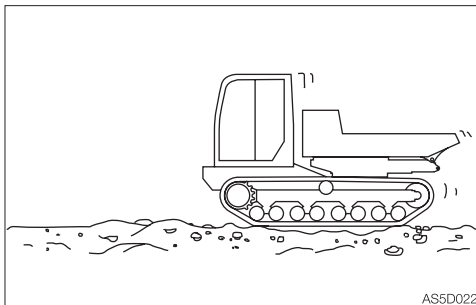
CAUTIONS ON OPERATING

Caution on traveling



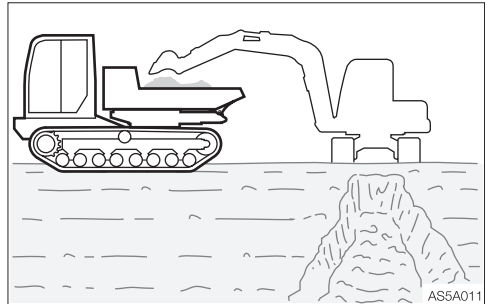
Traveling over obstacles (rocks, stumps, etc.) may put a great load on the machine body and may cause damage to it. Avoid crossing over obstacles whenever possible. If you must do so, travel at a low speed and go over the obstacle at the center of the track.

Caution on traveling in 2nd (High) speed



On uneven ground, maintain the low speed and avoid starting, stopping or changing directions abruptly.

Precautions when loading material

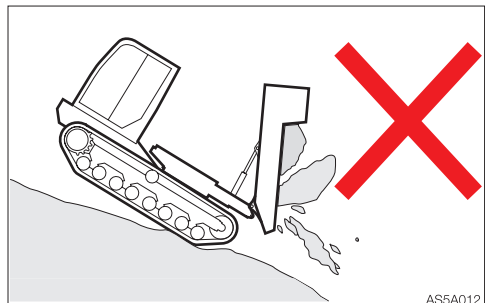


When loading earth or sand, make sure that the machine operator is safe. Do not load material on slopes. Do it only on a firm ground.

Improper loading is dangerous, as it could cause the machine to tip over or result in the load shifting.

- Do not exceed the maximum loading capacity (3700 kg, 8155 lb).
- Load the material so that it is evenly distributed in the dump body.
- Be sure to properly secure the unstable load onto the dump body.

Precautions when dumping

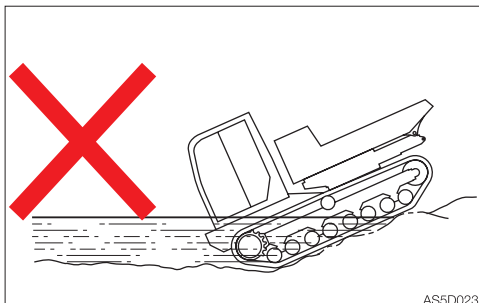


Do not perform the following dumping operations. The machine may tip over due to the shift of the center of gravity.

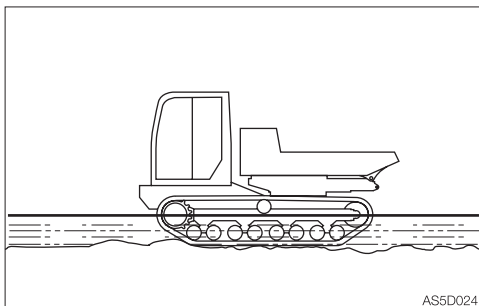
- Dumping on slopes or bumpy terrain
- Dumping while swinging the dump body
- Dumping while traveling



PRECAUTIONS ON USING THE MACHINE IN WATER



- If the front of the machine is submerged in water as shown in the figure above, it could cause the radiator fan to turn in water, resulting in damage to the fan. The front of the machine must not be submerged.



- Allowable water depth
Use the machine in water only when the water is up to the middle of the travel reduction gear case.
- For those parts used in water for a long time, apply enough grease until the old grease is expelled.
- Never submerge the swing bearing or main frame in water or sand. If submerged, contact a Takeuchi service agent for inspection.



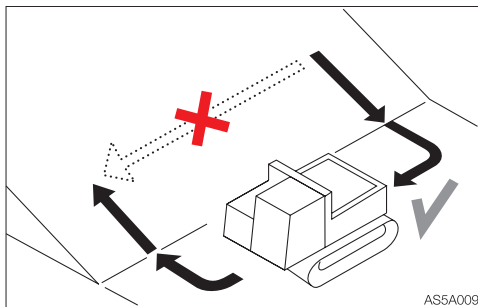
PRECAUTIONS WHEN TRAVELING ON SLOPES

WARNING

When traveling on slopes, do it carefully so that the machine does not tip (roll) over or slide.

When traveling on slopes of 15 degrees or more, position the heavier end of the machine (front or back, whichever is heavier) pointing up the slope.

- Never travel on slopes that are too steep for the machine to maintain its stability (maximum gradeability: 30°, lateral tipping angle: 10°). Note that in reality, the machine's stability becomes lower than the above values depending on the working condition.
- When traveling on slopes or grades, drive slowly in 1st (low) speed. Especially on down slopes, slow down the engine speed and limit the stroke length of the left control lever to less than half. Going down a slope at high speed may lead to loss of control.
- Braking abruptly on slopes could result in the machine losing its balance and tipping over.

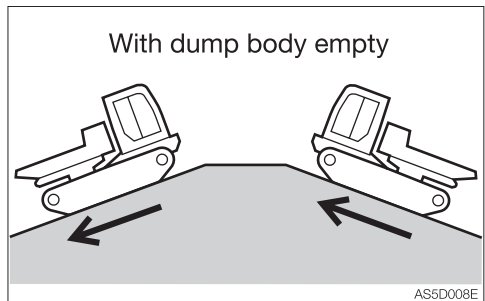
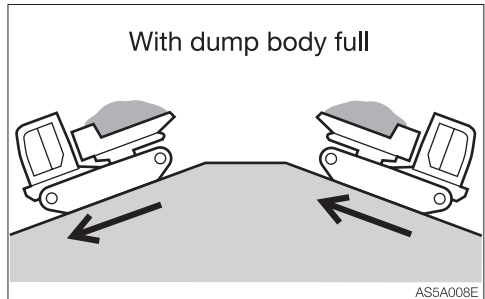


- Do not change directions on slopes or traverse slopes. First return to a flat surface, and then take an alternative path.
- The machine may slip sideways even on a slight slope if the ground is covered with grass or dead leaves, or when traveling on a wet metal plate or frozen surfaces. Make sure the machine is

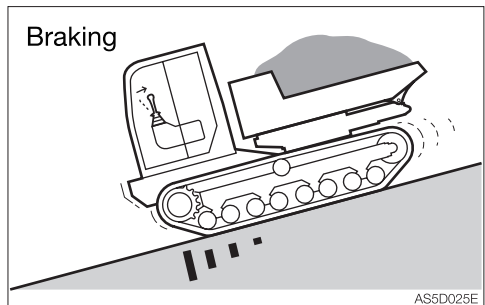
never positioned sideways on slopes.

- If the machine is stalled on the slope, return each control lever to the neutral position before restarting the engine.

Traveling posture on slopes



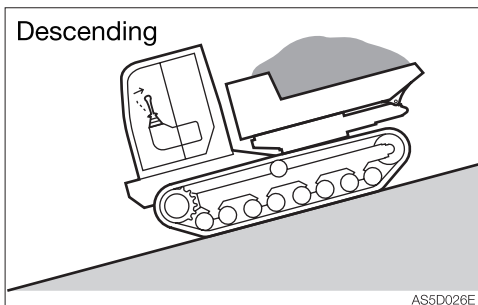
Braking when descending slopes



When descending slopes, the brakes are applied automatically once the left control lever is returned to the neutral position.

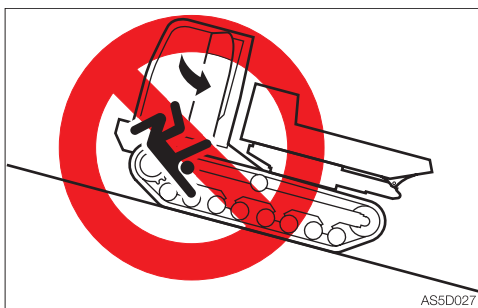


If the engine stops



If the engine stops when descending a slope, set the left control lever to the neutral position, stop the machine, then start the engine.

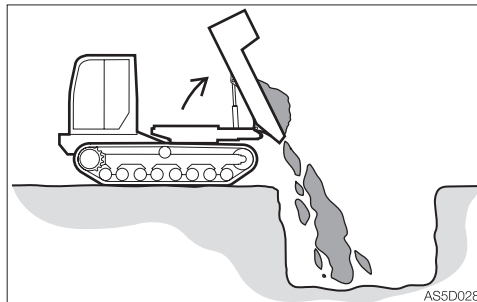
Do not open the door while traveling on slopes



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

OPERATIONS POSSIBLE WITH THIS MACHINE

Backfilling



Slowly travel in reverse until the dump body reaches the near side of the hole edge, and then raise the dump body to dump the loaded material.

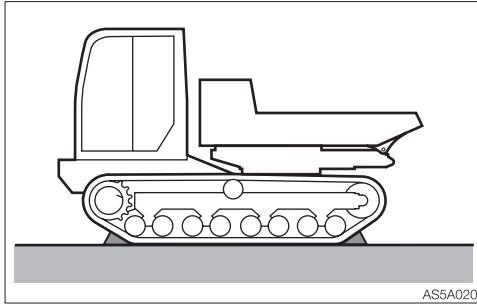


PARKING THE MACHINE

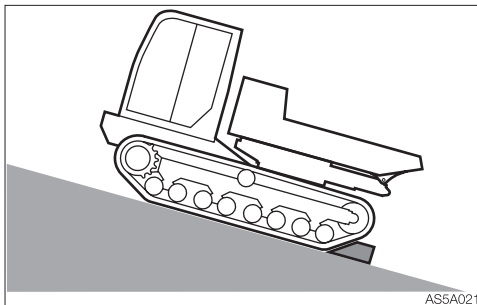
PARKING



WARNING

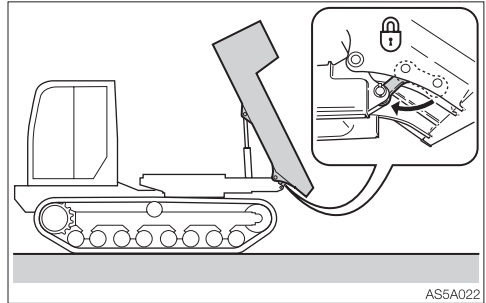


- Park the machine on a flat, rigid and safe ground. Set the parking brake.



If you must park on a slope or incline, park the machine securely and block the movement of 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, raise the safety lock lever to engage the lock and stop the engine.



- Do not leave the machine while the dump body is being raised. If it is absolutely necessary to leave the raised dump body unattended, be sure to engage the dump body prop to prevent the dump body from dropping.

Before leaving the machine, do the followings:

1. Fully lower the dump body and make it parallel to the main frame.
2. Set the control levers to the neutral position.
3. Return the throttle controller to idle the engine at low speed.
4. Raise the safety lock lever to the lock position.
5. Stop the engine and remove the ignition key.

Refer to "Stopping the engine" on page 3-5.

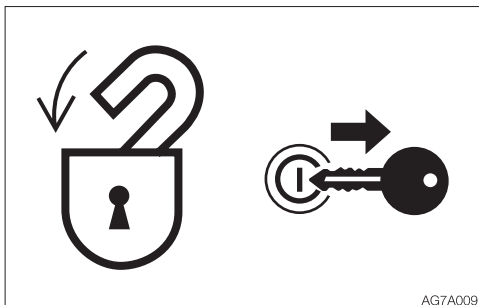


INSPECTION AND CHECKS AFTER STOPPING THE ENGINE

1. Check for oil or water leak and inspect the working equipment, covers and undercarriage. If any irregularities are found, repair.
2. Fill up the fuel tank.
Refer to "Inspecting the fuel level" on page 5-19.
3. Remove any paper scraps or dirt from the engine room.
4. Remove any mud from the undercarriage.

Locking

Be sure to lock the following places:



- Fuel filler cap
- Cab door
- Engine hood
- Side cover
- Battery cover



HANDLING IN COLD CLIMATES

PREPARING FOR COLD CLIMATES

Starting engine in cold climates is not easy, and it becomes more difficult if the coolant freezes. Prepare for cold-climate problems as follows.

Replacing the fuel and lubricant

Replace the hydraulic oil, engine oil and fuel with those intended for cold climates. Refer to “Fuel and lubricant table” on page 5-4.

Engine coolant



WARNING

The engine coolant is combustible. Keep away from flame.

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

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

Refer to “Fuel and lubricant table” on page 5-4.

Battery

As the temperature drops, the battery performance decreases.

Inspect the battery. If it is discharging, contact a Takeuchi service agent to have the battery recharged.

Refer to “Inspecting the battery fluid level and replenishing” on page 5-30.

CAUTIONS AFTER OPERATIONS

Observe the following cautions to prevent mud, water, or the undercarriage from freezing and making it impossible for the machine to move.

- Remove all mud and water from the machine body. In particular, wipe the hydraulic cylinder rod clean to prevent damage to the seal caused by mud or dirt on the rod surface getting inside the seal together with drops of water.
- Park the machine on hard and dry ground. If this is impossible, park the machine on a wooden board placed on ground.
- Drain any water in the fuel tank to prevent it from freezing.

Refer to “Draining the water from the fuel tank” on page 5-29.

- As the battery capacity drops markedly in low temperatures, cover the battery or remove it from the machine and keep it in a warm place.

If the electrolyte level is low, add distilled water in the morning before beginning work. To prevent the battery electrolyte from freezing in the night, do not add water after the day's work.

AFTER THE COLD CLIMATE

When the climate becomes warmer, do as follows:

- Replace the fuel and oil for all parts with those specified in the “Fuel and lubricant table”.
Refer to “Fuel and lubricant table” on page 5-4.
- If a coolant of “one season type” is used, drain the cooling system completely, clean out the inside of the cooling system thoroughly, and fill with tap water.
Refer to “Cleaning the engine cooling system” on page 5-52.

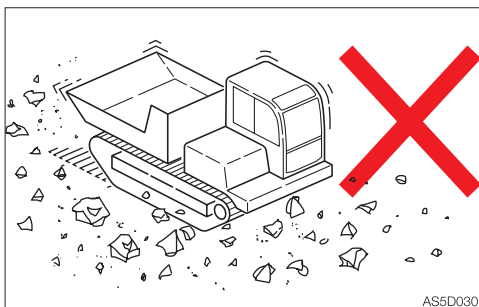


HANDLING RUBBER TRACKS

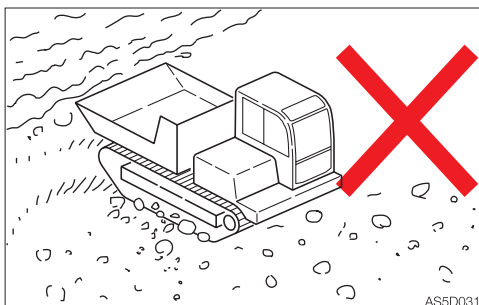
Rubber tracks have an inherent weakness, lack of strength, due to their use of rubber. Be sure to observe the prohibitions and cautions below to prevent the tracks from being damaged or coming off.

PROHIBITIONS

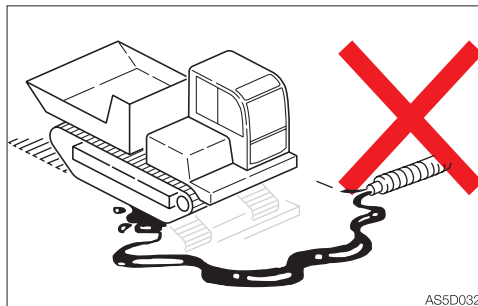
Do not travel or operate the machine in the following places:



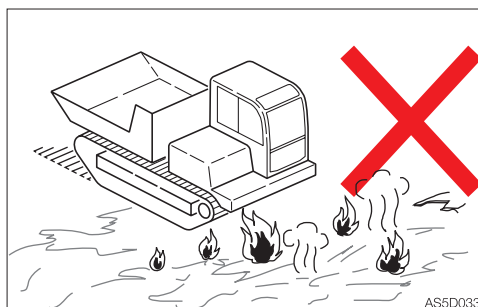
- Traveling and slewing on crushed rock, extremely rough hard rock, steel beams, scrap iron, or near the edges of steel plates will cause damage to the rubber tracks.



- Traveling on riverbeds or places where there are large numbers of boulders may cause the stones to get caught and damage the tracks or make the tracks come off.
- Do not use the machine on the seashore. The salt may corrode the steel core.



- Do not let fuel, oil, salt or chemical solvents get on the tracks. These substances may corrode the bonding of the steel cores on the tracks, resulting in rust or peeling. If any of these substances gets on the tracks, immediately clean it off with water.



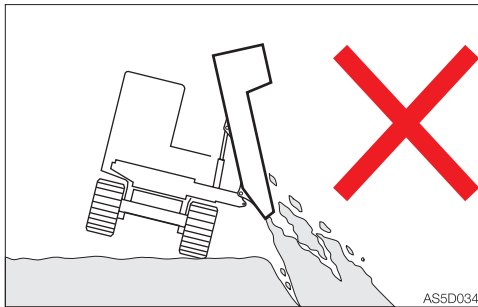
- It will cause an irregular wear or damage to the lugs, if the machine travels on irregular surfaces such as recently paved with asphalt, exposed to a bonfire or of hot iron sheets under the blazing sun.
- Do not move earth in places where the rubber tracks may slip. Doing so may speed up lug wear.



CAUTIONS

Observe the following cautions when operating the machine:

- Avoid changing course abruptly or spin-turning on concrete surfaces whenever possible. Doing so may wear or damage the rubber tracks.
- Avoid drops that may expose the rubber tracks to strong shocks.
- Salt, potassium chloride, ammonium sulfate, potassium sulfate, and triple superphosphate of lime can damage the tracks. If any of these substances gets on the tracks, wash it off thoroughly with water.
- Do not let the sides of the rubber tracks rub against concrete or walls.
- Be especially careful on snowy or frozen surfaces in winter, as the tracks tend to slip in such conditions.
- Use rubber tracks at temperatures between -25°C to $+55^{\circ}\text{C}$ (-14°F to 131°F).
- When storing the rubber tracks for long periods of time (three months or more), do so indoors in a place not exposed to direct sunlight or rain.

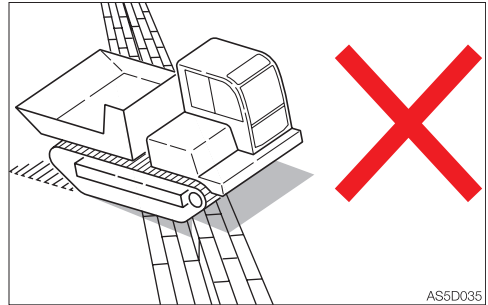


- Rubber tracks are not very stable because the entire lugs are made of rubber. Be very careful when swinging sideways.

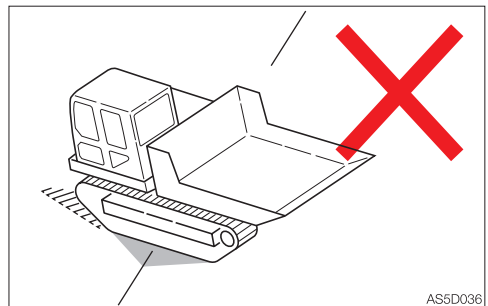
PREVENTING THE RUBBER TRACKS FROM COMING OFF

Observe the following cautions to prevent the track from coming off:

- Always keep the tracks at the proper tension.



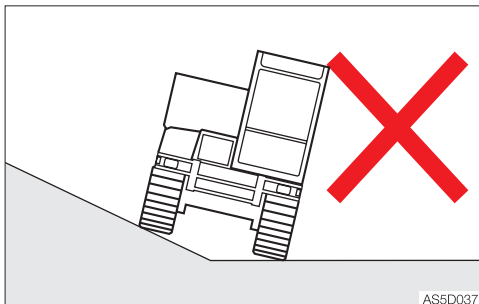
- When traveling over a large step such as a cobblestone or rock (20 cm (8 in.) or deeper), climb up the step at the right angle and do not change courses on top of the step.



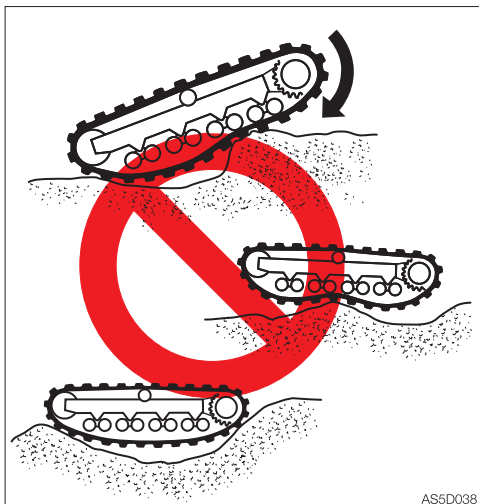
- When climbing in reverse, do not change directions at the point where the slope starts.



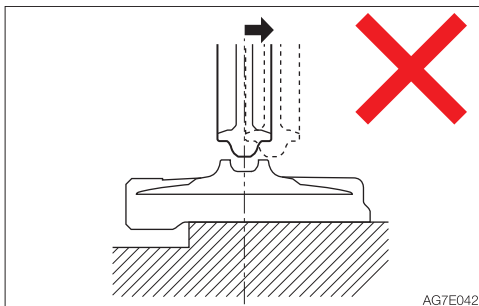
OPERATION HANDLING RUBBER TRACKS



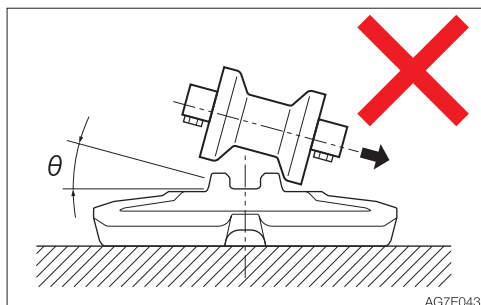
- Avoid traveling by setting one track on a slope or projecting portion and the other track on a flat surface (with the machine at a tilt of 10° or more). Travel with both tracks set on flat surfaces.



- Do not change directions when the tracks are slack as shown in the figure.



- The rubber track will come off if the machine travels backward in this condition.



- The rubber track will come off if the machine changes directions in this condition.

TRANSPORT



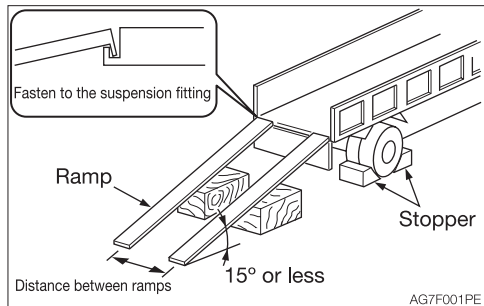
LOADING AND UNLOADING

WARNING

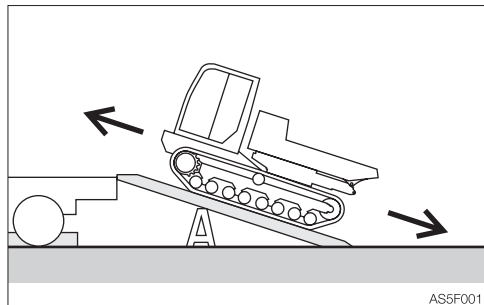
The machine may roll or tip over or fall while being loaded or unloaded. Take the following precautions:

- 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 ramps are bowed down too low, support them with poles or blocks.
- 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 tracks.
- Chock the transporter wheels to prevent movement.
- When being loaded or unloaded, travel slowly in 1st (low) gear by following the signal from the signal person.
- Never change courses on the ramp. If it is necessary, move down from the ramps, change the course and then get on the ramps again.
- Do not swing or raise the dump body on the ramps. The machine may tip over.
- When raising the dump body 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.
- Chock the tracks and secure the machine to the truck bed with wire rope or chain.

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



1. Set the parking brake on the transporter and chock the wheels.
2. Fix the ramps securely to the truck bed. The slope of the ramps must not exceed 15°.
3. Align the center of the truck bed with the center of the machine, and of the ramp with the center of the track.
4. Fully lower the dump body and make it parallel to the main frame.
5. Set the travel speed to the 1st (low) and slow down the engine speed.



6. When getting on or down the ramps, the dump body (without load) must be pointing down the slope.
7. Drive the machine straight toward the ramps and slowly travel up or down the ramps, by following the signal from the signal person.
8. Load the machine at the specified position on the transporter. Refer to "Transporting posture" on page 4-4.



HOISTING THE MACHINE

WARNING

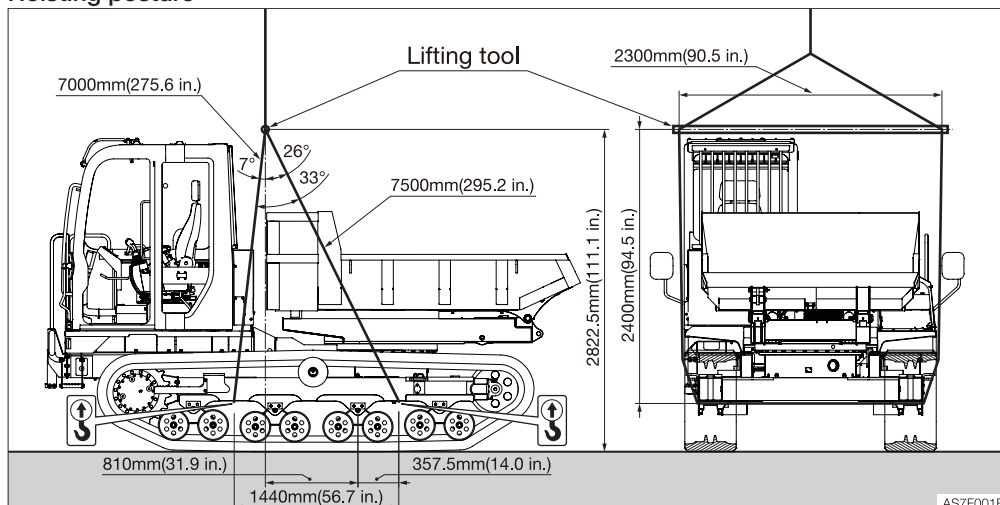
- Know and use the correct crane signals.
- Check the hoisting equipment for damaged or missing parts on a daily basis and replace as necessary.
- When hoisting, use a wire rope capable of lifting the machine mass.
- Hoist the machine in such a manner described in the procedure below. Do not do it in any other manner. Doing so is dangerous as it may result in the machine losing its balance.
- 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.

IMPORTANT: This hoisting method applies to machines with standard specifications. This method is not applicable for the machines with non-standard attachments and/or optional products, because the center of gravity differs according to the attachments and optional products installed. Contact your Takeuchi service agent for details.

Hoisting

1. Fully lower the dump body and make it parallel to the main frame.
2. Raise the safety lock lever to the lock position.
3. Stop the engine, remove the ignition key and get off the machine.
4. Install the wire ropes as shown on the figure below. Install the wire ropes and hoisting attachment without letting them touch the machine body.
5. Hoist the machine slowly until it leaves the ground.
6. Stop hoisting until the machine becomes stable, and then start hoisting the machine slowly again.

Hoisting posture

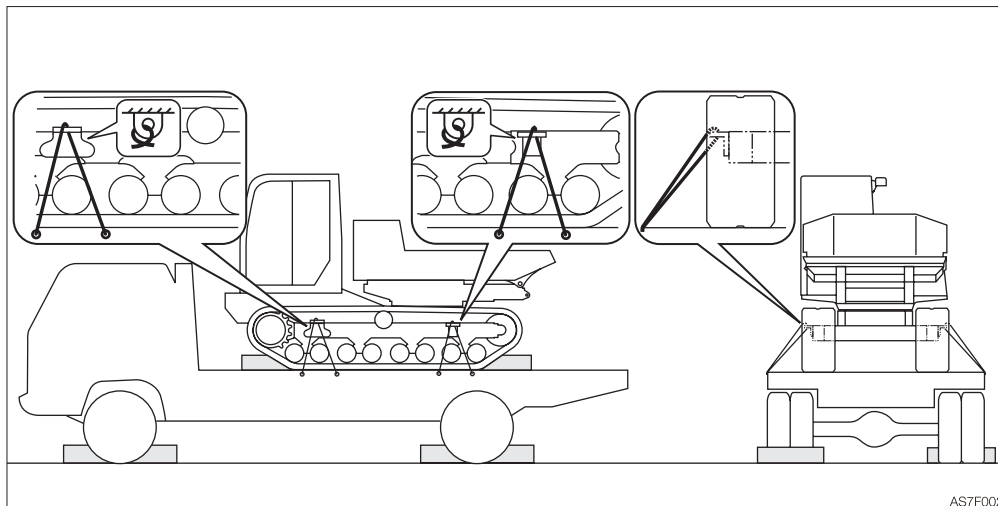




SECURING THE MACHINE

After loading the machine at the specified position, secure it as described below.

Transporting posture



AS7F002

1. Raise the safety lock lever to the lock position.
2. Stop the engine, remove the ignition key and lock all locks.
3. Place the stoppers (chocks) in front and behind the tracks.
4. Install a chain or wire rope over the lower frame of the machine and fasten it securely to prevent the machine from slipping sideways.

Precautions to be taken during transportation



WARNING

- 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.

MAINTENANCE





GENERAL

MAINTENANCE OVERVIEW

To keep the machine in good condition and use it for a long period, perform the inspection and maintenance properly and safely following the procedures recommended by this manual.

The inspection and maintenance items are divided into groups according to the machine's total operating time: every 10 hours (walk-around and daily inspection), every 50 hours, every 250 hours, etc. Refer to the hour meter readings to determine when to schedule an inspection and maintenance. Items for which it is not possible to determine the inspection and maintenance interval are included under "When Required".

When operating the machine in extremely harsh environments (with high dust levels or high temperatures), inspection and maintenance should be performed earlier than the times specified on the Maintenance List.

CAUTIONS ON MAINTENANCE

Do not perform any other inspection and maintenance works than those listed in this manual.

For works not listed in this manual, ask your sales or a service dealer for help.

Keep the machine clean

- Clean the machine before performing inspection and maintenance and try to keep it clean.
- 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.

Fuel, lubricant and grease

- Choose fuel, lubricant and grease by following to the "Fuel and lubricant table".
- Use fuels, lubricants and greases which do not contain water, and be careful to keep dirt out when changing or replenishing fuel, lubricant or grease.
- Store fuels, lubricants and greases in the prescribed places and in such a way that no water or dirt can get in them.

Cautions on refueling

- If the port includes a strainer, do not remove the strainer when fueling.
- After fueling, be sure to securely tighten the fuel filler cap.
- Do not add more than the specified amount of fuel.

Do not use fuel to clean parts

Do not use fuel to clean parts. Use a non-combustible cleaning agent.

Keep dirt out

When mounting and removing parts, do so in a place where there is no dust, clean the working area and the part, and keep dirt out.



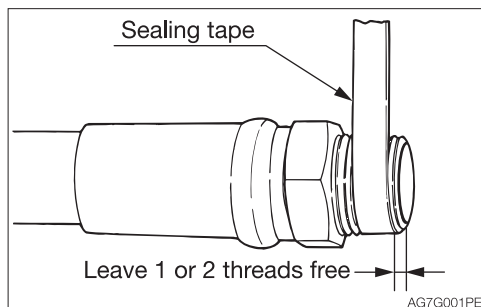
Clean the installation surfaces

When installing and removing parts, be sure that the surfaces of contact of the parts are clean. If the sealing grooves of the surface of contact are damaged, consult your sales or service dealer for repair or release.

Seals and split pins

- Be sure to replace all seals and cotter pins with new ones.
- When installing, be careful not to damage or twist the seal.

Sealing tape



- When wrapping the plug with sealing tape, remove any old sealing tape from the threads and clean the threads.
- Wrap the thread tight with seal tape starting 1 or 2 threads away from the thread end.

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, cooling water, coolant, filters and batteries.

Check 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 serviced parts.
- Operate each control lever and check that the machine is operating properly.

Cautions on handling of battery wiring

- Disconnect the wiring from the both terminals (+ and -) on the battery before working on the electrical system or doing electric welding.
Always disconnect it from the earth side (-). When connecting, connect the earth side last.
- Do not disconnect the battery wiring while the engine is moving. Otherwise, the electric circuits of the rotary converter or others may be damaged.



SERVICE DATA

FUEL AND LUBRICANT TABLE

Select the appropriate fuel, lubricant and grease according to the temperature by referring to the table below.

- Regardless of the specified time, change the oil if it becomes too dirty or degraded.
- When refilling, never mix oils of different brands. If a brand is to be changed, replace the whole fuel/oil.

Fuel

Diesel fuel specifications

Diesel fuel should comply with the following specifications. The table lists several worldwide specifications for diesel fuels.

Diesel fuel specification	Area	Diesel fuel specification	Area
ASTM D975 No.1-D S15 No.2-D S15	USA Canada	ISO 8217DMX	International
Bio-diesel fuel Biodiesel blends up to B5 ASTM D6751, D7467			
EN590: 2009	European union	BS2869-A1 or A2	United kingdom
Bio-diesel fuel Biodiesel blends up to B5 EN14214, EN590			



Fuel tank	Diesel fuel	<p>To maintain the performance and service life of the engine, always use clean and high-quality fuel.</p> <ul style="list-style-type: none">• To avoid freezing in cold climates, use a diesel fuel that still functions when the temperature is at least 12°C (53.6°F) below the lowest expected ambient temperature.• Use a diesel fuel that has a cetane number of 45 or higher. When operating at a very low temperature or at a high altitude, a higher cetane number fuel will be required.• Use fuel with sulfur content of less than 15 ppm by volume. Especially in the U.S.A. and Canada, ultra-low sulfur fuel should be used. <p>A higher sulfur content fuel may cause sulfuric acid corrosion in the cylinders of the engines.</p> <ul style="list-style-type: none">• Never mix kerosene, used engine oil, or residual fuel with the diesel fuel. Use of kerosene is prohibited.• Poor quality fuel can reduce engine performance and / or cause engine damage.• Fuel additives are not recommended. Some fuel additives may cause poor engine performance. <hr/> <p>Precautions when using bio-diesel fuel</p> <p>The warranty of the engine manufacturer may be voided by using a bio-diesel fuel that does not meet the standard or that is deteriorated.</p>
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Lubricant

Location	Type	Type by air temperature								When to replace
		-4 -20	14 -10	32 0	50 10	68 20	86 30	104°F 40°C		
Engine oil pan	Diesel engine oil API: CJ-4 class or higher ACEA: E6 class									Every 500 hrs. or once a year (whichever comes first)
Hydraulic oil tank	Anti-wear hydraulic oil									Every 1000 hrs.
Engine cooling system	Cooling water (water + coolant)** SAE: J814C or J1034 ASTM: D6210 or D4985 (USA)									Every 2000 hrs.
Travel reduction gear	Gear oil API: GL-4	SAE 90								Every 1000 hrs after the initial 250 hrs*.
Swing bearing	Lithium based grease EP-2 NLGI No.2	—								Every 250 hrs.
Dump body										Daily or every 10 hrs.
Track roller										When required

* : If the ratio of traveling time to total operating time is high, replace the gear oil earlier than the specified time.

** : For water, use tap water (soft). Do not use well or river water. When the ambient temperature drops below 0°C, add coolant (antifreeze). Follow the coolant manufacturer's instructions to determine the mixture ratio.

Volume

Engine oil pan	Engine cooling system	Hydraulic oil tank	Fuel tank	Travel reduction gear
Upper limit 10.5 L (11.1 US qt.) Lower limit 6 L (6.3 US qt.)	17.5 L (18.5 US qt.)	System 75 L (19.8 US gal.) Tank 44 L (11.5 US gal.)	Level capacity 127 L (33.6 US gal.) Effective capacity 121 L (32 US gal.)	2.6 L X 2 (2.7 US qt.) X 2

Note: On the DPF-equipped engines, part of the fuel may get mixed with engine oil during the regenerating process. This may dilute the oil and increase its quantity. If the oil rises above the upper limit of the oil level gauge, it means the oil has been diluted too much, resulting in a trouble. In such case, immediately replace the oil with new one.



LIST OF CONSUMABLES

Periodically replace consumables such as filters and elements according to the table below.

System	Item	Part name	Part No.	When to replace
Hydraulic system	Hydraulic oil return filter	Cartridge	15510-00320	Every 1000 hrs after the initial 50 hrs.
	Pilot line filter	Element	15511-02802	Every 500 hrs after the initial 50 hrs.
Engine lubrication system	Engine oil filter	Cartridge	Y119005-35151	Every 500 hrs. or once a year (whichever comes first)
Fuel system	Fuel filter	Cartridge	Y129A00-55800	Every 500 hrs.
	Water separator filter	Element	Y129A00-55730	
Air cleaner system	Air cleaner	Primary (Outer) element	Y129979-12560	Every 1000 hrs. or after 6 cleanings (whichever comes first)
		Secondary (Inner) element	Y129979-12550	When the primary elements are replaced.
AC system	Receiver dryer		19115-05511	Every 2 years
	Ventilation filter	Element	08714-61536	Once a year or if clogging remains after cleaning
	Circulation filter	Element	19115-06736	



LIST OF TOOLS (IF EQUIPPED)

Code	Part name	Part No.	Remarks
1	Spanner	19100-47081	10-12
2	Spanner	19100-47082	14-17
3	Spanner	16900-01922	19-22
4	Spanner	16900-02427	24-27
5	Spanner	16900-02730	27-30
6	Spanner	16900-03236	32-36
7	Spanner	16901-00013	13
8	Spanner	16901-00041	41
9	Spanner	16909-00019	19
10	Screwdriver	19100-06112	(+) (-) replaceable shank
11	Filter wrench	19103-47081	
12	Hammer	16903-00330	3/4
13	Monkey wrench	16904-00250	250 mm
14	Pliers	16905-00200	200 mm
15	Hex.wrench	16906-00250	2.5 mm
16	Hex.wrench	16906-00500	5 mm
17	Hex.wrench	16906-00600	6 mm
18	Hex.wrench	16906-00800	8 mm
19	Hex.wrench	16906-01000	10 mm
20	Hex.wrench	16906-01200	12 mm
21	Tool case	16914-00005	
22	Case	16919-00001	
23	Grease gun	16910-60600	600 cc
24	Drain connector	15545-12601	

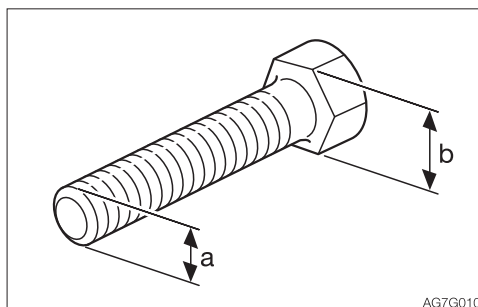
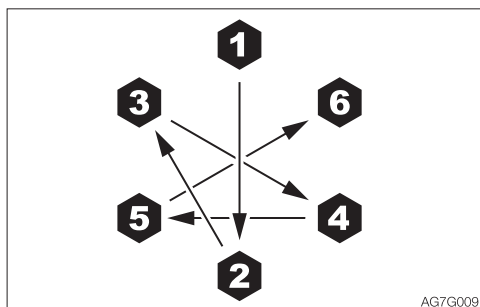


LIST OF TIGHTENING TORQUES

Nuts and Bolts (for ISO strength category 10.9)

Tighten nuts and bolts at the torques shown on the table below, unless otherwise specified.

- The tightening torques used for the mounted plastic covers are not listed in the table below. Consult your sales or service dealer for details. They will be damaged if over tightened.
- When replacing nuts and bolts, replace them with nuts and bolts of the same size and standards.
- Tighten nuts and bolts alternately (top, bottom, left then right) or in 2 or 3 times so that they are evenly tightened.



Classification	Head width (b)	Size (a) x pitch	Tightening torque	
			General connection points	
	mm	mm	N·m	ft·lb
Coarse	10	M6 x 1.0	9.8±0.5	7.2±0.4
	12, 13	M8 x 1.25	22.6±1.1	16.6±0.8
	14, 17	M10 x 1.5	47.1±2.4	34.7±1.7
	17, 19	M12 x 1.75	83.4±4.1	61.5±3.0
	19, 22	M14 x 2.0	134.4±6.7	99.1±4.9
	22, 24	M16 x 2.0	207.9±10.4	153.3±7.7
	27, 30	M20 x 2.5	410.9±20.5	303.1±15.1
Fine	12, 13	M8 x 1.0	24.5±1.2	18.1±0.9
	14, 17	M10 x 1.25	50±2.5	36.9±1.8
	17, 19	M12 x 1.5	87.3±4.3	64.4±3.2
	19, 22	M14 x 1.5	135.3±6.8	99.8±5.0
	22, 24	M16 x 1.5	220.6±11	162.7±8.1
	27, 30	M20 x 1.5	452.1±22.6	333.4±16.6



SAFETY-CRITICAL PARTS

To use the machine safely, periodically perform inspection and maintenance. The safety-critical parts listed below must be periodically replaced for an increased safety. Serious injury or a fire could result if they are worn or damaged.

List of safety-critical parts

Unit		Safety-critical parts to be replaced periodically	When to replace
Fuel system		Fuel hoses	Every 2 years
		Packing on fuel filler cap	
Cooling system		Rubber hoses	
Heater & AC systems		Heater hoses	
		Air conditioner hoses	
Hydraulic system	Main body	Hydraulic hoses (pump - delivery)	
		Hydraulic hoses (pump - suction)	
		Hydraulic hoses (travel motor)	
	Working equipment	Hydraulic hoses (swing motor)	
		Hydraulic hoses (dump cylinder piping)	
		Hydraulic hoses (tension cylinder piping)	
		Hydraulic hoses (pilot valve)	
		Seat belt	Every 3 years



The material of the safety-critical part listed above tends to change over time and cause wear or deterioration. It is difficult to determine the degree of deterioration at the periodic inspection, and thus they need to be replaced with new ones after a certain time to maintain their proper performance even if they appear in good condition. Note that regardless of the replacement schedule, replacement must be performed immediately if a symptom of wear is found. If a hose clamp is deformed or cracked, replace it together with the hose immediately. When replacing the safety-critical parts, ask your sales or service dealer.

In addition to the safety-critical parts, inspect the hydraulic hoses and retighten or replace as necessary. When replacing the hydraulic hoses, replace the O-rings and seals at the same time.

Check the fuel and hydraulic hoses according to the periodic schedule described below.

Refer to "Maintenance".

Type of inspection	Inspection item
Daily inspection	Leakage from the connecting parts of hydraulic or fuel hoses Damage to cab - replace*
Monthly inspection	Leakage from the connecting parts of hydraulic or fuel hoses Damaged hydraulic or fuel hoses (cracks, wear and tear)
Annual inspection	Leakage from the connecting parts of hydraulic or fuel hoses Deteriorated, twisted, damaged hydraulic or fuel hoses (cracks, wear and tear) or hoses in contact with other parts of the machine

*: Cab parts No. 07186-00005



MAINTENANCE LIST

Inspection and maintenance item	Page
Walk-around inspection	
Inspecting by opening the engine hood and covers	5-14
Inspecting by walking around the machine	5-15
Inspecting while sitting in the operator's seat	5-15
Daily inspection (every 10 hours)	
Inspecting and replenishing the coolant	5-16
Inspecting and replenishing the engine oil	5-17
Inspecting the water separator	5-18
Inspecting the fuel level	5-19
Inspecting the hydraulic oil tank level and replenishing	5-20
Lubricating the dump body and track rollers	5-21
After the initial 50 hours (only for new machines)	
Replacing the hydraulic oil return filter	5-22
Replacing the pilot line filter	5-23
Inspecting and adjusting the fan belt	5-24
Inspecting and adjusting the compressor belt (Air conditioner)	5-26
Every 50 hours	
Inspecting the track tension	5-28
Draining the water from the fuel tank	5-29
Inspecting the battery fluid level and replenishing	5-30
After the initial 250 hours (only for new machines)	
Replacing the travel motor gear oil*	5-32
Every 250 hours	
Inspecting and adjusting the fan belt	5-33
Inspecting and adjusting the compressor belt (Air conditioner)	5-33
Cleaning the air cleaner	5-34
Cleaning the radiator fins and the oil cooler fins	5-36
Cleaning the condenser (Air conditioner)	5-36
Cleaning the air filters (Air conditioner)	5-37
Inspecting the refrigerant (gas) level (Air conditioner)	5-38
Lubricating the swing bearing	5-40

*: If the percentage of the traveling time within the total operating time is high, replace the gear oil earlier than the specified time.



Inspection and maintenance item	Page
Every 500 hours	
Replacing the pilot line filter	5-42
Replacing the engine oil and the oil filter	5-42
Replacing the fuel filter	5-44
Replacing the water separator filter	5-45
Every 1000 hours	
Replacing the hydraulic oil return filter	5-46
Replacing the travel motor gear oil*	5-46
Replacing the air cleaner element	5-46
Replacing the hydraulic oil and cleaning the suction strainer	5-48
Inspecting and adjusting the engine valve clearance	5-50
Inspecting the radiator cap	5-50
Every 1500 hours	
Inspecting the crankcase breather system	5-51
Every 2000 hours	
Cleaning the engine cooling system	5-52
Every 3000 hours	
Inspecting the turbocharger (blow wash as necessary)	5-54
Inspecting, cleaning and checking operation of the EGR valve	5-54
Cleaning the EGR lead valve	5-54
Cleaning the EGR cooler (cleaning the water side and exhaust air passage blower)	5-54
Inspecting the operation of the air intake throttle valve	5-54
Inspecting and cleaning the fuel injector	5-54
When required	
Inspecting and replenishing the windshield washer fluid	5-55
Lubricating the levers	5-55
Draining the water from the water separator	5-56
Inspecting and cleaning the DPF soot filter	5-56
Inspecting the rubber tracks	5-57
Replacing the rubber tracks	5-58
Every 2 years	
Replacing the receiver dryer	5-60

*: If the percentage of the traveling time within the total operating time is high, replace the gear oil earlier than the specified time.



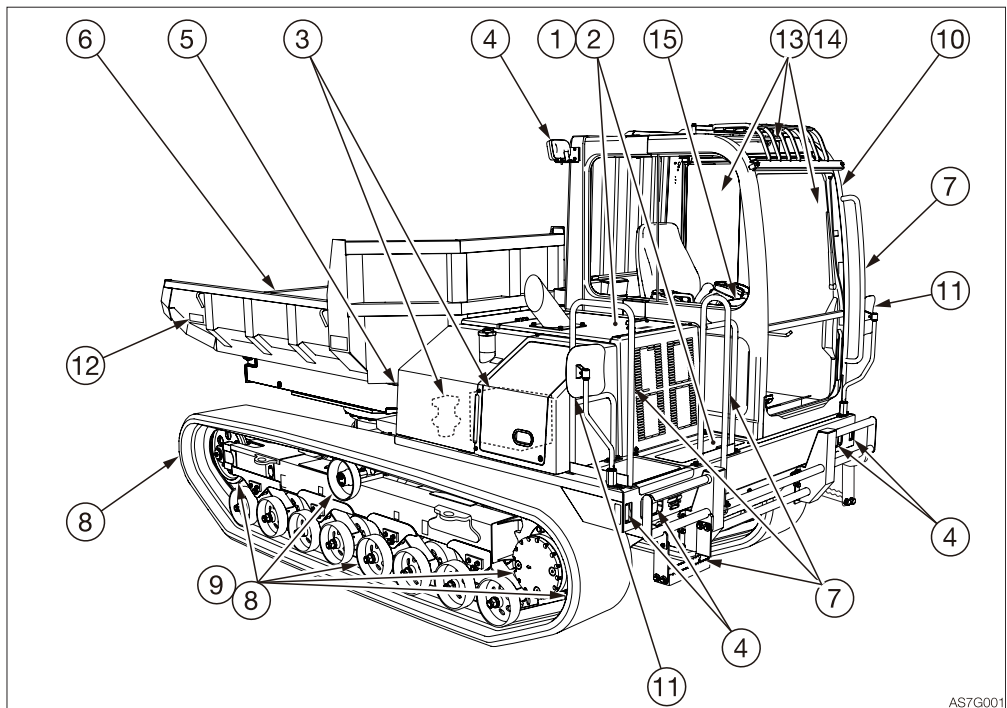
WALK-AROUND INSPECTION

Perform the following inspections every day before starting the engine for the first time.

WARNING

- Before operating, perform the walk-around inspections and make repairs immediately where necessary.
- Be sure to secure the engine hood or covers when they are left open. Do not leave the engine hood or covers open on a windy day or if the machine is parked on a slope.

Before starting the engine, look around the machine and clean any combustibles from the surroundings of the engine. Also, inspect if oil or water is leaking and any nuts, bolts or electric wiring are loosened or damaged.



INSPECTING BY OPENING THE ENGINE HOOD AND COVERS

1. Check for any twigs, leaves, oil or other combustible materials around the engine and battery.
2. Check for oil, fuel or engine coolant leakage around the engine.

**INSPECTING BY WALKING AROUND THE MACHINE**

3. Check for oil leakage from the hydraulic oil tank, hydraulic devices, hoses or connections.
4. Check lights for dirt, damage and burnt out bulbs.
5. Check the hoses for damage.
6. Check the dump body, cylinders and pins for wear, damage and looseness
7. Check the handrail, the steps and the slip-resistant surfaces for damage and loose bolts.
8. Check the tracks, carrier rollers, track rollers, idlers and sprockets for damage, wear and loose bolts.
9. Check for oil leakage from the travel motor, carrier rollers, track rollers and idlers.
10. Check the cab and the guard for damage and the bolts and the nuts for looseness or damage.
11. Check the rear view mirrors and room mirror for dirt, damage and angle adjustment.
12. Check the labels for dirt and damage.

INSPECTING WHILE SITTING IN THE OPERATOR'S SEAT

13. Check the windshield for dirt or damage.
14. Check the seat and seat belt for dirt or damage.
Check the operator's seat for dirt, oil or other combustible materials.
15. Check the monitor, instruments and switches for dirt or damage.



DAILY INSPECTION (EVERY 10 HOURS)

Perform the following inspections every day before starting the engine for the first time.



WARNING

- Before operating, perform the daily inspections and make repairs immediately where necessary.
- 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.

INSPECTING AND REPLENISHING THE COOLANT

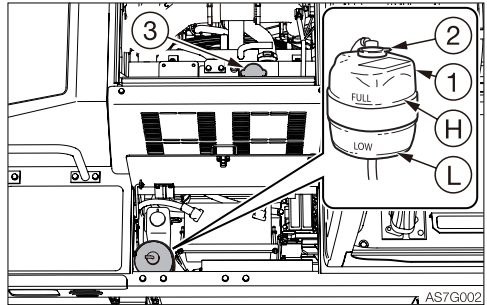


WARNING

- 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 radiator cool before slowly loosening the radiator cap and the drain plug to remove them.
- Always wear the protective goggle and gloves when handling coolant (antifreeze). If any coolant (antifreeze) comes in contact with eyes or skin, wash it off with clean water. Otherwise, it could result in injuries.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.

- Be sure to secure the engine hood or covers when they are left open. Do not leave the engine hood or covers open on a windy day or if the machine is parked on a slope.

Inspection



1. Open the engine hood and the battery cover.
2. Inspect the cooling water level in the reserve tank (1).
The level should be between the upper limit (H) and the lower limit (L).
If it is below the lower limit (L), replenish.

Replenishing

1. Remove the cap (2) of the reserve tank (1).
2. Add cooling water up to the upper limit (H) of the reserve tank (1).
If the reserve tank (1) is found empty at the inspection, check for water leakage and then the water level in the radiator (3). Add water to the radiator (3) as required, and then to the reserve tank (1).
3. Install the cap (2).

Note: Use only clean water (soft water) to replenish the cooling water loss due to evaporation. Use coolant (antifreeze) and clean water (soft water) of the specified mixing ratio to replenish the cooling water loss due to leaking.



INSPECTING AND REPLENISHING THE ENGINE OIL

WARNING

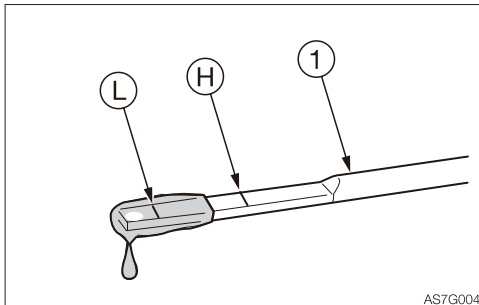
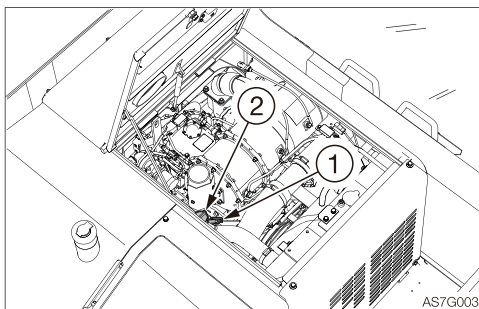
- Stop the engine and allow each part of the machine to cool down before performing maintenance.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following to prevent falling.
 - Do not spill oil or grease.
 - Do not leave tools scattered around.
 - Watch your step when walking.
- Never jump down from the machine. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.
- Be sure to secure the engine hood or covers when they are left open. Do not leave the engine hood or covers open on a windy day or if the machine is parked on a slope.

1. Open the engine hood.
2. Take out the dipstick (1) and wipe the oil off with a rag.
3. Fully reinsert the dipstick (1), and then pull it back out.
4. Check the oil on the dipstick (1).
The level should be between the upper limit (H) and the lower limit (L).
If it is below the lower limit (L), replenish.

Replenishing

1. Remove the oil filler cap (2).
2. Add oil up to between the upper limit (H) and the lower limit (L) of the dipstick (1).
Problems could arise if the oil level is either too low or too high.
3. Tighten the oil filler cap (2).
4. Start the engine, run it at low idle for about 5 minutes, then stop it.
5. After about 15 minutes, inspect the oil level.

Inspection



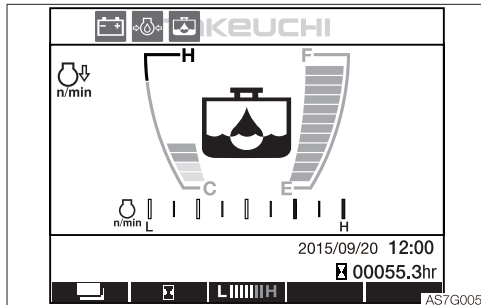


INSPECTING THE WATER SEPARATOR



WARNING

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- Stop the engine in a well-ventilated place and allow it to cool down before performing maintenance.
- Clean up spilled fuel immediately.



1. Turn the ignition switch to the ON position.
2. Inspect the water separator warning lamp.
3. If the warning lamp is flashing, drain the water.

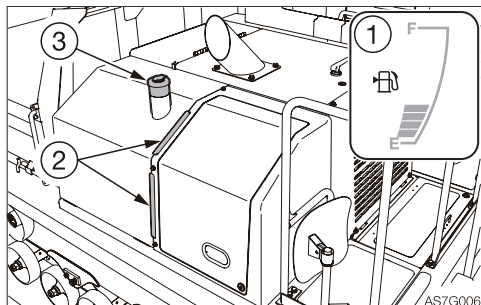
Refer to “Draining the water from the water separator” on page 5-56.

**INSPECTING THE FUEL LEVEL**

Refer to “Fuel filler port” on page 2-4.

**WARNING**

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- 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.
- Clean up spilled fuel immediately.
- Do not fill the fuel tank to capacity. Allow room for oil expansion.
- Securely tighten the fuel filler cap.
- Use the correct grade of fuel for the operating season.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.



1. Check the fuel level using the fuel gauge (1).
 - F: Tank is full.
 - E: Tank is empty.
2. If the level is low, add fuel from the fuel filler port (3) while watching the sight gauge (2).



INSPECTING THE HYDRAULIC OIL TANK LEVEL AND REPLENISHING

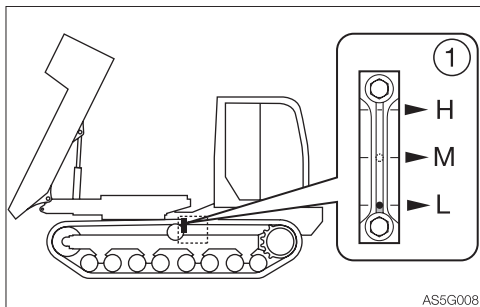
WARNING

- Oil may spurt out if caps or filters are removed or pipes are disconnected before releasing the pressure in the hydraulic system.
 - 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.
- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.

Inspection

The oil level changes with the oil temperature. Inspect the oil by maintaining the machine at posture shown in the figure at the next.

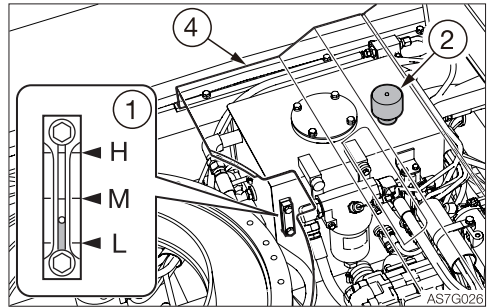
- Machine configuration for inspecting the hydraulic oil level



1. Start the engine and run it at low speed.
2. Fully raise the dump body.
3. Raise the safety lock lever to the lock position and stop the engine.
4. Engage the dump body prop to the dump body.
5. Inspect the oil level using the sight gauge (1).

- When the oil temperature is about 20°C (68°F):
The level should be between the middle (M) and the lower limit (L).
(When the dump body is lowered, the oil level rises to the “M”.)
If it is below the lower limit (L), replenish.
- When the oil temperature is about 50 to 80°C (122 to 176°F):
The level should be around the middle (M).
(When the dump body is lowered, the oil level rises to the middle point between the “M” and “H”.)

Replenishing

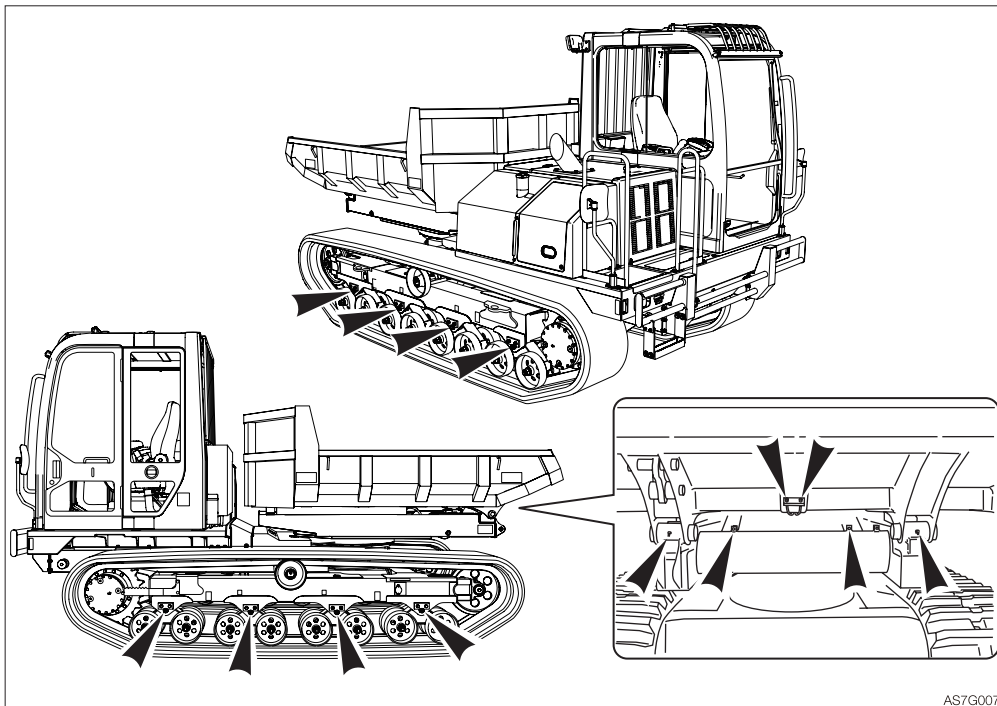


IMPORTANT: Do not fill up to the level higher than the middle point between the middle (M) and the lower limit (L). Doing so will damage the hydraulic circuits or result in oil spurting. If excessively added, stop the engine, wait for the hydraulic oil to cool and let the excessive oil drain from the drain plug.

6. Loosen the bolts and remove the cover (4).
7. Remove the air breather (2).
8. Add the hydraulic oil up to the middle point between the middle (M) and the lower limit (L) of the sight gauge (1) through the hole in the air breather (2).
9. Tighten the air breather (2).
10. Install the cover (4).



LUBRICATING THE DUMP BODY AND TRACK ROLLERS



AS7G007

1. Set the machine configuration for lubrication as shown in the diagram above, and then stop the engine.
2. Use the grease gun to lubricate the grease fitting.
3. Wipe off the excess grease.



AFTER THE INITIAL 50 HOURS (ONLY FOR NEW MACHINES)

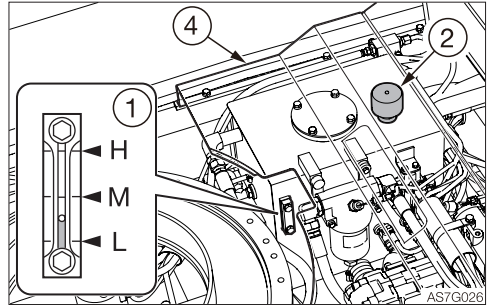
REPLACING THE HYDRAULIC OIL RETURN FILTER



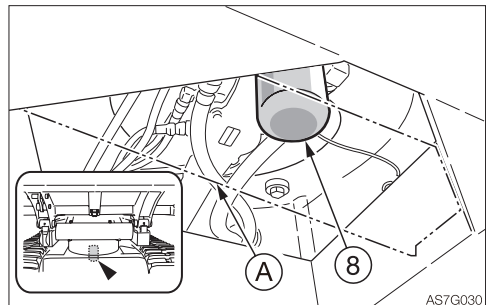
WARNING

- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine and the hydraulic system and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The hydraulic oil is 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.
- Oil may spurt out if caps or filters are removed or pipes are disconnected before releasing the pressure in the hydraulic system.
 - 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.
- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.

1. Start the engine and run it at low speed.
2. Fully raise the dump body.
3. Raise the safety lock lever to the lock position and stop the engine.
4. Engage the dump body prop to the dump body.



5. Loosen the bolts and remove the cover (4).
6. Remove the air breather (2).



7. Loosen the bolts and remove the cover (A).
8. Turn the filter (8) counterclockwise with the filter wrench and remove it.
9. Clean the surface to install the filter stand.
10. Apply a thin layer of oil on the packing of the new filter.
11. Install the new filter by hand.
12. Tighten 3/4 more turn after the filter packing comes in contact with the surface of installation.
13. Inspect the oil level with the sight gauge (1), and replenish if the level is too low. Refer to "Inspecting the hydraulic oil tank level and replenishing" on page 5-20.
14. Install the air breather (2).



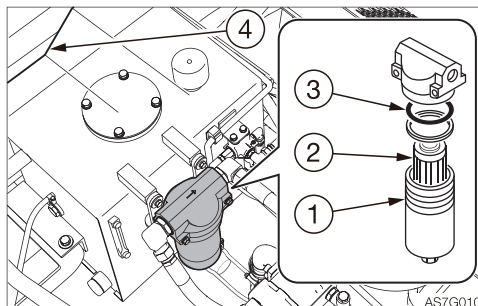
REPLACING THE PILOT LINE FILTER



WARNING

- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine and the hydraulic system and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The hydraulic oil is 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.
- Oil may spurt out if caps or filters are removed or pipes are disconnected before releasing the pressure in the hydraulic system.
 - 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.
- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.

1. Start the engine and run it at low speed.
2. Fully raise the dump body.
3. Raise the safety lock lever to the lock position and stop the engine.
4. Engage the dump body prop to the dump body.



5. Loosen the bolts and remove the cover (4).
6. Turn the case (1) counterclockwise and remove it.
7. Remove the element (2) and O-ring (3).
8. Clean the inside of the case (1).
9. Coat the O-ring receiving groove on the new filter with a thin layer of oil.
10. Install the new element on the filter stand.
11. Coat the new O-ring (3) with a thin layer of oil.
12. Set the new O-ring (3), and then tighten the case (1) to the filter stand.
13. Inspect the level with the sight gauge and replenish if the level is low. Refer to "Inspecting the hydraulic oil tank level and replenishing" on page 5-20.



INSPECTING AND ADJUSTING THE FAN BELT



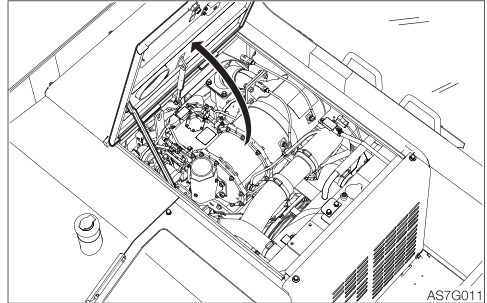
WARNING

- 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.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.
- Be sure to secure the engine hood or covers when they are left open. Do not leave the engine hood or covers open on a windy day or if the machine is parked on a slope.

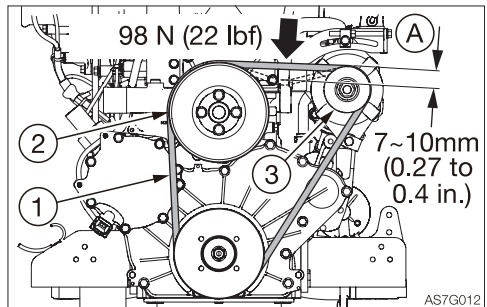
IMPORTANT: The loose belts could result in bad battery charge, overheat of engine or early wear of belt. Too tight belts could damage the water pump or bearing and belt used to drive the alternator.

IMPORTANT: Do not let any oil or grease get on the belt.

Inspection



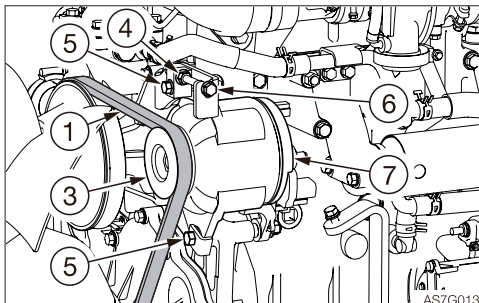
1. Open the engine hood.



2. Press the fan belt (1) at the midpoint between the fan pulley (2) and alternator pulley (3) to check the tension (approx. 98 N or 22 lbf).
The slack (A) should be 7 to 10 mm (0.27 to 0.4 in.).
3. Inspect the fan belt (1) and replace if it is as follows.
 - There are cuts or cracks.
 - The belt is worn and touches the bottom of the V groove in the pulley.
 - The belt stretched too loose to be adjusted.



Adjustment



1. Loosen the bolts (5) and locking nuts (4).
2. Turn the adjustment bolt (6) to move the alternator (7) and to adjust the tension of the fan belt (1).
 - Tighten: Clockwise
 - Loosen: Counterclockwise
3. Tighten the bolts (5) and locking nuts (4).

Note: When replacing with a new belt, run the engine at low idle speed for about 3 to 5 minutes to break in the new belt, before adjusting the tension.



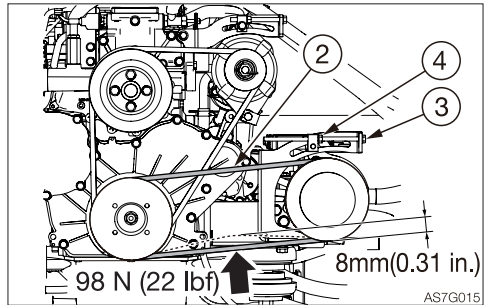
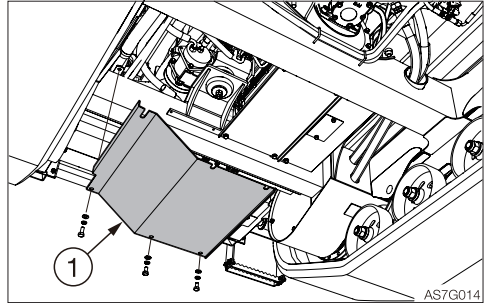
INSPECTING AND ADJUSTING THE COMPRESSOR BELT (AIR CONDITIONER)

WARNING

- 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 high-pressure pipes of the air conditioner can be very hot (80 to 120°C or 176 to 248°F). Be careful not to burn yourself.

IMPORTANT: Do not let any oil or grease get on the belt. It will cause the belt to slip, decrease the cooling capacity or shorten the service life of the air conditioner.

If the belt is too slack, it will slip and vibrate, resulting in decreased cooling capacity. The service life of the air conditioner also will be shortened. Adjust the belt tension to the standard value (approximately 8 mm or 0.3 in).



Inspection

1. Loosen the bolts and remove the inspection cover (1).
2. Press on the center of the belt (2) with a finger. The belt tension is normal if the slack in the belt is 8 mm (0.31 in.) when pressed with a force of 98 N (22 lbf).



Adjustment

If the belt tension is not normal, adjust it with the adjuster bolt (3).

1. Loosen the locking nut (4).
2. Turn the adjuster bolt (3) as follows.
 - Tighten: Clockwise
 - Loosen: Counterclockwise
3. Tighten the locking nut (4) after adjustment.

Note: When replacing with a new belt, run the engine at low idle speed for about 3 to 5 minutes to break in the new belt, before adjusting the tension again.

Replacing

Replace the belt in the following cases:

- There are cuts or cracks.
- The belt is worn and touches the bottom of the V groove in the pulley.
- The belt stretched too loose to be adjusted.



EVERY 50 HOURS

INSPECTING THE TRACK TENSION



WARNING

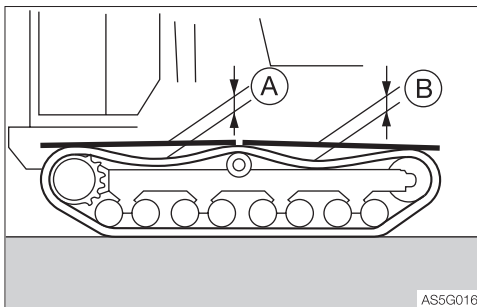
If maintenance must be performed with the engine running, always work as a two person team communicating each other.

- 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.

This machine uses a hydraulic cylinder to adjust the tension of the tracks. It is not necessary to regularly perform adjustments of the tension of the track.

If the tension is too loose and the track comes off after the engine start-up, the hydraulic cylinder is likely faulty. Ask your sales or service dealer for repairs.

Inspection



1. Move the machine to a flat, rigid and safe ground.
2. Move the machine forward and backward two or three times.
3. Travel in reverse so that the slack in the track is on the upper side.
4. Place straight bars on the track on the sprocket side and idler side with the carrier roller at the center.

- Each slack of (A) and (B) should be 5 to 15 mm (0.2 to 0.6 in.).

Adjustment

If the amount of slack is too large, contact a Takeuchi sales or service outlet for repairs.



DRAINING THE WATER FROM THE FUEL TANK

WARNING

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- 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.
- Use the correct grade of fuel for the operating season.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.

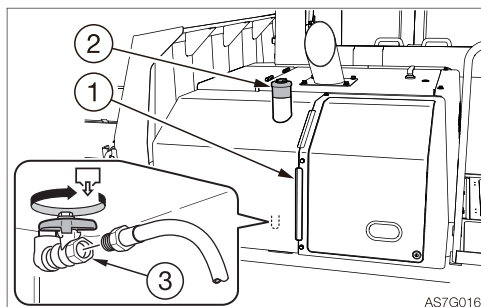
3. Place a pan under the end of the hose just connected.
4. Open the drain valve (3) and drain the water and sediment buildup in the bottom of the tank
5. Close the drain valve (3) and disconnect the hose.
6. Add fuel while watching the sight gauge (1).
7. Tighten the fuel filler cap (2) and lock it with the key.
8. Bleed air.

Bleeding air from the fuel system

Refer to “Bleeding air from the fuel system” on page 6-8.

Note: Air in the fuel system causes the engine to fail to start or to have problems. Bleed air when the fuel tank is emptied, using the same procedure above.

Do the draining operation before starting the machine.



1. Remove the fuel filler cap (2).
2. Connect the hose to the drain valve (3).



INSPECTING THE BATTERY FLUID LEVEL AND REPLENISHING



DANGER

- 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).
- Batteries generate flammable hydrogen gas which may explode. Keep away from flame, sparks, fire or lighted cigarettes.
- Use a dampened cloth to clean above the fluid level line and check the fluid level. Do not clean with a dry cloth; otherwise it can cause static electricity to build up, resulting in ignition or explosion.
- Do not use the cable if it's connecting terminal is loose or corroded. If used, ignition or explosion may occur.
- Do not block the exhaust hole of the battery. An explosion could result, if blocked.



WARNING

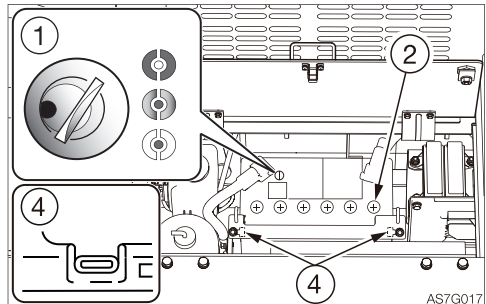
- Wear protective goggle and clothing when working with batteries.
- Do not add the distilled water above the upper level limit. Doing so could cause the fluid to leak. This fluid can cause skin damage if contacted, or can cause the machine components to corrode.
- Batteries contain sulfuric acid which will damage eyes or skin if contacted.
 - 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.
- 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).

Inspection

IMPORTANT: Check the fluid level of all cells following the steps below, even when the fluid level can be checked using the indicator.

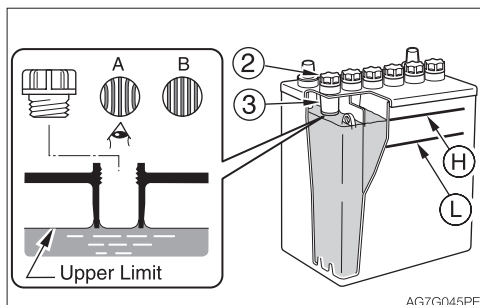


1. Open the battery cover.
2. Inspect the indicator (1).
 - Blue: Good
 - White: Charging needed
 - Red: Insufficient battery fluid
3. Inspect the fluid level.

The fluid level must be between the upper level (H) line and lower level (L) line. If not, add distilled water up to the line (H).



- If the fluid level cannot be checked by fluid level lines:



Remove the caps (2) and look into the fluid filler holes to check the fluid level. If the fluid is below the sleeve (3), be sure to add distilled water up to the bottom edge of the sleeve (3).

Proper level (A)

If the fluid reaches up to the bottom edge of the sleeve (3), the surface tension causes the fluid to swell and the plate appears as if it is distorted.

Level too low (B)

If fluid does not reach up to the bottom edge of the sleeve (3), the plate looks laminar, not distorted.

4. Check the battery terminal for looseness, dirt and corrosion.
5. Check the exhaust holes (4) for dirt.

Replenishing

When adding distilled water, do so before starting operations in order to prevent freezing.

1. Remove the sealing plugs (2), and then add distilled water up to the highest level line (H).
2. Check that the indicator (1) turns blue.
3. Securely tighten the sealing plugs (2).

Note: For the replacement battery, a semi-sealed type is recommended.



AFTER THE INITIAL 250 HOURS (ONLY FOR NEW MACHINES)

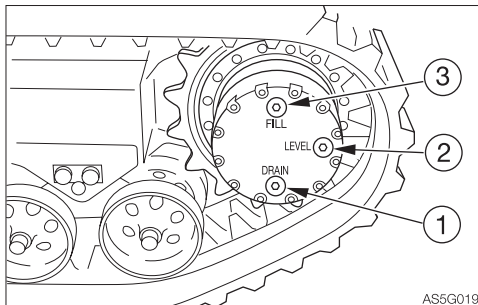
REPLACING THE TRAVEL MOTOR GEAR OIL



WARNING

- Stop the engine and allow the machine to cool down before performing maintenance.
 - The travel motor is hot immediately after the engine is stopped. Touching it will cause burns.
 - The gear oil is also hot and under high pressure immediately after the engine is stopped.
Be careful when loosening the plugs. Working on the machine under these conditions could result in burns or injuries.
- The pressure in the reduction gear case of travel motor may cause oil or the plug to fly out. Loosen the plug slowly to release the pressure.

IMPORTANT: If the percentage of the traveling time within the total operating time is high, replace the gear oil earlier than the specified time.



4. Rewrap the plugs with new sealing tape.
5. Tighten the plug (1).
 - Tightening torque: 157 ± 8 N·m (115.7 ± 5.8 ft-lb.)
6. Add oil through the hole of the plug (3) until oil flows out of the hole of the plug (2).
7. Tighten the plugs (2) and (3).
 - Tightening torque: 157 ± 8 N·m (115.7 ± 5.8 ft-lb.)

1. Set the travel motor so that plug (1) is at the very bottom.
2. Place a pan under the plug (1).
3. Remove the plugs (1), (2) and (3), and drain the oil.



EVERY 250 HOURS

INSPECTING AND ADJUSTING THE FAN BELT

Refer to “Inspecting and adjusting the fan belt” on page 5-24.

INSPECTING AND ADJUSTING THE COMPRESSOR BELT (AIR CONDITIONER)

Refer to “Inspecting and adjusting the compressor belt (Air conditioner)” on page 5-26.



CLEANING THE AIR CLEANER



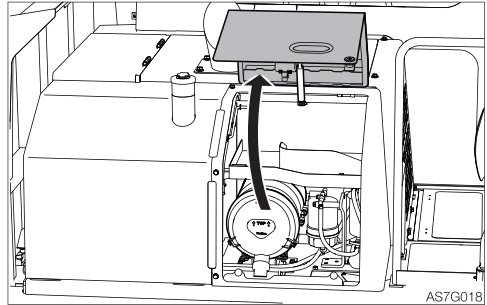
WARNING

- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine, muffler, radiator and many other parts of the machine are hot immediately after the engine is stopped. Touching it will cause burns.
- Wear required appropriate equipment such as protective goggle and filter mask when using compressed air, as metal fragments or other objects can fly and cause serious injury.

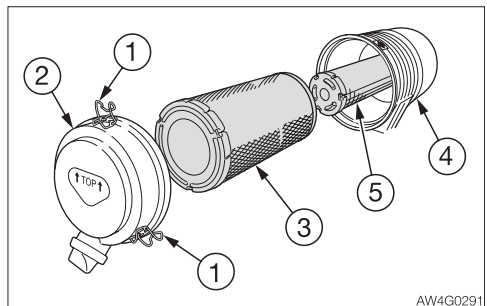
IMPORTANT: Be careful not to scratch the element. Do not use an element if it is damaged.

IMPORTANT: When operating the machine in very dusty places, perform inspection and maintenance operations every day.

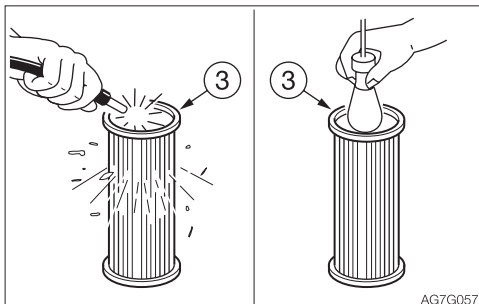
IMPORTANT: Be sure to install the element and dust cap securely. If not, dust could be drawn into the cylinder, damaging the engine.



1. Open the side cover.



2. Loosen the clamps (1) and remove the dust cup (2).
3. Clean the inside of the dust cup (2).
4. Remove the primary element (3).
To prevent dirt from getting inside the engine, do not remove or clean the secondary element (5) except for replacing.
5. Clean the inside of the body (4).



6. Clean the primary element (3) with dried compressed air (294 to 490 kPa or 43 to 71 psi).
First blow the air from the inside of the element along the pleats. Then blow the air from the outside and finally from the inside again.
7. Light up the inside of the primary element (3) with a light bulb, inspect it, and replace it if there are small holes or thin spots.
8. Install the primary element (3).
9. Install the dust cup (2) with its “**↑ TOP ↑**” mark facing up, and then fasten it with the clamps (1).



CLEANING THE RADIATOR FINS AND THE OIL COOLER FINS

WARNING

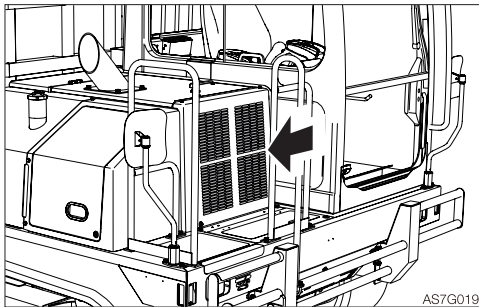
Wear required appropriate equipment such as protective goggle and filter mask when using compressed air, as metal fragments or other objects can fly and cause serious injury.

IMPORTANT: Be careful not to damage the fins when cleaning.

- When using compressed air or pressurized water, make sure the pressure is no higher than 200 kPa (28 psi) and hold the nozzle sufficiently away from the fins.

IMPORTANT: When using water, cover the electrical system to prevent water from getting in.

IMPORTANT: When operating the machine in very dusty places, perform inspection and maintenance operations every day.



1. Blow compressed air on the fins to remove mud and dirt stuck on them.

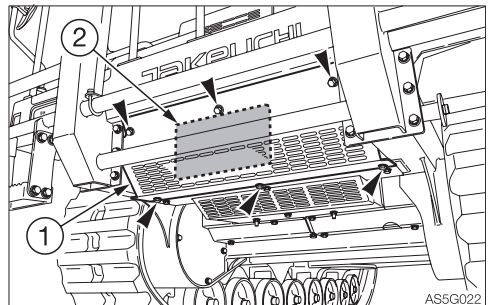
CLEANING THE CONDENSER (AIR CONDITIONER)

WARNING

Wear required appropriate equipment such as protective goggle and filter mask when using compressed air, as metal fragments or other objects can fly and cause serious injury.

IMPORTANT: Be careful not to damage the fins when cleaning.

- When using compressed air or pressurized water, make sure the pressure is no higher than 200 kPa (28 psi) and hold the nozzle sufficiently away from the fins.



1. Loosen the bolts and remove the under cover (1).
2. Clean the condenser (2).

Note: If the condenser is dirty, heat will not discharge properly and the air conditioner will not work efficiently.



CLEANING THE AIR FILTERS (AIR CONDITIONER)

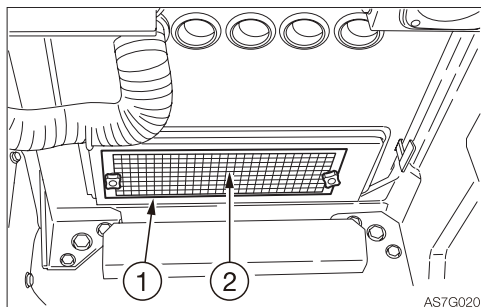
⚠ WARNING

Wear required appropriate equipment such as protective goggle and filter mask when using compressed air, as metal fragments or other objects can fly and cause serious injury.

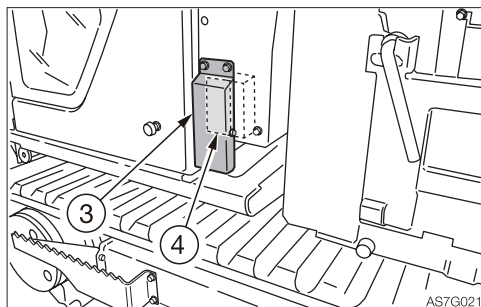
Clean the filters immediately after operating in dusty places.

If the filters are clogged, the air flow is reduced and a booming sound is heard from the air conditioner unit.

Removing the filters



1. Slide the seat fully forward, and then fold the backrest forward.
 2. Loosen the knobs and remove the cover (1).
 3. Remove the circulation filter (2).
- Circulation filter (2): Part No. 19115-06736



4. Loosen the bolts and remove the cover (3).

5. Remove the ventilation filter (4).
- Ventilation filter (4): Part No. 08714-61536

Cleaning

1. Blow dry, compressed air (138 kPa or 20 psi or less) directly on the filters from the inside, moving up and down along the pleats.
Be sure to keep the nozzle at an adequate distance from the filters.
2. Wash the filter with neutral detergent if it is very dirty. Dry the filter completely after washing it.

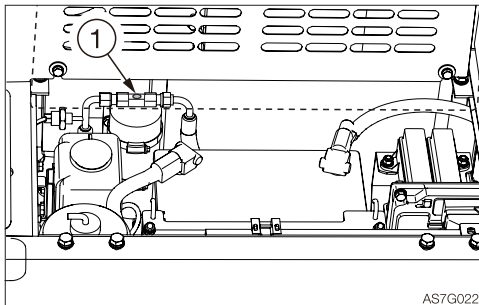


INSPECTING THE REFRIGERANT (GAS) LEVEL (AIR CONDITIONER)

WARNING

- Exposure of the eyes or hands to the cooler's refrigerant could result in blindness or frostbite. Never touch the refrigerant or loosen the parts of the cooling circuit.
- Keep flames away if the refrigerant gas is leaking.
- The high-pressure pipes of the air conditioner can be very hot (80 to 120°C or 176 to 248°F). Be careful not to burn yourself.
- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.

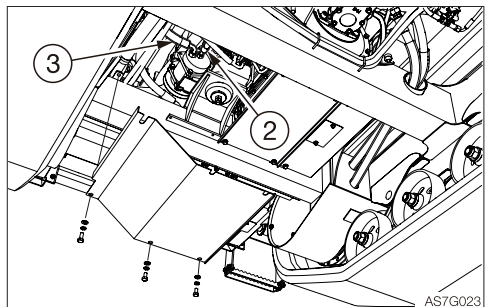
The cooling capacity decreases if the amount of refrigerant is insufficient. Inspect the refrigerant level using the sight glass (1) on the top of the receiver drier.



1. Inspect the places for the conditions below.

Places for inspection	Conditions
Cab door	Fully open
Temperature control dial	Set fully to the COOL side
Fan speed	High
Engine speed	Maximum speed
Air conditioner switch	ON

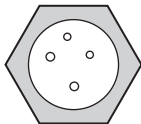
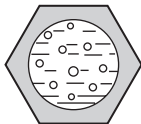
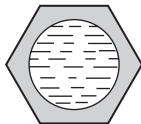
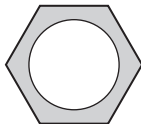
2. Open the battery cover.
3. Inspect the refrigerant by watching the flow of air bubbles through the sight glass (1). Refer to "Check list for refrigerant volume" on page 5-39.



4. Open the inspection cover.
5. Check the temperature of the compressor's high pressure pipe (2) and low pressure pipe (3). Refer to "Check list for refrigerant volume" on page 5-39.



Check list for refrigerant volume

Air conditioner	Normal	Abnormal		
High/low pressure pipe temperature	High pressure pipe is hot (80 to 120°C or 176 to 248°F), low pressure pipe is cold (8 to 15°C or 46 to 59°F). Clear difference in temperature between the pipes.	High pressure pipe is warm, low pressure pipe is slightly cool. No significant difference in temperature between the pipes.	Little difference in temperature between the high-pressure pipe and the low-pressure pipe.	High pressure pipe is hot, low pressure pipe is slightly cool. A significant difference in temperature between the pipes.
Pipe connection	Normal	Some places are dirty with oil.	Some places are extremely dirty with oil.	Normal
Sight glass	 <p>AG7G064</p> <p>Almost transparent with some bubbles. Fully transparent when the engine speed is increased or decreased.</p>	 <p>AG7G065</p> <p>Flow of bubbles can be seen constantly. Sometimes transparent or white with bubbles.</p>	 <p>AG7G066</p> <p>Mist-like flow is faintly visible.</p>	 <p>AG7G067</p> <p>No bubbles are visible, even when the fan is set to High and the engine is idling.</p>
Refrigerant level	Proper level	Refrigerant may be leaking.	Refrigerant has leaked; little is left.	Refrigerant level too high

If the air conditioner is not working

If the air conditioner does not work well, set the fan switch to OFF and contact your sales or service dealer for inspection and/or repairs.

IMPORTANT: Continued use of the air conditioner when it is not working properly will damage its various parts.

IMPORTANT: Using the air conditioner when there is no refrigerant will damage the compressor.

IMPORTANT: Always consult your sales or service dealer for replacing the refrigerant. Be sure to use R134a refrigerant (1800 g or 4.0 lb).

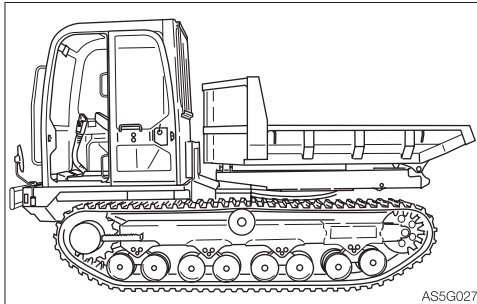


LUBRICATING THE SWING BEARING

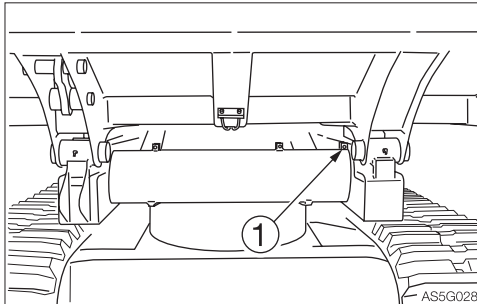


WARNING

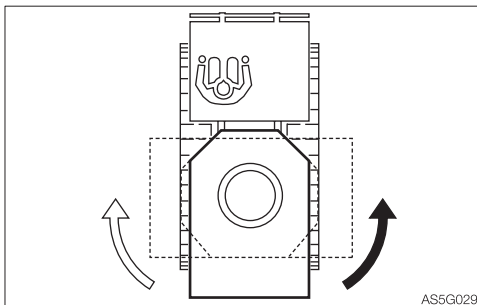
Do not swing while lubricating. Doing so is dangerous, as you may get caught in the machine.



1. Stop the engine with the machine set as shown on the figure above.



2. Use the grease gun to lubricate the grease fitting (1).



3. Start the engine, swing the dump body 90° clockwise.
4. Stop the engine.

5. Repeat the step 2 above.
6. Start the engine, swing the dump body 180° counterclockwise.
7. Stop the engine.
8. Repeat the step 2 above.
9. Wipe off the excess grease expelled from the swing bearing and grease fitting.



EVERY 500 HOURS

REPLACING THE PILOT LINE FILTER

Refer to “Replacing the pilot line filter” on page 5-23.

REPLACING THE ENGINE OIL AND THE OIL FILTER

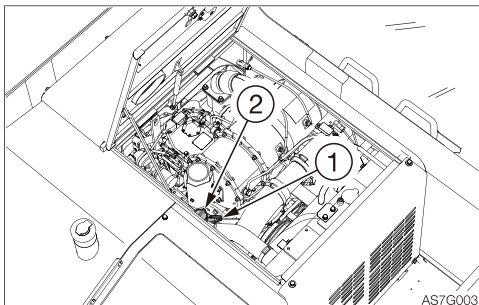


WARNING

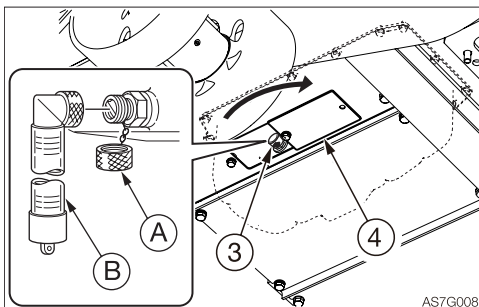
- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine, muffler, radiator, hydraulic lines, sliding parts and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The engine oil is also hot. 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.
 - Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.
 - Be sure to secure the engine hood or covers when they are left open. Do not leave the engine hood or covers open on a windy day or if the machine is parked on a slope.
-



Engine oil



1. Open the engine hood.
2. Remove the oil filler cap (2).

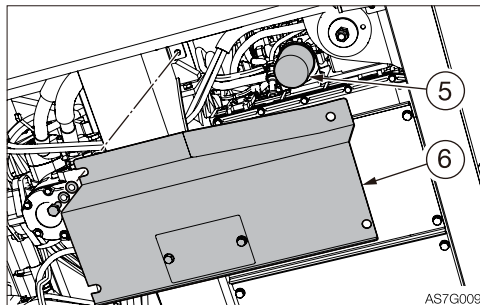


3. Loosen the bolts and remove the under cover (4).
4. Place a pan for catching the waste oil under the drain plug (3).
5. Remove the cap (A), install connector (B) and drain the oil. (The oil comes out when the screw is tightened.)
6. Remove the connector (B) and install the cap (A).

IMPORTANT: Check the waste oil for metal powder. If it contains large amounts of metal powder, consult your sales or service dealer.

7. Install the under cover (4).

Engine oil filter



8. Loosen the bolts and remove the under cover (6).
9. Turn the filter (5) counterclockwise with the filter wrench and remove it.
10. Clean the surface of installation of the filter stand.
11. Apply a thin layer of oil on the packing of the new filter.
12. Install the new filter by hand.
13. Tighten one more turn (with the filter wrench) after the filter packing comes in contact with the surface of installation. (Torque when tightening with filter wrench: 19.6 to 23.5 N·m or 14 to 17 ft·lb.)
14. Add oil up to between the upper limit (H) and the lower limit (L) of the dipstick (1). Problems could arise if the oil level is either too low or too high. It takes around 10 to 20 minutes for all of the added oil to go down to the oil pan.
15. Tighten the oil filler cap (2).
16. Start the engine, run it at low idle for about 5 minutes, then stop it.
17. After about 10 minutes, inspect the oil level.

Note: Change the engine oil and oil filter even if the running time is less than 500 hours after a year's time of operation. Or, change the engine oil and oil filter if the running time reaches 500 hours within a year's time of operation.

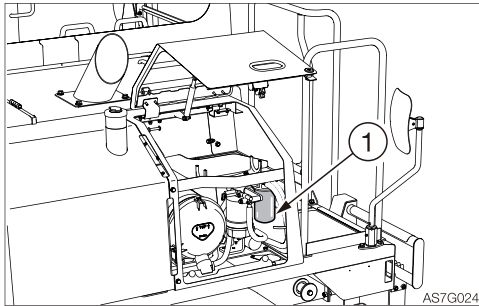


REPLACING THE FUEL FILTER



WARNING

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- Stop the engine in a well-ventilated place and allow it to cool down before performing maintenance.
- Clean up spilled fuel immediately.



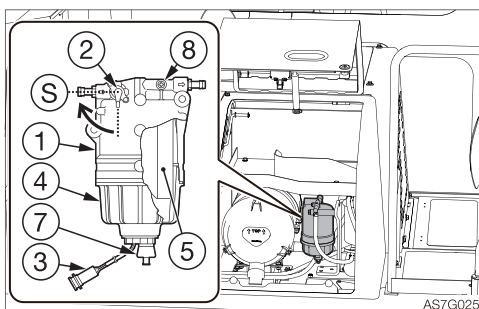
1. Open the side cover.
2. Turn the filter (1) counterclockwise with the filter wrench and remove it.
3. Clean the surface of installation of the filter stand.
4. Apply a thin layer of oil on the packing of the new filter.
5. Install the new filter by hand.
6. Tighten one more turn after the filter packing comes in contact with the surface of installation. (Torque when tightening with filter wrench: 19.6 to 23.5 N·m or 14 to 17 ft·lb.)
7. Bleed the air.
Refer to "Bleeding air from the fuel system" on page 6-8.



REPLACING THE WATER SEPARATOR FILTER

WARNING

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- Stop the engine in a well-ventilated place and allow it to cool down before performing maintenance.
- Clean up spilled fuel immediately.



(S): Close

1. Open the side cover.
2. Close the valve (2) of the water separator (1).
3. Place a pan for catching fuel under the drain hose.
4. Loose the air-bleeding plug (8) and the drain plug (7) to discharge fuel from inside.
5. Remove the sensor wiring coupler (3).
6. Remove the case (4) with the filter wrench.
7. Remove the element (5), and then clean the case. When doing the above, be careful not to damage the sensor.
8. Replace the packing with a new one and lubricate it with diesel fuel.
9. Install the new element (5) on the filter stand.
10. Tighten the case (4) by hand. Be sure to do it by hand.
Tightening torque: 27 to 33 N·m (20 to 24.6 ft-lb)
11. Install the sensor wiring coupler (3).
12. Tighten the drain plug (7).
13. Bleed air.
Refer to "Bleeding air from the fuel system" on page 6-8.



EVERY 1000 HOURS

REPLACING THE HYDRAULIC OIL RETURN FILTER

Refer to “Replacing the hydraulic oil return filter” on page 5-22.

REPLACING THE TRAVEL MOTOR GEAR OIL

Refer to “Replacing the travel motor gear oil” on page 5-32.

REPLACING THE AIR CLEANER ELEMENT



WARNING

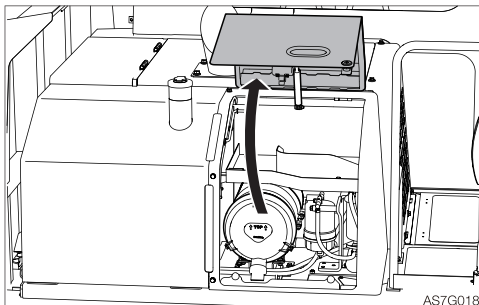
Stop the engine and allow the machine to cool down before performing maintenance.

- The engine, muffler, radiator and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.

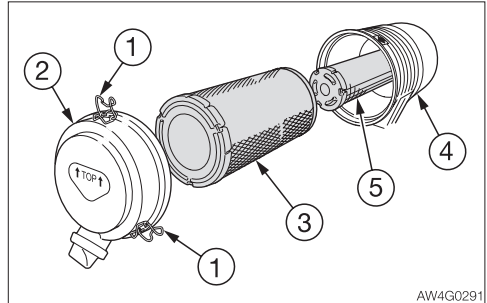
IMPORTANT: Do not use an element if its pleats, gaskets or seals are damaged.

IMPORTANT: Be sure to install the element and dust cap securely. If not, dust could be drain into the cylinder, damaging the engine.

1. Open the side cover.



AS7G018



AW4G0291

2. Loosen the clamps (1) and remove the dust cup (2).
3. Clean the inside of the dust cup (2).
4. Remove the primary element (3).
5. Clean the inside of the body (4).
6. Remove the secondary element (5).
7. Install the new elements.
8. Install the dust cup (2) with its “↑ TOP ↑” mark facing up, and then fasten it with the clamps (1).

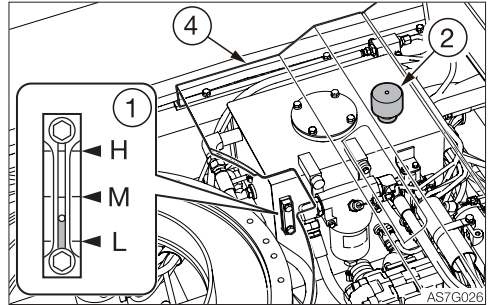


REPLACING THE HYDRAULIC OIL AND CLEANING THE SUCTION STRAINER

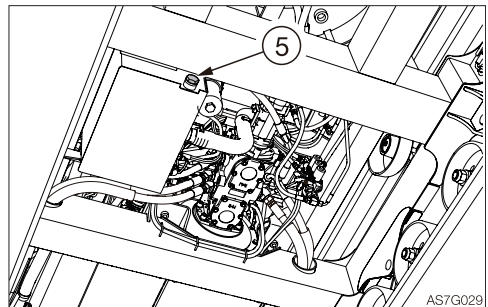
WARNING

- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine and the hydraulic system and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The hydraulic oil is also hot and under high pressure immediately after the engine is stopped.
Be careful when loosening the caps or plugs. Working on the machine under these conditions could result in burns or injuries due to the hot oil spurting out.
- Oil may spurt out if caps or filters are removed or pipes are disconnected before releasing the pressure in the hydraulic system.
 - 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.
- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.

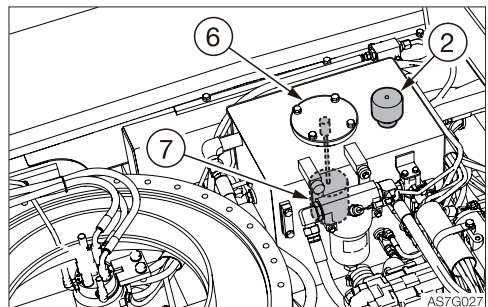
1. Start the engine and run it at low speed.
2. Fully raise the dump body.
3. Raise the safety lock lever to the lock position and stop the engine.
4. Engage the dump body prop to the dump body.



5. Loosen the bolts and remove the cover (4).
6. Remove the air breather (2).



7. Place a pan for catching the waste oil under the drain plug (5).
8. Loosen the drain plug (5) and drain the hydraulic oil.



9. Loosen the bolts and remove the flange (6).

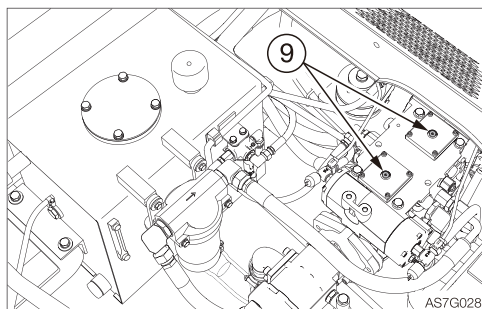


10. Remove the suction strainer (7) and clean it.
11. Clean the inside of the hydraulic oil tank.
12. Install the suction strainer (7) and the flange (6).
13. Tighten the drain plug (5).
14. Replace the pilot line filter.
Refer to "Replacing the pilot line filter" on page 5-23.
15. Replace the hydraulic oil return filter.
Refer to "Replacing the hydraulic oil return filter" on page 5-22.
16. Add hydraulic oil from the hole of air breather (2) up to the level between the middle (M) and the lower limit (L) in the sight gauge (1).
17. Tighten the air breather (2).
18. Bleed air from the hydraulic oil circuit by following "Bleeding air" below.
19. Install the cover (4).
20. Set the machine configuration for inspecting the hydraulic oil level and inspect the oil level after the oil cools.
Refer to "Inspecting the hydraulic oil tank level and replenishing" on page 5-20.

Bleeding the air

IMPORTANT: After replacing the hydraulic oil or hydraulic devices, or after performing maintenance of the hydraulic devices, bleed air from the hydraulic circuits and hydraulic devices. Failure to do so may damage the hydraulic devices.

• Hydraulic pump



1. Loosen the vent plugs (9) on the hydraulic pump.
2. Tighten the plugs (9) once the hydraulic oil

overflows from the hole of the vent plugs (9).

• Cylinders

3. Disengage the dump body prop on the dump body.
Refer to "Dump body prop" on page 2-7.
4. Start the engine and let it run at a low-idling speed for 10 minutes.
5. Maintain the engine at low idle, and then extend and retract the dump cylinders 4 or 5 times, without letting them reach the stroke end.
6. Run the engine at high speed, and then extend and retract the dump cylinders 4 or 5 times, without let them reach the stroke end.
7. Return the engine speed to low idle, and then extend and retract the dump cylinders 4 or 5 times to the stroke end.



MAINTENANCE
EVERY 1000 HOURS

INSPECTING AND ADJUSTING THE ENGINE VALVE CLEARANCE

This operation requires experience. Ask your sales or service dealer for it.

INSPECTING THE RADIATOR CAP

This operation requires experience. Ask your sales or service dealer for it.



EVERY 1500 HOURS

INSPECTING THE CRANKCASE BREATHER SYSTEM

This operation requires experience. Ask your sales or service dealer for it.



EVERY 2000 HOURS

CLEANING THE ENGINE COOLING SYSTEM

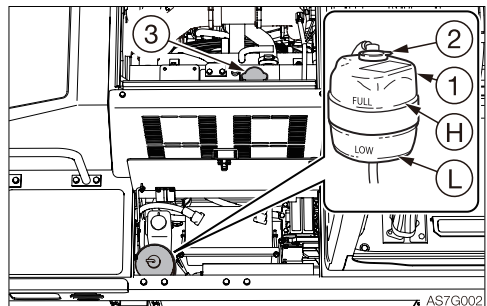


WARNING

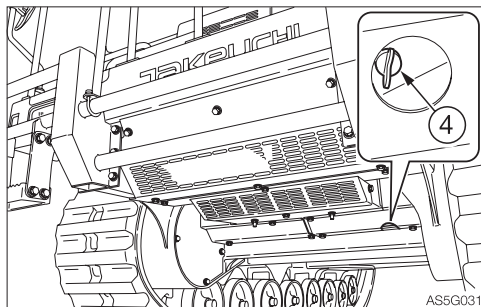
- Stop the engine and allow the machine to cool down before performing maintenance.
 - The engine, muffler, radiator and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The engine coolant is also hot and under high pressure immediately after the engine is stopped. Be careful when loosening the caps or plugs. Working on the machine under these conditions could result in burns or injuries due to the hot coolant spurting out.
- 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.
- Standing at the back of the machine while the engine is running is extremely dangerous, as the machine could move suddenly. Never stand at the back of the machine while the engine is running.
- 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 and the drain plug to remove them.

- Before performing maintenance on the top of the machine, clean the place you will work on and observe the following 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. Use the steps and handrails when climbing up and down the machine, and always support your body at three points with your hands and feet.

When cleaning, if the temperature of the coolant is low, the thermostat will be closed and the coolant will not circulate in the radiator. Heat the coolant water to at least 90°C (194°F) before cleaning.



1. Open the engine hood and the battery cover.
2. Gradually loosen the radiator cap (3) to release the internal pressure, and then remove the cap.



3. Place a pan for catching the waste coolant under the drain plug (4), and then loosen the drain plug (4) to drain the coolant.
4. Tighten the drain plug (4).
5. Add tap water to the radiator through the coolant fill port up to the top of the port. Take time and slowly add water, so that no air enters the radiator.
6. Close the radiator cap (3).
7. Start the engine and run it at a speed slightly above low idling. Raise the water temperature to at least 90°C (194°F), and then run the engine for about 10 minutes with the thermostat open.
8. Stop the engine, wait until the cooling water temperature becomes lower, and then remove the drain plug (4) to drain the water.
9. After draining, clean the cooling system using a cleaning agent. When using the cleaning agent, follow the instructions included with the agent.
10. Repeat the steps 3 to 8 to rinse the cooling system.
11. Tighten the drain plug (4).
12. Take time and slowly add the new coolant (mixture of antifreeze and tap water) to the radiator through the fill port until it is full.
13. Close the radiator cap (3).
14. Warm up the engine. Use the meters to check that there are no irregularities in the cooling system at this time.
15. Increase the water temperature to at least 90°C (194°F). Then, run the engine for about 10 minutes with the thermostat open.
16. Stop the engine, wait until the cooling water temperature becomes lower, and then check the level of coolant in the radiator.
If necessary, add cooling water until the radiator is full.
17. Close the radiator cap (3).
18. Clean the interior of the reserve tank (1), and then add coolant to the upper limit (H).
19. When the coolant has been replaced, inspect the coolant level once again after operating the machine.
Once the machine is operated, the coolant is distributed throughout the entire system, resulting in the lower coolant level.
Replenish the cooling water that has been used.



MAINTENANCE
EVERY 3000 HOURS

EVERY 3000 HOURS

INSPECTING THE TURBOCHARGER (BLOW WASH AS NECESSARY)

This operation requires experience. Ask your sales or service dealer for it.

INSPECTING, CLEANING AND CHECKING OPERATION OF THE EGR VALVE

This operation requires experience. Ask your sales or service dealer for it.

CLEANING THE EGR LEAD VALVE

This operation requires experience. Ask your sales or service dealer for it.

CLEANING THE EGR COOLER (CLEANING THE WATER SIDE AND EXHAUST AIR PASSAGE BLOWER)

This operation requires experience. Ask your sales or service dealer for it.

INSPECTING THE OPERATION OF THE AIR INTAKE THROTTLE VALVE

This operation requires experience. Ask your sales or service dealer for it.

INSPECTING AND CLEANING THE FUEL INJECTOR

This operation requires experience. Ask your sales or service dealer for it.



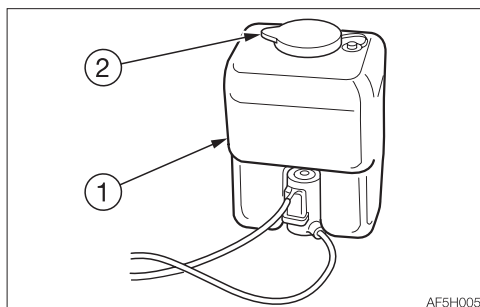
WHEN REQUIRED

INSPECTING AND REPLENISHING THE WINDSHIELD WASHER FLUID

WARNING

Choose ethyl alcohol as washer solution. Do not use methyl alcohol as washer solution. It could damage the eyes.

Use a windshield washer fluid designed specifically for motor vehicles. Follow the instructions included with the washer fluid.



Inspection

1. Open the battery cover.
2. Inspect the washer tank (1) and add washer fluid if the level is low.

Replenishing

1. Mix the washer fluid to the prescribed concentration.
2. Remove the cap (2) and add washer fluid. Keep the dust away while replenishing the washer fluid.
3. Install the cap (2).

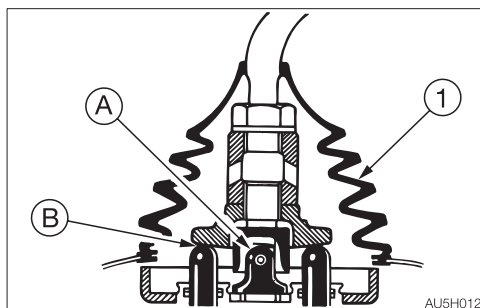
LUBRICATING THE LEVERS

WARNING

Set the machine to the parking posture, stop the engine, remove the ignition key and store it. Failure to do so may result in the machine moving abruptly, leading to serious injury or death.

If the levers no longer move smoothly, grease them.

Control levers



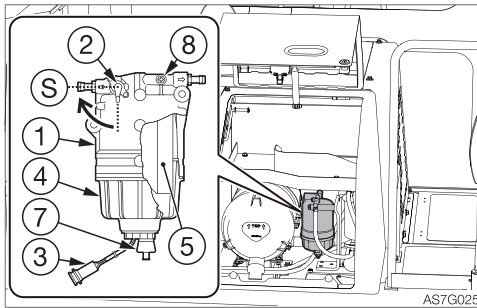
1. Remove the lower mount section of the boot (1) and turn it upward.
2. Wipe off the old grease.
3. Apply grease to points (A) and (B).
4. Set the boot (1) back as it was.



DRAINING THE WATER FROM THE WATER SEPARATOR

WARNING

- Do not smoke or permit open flames while handling fuel or working on the fuel system.
- Stop the engine in a well-ventilated place and allow it to cool down before performing maintenance.
- Clean up spilled fuel immediately.



(S): Close

1. Open the engine hood.
2. Place a pan under the drain valve (7) to catch fuel.
3. Open the drain valve (7) and drain the water.
If the water does not drain easily, loosen the plug (8).
4. Close the drain valve (7) and tighten the plug (8).
Refer to "Bleeding air from the fuel system" on page 6-8.

INSPECTING AND CLEANING THE DPF SOOT FILTER

For the inspection and maintenance of the DPF soot filter or oxidation catalyst, follow the procedure below.

This operation requires experience. Ask your sales or service dealer for it.

- Do not modify the DPF without permission.
If modified, it may be damaged or malfunction may occur. As a result, an expensive repair work may be required.
- Do not reuse the DPF that has been dropped to the ground. There is catalyst fitted inside the DPF. It can be damaged if strong shocks are applied to it.

• Soot filter

Cleaning:

The soot filter must be cleaned if any of the error codes listed below appears. When cleaning becomes necessary, the ECM error warning lamp or the vehicle and engine emergency lamp starts flashing and an alarm is sounded.

Display the engine error code screen to check the SPN and FMI numbers.

Error code		Classi- fication	Description
SPN	FMI		
3719	7	Warning	DPF recovery regeneration inhibit
3719	9	Warning	DPF recovery regeneration failure
3720	0	Warning	DPF ash cleaning request 2
3720	16	Caution	DPF ash cleaning request 1
522573	0	Caution	DPF over accumulation
522574	0	Caution	DPF over accumulation

Replacement:

Replace every 9000 hours.

- Oxidation catalyst

Replacement:

Replace every 9000 hours.



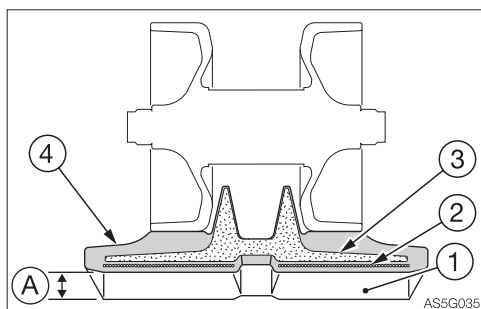
INSPECTING THE RUBBER TRACKS

Repair or replace the rubber tracks if their condition becomes as described below. Consult your sales or service dealer for repair or replacement.

Rubber track

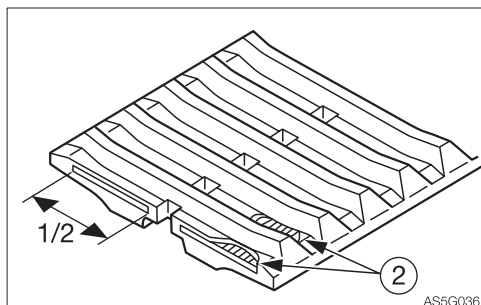
Replace the track if the entire track is stretched and cannot be adjusted.

(1) Lug



Replace if the height of (A) is 5 mm (0.2 in.) or below.

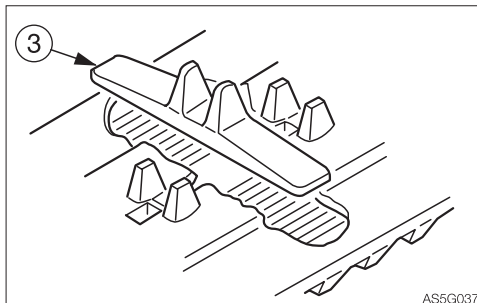
(2) Steel cord



Replace if the steel cord is exposed for two links or more.

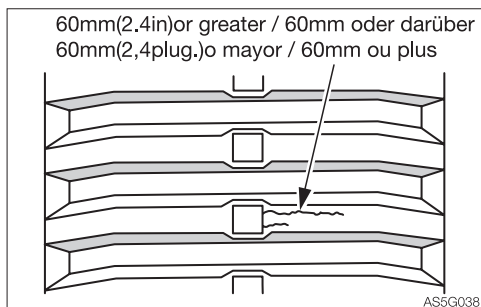
Replace if the half or more of the steel cords on one side are cut.

(3) Metal core



Replace if even one metal core is off.

(4) Rubber



Repair if there are cracks of 60 mm (2.4 in.) or greater in length.

If the steel cord is visible, repair as soon as possible, regardless of the length of the crack.



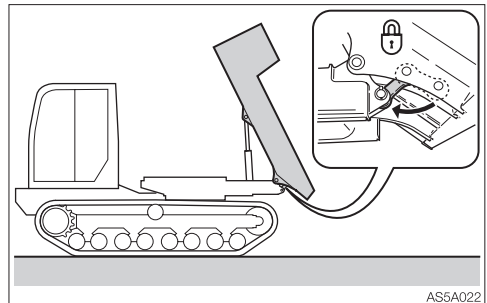
REPLACING THE RUBBER TRACKS

WARNING

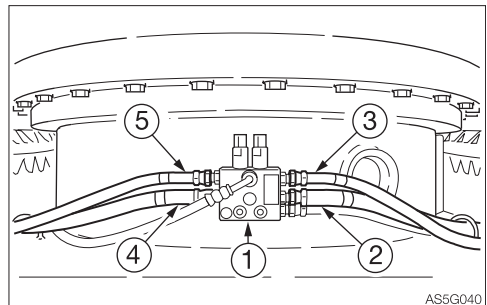
- If you must work under the raised machine or its components, always use the dump body prop, wood blocks, jack-stands or other rigid and stable supports to keep the machine or its components raised. Never get under the machine or its components if they are not sufficiently supported. This procedure is especially important when working on hydraulic cylinders.
- Stop the engine and allow each part of the machine to cool before performing maintenance.
- 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.
- When disconnecting hoses, stand to the side and loosen them slowly to gradually release the internal pressure before removing.
- It is extremely dangerous to remove the tracks by not following the procedure below. If the tension of the rubber track cannot be loosened, Contact a Takeuchi service agent for advice.
- Take great care in handling rubber tracks, because they are very heavy.
- If you must work under the raised dump body, be sure to engage the dump body prop to prevent the dump body from dropping. Never position yourself under the dump body without making sure that it is securely supported.

IMPORTANT: Prepare two wrenches for removal and installation of hydraulic hoses. Use one of the wrenches for holding the hydraulic hose to prevent it from twisting.

Removing



1. Start the engine and run it at low speed.
2. Fully raise the dump body.
3. Raise the safety lock lever to the lock position and stop the engine.
4. Engage the dump body prop to the dump body.



5. Change the connecting locations of the hydraulic hoses connected to the auto-tension valve (1).
Changing the connecting locations of the hydraulic hoses allows the tension cylinder to be retracted and extended.
 - Right rubber track:
Change the connecting locations between the hydraulic hoses (2) and (3).
 - Left rubber track:
Change the connecting locations between the hydraulic hoses (4) and (5).



6. Start the engine, fully retract the tension cylinder and then stop the engine.
7. Jack up the machine so that a clearance can be created between the metal core protrusion of the rubber track and the track rollers, and then put wood bases or the like between the track frame on its lower side and ground.
8. Remove the rubber track from the idler side first, and then from the sprocket.

Installing

1. Engage one side the rubber track with the sprocket, and place the side of the rubber track onto the idler.
2. Start the engine and turn the rubber track slowly while using a lever to install the rubber track onto the idler.
3. Stop the engine and confirm that the rubber track is fully engaged with the sprocket, the rollers and idler.
4. Referring to the step (5) on the previous page, change the connecting locations of the hydraulic hoses connected to the auto-tension valve (1), to return those to the original state before the removal of the rubber track.
5. Start the engine and check that the rubber track tension is sufficient.
6. Lower the machine to the ground.
7. Check the hydraulic hoses for oil leakage.



EVERY 2 YEARS

REPLACING THE RECEIVER DRYER

This operation requires experience. Ask your sales or service dealer for it.



MAINTENANCE DURING EXTENDED STORAGE PERIOD

Storage procedures

If the machine is to be stored for 30 days or more, store it indoors. If it must be stored outdoors, park the machine on a surface laid with lumber on a flat ground, and place a waterproof cover over it so that it stays dry.

1. Clean the machine.
2. Inspect for oil leakage, water leakage, cracks and loose nuts and bolts.
3. Add fuel and replace the hydraulic oil and oil.
4. To prevent rusting and freezing, replace the engine coolant with long-life coolant (LLC).
Refer to "Cleaning the engine cooling system" on page 5-52.
5. Use the grease gun to lubricate the grease fittings.
6. Fully retract the dump cylinders to lower the dump body completely.
7. Apply rust-inhibiting oil to the hydraulic cylinder rods.
8. Disconnect the negative cable from the battery and cover the battery to prevent freezing.

During storage



WARNING

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

1. To prevent rusting, operate the machine once a month so that the oil can be circulated throughout the system.
2. Inspect the battery and recharge it as necessary.
Ask your sales or service dealer for recharging.

Starting the machine after storage

IMPORTANT: If the above "Storage procedures" have not been followed during the extended storage periods, **consult your sales or service dealer before starting the machine again.**

1. Wipe off the rust-inhibiting oil that was applied on the piston rods of the hydraulic oil cylinders.
2. Add oil or grease as necessary.

Returning the engine to service

1. Perform the daily checks.
2. The engine should be pre-oiled before startup.
 - a. Crank the engine, leaving the fuel system shut off so the engine will not start, for 15 seconds.
 - b. Then pause for 30 seconds.
 - c. Repeat the procedure until you have cranked the engine for a total of one minute. This will circulate the oil in the engine's lubrication system.
3. Prime the fuel system.
4. Start the engine. Allow the engine to idle for approximately 15 minutes while you check for:
 - Proper oil pressure
 - Fuel, engine oil or coolant leaks
 - Proper operation of the indicators and/or gauges
5. Avoid prolonged operation at minimum or maximum engine speeds and loads for the remainder of the first hour of operation.

TROUBLESHOOTING



SYMPTOMS THAT ARE NOT MALFUNCTIONS

The symptoms listed below are not malfunctions.

- The swing motor produces noise at the beginning and end of the swing operation.
- The travel motor produces noise when suddenly stopped from its high speed traveling.
- The control valve produces noise if excessive force is applied to the dump body or when it moved to the stroke end.
- In some cases smoke may be emitted from the tail pipe while the DPF regeneration is being performed. This is not a failure; it is due to burning of the particulate matter (PM).
- In some cases the noise associated with the DPF regeneration operation or cancel operation may change; this is not a failure.

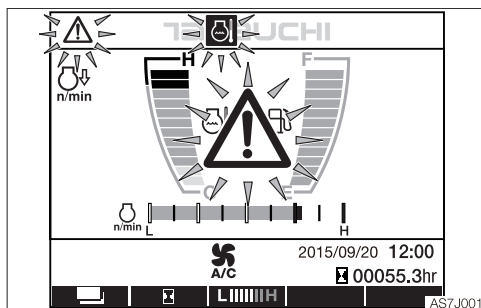


IF THE ENGINE OVERHEATS

WARNING

- Do not open the engine hood when steam is coming from it. The steam or hot water may spurt out and cause burns.
- Do not try to remove the radiator cap or the drain plug when the cooling water is hot. Stop the engine, wait until the engine and the radiator cool, and then slowly loosen the radiator cap to release the internal pressure.
- Before performing maintenance, stop the engine and allow the machine to cool down.

The symptoms listed below indicate overheating.



- An alarm is sounded and the vehicle and engine emergency lamp and the coolant temperature warning lamp start flashing.
- The water temperature gauge level is in the red zone.
- Steam comes from the engine room.

Remedy procedure

1. Park the machine in a safe place.
2. Check if steam is coming out of the closed engine hood.
3. If there is steam, stop the engine immediately and contact your sales or service dealer for repair. If steam is not coming out run the engine at low idle and let the water temperature cool down.
4. When the water temperature gauge level drops in the green zone, stop the engine.
5. Perform the inspections and the remedies listed below once the engine cools down.
 - Fan belt slack..... Adjust
..... Refer to page 5-24.
 - Coolant level Add
..... Refer to page 5-16.
 - Water leakage..... Repair
 - Radiator fins..... Clean
..... Refer to page 5-36.
 - Sediment in cooling system
..... Clean
..... Refer to page 5-52.

If the problem persists after the above remedies, contact your sales or service dealer for repair.



IF THE BATTERY GOES DEAD

The symptoms below indicate that the battery is dead.

- The starter motor does not turn or fails to start the engine.
- The horn is too weak.

Remedy procedure

Start the engine using the booster battery on the other vehicle (booster vehicle) and the jumper cables.



WARNING

- When starting the engine using the jumper cables, be sure to connect the cables by following the proper steps. Improper use of jumper cables can result in battery explosion or unexpected machine motion.
 - Do not allow the booster vehicle and the machine with a dead battery (dead machine) to touch each other.
 - Do not allow the positive (+) and the negative (-) clips of the jumper cables to touch each other.
 - When connecting, attach the jumper cable to the positive (+) terminals first. When disconnecting, remove the cable from the negative (-) terminal (ground) first.
 - Connect the last clip of the jumper cable to a point as far away from the battery as possible.
- Always wear the protective goggle when jump starting the engine by using the jumper cables.

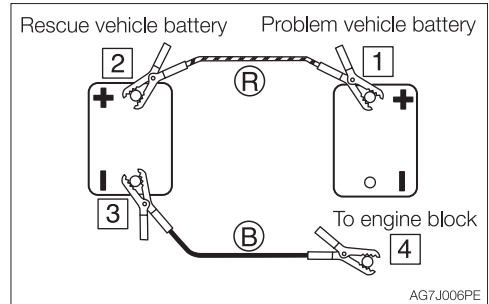
IMPORTANT: Use the jumper cables and clips of a size suited to the capacity of battery. Do not use damaged or corroded jumper cables and clips.

IMPORTANT: Be sure that the battery of the booster vehicle has the same capacity as the battery of the dead machine.

IMPORTANT: Be sure to connect the clips securely.

Connecting the jumper cables

IMPORTANT: Set the ignition keys of the booster vehicle and the dead machine to the OFF position.



1. Connect the clip of jumper cable (R) to the positive (+) battery terminal of the dead machine.
2. Connect the other clip of jumper cable (R) to the positive (+) battery terminal of the booster vehicle.
3. Connect the clip of jumper cable (B) to the negative (-) battery terminal of the booster vehicle.
4. Connect the other clip of jumper cable (B) to the engine block of the dead machine. Connect the clip to a place as far from the battery as possible.

Starting the engine

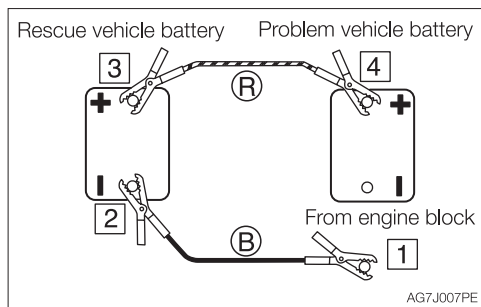
1. Check that the clips are securely connected to the terminals.
2. Start the engine of the booster vehicle and run it at high speed.
3. Start the engine of the dead machine.



TROUBLESHOOTING IF THE BATTERY GOES DEAD

Disconnecting the jumper cables

Once the dead machine is successfully running, remove the jumper cables by following the same steps as for connection in the reverse order.



1. Disconnect the clip of jumper cable (B) from the engine block of the dead machine.
2. Disconnect the other clip of jumper cable (B) from the negative (-) battery terminal of the booster vehicle.
3. Disconnect the clip of jumper cable (R) from the positive (+) battery terminal of the booster vehicle.
4. Disconnect the clip of jumper cable (R) from the positive (+) battery terminal of the dead machine.

Recharging

Ask your sales or service dealer for recharging the dead battery.



IF A FUSE BLOWS

If a light does not come on or the electrical system does not work, a fuse may be blown. Inspect the fuses.

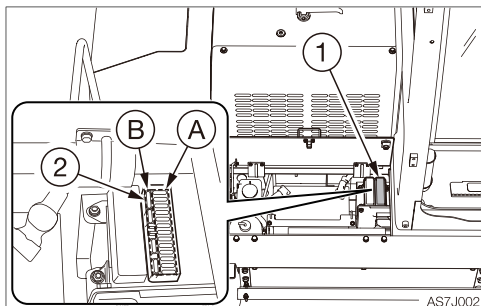
INSPECTING AND REPLACING THE FUSE



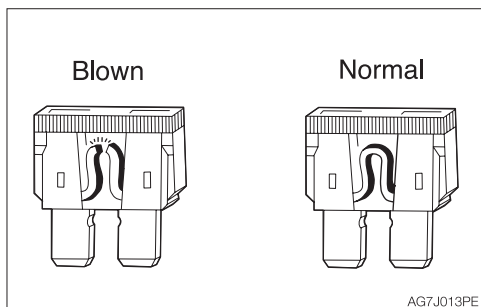
WARNING

If the fuse blows again soon after replacement, then the electric system is likely faulty. It may pose a fire hazard if not properly repaired. Contact your sales or service dealer for advice.

1. Turn the starter key to the OFF position to stop the engine.



2. Open the battery cover.
3. Open the fuse box cover (1).
4. Check for any blown fuses (2).



5. If a fuse is blown, replace it with a spare fuse of the same capacity.

Fuse layout and circuits protected

(A) side

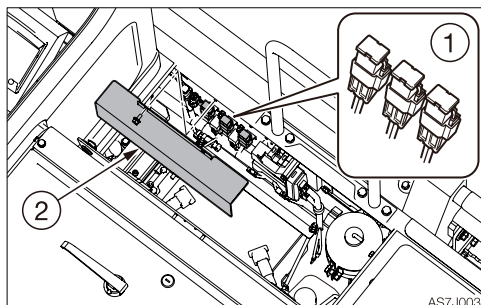
Capacity	Symbol	Protected circuit
25A		Light
25A	CAB	Cab interior power supply
5A		Lever lock
15A	CTL(1)	Controller power supply (1)
5A		Travel alarm
5A		Switch lighting
15A	OPT(1)	Option (1)
10A	OPT(2)	Option (2)
20A		Air conditioner compressor
30A		Air conditioner blower motor
25A	CAB	Cab light
15A		Horn

(B) side

Capacity	Symbol	Protected circuit
5A		Ignition switch
15A	CTL(2)	Controller power supply (2)
25A		Feed pump
20A	ECU	ECU power source



INSPECTING THE FUSIBLE LINK



If the machine is not turned on after turning the ignition switch to the ON position, there is likely a break in the cartridge type fusible link (1).

1. Open the battery cover.
2. Loosen the bolts and remove the cover (2).
3. Inspect the fusible links (1).
4. If there is a break, please contact your sales or service dealer.

Note: Fusible links are large type fuses used in high current applications. Like a regular fuse, they act as fuses by protecting the electric components and wirings from damage caused by excessive current draw.

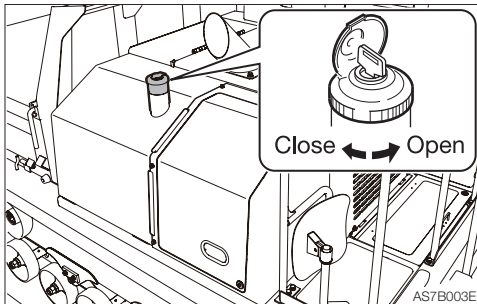


RESTARTING AFTER ADDING FUEL

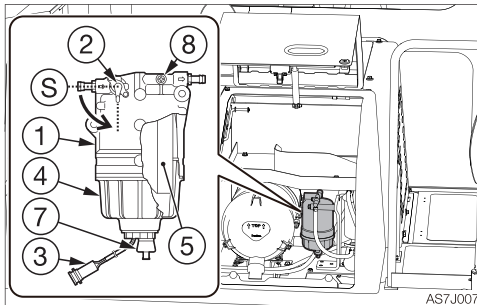
BLEEDING AIR FROM THE FUEL SYSTEM

IMPORTANT: NEVER use the starter motor to crank the engine in order to prime the fuel system. This may cause the starter motor to overheat and damage the coils, pinion gear and/or ring gear.

IMPORTANT: If the engine stalls due to fuel shortage, add fuel, turn the key to the ON position for 60 seconds, and then turn it to the START position. Running the starter for a long time before there is enough fuel is going through can cause the starter to fail.



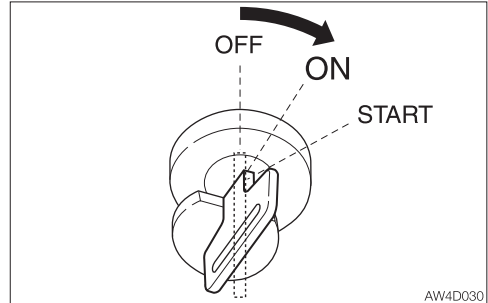
1. Add fuel.



(S): Close

2. Open the side cover.

3. Open the valve (2) of the water separator.








4. Turn the ignition key to the ON position and hold it for about 60 seconds.
The automatic air bleeder bleeds air from the fuel system.
5. Start the engine and check for fuel leakage.

Note: Air in the fuel system causes the engine to fail to start or to have other problems. Always bleed air when the fuel tank is emptied or when there is air in the fuel system.







IF A WARNING LAMP FLASHES

If an alarm is sounded or a warning lamp starts flashing during operation, park the machine in a safe place and perform the remedy procedures described below.

Warning lamp	Lamp name	Causes and remedies
 AW4J007	Vehicle and engine emergency lamp	<p>There is a problem in the machine. Refer to the respective warning lamp below. Get the vehicle or engine error code number from the multi-information display, and then consult your sales or service dealer referring to the “Vehicle error code list” or “Engine error code list”. Refer to “Multi-information display” on page 2-14. Refer to “Vehicle error code list” on pages 6-12 and 6-13. Refer to “Engine error code list” on pages 6-14 to 6-19.</p>
 AW4J0041	ECU error warning lamp	<p>An engine problem is detected. If an error code is displayed on the multi-information display, inform your sales or service dealer of the code and ask for help. Refer to “Multi-information display” on page 2-14. Refer to “Engine error code list” on pages 6-14 to 6-19.</p>
 AG7J019	Battery charge warning lamp	<p>There is a problem with the fan belt or charger. Check the fan belt for slack or breakage and adjust as necessary. If the lamp continues flashing after maintenance, there is likely a problem with the charger. Consult your sales or service dealer for help. Refer to “Inspecting and adjusting the fan belt” on page 5-24.</p>
 AG7J017	Engine oil pressure warning lamp	<p>There is a problem in the engine lubrication system. Check the engine oil level. If the lamp is flashing when the level is normal or even after replenishment of oil or coolant, consult your sales or service dealer. Refer to “Inspecting and replenishing the engine oil” on page 5-17.</p>
 AW4J009	Water separator warning lamp	<p>Water is in the water separator. Drain water. Refer to “Draining the water from the water separator” on page 5-56.</p>



TROUBLESHOOTING IF A WARNING LAMP FLASHES

Warning lamp	Lamp name	Causes and remedies
 AG7J018	Coolant temperature warning lamp	The coolant temperature is too high and the engine is overheating. Refer to “If the engine overheats” on page 6-3.
 AG7J020	Air cleaner warning lamp	The air cleaner is clogged. Clean it. Refer to “Cleaning the air cleaner” on page 5-34.
 AW4J010	Fuel level warning lamp	The fuel level is too low. Add fuel. Refer to “Inspecting the fuel level” on page 5-19.
 AU5J003	Pilot line filter warning lamp	<p>The hydraulic oil pilot line filter is clogged. Stop the engine and replace the filter immediately. Continuing to operate the machine while the lamp is flashing could damage the line filter and hydraulic equipment. Refer to “Replacing the pilot line filter” on page 5-23.</p> <p>Cold climate operation: Hydraulic oil is not warmed up. Refer to “Warming up the machine (hydraulic oil)” on page 3-8.</p>



VEHICLE ERROR CODE LIST

If an error code appears on the display, consult your sales or service dealer.

Error code	Error details
9	Impossible to sense ACC key
402	CAN 0 communication error
502	CAN communication error (EECU)
602	CAN communication error (cluster gauge)
612	CAN communication error (IOX024)
1703	Main power supply voltage error (too high)
1704	Main power supply voltage error (too low)
1713	IOX024 power supply voltage error (too high)
1714	IOX024 power supply voltage error (too low)
2503	Sensor voltage error (too high) MMC
2504	Sensor voltage error (too low) MMC
2513	IOX sensor voltage error (too high) MMC
2514	IOX sensor voltage error (too low) MMC



TROUBLESHOOTING VEHICLE ERROR CODE LIST

Error code	Error details
3300	Alternator charge faulty
3401	Engine oil pressure error
3500	Overheat
3600	Air cleaner clogged
3700	Water separator alarm
3810	Line filter clogged
3820	Hydraulic oil temp. sensor error (too high)
3825	Hydraulic oil temp. sensor error (cable break)
5303	Accelerator sensor error (too high)
5304	Accelerator sensor error (too low)
5323	Foot accelerator sensor error (too high pressure)
5324	Foot accelerator sensor error (too low pressure)
5505	Fuel gauge resistance value error (cable break)
8095	Lever lock PWM output current error (low current)
8096	Lever lock PWM output current error (high current)

PWM = Pulse width modulation



ENGINE ERROR CODE LIST

If an error code appears on the display, consult your sales or service dealer.

Error code		Error details	DTC
SPN	FMI		
522400	2	Crank speed sensor (Crank signal malfunction)	P0336
	5	Crank speed sensor (No crank signal)	P0337
522401	2	Cam speed sensor (Cam signal malfunction)	P0341
	5	Cam speed sensor (No cam signal)	P0342
	7	Cam speed sensor (Angle offset failure)	P1341
523249	5	No signal on both crank and cam speed sensor	P0008
91	3	Accelerator sensor 1 (Excessive sensor output)	P0123
	4	Accelerator sensor 1 (Insufficient sensor output)	P0122
28	3	Accelerator sensor 2 (Excessive sensor output)	P0223
	4	Accelerator sensor 2 (Insufficient sensor output)	P0222
29	3	Accelerator sensor 3 (Excessive sensor output)	P0228
	4	Accelerator sensor 3 (Insufficient sensor output)	P0227
	8	Pulse sensor failure (Pulse communication)	P1227
51	3	Intake throttle opening sensor fault (High voltage)	P02E9
	4	Intake throttle opening sensor fault (Low voltage)	P02E8
102	3	EGR low pressure side sensor fault (High voltage)	P0238
	4	EGR low pressure side sensor fault (Low voltage)	P0237
	13	EGR low pressure side sensor fault (Abnormal learning value)	P0236
1209	3	EGR high pressure side sensor fault (High voltage)	P0473
	4	EGR high pressure side sensor fault (Low voltage)	P0472
	13	EGR high pressure side sensor (Abnormal learning value)	P0471
110	3	Cooling water temperature sensor fault (High voltage)	P0118
	4	Cooling water temperature sensor fault (Low voltage)	P0117
	0	Cooling water temperature sensor temperature abnormal high (Overheat)	P0217



Error code		Error details	DTC
SPN	FMI		
172	3	New air temperature sensor fault (High voltage)	P0113
	4	New air temperature sensor fault (Low voltage)	P0112
174	3	Fuel temperature sensor fault (High voltage)	P0183
	4	Fuel temperature sensor fault (Low voltage)	P0182
	0	Fuel temperature sensor temperature abnormal high	P0168
157	3	Rail pressure sensor fault (High voltage)	P0193
	4	Rail pressure sensor fault (Low voltage)	P0192
3251	3	DPF differential pressure sensor fault (High voltage)	P2455
	4	DPF differential pressure sensor fault (Low voltage)	P2454
	0	DPF differential pressure sensor differential pressure abnormal high	P2452
	13	DPF differential pressure sensor (Abnormal learning value)	P2453
3609	3	DPF high pressure side sensor fault (High voltage)	P1455
	4	DPF high pressure side sensor fault (Low voltage)	P1454
3242	3	DPF inlet temperature sensor fault (High voltage)	P1428
	4	DPF inlet temperature sensor fault (Low voltage)	P1427
	0	DPF inlet temperature sensor temperature abnormal high	P1436
3250	3	DPF intermediate temperature sensor fault (High voltage)	P1434
	4	DPF intermediate temperature sensor fault (Low voltage)	P1435
	1	DPF intermediate temperature sensor temperature abnormal low temperature	P0420
	0	DPF intermediate temperature sensor temperature abnormal high (Post-injection failure)	P1426



TROUBLESHOOTING ENGINE ERROR CODE LIST

Error code		Error details	DTC
SPN	FMI		
108	3	Atmospheric pressure sensor fault (High voltage)	P2229
	4	Atmospheric pressure sensor fault (Low voltage)	P2228
	10	Atmospheric pressure sensor characteristic fault	P1231
412	3	EGR gas temperature sensor fault (High voltage)	P041D
	4	EGR gas temperature sensor fault (Low voltage)	P041C
105	3	Intake manifold temperature sensor fault (High voltage)	P040D
	4	Intake manifold temperature sensor fault (Low voltage)	P040C
173	3	Exhaust manifold temperature sensor fault (High voltage)	P0546
	4	Exhaust manifold temperature sensor fault (Low voltage)	P0545
1485	2	Main relay early opening	P068A
522243	5	Startup assist relay interrupted	P0543
	6	Startup assist relay GND interrupted	P0541
651	5	Injector 1 open circuit (Inherent location of the injector)	P0201
652	5	Injector 2 open circuit (Inherent location of the injector)	P0202
653	5	Injector 3 open circuit (Inherent location of the injector)	P0203
654	5	Injector 4 open circuit (Inherent location of the injector)	P0204
2797	3	Injector bank 1 +B short circuit	P2148
	6	Injector bank 1 GND short circuit	P2147
	5	Injector bank 1 cable break	P2146
2798	3	Injector bank 2 +B short circuit	P2151
	6	Injector bank 2 GND short circuit	P2150
	5	Injector bank 2 cable break	P2149
522996	4	Injector drive circuit undercharge error	P0611
522997	3	Injector drive circuit overcharge error	P0200



TROUBLESHOOTING ENGINE ERROR CODE LIST

Error code		Error details	DTC
SPN	FMI		
633	3	High-pressure pump drive circuit high-side VB short circuit	P0629
	5	High-pressure pump drive circuit high-side GND short circuit, cable break	P0627
	7	High-pressure pump drive circuit error	P2635
1347	0	High-pressure pump protection fail	P1235
	15	High-pressure pump replacement fail	P1236
522803	13	High-pressure pump learning not yet implemented alarm	P1237
157	0	Actual rail pressure rise error	P0088
	18	Rail pressure deviation error during the actual rail pressure drop	P0094
190	0	Overspeed	P0219
523221	12	QR data not yet written	P1631
	13	QR data error	P1632
522995	12	QR data correction input error	P1630
2950	5	No-load of throttle valve drive H bridge circuit	P0660
	3	Power short circuit of throttle valve drive H bridge output 1	P1658
522596	9	TSC1 (CAN message) reception time out (SA1)	U0292
522597	9	TSC1 (CAN message) reception time out (SA2)	U1301
522599	9	Y_ECR1 (CAN message) reception time out	U1292
522600	9	Y_EC (CAN message) reception time out	U1293
237	31	VI (CAN message) reception time out	U0168
	13	VI (CAN message) reception data fault	U3002
522618	9	EBC1 (CAN message) reception time out	U1302
522619	9	Y_DPFIF (CAN message) reception time out	U1303
522610	9	CAN1 (for EGR): Reception time out	U010B



TROUBLESHOOTING ENGINE ERROR CODE LIST

Error code		Error details	DTC
SPN	FMI		
2791	0	EGR over-voltage fault	P0404
	1	EGR under-voltage fault	P1404
	7	EGR feedback malfunction	P1409
	9	EGR ECM data fault	U0401
	12	Open circuit between the EGR motor coils	P0403
522579	12	Short circuit between the EGR motor coils	P1405
522580	12	EGR position sensor malfunction	P0488
522581	7	EGR stuck open valve malfunction	P148A
522582	7	EGR initialization malfunction	P049D
522583	1	High temp. thermistor error	P1410
522584	1	Low temp. thermistor error	P1411
522617	12	EGR target value out of range	U1401
630	2	EEPROM error	P1601
523074	1	ECU internal sensor 5V circuit 1 error (low voltage)	P0652
	0	ECU internal sensor 5V circuit 1 error (high voltage)	P0653
523075	1	ECU internal sensor 5V circuit 2 error (low voltage)	P0698
	0	ECU internal sensor 5V circuit 2 error (high voltage)	P0699
522993	12	ECU IC for monitoring internal CPU error	P0607
522994	12	ECU internal CPU error	P0606
522998	12	Flash ROM corruption error (checksum)	P1602
522323	0	Air cleaner clogged alarm	P1101
522329	0	Oil/water separator alarm	P1151



TROUBLESHOOTING ENGINE ERROR CODE LIST

Error code		Error details	DTC
SPN	FMI		
167	5	Charge switch (Charge switch open circuit)	P1562
	1	Charge switch (Charge alarm)	P1568
100	4	Oil pressure switch (Oil pressure switch open circuit)	P1192
	1	Oil pressure switch (Low oil pressure fault alarm)	P1198
522573	0	DPF overaccumulation (Method C)	P2463
522574	0	DPF overaccumulation (Method P)	P1463
522575	7	DPF regeneration defect (Stationary regeneration failure)	P2458
522577	11	DPF regeneration defect (Stationary regeneration not-performed)	P2459
3720	16	DPF OP interface (Ash cleaning request 1)	P242F
	0	DPF OP interface (Ash cleaning request 2)	P1420
3719	16	DPF OP interface (Stationary regeneration standby)	P1421
	0	DPF OP interface (Backup mode)	P1424
	9	DPF OP interface (Recovery regeneration failure)	P1445
	7	DPF OP interface (Recovery regeneration prohibition)	P1446



OTHER SYMPTOMS

For symptoms not included in the table below or if the problem persists after the proper remedies have been taken, consult your sales or service dealer.

Symptoms	Major causes	Remedies
Left and right control levers do not move smoothly	<ul style="list-style-type: none">• Insufficient grease on the left and right control levers	<ul style="list-style-type: none">• Grease the levers. Refer to page 5-55.
Dumping, swinging or traveling operation not possible	<ul style="list-style-type: none">• Safety lock lever is raised (locked)• Fuse is blown	<ul style="list-style-type: none">• Lower the safety lock lever (release). Refer to page 2-34.• Replace the fuse. Refer to page 6-6.
Dumping or swinging force is insufficient	<ul style="list-style-type: none">• Hydraulic oil level too low• Hydraulic oil is not warm enough• Air cleaner is clogged• Hydraulic oil is not of suitable type	<ul style="list-style-type: none">• Add to the specified level. Refer to page 5-20.• Perform the warm-up. Refer to page 3-8.• Clean the air cleaner. Refer to page 5-34.• Replace the hydraulic oil. Refer to page 5-48.
Traveling is not possible or not smooth	<ul style="list-style-type: none">• Stones or foreign objects are stuck	<ul style="list-style-type: none">• Remove the foreign object.
Machine veers to the right/left	<ul style="list-style-type: none">• Stones or foreign objects are stuck	<ul style="list-style-type: none">• Remove the foreign object.
Switches are not functioning	<ul style="list-style-type: none">• Fuse is blown	<ul style="list-style-type: none">• Replace the fuse. Refer to page 6-6.
Travel speed cannot be changed	<ul style="list-style-type: none">• Fuse is blown	<ul style="list-style-type: none">• Replace the fuse. Refer to page 6-6.
Swinging is not possible or not smooth	<ul style="list-style-type: none">• Insufficient grease on the swing bearing	<ul style="list-style-type: none">• Grease the swing bearing. Refer to page 5-40.
Hydraulic oil temperature is too high	<ul style="list-style-type: none">• Hydraulic oil level too low	<ul style="list-style-type: none">• Add up to the specified level. Refer to page 5-20.



Symptoms	Major causes	Remedies
Starter motor turns but engine does not start	<ul style="list-style-type: none">• Insufficient fuel• Air in fuel system• Water in fuel system• Fuel is frozen.• Engine control system is faulty.• Fuel line is faulty.• Preheating device is faulty.	<ul style="list-style-type: none">• Add fuel. Refer to page 5-19.• Bleed air. Refer to page 6-8.• Drain water. Refer to page 5-29.• Warm the fuel pipe with hot water or wait until the ambient temperature becomes high.• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).
Tracks come off	<ul style="list-style-type: none">• Tracks too loose	<ul style="list-style-type: none">• Consult your sales or service dealer. Refer to page 5-28.
Engine exhaust is white or bluish	<ul style="list-style-type: none">• Excessive engine oil• Insufficient engine warm-up.• Engine control system is faulty.• Fuel line is faulty.• Prolonged idling (approx. two hours or more)• Poor fuel	<ul style="list-style-type: none">• Adjust to the specified level. Refer to page 5-17.• Perform the warm-up operation. Refer to page 3-5.• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).• Increase the engine RPM and check for smoke.• Replace the fuel.



TROUBLESHOOTING

OTHER SYMPTOMS

Symptoms	Major causes	Remedies
Engine exhaust is occasionally black	<ul style="list-style-type: none">• Air cleaner is clogged• Engine control system is faulty.• Fuel line is faulty.• Clogging in the exhaust line.• DPF is faulty.	<ul style="list-style-type: none">• Clean the air cleaner. Refer to page 5-34.• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).• Adjust or repair (ask your sales or service dealer).
Irregular noise is produced from the engine (combustion or mechanical noise)	<ul style="list-style-type: none">• Low quality fuel is being used• Engine is overheating• Damage inside the muffler	<ul style="list-style-type: none">• Replace the fuel.• Refer to “If the engine overheats” on page 6-3.• Replace the muffler. For replacement, ask your sales or service dealer.
Headlights do not come on.	<ul style="list-style-type: none">• The switch located on the light is off.	<ul style="list-style-type: none">• Turn on the switch located on the light.



TOWING



WARNING

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.

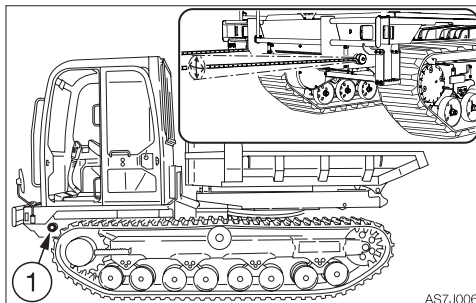
IMPORTANT: Do not tow a machine if its engine does not start or if the machine does not run. Doing so could damage the machine being towed.

IMPORTANT: Be sure to follow the steps below closely when towing. Failure to heed even one of the steps may cause damage to the hooks (1).

Towing the machine

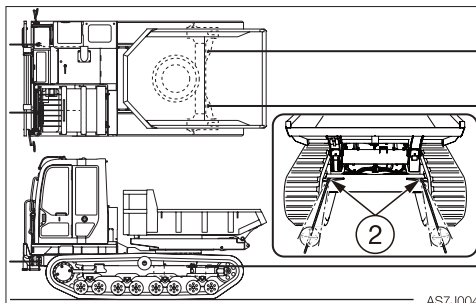
Use the procedure described below to tow heavy objects or the machine itself if it should get stuck in the mud and not be able to get out on its own.

<Front>



1. Attach the wire rope to the hooks (1).

<Rear>



- Permissible forces: 74.4 kN (16726 lbf)

1. Attach the wire rope to the shackle.
2. Fasten the shackle to the towing holes (2).
3. Make sure that the wire rope is horizontal and is lined up straight with the travel frame. (Cone angle of 20° or less)
4. Move the machine to tension the wire rope.
5. Move the machine at a low speed of 2 km/h (1.24 mph) or less to a place (convenient location for repair) a short distance from the site.

Note: Do not tow using only a towing hook or hole on one side.

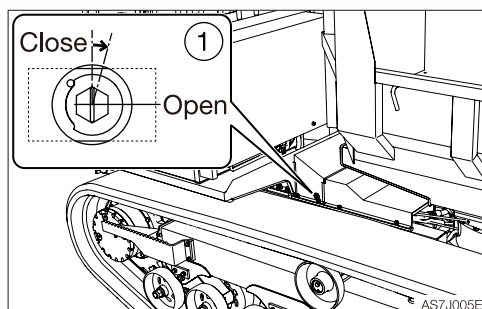


LOWERING THE DUMP BODY

WARNING

- Stop the engine and allow each part of the machine to cool down before performing maintenance.
 - The engine, the hydraulic system and many other parts of the machine are hot immediately after the engine is stopped. Touching these parts will cause burns.
 - The hydraulic oil is also hot and under high pressure immediately after the engine is stopped.
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.
- Keep away from the working area when the dump body is lowered. You may be hit by the dump body or the material falling out of it.
- Slowly turn the valve nut and lower the dump body at a slow pace.
- Do not loosen or remove the hoses not located in the specified places. Doing so could cause the oil to spurt out.

If the dump body must be fully lowered while the engine is stopped, use the following procedure.



IMPORTANT: After lowering the dump body, be sure to close the stop valve (1). If not closed, the dump body cannot be raised.

1. Slightly turn the stop valve (1) clockwise. (The dump body starts moving down.)
2. Slowly lower the dump body.
3. After the dump body is fully lowered, check the safety and stability of the machine.
4. Close the stop valve (1) by turning it counterclockwise.



IF THE CAB IS DAMAGED



WARNING

Immediately replace the damaged cab. Serious injury or death may occur if the machine is operated with damaged cab. Do not operate the machine until the replacement is complete. Do not try to repair the damaged cab by welding. Doing so could endanger the safety of the cab.

Cab part number: 07186-00005

SPECIFICATIONS



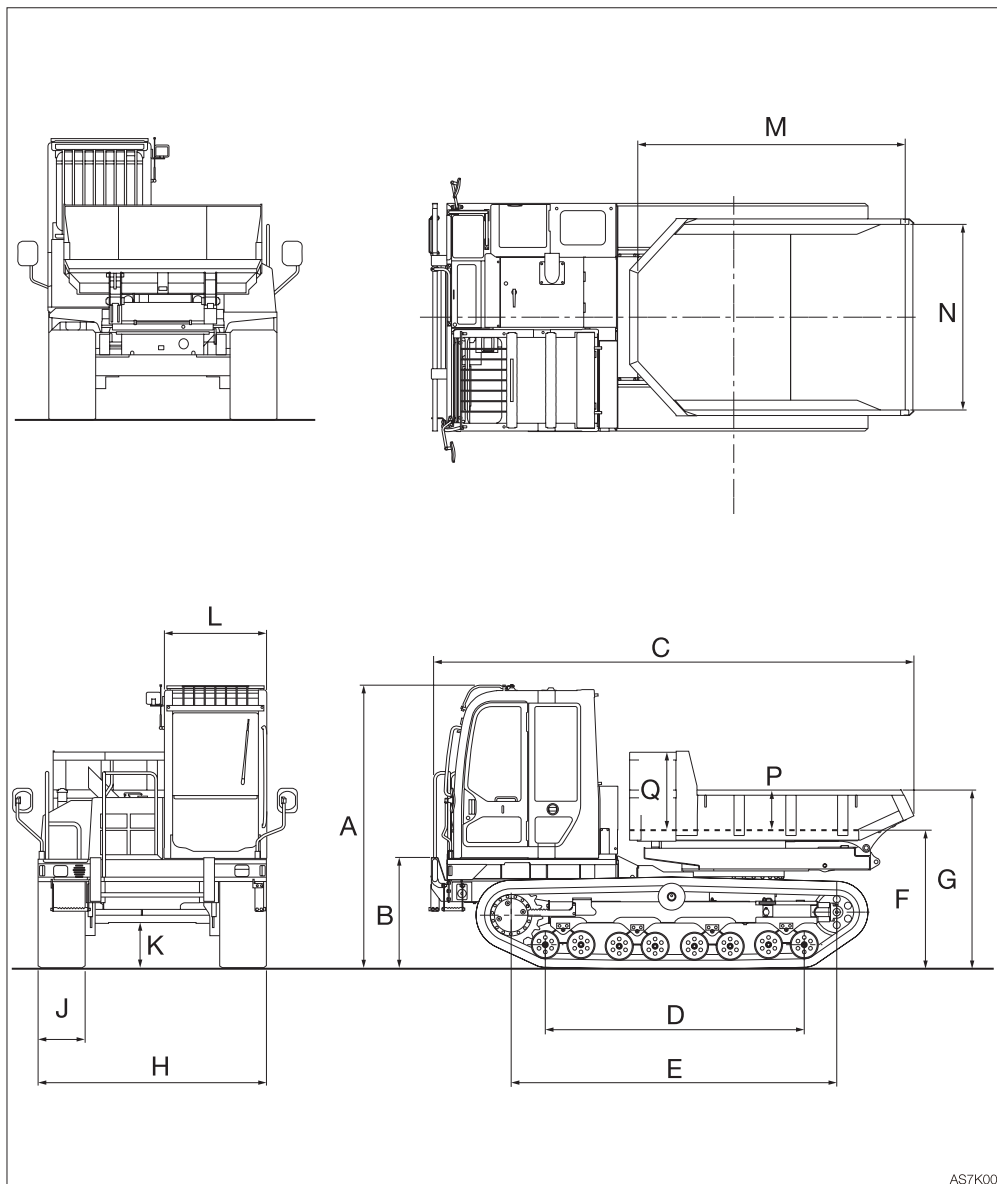


SPECIFICATIONS BASIC SPECIFICATIONS

BASIC SPECIFICATIONS

Type			Cab	
MASS				
Operating mass		kg (lb)	6410 (14130)	
PERFORMANCE				
Dump body capacity (Standard dump body)		m³ (cu.ft.)	Heaped	2.055 (72.57)
			Struck	1.15 (40.61)
Maximum loading mass		kg (lb)	3700 (8160)	
Travel speed		km/h (mph)	0~9.2 (5.72)	
Gradeability		degrees	30	
Ground pressure (ISO 16754: 2008)		kPa (psi)	With dump body full	41.5 (6.02)
			With dump body empty	26.3 (3.81)
Noise level	dB (A)	Sound power level		L _{WA} 103
		Emission sound pressure level at the operator's position (ISO 6396,2008:)		L _{pA} 82
ENGINE				
Manufacturer and model			Yanmar 4TNV94CHT-NTBC	
Rated output	Net (ISO 14396)	kW/min ⁻¹ (hp/rpm)	88.4/2500 (118.5/2500)	
	Net (ISO 9249/ SAEJ1349)	kW/min ⁻¹ (hp/rpm)	83.2/2500 (111.6/2500)	
Displacement		ml (cu.in.)	3053 (186.3)	
Starter		V-kW	12-3	
Alternator		V-kW	12-0.96	
Battery		V-A·h	12-72	

MACHINE DIMENSIONS



AS7K001



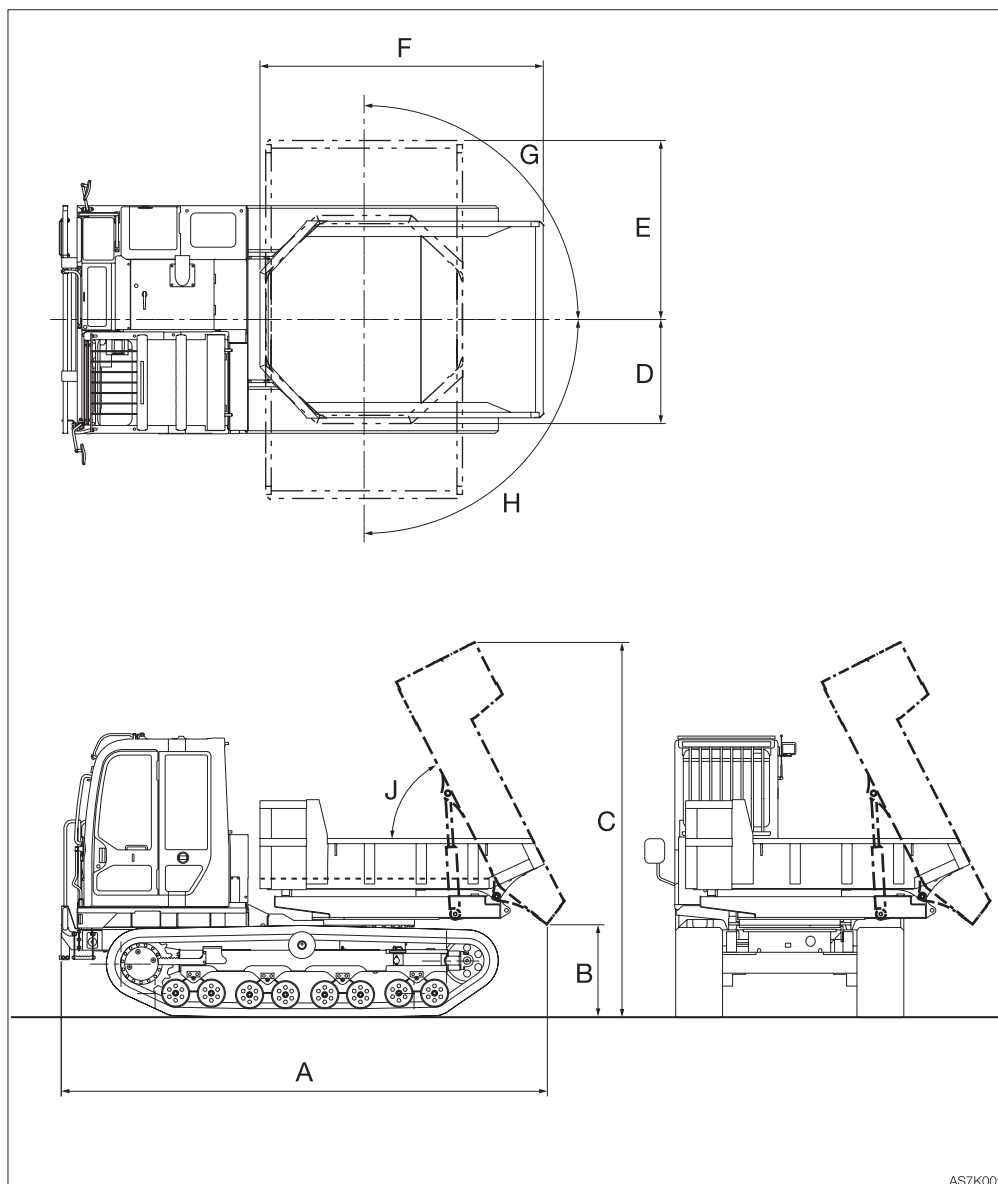
SPECIFICATIONS

MACHINE DIMENSIONS

Unit: mm (inch)

	Item	Standard dump body
A	Overall height	2725 (107.3)
B	Height of bumper	1040 (40.9)
C	Overall length	4660 (183.5)
D	Length of track ground	2500 (98.4)
E	Track base	3145 (123.8)
F	Dump body floor height	1330 (52.4)
G	Dump body flap height from the ground	1715 (67.5)
H	Overall width	2200 (86.6)
J	Track shoe width	450 (17.7)
K	Ground clearance of undercarriage	435 (17.1)
L	Cab width	980 (38.6)
M	Dump body length (inside)	2615 (103.0)
N	Dump body width	1795 (70.7)
P	Height of dump body gate	385 (15.2)
Q	Height of dump body front gate	750 (29.5)

OPERATING RANGES



AS7K002



Unit: mm (inch)

	Standard dump body
A	4680 (184.3)
B	885 (34.8)
C	3610 (142.0)
D	1005 (39.6)
E	1730 (68.1)
F	2735 (107.7)
G	90°
H	90°
J	65°

OPTIONS



GENERAL PRECAUTIONS

SAFETY PRECAUTIONS



WARNING

When removing or installing an attachment or optional part, take the following precautions.

- Consult with Takeuchi before installing an optional attachment.
- Do not use any attachments not approved by Takeuchi. Doing so may cause safety problems. Or, it may adversely affect the machine's operation or service life.
- We will not be held responsible for any injuries, accidents or damage to its products caused by the use by a non-approved attachment.
- Select a firm, level work area. Also, be sure to park in a well ventilated place.
- Clear obstacles and dangerous objects, and clean up spilled fuel immediately.
- When it is necessary to temporarily place a heavy object or an attachment on the ground during removal or installation, be sure to place it in a stable position.
- Use the proper procedure when mounting an attachment; otherwise serious damage could result. Consult your sales or service dealer for help.
- When hoisting, be sure to designate a person to act as a signalman. Follow the instructions of the signalman regarding the procedure and measures.
- Keep everyone out of the area when hoisting. There is a hazard of objects falling or contacting with people in the area.
- Use a crane to move heavy objects (25 kg (55 lb.) or greater).
- Before removing a heavy object, be sure to put a support to it. When lifting with a crane, pay attention to the center of gravity of the load to keep the machine in balance.
- Do not operate the machine while the load is lifted by a crane stand.

CAUTIONS WHEN INSTALLING ATTACHMENTS

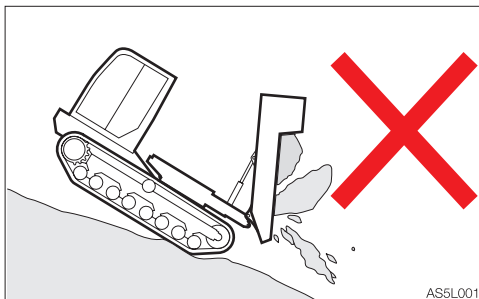
Be sure to perform a test operation after an optional or other special attachment has been replaced. Inspect the hydraulic oil level and recharge it as necessary. Consult your sales or service dealer for detailed procedures on installing/removing attachments.



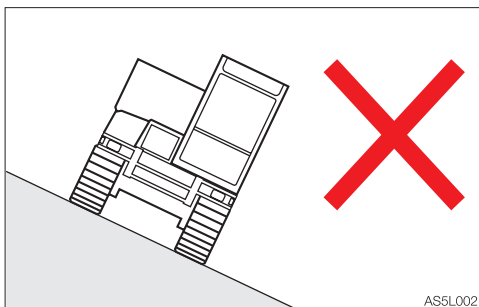
PRECAUTIONS WHEN OPERATING ATTACHMENTS

WARNING

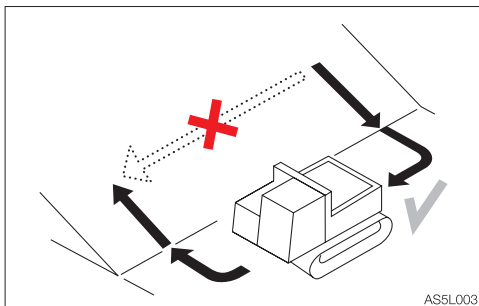
Long or large attachments reduce stability of the machine. The machine may tip over if it loses the balance when traveling or slewing on slopes. Never perform the operations listed below as they are extremely dangerous.



- Traveling down the slopes with the dump body raised



- Traveling across slopes



- Turning on slopes
- If there is a heavy attachment is installed, the machine takes larger operating range than usual to swing. Carefully judge the distance so as not to bump into an object around the machine. Keep a safe distance from surrounding obstacles to the attachment.
Also, be aware that the spontaneous drop (the gradual dropping of the attachment under its own weight when it is stopped in midair) gets larger as the attachment gets heavier.
- The machine can tip over more easily in the lateral direction than in the longitudinal direction.
 - Do not swing sideways when the dump body is heavily loaded. In particular, do not swing sideways on slopes.



OPTIONAL EQUIPMENT MASS

Standard machine mass (Not including operator)	Cab
	6330 (13960)
OPTION	
Air conditioner	61 (135)

Units: kg (lb)

- *: Mass of optional equipment is added to the standard machine mass.
- *: This table only contains the optional equipment of 10 kg (20 lb) or more in mass.

First Published August 2015
Third Published December 2016

OPERATOR'S MANUAL

TCR50 Crawler Dumper

Edited and issued by TAKEUCHI MFG. CO., LTD.

Printed in Japan by STATION M Co., Ltd.

CALIFORNIA

PROPOSITION 65 WARNING

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

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

Declaration of Conformity

We herewith declare that following named machine, based on its conception and design and in the form brought into service is in accordance with the relevant, basic safety and health requirements of the following EU directives. In case of any alteration of the machine not coordinated with us, this certificate loses its validity.

Designation of the machine	Crawler Dumper
Manufacturer	TAKEUCHI MFG. CO., LTD 205 Uwadaira, Sakaki-machi, Hanishina-gun, Nagano 389-0605, Japan

Model	TCR50
Engine type	4TNV94CHT-NTBC
Engine power	88.4kW @ 2500 rpm

The machine is in accordance with the requirements of EU directives:

- 1) Machine directive 2006/42/EC and appendix
- 2) Electromagnetic compatibility-regulation 2014/30/EU and appendix
- 3) Noise directive 2000/14/EC (Evaluation procedure according to appendix VI), 2005/88/EC and appendices.
- 4) Regulations on engine emissions: 97/68/EC as last amended by Directive 2011/88/EU.

Harmonized norms: EN474-1:2006+A4:2013, EN474-6:2006+A1:2009.

Compiler of the technical files:
Hans Friedrich
Oliver Scharschmidt
Wilhelm Schäfer GmbH
68307 Mannheim-Sandhofen GERMANY

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Akio Takeuchi, President