

PART No. EM1LD-1-1

# Operator's Manual

# ZAXIS

# 40U

# 50U

# Excavator

Serial No. 005001 and up

# HITACHI

## INTRODUCTION

---

**Read this manual** carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

**This manual should be considered** a permanent part of your machine and should remain with the machine when you sell it.

**This machine is of metric** design. Measurements in this manual are metric. Use only metric hardware and tools as specified.

- SI Units (International System of Units) are used in this manual.

For reference MKS system units and English units are also indicated in parentheses after the SI units.  
Example : 24.5 MPa (250 kgf/cm<sup>2</sup>, 3560 psi)

**Right-hand and left-hand** sides are determined by facing in the direction of forward travel.

**Write product identification numbers** in the Machine Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

**Warranty** is provided as a part of Hitachi's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that Hitachi will back its products where defects appear within the warranty period. In some circumstances, Hitachi also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

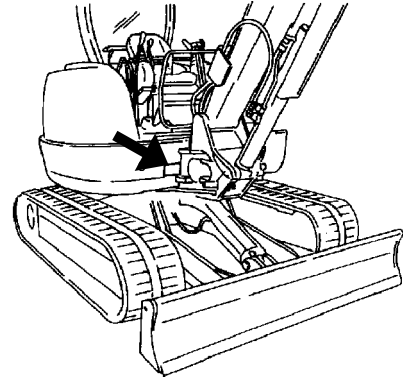
Prior to operating this machine in a country other than a country of its intended use, it may be necessary to make modifications to it so that it complies with the local standards (including safety standards) and requirements of that particular country. Please do not operate this machine outside of the country of its intended use until such compliance has been confirmed. Please contact Hitachi Construction Machinery Co., Ltd. or any of our authorized distributor or dealer if you have any questions concerning compliance.

# MACHINE NUMBERS

## MACHINE TYPE AND SERIAL NUMBER

MODEL/TYPE: \_\_\_\_\_

PRODUCT  
IDENTIFICATION  
NUMBER: \_\_\_\_\_



## PRODUCT IDENTIFICATION NUMBER (PIN)

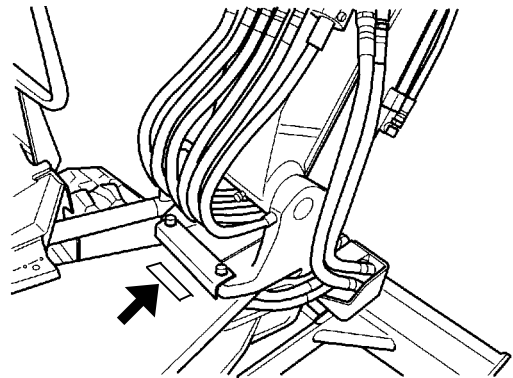
PRODUCT  
IDENTIFICATION  
NUMBER: \_\_\_\_\_

M571-01-018

 NOTE:

\_\_\_\_\_ Marks to indicate the start and  
end of the PIN  
\*HCM1LD00000005001\*

PRODUCT IDENTIFICATION  
NUMBER (PIN)



M570-07-009

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**



---

# CONTENTS

---

## MACHINE NUMBERS

Machine Type and Serial Number  
Product Identification Number (PIN)

## SAFETY

Recognize Safety Information ..... S1  
Understand Signal Words ..... S1  
Follow Safety Instructions ..... S2  
Prepare for Emergencies ..... S2  
Wear Protective Clothing ..... S3  
Protect Against Noise ..... S3  
Inspect Machine ..... S3  
Use Handholds and Steps ..... S4  
Adjust the Operator's Seat ..... S4  
Fasten Your Seat Belt ..... S5  
Move and Operate Machine Safely ..... S5  
Operate Only from Operator's Seat ..... S6  
Jump Starting ..... S6  
Keep Riders Off Machine ..... S6  
Investigate Job Site Beforehand ..... S7  
Protect Against Falling Stones and Debris ..... S7  
Provide Signals for Jobs Involving  
    Multiple Numbers of Machines ..... S8  
Confirm Direction of Machine to be Driven ..... S8  
Drive Machine Safely ..... S9  
Avoid Injury from Rollaway Accidents ..... S10  
Avoid Injury from Back-Over  
    and Swing Accidents ..... S11  
Keep Person Clear from Working Area ..... S12  
Never Position Bucket Over Anyone ..... S12  
Avoid Undercutting ..... S12  
Avoid Tipping ..... S13  
Never Undercut a High Bank ..... S13  
Dig with Caution ..... S14  
Operate with Caution ..... S14  
Avoid Power Lines ..... S14  
Do Not Use for Craning Operation ..... S15  
Protect Against Flying Debris ..... S15  
Park Machine Safely ..... S15  
Handle Fluids Safely – Avoid Fires ..... S16  
Safety Transporting ..... S17  
Practice Safe Maintenance ..... S18  
Support Machine Properly ..... S19  
Stay Clear of Moving Parts ..... S19  
Warn Others of Service Work ..... S19  
Prevent Parts from Flying ..... S20  
Store Attachments Safely ..... S20  
Prevent Burns ..... S21  
Replace Rubber Hoses Periodically ..... S21  
Avoid High-Pressure Fluids ..... S22  
Prevent Fires ..... S23  
Evacuating in Case of Fire ..... S24  
Beware of Exhaust Fumes ..... S24  
Avoid Heating Near Pressurized Fluid Lines ..... S25  
Avoid Applying Heat to Lines  
    Containing Flammable Fluids ..... S25

Remove Paint before Welding or Heating ..... S25  
Prevent Battery Explosions ..... S26  
Avoid Harmful Asbestos Dust ..... S26  
Handle Chemical Products Safely ..... S27  
Dispose of Waste Properly ..... S27

**SAFETY SIGNS** ..... S28

**COMPONENTS NAME** ..... 1-1

## OPERATOR'S STATION

Pedals and Levers ..... 1-2  
Monitor Panel and Switch Panel ..... 1-3  
Key Switch ..... 1-4  
Work Light Switch ..... 1-4  
Monitor Panel ..... 1-5  
Alternator Indicator ..... 1-5  
Engine Oil Pressure Indicator ..... 1-5  
Preheat Indicator ..... 1-6  
Coolant Temperature Gauge  
    and Overheat Indicator ..... 1-6  
Fuel Gauge and Fuel Level Indicator ..... 1-7  
Hour Meter ..... 1-7  
Cab Heater ..... 1-8  
Wiper/Washer Switch ..... 1-8  
Opening and Closing Front Window ..... 1-9  
Air Conditioner Operation (Optional Unit  
    for Cab-equipped Machines) ..... 1-10  
Cooling Operation ..... 1-11  
Tips For Optimal Air Conditioner Usage ..... 1-12  
Emergency Exit ..... 1-13  
Tool Box and Operator's Manual Box ..... 1-14  
Cab Door Release Lever ..... 1-14  
Cab Light ..... 1-14  
Adjusting the Operator's Seat ..... 1-15  
Seat Belt ..... 1-16

## BREAK-IN

Breaking in a New Machine ..... 2-1  
Correct Break-In Procedures ..... 2-1

## OPERATING THE ENGINE

Before Starting Engine ..... 3-1  
Engine Speed Control Lever ..... 3-1  
Starting the Engine ..... 3-2  
Check Instruments after Starting ..... 3-2  
Using Booster Batteries ..... 3-3  
Stopping the Engine ..... 3-4

## DRIVING THE MACHINE

Travel Levers ..... 4-1  
Fast Speed Travel Pedal ..... 4-2  
Traveling ..... 4-3  
Operating on Soft Ground ..... 4-4  
Raise One Track Using Boom and Arm ..... 4-4  
Towing Machine a Short Distance ..... 4-5

---

# CONTENTS

---

Operating in Water or Mud.....	4-6
Precautions for Traveling on Slopes .....	4-7
Parking and Stopping on a Slope.....	4-8
Parking the Machine.....	4-8

## OPERATING THE MACHINE

Control Lever (ISO Excavator Pattern).....	5-1
Boom-Swing Pedal .....	5-2
Optional Pedal .....	5-3
Blade Lever .....	5-5
Pilot Control Shut-Off Lever .....	5-6
Warming Up Operation .....	5-8
Warming Up in Cold Weather .....	5-8
Precautions for Operations .....	5-9
Avoid Tipping.....	5-10
Operating Backhoe.....	5-11
Grading Operation.....	5-12
Avoid Abusive Operation.....	5-12
Select Correct Track Shoes .....	5-13
Operating Tips.....	5-13
Object Handling --- If Equipped .....	5-14
Avoid Hitting Blade with Front Attachment.....	5-15
Avoid Hitting Blade with Bucket.....	5-15
Avoid Striking the Blade into a Rock .....	5-15
Boom Cylinder May Hit Track.....	5-16
Precautions for Installing Wide Bucket or Special Type Bucket .....	5-16
Operate the Machine Safely.....	5-17
Using Rubber Crawler .....	5-18
Traveling and Other Cautions .....	5-19
Emergency Stop Procedure to Lower Front Attachment.....	5-20
Hydraulic Breaker Operating Tips --- Optional .....	5-21
Replacement of Hydraulic Oil and Filter Element.....	5-23
Operating Hydraulic Crusher --- If Equipped .....	5-24
After Finishing Work.....	5-25

## TRANSPORTING

Transporting by Road.....	6-1
Transporting the Machine by Truck.....	6-1
Precautions for Transporting Machines with Rubber Tracks .....	6-3
Lifting the Entire Machine with a Crane.....	6-5

## MAINTENANCE

Correct Maintenance and Inspection Procedures .....	7-1
Service Your Machine at Specified Intervals.....	7-2
Check the Hour Meter Regularly .....	7-2
Prepare Machine for Maintenance .....	7-3
Hood and Access Covers.....	7-4
Daily Inspection .....	7-5
Daily Inspection Check List .....	7-6
Periodic Replacement of Parts.....	7-7

Maintenance Guide.....	7-8
The Brand Names of Recommended Oils and Lubricants.....	7-10
A. Greasing .....	7-11
Front Joint Pins.....	7-11
Bucket and Link Pins.....	7-13
Precautions for Front Attachment and Blade Removal.....	7-13
Swing Bearing.....	7-14
Swing Internal Gear .....	7-15
Control Lever Universal Joint .....	7-16
B. Engine .....	7-17
Engine Oil Level.....	7-17
Change Engine Oil .....	7-18
Replace Engine Oil Filters .....	7-18
C. Transmission.....	7-20
D. Hydraulic System.....	7-22
Inspection and Maintenance of Hydraulic Equipment .....	7-22
Check Hydraulic Oil Level .....	7-23
Drain Hydraulic Tank Sump.....	7-26
Change Hydraulic Oil.....	7-27
Clean Suction Filter .....	7-27
Replace Hydraulic Oil Tank Filter .....	7-30
Replace Pilot Oil Filter .....	7-31
Check Hoses and Lines .....	7-32
E. Fuel System.....	7-38
Drain Fuel Tank Sump .....	7-39
Check Water Separator.....	7-39
Replace Fuel Filter .....	7-40
Check Fuel Hoses .....	7-41
F. Air Cleaner.....	7-42
Clean the Air Cleaner Element.....	7-42
G. Cooling System .....	7-43
Check Coolant Level .....	7-44
Check and Adjust Fan Belt Tension .....	7-45
Change Coolant.....	7-46
Clean Radiator.....	7-47
H. Electrical System .....	7-48
Replacing Fuses.....	7-50
Electical Socket .....	7-51
I. Miscellaneous.....	7-52
Check Bucket Teeth .....	7-52
Replace Bucket .....	7-54
Adjusting Bucket Linkage .....	7-55
Check Track Sag (rubber crawler) .....	7-56
Replace Rubber Track .....	7-58
Check Track Sag (steel crawler) .....	7-59
Check and Replace Seat Belt.....	7-62
Check Fuel Injection Nozzles .....	7-62
Check and Adjust Valve Clearance .....	7-62
Check Injection Timing .....	7-63
Measure Engine Compression pressure .....	7-63
Check Starter and Alternator .....	7-63
Check Radiator Cap .....	7-63

---

# CONTENTS

---

Check Tightening Torque of Bolts and Nuts.....	7-64
Often-Replaced Parts.....	7-66
Maintenance Under Special Environmental Conditions .....	7-67

## **STORAGE**

Storing the Machine .....	10-1
Removing the Machine From Storage .....	10-2

## **TROUBLESHOOTING**

Troubleshooting.....	11-1
----------------------	------

## **SPECIFICATIONS**

Specifications .....	12-1
Working Ranges.....	12-4
Shoe Types and Applications .....	12-7
Bucket Types and Applications .....	12-10

<b>INDEX</b> .....	14-1
--------------------	------

---



# SAFETY

## RECOGNIZE SAFETY INFORMATION


- This is the **SAFETY ALERT SYMBOL**.
  - When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.
  - Follow recommended precautions and safe operating practices.



001-E01A-0001-2

SA-001

## UNDERSTAND SIGNAL WORDS

- On machine safety signs, signal words designating the degree or level of hazard - **DANGER**, **WARNING**, or **CAUTION** - are used with the safety alert symbol.
  - **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
  - **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
  - **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
  - **DANGER** or **WARNING** safety signs are located near specific hazards. General precautions are listed on **CAUTION** safety signs.
- **CAUTION** also calls attention to safety messages in this manual.
- To avoid confusing machine protection with personal safety messages, a signal word **IMPORTANT** indicates a situation which, if not avoided, could result in damage to the machine.
-  **NOTE** indicates an additional explanation for an element of information.



**IMPORTANT**



002-E01A-0461-6

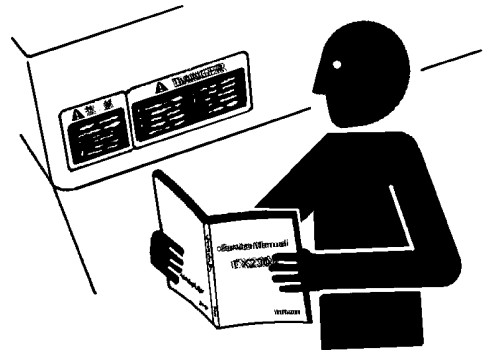
SA-1223

## SAFETY

### FOLLOW SAFETY INSTRUCTIONS

- Carefully read and follow all safety signs on the machine and all safety messages in this manual.
- Safety signs should be installed, maintained and replaced when necessary.
  - If a safety sign or this manual is damaged or missing, order a replacement from your authorized dealer in the same way you order other replacement parts (be sure to state machine model and serial number when ordering).
- Learn how to operate the machine and its controls correctly and safely.
- Allow only trained, qualified, authorized personnel to operate the machine.
- Keep your machine in proper working condition.
  - Unauthorized modifications of the machine may impair its function and/or safety and affect machine life.
- The safety messages in this SAFETY chapter are intended to illustrate basic safety procedures of machines. However it is impossible for these safety messages to cover every hazardous situation you may encounter. If you have any questions, you should first consult your supervisor before operating or performing maintenance work on the machine.

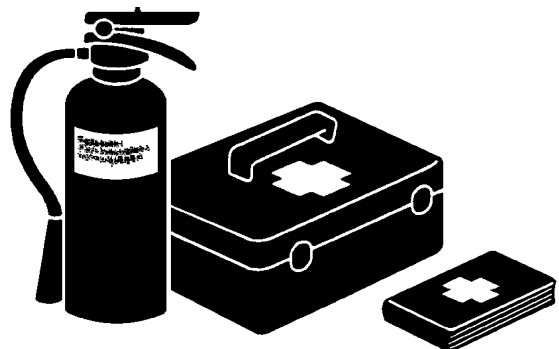
003-E01A-0003-5



SA-003

### PREPARE FOR EMERGENCIES

- Be prepared if a fire starts or if an accident occurs.
  - Keep a first aid kit and fire extinguisher on hand.
  - Thoroughly read and understand the label attached on the fire extinguisher to use it properly.
  - Establish emergency procedure guidelines to cope with fires and accidents.
  - Keep emergency numbers for doctors, ambulance service, hospital, and fire department posted near your telephone.



SA-437

004-E01A-0437-3

## SAFETY

---

### WEAR PROTECTIVE CLOTHING

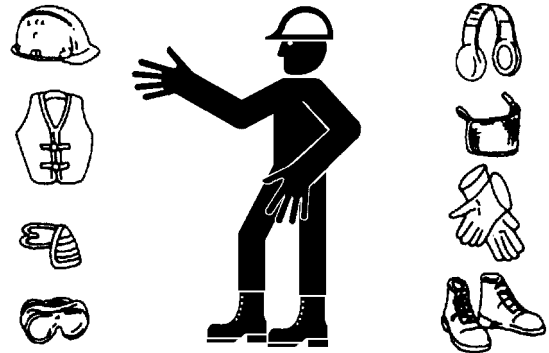
- Wear close fitting clothing and safety equipment appropriate to the job.

You may need:

- A hard hat
- Safety shoes
- Safety glasses, goggles, or face shield
- Heavy gloves
- Hearing protection
- Reflective clothing
- Wet weather gear
- Respirator or filter mask.

Be sure to wear the correct equipment and clothing for the job. Do not take any chances.

- Avoid wearing loose clothing, jewelry, or other items that can catch on control levers or other parts of the machine.
- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.



SA-438

005-E01A-0438-4

---

### PROTECT AGAINST NOISE

- Prolonged exposure to loud noise can cause impairment or loss of hearing.
- Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortably loud noises.



006-E01A-0434-2

SA-434

---

### INSPECT MACHINE

- Inspect your machine carefully each day or shift by walking around it before you start it to avoid personal injury.
- In the walk-around inspection, be sure to cover all points described in the “PRE-START INSPECTION” chapter.



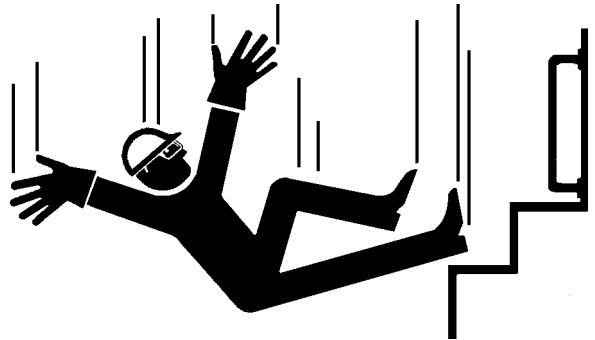
007-E01A-0435-2

SA-435

## SAFETY

### USE HANDHOLDS AND STEPS

- Falling is one of the major causes of personal injury.
  - When you get on and off the machine, always face the machine and maintain a three-point contact with the steps and handrails.
  - Do not use any controls as handholds.
  - Never jump on or off the machine. Never mount or dismount a moving machine.
  - Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.



SA-439

008-E01A-0439-3

### ADJUST THE OPERATOR'S SEAT

- A poorly adjusted seat for either the operator or for the work at hand may quickly fatigue the operator leading to misoperations.
  - The seat should be adjusted whenever changing the operator for the machine.
  - The operator should be able to fully depress the pedals and to correctly operate the control levers with his back against the seat back.
  - If not, move the seat forward or backward, and check again.



SA-378

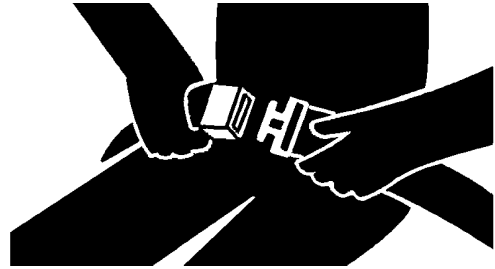
009-E01A-0378-3

## SAFETY

---

### FASTEN YOUR SEAT BELT

- If the machine should overturn, the operator may become injured and/or thrown from the cab. Additionally the operator may be crushed by the overturning machine, resulting in serious injury or death.
- Prior to operating the machine, thoroughly examine webbing, buckle and attaching hardware. If any item is damaged or worn, replace the seat belt or component before operating the machine.
- Be sure to remain seated with the seat belt securely fastened at all times when the machine is in operation to minimize the chance of injury from an accident.

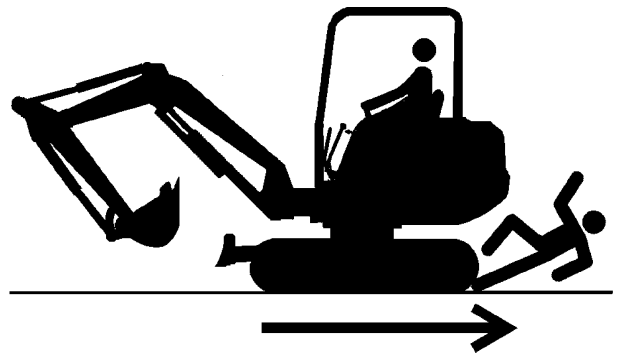


SA-237

010-E02A-0237-3

### MOVE AND OPERATE MACHINE SAFELY

- Bystanders can be run over.
- Take extra care not to run over bystanders. Confirm the location of bystanders before moving, swinging, or operating the machine.
- Always keep the travel alarm and horn in working condition (if equipped). It warns people when the machine starts to move.
- Use a signal person when moving, swinging, or operating the machine in congested areas. Coordinate hand signals before starting the machine.



SA-659

011-E01A-0529-4

## SAFETY

### OPERATE ONLY FROM OPERATOR'S SEAT

- Inappropriate engine starting procedure may cause the machine to runaway, possibly resulting in serious injury or death.
- Start the engine only from the operator's seat.
- NEVER start the engine while standing on the track or on ground.
- Do not start engine by shorting across starter terminals.
- Before starting the engine, confirm that all control levers are in neutral.

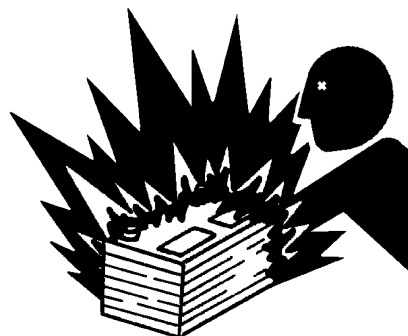


SA-444

012-E01A-0444-3

### JUMP STARTING

- Battery gas can explode, resulting in serious injury.
- If the engine must be jump started, be sure to follow the instructions shown in the "OPERATING THE ENGINE" chapter.
- The operator must be in the operator's seat so that the machine will be under control when the engine starts. Jump starting is a two-person operation.
- Never use a frozen battery.
- Failure to follow correct jump starting procedures could result in a battery explosion or a runaway machine.

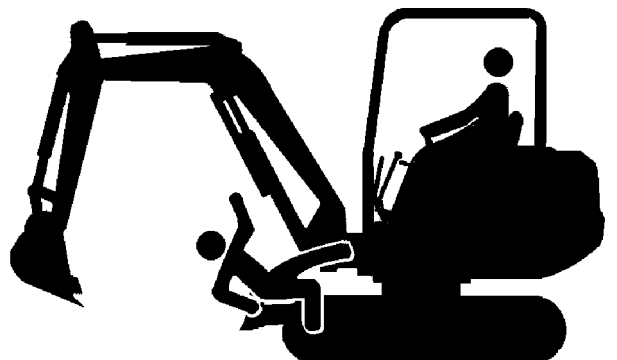


SA-032

013-E01A-0032-3

### KEEP RIDERS OFF MACHINE

- Riders on machine are subject to injury such as being struck by foreign objects and being thrown off the machine.
- Only allow the operator on the machine. Keep riders off.
- Riders also obstruct the operator's view, resulting in the machine being operated in an unsafe manner.



014-E01A-0530-2

SA-660

## SAFETY

---

### INVESTIGATE JOB SITE BEFOREHAND

- When working at the edge of an excavation or on a road shoulder, the machine could tip over, possibly resulting in serious injury or death.
  - Investigate the configuration and ground conditions of the job site beforehand to prevent the machine from falling and to prevent the ground, stockpiles, or banks from collapsing.
  - Make a work plan. Use machines appropriate to the work and job site.
  - Reinforce ground, edges, and road shoulders as necessary. Keep the machine well back from the edges of excavations and road shoulders.
  - When working on an incline or on a road shoulder, employ a signal person as required.
  - Confirm that your machine is equipped a FOPS cab before working in areas where the possibility of falling stones or debris exist.
  - When the footing is weak, reinforce the ground before starting work.
  - When working on frozen ground, be extremely alert. As ambient temperatures rise, footing becomes loose and slippery.



SA-661

015-E01A-0531-5

---

### PROTECT AGAINST FALLING STONES AND DEBRIS

- Confirm that your machine is FOPS cab equipped before working in areas where the possibility of falling stones or debris exist.

016-E01A-0510-2

## SAFETY

---

### PROVIDE SIGNALS FOR JOBS INVOLVING MULTIPLE NUMBERS OF MACHINES

- For jobs involving multiple numbers of machines, provide signals commonly known by all personnel involved. Also, appoint a signal person to coordinate the job site. Make sure that all personnel obey the signal person's directions.

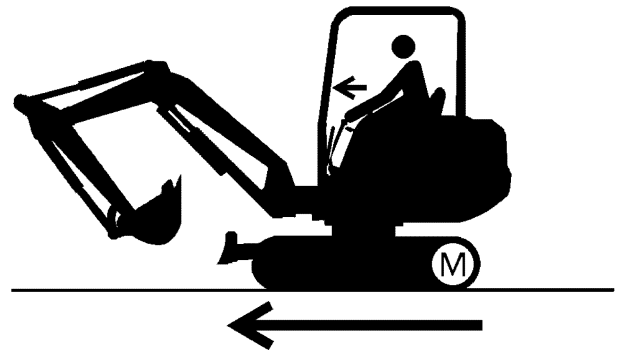


018-E01A-0481-2

SA-481

### CONFIRM DIRECTION OF MACHINE TO BE DRIVEN

- Incorrect travel pedal/lever operation may result in serious injury death.
- Before driving the machine, confirm the position of the undercarriage in relation to the operator's position. If the travel motors are located in front of the cab, the machine will move in reverse when travel pedals/levers are operated to the front.



017-E01A-0532-2

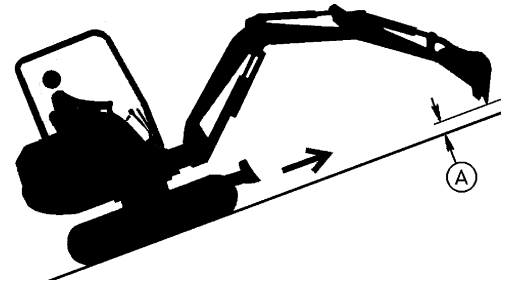
SA-662

# SAFETY

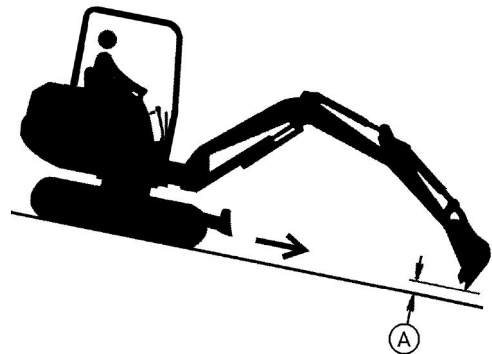
## DRIVE MACHINE SAFELY

- Before moving the machine, confirm which way to move travel pedals/levers for the corresponding direction you wish to go.
  - Pushing the travel levers forward moves the machine towards the idlers. (Refer to the Driving the Machine "Travel Levers" section for correct travel operation.)
- Traveling on a grade may cause the machine to slip or to overturn, possibly resulting in serious injury or death.
  - When traveling up or down a grade, keep the bucket in the direction of travel, approximately 200 to 300 mm (8 to 12 in) (A) above the ground.
  - If machine starts to skid or becomes unstable, lower the bucket immediately.
- Traveling across the face of slope or steering on a slope may cause the machine to skid or to turnover. If the direction must be changed, move the machine to level ground, then, change the direction to ensure safe operation.

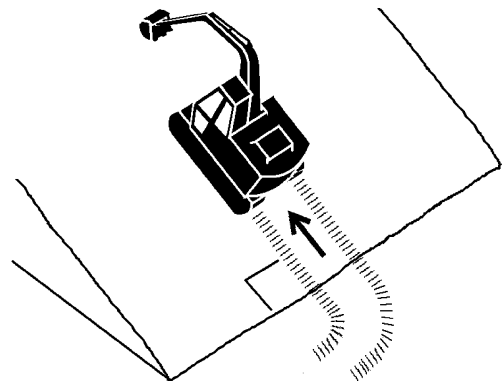
019-E02A-0547-8



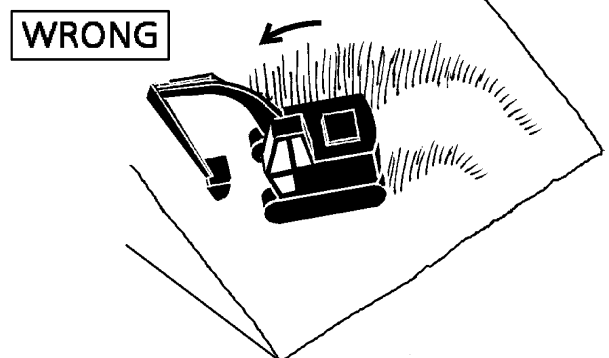
SA-663



SA-664



SA-441



SA-442

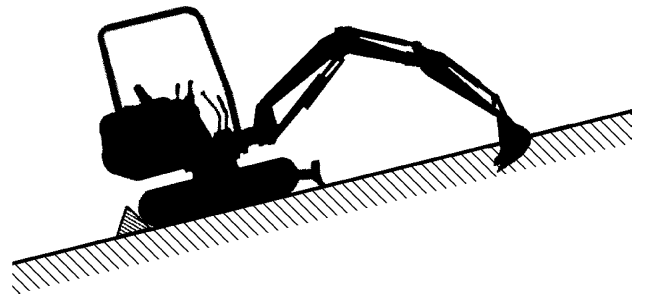
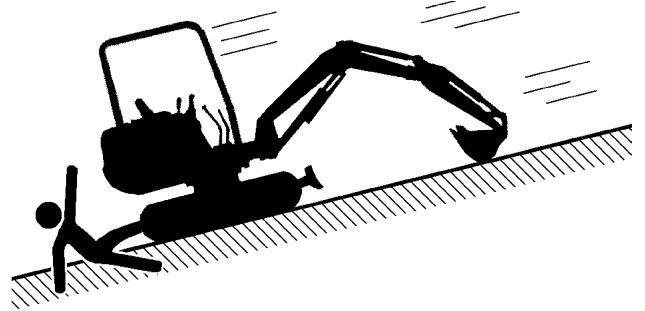
## SAFETY

### AVOID INJURY FROM ROLLAWAY ACCIDENTS

- Death or serious injury may result if you attempt to mount or stop a moving machine.

To avoid rollaways:

- Select level ground when possible to park machine.
- Do not park the machine on a grade.
- Lower the bucket to the ground.
- Run the engine at slow idle speed without load for 5 minutes to cooling it.
- Stop the engine and remove the key from the key switch.
- Pull the pilot controls shut-off lever to LOCK position.
- Block both tracks and lower the bucket to the ground, thrust the bucket teeth into the ground if you must park on a grade.
- Position the machine to prevent rolling.
- Park a reasonable distance from other machines.



SA-666

020-E01A-0548-4

## SAFETY

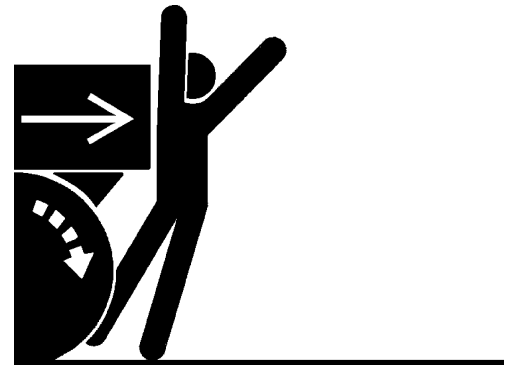
---

### AVOID INJURY FROM BACK-OVER AND SWING ACCIDENTS

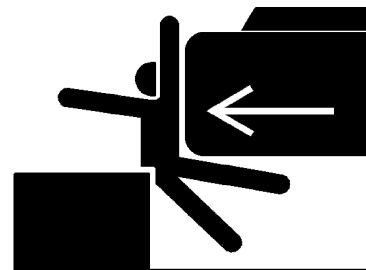
- If any person is present near the machine when backing or swinging the upperstructure, the machine may hit or run over that person, resulting in serious injury or death.

To avoid back-over and swing accidents:

- Always look around **BEFORE YOU BACK UP AND SWING THE MACHINE**. BE SURE THAT ALL BYSTANDERS ARE CLEAR.
- Keep the travel alarm in working condition (if equipped). ALWAYS BE ALERT FOR BYSTANDERS MOVING INTO THE WORK AREA. USE THE HORN OR OTHER SIGNAL TO WARN BYSTANDERS BEFORE MOVING MACHINE.
- USE A SIGNAL PERSON WHEN BACKING UP IF YOUR VIEW IS OBSTRUCTED. ALWAYS KEEP THE SIGNAL PERSON IN VIEW. Use hand signals, which conform to your local regulations, when work conditions require a signal person.
- No machine motions shall be made unless signals are clearly understood by both signalman and operator.
- Learn the meanings of all flags, signs, and markings used on the job and confirm who has the responsibility for signaling.
- Keep windows, mirrors, and lights clean and in good condition.
- Dust, heavy rain, fog, etc., can reduce visibility. As visibility decreases, reduce speed and use proper lighting.
- Read and understand all operating instructions in the operator's manual.



SA-383



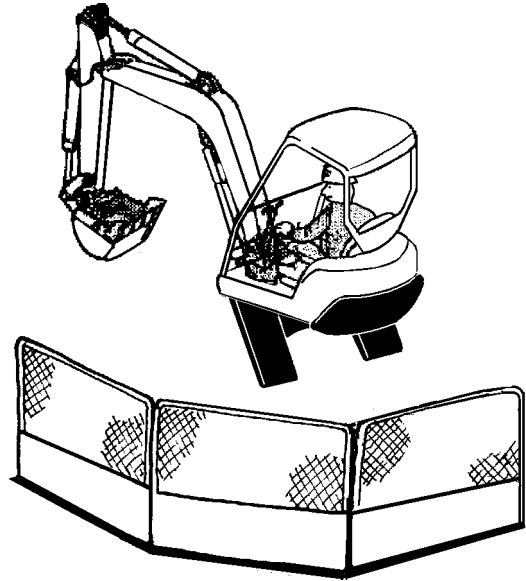
SA-384

021-E01A-0494-8

## SAFETY

### KEEP PERSON CLEAR FROM WORKING AREA

- A person may be hit severely by the swinging front attachment or counterweight and/or may be crushed against an other object, resulting in serious injury or death.
- Keep all persons clear from the area of operation and machine movement.
- Before operating the machine, set up barriers to the sides and rear area of the bucket swing radius to prevent anyone from entering the work area.



022-E01A-0537-3

SA-667

### NEVER POSITION BUCKET OVER ANYONE

- Never lift, move, or swing bucket above anyone or a truck cab. Serious injury or machine damage may result due to bucket load spill or due to collision with the bucket.

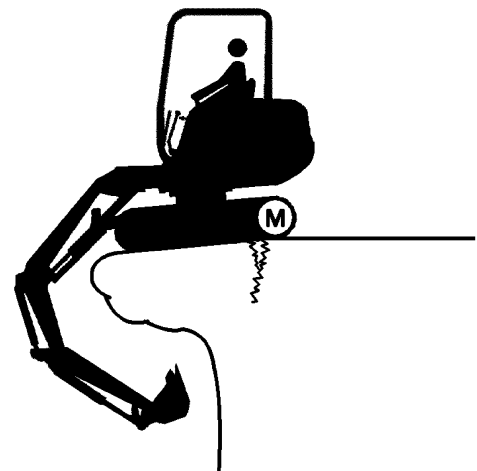


023-E01A-0538-2

SA-668

### AVOID UNDERCUTTING

- In order to retreat from the edge of an excavation if the footing should collapse, always position the undercarriage perpendicular to the edge of the excavation with the travel motors at the rear.
- If the footing starts to collapse and if retreat is not possible, do not panic. Often, the machine can be secured by lowering the front attachment, in such cases.



024-E01A-0539-2

SA-669

## SAFETY

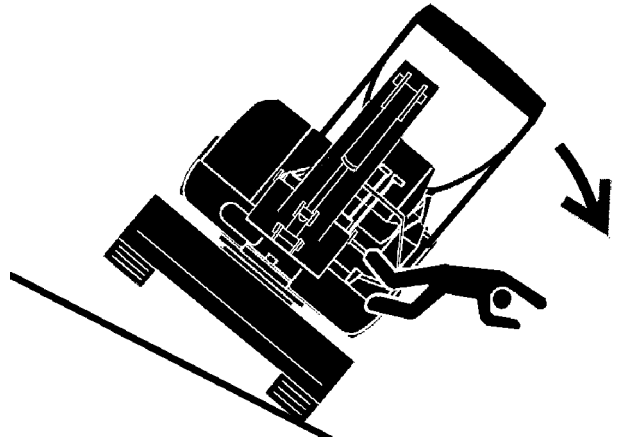
---

### AVOID TIPPING

- The danger of tipping is always present when operating on a grade, possibly resulting in serious injury or death.

To avoid tipping:

- Be extra careful before operating on a grade.
  - Prepare machine operating area flat.
  - Keep the bucket low to the ground and close to the machine.
  - Reduce operating speeds to avoid tipping or slipping.
  - Avoid changing direction when traveling on grades.
  - NEVER attempt to travel across a grade steeper than 15 degrees if crossing the grade is unavoidable.
  - Reduce swing speed as necessary when swinging loads.
- Be careful when working on frozen ground.
  - Temperature increases will cause the ground to become soft and make ground travel unstable.

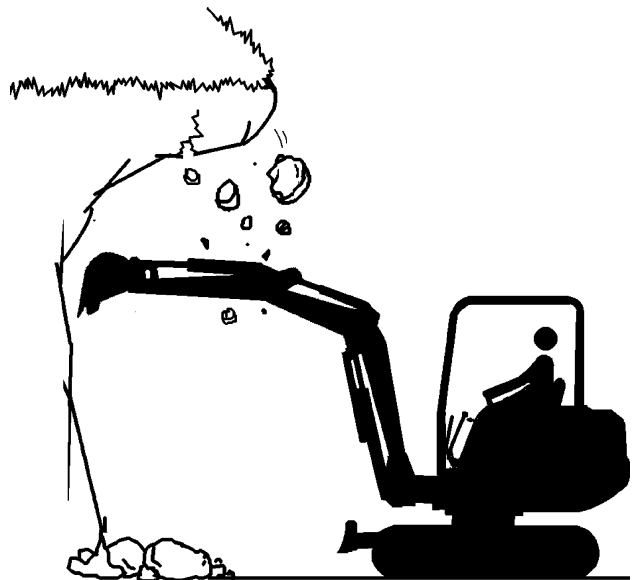


SA-670

025-E01A-0540-4

### NEVER UNDERCUT A HIGH BANK

- The edges could collapse or a land slide could occur causing serious injury or death.



026-E01A-0541-2

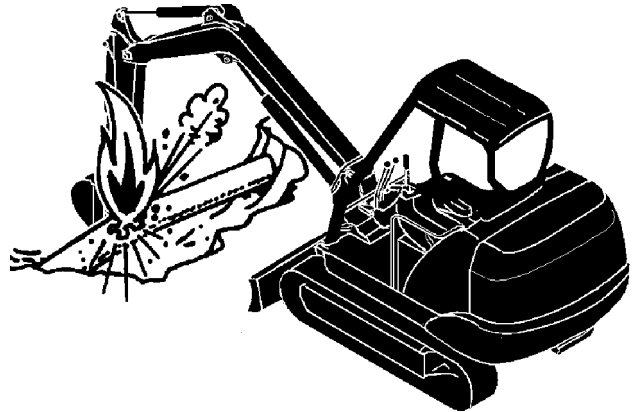
SA-671

## SAFETY

### DIG WITH CAUTION

- Accidental severing of underground cables or gas lines may cause an explosion and/or fire, possibly resulting in serious injury or death.
  - Before digging check the location of cables, gas lines, and water lines.
  - Keep the minimum distance required, by law, from cables, gas lines, and water lines.
  - If a fiber optic cable should be accidentally severed, do not look into the end. Doing so may result in serious eye injury.
  - Contact your local "diggers hot line" if available in your area, and/or the utility companies directly. Have them mark all underground utilities.

027-E01A-0542-2

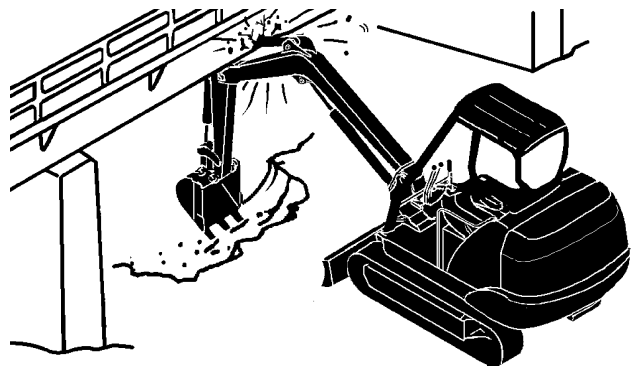


SA-672

### OPERATE WITH CAUTION

- If the front attachment or any other part of the machine hits against an overhead obstacle, such as a bridge, both the machine and the overhead obstacle will be damaged, and personal injury may result as well.
  - Take care to avoid hitting overhead obstacles with the boom or arm.

028-E01A-0543-2

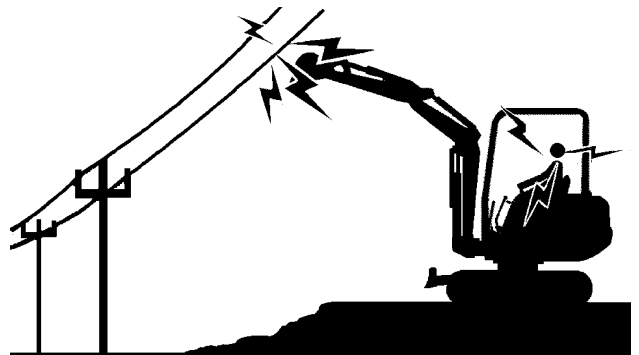


SA-673

### AVOID POWER LINES

- Serious injury or death can result if the machine or front attachments are not kept a safe distance from electric lines.
  - When operating near an electric line, NEVER move any part of the machine or load closer than 3 m (10 ft) plus twice the line insulator length.
  - Check and comply with any local regulations that may apply.
  - Wet ground will expand the area that could cause any person on it to be affected by electric shock. Keep all bystanders or co-workers away from the site.

029-E01A-0544-2



SA-674



**Suggest:**

**For more complete manuals. Please go to the home page.**

**<https://www.ebooklibonline.com>**

**If the above button click is invalid. Please download this document first, and then click the above link to download the complete manual.**

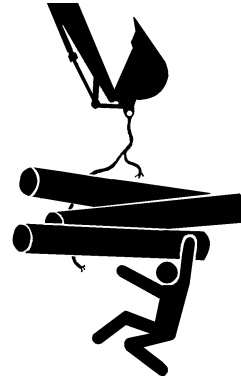
**Thank you so much for reading**

## SAFETY

---

### DO NOT USE FOR CRANING OPERATION

- This machine is not equipped with any devices that could allow the machine to be used for craning operation. If the machine is used for craning operation, the machine may tip over and/or lifted load may fall, possibly resulting in serious injury or death.
- NEVER use the machine for craning operation.

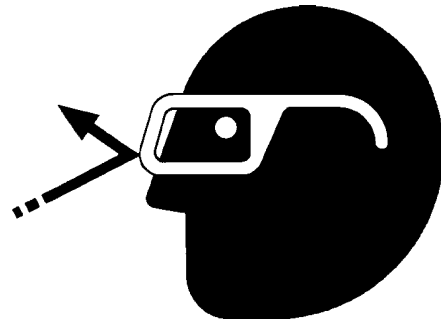


030-E01A-0014-2

SA-014

### PROTECT AGAINST FLYING DEBRIS

- If flying debris hit eyes or any other part of the body, serious injury may result.
- Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.
- Keep bystanders away from the working area before striking any object.



031-E01A-0432-2

SA-432

### PARK MACHINE SAFELY

To avoid accidents:

- Park machine on a level surface.
- Lower bucket to the ground.
- Run engine at slow idle speed without load for 5 minutes.
- Turn key switch to OFF to stop engine.
- Remove the key from the key switch.
- Pull the lock lever to the LOCK position.
- Close windows, roof vent, and cab door.
- Lock all access doors and compartments.



SA-675

033-E01A-0545-4

## SAFETY

---

### HANDLE FLUIDS SAFELY – AVOID FIRES

- Handle fuel with care; it is highly flammable. If fuel ignites, an explosion and/or a fire may occur, possibly resulting in serious injury or death.
  - Do not refuel the machine while smoking or when near open flame or sparks.
  - Always stop the engine before refueling the machine.
  - Fill the fuel tank outdoors.
- All fuels, most lubricants, and some coolants are flammable.
  - Store flammable fluids well away from fire hazards.
  - Do not incinerate or puncture pressurized containers.
  - Do not store oily rags; they can ignite and burn spontaneously.



SA-018



034-E01A-0496-4

SA-019

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**