

PART NO. EM18G-1-1

Operator's Manual

EX8000

HYDRAULIC EXCAVATOR

Serial No. 000101 and up

HITACHI

INDEX

MACHINE NUMBERS

SAFETY

SAFETY SIGNS

COMPONENTS NAME

HANDLING LADDER / Emergency Rope

OPERATOR'S STATION

BREAK-IN

OPERATING ENGINE

OPERATING THE MACHINE

DRIVING THE MACHINE

MAINTENANCE

MAINTENANCE UNDER SPECIAL ENVIRONMENTAL CONDITIONS

STORAGE

TROUBLESHOOTING

SPECIFICATIONS

INDEX

CONTENTS

MACHINE NUMBERS

SAFETY

Recognize Safety Information	S-1
Understand Signal Words	S-1
Follow Safety Instructions	S-2
Prepare for Emergencies	S-2
Wear Protective Clothing.....	S-3
Protect Against Noise.....	S-3
Inspect Machine	S-3
Use Handholds and Steps.....	S-4
Adjust the Operator's Seat	S-4
Fasten Your Seat Belt	S-5
Move and Operate Machine Safely	S-5
Handle Starting Aide Safety	S-5
Operate only from Operator's Seat	S-6
Jump Starting	S-6
Keep Riders Off Machine	S-6
Investigate Job Site Beforehand	S-7
Protect Against Falling Stones and Debris	S-7
Provide Signals for Jobs Involving Multiple Numbers of Machines	S-8
Confirm Direction of Machine to be Driven.....	S-8
Drive Machine Safely	S-9
Avoid Injury from Rollaway Accidents	S-10
Avoid Injury from Back-Over and Swing Accidents	S-11
Keep Person Clear from Working Area	S-12
Never Position Bucket Over Anyone	S-12
Avoid Undercutting	S-12
Avoid Tipping	S-13
Never Undercut a High Bank.....	S-13
Dig with Caution	S-14
Operate with Caution.....	S-14
Avoid Power Lines.....	S-14
Object Handling.....	S-15
Protect Against Flying Debris	S-15
Park Machine Safely	S-16
Handle Fluids Safely-Avoid Fires	S-16
Practice Safe Maintenance	S-17
Warn Others of Service Work.....	S-18
Support Machine Properly.....	S-18
Stay Clear of Moving Parts.....	S-18
Prevent Parts from Flying	S-19
Store Attachments Safely.....	S-19
Prevent Burns	S-20
Replace Rubber Hoses Periodically	S-20
Avoid High-Pressure Fluids.....	S-21
Prevent Fires	S-22
Evacuating in Case of Fire	S-23
Beware of Exhaust Fumes	S-23
Avoid Heating Near Pressurized Fluid Lines	S-24
Avoid Applying Heat to Lines Containing Flammable Fluids	S-24
Remove Paint before Welding or Heating	S-24

Prevent Battery Explosions.....	S-25
Service Air Conditioning System Safely	S-25
Handle Chemical Products Safely	S-26
Dispose of Waste Properly	S-26

SAFETY SIGNS	S-27
---------------------------	------

COMPONENTS NAME	1-1
------------------------------	-----

HANDLING

LADDER/Emergency Rope

Using Ladder	1-2
Operating Ladder.....	1-2
Emergency Escape	1-3
Emergency Exit	1-4
Evacuating in Case of Fire.....	1-5

OPERATOR'S STATION

Cab Features.....	1-7
Monitor Display.....	1-8
Starting Check Screen.....	1-8
Meter Check Screen.....	1-9
Tachometer.....	1-10
Coolant Temperature Gauge	1-10
Hydraulic Oil Temperature Gauge	1-10
Fuel Gauge	1-10
Hour Meter.....	1-11
Warning Indicators.....	1-11
Alternator Indicator	1-11
Pump Transmission Oil Pressure Indicator	1-11
Engine Stop Indicator	1-11
Engine Oil Pressure Indicator	1-12
Coolant Overheat Indicator.....	1-12
Coolant Level Indicator	1-12
Exhaust Temperature Indicator.....	1-12
Engine Over Run Indicator.....	1-13
Hydraulic Oil Level Indicator	1-13
Auto-Lubrication Indicator.....	1-14
Fast-Filling Indicator	1-14
Emergency Engine Stop Indicator	1-15
Tension Indicator	1-15
Electric Lever Indicator	1-15
Caution Indicators.....	1-15
Engine Warning Indicator.....	1-15
Hydraulic Oil Overheat Indicator.....	1-16
Pump Contamination Indicator.....	1-16
Ladder Position Indicator	1-16
Air Cleaner Restriction Indicator	1-16
Status Indicators	1-17
Auto-Idle Indicator.....	1-17
Travel Mode Indicator	1-17
Preheat Indicator	1-17
Left Console	1-18
Warning Lamp	1-18
Caution Lamp	1-18

CONTENTS

Key Pad.....	1-18	Stopping the Engine in Emergency (Except in the Cab).....	3-15
Monitor Contrast Switch	1-18	OPERATING THE MACHINE	
Wiper Switch	1-19	Control Lever (ISO Pattern Loading Shovel).....	4-1
Washer Switch	1-19	Control Lever (HITACHI Pattern Loading Shovel).....	4-2
Wiper Delay Selector Switch	1-19	Bucket Open-Close Pedals (Loading Shovel).....	4-3
Air Conditioners	1-20	Pilot Control Shut-Off Lever.....	4-4
Designations and Functions of Controls ..	1-21	Engine Speed Control	4-5
Cooling	1-23	Auto-Idle	4-6
Heating	1-23	Warming-Up Operation.....	4-7
Dehumidifying and Heating	1-23	Warming-Up the Cylinders and Motors.....	4-8
Defrosting	1-24	Precautions for Operations	4-9
Blower Operation without Cooling or Heating	1-24	Operate the Machine Safely	4-10
Ventilation the Cab	1-24	Loading Shovel Operation	4-11
FM/AM Radio Operation.....	1-25	Prohibited Operation.....	4-11
Digital Clock Setting Procedure.....	1-26	Object Handling --- if Equipped.....	4-13
Right Console.....	1-27	Overnight Storage Instructions	4-14
Key Switch.....	1-27	DRIVING THE MACHINE	
Emergency Engine Stop Switch	1-28	Drive the Machine Carefully.....	5-1
Engine Start Switch	1-28	Steering the Machine Using Pedals.....	5-2
Engine Stop Switch	1-28	Steering the Machine Using Levers	5-3
Engine Speed Control Dial	1-29	Travel Mode Switch	5-4
Work Light Switch.....	1-30	Travel Alarm	5-5
Dome Light Switch.....	1-31	Traveling.....	5-6
Maintenance Light Switch.....	1-32	Operating On Soft Ground.....	5-7
Entrance Light Switch.....	1-33	Raise One Track Using Boom and Arm.....	5-7
Travel Mode Switch.....	1-34	Towing Machine a Short Distance	5-8
Auto-Idle Switch.....	1-34	Operating in Water or Mud	5-9
Buzzer Stop Switch	1-35	Precautions for Traveling On Slopes	5-10
Fast-Filling System	1-36	Parking the Machine On Slopes	5-11
Preheat Switch	1-37	Parking the Machine.....	5-11
Rear Console	1-38	MAINTENANCE	
Camera Monitor Display.....	1-38	Correct Maintenance and Inspection Procedures	7-1
Horn Switch	1-39	Check the Hour Meter Regularly	7-2
Adjusting the Seat	1-40	Use Correct Fuels and Lubricants	7-2
Seat Belt.....	1-43	Prepare Machine for Maintenance.....	7-3
Cab Door Release Button	1-44	Access Covers.....	7-4
Opening Cab Left Window	1-44	Inspection/Maintenance Lights	7-5
BREAK-IN		Use a Chain to Prevent Falling Accidents.....	7-6
Observe Machine Closely	2-1	Electric Pump	7-7
Every 10 Hours or Each Shift.....	2-1	Construction Outline	7-9
After the First 50 Hours	2-2	Hydraulic System.....	7-10
OPERATING THE ENGINE		Loading Shovel.....	7-11
Inspect Machine Daily Before Starting	3-1	Periodic Replacement of Parts	7-13
Before Turning Power ON	3-3	Maintenance Interval Guide.....	7-28
Turning Power ON.....	3-4	A. Greasing	7-31
Starting the Engine.....	3-8	Loading Shovel Front Joint Pins	7-32
Starting in Cold Weather	3-9	Swing Bearing.....	7-36
Check Instruments After Starting	3-10	Swing Internal Gear	7-37
Using Booster Batteries.....	3-11		
Stopping the Engine	3-13		
Stopping the Engine in Emergency (in the Cab).....	3-14		

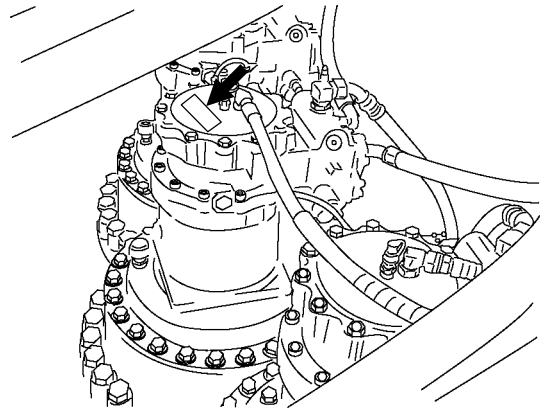
CONTENTS

Center Joint	7-38	Clean Outside of Radiator.....	7-86
Operating the Lubricator.....	7-39	H. Air Conditioner	7-87
B. Engine	7-41	Recirculation Air Filter.....	7-87
Engine Oil Level	7-42	Ventilation Air Filter.....	7-88
Change Engine Oil	7-43	Check Refrigerant Quantity.....	7-89
Replace Engine Oil Main and Bypass Filters	7-43	Check Compressor Belt Tension	7-91
Check Alternator Belt Tension.....	7-44	Clean Condenser Core	7-91
Check Injection Nozzle	7-45	Check Tightening Torque.....	7-92
Inspect Bolts and Nuts Outside Engine ...	7-45	Seasonal Maintenance	7-93
Inspect and Adjust Valve Clearance.....	7-45	I. Electrical System	7-94
Check Fuel Injection Timing	7-45	Batteries.....	7-94
Check Starter and Alternator	7-45	Replace Batteries	7-98
Check Turbocharger.....	7-45	Replacing Fuses	7-99
C. Transmission	7-46	Power Source Terminal	7-102
Pump Transmission.....	7-46	Fusible Link.....	7-103
Pump Transmission Oil Level.....	7-47	Check Electrical Cables and Wire Harnesses for Short Circuits	7-105
Change Pump Transmission Oil.....	7-48	Check Emergency Engine Stop Switch.....	7-107
Replace Pump Transmission Oil Filter	7-48	J. Miscellaneous	7-108
Clean Breather	7-49	Check Bucket Teeth.....	7-108
Swing and Travel Transmission	7-50	Inspect Emergency Evacuation Equipment and Hanger	7-111
Swing Transmission Oil Level	7-50	Auto-Lubrication System.....	7-112
Change Swing Transmission Oil	7-51	Check Windshield Washer Fluid Level.....	7-116
Clean Swing Transmission Breather	7-52	Check Track Sag	7-117
Travel Transmission Oil Level	7-52	Check Accumulator.....	7-119
Change Travel Transmission Oil	7-53	Check Side Frame Area.....	7-119
D. Hydraulic System.....	7-54	Check Tightening Torque of Bolts and Nuts	7-120
Inspection and Maintenance of Hydraulic Equipment.....	7-54	MAINTENANCE UNDER SPECIAL ENVIRONMENTAL CONDITIONS	
Hydraulic Oil Level.....	7-56	Maintenance Under Special Environmental Conditions	9-1
Drain Hydraulic Tank Sump.....	7-58	STORAGE	
Replace Full-Flow Filter and Drain Filter	7-58	Storing the Machine.....	10-1
Replace Bypass Filter.....	7-59	Removing the Machine from Storage	10-2
Replace Pilot Oil Filter	7-60	Transporting the Machine.....	10-3
Change Hydraulic Oil.....	7-61	TROUBLESHOOTING	
Clean Suction Filter	7-63	Engine Diagnostic Switches	11-1
Replace Suction Filter	7-64	Engine	11-3
Replace High-Pressure Filter	7-65	Electrical System	11-7
Clean Oil Cooler Core	7-67	Mode Selection.....	11-9
Check Hoses and Lines.....	7-68	Hydraulic System.....	11-10
Service Recommendations for hydraulic Fittings.....	7-71	Auto-Idle	11-12
E. Fuel System	7-72	SPECIFICATIONS	
Drain Fuel Tank Sump.....	7-74	Specifications	12-1
Water Separator Filter	7-74	Working Range (Loading Shovel).....	12-2
Replace Fuel Filter	7-81	INDEX	14-1
Check Fuel Hoses	7-77		
F. Air Cleaner	7-79		
Clean Air Cleaner Outer Element	7-79		
Replace Air Cleaner Outer and Inner Elements.....	7-79		
G. Cooling System	7-81		
Check Coolant Level	7-82		
Clean Intercooler Core	7-85		
Clean Radiator Core.....	7-85		

MACHINE NUMBERS

SWING MOTOR TYPE AND SERIAL NUMBER

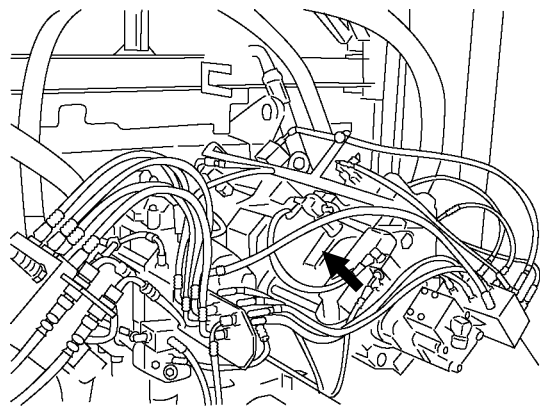
TYPE: _____
MFG. NO.(FRONT LEFT) : _____
MFG. NO.(FRONT CENTER): _____
MFG. NO.(FRONT RIGHT): _____
MFG. NO.(REAR LEFT): _____
MFG. NO.(REAR CENTER) : _____
MFG. NO.(REAR RIGHT): _____



M18G-07-063

HYDRAULIC PUMP TYPE AND SERIAL NUMBER

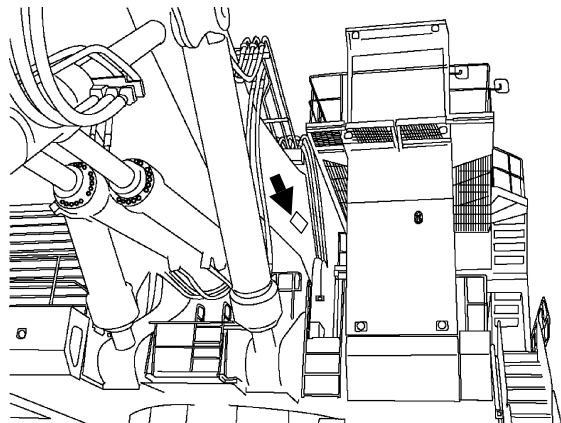
TYPE: _____
MFG. NO.(LEFT 1, 2): _____
MFG. NO.(LEFT 3, 4): _____
MFG. NO.(LEFT 5, 6): _____
MFG. NO.(LEFT 7, 8): _____
MFG. NO.(RIGHT 9, 10): _____
MFG. NO.(RIGHT 11, 12): _____
MFG. NO.(RIGHT 13, 14): _____
MFG. NO.(RIGHT 15, 16): _____



M18G-00-002

FRONT TYPE AND SERIAL NUMBER (LOADING SHOVEL)

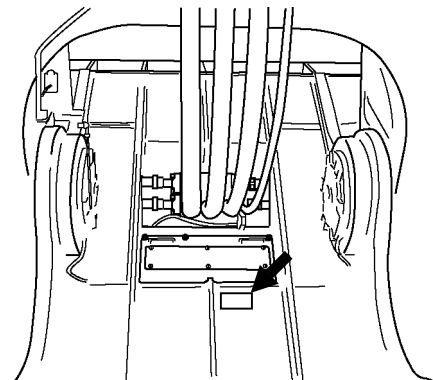
TYPE: _____
MFG. NO.: _____



M18G-01-041

BUCKET TYPE AND SERIAL NUMBER (LOADING SHOVEL)

TYPE: _____
MFG. NO.: _____



M18G-07-049

MACHINE NUMBERS

CONTROL VALVE TYPE AND SERIAL NUMBER

TYPE: _____

MFG. NO.(UPPER LEFT): _____

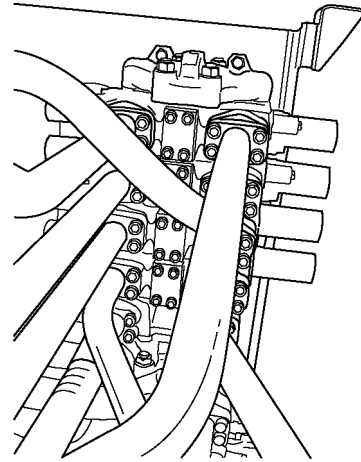
MFG. NO.(UPPER CENTER): _____

MFG. NO.(UPPER RIGHT): _____

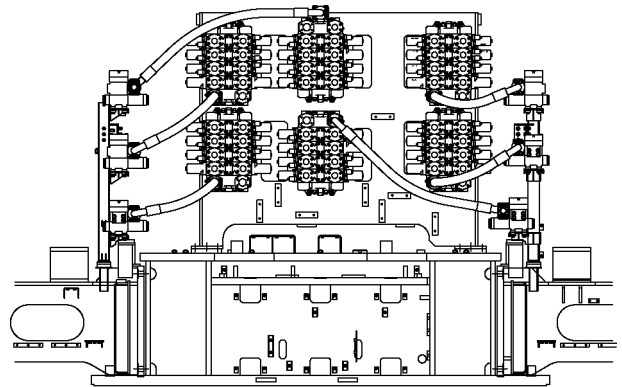
MFG. NO.(LOWER LEFT): _____

MFG. NO.(LOWER CENTER): _____

MFG. NO.(LOWER RIGHT): _____



M18G-07-093

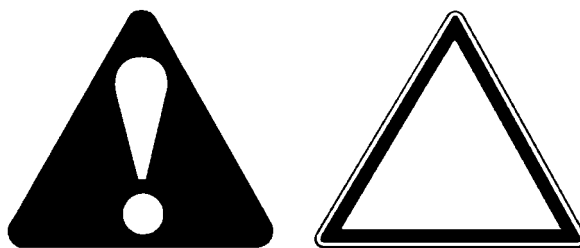


M18G-00-003

SAFETY

RECOGNIZE SAFETY INFORMATION


- These are the **SAFETY ALERT SYMBOLS**.
 - When you see these symbols 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

SA-688

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.
 - Some safety signs don't use any of the designated signal words above after the safety alert symbol are occasionally used on this machine.
- **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



SA-1223

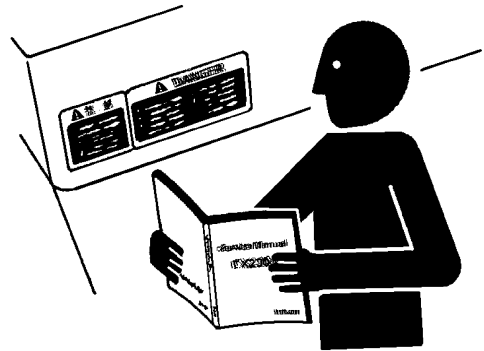
002-E01A-1223

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 and/or your authorized dealer before operating or performing maintenance work on the machine.

003-E01B-0003



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

SAFETY

WEAR PROTECTIVE CLOTHING

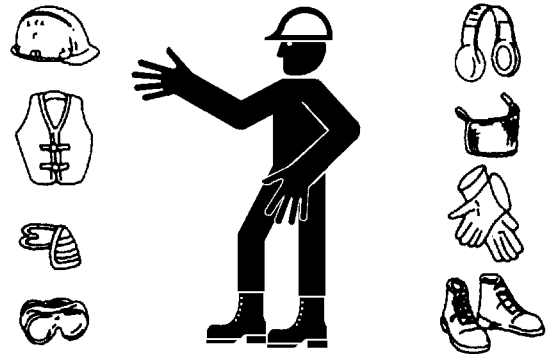
- Wear close fitting clothing and safety equipment appropriate to the job.

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

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

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 in the operator’s manual.



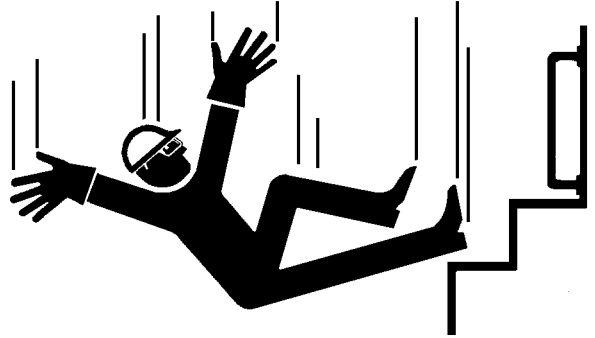
007-E01A-0435

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

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.



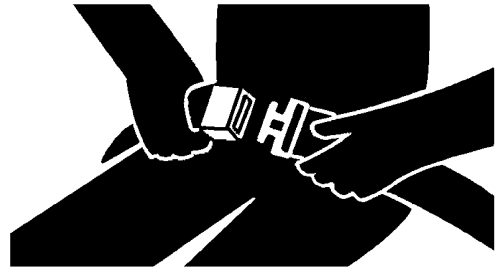
SA-378

009-E01A-0378

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.
- We recommend that the seat belt be replaced every three years regardless of its apparent condition.

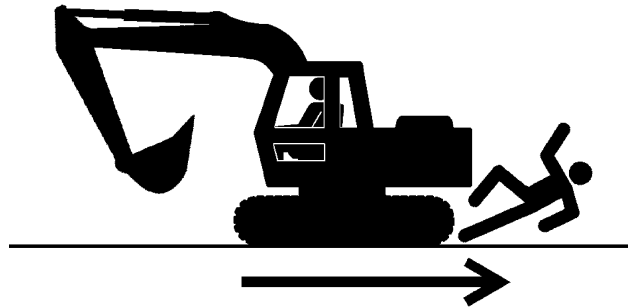


SA-237

010-E01A-0237

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-426

011-E01A-0426

HANDLE STARTING AIDS SAFELY

Starting fluid:

- Starting fluid is highly flammable.
- Keep all sparks and flame away when using it.
- Keep starting fluid well away from batteries and cables.
- Remove container from machine if engine does not need starting fluid.
- To prevent accidental discharge when storing a pressurized container, keep the cap on the container, and store it in a cool, well-protected location.
- Do not incinerate or puncture a starting fluid container.



SA-293

036-E01A-0293-3

SAFETY

OPERATE ONLY FROM OPERATOR'S SEAT

- Inappropriate engine starting procedures 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.

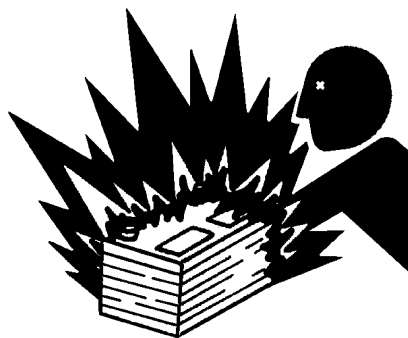


SA-444

012-E01B-0444

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

S013-E01A-0032

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-E01B-0379

SA-379

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.

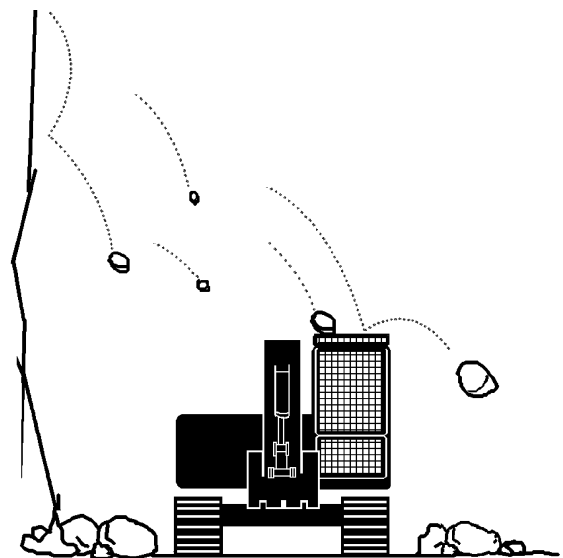


SA-380

015-E01A-0380

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.



015-E01A-0380

SA-490

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.

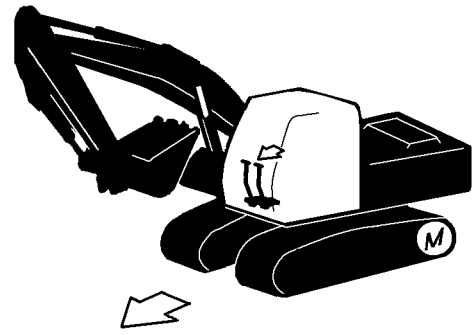


018-E01A-0481

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.



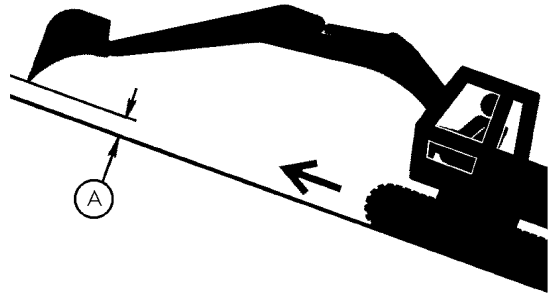
017-E01A-0491

SA-491

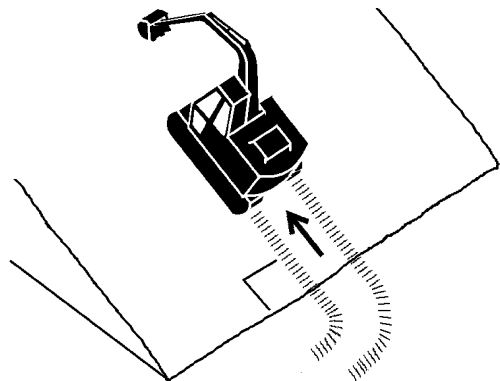
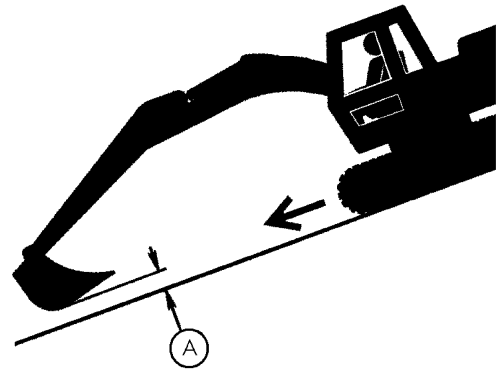
SAFETY

DRIVE MACHINE SAFELY

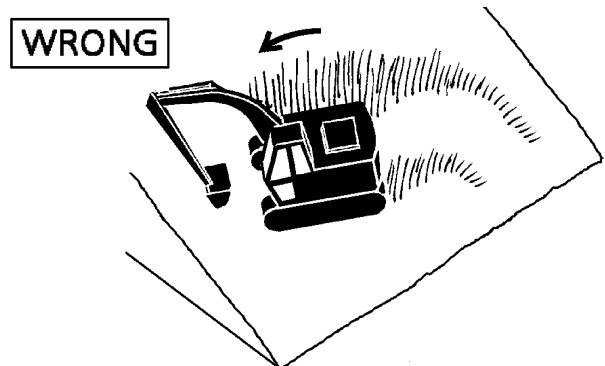
- Before driving the machine, always confirm that the travel levers/pedals direction corresponds to the direction you wish to drive.
- Be sure to detour around any obstructions.



- Driving on a slope may cause the machine to slip or overturn, possibly resulting in serious injury or death.
- When driving up or down a slope, keep the bucket facing the direction of travel, approximately 0.5 to 1.0 m (A) above the ground.
- If the machine starts to skid or becomes unstable, immediately lower the bucket to the ground and stop.



- Driving across the face of a slope or steering on a slope may cause the machine to skid or turnover. If the direction must be changed, move the machine to level ground, then, change the direction to ensure safe operation.



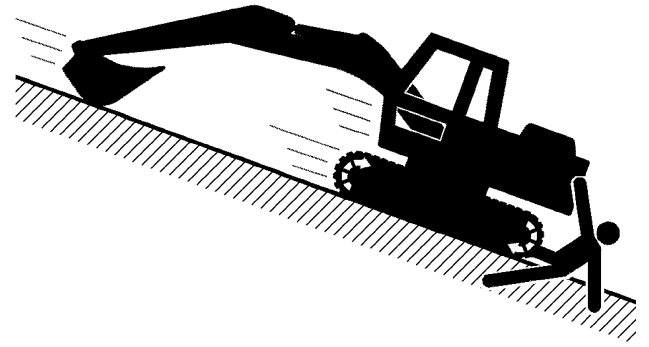
SAFETY

AVOID INJURY FROM ROLLAWAY ACCIDENTS

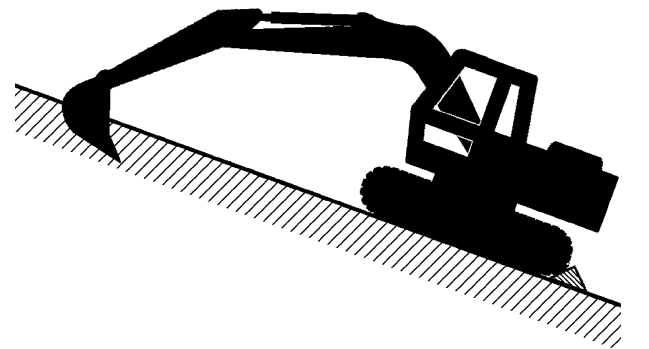
- Death or serious injury may result if you attempt to mount or stop a moving machine.

To avoid rollaways:

- Select level ground when possible to park machine.
- Do not park the machine on a grade.
- Lower the bucket and/or other work tools to the ground.
- Turn the auto-idle switch and the H/P mode switch off.
- Run the engine at slow idle speed without load for 5 minutes to cool down the engine.
- Stop the engine and remove the key from the key switch.
- Pull the pilot control 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-391



SA-392

020-E02A-0493

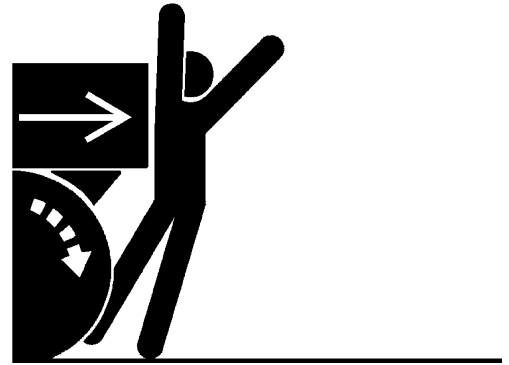
SAFETY

AVOID INJURY FROM BACK-OVER AND SWING ACCIDENTS

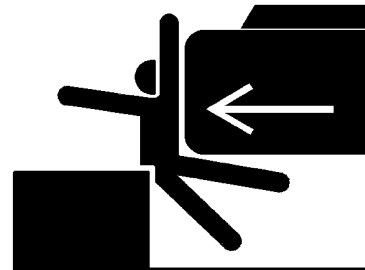
- If any person is present near the machine when backing or swinging the upperstructure, the machine may hit or run over that person, resulting in serious injury or death.

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



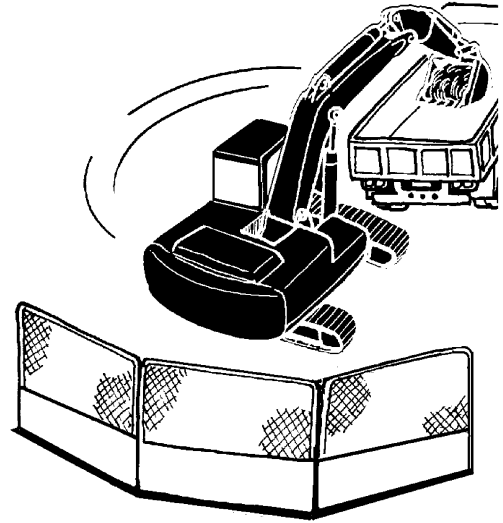
SA-384

021-E01A-0494

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-0386

SA-386

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.

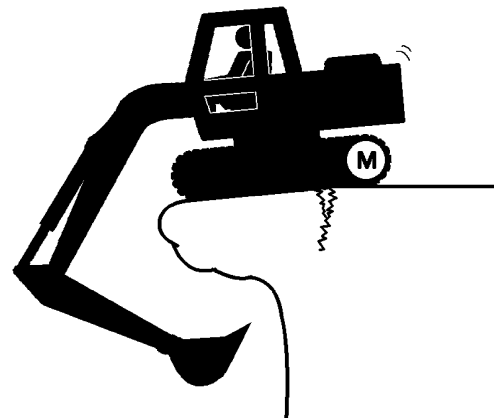


023-E01A-0487

SA-487

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-0488

SA-488

Thank you so much for reading.
Please click the “Buy Now!”
button below to download the
complete manual.



After you pay.

You can download the most
perfect and complete manual in
the world immediately.

Our support email:

ebooklibonline@outlook.com