

Operator's Manual

ZAXIS

210LC-3

250LC-3

350LC-3

470LCH-3

MATERIAL HANDLING MACHINE

(S-SC200H-A)

(S-SC240H-A)

(S-SC330H-B)

(S-SC450H-A)

Serial Machine No.

ZX 210LC-3 202803 and up

ZX 250LC-3 020001 and up

ZX 350LC-3 050002 and up

ZX 470LCH-3 020001 and up

Serial Front No.

ZX 210LC-3 U1521 and up

ZX 250LC-3 U1521 and up

ZX 350LC-3 U1521 and up

ZX 470LCH-3 U1521 and up

ZX210LC-3 · 250LC-3 · 350LC-3 · 470LCH-3 MATERIAL HANDLING MACHINE OPERATOR'S MANUAL

EM1V1-ENSH2-1(MD1)

 Hitachi Construction Machinery Co., Ltd.
URL:<http://www.hitachi-c-m.com>

INTRODUCTION

This Operator's Manual has been compiled for the Material Handling Machine of ZX210LC-3, 250LC-3, 350LC-3, 470LCH-3 Hitachi Hydraulic Excavator.

Only the parts that differ from those on the ZX210LC-3, 250LC-3, 350LC-3, 470LCH-3 Hitachi Hydraulic Excavator are described in this manual.

Refer to the Operator's Manual for ZX210LC-3, 250LC-3, 350LC-3, 470LCH-3 Hitachi Hydraulic Excavator for other inquiries than described in this manual.

Read this manual carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or machine 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/cm², 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.

Only qualified, experienced operators officially licensed (according to local law) should be allowed to operate the machine. Moreover, only officially licensed personnel should be allowed to inspect and service the machine.

Prior to operating this machine, including satellite communication system, 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 regulatory standards (including safety standards) and legal requirements of that particular country. Please do not export or 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.

All information, illustrations and specifications in this manual are based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

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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.
- 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.



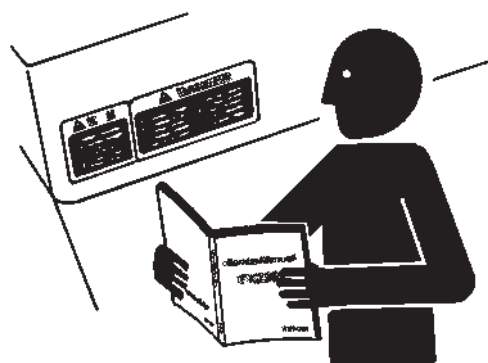
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SAFETY

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.
 - Do not modify any machine parts without authorization. Failure to do so may deteriorate the part safety, function, and/or service life. In addition, personal accident, machine trouble, and/or damage to material caused by unauthorized modifications will void Hitachi Warranty Policy.
 - Do not use attachments and/or optional parts or equipment not authorized by Hitachi. Failure to do so may deteriorate the safety, function, and/or service life of the machine. In addition, personal accident, machine trouble, and/or damage to material caused by using unauthorized attachments and/or optional parts or equipment will void Hitachi Warranty Policy.
- 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.



SA-003

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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.
 - To ensure that a fire-extinguisher can be always used when necessary, check and service the fire-extinguisher at the recommended intervals as specified in the fire-extinguisher manual.
 - 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.



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SAFETY

WEAR PROTECTIVE CLOTHING

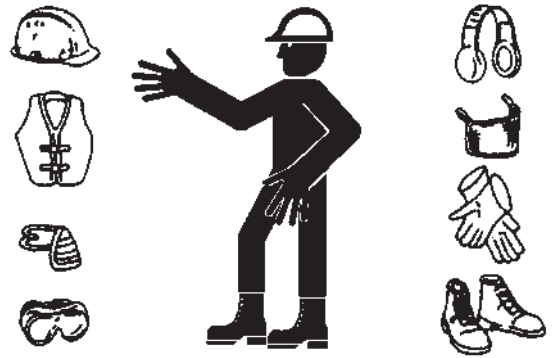
- Wear close fitting clothing and safety equipment appropriate to the job.

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

GENERAL PRECAUTIONS FOR CAB

- Before entering the cab, thoroughly remove all dirt and/or oil from the soles of your work boots. If any controls such as a pedal is operated while with dirt and/or oil on the soles of the operator's work boots the operator's foot may slip off the pedal, possibly resulting in a personal accident.
- Do not leave parts and/or tools lying around the operator's seat. Store them in their specified locations.
- Avoid storing transparent bottles in the cab. Do not attach any transparent type window decorations on the windowpanes as they may focus sunlight, possibly starting a fire.
- Refrain from listening to the radio, or using music headphones or mobile telephones in the cab while operating the machine.
- Keep all flammable objects and/or explosives away from the machine.
- After using the ashtray, always cover it to extinguish the match and/or tobacco.
- Do not leave cigarette lighters in the cab. When the temperature in the cab increases, the lighter may explode.

524-E01A-0000

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 hand-holds.
 - 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.



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SA-439

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.
 - Adjust the rear view mirror position so that the best rear visibility is obtained from the operator's seat. If the mirror is broken, immediately replace it with a new one.



SA-378

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ENSURE SAFETY BEFORE RISING FROM OR LEAVING OPERATOR'S SEAT

- Before rising from the operator's seat to open/close either side window or to adjust the seat position, be sure to first lower the front attachment to the ground and then move the pilot control shut-off lever to the LOCK position. Failure to do so may allow the machine to unexpectedly move when a body part unintentionally comes in contact with a control lever, possibly resulting in serious personal injury or death.
 - Before leaving the machine, be sure to first lower the front attachment to the ground and then move the pilot control shut-off lever to the LOCK position. Turn the key switch OFF to stop the engine.
 - Before leaving the machine, close all windows, doors, and access covers and lock them up.

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.

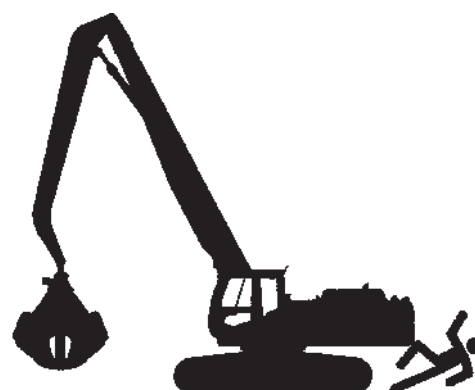


SA-237

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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.
- Use appropriate illumination. Check that all lights are operable before operating the machine. If any faulty illumination is present, immediately repair it.



SA-1776

011-E01A-0398

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 when seated in 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.
 - Before starting the engine, confirm the safety around the machine and sound the horn to alert bystanders.



SA-444

012-E01B-0431

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 in the operator's manual.
 - 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

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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 the operator should be on the machine. Keep riders off.
 - Riders also obstruct the operator's view, resulting in the machine being operated in an unsafe manner.



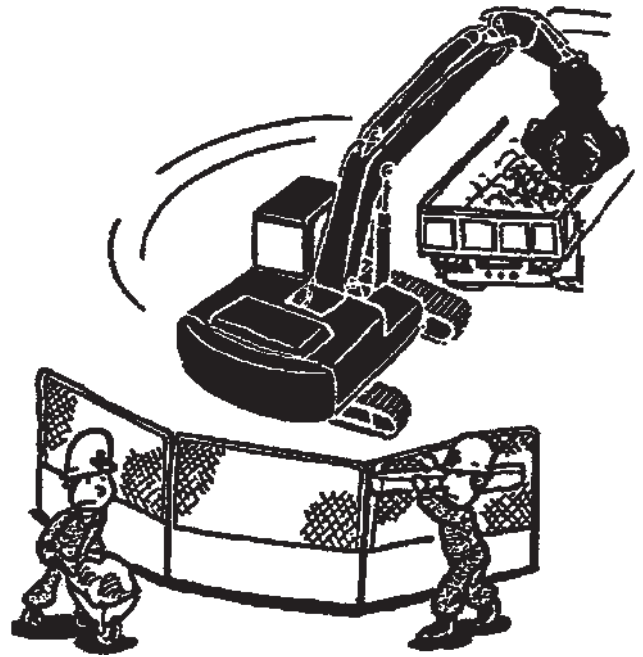
SA-379

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SAFETY

PRECAUTIONS FOR OPERATIONS

- Investigate the work site before starting operations.
 - Be sure to wear close fitting clothing and safety equipment appropriate for the job, such as a hard hat, etc. when operating the machine.
 - Clear all persons and obstacles from area of operation and machine movement.
Always beware of the surroundings while operating. When working in a small area surrounded by obstacles, take care not to hit the upperstructure against obstacles.
- When loading onto trucks, bring the bucket over the truck beds from the rear side. Take care not to swing the bucket over the cab or over any person.



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SAFETY

INVESTIGATE JOB SITE BEFOREHAND

- When working at the soft ground, on the unstable place such as the clippings 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.
 - Beware the possibility of fire when operating the machine near flammable objects such as dry grass.
- Make sure the worksite has sufficient strength to firmly support the machine.

When working close to an excavation or at road shoulders, operate the machine with the tracks positioned perpendicular to the cliff face with travel motors at the rear, so that the machine can more easily evacuate if the cliff face collapses.
- If working on the bottom of a cliff or a high bank is required, be sure to investigate the area first and confirm that no danger of the cliff or bank collapsing exists. If any possibility of cliff or bank collapsing exists, do not work on the area.
- Soft ground may collapse when operating the machine on it, possibly causing the machine to tip over. When working on a soft ground is required, be sure to reinforce the ground first using large pieces of steel plates strong and firm enough to easily support the machine.
- Note that there is always a possibility of machine tipping over when working on rough terrain or on slopes. Prevent machine tipping over from occurring. When operating on rough terrain or on slopes:
 - Reduce the engine speed.
 - Select slow travel speed mode.
 - Operate the machine slowly and be cautious with machine movements.



SA-380

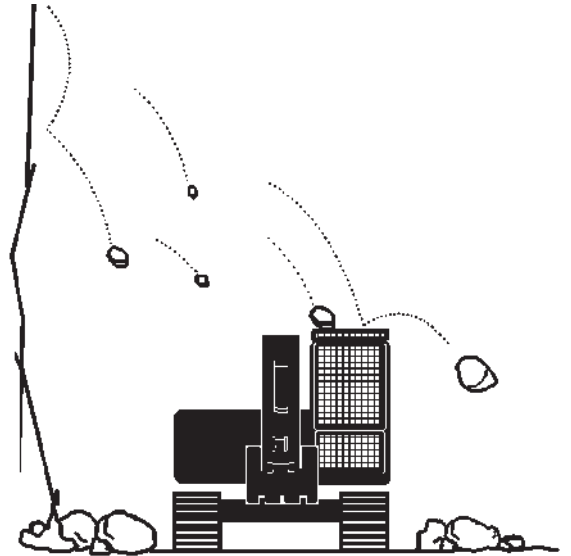
SAFETY

EQUIPMENT OF OPG

- In case the machine is operated in areas where the possibility of falling stones or debris exists, equip genuine Hitachi OPG guard. Contact your nearest Hitachi dealer for installation method of the OPG guard. Depending on the specifications applied to your machine, modification of the machine to meet ROPS standards will be possible.
- To maintain unimpaired operator protection and manufacturer's protective structure.
 - Damaged ROPS, OPG guard must be replaced, not repaired or revised.
 - Any alternation to the ROPS or OPG guard must be approved by the manufacturer.

ROPS: Roll Over Protective Structure

OPG: Operator Protective Guard



SA-490

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.



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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.



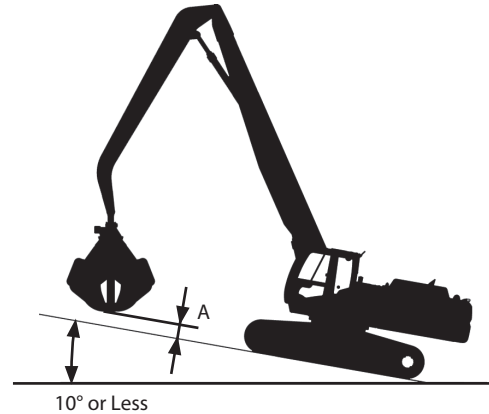
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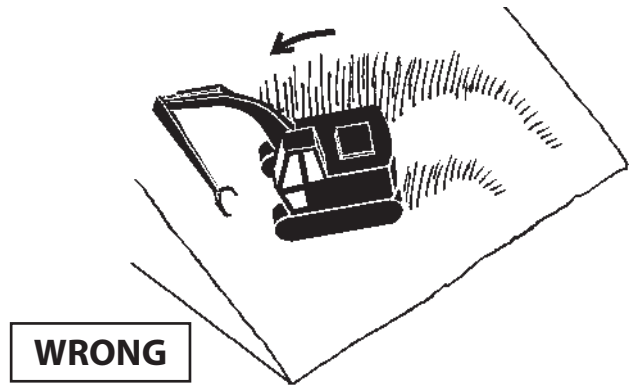
SAFETY

PRECAUTIONS FOR TRAVELING

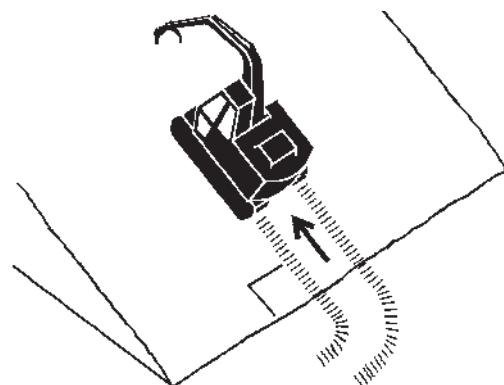
- Be sure to use a signal person when traveling the machine.
 - Incorrect travel pedal/lever operation may result in serious injury death or damage to personal property.
 - Before driving the machine, always confirm that the travel levers/pedals direction corresponds to the travel direction.
 - Avoid traveling over obstructions. Soil, fragments of rock, and/or metal pieces may be scattered around the machine. Don't allow personnel around the machine while traveling.
- Driving on a slope may cause the machine to slip or overturn, possibly resulting in serious injury or death.
 - Never attempt to drive the machine on slopes with the grade more than 10° under any condition.
 - Slowly drive the machine so that the attachment does not come in contact with the cab.
 - Travel the machine forward when driving up slopes and backward when driving down slopes.
 - When driving up or down slopes, hold the attachment approximately 300 to 500 mm (11.8 to 19.7 in)(A) above the ground so that the machine can be stopped immediately by lowering the attachment to the ground.
 - If the machine starts to skid or becomes unstable, immediately lower the attachment to the ground and stop traveling.
 - 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 machine's direction to ensure safe operation.
- If the machine travels with the attachment loaded, it may tip over due to the load. In addition, the load may fall from the attachment. Prevent these conditions to travel the machine safely.



SA-1777



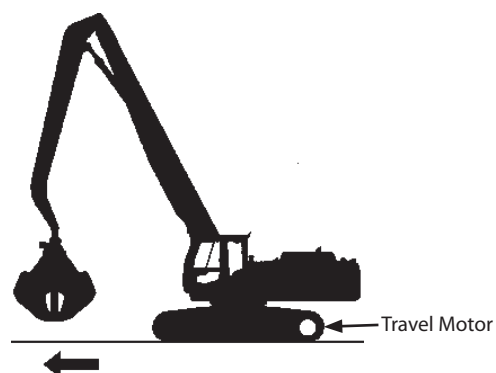
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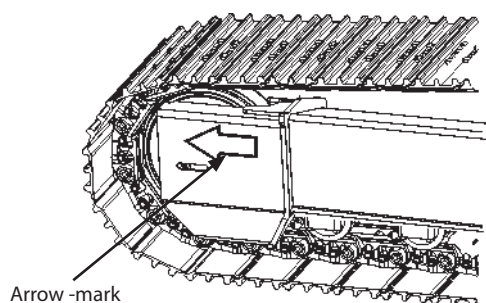
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SAFETY

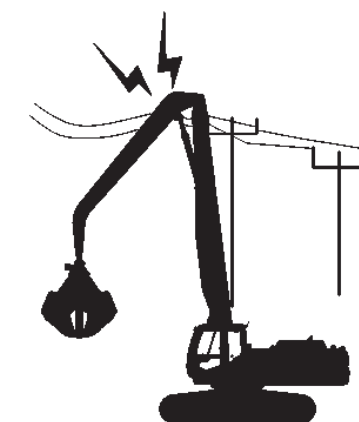
- Driving across the face of a slope or steering on a slope may cause the machine to skid or turnover. If the direction must be changed, move the machine to level ground, then, change the direction to ensure safe operation.
- Avoid swinging the upperstructure on slopes. Never attempt to swing the upperstructure downhill. The machine may tip over. If swinging uphill is unavoidable, carefully operate the upperstructure and boom at slow speed.
- If the engine stalls on a slope, immediately lower the bucket to the ground. Return the control levers to neutral. Then, restart the engine.
- Be sure to thoroughly warm up the machine before ascending steep slopes. If hydraulic oil has not warmed up sufficiently, sufficient performance may not be obtained.
- Use a signal person when moving, swinging or operating the machine in congested areas. Coordinate hand signals before starting the machine.
- Before moving machine, determine which way to move travel pedals/levers for the direction you want to go. When the travel motors are in the rear, pushing down on the front of the travel pedals or pushing the levers forward moves the machine forward, towards the idlers. An arrow-mark seal is stuck on the inside surface of the side frame to indicate the machine front direction.
- Select a travel route that is as flat as possible. Steer the machine as straight as possible, making small gradual changes in direction.
- Before traveling on them, check the strengths of bridges and road shoulders, and reinforce if necessary.
- Use wood plates in order not to damage the road surface. Be careful of steering when operating on asphalt roads in summer.
- When crossing train tracks, use wood plates in order not to damage them.
- Do not make contact with electric wires or bridges.
- When crossing a river, measure the depth of the river using the bucket, and cross slowly. Do not cross the river when the depth of the river is deeper than the upper edge of the upper roller.
- When traveling on rough terrain, reduce engine speed. Select slow travel speed. Slower speed will reduce possible damage to the machine.
- Avoid operations that may damage the track and undercarriage components.
- During freezing weather, always clean snow and ice from track shoes before loading and unloading machine, to prevent the machine from slipping.



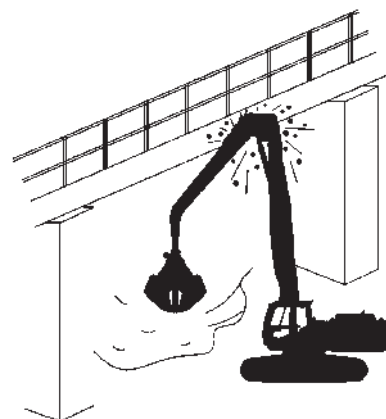
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SA-1780

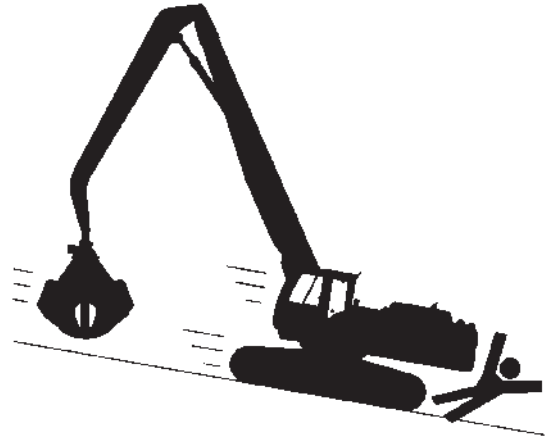
SAFETY

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 attachment 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.
- Position the machine to prevent rolling.
- Park a reasonable distance from other machines.



SA-1781

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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

ENSURE PERSONNEL SAFETY WHEN LEAVING THE MACHINE

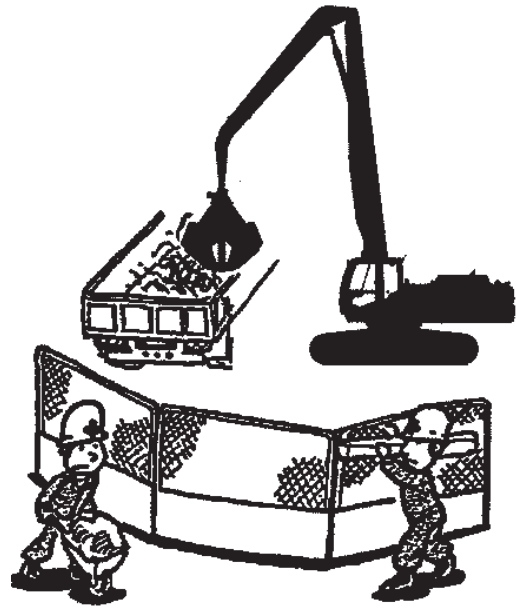
- Be sure to lower the attachment to the ground to securely park the machine. (Refer to the information for parking.) Stop the engine, remove the key, and lock the cab doors. Take all keys with you.



SA-1782

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, make sure that no personnel or obstacles other than the signal person are in the operation area.



SA-1778

PREVENT THE FRONT ATTACHMENT FROM CONTACTING THE CAB

When the front attachment is operated close to the base machine, it is possible that the front attachment may come in contact with the cab and the vehicle frame. Operate the machine carefully when the front attachment is operated close to the base machine.

PREVENT THE FRONT FROM CONTACTING THE ATTACHMENT

When the front is raised, it is possible that the attachment may come in contact with the arm. Operate the machine carefully when the front is raised.



SA-1783

SAFETY

NEVER ALLOW ANYONE TO ENTER UNDER THE ATTACHMENT

- If the attachment is passed over the working staff or the track cab, falling scraps or contact with the attachment may cause serious personal injury or damage to the machine. Always avoid passing the attachment over personnel. Never allow anyone to enter under the attachment.



SA-1784

CRANE WORK IS PROHIBITED

- Never attempt to use this machine instead of a crane. Serious personal injury or death may result.
- This machine has been designed only for scraps proceeding work.
- This machine is not equipped with a lifting device and the safety devices required for crane operations.



SA-1785

MOVEMENT IN SOFT GROUND

Keep the machine away from soft ground.

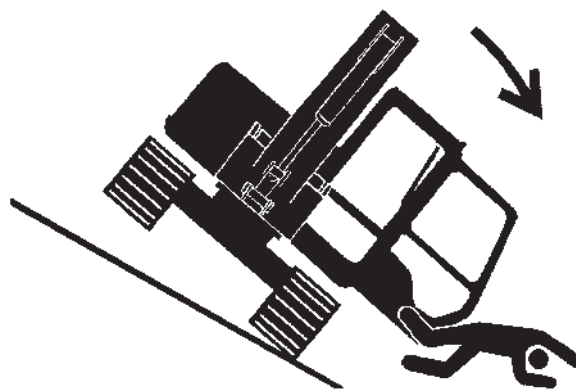
- ⚠ **CAUTION:** This machine is equipped with a long front and an additional counterweight. Therefore, the weight of the machine is heavy. The machine is unstable in soft ground and it is possible that the machine tips over. Keep the machine away from soft ground. (Refer to the specification section.)

SAFETY

AVOID TIPPING

**DO NOT ATTEMPT TO JUMP CLEAR OF TIPPING MACHINE
--- SERIOUS OR FATAL CRUSHING INJURIES WILL RESULT
MACHINE WILL TIP OVER FASTER THAN YOU CAN JUMP
FREE
FASTEN YOUR SEAT BELT**

- Depending on the working position or the slope grade, the machine stability may be reduced. Never operate the machine on a slope as the danger of tipping is always present when the machine is operated on a slope.
- If the machine is operated on soft ground, the machine may sink and decline, possibly causing the machine to tip over. Be sure to operate the machine only after reinforcing the footing strength by laying metal panels.



SA-012

AVOID USING THE MACHINE IN UNSPECIFIED APPLICATIONS

- The counterweight has been increased to allow a long front attachment to be installed. Therefore, the excavator base machine specifications are different from the standard base machine specifications.
- Never install the front attachment for this machine on other machines or vice versa. Damage to the machine, or personal injury and/or death may result.
- Use only working tools that match the specifications of the front attachment. If an overly heavy working tool is used, the front attachment may be damaged.
- When selecting the attachment, total weight of the attachment and the load should be below than the specification for the maximum reach.

ZX210LC-3: 2.3 tons or less

ZX250LC-3: 2.1 tons or less

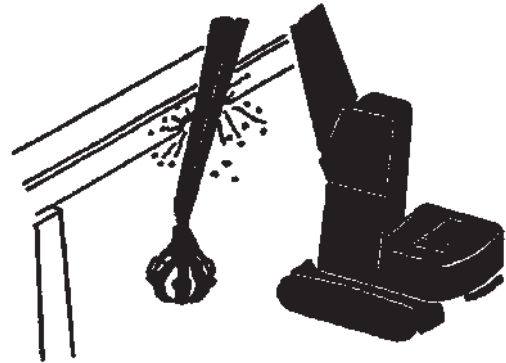
ZX350LC-3: 3.2 tons or less

ZX470LCH-3: 4.1 tons or less

SAFETY

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.

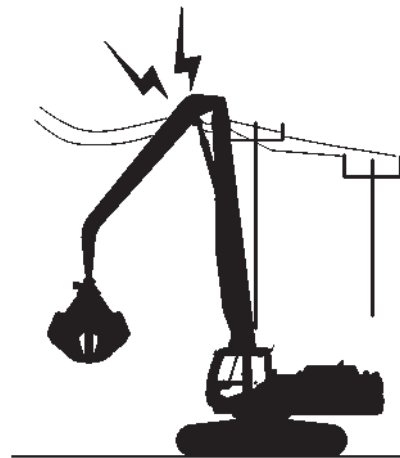


028-E01A-0389

SA-1398

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 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.




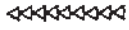


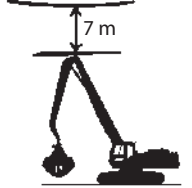
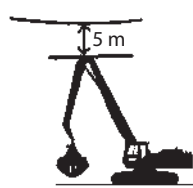
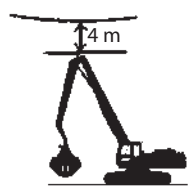
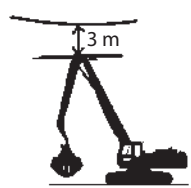
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SA-1779

Minimum Distance from Power Lines

Voltage	Minimum Distance
Extra High Tension	2 m. Increase 200 mm every 10000 V (round up fractions) increase for 6000 V or more power lines.
High Tension	1.2 m
Low Tension	1.0 m

According to the number of installed insulators, keep the attachment away from power lines by the distance as illustrated below at the job site. Befor operating the mashine in the vicinity of power lines, contact the owner of the power lines or the nearest electric utility.

No. of Insulators	 17 to 24 Pieces	 10 to 14 Pieces	 5 to 8 Pieces	 2 to 4 Pieces
Distance from Power Lines	 7 m	 5 m	 4 m	 3 m

SA-1788

SAFETY

IF MACHINE MADE CONTACT WITH POWER LINE



CAUTION:

- Do not panic. Be calm and follow the instructions below.
- If the crane is still operable, remove contact from the power line.
- Even after arcs disappear, continue to evacuate until at least the minimum distance specified from power line is obtained.
- If the crane is not operable, if no arcs are observed inside the cab and if no fire breaks out, remain seated until power is disconnected (until the machine is no longer charged).
- If arcs are observed inside the cab and/or a fire breaks out, jump out of the cab onto the ground as far from the machine as possible with both feet landing at the same time, trying not to touch any part of machine. If any part of the body touches the machine, a large electrical shock will result.
- To prevent further damage and/or injury from occurring, clear the bystanders away from the area. If someone is shocked by electricity, have him escape from the site by him/her self. Do not try to help him/her. You will end up shocking yourself without any possibility of helping him/her. Leave the site.
- Confirm that your co-worker made contact with the utility company and other parties concerned so as to get instructions on stopping power to the line, on first aids, as well as on any other measures that must be taken. If not, immediately make contact with them.
- Before putting the machine back to service, be sure to thoroughly inspect the machine and repair any faulty or malfunctioned parts as necessary.

SAFETY

PRECAUTIONS FOR LIGHTENING

- The machine is vulnerable to lightning strikes.
 - In the event of an electrical storm, immediately stop operation, and lower the bucket to the ground. Evacuate to a safe place far away from the machine.
 - After the electrical storm has passed, check all of the machine safety devices for any failure. If any failed safety devices are found, operate the machine only after repairing them.



SA-1799

PROHIBITION OF THE SUDDEN MACHINE OPERATION

- Avoid the sudden operation of the machine . If so, the machine stability is reduced and the machine may tip over. Specially take care to the following operations.
 - The sudden operation when the machine travels.
 - The sudden operation when the boom is lowered: The machine may tip over forward.
 - The sudden operation when the boom is raised: The machine may tip over backward.

PRECAUTIONS OF THE HEAVY ATTACHMENTS

- The stability of the machine with the heavy attachments is reduced more than the machine with the backhoe. Take care not to tip over the machine.
 - Do the work in the front and back of the crawler as much as possible.
 - Avoid the sudden operation of the machine.
 - When selecting the attachments, refer to LIFTING CAPACITIES in SPECIFICATION. Take care to the weight of the attachment and select the attachments.

OPERATE THE MACHINE SLOWLY AND CAREFULLY

- Abrupt operation may cause the machine to tip over due to impact loads. Operate each function slowly and carefully. Using extra care, slowly drive the machine. Avoid sudden start and stop of swing operation, which causes the attachment to sway so that the base machine becomes unstable thereby creating a hazardous condition.

SAFETY

PARK MACHINE SAFELY

- Park the machine on solid level ground so that the machine doesn't run away.
- Lower attachment to the ground.
- Pull the pilot control shut-off level to the LOCK position.
- Turn auto-idle selector switch OFF to prevent the engine speed from increasing unexpectedly when restarting operation.
- Run engine at slow idle speed without load for 5 minutes to cool down the engine.
- Turn key switch to OFF to stop engine.
- Remove the key from the key switch.
- Close and lock windows, cab door and all access covers.
- Be sure to take the keys with you.



SA-1782

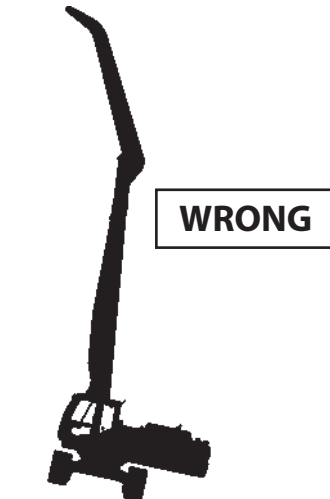
AVOID TIPPING BACKWARD

If the boom is fully raised and the arm is raised or rolled in, the center of gravity in the machine moves backward so that the rear of the machine becomes unstable.

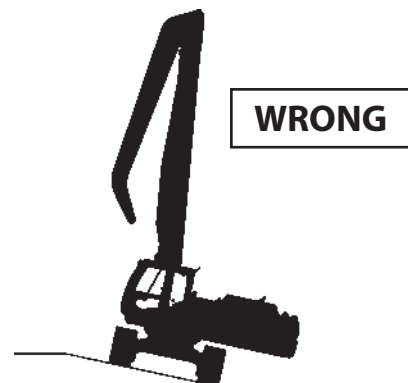
When the cylinder is rapidly operated to the stroke end with the boom fully raised and the arm raised or rolled in, the machine may tip over. Therefore, operate the cylinder carefully.

In special, pay enough attention to the machine without the attachment like the grapple.

In addition, when the machine is on the slope and on the trailer truck, lower the boom as much as possible and prevent the upperstructure from swinging.



SA-1882



SA-1883

SAFETY

TRANSPORT SAFELY

- Take care the machine may turn over when loading or unloading the machine onto or off of a truck or trailer.
 - Observe the related regulations and rules for safe transportation.
 - Select an appropriate truck or trailer for the machine to be transported.
 - Be sure to use a signal person.
 - Always follow the following precautions for loading or unloading:
 1. Select solid and level ground.
 2. Always use a ramp or deck strong enough to support the machine weight.
 3. Turn auto-idle switch OFF.
 4. Always select the slow speed mode with the travel mode switch.
 5. Never load or unload the machine onto or off a truck or trailer using the front attachment functions when driving up or down the ramp.
 6. Never steer the machine while on the ramp. If the traveling direction must be changed while the ramp, unload the machine from the ramp, reposition the machine on the ground, then try loading again.
 7. The top end of the ramp where it meets the flatbed is a sudden bump. Take care when traveling over it.
 8. Place blocks in front of and behind the tracks. Securely hold the machine to the truck or trailer deck with wire ropes.

Be sure to further follow the details described in the TRANSPORTING section.

035-E07A-0454

SAFETY

PRACTICE SAFE MAINTENANCE

To avoid accidents:

- Understand service procedures before starting work.
- Keep the work area clean and dry.
- Do not spray water or steam inside cab.
- Never lubricate or service the machine while it is moving.
- Keep hands, feet and clothing away from power-driven parts.

Before servicing the machine:

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.
4. Run the engine at slow idle speed without load for 5 minutes.
5. Turn the key switch to OFF to stop engine.
6. Relieve the pressure in the hydraulic system by moving the control levers several times.
7. Remove the key from the switch.
8. Attach a "Do Not Operate" tag on the control lever.
9. Pull the pilot control shut-off lever to the LOCK position.
10. Allow the engine to cool.

- If a maintenance procedure must be performed with the engine running, do not leave machine unattended.
- If the machine must be raised, remove the attachment and set the arm vertical against the ground. Securely support any machine elements that must be raised for service work.
- Inspect certain parts periodically and repair or replace as necessary. Refer to the section discussing that part in the "MAINTENANCE" chapter of this manual.
- Keep all parts in good condition and properly installed.
- Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.
- When cleaning parts, always use nonflammable detergent oil. Never use highly flammable oil such as fuel oil and gasoline to clean parts or surfaces.
- Disconnect battery ground cable (–) before making adjustments to electrical systems or before performing welding on the machine.

500-E02C-0520



SA-028



SA-527

SAFETY

- Sufficiently illuminate the work site. Use a maintenance work light when working under or inside the machine.
- Always use a work light protected with a guard. In case the light bulb is broken, spilled fuel, oil, antifreeze fluid, or window washer fluid may catch fire.



SA-037

WARN OTHERS OF SERVICE WORK

- Unexpected machine movement can cause serious injury.
- Before performing any work on the machine, attach a "Do Not Operate" tag on the control lever.
This tag is available from your authorized dealer.

501-E01A-0287



SS3076175



SS2045102

SUPPORT MACHINE PROPERLY

- Never attempt to work on the machine without securing the machine first.
- Always lower the attachment to the ground before you work on the machine.
- If you must work on a lifted machine or attachment, securely support the machine or attachment. Do not support the machine on cinder blocks, hollow tires, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack.

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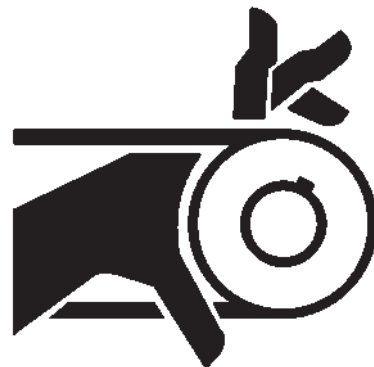


SA-527

STAY CLEAR OF MOVING PARTS

- Entanglement in moving parts can cause serious injury.
- To prevent accidents, care should be taken to ensure that hands, feet, clothing, jewelry and hair do not become entangled when working around rotating parts.

502-E01A-0026



SA-026

SAFETY

PREVENT PARTS FROM FLYING

- Grease in the track adjuster is under high pressure. Failure to follow the precautions below may result in serious injury, blindness, or death.
 - Do not attempt to remove GREASE FITTING or VALVE ASSEMBLY.
 - As pieces may fly off, be sure to keep body and face away from valve.
 - Never attempt to disassemble the track adjuster. Inadvertent disassembling of the track adjuster may cause the parts such as a spring to fly off, possibly resulting in severe personal injury or death.
- Travel reduction gears are under pressure.
 - As pieces may fly off, be sure to keep body and face away from AIR RELEASE PLUG to avoid injury.
 - GEAR OIL is hot. Wait for GEAR OIL to cool, then gradually loosen AIR RELEASE PLUG to release pressure.

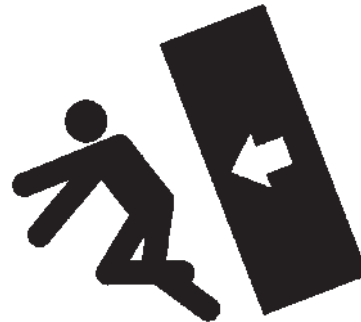


SA-344

503-E01B-0344

STORE ATTACHMENTS SAFELY

- Stored attachments such as grapple can fall and cause serious injury or death.
 - Securely store attachments and implements to prevent falling. Keep children and bystanders away from storage areas.



504-E01A-0034

SA-034

SAFETY

PREVENT BURNS

Hot spraying fluids:

- After operation, engine coolant is hot and under pressure. Hot water or steam is contained in the engine, radiator and heater lines. Skin contact with escaping hot water or steam can cause severe burns.
- To avoid possible injury from hot spraying water. DO NOT remove the radiator cap until the engine is cool. When opening, turn the cap slowly to the stop. Allow all pressure to be released before removing the cap.
- The hydraulic oil tank is pressurized. Again, be sure to release all pressure before removing the cap.



SA-039

Hot fluids and surfaces:

- Engine oil, gear oil and hydraulic oil also become hot during operation. The engine, hoses, lines and other parts become hot as well.
- Wait for the oil and components to cool before starting any maintenance or inspection work.



505-E01B-0498

SA-225

REPLACE RUBBER HOSES PERIODICALLY

- Rubber hoses that contain flammable fluids under pressure may break due to aging, fatigue, and abrasion. It is very difficult to gauge the extent of deterioration due to aging, fatigue, and abrasion of rubber hoses by inspection alone.
- Periodically replace the rubber hoses. (See the page of "Periodic replacement of parts" in the operator's manual.)
- Failure to periodically replace rubber hoses may cause a fire, fluid injection into skin, or the front attachment to fall on a person nearby, which may result in severe burns, gangrene, or otherwise serious injury or death.



SA-019

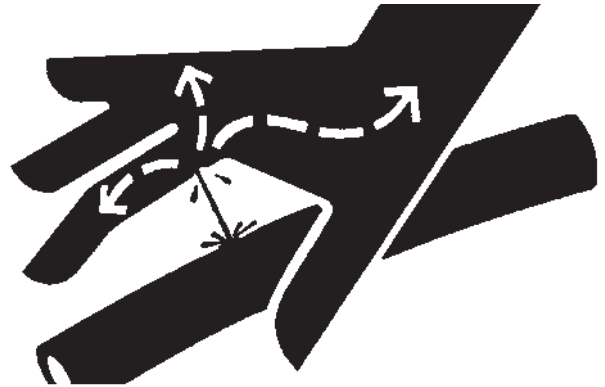
S506-E01A-0019

SAFETY

AVOID HIGH-PRESSURE FLUIDS

- Fluids such as diesel fuel or hydraulic oil under pressure can penetrate the skin or eyes causing serious injury, blindness or death.
- Avoid this hazard by relieving pressure before disconnecting hydraulic or other lines.
- Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard; take care to protect hands and body from high-pressure fluids. Wear a face shield or goggles for eye protection.
- If an accident occurs, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

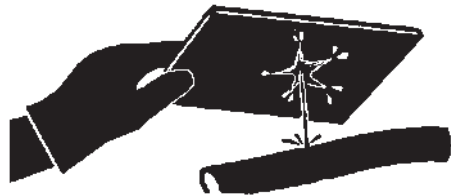
507-E03A-0499



SA-031



SA-292



SA-044

SAFETY

PREVENT FIRES

Check for Oil Leaks:

- Fuel, hydraulic oil and lubricant leaks can lead to fires.
 - Check for oil leaks due to missing or loose clamps, kinked hoses, lines or hoses that rub against each other, damage to the oil-cooler, and loose oil-cooler flange bolts.
 - Tighten, repair or replace any missing, loose or damaged clamps, lines, hoses, oil-cooler and oil-cooler flange bolts.
 - Do not bend or strike high-pressure lines.
 - Never install bent or damaged lines, pipes, or hoses.



SA-019

Check for Shorts:

- Short circuits can cause fires.
 - Clean and tighten all electrical connections.
 - Check before each shift or after eight(8) to ten(10) hours operation for loose, kinked, hardened or frayed electrical cables and wires.
 - Check before each shift or after eight(8) to ten(10) hours operation for missing or damaged terminal caps.
 - DO NOT OPERATE MACHINE if cable or wires are loose, kinked, etc..

Clean up Flammables:

- Spilled fuel and oil, and trash, grease, debris, accumulated coal dust, and other flammables may cause fires.
 - Prevent fires by inspecting and cleaning the machine daily and by removing spilled or accumulated flammables immediately.

Check Key Switch:

- If a fire breaks out, failure to stop the engine will escalate the fire, hampering fire fighting.
Always check key switch function before operating the machine every day:
 1. Start the engine and run it at slow idle.
 2. Turn the key switch to the OFF position to confirm that the engine stops.
 - If any abnormalities are found, be sure to repair them before operating the machine.

508-E02B-0019

Check Heat Shields:

- Damaged or missing heat shields may lead to fires.
 - Damaged or missing heat shields must be repaired or replaced before operating the machine.

508-E02A-0393

SAFETY

EVACUATING IN CASE OF FIRE

- If a fire breaks out, evacuate the machine in the following way:
 - Stop the engine by turning the key switch to the OFF position if there is time.
 - Use a fire extinguisher if there is time.
 - Exit the machine.
- In an emergency, if the cab door or front window can not be opened, break the front or rear window panes with the emergency evacuation hammer to escape from the cab. Refer the explanation pages on the Emergency Evacuation Method.



SA-393

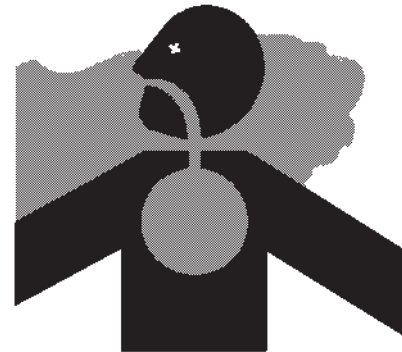


SS-1510

18-E02B-0393

BEWARE OF EXHAUST FUMES

- Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.
- If you must operate in a building, be sure there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.



509-E01A-0016

SA-016

PRECAUTIONS FOR WELDING AND GRINDING

- Welding may generate gas and/or small fires.
 - Be sure to perform welding in a well ventilated and prepared area. Store flammable objects in a safe place before starting welding.
 - Only qualified personnel should perform welding. Never allow an unqualified person to perform welding.
- Grinding on the machine may create fire hazards. Store flammable objects in a safe place before starting grinding.
- After finishing welding and grinding, recheck that there are no abnormalities such as the area surrounding the welded area still smoldering.



SA-818

523-E01A-0818

SAFETY

AVOID HEATING NEAR PRESSURIZED FLUID LINES

- Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders.
- Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials.
- Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area. Install temporary fire-resistant guards to protect hoses or other materials before engaging in welding, soldering, etc..



SA-030

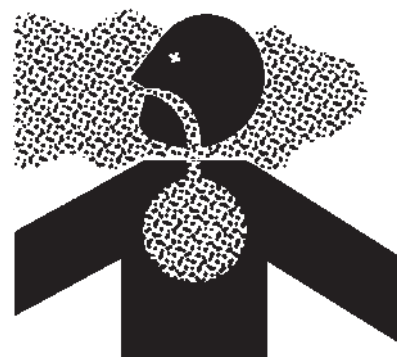
AVOID APPLYING HEAT TO LINES CONTAINING FLAMMABLE FLUIDS

- Do not weld or flame cut pipes or tubes that contain flammable fluids.
- Clean them thoroughly with nonflammable solvent before welding or flame cutting them.

510-E01B-0030

REMOVE PAINT BEFORE WELDING OR HEATING

- Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. If inhaled, these fumes may cause sickness.
- Avoid potentially toxic fumes and dust.
- Do all such work outside or in a well-ventilated area. Dispose of paint and solvent properly.
- Remove paint before welding or heating:
 1. If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
 2. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



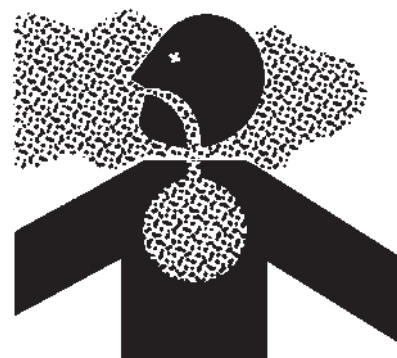
SA-029

511-E01A-0029

SAFETY

BEWARE OF ASBESTOS AND SILICON DUST AND OTHER CONTAMINATION

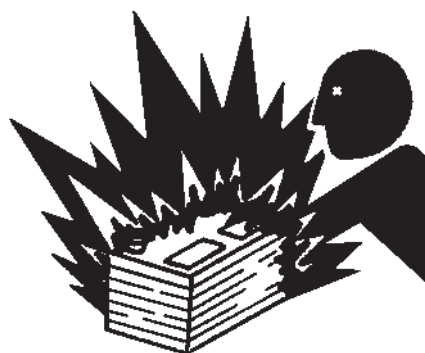
- Take care not to inhale dust produced in the work site. Inhalation of asbestos fibers may be the cause of lung cancer. Inhalation of silicon dust and other contamination may cause sickness.
- Depending on the work site conditions, the risk of inhaling asbestos fiber, silicon dust or other contamination may exist. Spray water to prevent asbestos, silicon dust or other contamination from airborne. Do not use compressed air.
- When operating the machine in a work site where asbestos, silicon dust or other contamination might be present, be sure to operate the machine from the upwind side and wear a mask rated to prevent the inhalation of asbestos, silicon dust or other contamination.
- Keep bystanders out of the work site during operation.
- Asbestos might present in imitation parts. Use only genuine Hitachi Parts.



SA-029

PREVENT BATTERY EXPLOSIONS

- Battery gas can explode.
 - Keep sparks, lighted matches, and flame away from the top of battery.
 - Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.
 - Do not charge a frozen battery; it may explode. Warm the battery to 16°C (60° F) first.
 - Do not continue to use or charge the battery when electrolyte level is lower than specified. Explosion of the battery may result.
 - Loose terminals may produce sparks. Securely tighten all terminals.
- Battery electrolyte is poisonous. If the battery should explode, battery electrolyte may be splashed into eyes, possibly resulting in blindness.
 - Be sure to wear eye protection when checking electrolyte specific gravity.



SA-032

512-E01B-0032

SERVICE AIR CONDITIONING SYSTEM SAFELY

- If spilled onto skin, refrigerant may cause a cold contact burn.
 - Refer to the instructions described on the container for proper use when handling the refrigerant.
 - Use a recovery and recycling system to avoid leaking refrigerant into the atmosphere.
 - Never touch the refrigerant.



513-E01A-0405

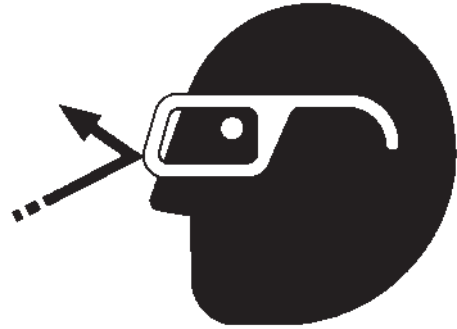
SA-405

SAFETY

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



SA-432

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.
 - Securely tighten the fuel and oil filler cap.

034-E01A-0496



SA-018



SA-019

SAFETY

HANDLE CHEMICAL PRODUCTS SAFELY

- Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with your machine include such items as lubricants, coolants, paints, and adhesives.
 - A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.
 - Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and use recommended equipment.
 - See your authorized dealer for MSDS's (available only in English) on chemical products used with your machine.

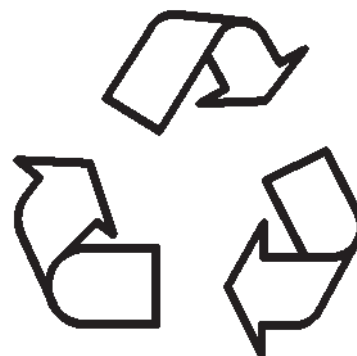


SA-309

515-E01A-0309

DISPOSE OF WASTE PROPERLY

- Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with HITACHI equipment includes such items as oil, fuel, coolant, brake fluid, filters, and batteries.
 - Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
 - Do not pour waste onto the ground, down a drain, or into any water source.
 - Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.
 - Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your authorized dealer.



SA-226

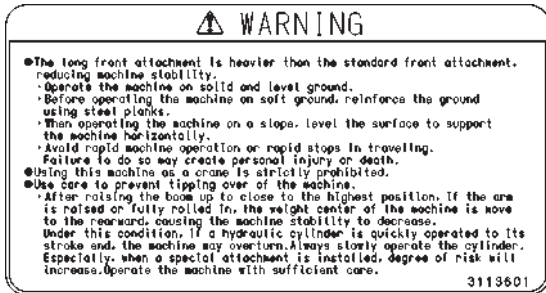
516-E01A-0226

NEVER RIDE ATTACHMENT

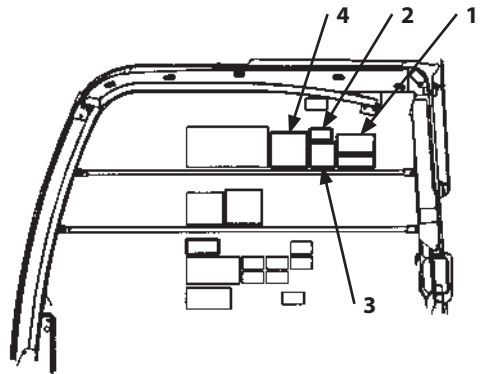
- Never allow anyone to ride attachments or the load. This is an extremely dangerous practice.

SAFETY SIGNS

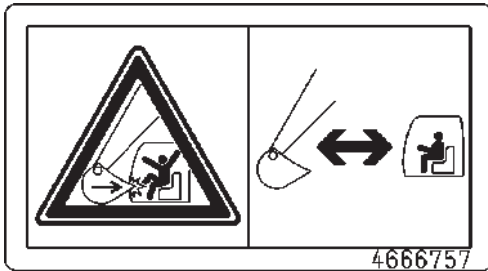
All safety signs and their locations affixed on the machine are illustrated in this group. Make sure of the contents described in the safety signs through reading actual ones affixed on the machine to ensure safe machine operation. Always keep the safety signs clean. In case a safety sign is broken or lost, immediately, obtain a new replacement and affix it again in position on the machine. Use the part No. indicated under the right corner of each safety sign illustration when placing an order of it to the Hitachi dealer.



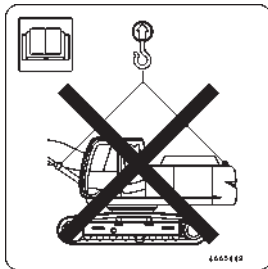
SS3113601



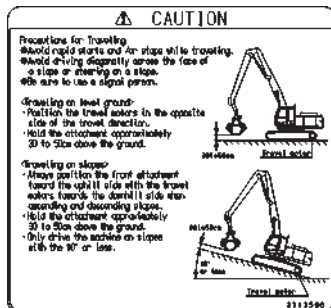
SS-2975



SS4666757



SS4665448

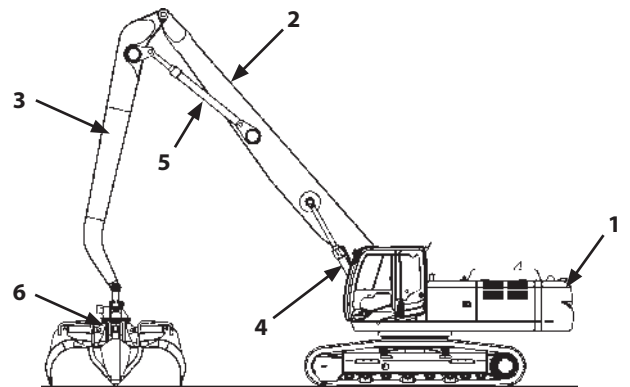


SS3113596

COMPONENTS NAME

COMPONENTS NAME

- 1- Additional Counterweight
- 2- Boom
- 3- Arm
- 4- Boom Cylinder
- 5- Arm Cylinder
- 6- Attachment(Grapple)




M1V1-SH1-001

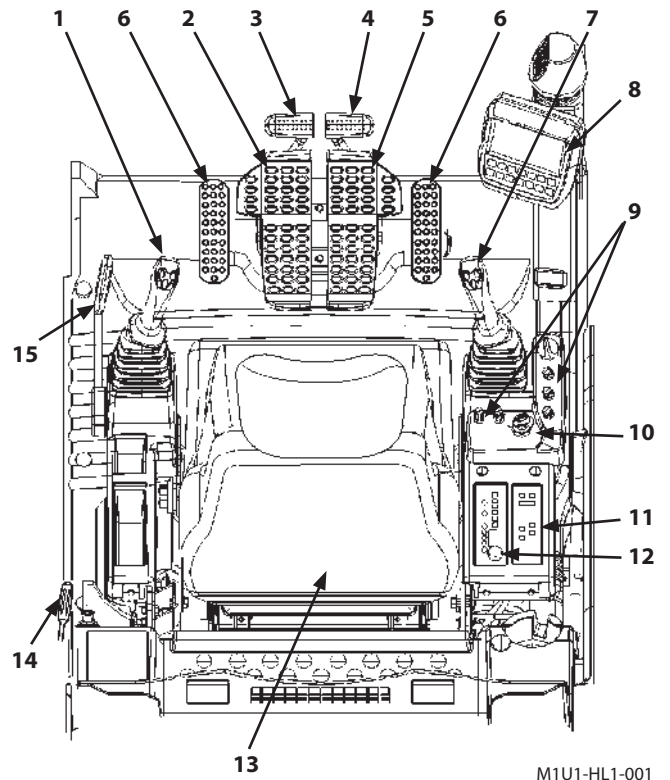
OPERATOR'S STATION

CAB FEATURES

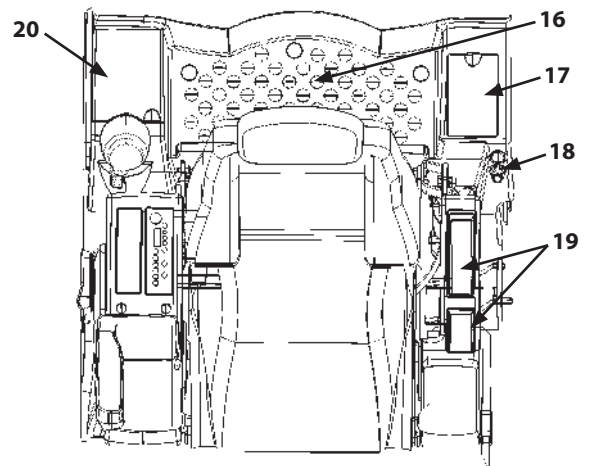
Std. Model

- 1- Left Control Lever/Horn Switch
- 2- Left Travel Pedal
- 3- Left Travel Lever
- 4- Right Travel Lever
- 5- Right Travel Pedal
- 6- Attachment Pedal
- 7- Right Control Lever/Power Boost Switch
- 8- Multi Function Monitor Panel
- 9- Switch Panel
- 10- Key Switch
- 11- Air Conditioner Panel
- 12- FM/AM Radio
- 13- Operator's Seat
- 14- Cab Door Release Lever
- 15- Pilot Control Shut-Off Lever
- 16- Tray
- 17- Fuse Box
- 18- Cigar Lighter
- 19- Switch Panel (incl:optional)
- 20- Glove Compartment (Hot and Cool Box)
- 21- Handle (Engine Stop Knob)

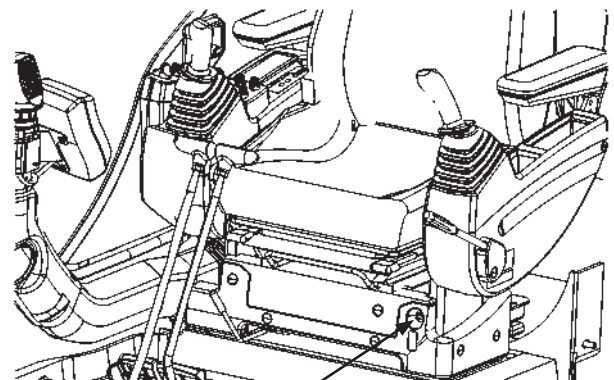
 **NOTE:** Attachment pedales (6) used for attachment swing operation are equipped on either right or left.



M1U1-HL1-001



M1U1-01-002



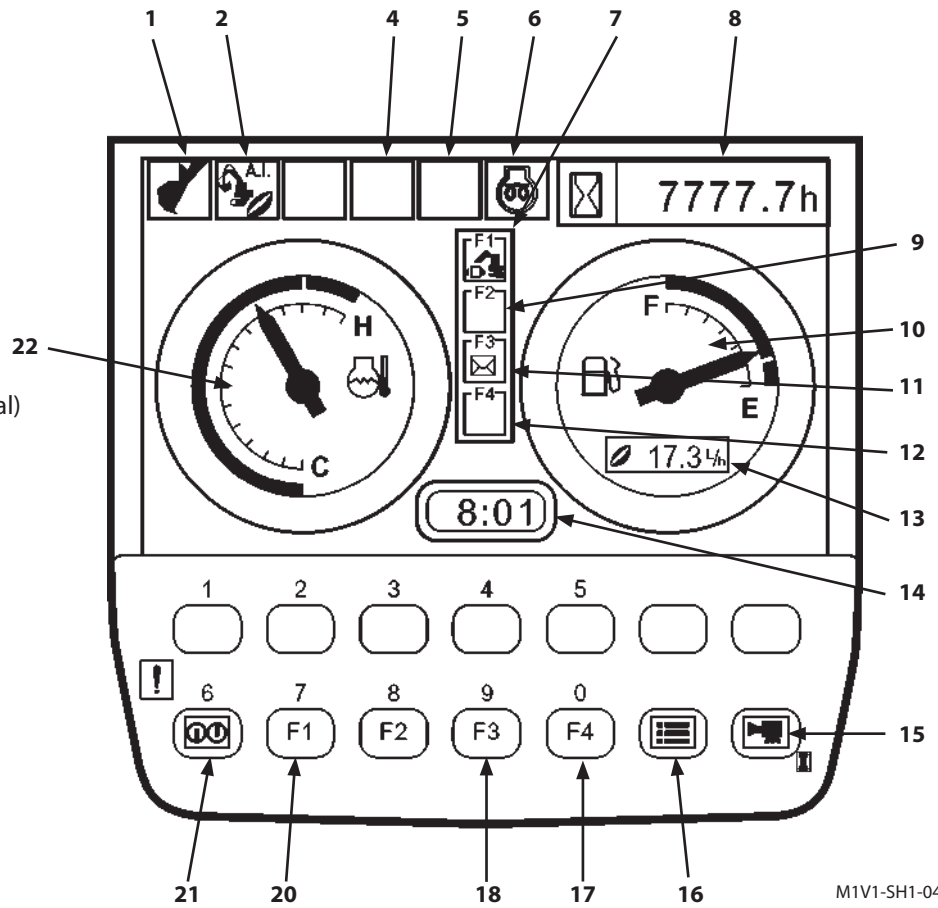
21

M1U1-01-029

OPERATOR'S STATION

MULTI FUNCTION MONITOR PANEL

- 1 - Work Mode Display
- 2 - Auto-Idle Display
- 4 - Auxiliary
- 5 - Auxiliary
- 6 - Preheat Display
- 7 - Work Mode Display
- 8 - Hour Meter
- 10 - Fuel Gauge
- 11 - Mail Display (Optional)
- 12 - Auxiliary
- 13 - Fuel Rate Display
- 14 - Clock
- 15 - Back Monitor Selector (Optional)
- 16 - Menu
- 17 - Auxiliary Selection
- 18 - Mail Selection (Optional)
- 20 - Work Mode Selection
- 21 - Return to Basic Screen Key
- 22 - Coolant Temperature Gauge



M1V1-SH1-047

OPERATOR'S STATION

WORK MODE SELECTION


IMPORTANT: Select the work mode from the work mode screen.

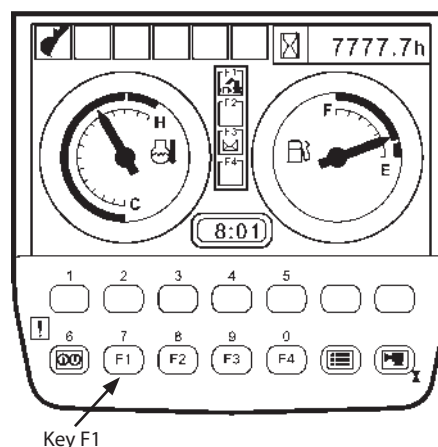
In order to display the work mode screen, push work mode selection key F1 after basic screen displays, or select from main menu.

Selecting an Attachment by Using Work Mode Selection Key F1

1. When the basic screen displays, push work mode selection key F1 and display the work mode screen.
2. This machine is operated with work mode.
Select digging mode.

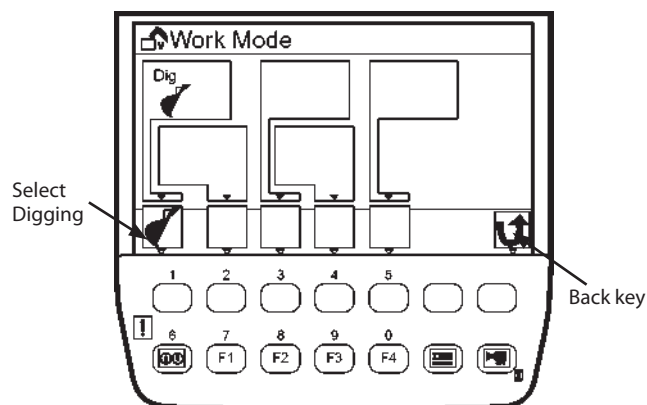
 **NOTE:** When selecting Digging, return to the basic screen.

 **NOTE:** When pushing the back key, return to the previous screen.



Basic Screen

M1V1-SH1-048





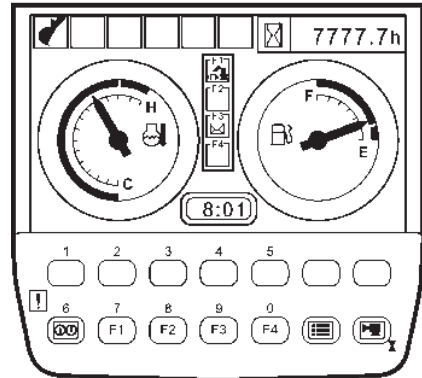
Work Mode Screen

M1V1-SH1-050

OPERATOR'S STATION

Selecting a Work Mode from Main Menu

1. When the basic screen displays, push the menu key and display main menu.
2. Select work mode from main menu by using keys 1  and 2 . Push determination key. Then, the work mode screen displays.
3. This machine is operated with work mode.
Select digging mode.

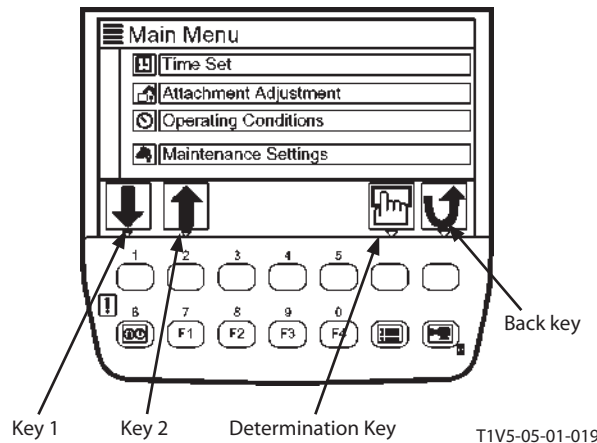


Basic Screen

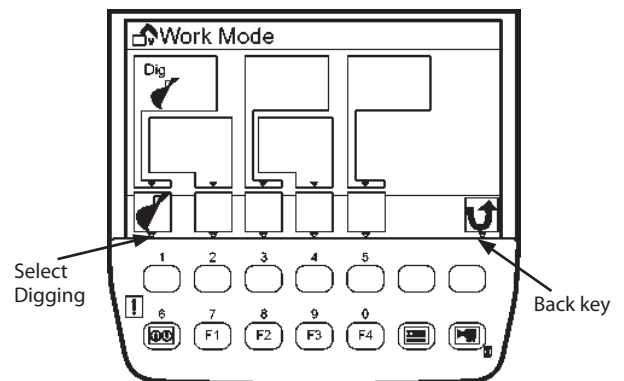
M1V1-SH1-048

 NOTE: When selecting Digging, return to Main Menu.

 NOTE: When pushing the back key, return to the basic screen.



T1V5-05-01-019



Work Mode Screen

M1V1-SH1-050

BREAK-IN

BREAK-IN OPERATION OF NEW MACHINE

IMPORTANT: If full loads are imposed to the machine without performing break-in operation, score or seizure of the parts may result, possibly shortening the service life of the machine. Sufficiently perform break-in operation.

Service life and operational performance of the machine will be greatly affected depending on how the machine is operated during initial stage of operation. Operate the machine only in economy (E) mode and limit the engine power up to approx. 80% of the maximum output during the first 50 hours of operation. Grease all front attachment joint pins every day.

OPERATING THE ENGINE

INSPECT MACHINE DAILY BEFORE STARTING WORK

Be sure to carry out daily inspections before starting the engine. Refer to the Hydraulic Excavator Operator's Manual for the engine starting/stopping procedures.

	Check Point
Engine	<ol style="list-style-type: none"> 1. Level and if engine oil and coolant are contaminated 2. Starting easiness, Exhaust color, Noise 3. Oil and coolant leaks, Damage to hoses and pipe lines 4. Clogging or damage to the radiator and oil cooler 5. Loose and/or missing mounting nut and bolts 6. Damage to the intake hose and loose clamps
Upperstructure	<ol style="list-style-type: none"> 1. Fuel level and leaks from the fuel tank. Mixing of foreign material in the fuel 2. Hydraulic oil level and leaks from the hydraulic oil tank. Mixing of foreign material in the hydraulic oil. 3. Operation, play, and force of each control lever 4. Operation of each hydraulic component, Oil leaks and damage to pipe lines and hoses, 5. Deformation, Breakage, Noise in any section 6. Loose and/or missing mounting nuts and bolts 7. Washer fluid level 8. High-mount cab parts (optional) <ul style="list-style-type: none"> • Loose and/or missing stand mounting nuts and bolts • Loose and/or missing step mounting nuts and bolts
Undercarriage	<ol style="list-style-type: none"> 1. Sag, wear, or breakage on the crawlers 2. Oil leaks or wear of the upper/lower rollers, and front idlers 3. Oil leaks from the travel device 4. Loose and/or missing mounting nuts and bolts
Front Attachment	<ol style="list-style-type: none"> 1. Oil leaks or damage to the hydraulic cylinders, pipe lines, and hoses 2. Wear or damage of the attachment 3. Loose, worn, or missing of the attachment tooth 4. Greasing conditions of the front attachment joint pins 5. Damage of pin lock pins, stoppers and link pins 6. Loose and/or missing mounting nuts and bolts
Others	<ol style="list-style-type: none"> 1. Operation of all gauges and meters, switches, lights, and alarms 2. Function of the parking brake 3. Deformation and damage to the head guard 4. Abnormal conditions of the exterior machine appearance 5. Wear or damage of the seat belt

- Refer to the CHECK AND MAINTENANCE section for inspection procedures. For inspection procedures other than those described in this manual, refer to the Hydraulic Excavator Operator's Manual.

OPERATING THE ENGINE



CAUTION:

- **Be sure to fasten the seatbelt prior to operating the machine to reduce the possibility of personal injury to the minimum in case tipping over of the machine occurs.**
- **Before operating the machine, be sure to check that the stroke direction of the control levers and pedals matches the movement direction of the machine.**
- **Be sure to close the door in cab in order to prevent the operator from falling.**
- **Take a good care for going up and down to the cab.**

While slowly operating each lever and pedal, check the movement direction of the front attachment.

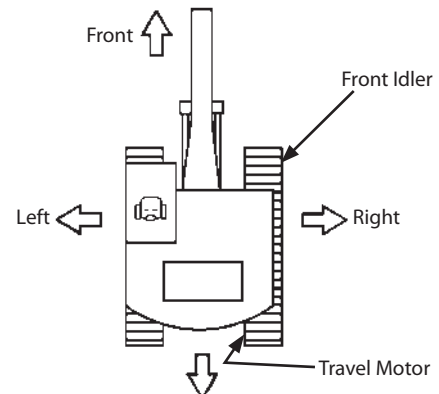
DRIVING THE MACHINE

CONTROL LEVERS AND PEDALS

WARNING: Before operating the machine, be sure to check that the stroke direction of the control levers and pedals matches the movement direction of the machine.

Align the front attachment in parallel with the longitudinal center direction of the crawlers and position the machine with the travel motors at the rear.

While slowly operating each lever and pedal, check the movement direction of the front attachment.



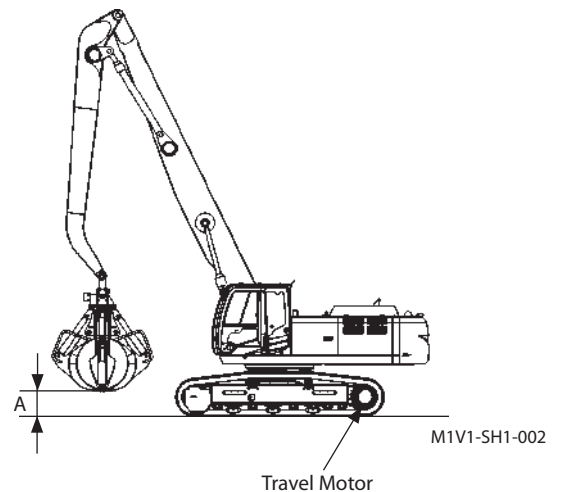
M104-01-038

DRIVE THE MACHINE

WARNING: Don't operate the travel mode switch while driving the machine. Avoid abrupt start and stop travel operation, possibly causing the machine to tip over.

Traveling on Flat Ground

1. Use a signal person.
2. Position the machine as illustrated to the right.
 - Set the arm vertical against the ground.
 - As for the machine attached with the grapple, close the grapple teeth.
 - Raise the grapple bottom 300 to 500 mm (11.8~19.7 in)(A) above the ground.
 - Align the front attachment in parallel with the longitudinal center direction of the crawlers and position the machine with the travel motors at the rear
3. Reduce the engine speed to a range slower than the middle speed. Turn the travel mode switch to the SLOW position. Drive the machine slowly so that the attachment does not sway.



DRIVING THE MACHINE

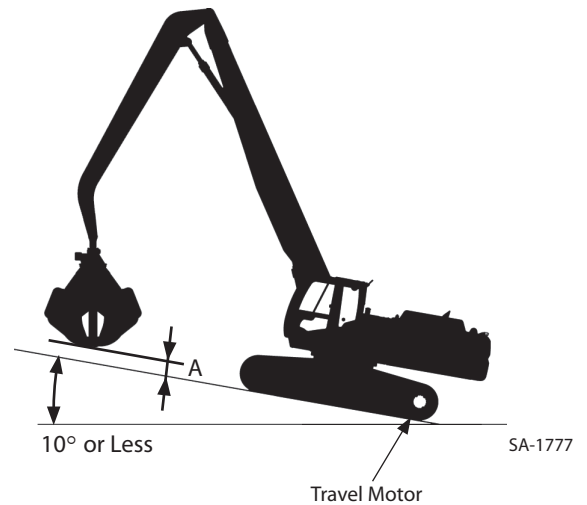
TRAVELING ON SLOPES



WARNING:

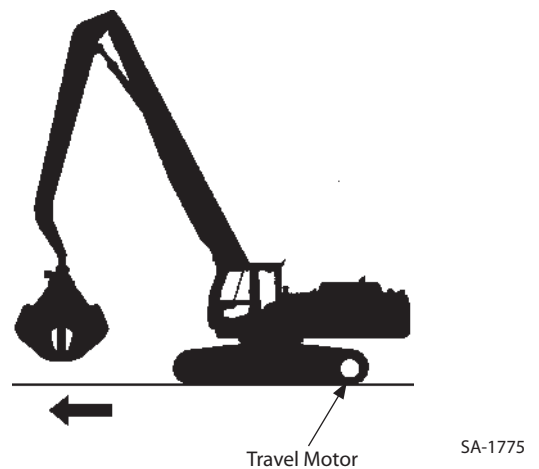
- **Never attempt to travel on slopes with grade of 10° (17%) or more.**
- **Don't operate actuators other than travel motors while driving up or down slopes.**
- **Avoid driving across the face of a slope, possibly creating hazardous conditions.**
- **Don't operate the travel mode switch while driving the machine. If the fast travel mode is unintentionally selected while driving up or down slopes, tipping over of the machine may result due to impact loads.**
- **The machine stability may suddenly change at a point where the slope inclination changes. Carefully operate the machine to prevent the machine from tipping over.**

1. Use a signal person.
2. Position the machine as illustrated to the right:
 - Fully retract the arm cylinder.
 - As for the machine attached with the grapple, close the grapple teeth.
 - Raise the attachment bottom 300 to 500 mm (11.8~19.7 in)(A) above the ground.
 - Align the front attachment in parallel with the longitudinal center direction of the crawlers and position the machine with the travel motors at the rear.
3. Face the front attachment and the travel motors toward the up-hill side and down hill side respectively.
4. Reduce the engine speed to the range slower than the middle speed. Turn the travel mode switch to the SLOW position. Drive the machine slowly.



SETTING MACHINE AT WORK AREA

1. Place the machine on solid, level ground.
2. Position the crawlers to front and the travel motor to rear.
3. Set the front as illustrated.



DRIVING THE MACHINE

PARKING THE MACHINE ON SLOPES

WARNING: Avoid parking machine on slopes. The machine may tip over, possibly resulting in personal injury.

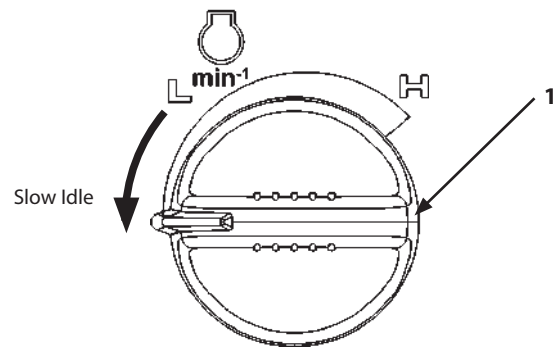
PARKING THE MACHINE

IMPORTANT: Protect cab electrical components from bad weather. Always close windows, roof vent and cab door when parking the machine.

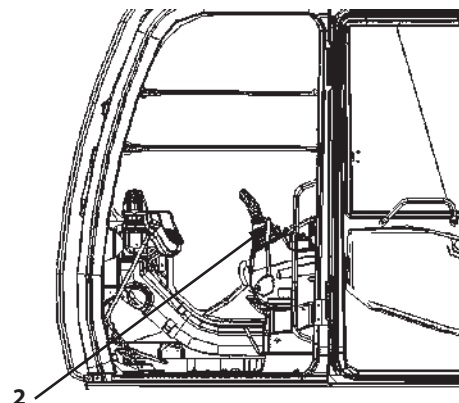
1. Park the machine on solid and level ground.
2. Position the machine as illustrated to the right.
 - Retract the arm cylinder so that the arm is positioned perpendicularly to the ground surface.
 - As for the machine attached with the grapple, open the grapple teeth.
 - Lower the attachment to the ground surface.
3. Turn engine control dial counterclockwise to the stop (the slow idle position).
Run the engine approximately 5 minutes to cool the engine.
4. Turn the key switch to OFF to stop the engine. Remove the key from the key switch.
5. Pull pilot control shut-off lever (2) to the LOCK position.
6. Close windows, roof vent, and cab door.
7. Lock all access doors and compartments.
8. Whenever leaving the machine, close and lock all windows, cab doors, and access covers.
9. Be sure to carry the key.



SA-1782



M1U1-01-033



M1U1-01-025

LOCK position

OPERATING THE MACHINE

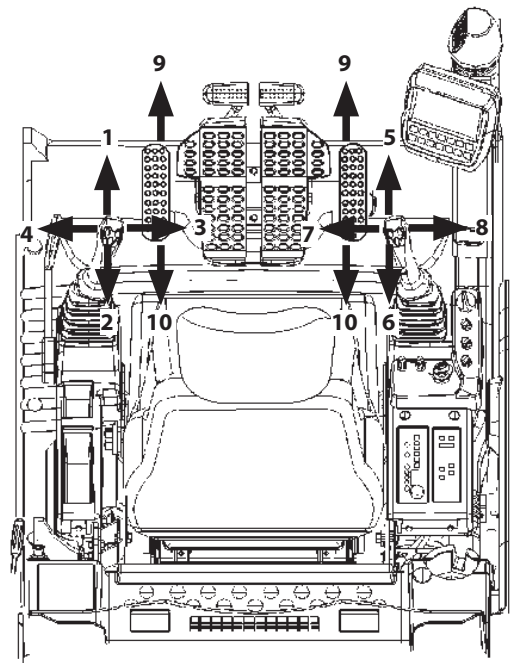
CONTROL LEVERS (ISO PATTERN)



WARNING:

- If the boom is operated with any part of the operator's body extended beyond the window frame, crushing accident with the boom may result.
- Never extend any part of your body beyond the window frame. Never remove the window bars.
- Be completely familiar with the location and function of each control before operation.

The machine is equipped with a label showing the control patterns of the levers and pedals. When the control levers (pedals) are released, they will automatically return to neutral and the upperstructure, boom, arm, and grapple stop moving and are held in position. Select the digging mode when operating this machine.



M1U1-HL1-001

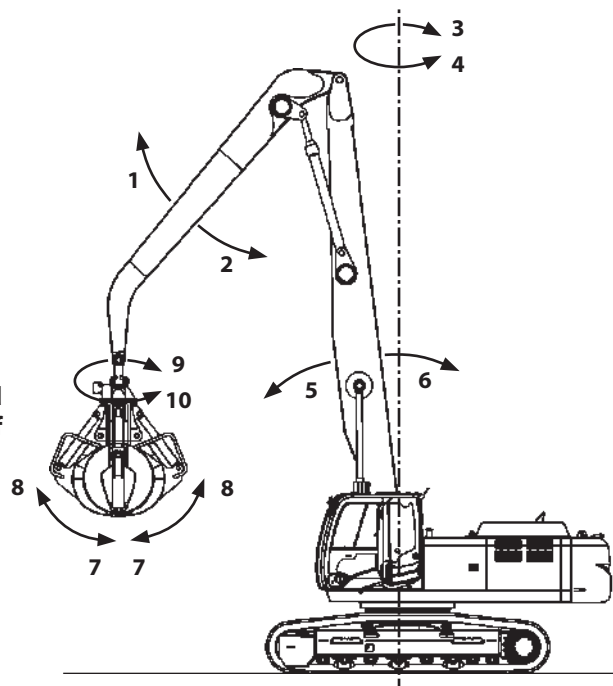
- 1- Arm Roll-Out
- 2- Arm Roll-In
- 3- Swing Right (Base machine)
- 4- Swing Left (Base machine)
- 5- Boom Lower
- 6- Boom Raise
- 7- Attachment (Grapple)/Close
- 8- Attachment (Grapple)/Open
- 9- Attachment (Grapple)/Right Swing
- 10- Attachment (Grapple)/Left Swing



CAUTION: The operations of grapple open/close and swing are different according to the specification of machine respectively.



NOTE: Either left or right of the attachment pedal is installed.



M1V1-SH1-004

OPERATING THE MACHINE

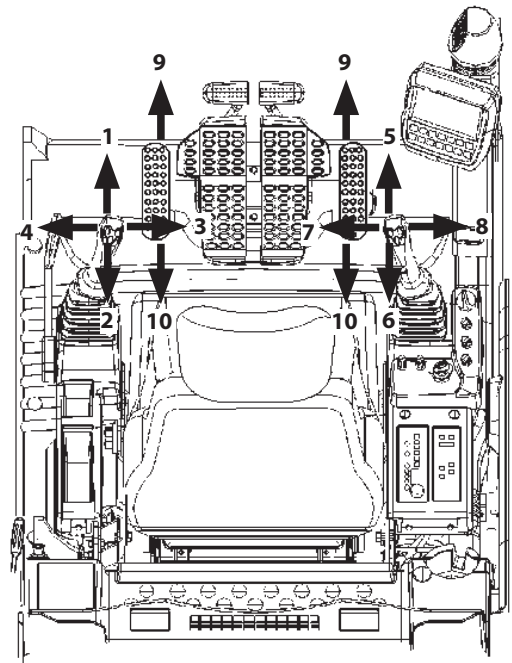
CONTROL LEVERS (HITACHI PATTERN)



WARNING:

- If the boom is operated with any part of the operator's body extended beyond the window frame, crushing accident with the boom may result.
- Never extend any part of your body beyond the window frame. Never remove the window bars.
- Be completely familiar with the location and function of each control before operation.

The machine is equipped with a label showing the control patterns of the levers and pedals. When the control levers (pedals) are released, they will automatically return to neutral and the upperstructure, boom, arm, and grapple stop moving and are held in position. Select the digging mode when operating this machine.



M1U1-HL1-001

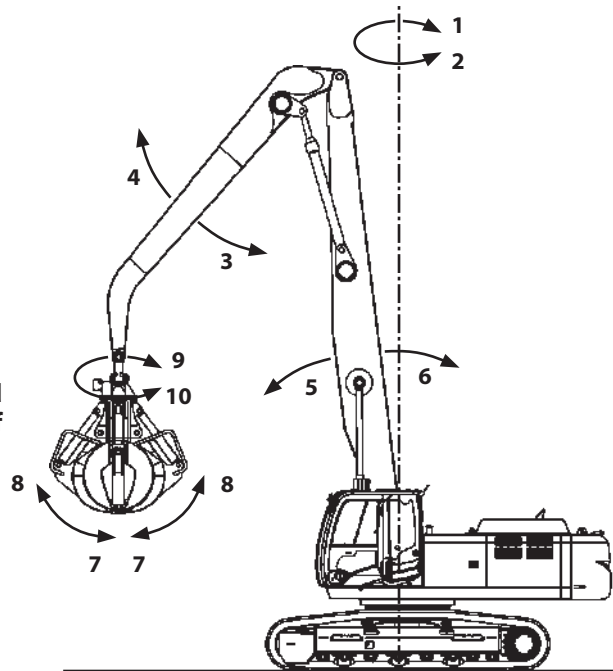
- 1- Swing Right (Base machine)
- 2- Swing Left (Base machine)
- 3- Arm Roll-In
- 4- Arm Roll-Out
- 5- Boom Lower
- 6- Boom Raise
- 7- Attachment (Grapple)/Close
- 8- Attachment (Grapple)/Open
- 9- Attachment (Grapple)/Right Swing
- 10- Attachment (Grapple)/Left Swing



CAUTION: The operations of grapple open/close and swing are different according to the specification of machine respectively.



NOTE: Either left or right of the attachment pedal is installed.



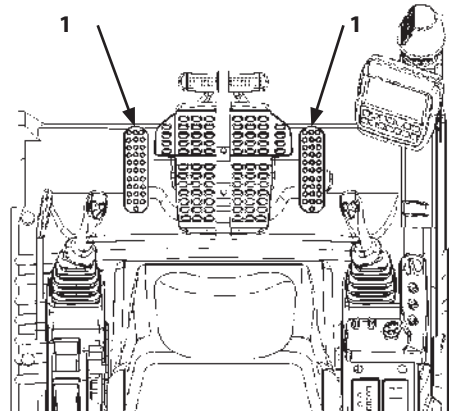
M1V1-SH1-004

OPERATING THE MACHINE

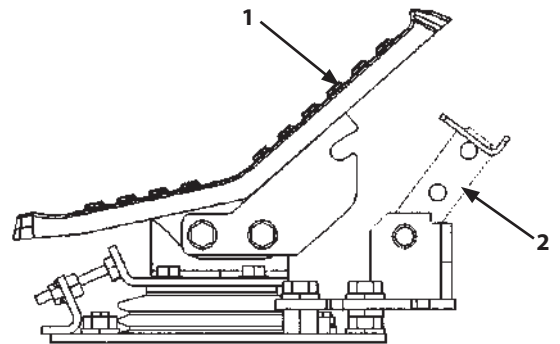
ATTCHMENT PEDAL

CAUTION: Turn pedal lock (2) in the LOCK position when attachment pedal (1) is not in use. Do not put foot on the pedal when attachment pedal (1) is not in use.

Turn attachment pedal (1) in neutral. Lay pedal lock (2) down forward and lock attachment pedal (1). Lay pedal lock (2) down forward and unlock attachment pedal (1).

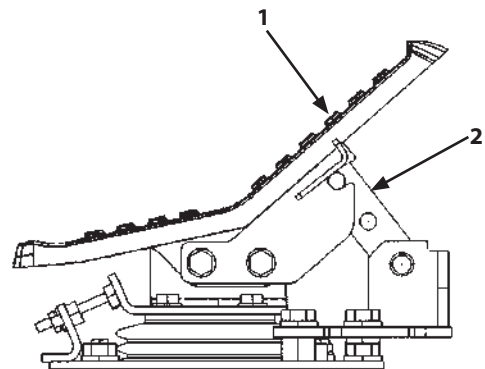


M1U1-HL1-001



Unlocked Attachment Pedal

M1J1-13-003



Locked Attachment Pedal

M1J1-13-002

OPERATING THE MACHINE

OPERATION (AS FOR THE MACHINE ATTACHED WITH THE GRAPPLE)



CAUTION:

- Before operating the machine, be sure to check that the direction of movement of the control levers and pedals matches the direction of movement of the machine.
- If the grapple sways, the machine stability is reduced. Operate the grapple slowly so as to prevent the grapple from swaying as less as possible.
- Grasp the long objects at the center of gravity.
- Set the grapple vertical against the ground whenever operating the machine.

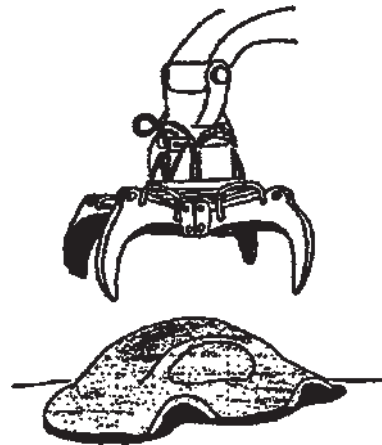
1. Slowly raise the boom from the parking position (refer to the descriptions for Parking).
2. While operating the boom and the arm, move the grapple above the objects to be handled.
3. After fully opening the grapple, grasp the objects.
4. Transport the grasped objects to the position desired.

PRECAUTIONS FOR OPERATION

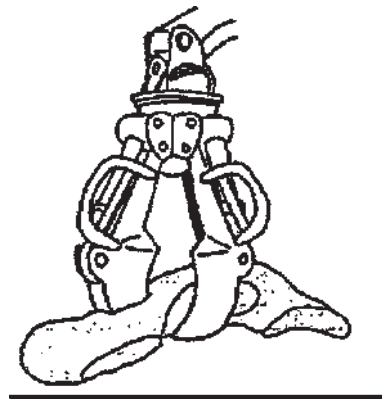


WARNING: Sufficiently check job site safety before starting operation. Be sure to follow the rules below:

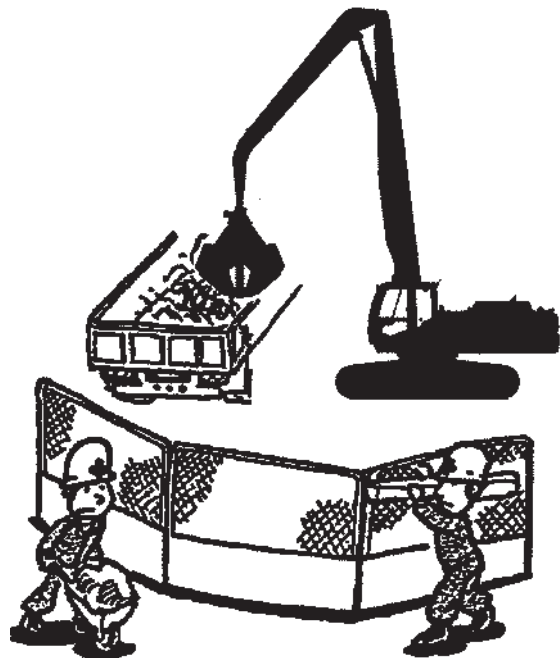
- Be sure to install both the overhead and front cab guards when the machine is operated at a job site, which has the possibility of falling objects.
 - Operate the machine on solid level ground strong enough to support the machine weight.
 - When operating the machine, avoid hitting attachment with cab.
1. Be sure to wear close fitting clothing and safety equipment appropriate for the job, such as a hard hat, etc. when operating the machine.
 2. Clear all persons and obstacles from area of operation and machine movement.
Always beware of the surroundings while operating.
When working in a small area surrounded by obstacles, take care not to hit the upperstructure against obstacles.
 3. During loading or unloading operation, swing the grapple toward the rear side of the loading dump truck to prevent the grapple from passing over the dump truck cab or co-workers.



M1HM-04-003



M1HM-04-004



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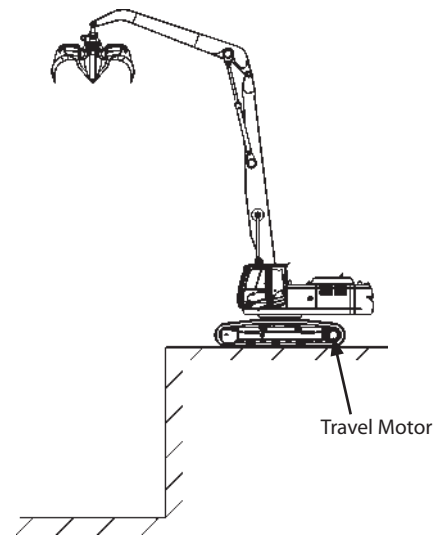
OPERATING THE MACHINE

OPERATE THE MACHINE SAFELY

Pilot control shut-off lever (1) functions to prevent misoperation of the machine from occurring if the control levers are accidentally moved when leaving the operator's seat or when entering the cab.

CAUTION: Prevent the machine from tipping over and from being involved in a ground collapse. Take the necessary precautions as follows:

- Make sure the worksite has sufficient strength to firmly support the machine.
- When working close to an excavation or at road shoulders, operate the machine with the tracks positioned perpendicular to the cliff face with travel motors at the rear, so that the machine can more easily evacuate if the cliff face collapses.
- If working on the bottom of a cliff or a high bank is required, be sure to investigate the area first and confirm that no danger of the cliff or bank collapsing exists. If any possibility of cliff or bank collapsing exists, do not work on the area.
- Soft ground may collapse when operating the machine on it, possibly causing the machine to tip over. When working on a soft ground is required, be sure to reinforce the ground first using large pieces of steel plates strong and firm enough to easily support the machine.
- Avoid loading operation on a rough terrain or slopes. Tipping over of the machine may result if the machine is operated in an inclined position. In addition, the machine may tip over due to inertia force of machine's own weight. Always operate the machine on solid level ground.



M1V1-SH1-024



SA-1793

AVOID PUSHING GRAPPLE INTO SCRAP

Avoid pushing the grapple into scrap using the front attachment hydraulic cylinder force plus machine weight by raising the base machine above the ground. Tipping over of the machine and/or damage to the front attachment may result.



SA-1796

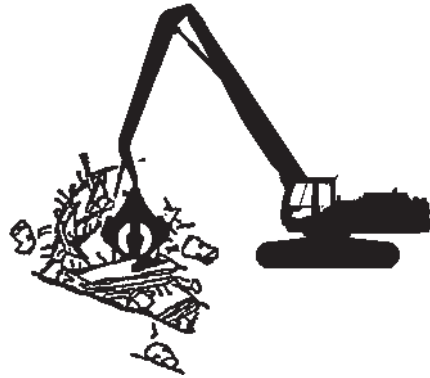
AVOID COLLAPSING OPERATIONS BY SWING FUNCTION

Don't attempt to collapse piled scrap with the long front attachment by swinging the base machine. Tipping over of the machine and/or damage to the front attachment may result.

OPERATING THE MACHINE

AVOID GRADING OPERATION

Do not use this machine to grade scrap heaps. Tipping over of the machine and/or damage to the front attachment may result.



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OPERATE THE MACHINE SLOWLY AND CAREFULLY

- Abrupt operation may cause the machine to tip over due to impact loads. Operate each function slowly and carefully. Using extra care, slowly drive the machine. Avoid sudden start and stop of swing operation, which causes the grapple to sway so that the base machine becomes unstable thereby creating a hazardous condition.
- Do not move each cylinder quickly to the stroke end. Avoid operation with any cylinder at the stroke end. The machine may sway dangerously, possibly resulting in tipping over of the machine and/or damage to the cylinders and any parts.

AVOID CRUSHING OPERATIONS BY PUSHING AND PULLING THE GRAPPLE

Do not attempt to push scrap heaps using free-fall force of the front and do not pull scrap forcibly with the front. Tipping over of the machine and /or damage to the front attachment may result.



SA-1796

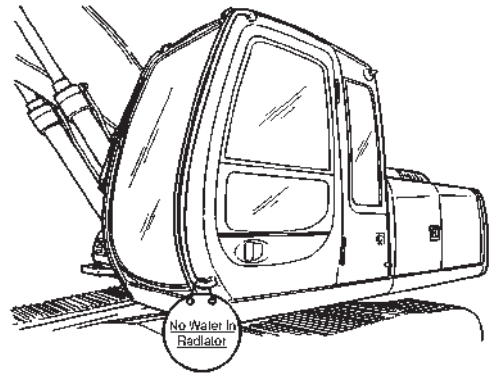


SA-1789

OPERATING THE MACHINE

OVERNIGHT STORAGE INSTRUCTIONS

- After day's operation, drive the machine to solid level ground where there is no possibility of scrap falling, or floods. (Refer to the descriptions for the Parking in the DRIVING THE MACHINE section.)
- Fill the fuel tank with fuel.
- Clean the machine.
- If anti-freeze or long life coolant is not used in cold weather, be sure to drain coolant from the radiator and the engine jacket. Also, be sure to put a "No Water in Radiator" tag in a visible place if the coolant has been drained.



M1HM-04-011

OPERATING THE MACHINE

OBJECT HANDLING --- IF EQUIPPED



WARNING: When using machine for object handling operation, be sure to comply with EN 474-5, which prescribes that the machine must be equipped with the rated lifting-load table, lifting hook, overload alarm device, and hosesrupture safety valve when applied to object handling.

Lifting hook, cables, straps, or ropes can break, causing serious injury. Do not use damaged chains, lifting hook, frayed cables, slings, straps, or ropes to crane.

Never move the load suddenly. Never move load over a person's head. Do not allow any persons near load.

Keep all persons away from raised load until blocks are supporting it or load is sitting on the ground.

Position upperstructure so that the travel motors are at the rear.

Do not attach sling/chain to the bucket teeth.

Be sure that the maximum lifting load does not exceed the rated load as shown in the lifting load table plate or operator's manual.

The overload alarm device warns the operator with a buzzer sound when the lifting load exceeds the lifting capacity. If the buzzer sounds, immediately move the load into the safety range, or lower the load on the ground.

Be sure to turn the overload alarm device switch ON while the machine is used for object handling.

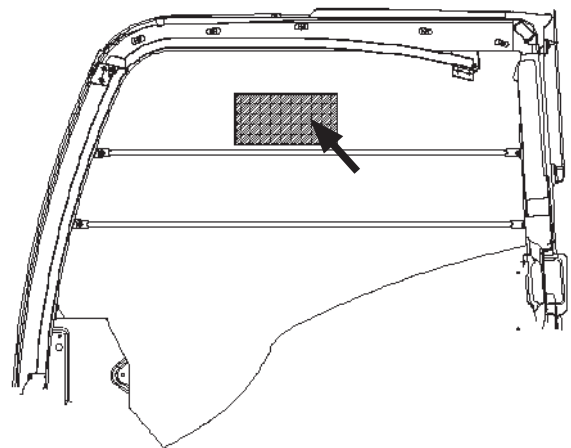
When the machine specifications are modified from the original specifications of the machine delivered, for example, changing the front attachment or track shoes, changing or new installing the overload alarm device may be require. Be sure to consult your authorized Hitachi dealer.

Check that the specifications of the front and machine to be used meet the specifications shown on the rated lifting load table. If any discrepancies between them are found, replace the rated lifting load table so that no discrepancy is found.

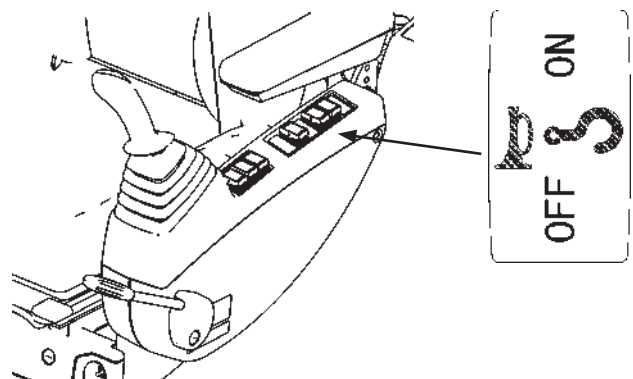


Rated lifting load table

SA-1785



M1U1-05-004



T1V1-05-02-004

M1U1-01-010

OPERATING THE MACHINE

1. Secure sling/chain tightly to the load being lifted. Wear gloves when securing sling/chain.
2. Fasten sling/chain to bucket loop, with the bucket curled and arm retracted.
3. Coordinate hand signals with your signal man before starting.
4. Be aware of the location of all persons in the working area.
5. Attach a hand line to load and make sure person holding it is well away from load.
6. Before lifting, test your load.
 - Park your machine close to load.
 - Attach load to the machine.
 - Raise load 50 mm above the ground.
 - Swing the load all the way to one side.
 - While keeping load close to the ground, move it away from machine.
 - If there is any indication of reduced stability of your machine, lower load to the ground.
7. Lift load only as high as necessary.

OPERATING THE MACHINE

MEMO

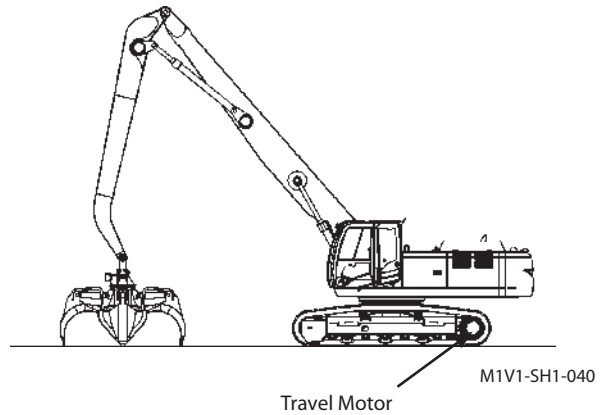
A series of horizontal dotted lines for taking notes.

ASSEMBLING AND DISASSEMBLING

INSTALL ATTACHMENT

⚠ CAUTION: Use an attachment corresponding to the base machine specifications. If a heavier grapple is installed, tipping over of the machine and/or damage to the machine may result.

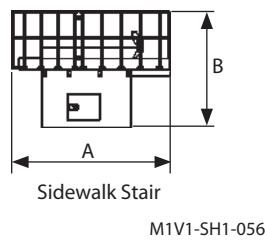
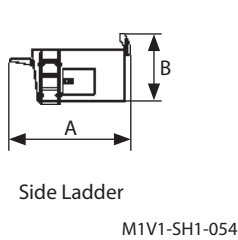
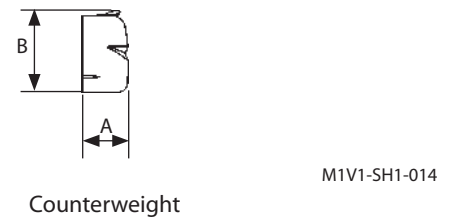
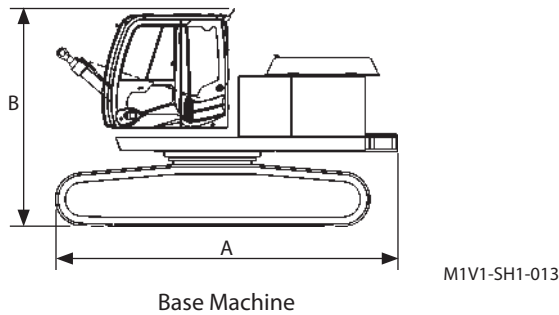
1. Park the machine on solid level ground.
 2. Place the grapple in the position as illustrated to the right.
- Stand the arm perpendicularly to the ground surface.
 - Align the front attachment with the longitudinal direction of the crawlers, and position the travel motors at the rear.



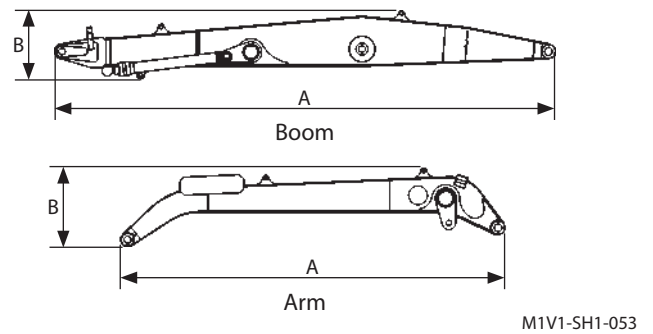
DISASSEMBLE

ZX210LC-3 Std.Cab, High-Mount Cab

Disassembly Conditions		A mm	B mm	Width mm	Weight kg
Base Machine	Std.Cab	4800	2950	2990	12950
	High-Mount Cab	4800	3075	2990	13050
Handrails	1.0 m	Side Ladder	2380	1390	570
	1.5 m	Sidewalk Stair	3040	2230	1050
	2.0 m	Sidewalk Stair	3040	2230	1200
Boom		6700	930	1060	2180
Arm		5140	930	940	1000
Counterweight		620	1120	2700	6250



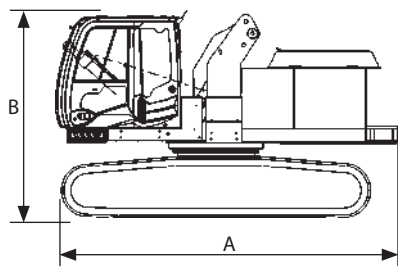
Handrails



ASSEMBLING AND DISASSEMBLING

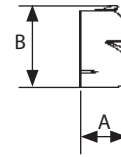
ZX210LC-3 High-Mount Cab (Single Link Type)

Disassembly Conditions		A mm	B mm	Width mm	Weight kg
Base Machine	Single Link Type	4800	2970	3060	15000
Boom		6700	930	1060	2180
Arm		5140	930	940	1000
Counterweight		620	1120	2700	6250



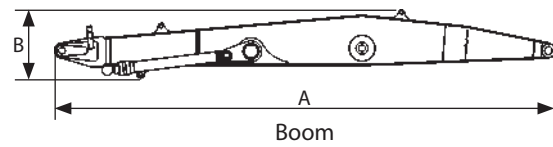
Base Machine (Single Link Type)

M1V1-SH1-019

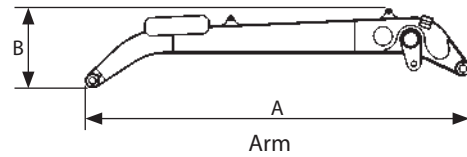


Counterweight

M1V1-SH1-014



Boom



Arm

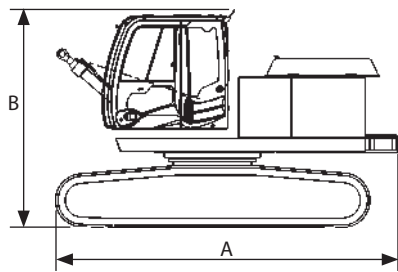
M1V1-SH1-053

ASSEMBLING AND DISASSEMBLING

DISASSEMBLE

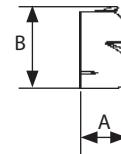
ZX250LC-3 Std.Cab, High-Mount Cab

Disassembly Conditions		A mm	B mm	Width mm	Weight kg
Base Machine	Std.Cab	5050	3020	3190	14300
	High-Mount Cab	5050	3140	3190	14400
Handrails	1.0 m	Side Ladder	2380	1390	570
	1.5 m	Sidewalk Stair	3040	2230	1050
	2.0 m	Sidewalk Stair	3040	2230	1200
Boom		7220	990	1020	2450
Arm		6190	1180	940	1320
Counterweight		710	1120	2840	7900



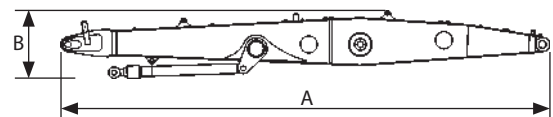
Base Machine

M1V1-SH1-013



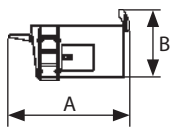
Counterweight

M1V1-SH1-014



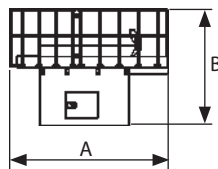
Boom

M1V1-SH1-007



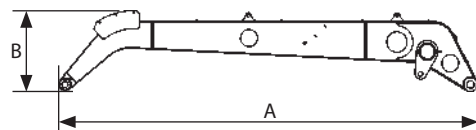
Side Ladder

M1V1-SH1-054



Sidewalk Stair

M1V1-SH1-056



Arm

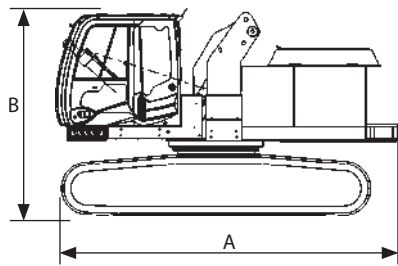
M1V1-SH1-008

Handrails

ASSEMBLING AND DISASSEMBLING

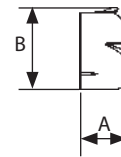
ZX250LC-3 High-Mount Cab (Single Link Type)

Disassembly Conditions		A mm	B mm	Width mm	Weight kg
Base Machine	Single Link Type	5130	3040	3080	16300
Boom		7220	990	1020	2450
Arm		6190	1180	940	1320
Counterweight		710	1120	2840	7900



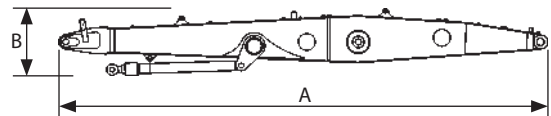
Base Machine (Single Link Type)

M1V1-SH1-019



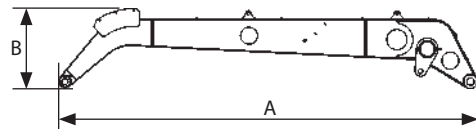
Counterweight

M1V1-SH1-014



Boom

M1V1-SH1-011



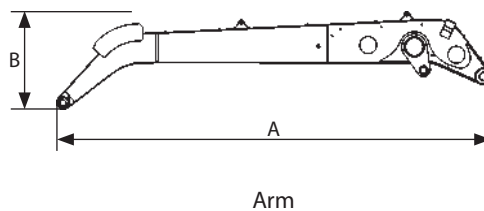
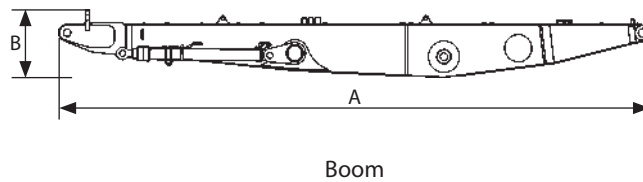
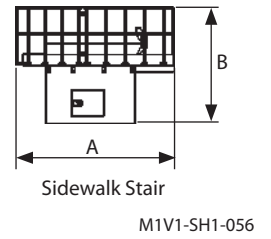
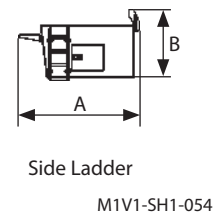
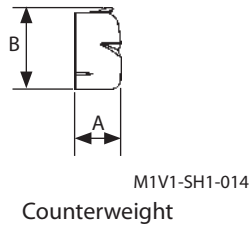
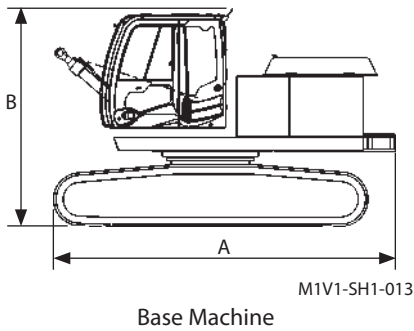
Arm

M1V1-SH1-012

ASSEMBLING AND DISASSEMBLING

ZX350LC-3 Std.Cab, High-Mount Cab 1.5 m

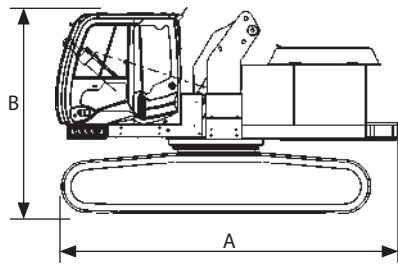
Disassembly Conditions		A mm	B mm	Width mm	Weight kg	
Base Machine	Std.Cab	5650	3120	3190	19200	
	High-Mount Cab	5650	3290	3190	19300	
Handrails	1.0 m	Side Ladder	2380	1390	1210	570
	1.5 m	Sidewalk Stair	3040	2230	1800	1050
	2.0 m	Sidewalk Stair	3040	2230	1800	1200
Boom		8740	1040	1170	3500	
Arm		6400	1430	1100	1510	
Counterweight		900	1190	2950	11300	



ASSEMBLING AND DISASSEMBLING

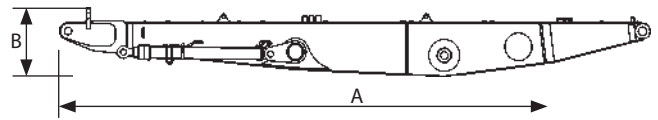
ZX350LC-3 Std.Cab, High-Mount Cab

Disassembly Conditions		A mm	B mm	Width mm	Weight kg
Base Machine	Single Link Type	5520	3170	3190	21200
Boom		8740	1040	1170	3500
Arm		6400	1430	1100	1510
Counterweight		900	1250	2950	11300



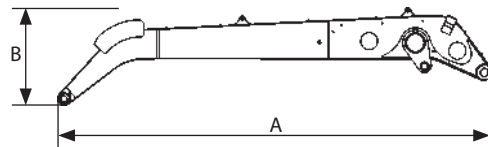
Base Machine (Single Link Type)

M1V1-SH1-019



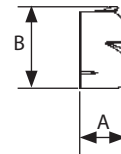
Boom

M1V1-SH1-020



Arm

M1V1-SH1-021



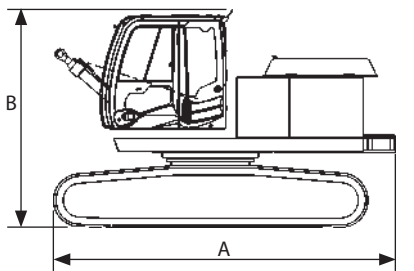
Counterweight

M1V1-SH1-022

ASSEMBLING AND DISASSEMBLING

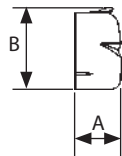
ZX470LCH-3 Std.Cab, High-Mount Cab

Disassembly Conditions		A mm	B mm	Width mm	Weight kg	
Base Machine	Std.Cab	with Side Frame	5630	3420	3070	29600
		without Side Frame	4640	2660	3070	16300
	High-Mount Cab	with Side Frame	5630	3420	3070	29700
		without Side Frame	4640	2660	3070	16400
Side Frame		5470	1220	940	1330	
Hand-rails	1.0 m	Side Ladder	2380	1390	1210	570
	1.5 m	Sidewalk Stair	304	2230	1800	1050
	2.0 m	Sidewalk Stair	3040	2230	1800	1200
Boom		979	1120	1270	4510	
Arm		7520	1090	1170	1960	
Counterweight		660	1810	2960	13700	
Side Step (Front)		2340	515	150	44	
Side Step (Rear)		1700	515	150	30	
Ladder		1770	750	425	23	
Boom Cylinder×2		2470	490	330	420	
Hose×4		1100	100	100	9	



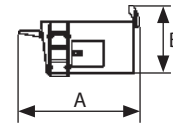
M1V1-SH1-013

Base Machine



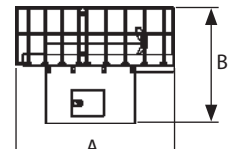
M1V1-SH1-014

Counterweight



M1V1-SH1-054

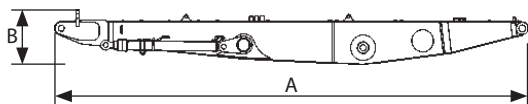
Side Ladder



M1V1-SH1-056

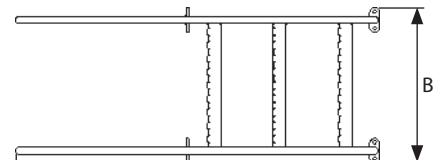
Sidewalk Stair

Handrails



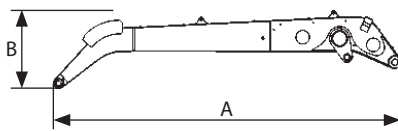
M1V1-SH1-016

Boom



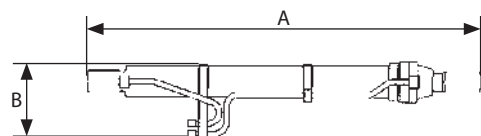
M1J1-06-003

Ladder



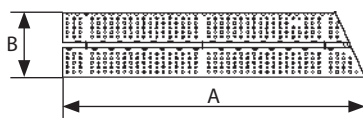
M1V1-SH1-017

Arm

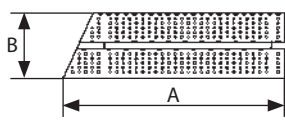


M17P-06-016

Boom Cylinder

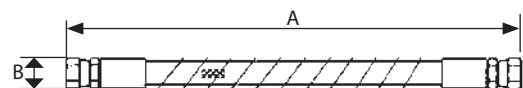


Side Step (Front)



Side Step (Rear)

M1J1-06-002



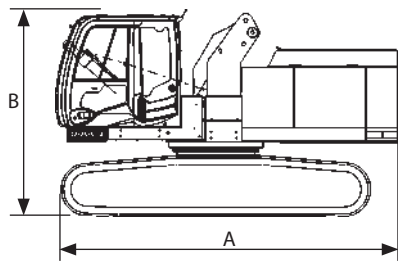
M17P-06-017

Hose

ASSEMBLING AND DISASSEMBLING

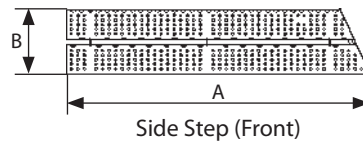
ZX470LCH-3 Std.Cab, High-Mount Cab

Disassembly Conditions			A mm	B mm	Width mm	Weight kg
Base Machine	Single Link Typ	with Side Frame	5630	3420	3070	32500
		without Side Frame	4640	2660	3070	19200
Boom			9790	1120	1270	4510
Arm			7520	1090	1170	1960
Counterweight			660	1810	2960	13700
Side Step (Front)			2340	515	150	44
Side Step (Rear)			1700	515	150	30
Ladder			1770	750	425	23
Boom Cylinder×2			2470	490	330	420
Hose×4			1100	100	100	9

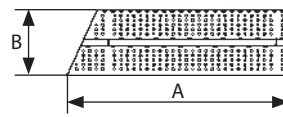


Base Machine (Single Link Type)

M1V1-SH1-059

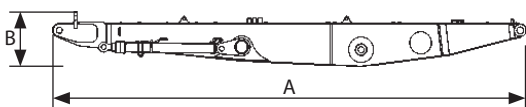


Side Step (Front)



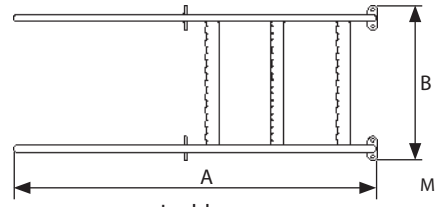
Side Step (Rear)

M1V1-SH1-017



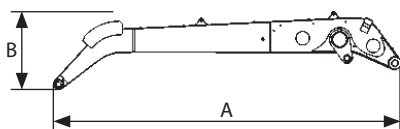
Boom

M1V1-SH1-016



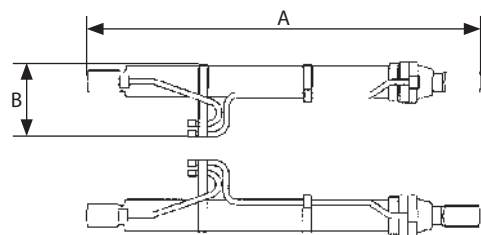
Ladder

M1J1-06-003



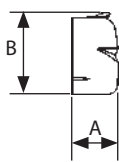
Arm

M1V1-SH1-017



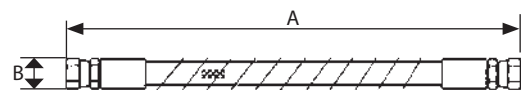
Boom Cylinder

M17P-06-016



Counterweight

M1V1-SH1-014



Hose

M17P-06-017

TRANSPOTATION

TRANSPORTING BY ROAD

Before transporting the machine on public roads, be sure to first research understand and follow all local regulations.

- When transporting the machine using a trailer check the width, height, length, and weight of the trailer with the machine loaded. Note that the transportation weight and dimensions may vary depending on the type of shoes or arm installed. Refer to the mass (weight) shown in the Assembly/Disassembly section. Be sure that the transportation weight and dimensions do not exceed the limits specified in the local regulations concerned.
- Investigate beforehand the conditions of the route to be traveled, such as dimension limits, weight limits and traffic regulations. In some cases, disassembly of the machine may be required to bring it within dimensional limits and/or weight limit of local regulations or for getting transportation permission from the local government office. Remove the boom, arm, counterweight, and/or cab stand as required when transporting this machine.

TRANSPORTING BY TRAILER

Be sure that the transportation weight and dimensions do not exceed the limits specified in the local regulations concerned. Investigate beforehand the conditions of the route to be traveled, such as dimension limits, weight limits and traffic regulations. In some cases, disassembly of the machine may be required to bring it within dimensional limits and/or weight limit of local regulations or for getting transportation permission from the local government office.

TRANSPOTATION

MEMO

A series of horizontal dotted lines for writing a memo.

MAINTENANCE

CORRECT MAINTENANCE AND INSPECTION PROCEDURES

Learn how to service your machine correctly. Follow the correct maintenance and inspection procedures shown in this manual.

Inspect machine daily before starting.

- Check controls and instruments.
- Check coolant, fuel and oil levels
- Check for leaks, kinked, frayed or damaged hoses and lines.
- Walk around machine checking general appearance, noise, heat, etc.
- Check for loose or missing parts.

If there is any problem with your machine, repair it before operating or contact your authorized dealer.

- IMPORTANT:**
- **Use only recommended fuel and lubricants.**
 - **Be sure to use only genuine Hitachi parts. Failure to do so may result in serious injury or death and/or machine breakdown.**
 - **Use only genuine HITACHI parts.**
 - **Failure to use recommended fuel, lubricants, and genuine Hitachi parts will result in loss of Hitachi product warranty.**
 - **Never adjust engine governor or hydraulic system relief valve.**
 - **Protect electrical parts from water and steam.**
 - **Never disassemble electrical components such as main controller, sensors, etc.**



SA-005

MAINTENANCE

CHECK THE HOUR METER REGULARLY

- Intervals on the periodic maintenance chart are for operating in normal conditions. If you operate your machine in more adverse conditions, you should service it at SHORTER INTERVALS.
- Lubricate, make service checks and adjustments at intervals shown on periodic maintenance guide table.

USE CORRECT FUELS AND LUBRICANTS

IMPORTANT: Always use recommended fuels and lubricants.

Failure to do so will result in machine damage and loss of Hitachi product warranty.

MAINTENANCE

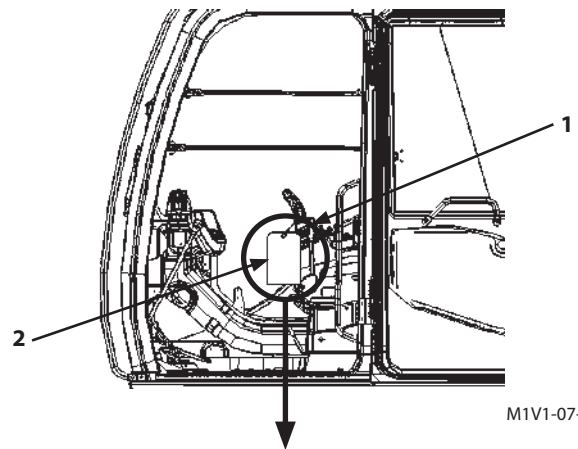
PREPARE MACHINE FOR MAINTENANCE

Except in special cases, park the machine for maintenance in the following procedures:

1. Park the machine on solid level surface.
2. Lower the grapple with the teeth opened to the ground.
3. Turn the auto-idle selector switch off.
4. Run the engine at slow idle speed without load for five minutes.
5. Turn the key switch OFF. Remove key from switch. (If maintenance must be performed with engine running, do not leave machine unattended.)
6. Pull the pilot control shut-off lever (1) to the LOCK position.
7. Before starting maintenance, put tag (2) UNDER MAINTENANCE on an easy-to-see place such as the cab door or control lever.



SA-1782



M1V1-07-001



SS3076175



SS2045102

MAINTENANCE

PRECAUTIONS FOR MAINTENANCE



CAUTION:

- **Never allow anyone to enter below the machine during maintenance.**
 - **When aligning pin holes, never insert fingers into the pin holes.**
 - **When using a hammer, wear protective equipment such as safety glasses and a hard hat. If flying debris come in contact with eyes or any other part of the body, serious injury may result.**
 - **Never enter under the machine when installing a pin.**
 - **Service the hydraulic system only after the residual pressure in the system has been released and the temperature of each component has cooled.**
1. Operate each control lever several times to release the residual pressure from the boom, arm, grapple open/close, swing, and pilot control (incl. the accumulator) circuits.
 2. Bleed air from the hydraulic oil tank.
 3. Immediately after operation, each component, hydraulic oil, and lubricants are hot and under pressure. Start maintenance only after the oil and components have sufficiently cooled down. If the maintenance work is started without allowing the oil and components to cool down, burns due to contact with hot component and/or escaping oil, or injury due to contact with flying plugs or screws may result. Be careful that even after the temperature has lowered, the residual pressure may still be remaining. When loosening the plugs or screws, do not stand directly in front of them. Slowly loosen and remove them after the residual pressure has been completely released.
 4. Even after air is bled from the hydraulic oil tank, when the machine is on a slope, the machine weight will be applied to the travel and swing circuits so that the oil pressure in the swing and travel circuit increases. Therefore, never service the machine on a slope.

IMPORTANT:

- 1. Be careful not to damage the mating surfaces of any hydraulic component, or do not allow foreign matter such as dust to enter the hydraulic components.**
 1. Before installing hydraulic pipe lines, hoses, and oil tank, clean not only the mating surfaces but also their surrounding areas. After completely removing the cleaning solvent, install them. Check that O-rings are completely seated in the grooves without projecting outward.
 2. Use an O-ring with no flaw. Be careful not to file the mating surface unintentionally. Do not twist a high pressure hose when connecting it. If the hose is connected without correcting twisting, the service life of the hose will become extremely short.
 3. Tighten the hose connector fittings to the specified torque values. Refer to the Hydraulic Excavator Operator's Manual for the specified tightening torque values.
- 2. Do not use hydraulic oil other than specified in the lubricant table.**
 1. Do not mix to use the hydraulic oil with other manufacturer's oil. If required to use another manufacturer's oil, be sure to completely replace the full amount of oil.
 2. Super EX46 HN (Change interval: 4000 hours of operation) hydraulic oil is used on new machine. When additions or changes are required, using Super EX46 HN is recommended. In case unavoidable, Super Hydro 46 WRHO should be used, oil change interval becomes to 2500 hours. In case Bartran HV 46 is used, oil change interval becomes to 1500 hours.
 3. In case the hydraulic oil change interval of 400 hours is used, always use the same brand oil when add or change the oil. If unavoidably changed to the 2500 hour change-interval oil, shorten the change interval to 2500 hours. When changing to 1500 hour change-interval oil is used, shorten the change interval to 1500 hours
- 3. Never start the engine without hydraulic oil in the system.**
- 4. Be sure to coat pins with grease before installing them.**

MAINTENANCE

PERIODIC REPLACEMENT OF PARTS


To ensure safe operation, be sure to conduct periodic inspection of the machine. In addition, the parts listed below, if defective, may pose serious safety/fire hazards. It is very difficult to gauge the extent of deterioration, fatigue, or weakening of the parts listed below simply by visual inspection alone. For this reason, replace these parts at the intervals shown in the table below. However, if any of these parts are found to be defective, replace before starting operation, regardless of the interval.

Also, when replacing hoses, check the clamps for deformation, cracks, or other deterioration, and replace as necessary.

Be sure to perform periodic inspection of all hoses, as shown below, and replace or retighten any defective parts found, as necessary.

Consult your authorized dealer for correct replacement.

Periodic Replacement Parts			Replacement Intervals
Hydraulic System	Front Attachment	Boom cylinder line hose	Every 2 years
		Arm cylinder line hose	Every 2 years
		Attachment cylinder line hose	Every 2 years


 **NOTE:** Be sure to replace seals, such as O-rings and gaskets, when replacing hoses.

MAINTENANCE

GREASE AND HYDRAULIC OIL

Brand Names of Recommended Grease

Where to be applied	Bucket, Arm and Boom, Swing Gear, Swing Bearing, etc.	
Manufacturer	-20 to 40 °C (-4 to 104 °F)	
Nippon Koyu	SEP 2	*1
British Petroleum	BP Energrease	LS-EP2
Caltex Oil	Multifax	EP2
Esso	Beacon	EP2
Idemitsu Kosan	Daphne Coronex Grease	EP2
Mobil Oil	Mobilux	EP2
Nippon Oil	Epinoc Grease	AP2
Shell Oil	Shell Alvania	EP2 *2

 **NOTE:** The machine shipped from the factory is filled with lubricants marked with .

*1 Front Joint Pin and Swing Bearing

*2 Swing Gear

Brand Names of Recommended Hydraulic Oil

Kind of Lubricant	Hydraulic Oil					
Where to be applied	Hydraulic System					
Change Interval	5000 hours		2500 hours		1500 hours	
Environmental Temp.	-20 to 40°C (-4 to 104°F)	-10 to 40°C (14 to 104°F)	-20 to 40°C (-4 to 104°F)	-10 to 40°C (14 to 104°F)	-20 to 40°C (-4 to 104°F)	-10 to 40°C (14 to 104°F)
Hitachi	Super EX 46HN					
Idemitsu Kosan			Super Hydro 46 WRHU			
British Petroleum					Bartran HV46	
Caltex Oil						Rando Oil HD46
Texaco INC.						Rando Oil HD46
Chevron U.S.A INC.						Chevron AW46
Esso						NUTO H46
Mobil Oil						DTE 25
Shell Oil				Tellus Oil S46		Tellus Oil 46
Remarks	Anti-wear type hydraulic oil					

 **NOTE:** Use proper hydraulic oil in accordance with the atmospheric temperature.

The machine shipped from the factory is filled with oil marked .

When the atmospheric temperature is between -40°C and +20°C: Use the proper hydraulic oil having high and low temperature characteristics by referring to the values shown below.

Low Temperature Viscosity: Less than 4000cSt at -40°C

High Temperature Viscosity: More than 6.5cSt at +80°C

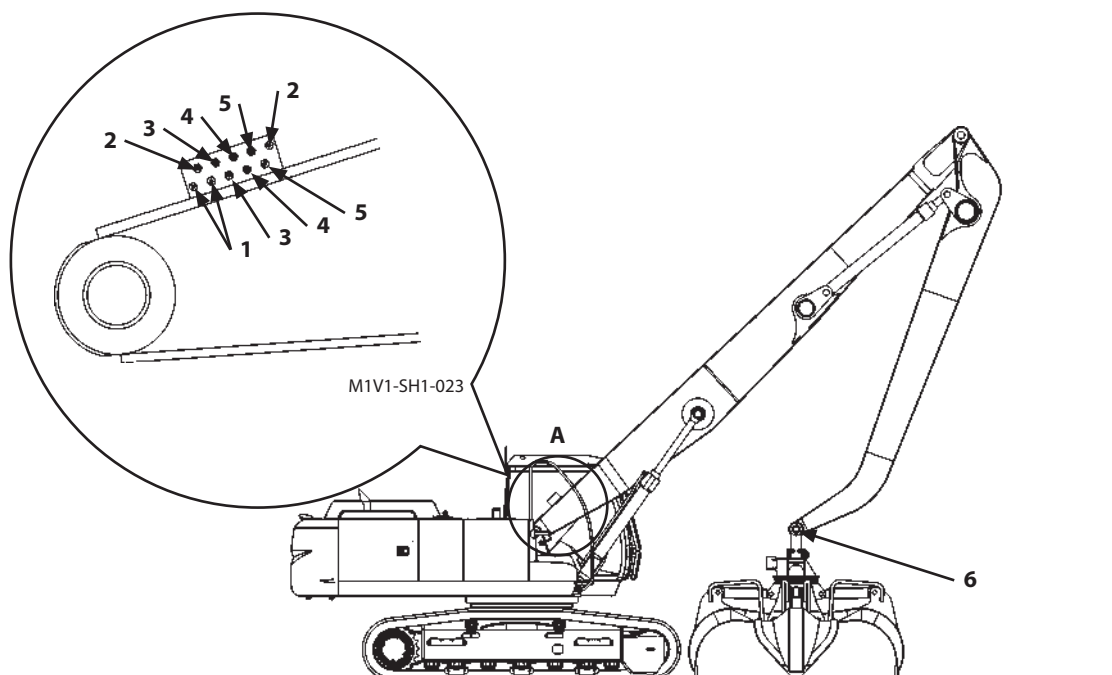
The above values are approximately equivalent to ISO viscosity grade #22. However, low temperature viscosity will differ depending on each product. Contact each hydraulic oil manufacture directly.

When the atmospheric temperature is below -40°C: Contact your authorized dealer.

MAINTENANCE

LUBRICATION (ZX210LC-3, 250LC-3, 350LC-3)

CAUTION: Position the machine as illustrated below for lubrication. Stop the engine. Move the pilot control shut-off lever to the LOCK position. Attach a "Do not Operate" tag to an easy-to-see place such as the cab door or a control lever to prevent the machine from being unintentionally operated while repairs are being performed.



M1V1-SH1-025

Central Greasing Location	No.	Greasing Part	Quantity	Interval (Hours)	Kind of Grease
A	1	Boom Foot	2	8	Bearing Grease
	2	Boom Cylinder Rod	2		
	3	Arm Cylinder Bottom	2		
	4	Arm Boss	2		
	5	Arm Cylinder Rod	2		
Respectively	6	Arm	2		

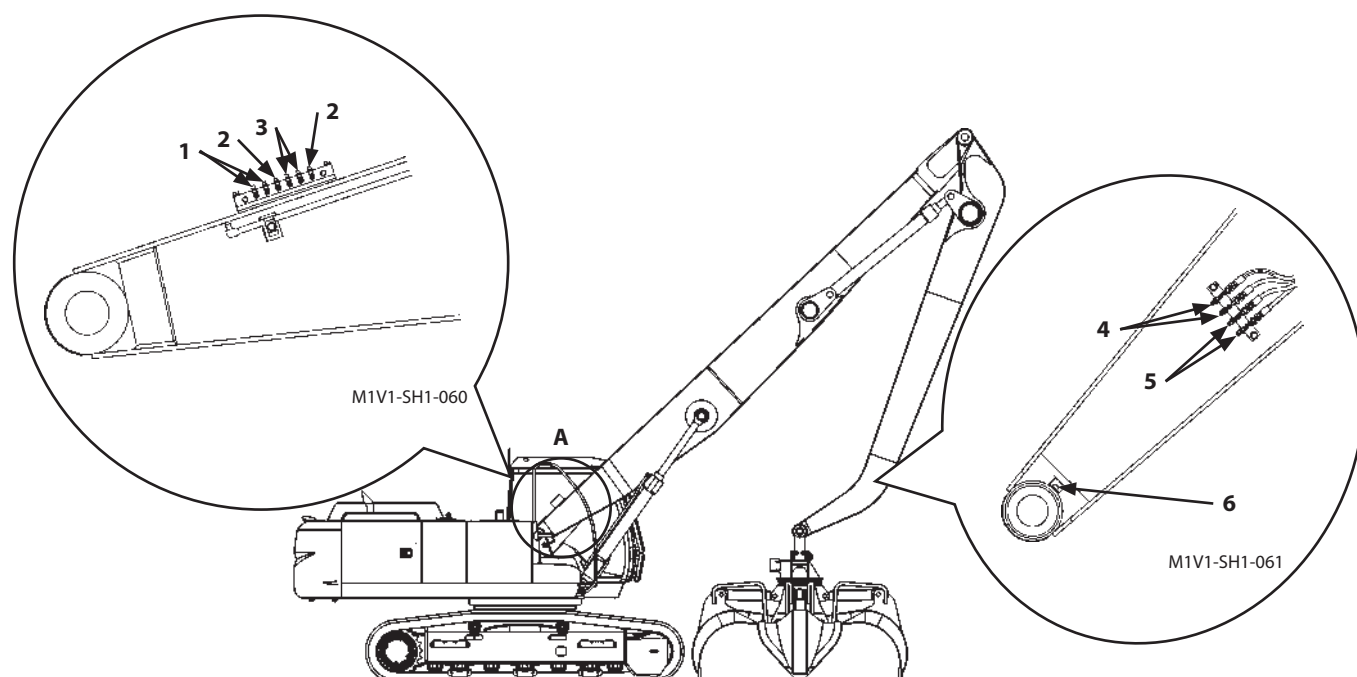
Precautions for Greasing

- Grease only after cleaning the grease fitting.
- Grease parts having no grease fittings such as the levers, links at their proper intervals.
- Use only the same manufacturer's grease.
- Part failure may result if greasing is not performed or the filter elements are not replaced at the specified intervals. Be sure to service the machine as specified.

MAINTENANCE

LUBRICATION (ZX470LCH-3)

⚠ CAUTION: Position the machine as illustrated below for lubrication. Stop the engine. Move the pilot control shut-off lever to the LOCK position. Attach a "Do not Operate" tag to an easy-to-see place such as the cab door or a control lever to prevent the machine from being unintentionally operated while repairs are being performed.



M1V1-SH1-025

Central Greasing Location	No.	Greasing Part	Quantity	Interval (Hours)	Kind of Grease
A	1	Boom Foot	2	8	Bearing Grease
	2	Boom Cylinder Rod	2		
	3	Arm Cylinder Bottom	2		
	4	Arm Boss	2		
	5	Arm Cylinder Rod	2		
Respectively	6	Arm	2		

Precautions for Greasing

- Grease only after cleaning the grease fitting.
- Grease parts having no grease fittings such as the levers, links at their proper intervals.
- Use only the same manufacturer's grease.
- Part failure may result if greasing is not performed or the filter elements are not replaced at the specified intervals. Be sure to service the machine as specified.

MAINTENANCE

CHECK HYDRAULIC OIL LEVEL

IMPORTANT: If the machine is operated without sufficient supplying of hydraulic oil, air can become mixed into the pump, possibly causing damage to the pump.

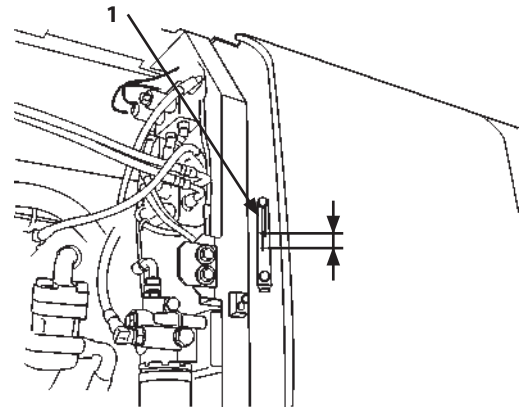
Be sure to check the oil level by following the procedures below:

- Park the machine on solid and level ground with the attachment contacted on the ground as illustrated to the right. Stop the engine.
- Fully retract the arm cylinder.
- Open the grapple. (Fully retract the open/close cylinder.)
- Open the front pump cover. Check oil level with level gauge (1) on the side surface of the hydraulic oil tank. The oil level should be between the high and low marks on level gauge (1) when normal.

IMPORTANT: When replacing the front attachment or hoses, a large volume of air may become mixed into the hydraulic line. After replacing the front attachment or hoses, check the oil level and add oil as required. Be sure to correctly follow the procedures mentioned above. (Refer to the Hydraulic Excavator Operator's Manual.)

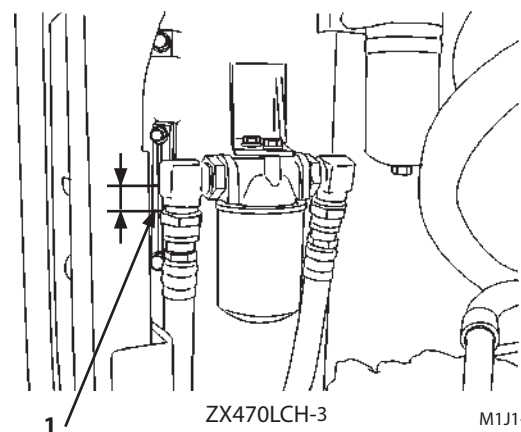


SA-1782



ZX210LC-3, 250LC-3, 350LC-3

M1U1-07-048



ZX470LCH-3

M1J1-07-010

MAINTENANCE

MEMO

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STORAGE

PRECAUTIONS FOR LONG TERM MACHINE STORAGE

In case the machine is to be stored for longer than one month, pay attention to the following points to prepare next operation.

Precautions for Long Term Machine Storage

Precautionary Point	Action to be Taken
Machine Cleaning	After sufficiently cleaning the machine, remove any soil or other debris adhered to the machine.
Lubrication/Greasing	Check lubricants for level and contamination. Add or change as necessary. Grease all greasing points. Coat grease to exposed metal surfaces which are subject to rust (such as the cylinder rods).
Protection against Dust and Moisture	Store the machine in a dry storage area using a protective cover.
Battery	Remove the batteries from the base machine and store them separately after fully charging them, or if not removed, disconnect the negative cable from the (-) terminal.
Coolant	Add an antirust agent to the coolant. In cold weather, add antifreeze, or drain the coolant completely. Be sure to attach a "No water in Radiator" tag in a clearly visible location if the system is drained.
Tools	Store tools after cleaning and checking.
Operation for Lubrication	If oil film on the metal surfaces is lost, rust may begin, possibly causing abnormal wear of the machine when the machine operation is restarted. Perform lubrication operation once a month at a regular interval. Check the coolant and lubricant levels at this time as well.
Front Attachment Position for Long-Term Storage	As illustrated below, lower the grapple to the ground with the grapple teeth fully opened.

-  **NOTE:**
- *Lubrication operation is a series of warm-up, travel, swing and front attachment operation to repeatedly cycle each function a few times.*
 - *Lubricants will deteriorate during long term storage of the machine. Be sure to carefully check the lubricants before restarting operation of the machine.*



SA-1782

STORAGE

MEMO

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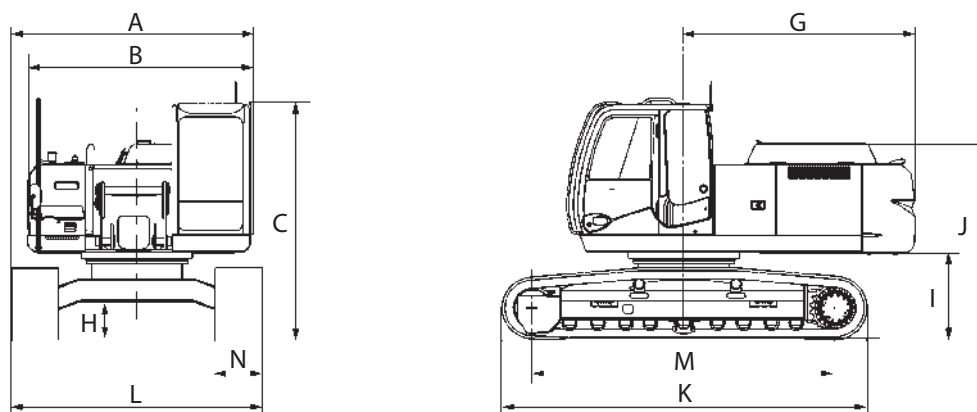
SPECIFICATIONS

SPECIFICATIONS (ZX210LC-3)

Std. Cab

Refer to the ZX210LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Unit : mm



M1V1-SH1-041

Model	ZX210LC-3	
Type of Front-End Attachment	S-SC200H-A	
Engine	ISUZU AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)	
Cab	Std. Cab	
Handrail Height	mm	—
Ladder or Stairs	—	—
Operating Weight	kg	23000
Base Machine Weight	kg	18700
Ground Pressure	MPa	48
A: Overall Width (Excluding back mirrors)	mm	2990
B: Overall Width of Upperstructure	mm	2710
C: Cab Height	mm	2950
D: Operator's View	mm	—
E: Swing Center to Operator's Eye View	mm	—
F: Floor Height	mm	—
G: Rear End Swing Radius	mm	2750
H: Minimum Ground Clearance	mm	*450
I: Counterweight Clearance	mm	*1030
J: Engine Cover Height	mm	*2270
K: Undercarriage Length	mm	4470
L: Undercarriage Width	mm	2990
M: Sprocket Center to Idler Center	mm	3660
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	6500
Arm Length	mm	4950
Swing Speed	min ⁻¹	13.3
Travel Speed (fast/slow)	km/h	5.5/3.5
Gradeability	degree	10

NOTE: • * Dimensions shown above exclude the height of the shoe grouser.

• * The operating weight does not include the attachment weight.

• * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)


SPECIFICATIONS

SPECIFICATIONS (ZX210LC-3)

High-Mount Cab 1.0 m

Refer to the ZX210LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX210LC-3
Type of Front-End Attachment		S-SC200H-A
Engine		ISUZU AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)
Cab		High-Mount Cab
Handrail Height	mm	1000
Ladder or Stairs	–	Side Ladder
Operating Weight	kg	23600
Base Machine Weight	kg	19300
Ground Pressure	MPa	54
A: Overall Width (Excluding back mirrors)	mm	3130
B: Overall Width of Upperstructure	mm	2890
C: Cab Height	mm	3950
D: Operator's View	mm	3530
E: Swing Center to Operator's Eye View	mm	480
F: Floor Height	mm	2330
G: Rear End Swing Radius	mm	2750
H: Minimum Ground Clearance	mm	*450
I: Counterweight Clearance	mm	*1030
J: Engine Cover Height	mm	*2270
K: Undercarriage Length	mm	4470
L: Undercarriage Width	mm	2990
M: Sprocket Center to Idler Center	mm	3660
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	6500
Arm Length	mm	4950
Swing Speed	min ⁻¹	13.3
Travel Speed (fast/slow)	km/h	5.5/3.5
Gradeability	degree	10

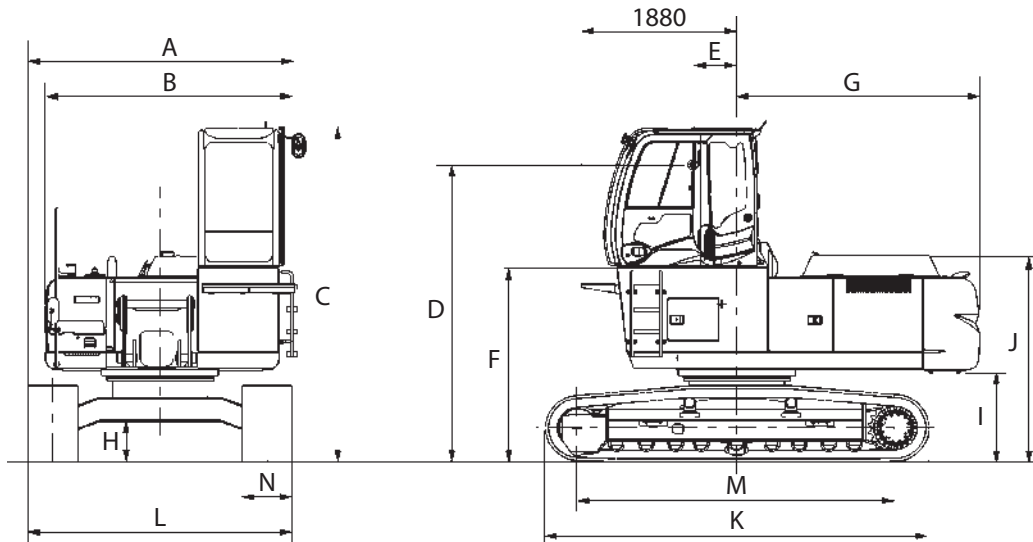
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX210LC-3

High-Mount Cab 1.0 m (Side Ladder Type)

Unit : mm



M1V1-SH1-042


SPECIFICATIONS

SPECIFICATIONS (ZX210LC-3)

High-Mount Cab 1.5 m

Refer to the ZX210LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX210LC-3
Type of Front-End Attachment		S-SC200H-A
Engine		ISUZU AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)
Cab		High-Mount Cab
Handrail Height	mm	1500
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	24100
Base Machine Weight	kg	19800
Ground Pressure	MPa	54
A: Overall Width (Excluding back mirrors)	mm	3720
B: Overall Width of Upperstructure	mm	3480
C: Cab Height	mm	4490
D: Operator's View	mm	4030
E: Swing Center to Operator's Eye View	mm	370
F: Floor Height	mm	2830
G: Rear End Swing Radius	mm	2750
H: Minimum Ground Clearance	mm	*450
I: Counterweight Clearance	mm	*1030
J: Engine Cover Height	mm	*2270
K: Undercarriage Length	mm	4470
L: Undercarriage Width	mm	2990
M: Sprocket Center to Idler Center	mm	3660
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	6500
Arm Length	mm	4950
Swing Speed	min ⁻¹	13.3
Travel Speed (fast/slow)	km/h	5.5/3.5
Gradeability	degree	10

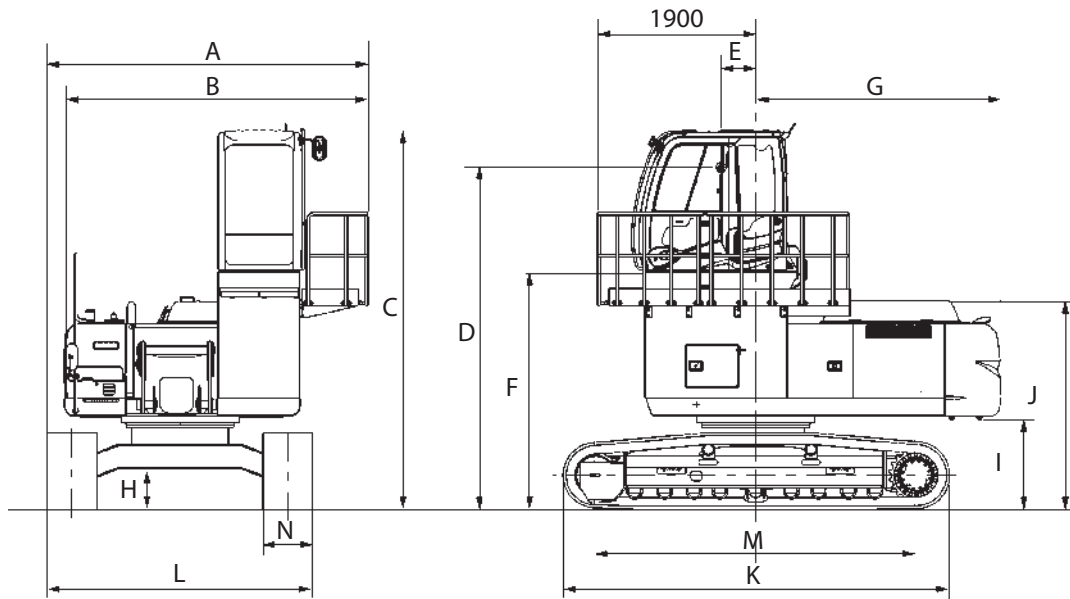
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX210LC-3

High-Mount Cab 1.5 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX210LC-3)

High-Mount Cab 2 m

Refer to the ZX210LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX210LC-3
Type of Front-End Attachment		S-SC200H-A
Engine		ISUZU AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)
Cab		High-Mount Cab
Handrail Height	mm	2000
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	24100
Base Machine Weight	kg	20000
Ground Pressure	MPa	55
A: Overall Width (Excluding back mirrors)	mm	3720
B: Overall Width of Upperstructure	mm	3480
C: Cab Height	mm	4990
D: Operator's View	mm	4530
E: Swing Center to Operator's Eye View	mm	370
F: Floor Height	mm	3330
G: Rear End Swing Radius	mm	2750
H: Minimum Ground Clearance	mm	*450
I: Counterweight Clearance	mm	*1030
J: Engine Cover Height	mm	*2270
K: Undercarriage Length	mm	4470
L: Undercarriage Width	mm	2990
M: Sprocket Center to Idler Center	mm	3660
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	6500
Arm Length	mm	4950
Swing Speed	min ⁻¹	13.3
Travel Speed (fast/slow)	km/h	5.5/3.5
Gradeability	degree	10

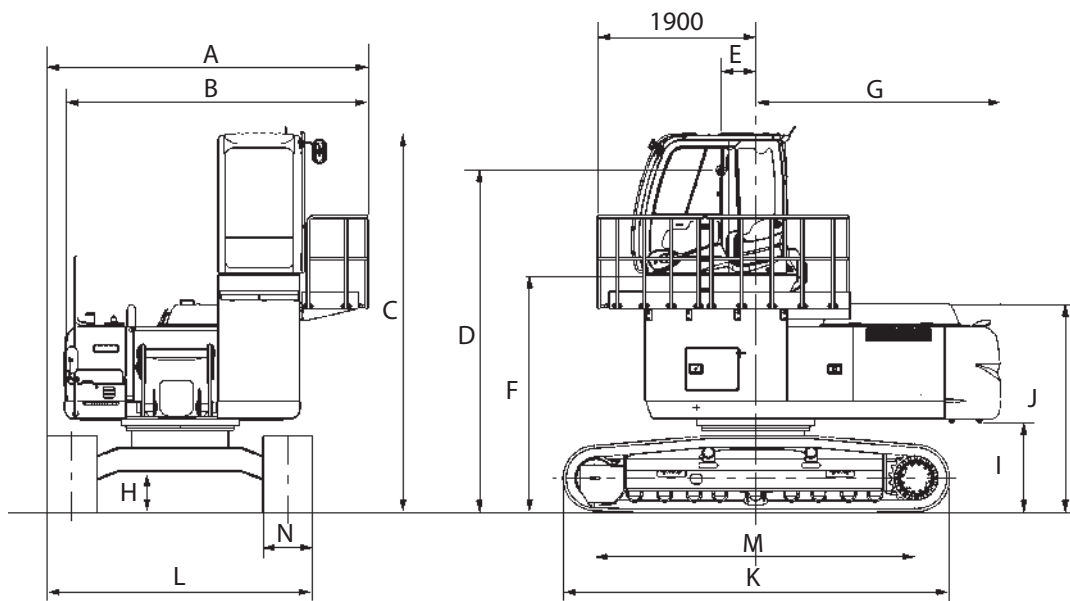
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX210LC-3

High-Mount Cab 2.0 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX210LC-3)

Lift Cab

Refer to the ZX210LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model			ZX210LC-3
Type of Front-End Attachment			S-SC200H-A
Engine			ISUZU AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)
Cab			Single Link Type
Cab Lifting Height	mm		2500
Operating Weight	kg		25000
Base Machine Weight	kg		20700
Ground Pressure	MPa		52
A: Overall Width (Excluding back mirrors)	mm		3060
B: Overall Width of Upperstructure	mm		2820
C: Transport Height	mm		2970
D: Cab Height	Max.	mm	5450
E: Cab Height	Min.	mm	2950
F: Operator's View	Max.	mm	5000
G: Operator's View	Min.	mm	2500
H: Swing Center to Operator's Eye View	mm		1270 to 1330
I: Floor Height	Max.	mm	3800
J: Floor Height	Min.	mm	1300
K: Rear End Swing Radius	mm		2750
L: Minimum Ground Clearance	mm		*450
M: Counterweight Clearance	mm		*1030
N: Engine Cover Height	mm		*2270
O: Undercarriage Length	mm		4470
P: Undercarriage Width	mm		2990
Q: Sprocket Center to Idler Center	mm		3660
R: Track Shoe Width	mm		600 (Grouser shoe)
Boom Length	mm		6500
Arm Length	mm		4950
Swing Speed	min ⁻¹		13.3
Travel Speed (fast/slow)	km/h		5.5/3.5
Gradeability	degree		10

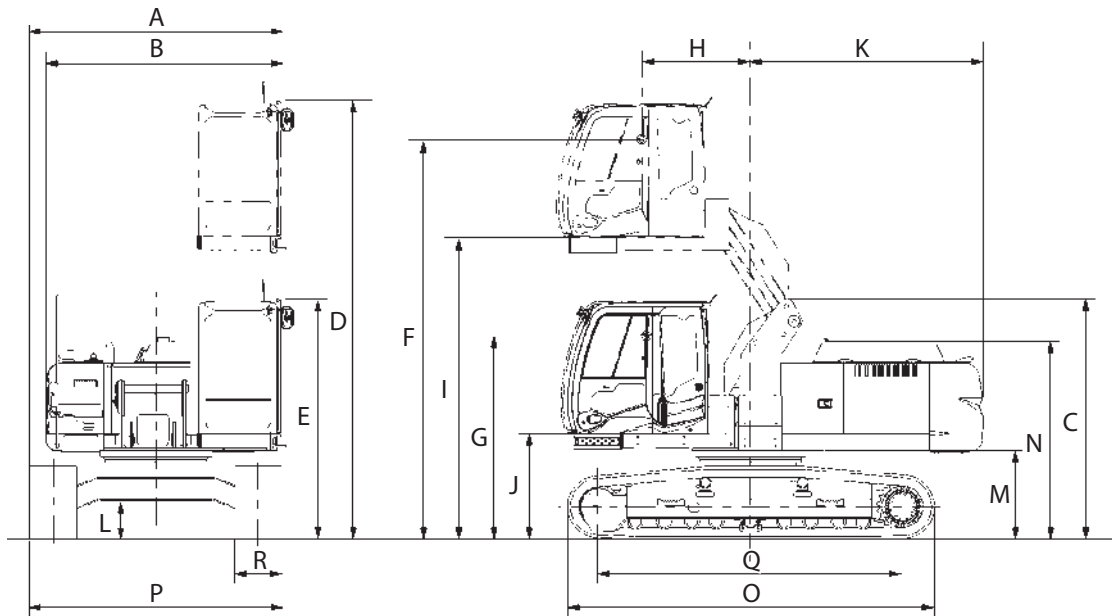
-  **NOTE:** • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX210LC-3

Lift Cab (Single Link Type)

Unit : mm



M1V1-SH1-045


SPECIFICATIONS

SPECIFICATIONS (ZX250LC-3)

Std. Cab • High-Mount Cab 1.0 m

Refer to the ZX250LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX250LC-3	
Type of Front-End Attachment		S-SC240H-A	
Engine		ISUZU AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)	
Cab		Std. Cab	High-Mount Cab
Handrail Height	mm	–	1000
Ladder or Stairs	–	–	Side Ladder
Operating Weight	kg	26100	2670
Base Machine Weight	kg	21100	21700
Ground Pressure	MPa	52	54
A: Overall Width (Excluding back mirrors)	mm	3190	3260
B: Overall Width of Upperstructure	mm	2890	3060
C: Cab Height	mm	3010	4010
D: Operator's View	mm	–	3600
E: Swing Center to Operator's Eye View	mm	–	530
F: Floor Height	mm	–	2360
G: Rear End Swing Radius	mm	2940	
H: Minimum Ground Clearance	mm	*460	
I: Counterweight Clearance	mm	*1090	
J: Engine Cover Height	mm	*2425	
K: Undercarriage Length	mm	4640	
L: Undercarriage Width	mm	3190	
M: Sprocket Center to Idler Center	mm	3845	
N: Track Shoe Width	mm	600 (Grouser shoe)	
Boom Length	mm	7000	
Arm Length	mm	6000	
Swing Speed	min ⁻¹	13.5	
Travel Speed (fast/slow)	km/h	5.5/3.4	
Gradeability	degree	10	

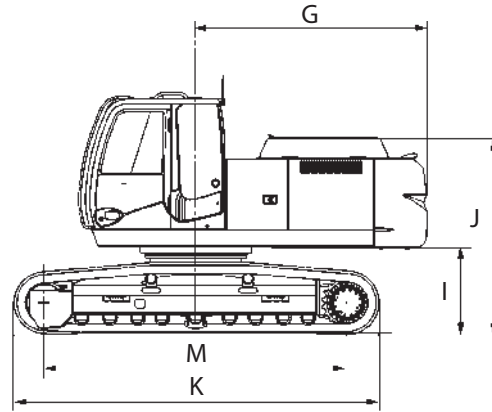
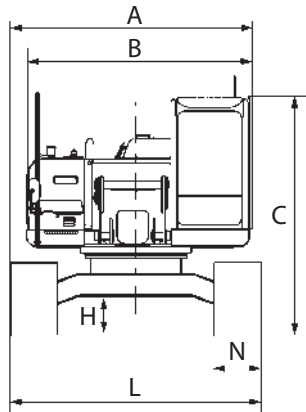
-  **NOTE:** • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX250LC-3

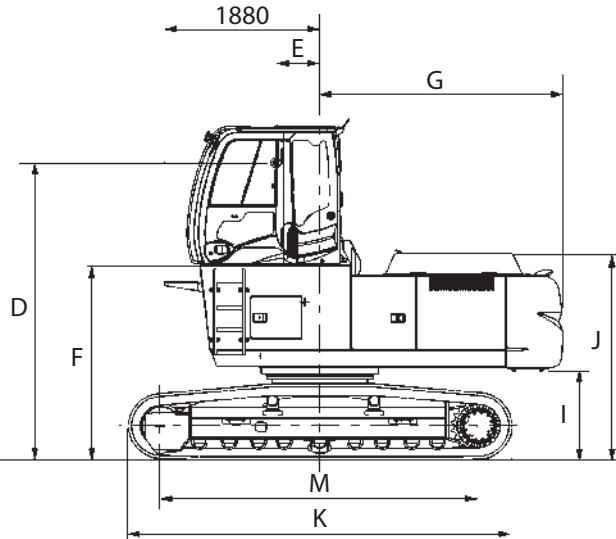
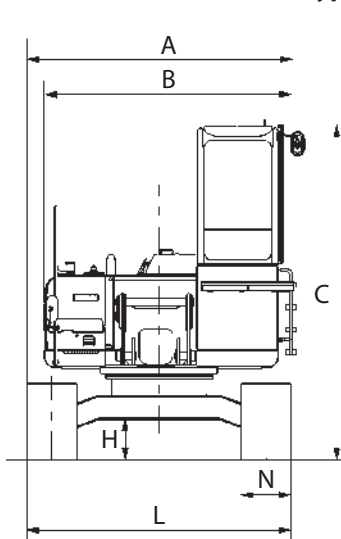
Std. Cab

Unit : mm



M1V1-SH1-041

High-Mount Cab 1.0 m (Side Ladder Type)



M1V1-SH1-042


SPECIFICATIONS

SPECIFICATIONS (ZX250LC-3)

High-Mount Cab 1.5 m

Refer to the ZX250LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX250LC-3
Type of Front-End Attachment		S-SC240H-A
Engine		ISUZU AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)
Cab		High-Mount Cab
Handrail Height	mm	1500
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	27200
Base Machine Weight	kg	22200
Ground Pressure	MPa	54
A: Overall Width (Excluding back mirrors)	mm	3850
B: Overall Width of Upperstructure	mm	3650
C: Cab Height	mm	4510
D: Operator's View	mm	4100
E: Swing Center to Operator's Eye View	mm	420
F: Floor Height	mm	2860
G: Rear End Swing Radius	mm	2940
H: Minimum Ground Clearance	mm	*460
I: Counterweight Clearance	mm	*1090
J: Engine Cover Height	mm	*2425
K: Undercarriage Length	mm	4640
L: Undercarriage Width	mm	3190
M: Sprocket Center to Idler Center	mm	3845
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	7000
Arm Length	mm	6000
Swing Speed	min ⁻¹	13.5
Travel Speed (fast/slow)	km/h	5.5/3.4
Gradeability	degree	10

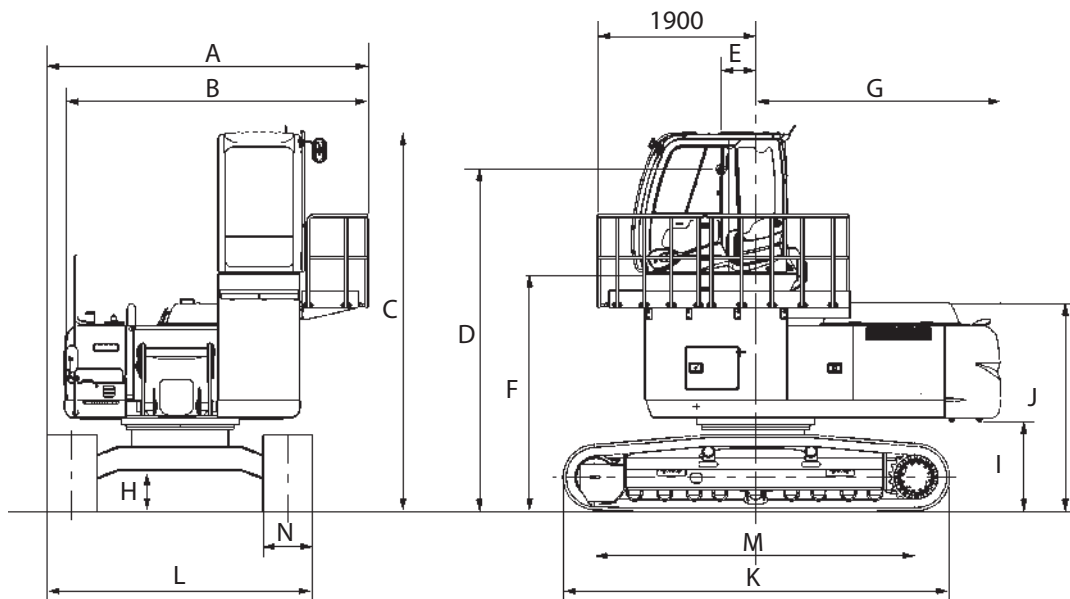
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX250LC-3

High-Mount Cab 1.5 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX250LC-3)

High-Mount Cab 2 m

Refer to the ZX250LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX250LC-3
Type of Front-End Attachment		S-SC240H-A
Engine		ISUZU AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)
Cab		High-Mount Cab
Handrail Height	mm	2000
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	27400
Base Machine Weight	kg	22400
Ground Pressure	MPa	55
A: Overall Width (Excluding back mirrors)	mm	3850
B: Overall Width of Upperstructure	mm	3650
C: Cab Height	mm	5010
D: Operator's View	mm	4600
E: Swing Center to Operator's Eye View	mm	420
F: Floor Height	mm	3360
G: Rear End Swing Radius	mm	2940
H: Minimum Ground Clearance	mm	*460
I: Counterweight Clearance	mm	*1090
J: Engine Cover Height	mm	*2425
K: Undercarriage Length	mm	4640
L: Undercarriage Width	mm	3190
M: Sprocket Center to Idler Center	mm	3845
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	7000
Arm Length	mm	6000
Swing Speed	min ⁻¹	13.5
Travel Speed (fast/slow)	km/h	5.5/3.4
Gradeability	degree	10

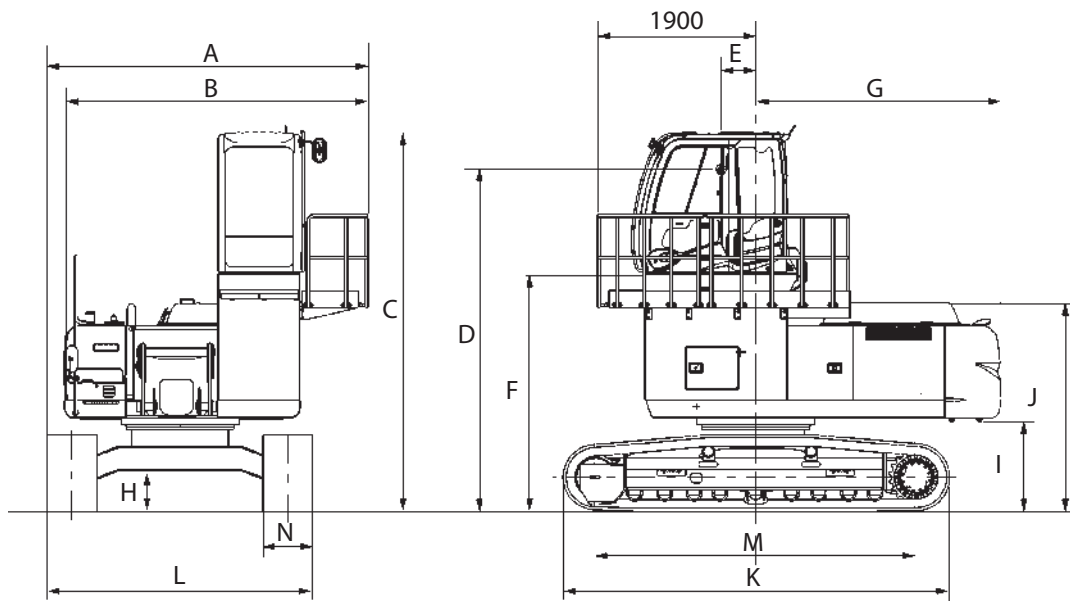
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX250LC-3

High-Mount Cab 2.0 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX250LC-3)

Lift Cab

Refer to the ZX250LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model	ZX250LC-3	
Type of Front-End Attachment	S-SC240H-A	
Engine	ISUZU AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)	
Cab	Single Link Type	
Cab Lifting Height	mm	2500
Operating Weight	kg	28100
Base Machine Weight	kg	23100
Ground Pressure	MPa	56
A: Overall Width (Excluding back mirrors)	mm	3240
B: Overall Width of Upperstructure	mm	3040
C: Transport Height	mm	3040
D: Cab Height	Max. mm	5510
E: Cab Height	Min. mm	3010
F: Operator's View	Max. mm	5070
G: Operator's View	Min. mm	2570
H: Swing Center to Operator's Eye View	mm	1320 to 1380
I: Floor Height	Max. mm	3860
J: Floor Height	Min. mm	1360
K: Rear End Swing Radius	mm	2940
L: Minimum Ground Clearance	mm	*460
M: Counterweight Clearance	mm	*1090
N: Engine Cover Height	mm	*2425
O: Undercarriage Length	mm	4640
P: Undercarriage Width	mm	3190
Q: Sprocket Center to Idler Center	mm	3845
R: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	7000
Arm Length	mm	6000
Swing Speed	min ⁻¹	13.5
Travel Speed (fast/slow)	km/h	5.5/3.4
Gradeability	degree	10

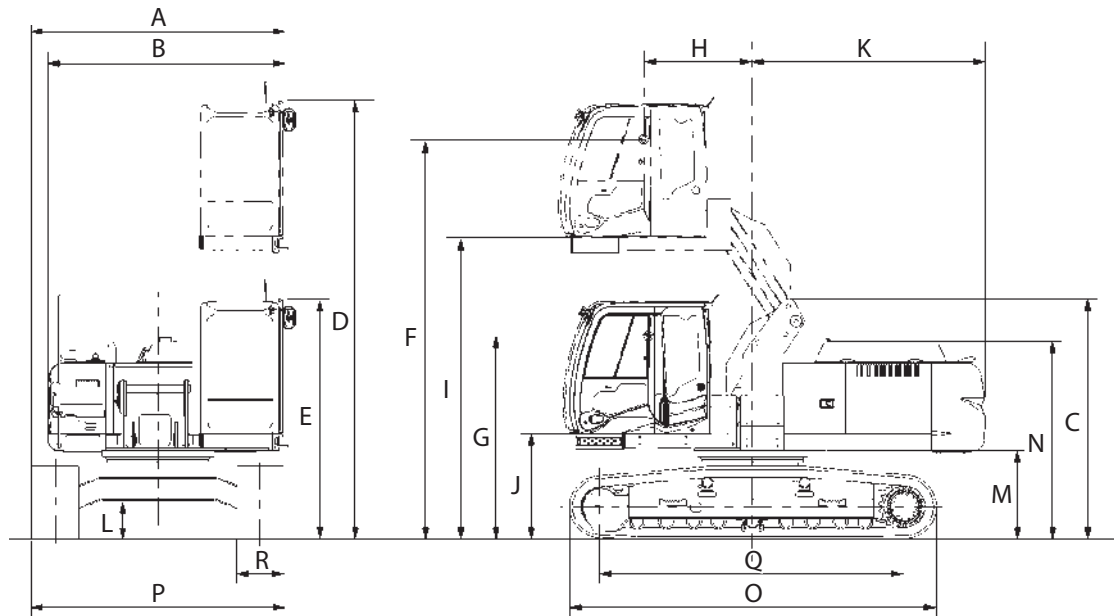
-  **NOTE:** • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX250LC-3

Lift Cab (Single Link Type)

Unit : mm



M1V1-SH1-045


SPECIFICATIONS

SPECIFICATIONS (ZX350LC-3)

Std. Cab • High-Mount Cab 1.0 m

Refer to the ZX350LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX350LC-3	
Type of Front-End Attachment		S-SC330H-B	
Engine		ISUZU AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)	
Cab		Std. Cab	High-Mount Cab
Handrail Height	mm	–	1000
Ladder or Stairs	–	–	Side Ladder
Operating Weight	kg	35600	36200
Base Machine Weight	kg	29100	29800
Ground Pressure	MPa	67	69
A: Overall Width (Excluding back mirrors)	mm	3190	3270
B: Overall Width of Upperstructure	mm	2990	3010
C: Cab Height	mm	3160	4160
D: Operator's View	mm	–	3730
E: Swing Center to Operator's Eye View	mm	–	640
F: Floor Height	mm	–	2520
G: Rear End Swing Radius	mm	3540	
H: Minimum Ground Clearance	mm	*500	
I: Counterweight Clearance	mm	*1160	
J: Engine Cover Height	mm	*2590	
K: Undercarriage Length	mm	4940	
L: Undercarriage Width	mm	3190	
M: Sprocket Center to Idler Center	mm	4050	
N: Track Shoe Width	mm	600 (Grouser shoe)	
Boom Length	mm	8500	
Arm Length	mm	6200	
Swing Speed	min ⁻¹	10.7	
Travel Speed (fast/slow)	km/h	5.0/3.2	
Gradeability	degree	10	

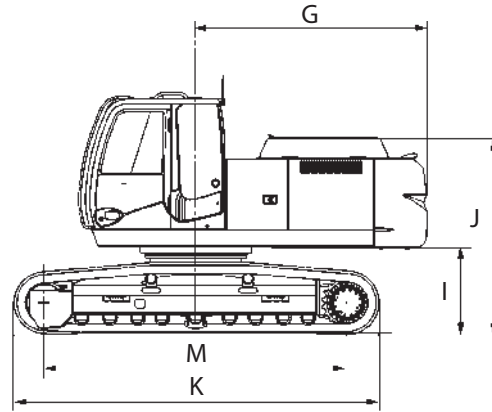
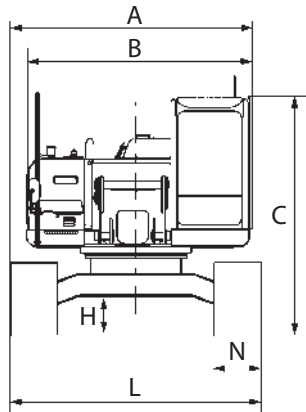
-  **NOTE:** • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX350LC-3

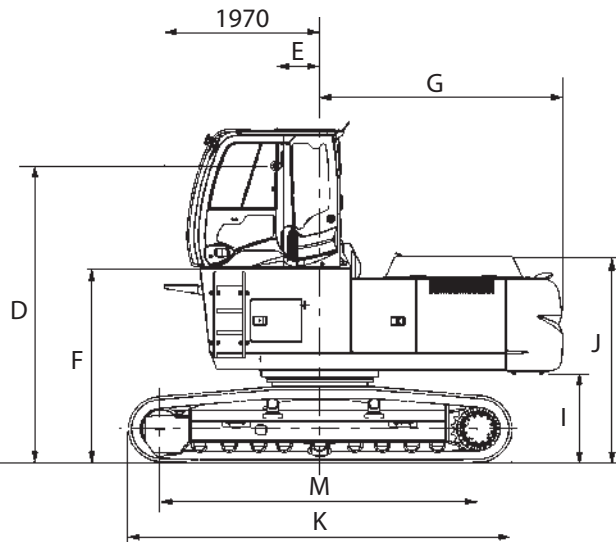
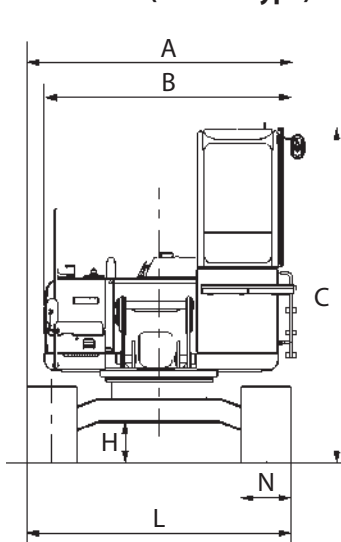
Std. Cab

Unit : mm



M1V1-SH1-041

High-Mount Cab 1.0 m (Ladder Type)



M1V1-SH1-042


SPECIFICATIONS

SPECIFICATIONS (ZX350LC-3)

High-Mount Cab 1.5 m

Refer to the ZX350LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX350LC-3
Type of Front-End Attachment		S-SC330H-B
Engine		ISUZU AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)
Cab		High-Mount Cab
Handrail Height	mm	1500
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	36700
Base Machine Weight	kg	30300
Ground Pressure	MPa	69
A: Overall Width (Excluding back mirrors)	mm	3860
B: Overall Width of Upperstructure	mm	3770
C: Cab Height	mm	4660
D: Operator's View	mm	4230
E: Swing Center to Operator's Eye View	mm	530
F: Floor Height	mm	3020
G: Rear End Swing Radius	mm	3540
H: Minimum Ground Clearance	mm	*500
I: Counterweight Clearance	mm	*1160
J: Engine Cover Height	mm	*2590
K: Undercarriage Length	mm	4940
L: Undercarriage Width	mm	3190
M: Sprocket Center to Idler Center	mm	4050
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	8500
Arm Length	mm	6200
Swing Speed	min ⁻¹	10.7
Travel Speed (fast/slow)	km/h	5.0/3.2
Gradeability	degree	10

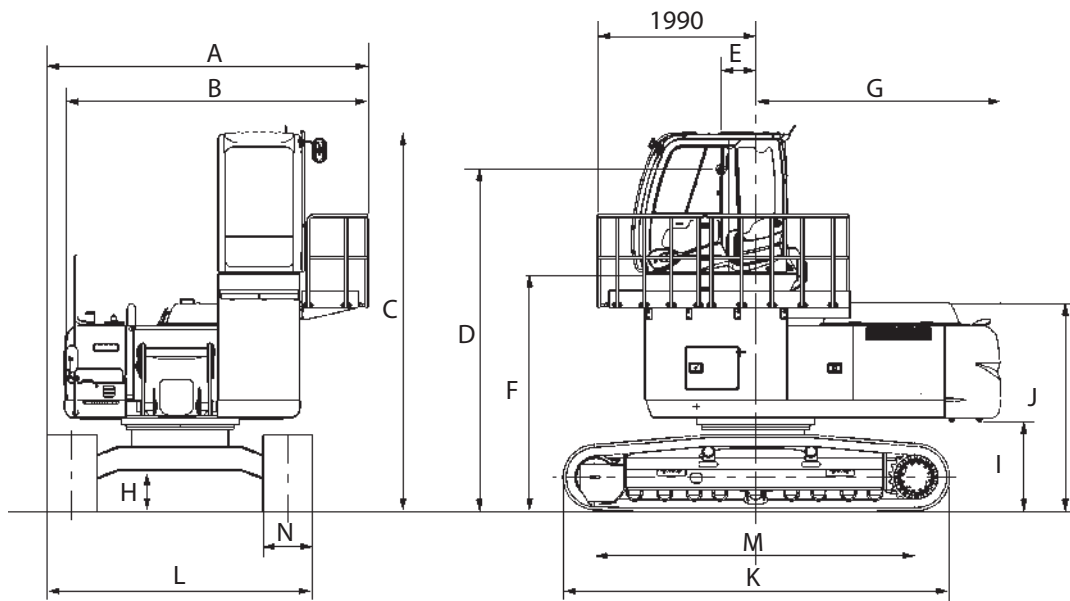
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX350LC-3

High-Mount Cab 1.5 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX350LC-3)

High-Mount Cab 2 m

Refer to the ZX350LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX350LC-3
Type of Front-End Attachment		S-SC330H-B
Engine		ISUZU AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)
Cab		High-Mount Cab
Handrail Height	mm	2000
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	36900
Base Machine Weight	kg	30400
Ground Pressure	MPa	70
A: Overall Width (Excluding back mirrors)	mm	3860
B: Overall Width of Upperstructure	mm	3770
C: Cab Height	mm	5160
D: Operator's View	mm	4730
E: Swing Center to Operator's Eye View	mm	530
F: Floor Height	mm	3520
G: Rear End Swing Radius	mm	3540
H: Minimum Ground Clearance	mm	*500
I: Counterweight Clearance	mm	*1160
J: Engine Cover Height	mm	*2590
K: Undercarriage Length	mm	4940
L: Undercarriage Width	mm	3190
M: Sprocket Center to Idler Center	mm	4050
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	8500
Arm Length	mm	6200
Swing Speed	min ⁻¹	10.7
Travel Speed (fast/slow)	km/h	5.0/3.2
Gradeability	degree	10

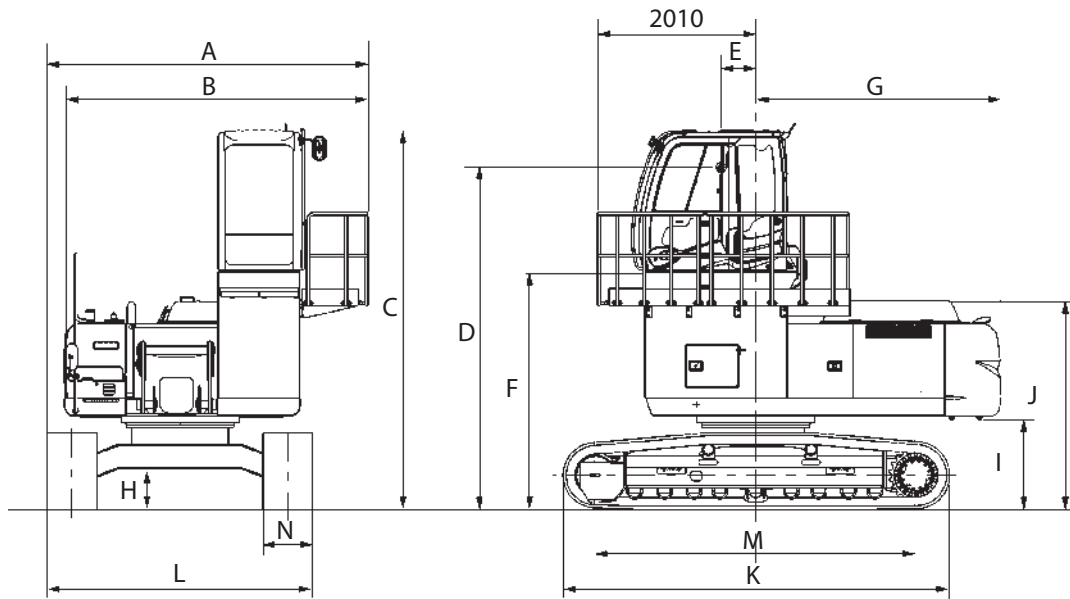
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX350LC-3

High-Mount Cab 2.0 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX350LC-3)

Lift Cab

Refer to the ZX350LC-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model			ZX350LC-3
Type of Front-End Attachment			S-SC330H-B
Engine			ISUZU AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)
Cab			Single Link Type
Cab Lifting Height	mm		2500
Operating Weight	kg		37600
Base Machine Weight	kg		31100
Ground Pressure	MPa		71
A: Overall Width (Excluding back mirrors)	mm		3250
B: Overall Width of Upperstructure	mm		3160
C: Transport Height	mm		3160
D: Cab Height	Max.	mm	5660
E: Cab Height	Min.	mm	3160
F: Operator's View	Max.	mm	5180
G: Operator's View	Min.	mm	2700
H: Swing Center to Operator's Eye View	mm		1430 to 1490
I: Floor Height	Max.	mm	3990
J: Floor Height	Min.	mm	1490
K: Rear End Swing Radius	mm		3540
L: Minimum Ground Clearance	mm		*500
M: Counterweight Clearance	mm		*1160
N: Engine Cover Height	mm		*2590
O: Undercarriage Length	mm		4940
P: Undercarriage Width	mm		3190
Q: Sprocket Center to Idler Center	mm		4050
R: Track Shoe Width	mm		600 (Grouser shoe)
Boom Length	mm		8500
Arm Length	mm		6200
Swing Speed	min ⁻¹		10.7
Travel Speed (fast/slow)	km/h		5.0/3.2
Gradeability	degree		10

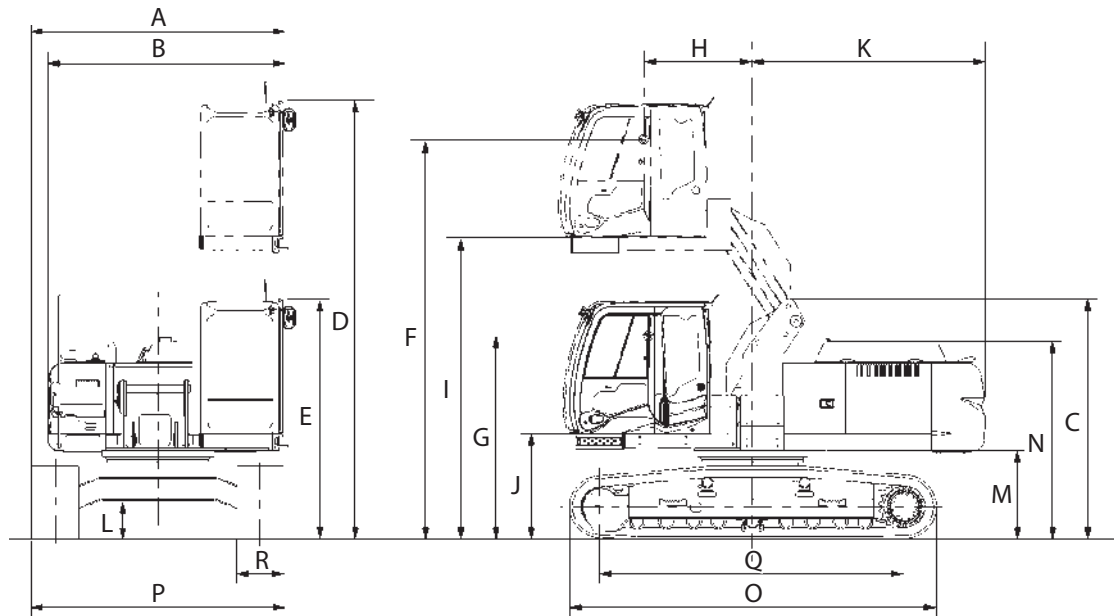
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX350LC-3

Lift Cab (Single Link Type)

Unit : mm



M1V1-SH1-045


SPECIFICATIONS

SPECIFICATIONS (ZX470LCH-3)

Std. Cab • High-Mount Cab 1.0 m

Refer to the ZX470LCH-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX470LCH-3	
Type of Front-End Attachment		S-SC450H-A	
Engine		ISUZU AH-6WG1X 260 kW/1800 min ⁻¹ (353 PS/1800 rpm)	
Cab		Std. Cab	High-Mount Cab
Handrail Height	mm	–	1000
Ladder or Stairs	–	–	Side Ladder
Operating Weight	kg	50700	51350
Base Machine Weight	kg	42000	42700
Ground Pressure	MPa	86	73
A: Overall Width (Excluding back mirrors)	mm	3740	3750
B: Overall Width of Upperstructure	mm	3530	3550
C: Cab Height	mm	3330	4330
D: Operator's View	mm	–	3880
E: Swing Center to Operator's Eye View	mm	–	780
F: Floor Height	mm	–	2670
G: Rear End Swing Radius	mm	3650	
H: Minimum Ground Clearance	mm	*760	
I: Counterweight Clearance	mm	*1400	
J: Engine Cover Height	mm	*3080	
K: Undercarriage Length	mm	5470	
L: Undercarriage Width (Extended/Retracted)	mm	3490/2990	
M: Sprocket Center to Idler Center	mm	4470	
N: Track Shoe Width	mm	600 (Grouser shoe)	
Boom Length	mm	9500	
Arm Length	mm	7300	
Swing Speed	min ⁻¹	9.0	
Travel Speed (fast/slow)	km/h	5.0/3.4	
Gradeability	degree	10	

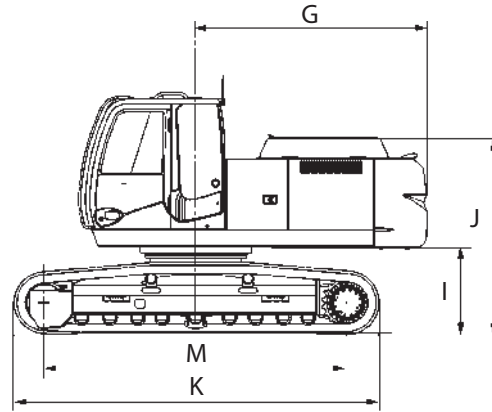
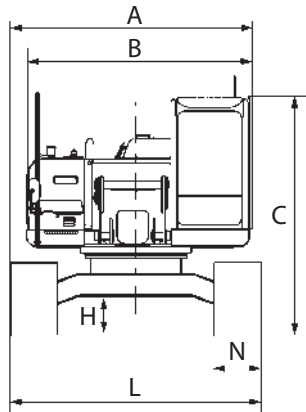
-  **NOTE:** • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX470LCH-3

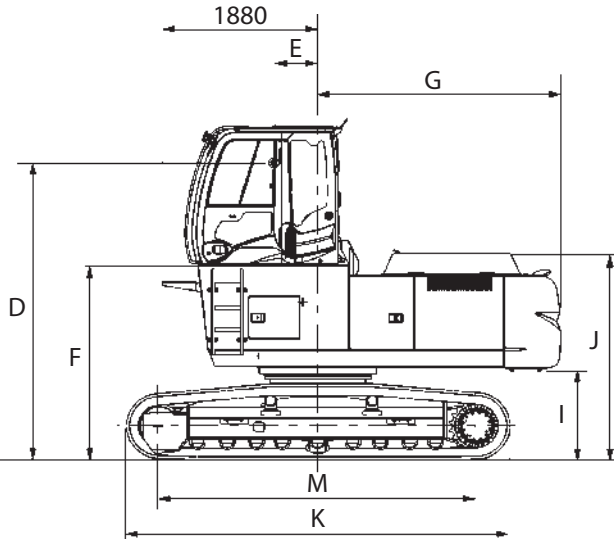
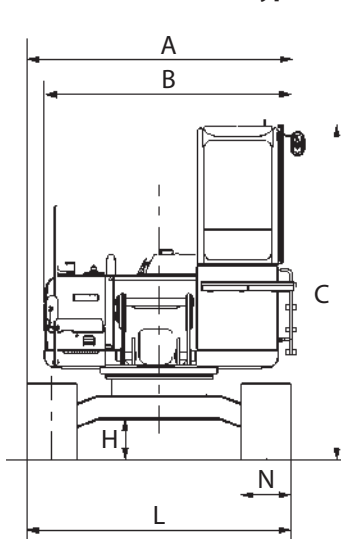
Std. Cab

Unit : mm



M1V1-SH1-041

High-Mount Cab 1.0 m (Ladder Type)



M1V1-SH1-042


SPECIFICATIONS

SPECIFICATIONS (ZX470LCH-3)

High-Mount Cab 1.5 m

Refer to the ZX470LCH-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX470LCH-3
Type of Front-End Attachment		S-SC450H-A
Engine		ISUZU AH-6WG1X 260 kW/1800 min ⁻¹ (353 PS/1800 rpm)
Cab		High-Mount Cab
Handrail Height	mm	1500
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	51800
Base Machine Weight	kg	43200
Ground Pressure	MPa	74
A: Overall Width (Excluding back mirrors)	mm	4030
B: Overall Width of Upperstructure	mm	3830
C: Cab Height	mm	4830
D: Operator's View	mm	4380
E: Swing Center to Operator's Eye View	mm	660
F: Floor Height	mm	3170
G: Rear End Swing Radius	mm	3650
H: Minimum Ground Clearance	mm	*760
I: Counterweight Clearance	mm	*1400
J: Engine Cover Height	mm	*3080
K: Undercarriage Length	mm	5470
L: Undercarriage Width (Extended/Retracted)	mm	3490/2990
M: Sprocket Center to Idler Center	mm	4470
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	9500
Arm Length	mm	7300
Swing Speed	min ⁻¹	9.0
Travel Speed (fast/slow)	km/h	5.0/3.4
Gradeability	degree	10

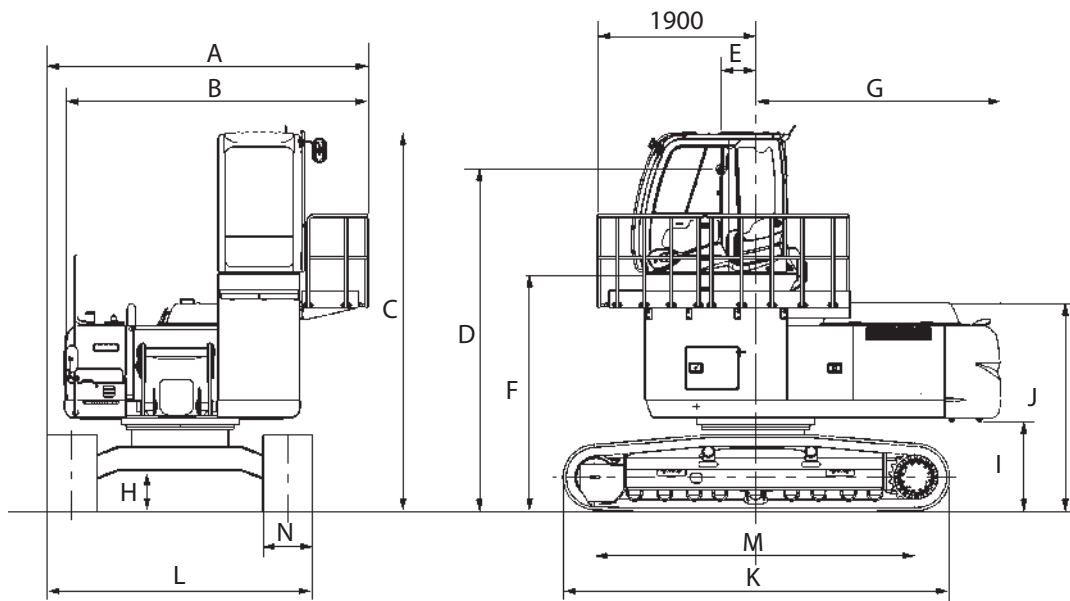
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX470LCH-3

High-Mount Cab 1.5 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX470LCH-3)

High-Mount Cab 2 m

Refer to the ZX470LCH-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model		ZX470LCH-3
Type of Front-End Attachment		S-SC450H-A
Engine		ISUZU AH-6WG1X 260 kW/1800 min ⁻¹ (353 PS/1800 rpm)
Cab		High-Mount Cab
Handrail Height	mm	2000
Ladder or Stairs	–	Sidewalk Stairs
Operating Weight	kg	51950
Base Machine Weight	kg	43300
Ground Pressure	MPa	74
A: Overall Width (Excluding back mirrors)	mm	4030
B: Overall Width of Upperstructure	mm	3830
C: Cab Height	mm	5330
D: Operator's View	mm	4850
E: Swing Center to Operator's Eye View	mm	660
F: Floor Height	mm	3670
G: Rear End Swing Radius	mm	3650
H: Minimum Ground Clearance	mm	*760
I: Counterweight Clearance	mm	*1400
J: Engine Cover Height	mm	*3080
K: Undercarriage Length	mm	5470
L: Undercarriage Width (Extended/Retracted)	mm	3490/2990
M: Sprocket Center to Idler Center	mm	4470
N: Track Shoe Width	mm	600 (Grouser shoe)
Boom Length	mm	9500
Arm Length	mm	7300
Swing Speed	min ⁻¹	9.0
Travel Speed (fast/slow)	km/h	5.0/3.4
Gradeability	degree	10

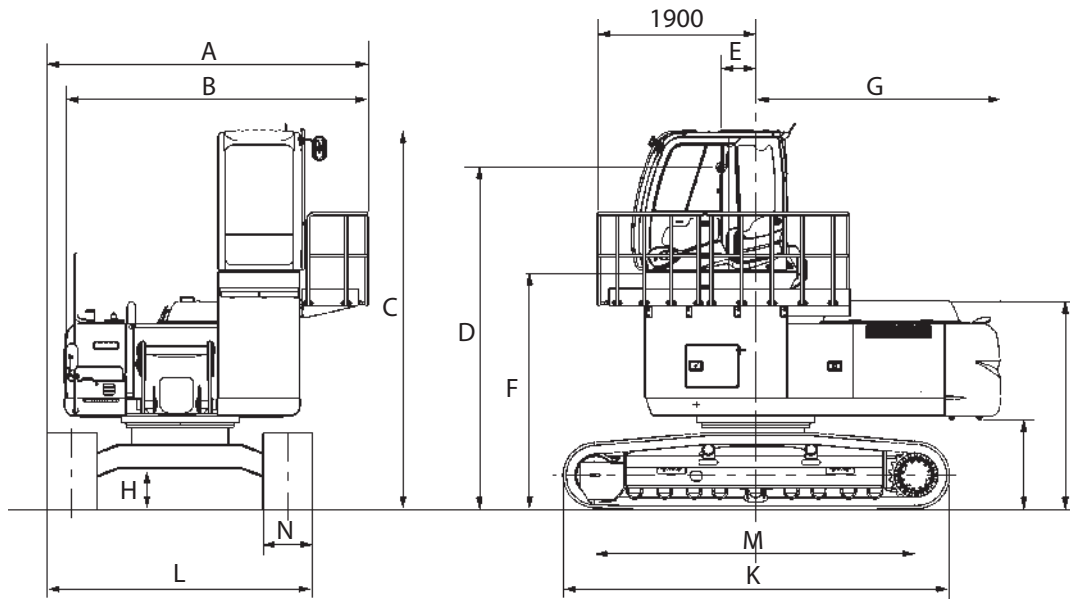
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX470LCH-3

High-Mount Cab 2.0 m (Sidewalk Stairs Type)

Unit : mm



M1V1-SH1-046


SPECIFICATIONS

SPECIFICATIONS (ZX470LCH-3)

Lift Cab

Refer to the ZX470LCH-3 Hydraulic Excavator Operator's Manual for specifications other than those described herein.

Model	ZX470LCH-3		
Type of Front-End Attachment	S-SC450H-A		
Engine	ISUZU AH-6WG1X 260 kW/1800 min ⁻¹ (353 PS/1800 rpm)		
Cab	Single Link Type		
Cab Lifting Height	mm	2500	
Operating Weight	kg	52700	
Base Machine Weight	kg	44500	
Ground Pressure	MPa	90	
A: Overall Width (Excluding back mirrors)	mm	3730	
B: Overall Width of Upperstructure	mm	3150	
C: Transport Height	mm	3420	
D: Cab Height	Max.	mm	5850
E: Cab Height	Min.	mm	3330
F: Operator's View	Max.	mm	5350
G: Operator's View	Min.	mm	2850
H: Swing Center to Operator's Eye View	mm	1570 to 1630	
I: Floor Height	Max.	mm	4150
J: Floor Height	Min.	mm	1650
K: Rear End Swing Radius	mm	3650	
L: Minimum Ground Clearance	mm	*760	
M: Counterweight Clearance	mm	*1400	
N: Engine Cover Height	mm	*3080	
O: Undercarriage Length	mm	5470	
P: Undercarriage Width (Extended/Retracted)	mm	3490/2990	
Q: Sprocket Center to Idler Center	mm	4470	
R: Track Shoe Width	mm	600 (Grouser shoe)	
Boom Length	mm	9500	
Arm Length	mm	7300	
Swing Speed	min ⁻¹	9.0	
Travel Speed (fast/slow)	km/h	5.0/3.4	
Gradeability	degree	10	

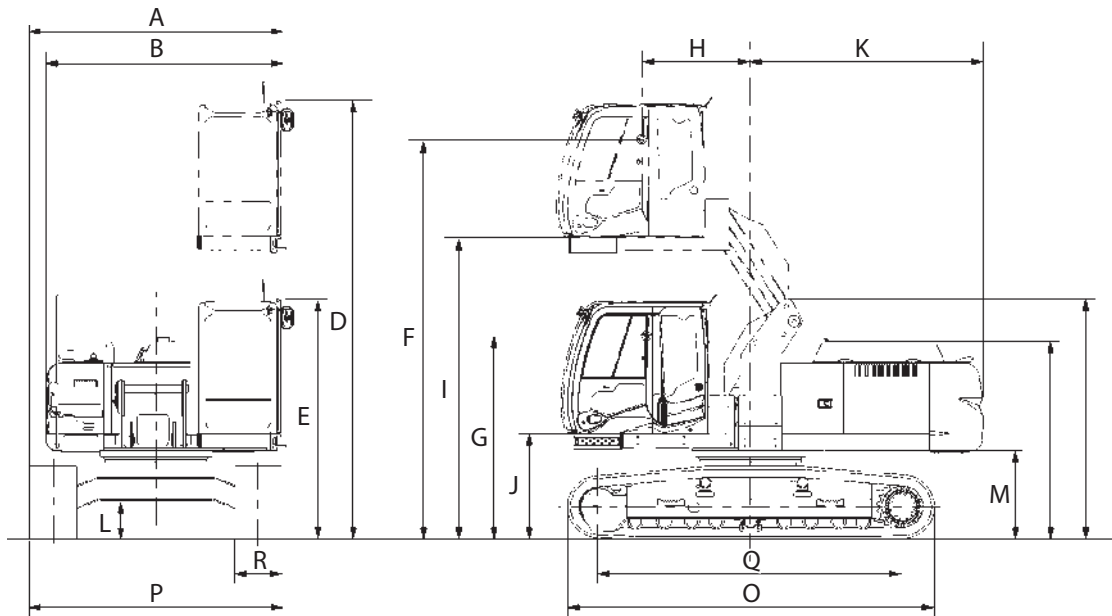
-  NOTE: • * Dimensions shown above exclude the height of the shoe grouser.
 • * The operating weight does not include the attachment weight.
 • * Use the attachment corresponding to the base machine specifications. (If a too heavy attachment is used, tipping over of the machine and/or damage to the front attachment may result.)

SPECIFICATIONS

ZX470LCH-3

Lift Cab (Single Link Type)

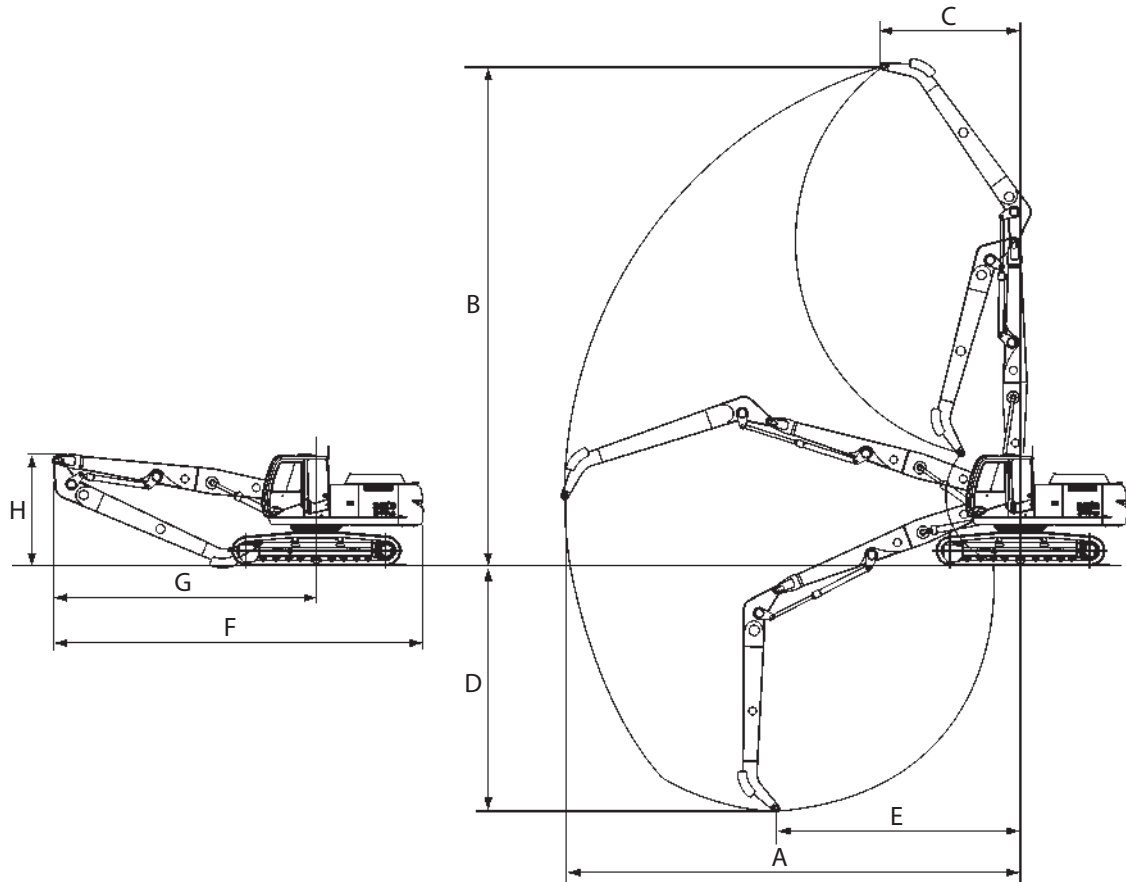
Unit : mm



M1V1-SH1-045

SPECIFICATIONS

WORKING RANGE • DIMENSIONS




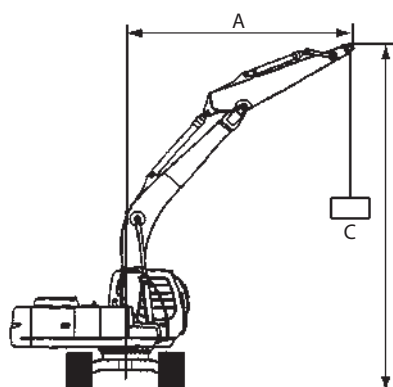
M1V1-SH1-039

Model		ZX210LC-3	ZX250LC-3	ZX350LC-3	ZX470LCH-3
A: Max. Arm Pint Reach	mm	11000	12500	14200	16200
B: Max. Arm Pint Height	mm	12280	13710	15660	17500
C: Min. Swing Radius	mm	3190	3770	3850	5300
D: Max. Arm Point Depth	mm	5680	6700	6150	7210
E: Max. Arm Point Depth Reach	mm	6150	6680	8420	9370
F: Overall Length	mm	9520	10400	12340	13420
G: Length from Swing Center to Front End	mm	6770	7400	8800	9900
H: Boom Height in storage	mm	3270	3400	2690	3370

SPECIFICATIONS

LIFTING CAPACITIES

-  **NOTE:** 1. Lifting capacity of the ZXseries does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity. (ISO 10567)
- 2.*Indicates load limited by hydraulic capacity.
3. Use only working tools that match the specifications of the front attachment.
4. Net lifting capacities are equal to the values obtained by deducting the ATT mass from the values described in the table below.

















A: Load radius
B: Load point height
C: Lifting capacity

M1V1-SH1-051

METRIC MEASURE

ZX210LC-3 Material Handling Machine Boom 6.5 m, Arm 4.95 m, 600G Counter weight is addition 6.3 TON. Unit; kg

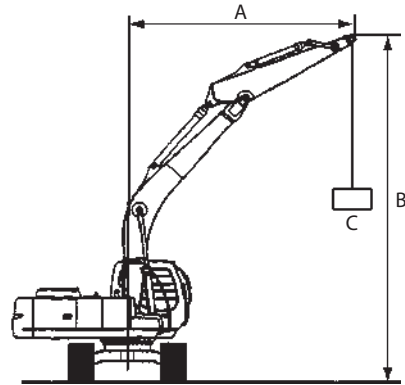
B:Load point height m	3m		4m		5m		6m		7m		8m	
												
11					4.2*	4.2*						
10					5.0*	5.0*	4.3*	4.3*	3.3*	3.3*		
9							4.8*	4.8*	4.3*	4.3*	3.1*	3.1*
8							4.7*	4.7*	4.5*	4.5*	4.1*	4.1*
7					5.1*	5.1*	4.8*	4.8*	4.5*	4.5*	4.3*	4.1
6					5.4*	5.4*	5.0*	5.0*	4.7*	4.7*	4.4*	4.1
5			6.6*	6.6*	5.9*	5.9*	5.3*	5.3*	4.9*	4.9*	4.5*	4.0
4	9.4*	9.4*	7.7*	7.7*	6.5*	6.5*	5.7*	5.7*	5.1*	4.8	4.7*	3.9
3	11.8*	11.8*	8.9*	8.9*	7.2*	7.2*	6.2*	5.8	5.4*	4.6	4.8*	3.8
2	6.3*	6.3*	10.0*	10.0*	7.9*	7.2	6.6*	5.6	5.7*	4.5	5.0*	3.7
1	3.1*	3.1*	8.6*	8.6*	8.3*	6.9	6.8*	5.4	5.8*	4.3	5.1*	3.6
0	2.8*	2.8*	5.6*	5.6*	8.5*	6.6	7.0*	5.2	5.9*	4.2	5.1*	3.5
-1	3.0*	3.0*	4.9*	4.9*	8.4*	6.5	6.9*	5.0	5.9*	4.1	5.0*	3.4
-2	3.3*	3.3*	4.8*	4.8*	8.0*	6.4	6.7*	5.0	5.6*	4.0	4.8*	3.4
-3	3.6*	3.6*	5.0*	5.0*	7.4*	6.4	6.2*	4.9	5.2*	4.0	4.5*	3.4
-4	3.9*	3.9*	5.3*	5.3*	6.5*	6.4	5.5*	5.0	4.6*	4.0	3.9*	3.4
-5			5.8*	5.8*	5.2*	5.2*	4.5*	4.5*	3.8*	3.8*	3.0*	3.0*

B:Load point height m	A: Load radius						Max.		REACH m
	9m		10m		11m				
11							3.1*	3.1*	6.0
10							2.8*	2.8*	7.3
9							2.6*	2.6*	8.3
8	2.7*	2.7*					2.5*	2.5*	9.1
7	3.7*	3.4					2.4*	2.4*	9.7
6	4.1*	3.4	2.8*	2.8			2.4*	2.4*	10.2
5	4.2*	3.3	3.6*	2.8			2.4*	2.4*	10.6
4	4.3*	3.3	4.0*	2.8			2.4*	2.4	10.8
3	4.4*	3.2	4.0*	2.7			2.5*	2.3	11.0
2	4.5*	3.1	3.9	2.7	2.7*	2.3	2.6*	2.3	11.0
1	4.5*	3.0	3.9	2.6			2.7*	2.3	11.0
0	4.4*	3.0	3.8	2.6			2.8*	2.3	10.9
-1	4.4*	2.9	3.7*	2.5			3.0*	2.3	10.7
-2	4.1*	2.9	3.4*	2.5			3.2*	2.4	10.3
-3	3.7*	2.9					3.0*	2.6	9.9
-4	3.1*	2.9					2.8*	2.8*	9.3
-5							2.4*	2.4*	8.6

SPECIFICATIONS

LIFTING CAPACITIES

- NOTE:** 1. Lifting capacity of the ZXseries does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity. (ISO 10567)
- 2.*Indicates load limited by hydraulic capacity.
3. Use only working tools that match the specifications of the front attachment.
4. Net lifting capacities are equal to the values obtained by deducting the ATT mass from the values described in the table below.



A: Load radius
B: Load point height
C: Lifting capacity

M1V1-SH1-051

METRIC MEASURE


ZX250LC-3 Material Handling Machine Boom 7.0m, Arm 6.0m, 600G Counter weight is addition 7.9TON. Unit; kg

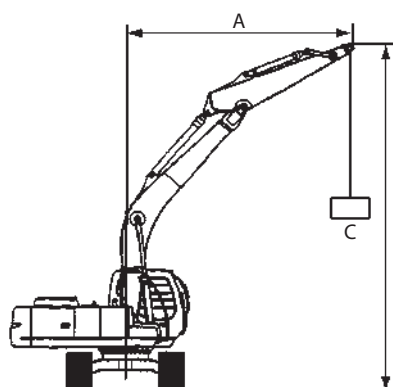
B:Load point height m	A: Load radius													
	2m		3m		4m		5m		6m		7m		8m	
13							3.9*	3.9*						
12									4.0*	4.0*	3.1*	3.1*		
11									4.6*	4.6*	4.0*	4.0*	3.1*	3.1*
10											4.5*	4.5*	3.9*	3.9*
9											4.5*	4.5*	4.3*	4.3*
8											4.5*	4.5*	4.3*	4.3*
7									4.9*	4.9*	4.6*	4.6*	4.4*	4.4*
6									5.1*	5.1*	4.8*	4.8*	4.5*	4.5*
5							6.0*	6.0*	5.5*	5.5*	5.1*	5.1*	4.7*	4.7*
4					7.9*	7.9*	6.8*	6.8*	6.0*	6.0*	5.4*	5.4*	4.9*	4.9*
3	13.4*	13.4*	12.1*	12.1*	9.3*	9.3*	7.6*	7.6*	6.5*	6.5*	5.8*	5.8*	5.1*	5.0
2			14.8*	14.8*	10.7*	10.7*	8.5*	8.5*	7.1*	7.1*	6.1*	5.8	5.4*	4.8
1	1.2*	1.2*	3.8*	3.8*	11.8*	11.8*	9.1*	9.1*	7.5*	7.0	6.4*	5.6	5.5*	4.6
0	1.3*	1.3*	2.8*	2.8*	6.1*	6.1*	9.5*	8.7*	7.8*	6.7	6.6*	5.4	5.7*	4.4
-1	1.7*	1.7*	2.8*	2.8*	4.9*	4.9*	9.6*	8.3*	7.8*	6.5	6.6*	5.2	5.7*	4.3
-2	2.1*	2.1*	3.0*	3.0*	4.6*	4.6*	7.9*	7.9*	7.7*	6.3	6.5*	5.1	5.6*	4.2
-3	2.5*	2.5*	3.2*	3.2*	4.6*	4.6*	7.3*	7.3*	7.4*	6.2	6.2*	5.0	5.3*	4.2
-4	2.8*	2.8*	3.5*	3.5*	4.8*	4.8*	7.2*	7.2*	6.8*	6.2	5.8*	5.0	4.9*	4.2
-5			3.8*	3.8*	5.1*	5.1*	7.1*	7.1*	6.0*	6.0*	5.1*	5.0	4.3*	4.2
-6					5.5*	5.5*	5.7*	5.7*	4.9*	4.9*	4.2*	4.2*	3.5*	3.5*

B:Load point height m	A: Load radius								Max.		
	9m		10m		11m		12m				REACH m
13									3.3*	3.3*	5.6
12									2.8*	2.8*	7.3
11									2.5*	2.5*	8.5
10	3.0*	3.0*							2.3*	2.3*	9.5
9	3.7*	3.7*	2.6*	2.6*					2.2*	2.2*	10.3
8	4.1*	4.1*	3.4*	3.4*					2.1*	2.1*	10.9
7	4.2*	4.2*	4.0*	3.8	2.8*	2.8*			2.1*	2.1*	11.4
6	4.3*	4.3*	4.0*	3.7	3.4*	3.1			2.1*	2.1*	11.8
5	4.4*	4.4	4.1*	3.7	3.8*	3.1	2.3*	2.3*	2.1*	2.1*	12.1
4	4.5*	4.3	4.2*	3.6	3.9*	3.0	2.8*	2.6	2.1*	2.1*	12.3
3	4.7*	4.1	4.3*	3.5	3.9*	3.0	3.1*	2.6	2.1*	2.1*	12.5
2	4.8*	4.0	4.3*	3.4	4.0*	2.9	3.3*	2.5	2.2*	2.2*	12.5
1	4.9*	3.9	4.4*	3.3	4.0*	2.8	3.4*	2.5	2.3*	2.3*	12.5
0	5.0*	3.8	4.4*	3.2	3.9*	2.8	3.4*	2.4	2.4*	2.3	12.4
-1	5.0*	3.7	4.3*	3.1	3.8*	2.7	3.0*	2.4	2.5*	2.4	12.2
-2	4.8*	3.6	4.2*	3.1	3.6*	2.7			2.7*	2.4	11.9
-3	4.6*	3.6	3.9*	3.1	3.3*	2.7			2.9*	2.6	11.5
-4	4.2*	3.5	3.5*	3.1	2.7*	2.7			2.7*	2.7*	11.0
-5	3.6*	3.6	2.8*	2.8*					2.5*	2.5*	10.4
-6	2.7*	2.7*									

SPECIFICATIONS

LIFTING CAPACITIES

-  **NOTE:** 1. Lifting capacity of the ZXseries does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity. (ISO 10567)
- 2.*Indicates load limited by hydraulic capacity.
3. Use only working tools that match the specifications of the front attachment.
4. Net lifting capacities are equal to the values obtained by deducting the ATT mass from the values described in the table below.



A: Load radius
B: Load point height
C: Lifting capacity

M1V1-SH1-051

METRIC MEASURE

ZX350LC-3 Material Handling Machine Boom 8.5m, Arm 6.2m, 600G Counter weight is addition 11.3TON. Unit; kg

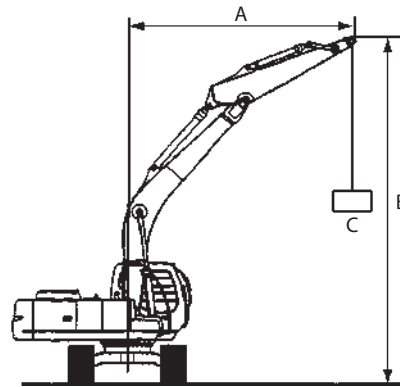
B:Load point height m	A: Load radius													
	3m		4m		5m		6m		7m		8m		9m	
15					6.43	6.43								
14							6.7	6.7	5.6*	5.6*				
13							7.5	7.5	6.8*	6.8*	5.8*	5.8*		
12									7.5*	7.5*	6.8*	6.8*	5.8*	5.8*
11									8.1*	8.1*	7.5*	7.5*	6.7*	6.7*
10									8.4*	8.4*	7.8*	7.8*	7.3*	7.3*
9									8.5*	8.5*	7.9*	7.9*	7.4*	7.3*
8									9.6*	9.6*	8.7*	8.7*	8.0*	7.2*
7									10.0*	10.0*	9.0*	9.0*	8.2*	7.1*
6					12.0*	12.0*	10.5*	10.5*	9.4*	9.4*	8.5*	8.3*	7.8*	6.9*
5	13.8*	13.8*	15.5*	15.5*	13.0*	13.0*	11.2*	11.2*	9.8*	9.8	8.8*	8.0	7.9*	6.8
4	23.7*	23.7*	17.6*	17.6*	14.1*	14.1*	11.9*	11.8	10.3*	9.4	9.1*	7.8	8.1*	6.6
3	4.0*	4.0*	17.7*	17.7*	15.1*	14.5	12.5*	11.2	10.7*	9.1	9.3*	7.5	8.3*	6.4
2	1.8*	1.8*	5.9*	5.9*	15.7*	13.7	12.9*	10.7	10.9*	8.7	9.5*	7.3	8.4*	6.2
1	1.7*	1.7*	4.2*	4.2*	8.9*	8.9*	13.0*	10.3	11.0*	8.4	9.5*	7.0	8.4*	6.0
0	2.2*	2.2*	3.9*	3.9*	7.0*	7.0*	12.8*	10.0	10.9*	8.1	9.4*	6.8	8.3*	5.9
-1	2.8*	2.8*	4.1*	4.1*	6.5*	6.5*	10.9*	9.7	10.6*	8.0	9.2*	6.7	8.1*	5.8
-2	3.4*	3.4*	4.5*	4.5*	6.4*	6.4*	9.9*	9.6	10.0*	7.9	8.7*	6.6	7.7*	5.7
-3			4.9*	4.9*	6.6*	6.6*	9.6*	9.6	9.2*	7.8	8.1*	6.6	7.1*	5.6
-4			5.4*	5.4*	7.0*	7.0*	9.2*	9.2*	8.2*	7.8	7.3*	6.5	6.4*	5.6
-5					7.4*	7.4*	7.7*	7.7*	7.0*	7.0*	6.2*	6.2*	5.5*	5.5*
-6									5.5*	5.5*	4.9*	4.9*	4.3*	4.3*

B:Load point height m	A: Load radius										Max.		
	10m		11m		12m		13m		14m			REACH m	
15											5.6*	5.6*	5.7
14											4.8*	4.8*	7.6
13											4.3*	4.3*	9.0
12	4.3*	4.3*									4.1*	4.1*	10.1
11	5.6*	5.6*	3.9*	3.9*							3.9*	3.9*	11.0
10	6.5*	6.2	5.2*	5.2*							3.8*	3.8*	11.8
9	6.9*	6.1	6.2*	5.3	4.6*	4.5					3.7*	3.7*	12.4
8	6.9*	6.1	6.5*	5.2	5.5*	4.5					3.7*	3.7*	12.9
7	7.0*	6.0	6.5*	5.2	6.1*	4.5	4.4*	3.9			3.6*	3.6*	13.3
6	7.1*	5.9	6.6*	5.1	6.1*	4.4	5.3*	3.9			3.7*	3.6	13.6
5	7.3*	5.8	6.7*	5.0	6.1*	4.4	5.5	3.8			3.7*	3.4	13.9
4	7.4*	5.6	6.7*	4.9	6.2*	4.3	5.5	3.8	3.9*	3.4	3.7*	3.3	14.1
3	7.5*	5.5	6.8*	4.8	6.1	4.2	5.4	3.7	4.3*	3.3	3.8*	3.3	14.2
2	7.5*	5.3	6.8*	4.7	6.0	4.1	5.3	3.7	4.6*	3.3	3.9*	3.2	14.2
1	7.5*	5.2	6.7*	4.6	5.9	4.1	5.3	3.6	4.6*	3.3	4.0*	3.2	14.1
0	7.4*	5.1	6.6*	4.5	5.8*	4.0	5.1*	3.6	4.3*	3.2	4.2*	3.2	14.0
-1	7.1*	5.0	6.3*	4.4	5.6*	4.0	4.8*	3.6			4.1*	3.3	13.8
-2	6.8*	5.0	6.0*	4.4	5.2*	3.9	4.4*	3.5			3.9*	3.4	13.6
-3	6.3*	4.9	5.5*	4.4	4.7*	3.9	3.8*	3.6			3.5*	3.5	13.2
-4	5.6*	4.9	4.8*	4.4	4.0*	3.9					3.2*	3.2*	12.8
-5	4.7*	4.7*	3.9*	3.9*	3.0*	3.0*							
-6													

SPECIFICATIONS

LIFTING CAPACITIES

- NOTE:** 1. Lifting capacity of the ZXseries does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity. (ISO 10567)
- 2.*Indicates load limited by hydraulic capacity.
3. Use only working tools that match the specifications of the front attachment.
4. Net lifting capacities are equal to the values obtained by deducting the ATT mass from the values described in the table below.



A: Load radius
B: Load point height
C: Lifting capacity

M1V1-SH1-051

METRIC MEASURE

ZX470LCH-3 Material Handling Machine Boom 9.5m, Arm 7.3m, 600G Counter weight is addition 13.7TON. Unit; kg

B:Load point height m	A: Load radius															
	3m		4m		5m		6m		7m		8m		9m		10m	
17							6.8*	6.8*								
16									6.9*	6.9*						
15											6.9*	6.9*	6.0*	6.0*		
14											7.4*	7.4*	6.8*	6.8*	6.0*	6.0*
13											7.8*	7.8*	7.3*	7.3*	6.7*	6.7*
12													7.8*	7.8*	7.3*	7.3*
11											8.5*	8.5*	8.2*	8.2*	7.8*	7.8*
10											8.8*	8.8*	8.6*	8.6*	8.3*	8.3*
9											9.3*	9.3*	9.1*	9.1*	8.8*	8.8*
8									9.7*	9.7*	9.9*	9.9*	9.8*	9.8*	9.3*	9.3*
7									10.6*	10.6*	10.8*	10.8*	10.2*	10.2*	9.4*	9.2
6							11.6*	11.6*	12.1*	12.1*	11.6*	11.6*	10.5*	10.5*	9.6*	9.0
5			12.8*	12.8*	14.3*	14.3*	14.9*	14.9*	13.5*	13.5*	12.0*	12.0*	10.8*	10.3	9.8*	8.8
4	33.0*	33.0*	24.4*	24.4*	19.5*	19.5*	16.3*	16.3*	14.0*	14.0*	12.3*	11.8	11.0*	10.0	10.0*	8.6
3			12.1*	12.1*	20.6*	20.6*	17.0*	17.0*	14.5*	13.8	12.7*	11.4	11.2*	9.7	10.1*	8.4
2			4.7*	4.7*	13.0*	13.0*	17.4*	16.3	14.8*	13.2	12.8*	11.0	11.3*	9.4	10.1*	8.2
1			3.5*	3.5*	7.8*	7.8*	17.4*	15.7	14.8*	12.7	12.9*	10.7	11.3*	9.1	10.1*	7.9
0	1.7*	1.7*	3.5*	3.5*	6.4*	6.4*	11.9*	11.9*	14.6*	12.4	12.7*	10.4	11.2*	8.9	9.9*	7.8
-1	2.4*	2.4*	3.8*	3.8*	6.1*	6.1*	10.1*	10.1*	14.1*	12.1	12.3*	10.2	10.9*	8.7	9.7*	7.6
-2	3.2*	3.2*	4.4*	4.4*	6.3*	6.3*	9.4*	9.4*	13.3*	11.9	11.7*	10.0	10.4*	8.6	9.2*	7.5
-3	3.9*	3.9*	5.0*	5.0*	6.6*	6.6*	9.4*	9.4*	12.3*	11.8	10.9*	9.9	9.7*	8.5	8.6*	7.4
-4			5.6*	5.6*	7.1*	7.1*	9.6*	9.6*	11.0*	11.0*	9.9*	9.8	8.8*	8.4	7.9*	7.4
-5					7.7*	7.7*	10.0*	10.0*	9.5*	9.5*	8.6*	8.6*	7.8*	7.8*	6.9*	6.9*
-6							8.3*	8.3*	7.8*	7.8*	7.2*	7.2*	6.5*	6.5*	5.8*	5.8*
-7											5.5*	5.5*	5.0*	5.0*	4.4*	4.4*

B:Load point height m	A: Load radius												Max.		
	11m		12m		13m		14m		15m		16m				REACH m
17													6.3*	6.3*	6.4
16													5.4*	5.4*	8.4
15													5.0*	5.0*	9.9
14	4.7*	4.7*											4.7*	4.7*	11.1
13	5.8*	5.8*	4.5*	4.5*									4.4*	4.4*	12.0
12	6.6*	6.6*	5.6*	5.6*									4.3*	4.3*	12.9
11	7.2*	7.2*	6.3*	6.3*	5.1*	5.1*							4.2*	4.2*	13.6
10	7.7*	7.7*	7.0*	7.0*	5.9*	5.9*	4.4*	4.4*					4.1*	4.1*	14.2
9	8.3*	8.2	7.6*	7.1	6.6*	6.2	5.3*	5.3*					4.1*	4.1*	14.7
8	8.6*	8.1	8.1*	7.1	7.2*	6.2	6.0*	5.5	4.3*	4.3*			4.0*	4.0*	15.1
7	8.7*	8.0	8.1*	7.0	7.6*	6.1	6.6*	5.4	5.0*	4.8			4.0*	4.0*	15.4
6	8.9*	7.8	8.2*	6.9	7.6*	6.0	7.1*	5.4	5.6*	4.8			4.1*	4.1*	15.7
5	9.0*	7.7	8.3*	6.7	7.6*	6.0	7.0*	5.3	6.1*	4.7			4.1*	4.1*	15.9
4	9.1*	7.5	8.3*	6.6	7.6*	5.9	7.0*	5.2	6.4*	4.7	4.3*	4.2	4.2*	4.2*	16.1
3	9.1*	7.3	8.3*	6.5	7.6*	5.7	6.9*	5.1	6.3*	4.6	4.6*	4.2	4.2*	4.1	16.1
2	9.1*	7.1	8.3*	6.3	7.5*	5.6	6.8*	5.1	6.2*	4.6	4.8*	4.2	4.3*	4.1	16.2
1	9.1*	7.0	8.2*	6.2	7.4*	5.6	6.7*	5.0	6.0*	4.5	4.8*	4.1	4.5*	4.1	16.1
0	8.9*	6.8	8.0*	6.1	7.2*	5.5	6.4*	4.9	5.7*	4.5			4.6*	4.1	16.0
-1	8.6*	6.7	7.7*	6.0	6.9*	5.4	6.1*	4.9	5.3*	4.5			4.5*	4.2	15.8
-2	8.2*	6.6	7.3*	5.9	6.5*	5.3	5.7*	4.9	4.8*	4.4			4.2*	4.2*	15.6
-3	7.7*	6.6	6.8*	5.9	6.0*	5.3	5.1*	4.8	4.2*	4.2*			3.8*	3.8*	15.3
-4	7.0*	6.5	6.2*	5.9	5.3*	5.3	4.4*	4.4*					3.4*	3.4*	14.9
-5	6.1*	6.1*	5.3*	5.3*	4.5*	4.5*	3.5*	3.5*					2.9*	2.9*	14.4
-6	5.1*	5.1*	4.3*	4.3*	3.4*	3.4*									
-7	3.7*	3.7*													

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Material Handling Machine ZX210LC-3/ZX250LC-3/350LC-3/ZX450LCH-3

Operator's Manual (Original Instruction)

Manual part number. : EM1V1-ENSH2-1(MD1)

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