

PART NO. EM1U1-EN3-2

HITACHI

Operator's Manual

ZAXIS

120-3 class

110-3 • 110M-3 • 130-3 • 130LCN-3

180-3 class

160LC-3 • 180LC-3 • 180LCN-3

200-3 class

210-3 • 210LC-3 • 210LCN-3 • 240N-3

270-3 class

250LC-3 • 250LCN-3 • 280LC-3 • 280LCN-3

330-3 class

350LC-3 • 350LCN-3

Hydraulic Excavator

Serial No.		
ZX120-3 class	080001	and up
ZX180-3 class	010372	and up
ZX200-3 class	202803	and up
ZX270-3 class	021321	and up
ZX330-3 class	052046	and up

ZX120-3 • 180-3 • 200-3 • 270-3 • 330-3 class HYDRAULIC EXCAVATOR OPERATOR'S MANUAL

EM1U1-EN3-2

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



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INTRODUCTION

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

This standard specification machine can be operated under the following conditions without being modified.
Atmospheric Temperature: -20 °C to 40 °C (-4 °F to 104 °F)
Altitude: 0 m to 2000 m (0 ft to 6600 ft)

In case the machine is used under conditions other than described above, consult your nearest Hitachi dealer.

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.

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.

Use only diesel fuel with quality specified in JIS K-2204, EN-590, ASTM D-975, GOST R52368 or GB252. Failure to use diesel fuel with quality as specified above may allow the engine to emit exhaust gas which cleanliness can not conform to the requests in various relevant regulations. In addition, serious damage to the engine may result. Consult with your nearest Hitachi dealer for detailed information.

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.

Hitachi machine models are classified into 5 classes and 1 model as shown in the table below. When referring to the texts and/or illustrations indicated with the applicable machine class names in this manual, check that the machine models concerned are included using this table.

Class

ZX120-3 Class	ZX110-3, 110M-3, 130-3, 130LCN-3
ZX180-3 Class	ZX160LC-3, 180LC-3, 180LCN-3
ZX200-3 Class	ZX210-3, 210LC-3, 210LCN-3, 240N-3
ZX270-3 Class	ZX250LC-3, 250LCN-3, 280LC-3, 280LCN-3
ZX330-3 Class	ZX350LC-3, 350LCN-3

Model

Std. Model	ZX110-3, 110M-3, 130-3, 130LCN-3, 160LC-3, 180LC-3, 180LCN-3, 210-3, 210LC-3, 210LCN-3, 240N-3, 250LC-3, 250LCN-3, 280LC-3, 280LCN-3, 350LC-3, 350LCN-3
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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.

CALIFORNIA

Proposition 65 Warning

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

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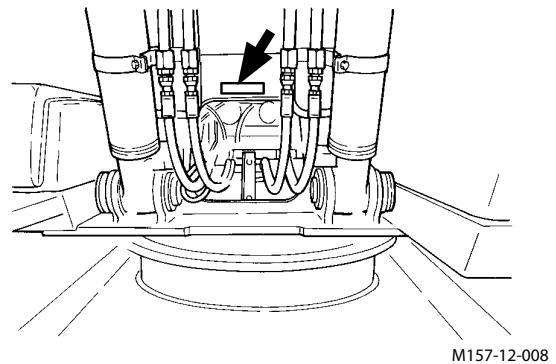
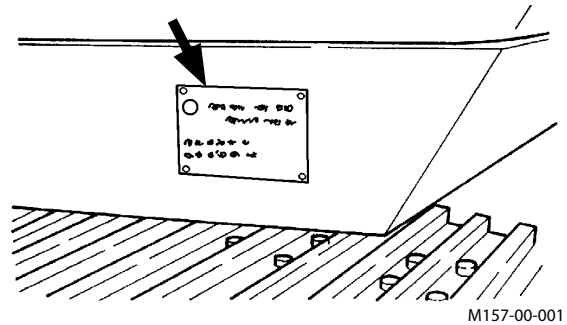
The manufacturing Nos. explained in this group is the individual number (serial No.) given to each machine and hydraulic components. These numbers are requested when inquiring any information on the machine and/or components. Fill these serial Nos. in the blank spaces in this group to immediately make them available upon request.

MACHINE

Model/type	
Product Identification Number	Hydraulic Excavator
Year of Manufacturing	
Engine Power(kw)	
Mass(kg)	
Hitachi Construction Machinery Co., Ltd. 650, Kandatsu-machi, Tsuchiura-shi, Ibaraki-ken, 300-0013 Japan	

SS3097499

1. MODEL/TYPE
2. Product Identification Number
3. Year of Manufacturing
4. Operating mass (standard version)
5. Engine power in KW according to ISO9249



PRODUCT IDENTIFICATION NUMBER

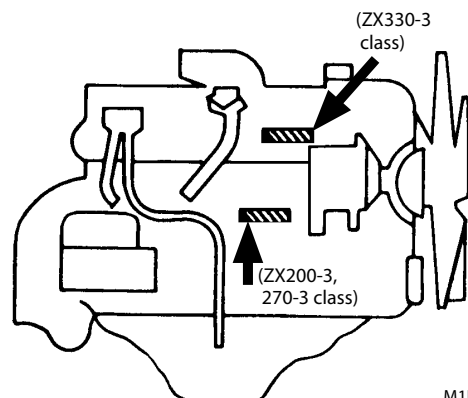
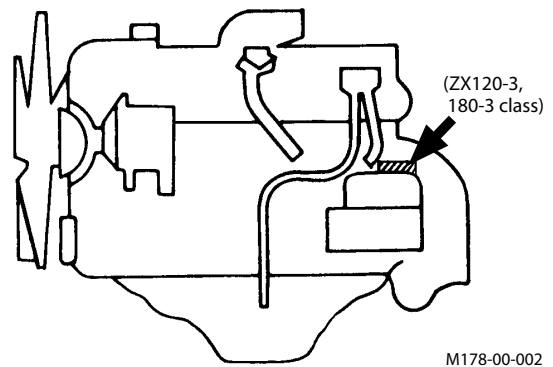
PRODUCT
IDENTIFICATION
NUMBER: _____

NOTE:

HCM1U100L00100001

Marks to indicate the
start and end of the PIN

PRODUCT IDENTIFICATION
NUMBER (PIN)



ENGINE

TYPE: _____

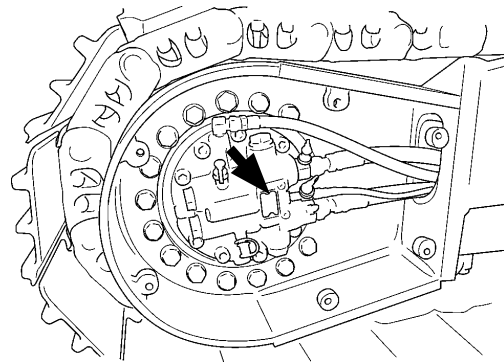
MFG. NO.: _____

MACHINE NUMBERS

TRAVEL MOTOR

TYPE: _____

MFG. NO.: _____

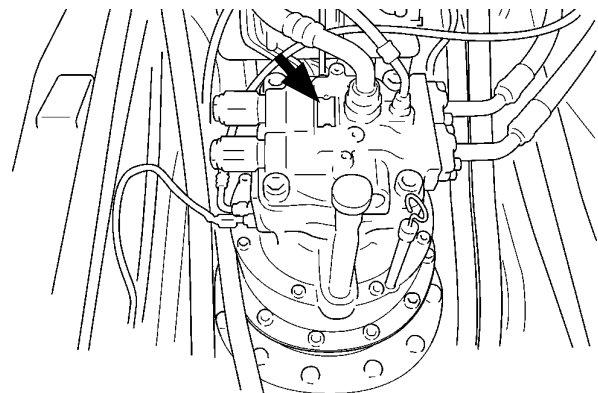


M178-07-047

SWING MOTOR

TYPE: _____

MFG. NO.: _____

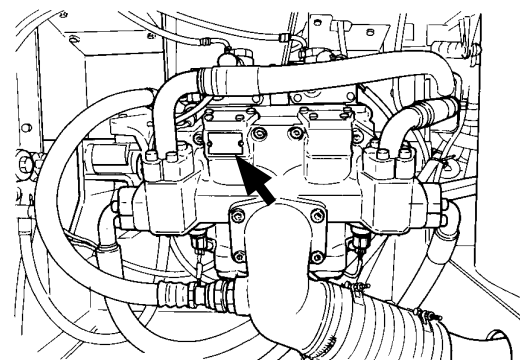


M178-07-086

HYDRAULIC PUMP

TYPE: _____

MFG. NO.: _____



M157-00-004

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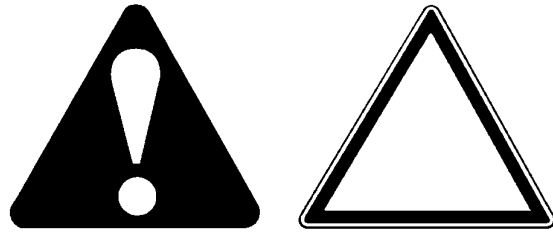
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SAFETY

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 do not 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.



IMPORTANT



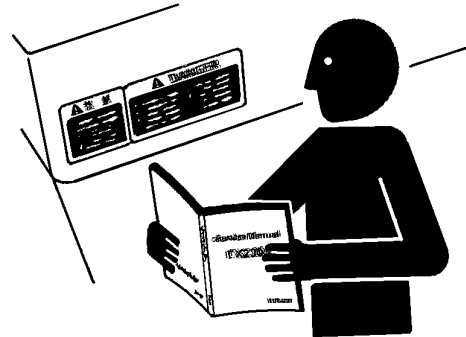
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SAFETY

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

003-E01B-0003

SAFETY

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.



SA-437

004-E01A-0437

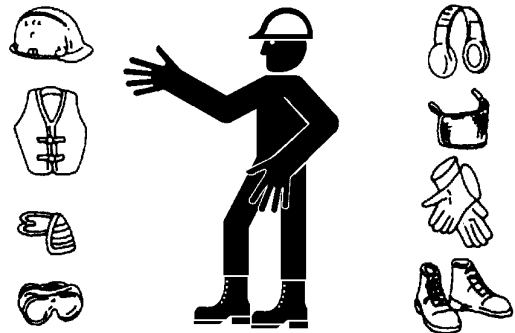
WEAR PROTECTIVE CLOTHING

- 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.



SA-438

- 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.

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

SAFETY

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

GENERAL PRECAUTIONS FOR CAB

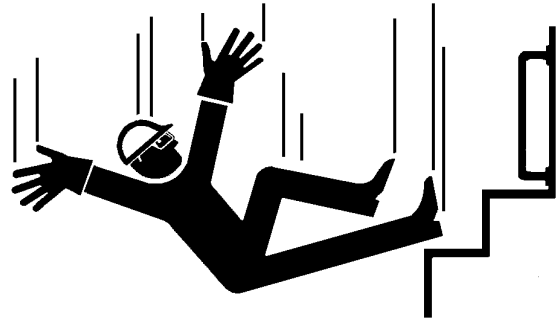
- Before entering the cab, thoroughly remove all dirt and/or oil from the soles of your work boots. If any controls such as a pedal is operated while with dirt and/or oil on the soles of the operator's work boots the operator's foot may slip off the pedal, possibly resulting in a personal accident.
- 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.



008-E01A-0439

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.



009-E01A-0462

SA-378

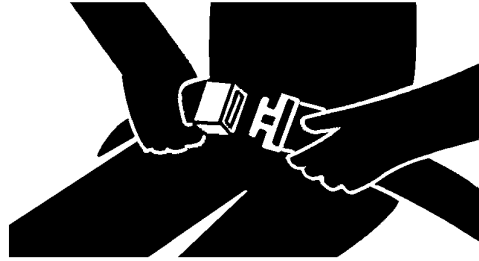
ENSURE SAFETY BEFORE RISING FROM OR LEAVING OPERATOR'S SEAT

- 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.

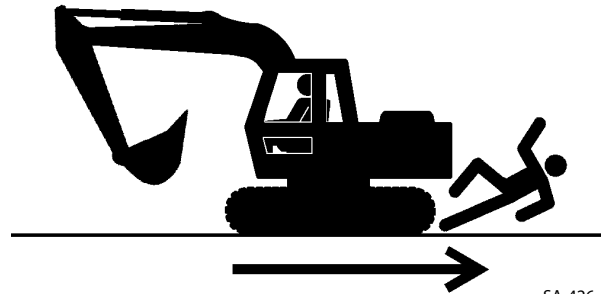


SA-237

010-E01A-0237

MOVE AND OPERATE MACHINE SAFELY

- Bystanders can be run over.
- Take extra care not to run over bystanders. Confirm the location of bystanders before moving, swinging, or operating the machine.
- Always keep the travel alarm and horn in working condition (if equipped). It warns people when the machine starts to move.
- Use a signal person when moving, swinging, or operating the machine in congested areas. Coordinate hand signals before starting the machine.
- Use appropriate illumination. Check that all lights are operable before operating the machine. If any faulty illumination is present, immediately repair it.



SA-426

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.

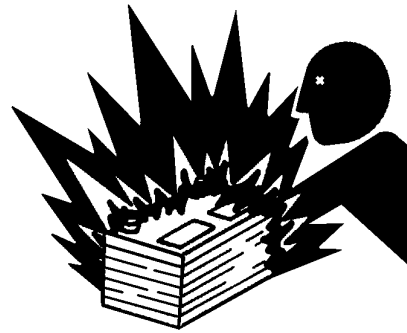


SA-444

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

S013-E01A-0032

KEEP RIDERS OFF MACHINE

- Riders on machine are subject to injury such as being struck by foreign objects and being thrown off the machine.
 - Only 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.



014-E01B-0427

SA-379

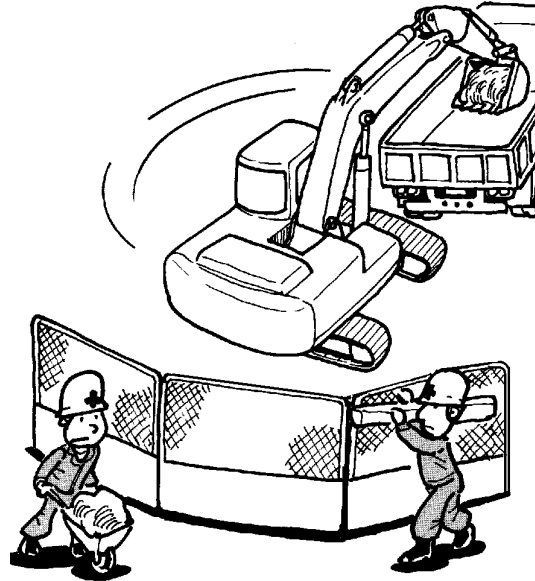
SAFETY

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.



M178-05-007

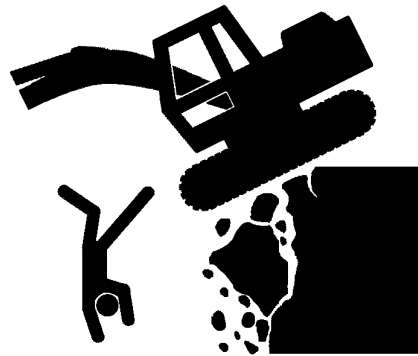
SAFETY

INVESTIGATE JOB SITE BEFOREHAND

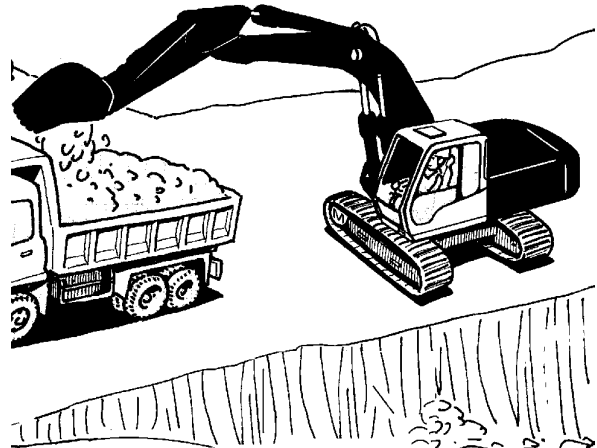
- When working at the edge of an excavation or on a road shoulder, the machine could tip over, possibly resulting in serious injury or death.
- Investigate the configuration and ground conditions of the job site beforehand to prevent the machine from falling and to prevent the ground, stockpiles, or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



M104-05-016

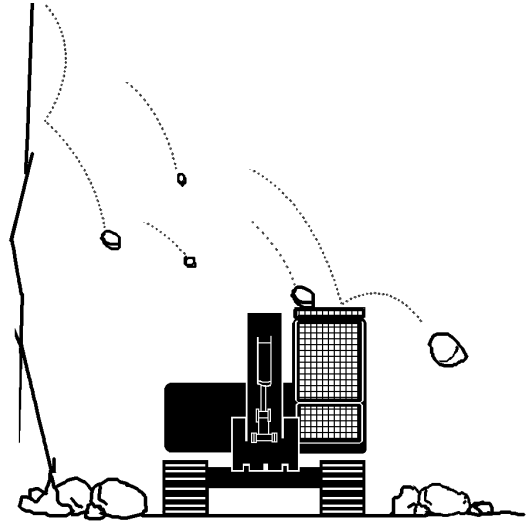
SAFETY

EQUIPMENT OF HEAD GUARD, ROPS, FOPS

In case the machine is operated in areas where the possibility of falling stones or debris exist, equip a head guard, ROPS, or FOPS according to the potential hazardous conditions. (The standard cab for this machine corresponds to ROPS and FOPS.)

ROPS: Roll-Over Protective Structure

FOPS: Falling Object Protective Structure



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.

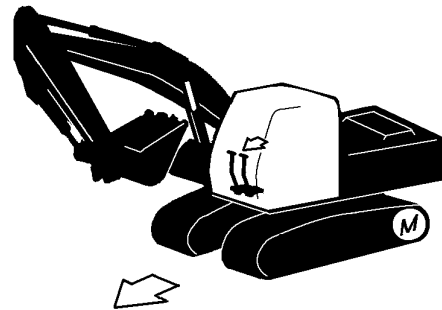


018-E01A-0481

SA-481

CONFIRM DIRECTION OF MACHINE TO BE DRIVEN

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



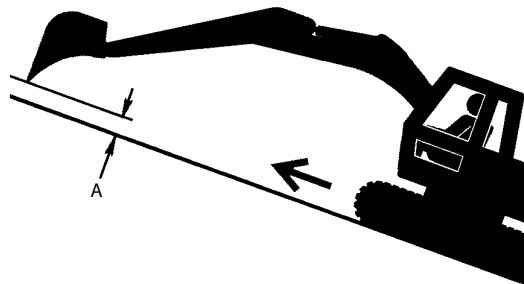
017-E01A-0491

SA-491

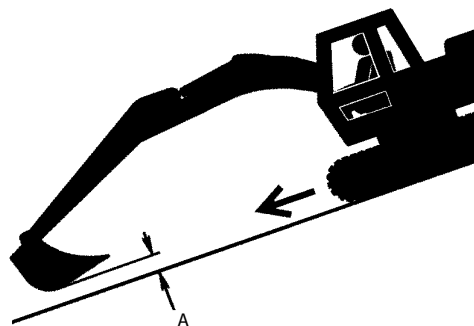
SAFETY

DRIVE MACHINE SAFELY

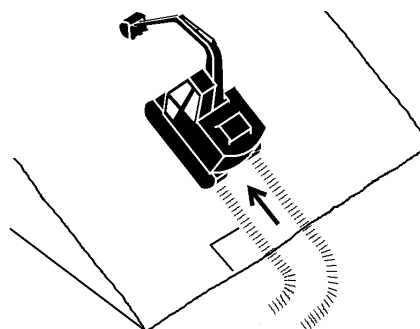
- Before driving the machine, always confirm that the travel levers/pedals direction corresponds to the direction you wish to drive.
 - Be sure to detour around any obstructions.
 - Avoid traveling over obstructions. Soil, fragments of rocks, and/or metal pieces may scatter around the machine. Do not allow personnel to stay 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 ascend or descend 35 degrees or steeper slopes.
 - Be sure to fasten the seat belt.
 - When driving up or down a slope, keep the bucket facing the direction of travel, approximately 0.5 to 1.0 m (A) above the ground.
 - If the machine starts to skid or becomes unstable, immediately lower the bucket to the ground and stop.



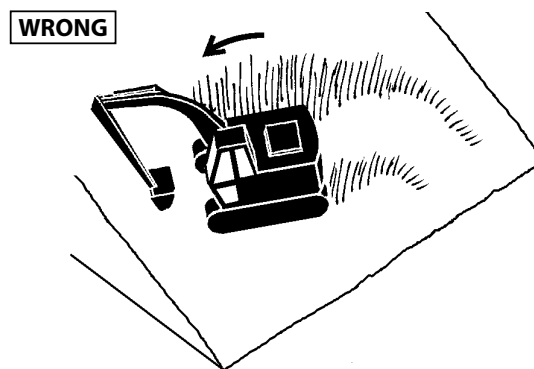
SA-657



SA-658



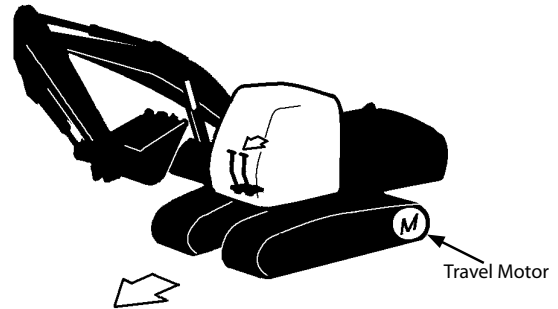
SA-441



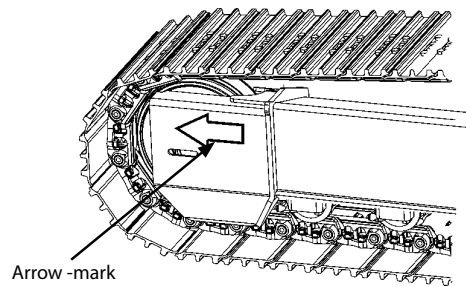
SA-590

SAFETY

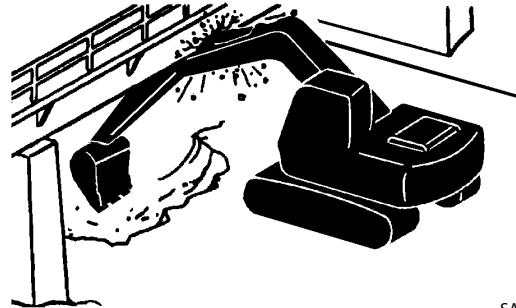
- Driving across the face of a slope or steering on a slope may cause the machine to skid or turnover. If the direction must be changed, move the machine to level ground, then, change the direction to ensure safe operation.
 - Avoid swinging the upperstructure on slopes. Never attempt to swing the upperstructure 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.



M104-05-008



M178-03-001



SA-011

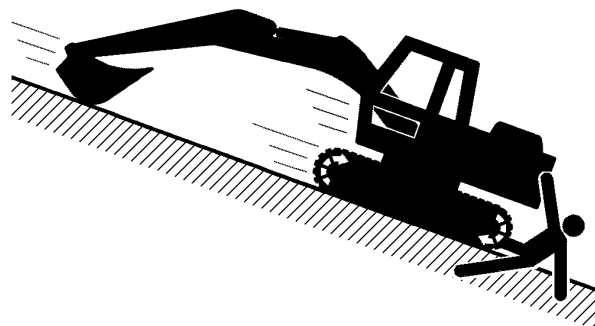
SAFETY

AVOID INJURY FROM ROLLAWAY ACCIDENTS

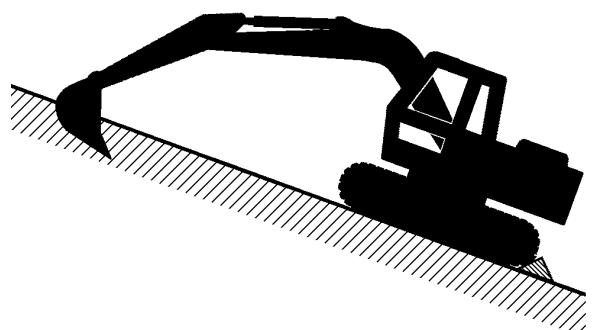
- Death or serious injury may result if you attempt to mount or stop a moving machine.

To avoid rollaways:

- Select level ground when possible to park the machine.
- Do not park the machine on a grade.
- Lower the bucket and/or other work tools to the ground.
- Turn the auto-idle switch OFF and the power mode switch E or P.
- Run the engine at slow idle speed without load for 5 minutes to cool down the engine.
- Stop the engine and remove the key from the key switch.
- Pull the pilot control shut-off lever to LOCK position.
- Block both tracks and lower the bucket to the ground. Thrust the bucket teeth into the ground if you must park on a grade.
- Position the machine to prevent rolling.
- Park a reasonable distance from other machines.



SA-391



SA-392

020-E02A-0493

SAFETY

AVOID INJURY FROM BACK-OVER AND SWING ACCIDENTS

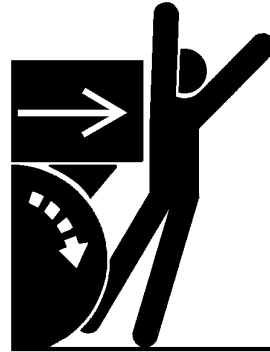
- If any person is present near the machine when backing or swinging the upperstructure, the machine may hit or run over that person, resulting in serious injury or death.

To avoid back-over and swing accidents:

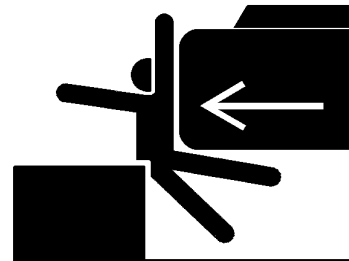
- Always look around BEFORE YOU BACK UP AND SWING THE MACHINE. BE SURE THAT ALL BYSTANDERS ARE CLEAR.
- Keep the travel alarm in working condition (if equipped). ALWAYS BE ALERT FOR BYSTANDERS MOVING INTO THE WORK AREA. USE THE HORN OR OTHER SIGNAL TO WARN BYSTANDERS BEFORE MOVING MACHINE.
- USE A SIGNAL PERSON WHEN BACKING UP IF YOUR VIEW IS OBSTRUCTED. ALWAYS KEEP THE SIGNAL PERSON IN VIEW.

Use hand signals, which conform to your local regulations, when work conditions require a signal person.

- No machine motions shall be made unless signals are clearly understood by both signalman and operator.
- Learn the meanings of all flags, signs, and markings used on the job and confirm who has the responsibility for signaling.
- Keep windows, mirrors, and lights clean and in good condition.
- Dust, heavy rain, fog, etc., can reduce visibility. As visibility decreases, reduce speed and use proper lighting.
- Read and understand all operating instructions in the operator's manual.



SA-383



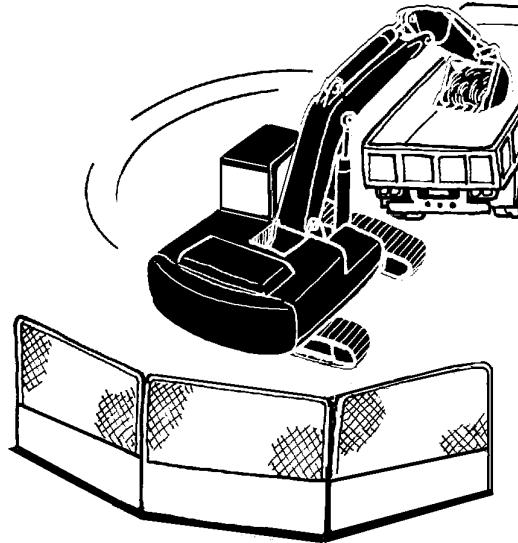
SA-384

021-E01A-0494

SAFETY

KEEP PERSON CLEAR FROM WORKING AREA

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



022-E01A-0386

SA-386

NEVER POSITION BUCKET OVER ANYONE

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

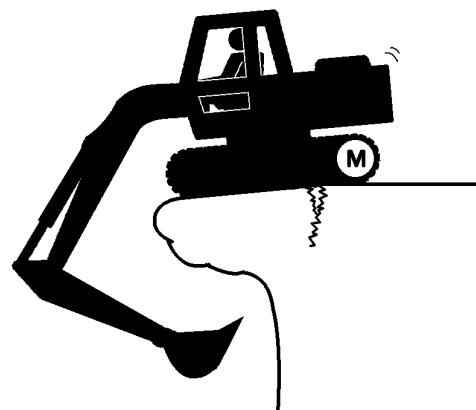


023-E01A-0487

SA-487

AVOID UNDERCUTTING

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



024-E01A-0488

SA-488

SAFETY

AVOID TIPPING

DO NOT ATTEMPT TO JUMP CLEAR OF TIPPING MACHINE---SERIOUS OR FATAL CRUSHING INJURIES WILL RESULT

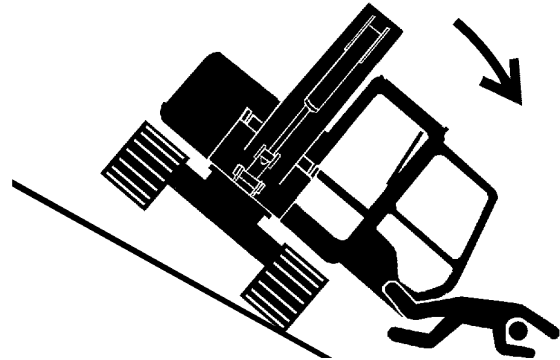
MACHINE WILL TIP OVER FASTER THAN YOU CAN JUMP FREE

FASTEN YOUR SEAT BELT

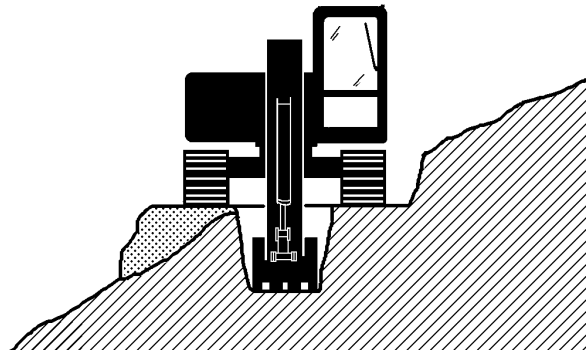
- The danger of tipping is always present when operating on a grade, possibly resulting in serious injury or death.

To avoid tipping:

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



SA-012

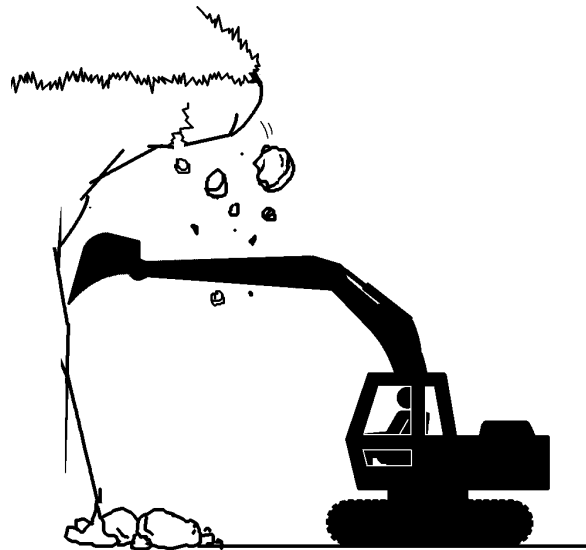


SA-440

025-E03B-0463

NEVER UNDERCUT A HIGH BANK

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



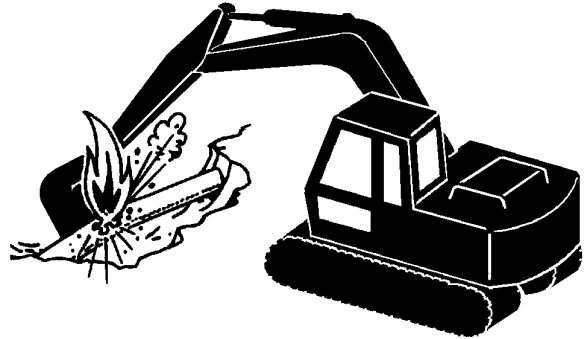
026-E01A-0519

SA-489

SAFETY

DIG WITH CAUTION

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



SA-382

027-E01A-0382

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.



SA-389

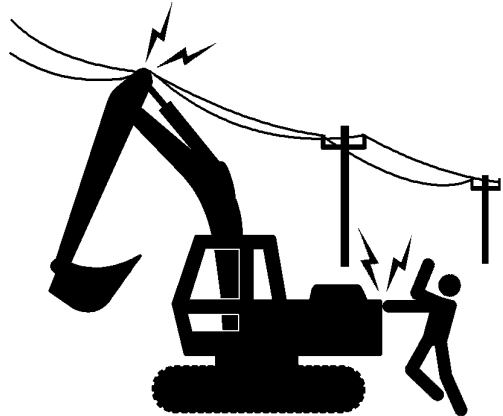
028-E01A-0389

SAFETY

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.

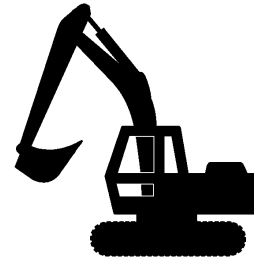
029-E01A-0381



SA-381

PRECAUTIONS FOR LIGHTNING

- 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.

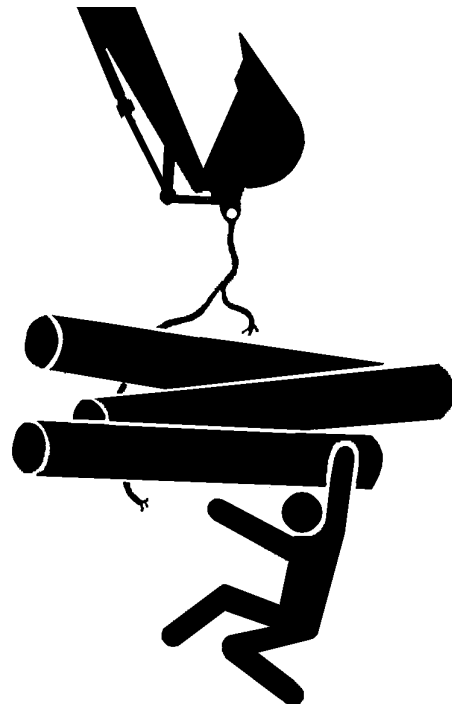


SA-1088

OBJECT HANDLING

- If a lifted load should fall, any person nearby may be struck by the falling load or may be crushed underneath it, resulting in serious injury or death.
- When using the machine for craning operations, be sure to comply with all local regulations.
- Do not use damaged chains or frayed cables, cables, slings, or ropes.
- Before craning, position the upperstructure with the travel motors at the rear.
- Move the load slowly and carefully. Never move it suddenly.
- Keep all persons well away from the load.
- Never move a load over a person's head.
- Do not allow anyone to approach the load until it is safely and securely situated on supporting blocks or on the ground.
- Never attach a sling or chain to the bucket teeth. They may come off, causing the load to fall.

032-E01A-0132

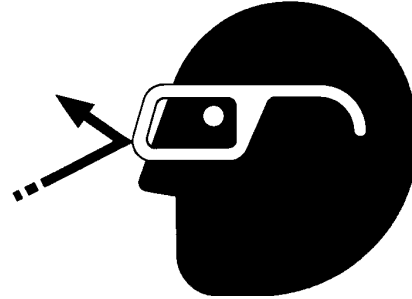


SA-014

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

PARK MACHINE SAFELY

To avoid accidents:

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



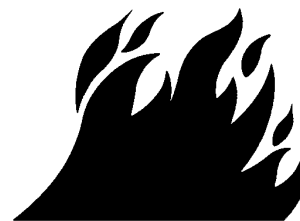
SA-390

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.



SA-018



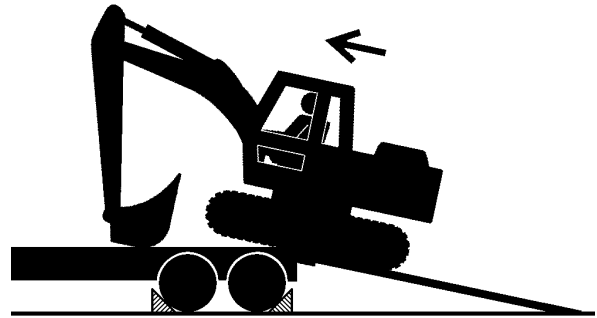
034-E01A-0496

SA-019

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 tires. Securely hold the machine to the truck or trailer deck with wire ropes.



SA-395

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 key 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 the machine unattended.
 - If the machine must be raised, maintain a 90 to 110° angle between the boom and arm. 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.



SA-028



SA-527

500-E02C-0520

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.

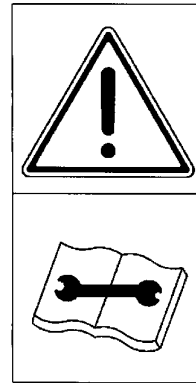


SA-037

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

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.

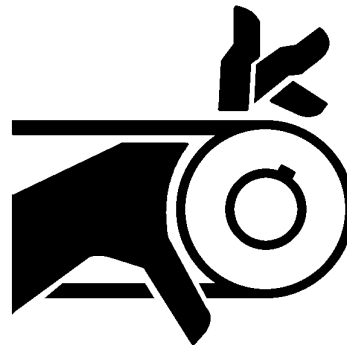


SA-527

519-E01A-0527

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.



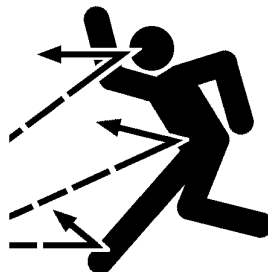
502-E01A-0026

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.

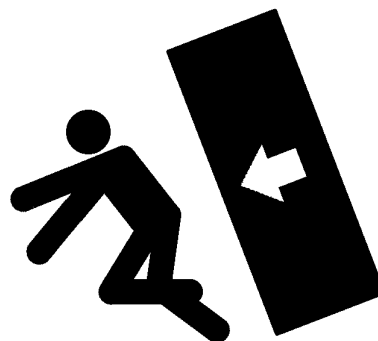


SA-344

503-E01B-0344

STORE ATTACHMENTS SAFELY

- Stored attachments such as buckets, hydraulic hammers, and blades 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.



SA-225

505-E01B-0498

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

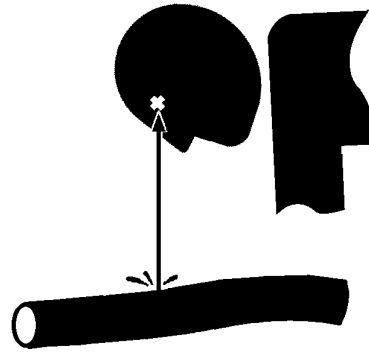
AVOID HIGH-PRESSURE FLUIDS

- 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.

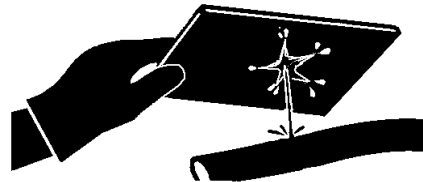
507-E03A-0499



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

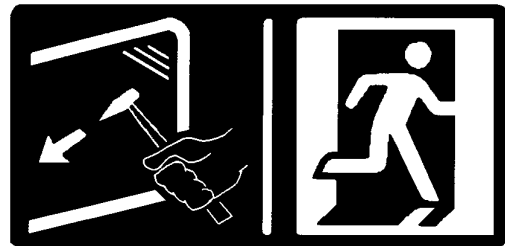
EVACUATING IN CASE OF FIRE

- 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

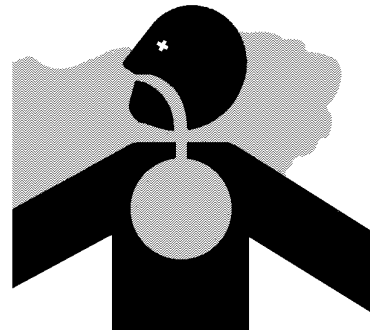
18-E02B-0393



SS-1510

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.

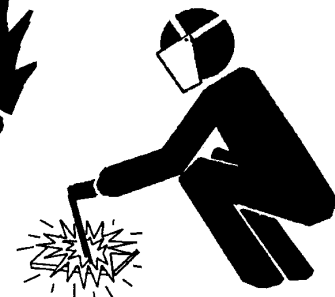


509-E01A-0016

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 DUST

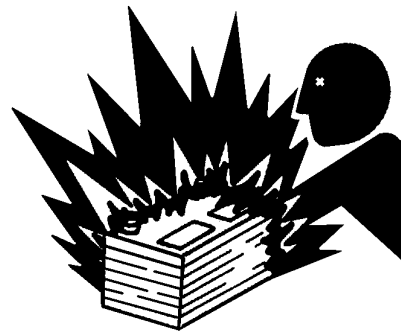
- Take care not to inhale dust produced in the work site. Inhalation of asbestos fibers may be the cause of lung cancer.
 - Depending on the work site conditions, the risk of inhaling asbestos fiber may exist. Spray water to prevent asbestos from becoming airborne. Do not use compressed air.
 - When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



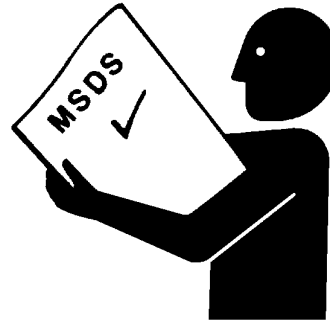
513-E01A-0405

SA-405

SAFETY

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.

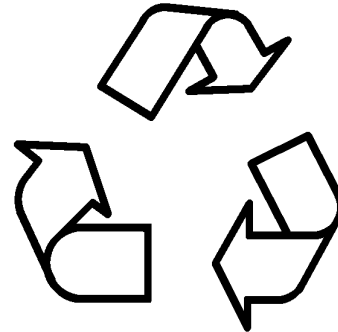


SA-309

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.

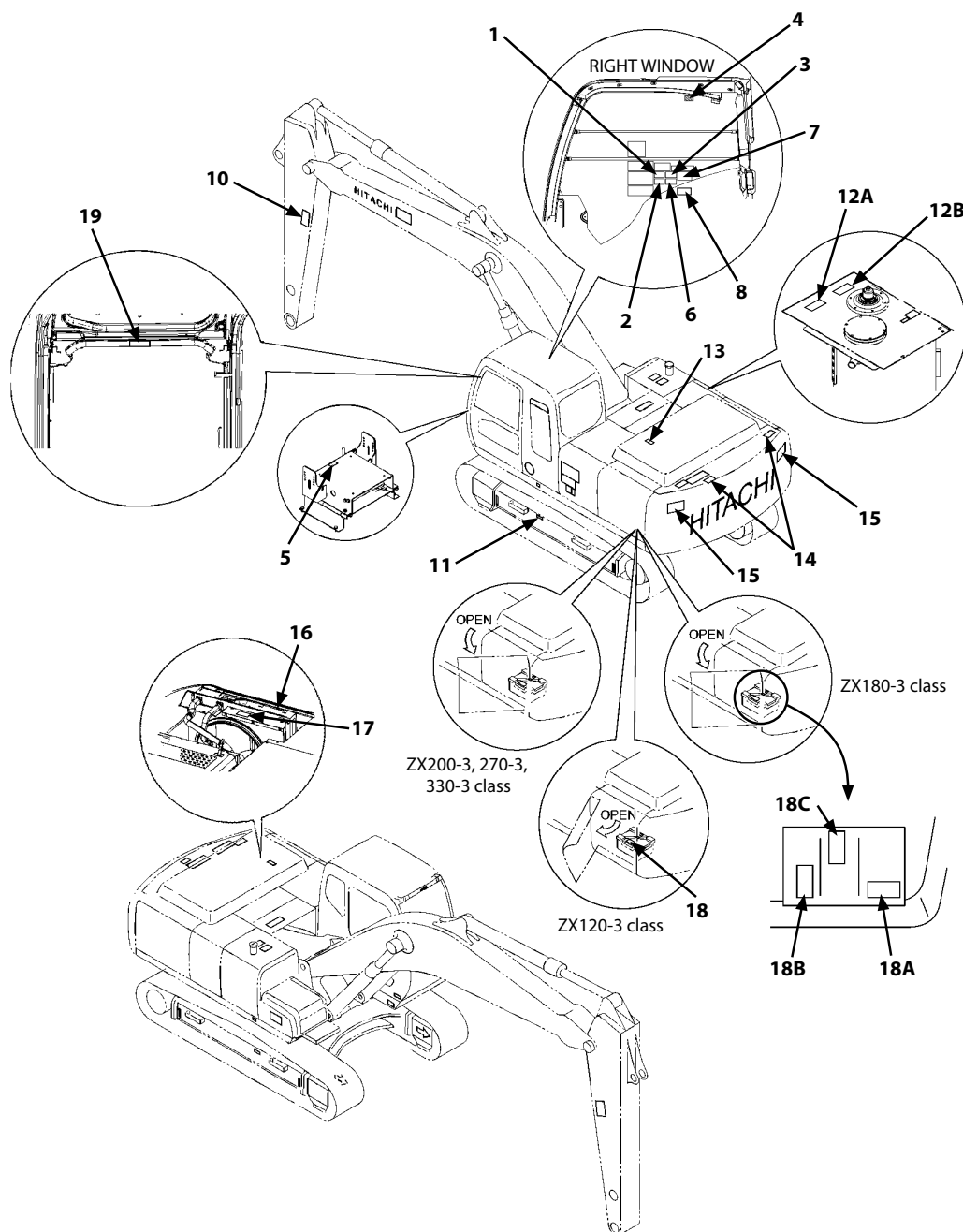


SA-226

516-E01A-0226

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

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.



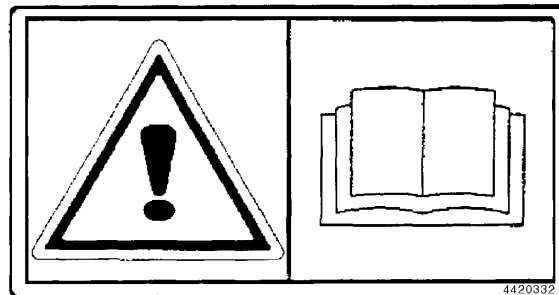
SS-3033

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

1.

WARNING!

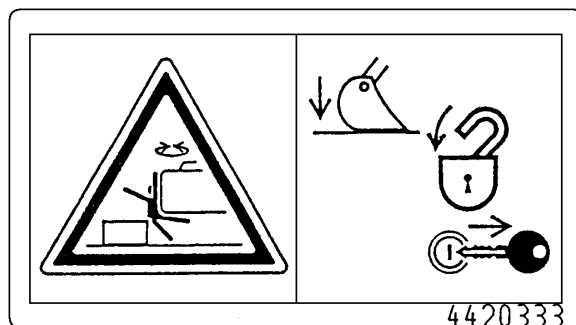
Prior to operation, maintenance, disassembling, and transportation of the machine, be sure to read and understand the Operator's Manual.



SS4420332

2.

If the parked machine is unexpectedly moved, serious injury or death due to crushing may result. Be sure to lower the front attachment to the ground, lock the control levers, and remove the engine key before leaving the machine unattended.

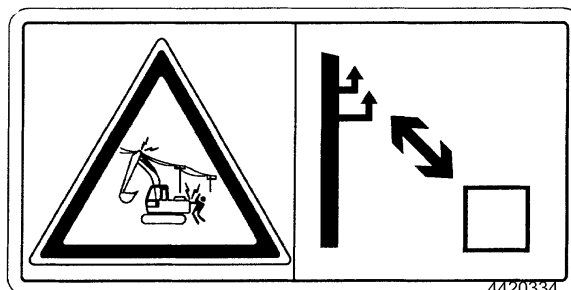


SS4420333

3.

Sign indicates an electrocution hazard if machine is brought too near electric power lines.

Keep a safe distance from electric power lines.

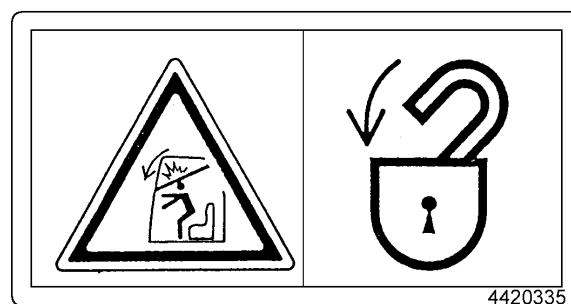


SS4420334

4.

Sign indicates a hazard from falling window.

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

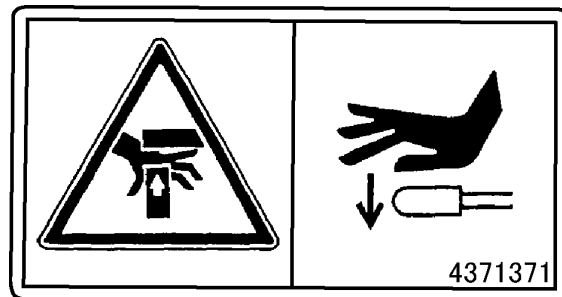


SS4420335

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

5.

When moving the seat height/tilt lever downward, press the lever grip with a palm from the top side. Do not grasp the lever grip to operate the lever, possibly resulting in pinch of your fingers into the seat stand.



SS4371371

6.

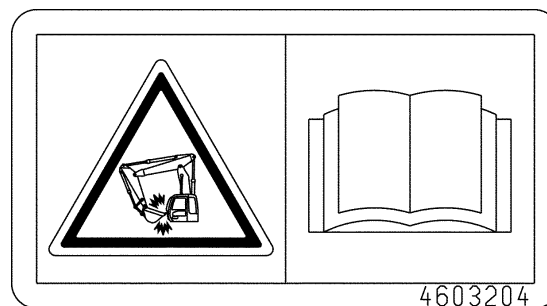
If the machine should overturn, the operator may become injured and/or throw from the cab and/or crushed by the overturning machine.



SS4654287

7.

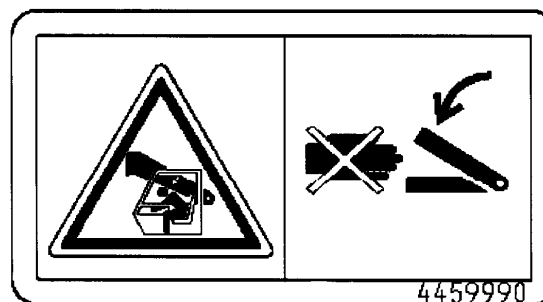
When operating with 2-piece boom, the bucket may come in contact with the cab. Operate the machine with care not to allow the tip of the bucket to hit the cab while rolling in the front attachment.



SS4603204

8.

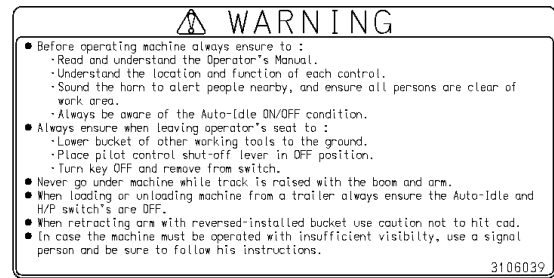
Do not extend your hands or head from the window. Your hands or head may come in contact with the boom. Keep away from machine during operation.



SS4459990

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

9.



SS3106039

10.

Sign indicates a hazard of being hit by the working device of the machine.

Keep away from machine during operation.

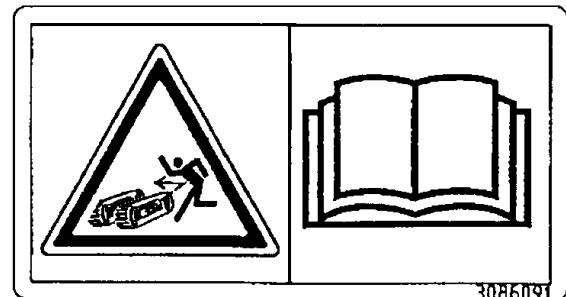


SS3089581

11.

Sign indicates a hazard of a flying plug from track adjuster that could cause injury.

Read manual before adjusting track for safe and proper handling.



SS3086091

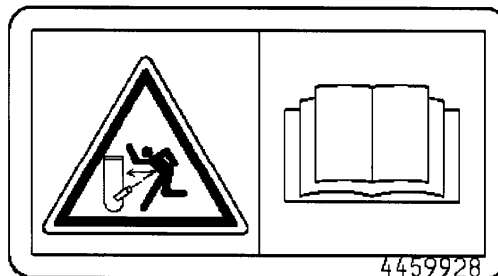
SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

12.

Sign indicates a burn hazard from compressed air and spurt-
ing hot oil if the oil inlet is uncapped during or right after
operation.

Read manual for safe and proper handling.

A

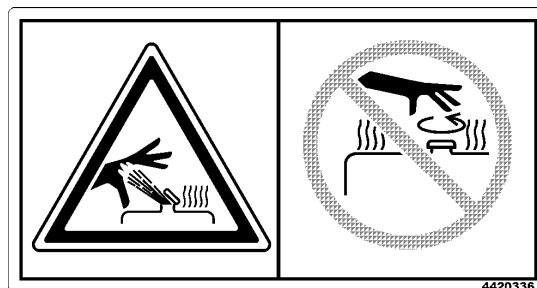


SS4459928

Sign indicates a burn hazard from spurting hot water or oil if
radiator or hydraulic oil tank is uncapped while hot.

Allow radiator or hydraulic oil tank to cool before removing
cap.

B



SS4420336

13.

Sign indicates a hazard of falling.

Do not stand on this place.



SS3092126

14.

Sign indicates a hazard of falling off the fender or hood.

Never stand close to the edge.



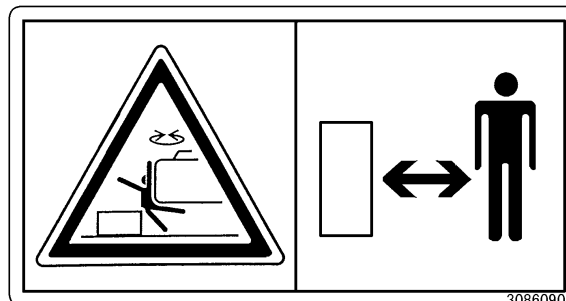
SS3092125

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

15.

Sign indicates a crush hazard by rotation of upper structure of the machine.

Keep away from swinging area of machine.



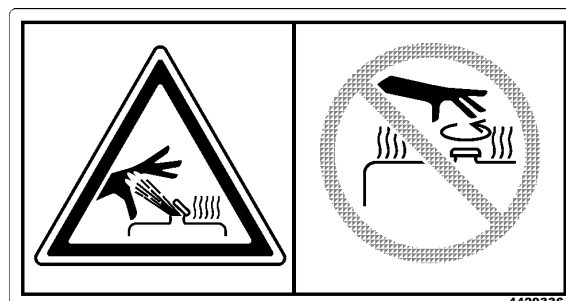
3086090

SS3086090

16.

Sign indicates a burn hazard from spurting hot water or oil if radiator or hydraulic oil tank is uncapped while hot.

Allow radiator or hydraulic oil tank to cool before removing cap.



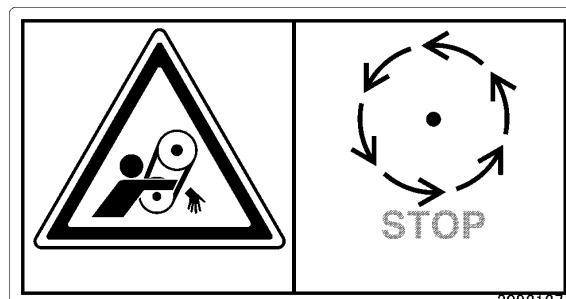
4420336

SS4420336

17.

Sign indicates a hazard of rotating parts, such as belt.

Turn off before inspection and maintenance.



3092127

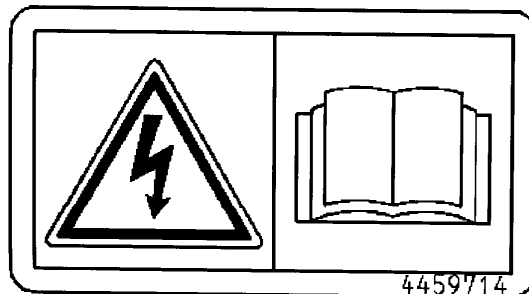
SS3092127

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

18.

Sign indicates an electrical hazard from handling the cable.
Read manual for safe and proper handling.

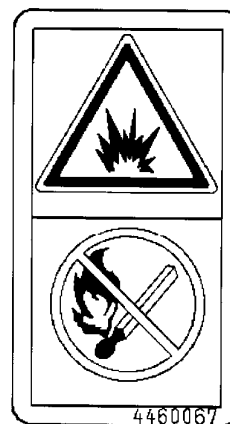
A



SS4459714

Sign indicates an explosion hazard.
Keep fire and open flames away from this area.

B



SS4460067

Skin contact with electrolyte will cause burns. Splashed
electrolyte into eyes will cause blindness. Take care not to
touch electrolyte.

C



SS4460056

19.



SS4467093

SAFETY SIGNS/Europe/Asia/Middle and Near East Model Only

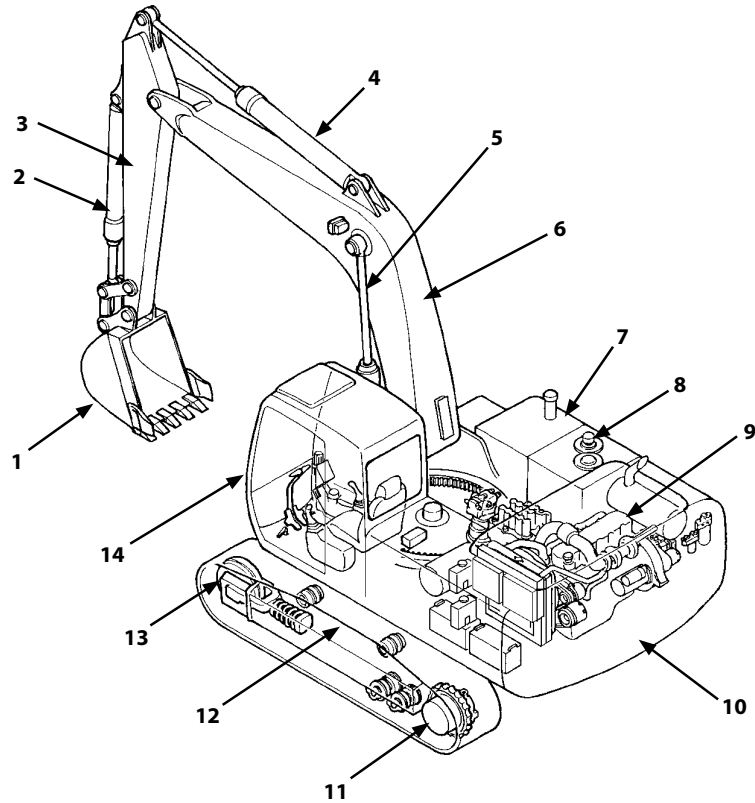
MEMO

This image shows a full page of a document template designed for handwritten notes or essays. It features approximately 30 evenly spaced, horizontal grey lines across the entire width of the page. The lines are thin and light, providing a guide for writing without being distracting. There is no text, handwriting, or other markings on the page.

COMPONENTS NAME

COMPONENTS NAME

- 1- Bucket
- 2- Bucket Cylinder
- 3- Arm
- 4- Arm Cylinder
- 5- Boom Cylinder
- 6- Boom
- 7- Fuel Tank
- 8- Hydraulic Oil Tank
- 9- Engine
- 10- Counterweight
- 11- Travel Device
- 12- Track
- 13- Front Idler
- 14- Cab



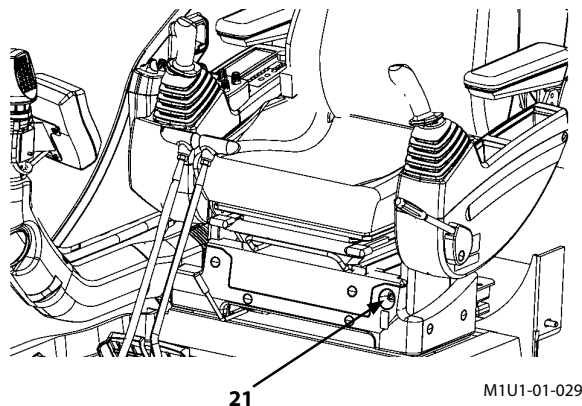
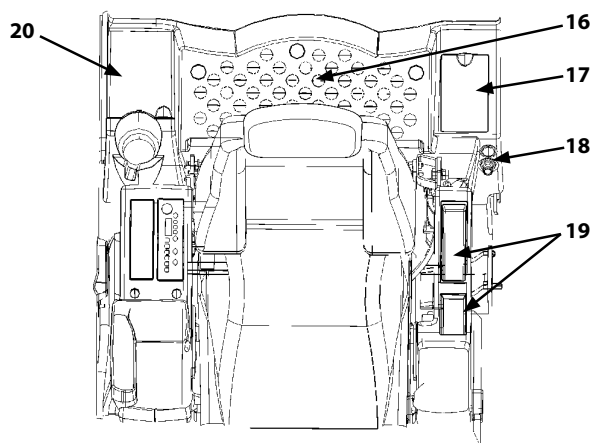
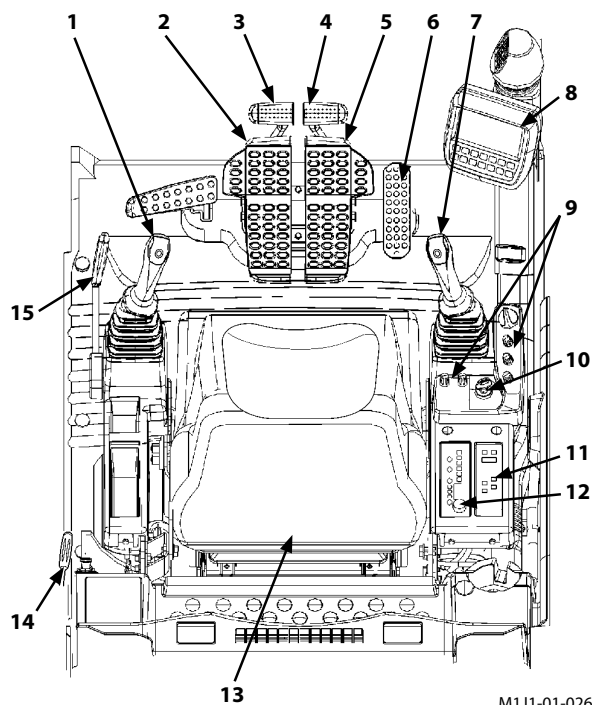
M1U1-01-005

OPERATOR'S STATION

CAB FEATURES

Std. Model

- 1- Left Control Lever/Horn Switch
(On Top of Lever)
- 2- Left Travel Pedal
- 3- Left Travel Lever
- 4- Right Travel Lever
- 5- Right Travel Pedal
- 6- Attachment Pedal (Optional)
- 7- Right Control Lever/Power Boost Switch
(Except ZX120-3 class)
- 8- Multi Function Monitor Panel
- 9- Switch Panel
- 10- Key Switch
- 11- Air Conditioner Panel
- 12- Radio
- 13- Operator's Seat
- 14- Cab Door Release Lever
- 15- Pilot Control Shut-Off Lever
- 16- Glove Compartment
- 17- Fuse Box
- 18- Cigar Lighter
- 19- Switch Panel
- 20- Hot & Cool Box
- 21- Engine Stop Switch



OPERATOR'S STATION

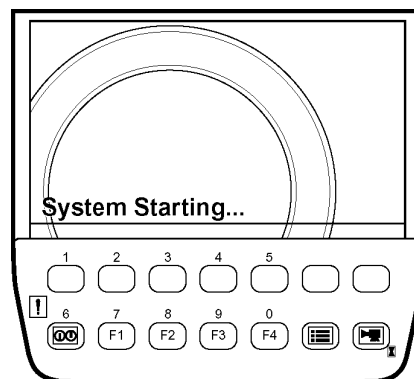
MULTI FUNCTION MONITOR

How To Use Screens

Displaying Basic Screen

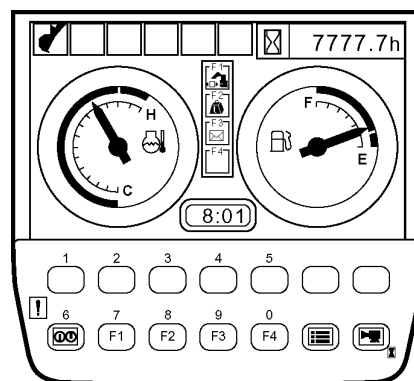
IMPORTANT: Start the engine after the basic screen is displayed.

When the key switch is turned to the ON position, the starting screen displays for about two seconds and the basic screen displays.



Key Switch: ON

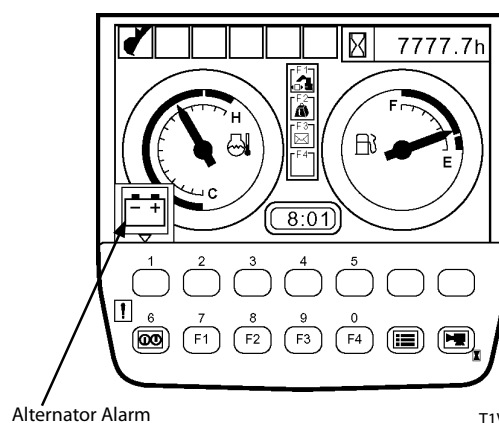
T1V1-05-01-115



Basic Screen

T1V1-05-01-123

IMPORTANT: After the engine starts and the alternator starts generating power, alternator alarm is displayed on the basic screen.



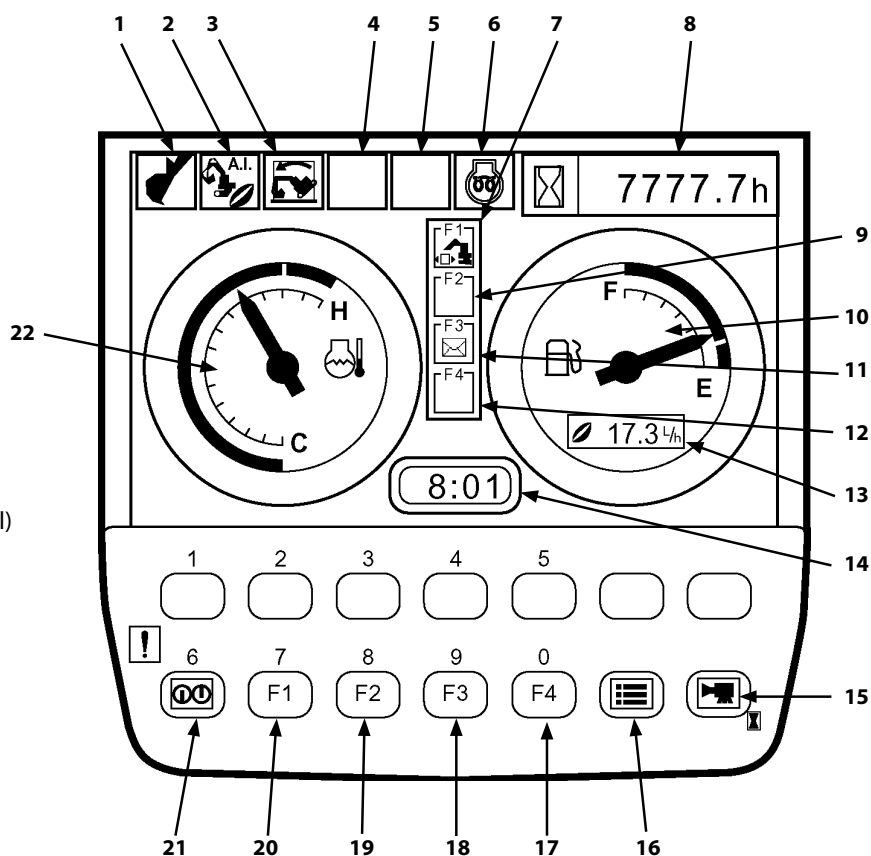
Alternator Alarm

T1V1-05-01-117

OPERATOR'S STATION

OUTLINE

- 1 - Work Mode Display
- 2 - Auto-Idle Display
- 3 - Overload Alarm Display (Optional)
- 4 - Auxiliary
- 5 - Auxiliary
- 6 - Preheat Display
- 7 - Work Mode Display
- 8 - Hour Meter
- 9 - Auxiliary
- 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)
- 19 - Auxiliary Selection (Optional)
- 20 - Work Mode Selection
- 21 - Return to Basic Screen Key
- 22 - Coolant Temperature Gauge



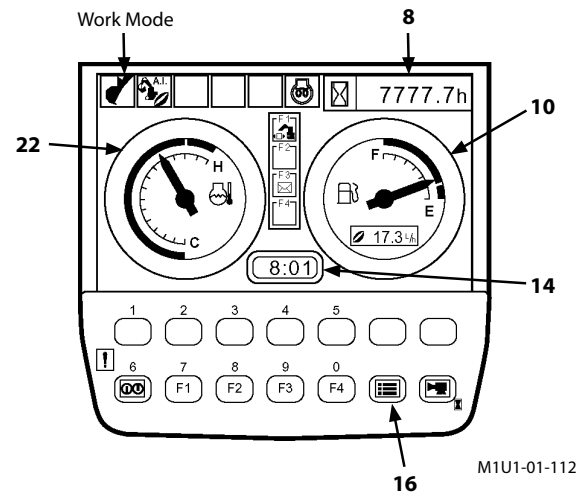
M1U1-01-111

OPERATOR'S STATION

- Display of Meters
Items to be displayed

- 8. Hour Meter
- 10. Fuel Gauge
- 14. Clock
- 16. Menu
- 22. Coolant Temperature Gauge

- Work Mode Display
The attachments being used are displayed.



M1U1-01-112

Digging mode



T1V1-05-01-108

Attachment mode

Breaker



T1V1-05-01-104

Pulverizer



T1V1-05-01-105

Crusher



T1V1-05-01-106

Vibration hammer



T1V1-05-01-107

Other



T1V1-05-02-003

OPERATOR'S STATION

- Auto-Idle Display (2)

When selecting auto-idle from the switch panel, auto-idle display (2) is displayed.

When the key is turned ON, the data blinks for 10 seconds.

- Overload Alarm Display (3) (optional)



T1V1-05-02-002

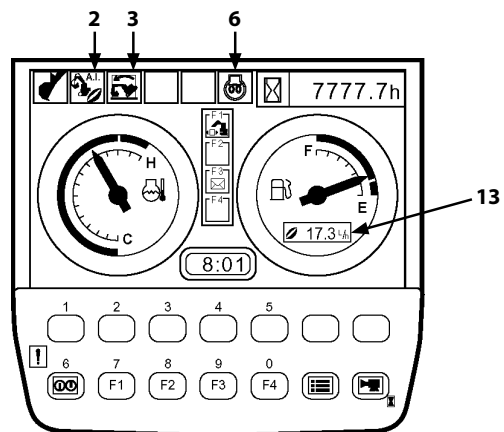
The system measures the load of suspended load from the bottom pressure of boom cylinder. When overload is detected, an alarm is displayed.

- Preheat Display (6)

While the current is being supplied to the glow plug, the indicator is displayed.

- Fuel Rate Display (13)

Fuel consumption is displayed (Reference value).

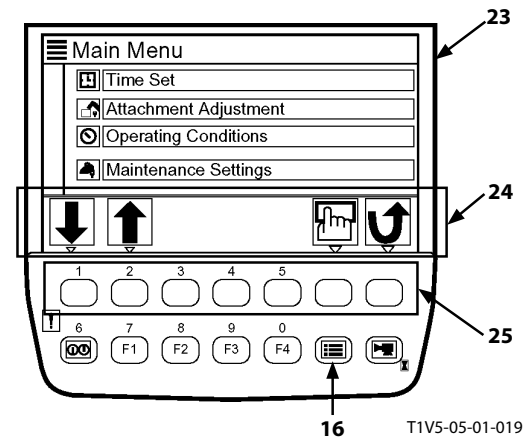


M1U1-01-113

OPERATOR'S STATION

Menu Screen (23)

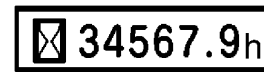
Press menu key (16) on the basic screen to display main menu screen (23). Select the desired menu by operating key (25) located under   keys on icon display area (24).



OPERATOR'S STATION

Hour Meter

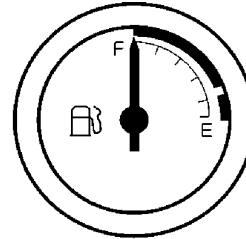
Total (accumulated) machine operation hours counted since the machine started working, are displayed in the unit of HOUR (h). One digit after the decimal point indicates the tenths of an hour (6 minutes).



M81U-01-058

Fuel Gauge

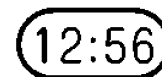
The fuel amount in the fuel tank is indicated. Refuel before the needle reaches "E".



M1U1-01-039

Clock

Indicates the present time.



M1U1-01-040

Back Monitor Selector

Shifts the monitor screen to the back view monitor screen and vice versa.



M1U1-01-041

OPERATOR'S STATION

Menu Key

Shifts the basic screen to the menu screen.



M1U1-01-042

Optional Function Key

The desired preset optional function can be selected by operating these keys even though the menu key is not operated.

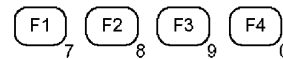
F1 : Work Mode Selection

F2 : Auxiliary

F3 : Mail (Optional)

F4 : Auxiliary

are the fixed function keys.



M1U1-01-043

Return to Basic Screen Key

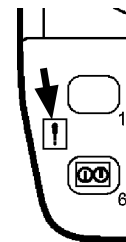
Allows any screen to return to the basic screen.



M1U1-01-044

Alarm Light

Comes ON when any abnormality occurs.



M1U1-01-045

Optional Function Display

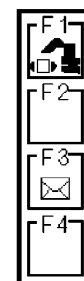
Displays the optional functions preset by the optional function key.

F1 : Work Mode Selection

F2 : Auxiliary

F3 : Mail (Optional)

F4 : Auxiliary

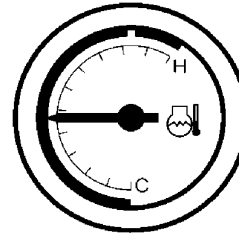


M1U1-01-114

OPERATOR'S STATION

Coolant Temperature Gauge

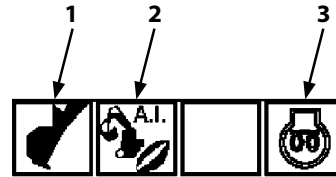
Indicates the engine coolant temperature. Normally the needle is around the center of the scale during operation.



M1U1-01-047

Operating Status Icon Display

Displays icons indicating the current status of the attachment (1) selected at the work mode selection screen and operation modes such as the auto-idle system (2) and preheat display (3), etc when these systems are activated.

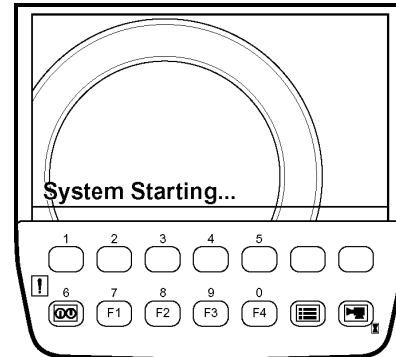


M1U1-01-065

OPERATOR'S STATION

Displaying Basic Screen by Password Input (Optional)

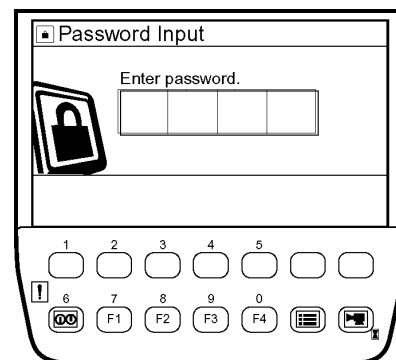
IMPORTANT: When required to activate the TEN-key function (ignition block system), consult your nearest Hitachi dealer.
If the password ever escapes the customer's memory, the machine must be modified. Be extra careful not to forget the password.



Starting Screen

T1V1-05-01-115

1. Turn the key switch ON. After the starting screen is displayed, the password input screen will be displayed.

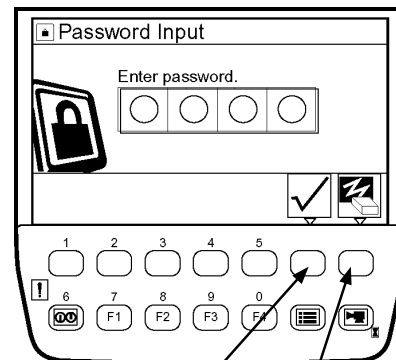


Password Input Screen

T1V5-05-01-093

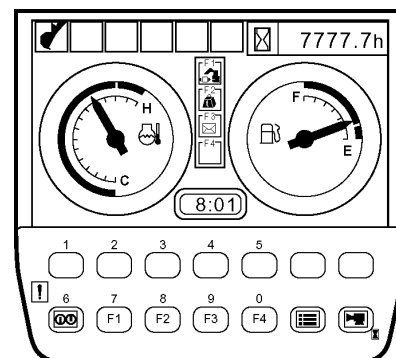
2. Input a password by using the keys located under the screen. If pushing the determination key, the monitor unit matches the input password to the registered one. If they match, the basic screen displays.

NOTE: When inputting the password again, the entered characters can be erased by pushing the delete key.



Determination Key Delete Key

T1V5-05-01-002



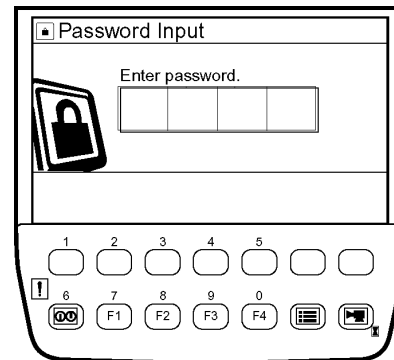
Basic Screen

T1V1-05-01-123

OPERATOR'S STATION

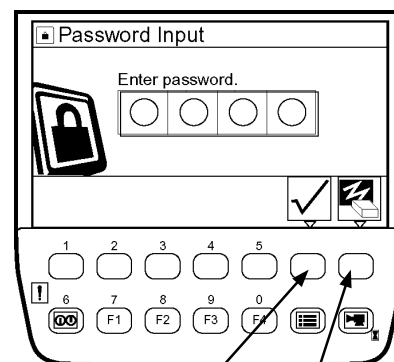
In Case of Inputting an Incorrect Password

1. If inputting an incorrect password, the message "Password is incorrect." displays by pushing the determination key.



Password Input Screen

T1V5-05-01-093

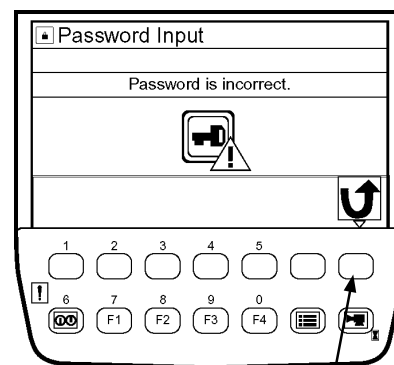


Determination Key Delete Key

T1V5-05-01-002

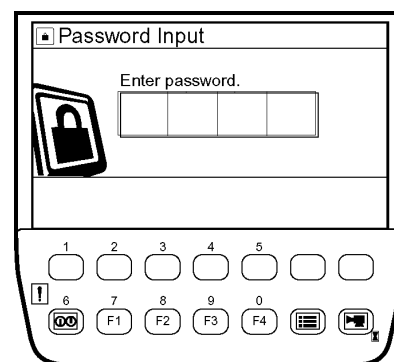
2. Return to the password input screen, by pushing the back key.

 **NOTE:** When inputting the password again, the entered characters can be erased by pushing the delete key.



Back key

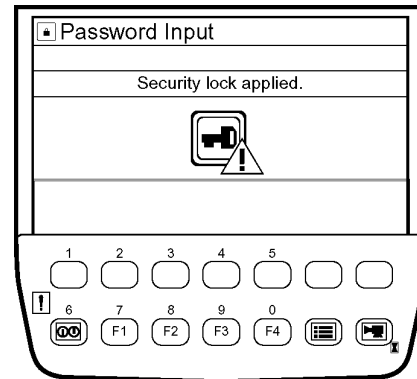
T1V5-05-01-004



T1V5-05-01-093

OPERATOR'S STATION

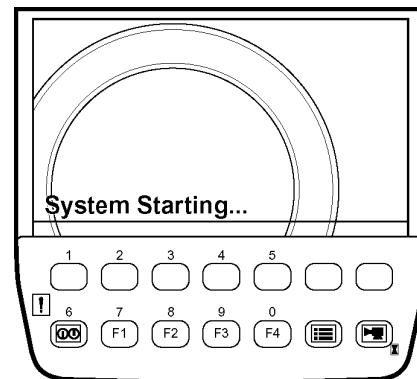
3. If inputting an incorrect password three times, a screen displays informing that the security lock has been applied, and a buzzer rings for thirty seconds. During that time, the buzzer does not stop ringing even if turning of the key switch ON/OFF.



Security Lock Screen

T1V5-05-01-005

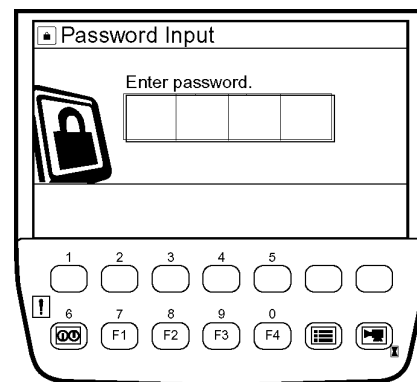
4. After thirty seconds, if the key switch is turned to the ON position, the starting screen displays and the password input screen displays again. Then a password can be input again. If inputting an incorrect password even once this time, the security lock screen displays again and a buzzer rings for thirty seconds. The buzzer does not stop ringing for thirty seconds even if turning the key switch ON/OFF.



Starting Screen

T1V1-05-01-115

5. After the buzzer stops ringing, a password can be input again. Turn the key switch to the ON position and input a password after the password input screen displays. (Refer to page 1-12)
6. If inputting an incorrect password again, the security lock screen displays again. The buzzer does not stop ringing for thirty seconds even if turning the key switch ON/OFF.



Password Input Screen

T1V5-05-01-093

OPERATOR'S STATION

Extending Password Duration Time

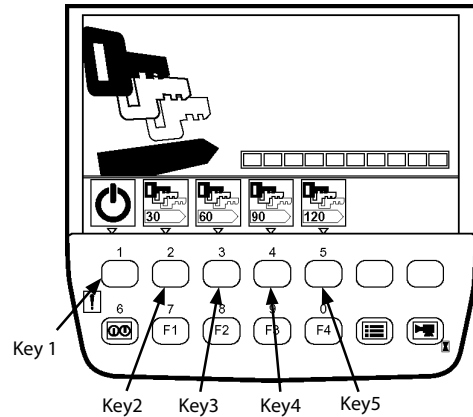
IMPORTANT: This operation is applicable only to those machines that display the basic screen based upon password input.

By using the password duration screen, password duration time can be set. When you restarting the machine, a password need not be input within that timeframe.

1. When turn the key switch to the OFF position, the monitor unit displays the password duration screen for ten seconds.
2. While the password duration screen is still displayed, push a relevant key, and password duration time is set. Duration time assigned to each key is as follows:
key 1: 0 minute
key 2: 30 minutes
key 3: 60 minutes
key 4: 90 minutes
key 5: 120 minutes

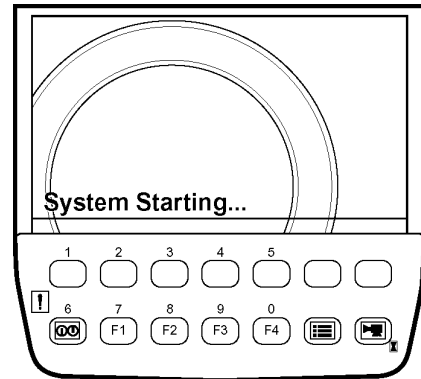
 **NOTE:** If password duration time is not set explicitly, 0 minute on duration time is assumed.

3. If turning the key switch to the ON position within password duration time, the monitor unit displays the basic screen after the starting screen.



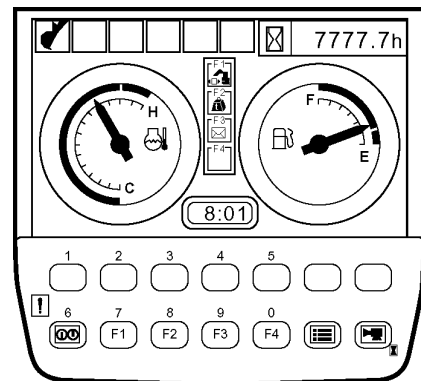
Password Duration Screen (Key Switch: OFF)

T1V1-05-01-012



Key Switch: ON

T1V1-05-01-115



Basic Screen

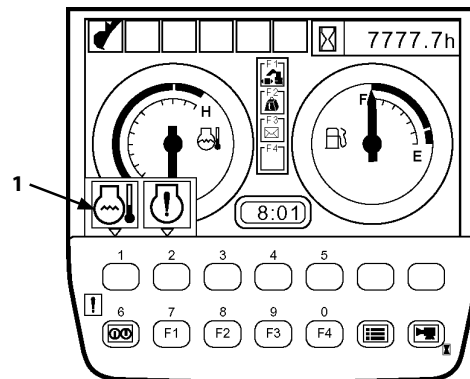
T1V1-05-01-123

OPERATOR'S STATION

ALARM OCCURRENCE SCREEN

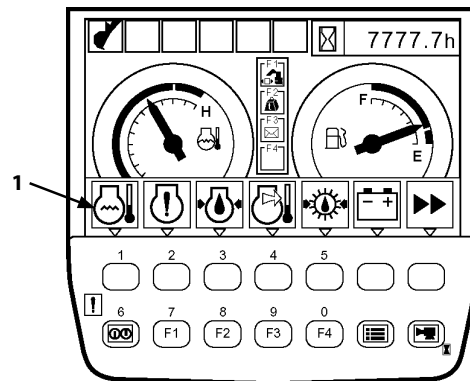
In case any abnormality occurs, alarm marks (1) are displayed on the basic screen.

- When the number of alarms is two or less



T1V1-05-01-095

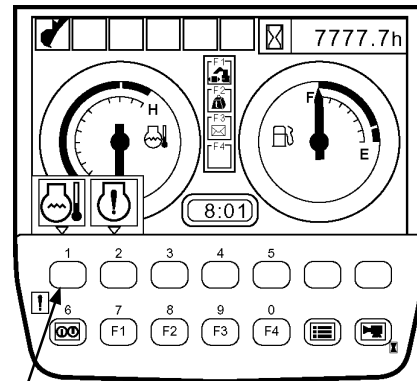
- When the number of alarms is three or more



T1V1-05-01-096

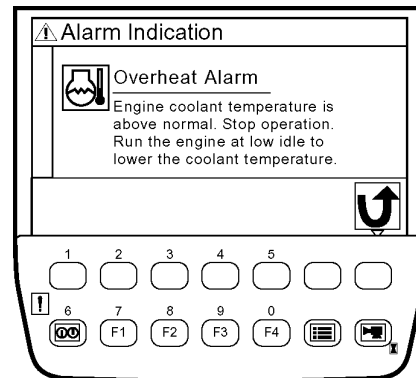
OPERATOR'S STATION

In case any abnormality occurs, push the key located under the alarm mark. The monitor displays the corrective action to the alarm situation.



Push a Relevant Key

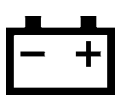
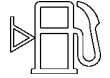
T1V1-05-01-095



T1V5-05-01-013

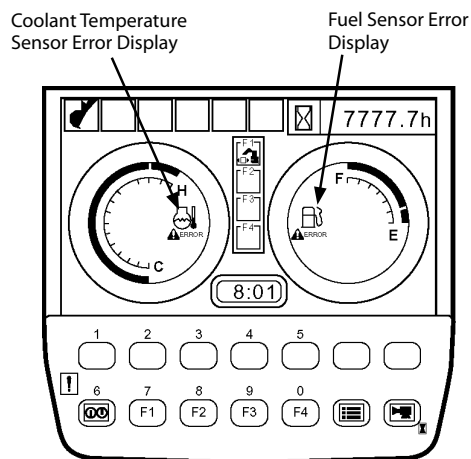
OPERATOR'S STATION

CONTENTS OF ALARMS

Display	Contents of Alarms	Remedy
 M178-01-036	Overheat Alarm	Engine coolant temperature has abnormally increased. Stop operation. Run the engine at slow idle speed and lower the coolant temperature.
 M183-01-080	Engine Warning Alarm	Engine or engine related parts are abnormal. Consult your nearest Hitachi dealer.
 M178-01-037	Engine Oil Pressure Alarm	Engine oil pressure has decreased. Immediately stop engine. Check engine oil system and oil level.
 M183-01-071	Alternator Alarm	Electrical system is abnormal. Consult your nearest Hitachi dealer.
 M178-01-034	Remaining Fuel Alarm	Fuel level is low. Refill fuel as soon as possible.
 M1CC-01-039	Hydraulic Oil Filter Alarm	Hydraulic oil filter is clogged. Replace filter.
 M183-01-067	Air Filter Clogged Alarm	Air filter elements are clogged. Clean or replace air filter elements.
 M1U1-01-116	Fuel Filter Clogged Alarm	Fuel filter elements (pre-filter, main filter) are clogged. Replace fuel filter elements.
 T1V1-05-01-102	Work Mode Alarm	Work Mode system is abnormal. Consult your nearest Hitachi dealer.
 T1V1-05-01-103	Pilot Control Shut-Off Lever Alarm	Pilot control shut-off lever system is abnormal. Consult your nearest Hitachi dealer.

OPERATOR'S STATION

- **Fuel Sensor Error Display**
When the fuel sensor is faulty or if the harness between fuel sensor and monitor unit is broken, the fuel sensor error display is displayed on the fuel gauge.
- **Coolant Temperature Sensor Error Display**
When the coolant temperature sensor is faulty or if the harness between coolant temperature sensor and monitor unit is broken, the coolant temperature sensor error display is displayed on the coolant temperature gauge.



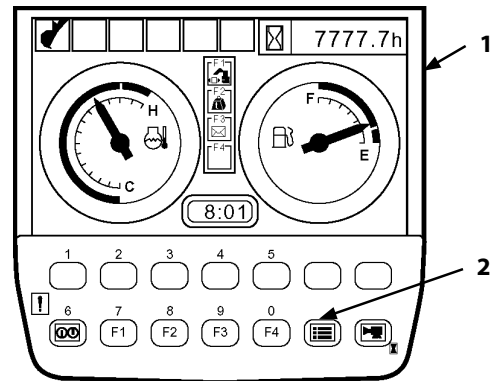
T1V1-05-02-005

OPERATOR'S STATION

CLOCK SETTING

Press menu key (2) on basic screen (1) to display main menu screen (3).

Select time set menu (4) by pressing the key located under   keys on icon display area and adjust the clock set.

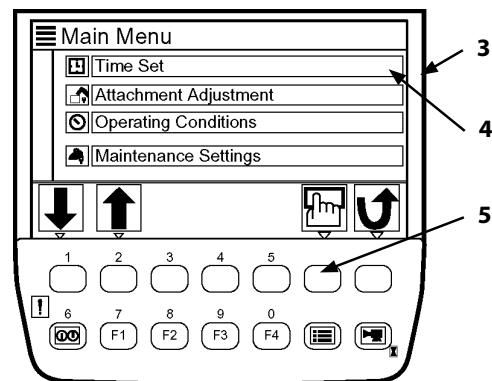


T1V1-05-01-123

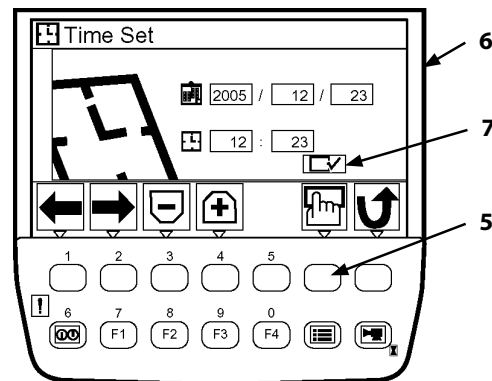
Time Adjustment

After selecting time set menu (4) by pressing the key located under   keys on icon display area, press determination key (5).

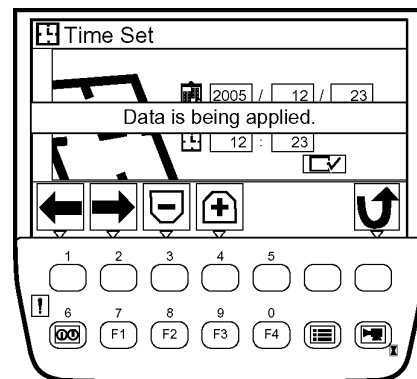
1. While pressing the key located under   and   keys on icon display area on time setting screen (6), select the figures for Year, Month, Day, and Time.
2. After moving the cursor to  position (7) by pressing the key located under  key, press determination key (5) to define the setting.



T1V5-05-01-019



T1V5-05-01-021



T1V5-05-01-022

OPERATOR'S STATION

ATTACHMENT SELECTION (Only Machines Equipped with Optional Parts)

IMPORTANT: Select the attachments 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

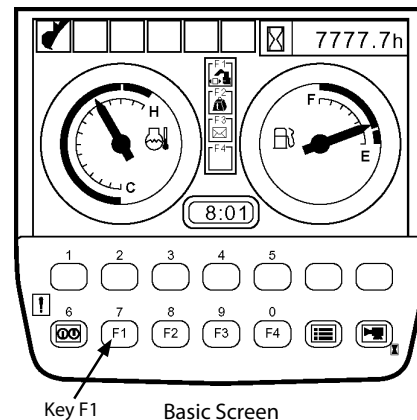
1. When the basic screen displays, push work mode selection key F1 and display the work mode screen.
2. Push a key located under an attachment mark to be used in order to select the attachment.
(In the right example, Crusher 1 is selected.)

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

3. On the attachment specification screen, confirm if specification of the installed attachment agrees with that displayed on the screen.

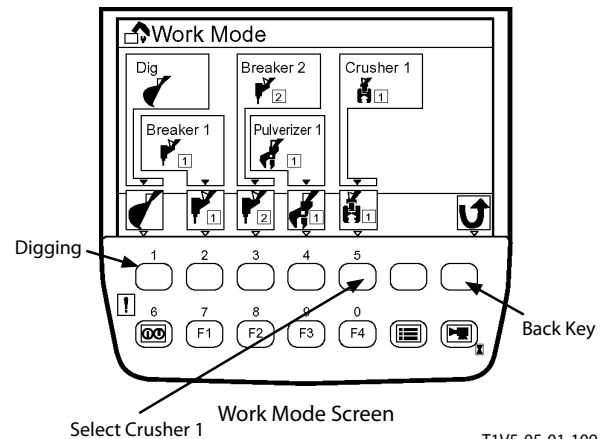
 **NOTE:** When pushing the back key, return to the previous screen.

4. Push the determination key, and the basic screen displays.



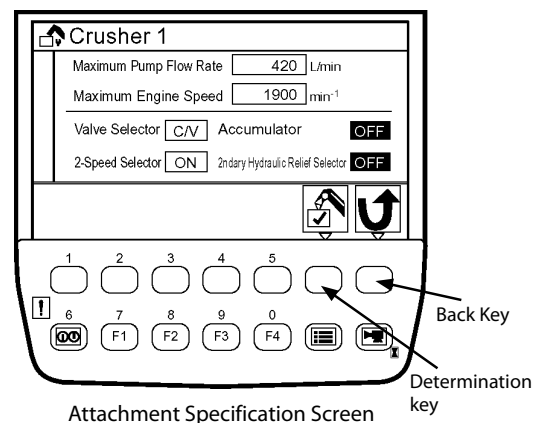
Basic Screen

T1V1-05-01-123



Work Mode Screen

T1V5-05-01-109



Attachment Specification Screen

T1V5-05-01-028

OPERATOR'S STATION

Selecting an Attachment from Main Menu

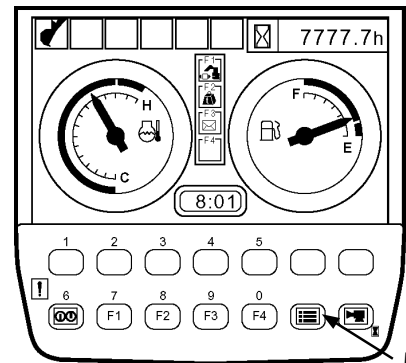
1. When the basic screen displays, push the menu key and display main menu.
2. Select work mode from main menu by using keys 1  and 2 . Push determination key. Then, the work mode screen displays.
3. Push the key located under an attachment mark to be used in order to select the attachment.
(In the right example, Crusher 1 is selected.)

 **NOTE:** When selecting Digging, return to Main Menu.

4. On the attachment specification screen, confirm if specification of the installed attachment agrees with that displayed on the screen.

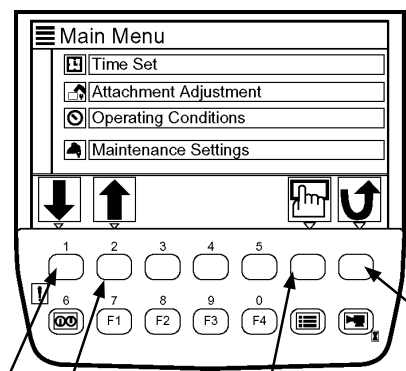
 **NOTE:** When pushing the back key, return to the basic screen.

5. Push the determination key, and the basic screen displays.

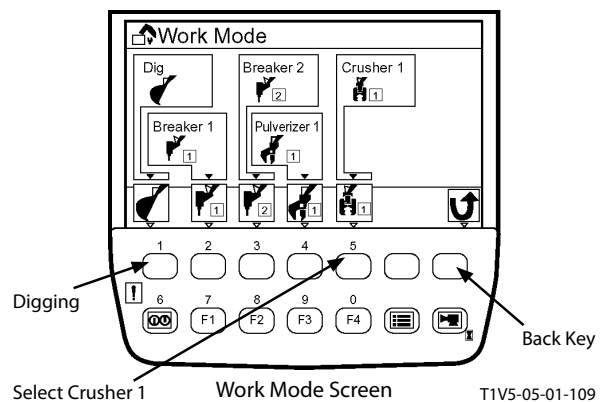


Basic Screen

Menu Key
T1V1-05-01-123

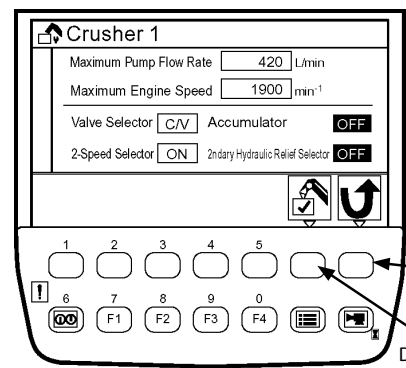


Key 1 Key 2 Determination Key Back Key
T1V5-05-01-019



Work Mode Screen

T1V5-05-01-109



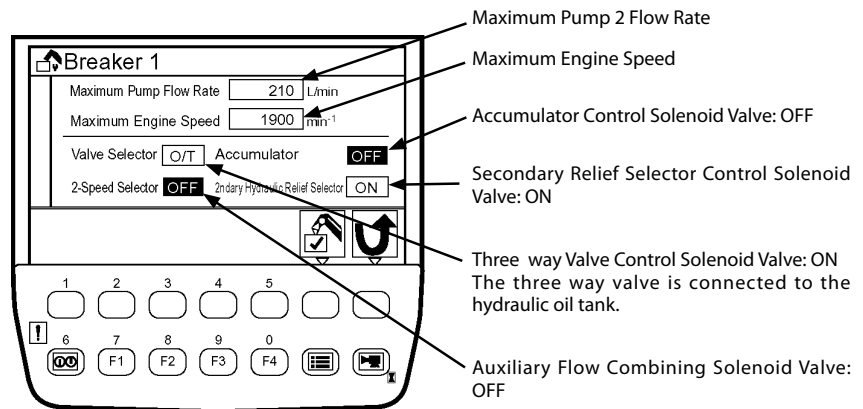
Attachment Specification Screen

Back Key
Determination key
T1V5-05-01-028

OPERATOR'S STATION

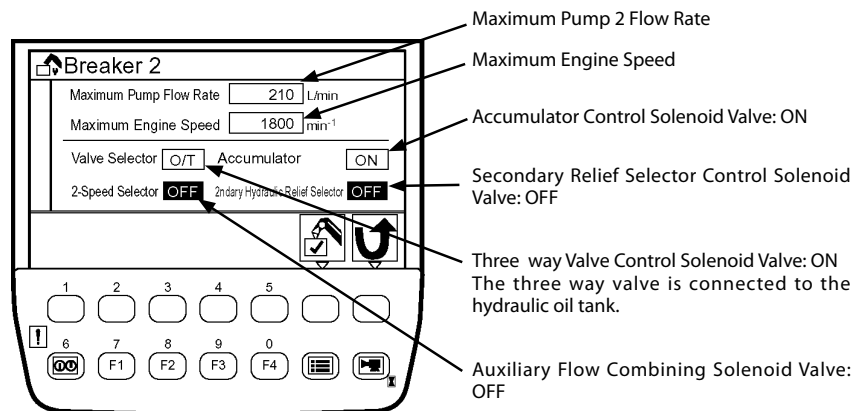
Attachment Specification Screen

Breaker 1



T1V5-05-01-001

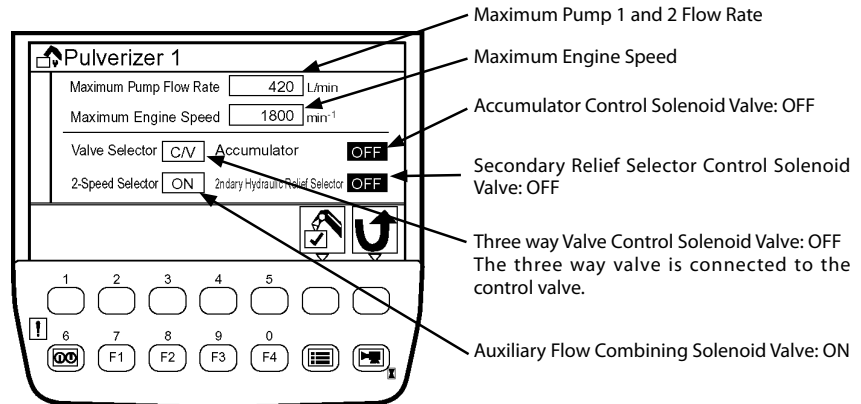
Breaker 2



T1V5-05-01-006

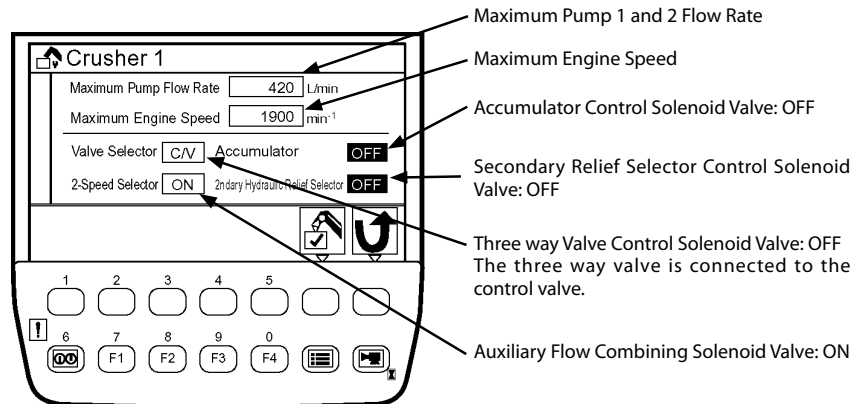
OPERATOR'S STATION

Pulverizer 1



T1V5-05-01-011

Crusher 1



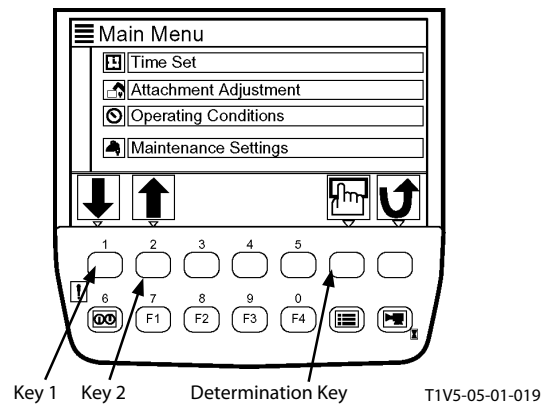
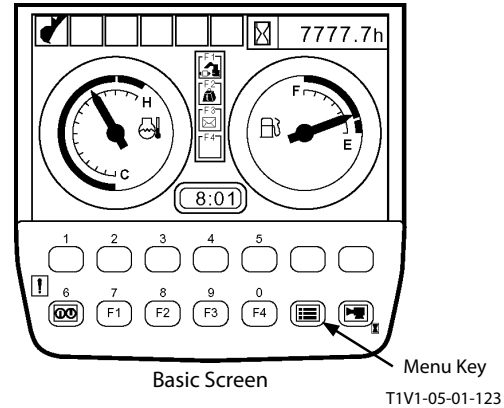
T1V5-05-01-028

OPERATOR'S STATION

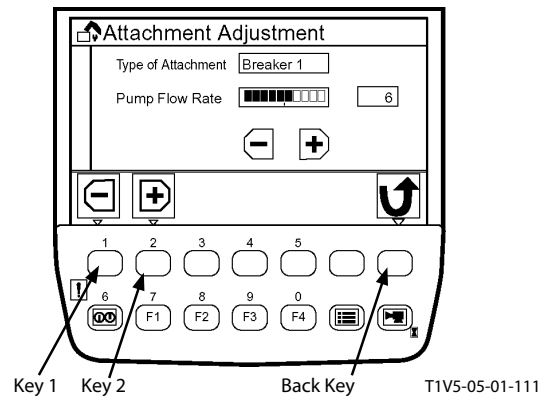
PUMP 2 FLOW RATE ADJUSTMENT (Only Machines Equipped with Optional Parts)

IMPORTANT: This operation is effective when attachments are used.

1. When the basic screen displays, push the menu key and display main menu.
2. Select attachment adjustment from main menu by using keys 1 (↓) and 2 (↑). Push determination key. Then, the attachment adjustment screen for currently installed attachment displays.



3. Adjust flow rate of Pump 2 by using keys 1 (←) and 2 (→).
When using breaker 1 or breaker 2, pushing key 1 (←) will decrease flow rate of pump 2 and pushing key 2 (→) will increase respectively.

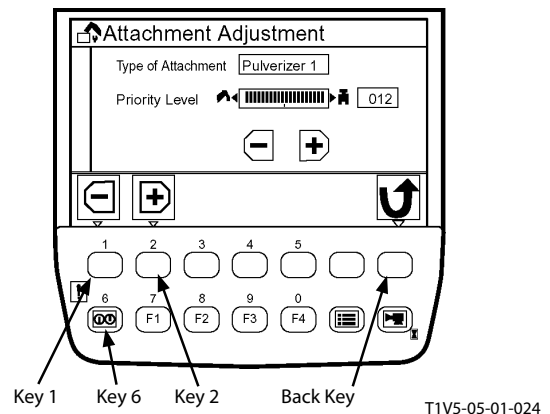


When using the pulverizer or crusher, pushing key 1 (←) will increase flow rate of boom raise, arm roll-out, swing or travel circuit.

Pushing key 2 (→) will increase flow rate of attachment side.

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

4. Push key 6 (⏏), and the basic screen displays.



OPERATOR'S STATION

DISPLAYING OPERATING CONDITIONS

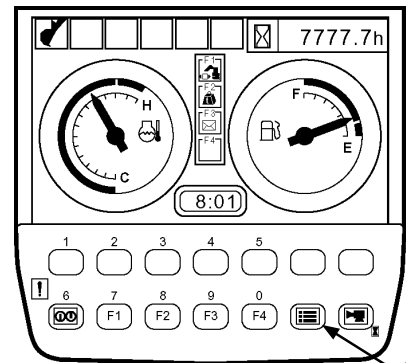
1. When the basic screen displayed, push the menu key and display main menu.
2. Select operating conditions from main menu by using keys 1 and 2. Push the determination key. Then, the operating conditions screen displays.
3. Push the reset key, and display the data reset confirm screen.

When reset the data, push the determination key.

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

IMPORTANT: Total fuel consumption and fuel consumption rate depend on the operating environment and the operation method of machine. The values shown on the screen are just for reference.
There could arise $\pm 20\%$ of differences between actual fuel consumption and fuel consumption which is displayed by the monitor unit.

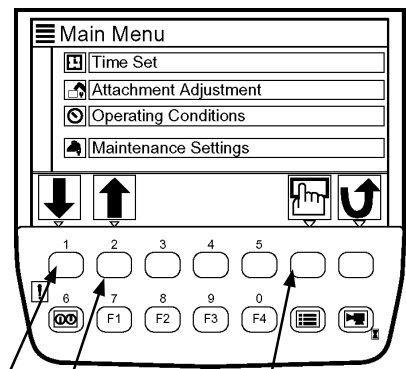
4. Push key 6 , and the basic screen displays.



Basic Screen

Menu Key

T1V1-05-01-123

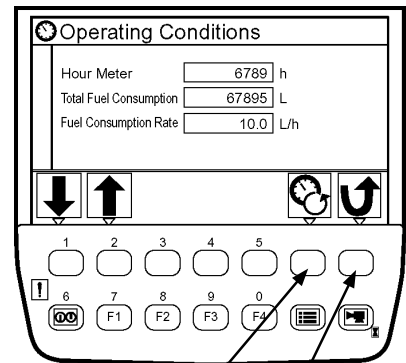


Key 1

Key 2

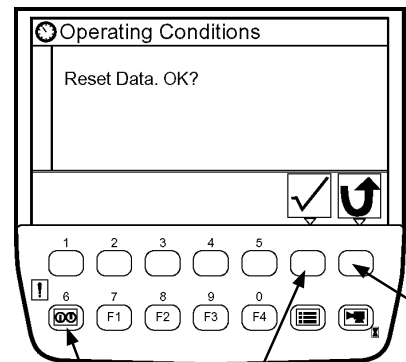
Determination Key

T1V5-05-01-019



Reset Key Back Key

T1V5-05-01-025



Key 6

Determination Key

Back Key

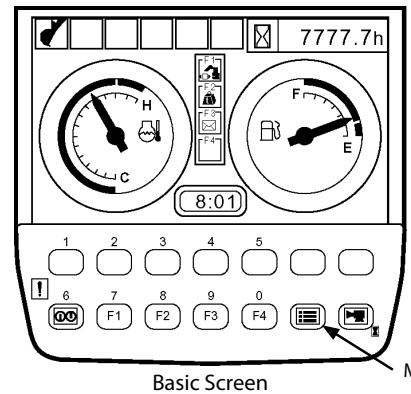
T1V5-05-01-026

OPERATOR'S STATION

FUEL RATE DISPLAY/NO DISPLAY

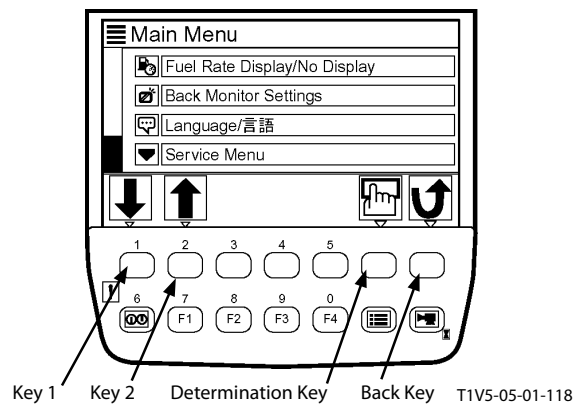
Fuel Rate Display

1. When the basic screen displays, push the menu key and display main menu.



Menu Key
T1V1-05-01-123

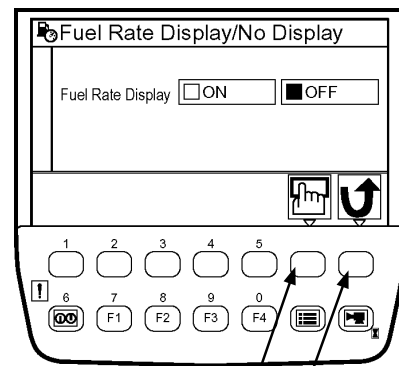
2. Select fuel rate display/No display from main menu by using keys 1 and 2. Push the determination key. Then, the fuel rate display/No display screen displays.



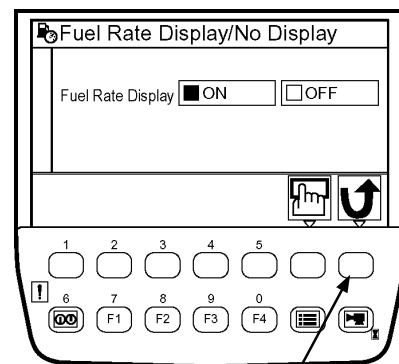
T1V5-05-01-118

3. Push the determination key, and fuel rate display will be set to ON.

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



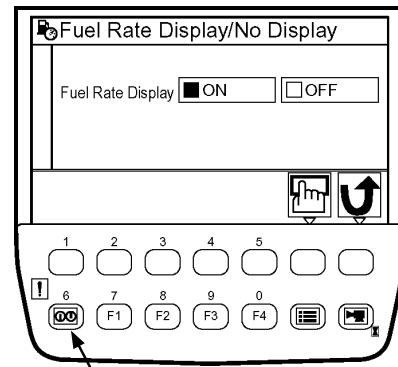
T1V5-05-01-164



T1V5-05-01-119

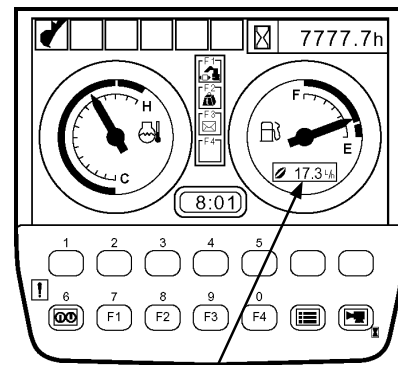
OPERATOR'S STATION

4. Push key 6 , and the fuel rate display will be added to basic screen.



Key 6

T1V5-05-01-119



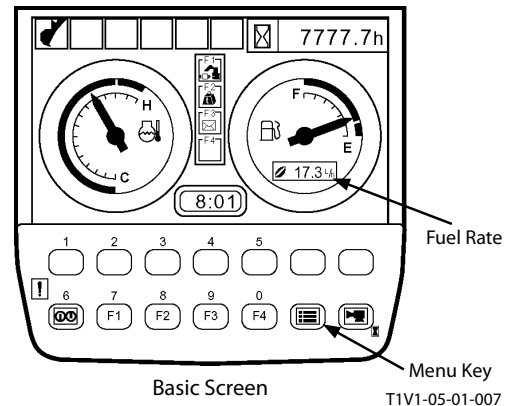
Fuel Rate

T1V1-05-01-007

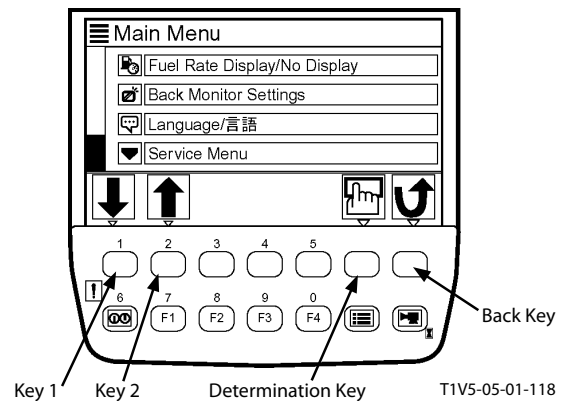
OPERATOR'S STATION

Fuel Rate No Display

1. When the basic screen displays, push the menu key and display main menu.

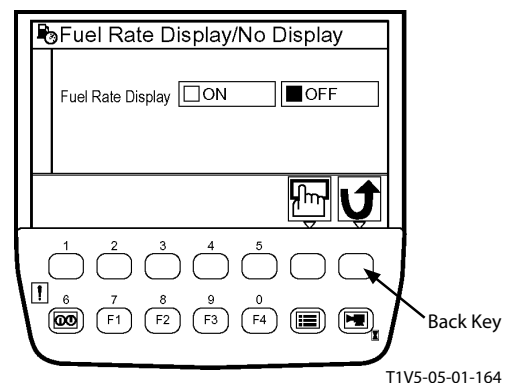
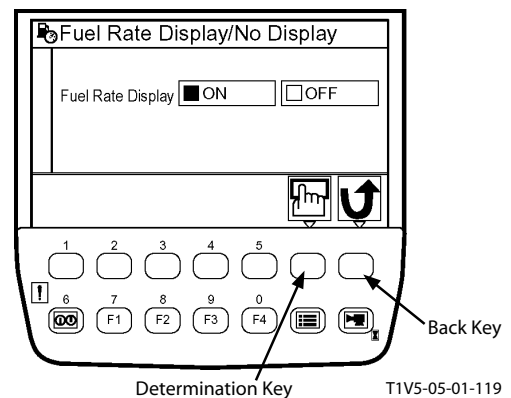


2. Select fuel rate display/No display from main menu by using keys 1 (↓) and 2 (↑). Push the determination key. Then, the fuel rate display/No display screen displays.



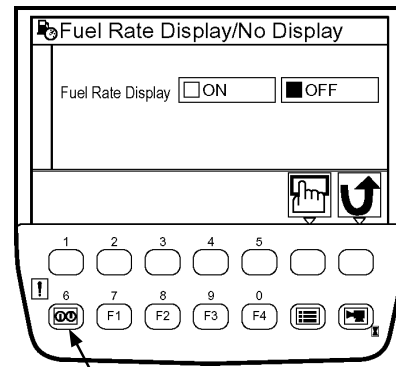
3. Push the determination key, and fuel rate display will be set to OFF.

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



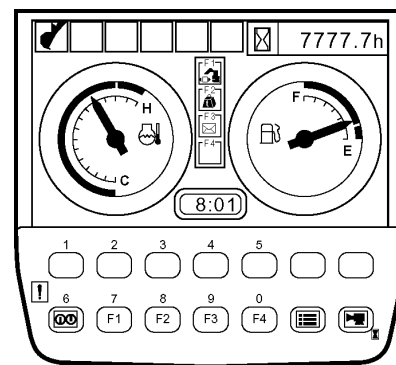
OPERATOR'S STATION

4. Push key 6 , and return to the basic screen.



Key 6

T1V5-05-01-164



Basic Screen

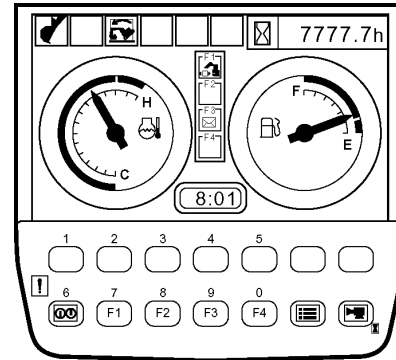
T1V1-05-01-123

OPERATOR'S STATION

- Overload Alarm
(Only machines equipped with optional parts)

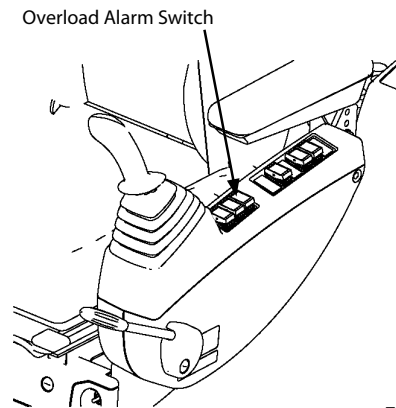
IMPORTANT: When using overload alarm, consult your nearest Hitachi dealer.

When the overload alarm switch is turned ON, the system measures load of the suspended load from bottom pressure of the boom cylinder. An alarm message is displayed and buzzer is rung, if overload is detected.



Basic Screen

T1V1-05-01-128

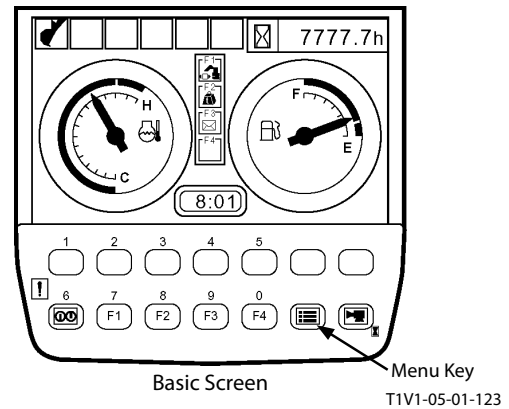


T1V1-05-02-004

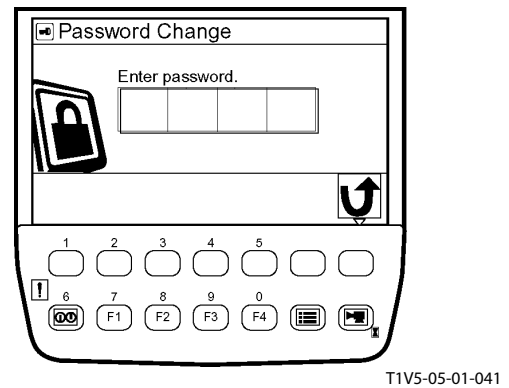
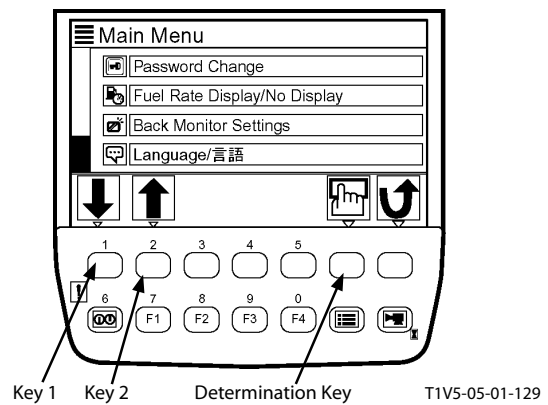
OPERATOR'S STATION

Password Change (Optional)

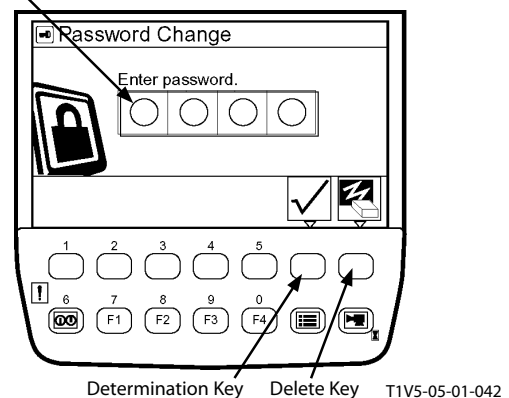
1. After the basic screen is displayed, push the menu key in order to display the main menu.



2. Select password change from main menu by using keys 1 and 2. Push the determination key. Then, the password change screen displays.

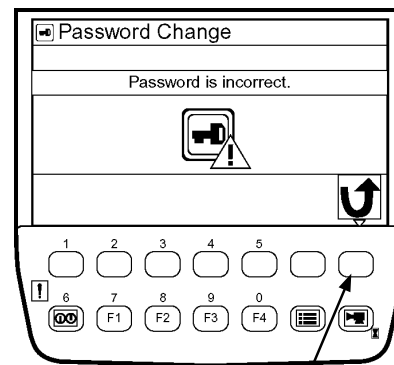


3. Input the registered password and push the determination key.
4. If inputting the password again, the entered characters can be erased by pushing the delete key.



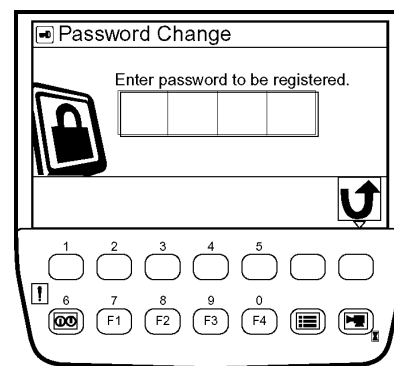
OPERATOR'S STATION

 **NOTE:** If inputting an incorrect password after pushing the determination key, the message "Password is incorrect." displays.
Push the back key and go back to the previous screen, input the password again.



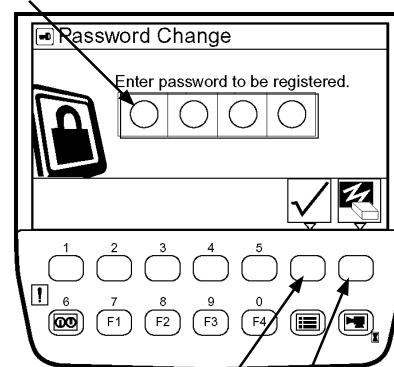
Back Key T1V5-05-01-044

5. The message "Enter password to be registered." displays.
Then, input a new password with three or four digits and push the determination key.
6. If inputting the password again, push the delete key.



T1V5-05-01-130

A New Password

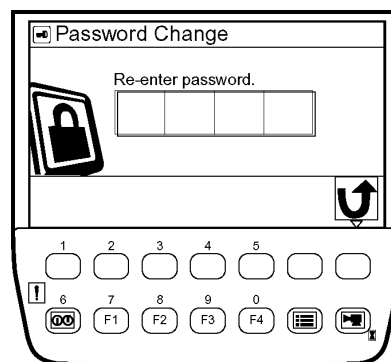


Determination Key Delete Key

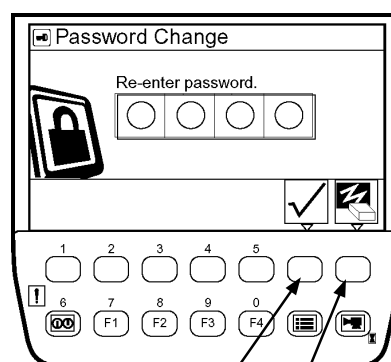
T1V5-05-01-131

OPERATOR'S STATION

7. The message "Re-enter password." displays. Then, input a new password again and push the determination key.
8. If inputting the password again, push the delete key in order to delete the entered characters.



T1V5-05-01-132

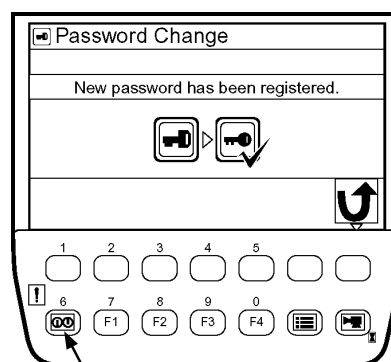


Determination Key

Delete Key

T1V5-05-01-133

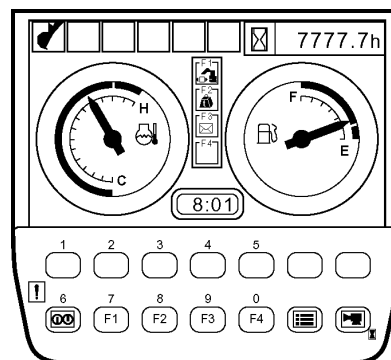
9. The message "New password has been registered." displays. This completes the password change process.



Key 6

T1V5-05-01-043

10. Push key 6 and the basic screen displays.



Basic Screen

T1V1-05-01-123

OPERATOR'S STATION

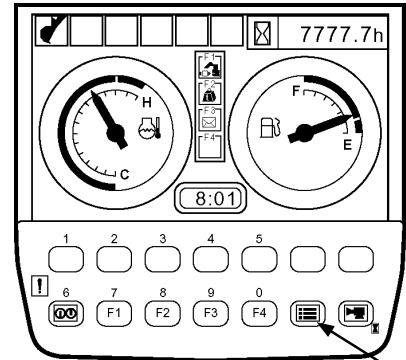
BACK MONITOR SETTINGS

IMPORTANT: The image displayed on the back monitor is to be used as an assist view. Drive the machine while paying thorough attention to the surroundings.

Auto-Control: ON

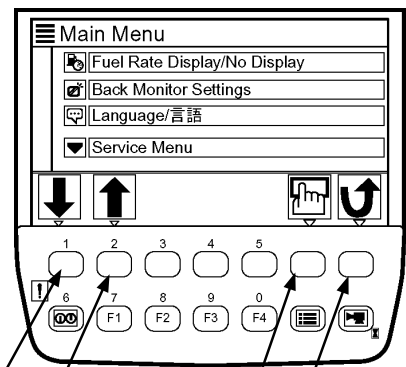
Image on the monitor unit when traveling is automatically switched to that of the back monitor.

1. When the basic screen displays, push the menu key and display main menu.
2. Select back monitor settings from main menu by using keys 1 (↓) and 2 (↑). Push the determination key. Then, the back monitor settings screen displays.



Basic Screen

Menu Key
T1V1-05-01-123

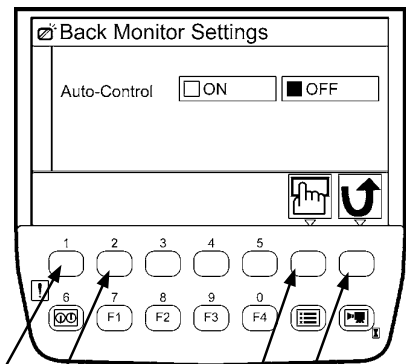


Key 1 Key 2 Determination Key Back Key T1V5-05-01-114

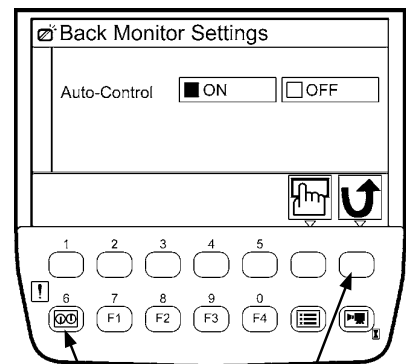
3. Push the determination key. Then, auto-control is set to ON.

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

4. Push key 6 , and return to the basic screen.
5. If travel operation is done, backward image is displayed on the screen of monitor unit.



Key 1 Key 2 Determination Key Back Key T1V5-05-01-173



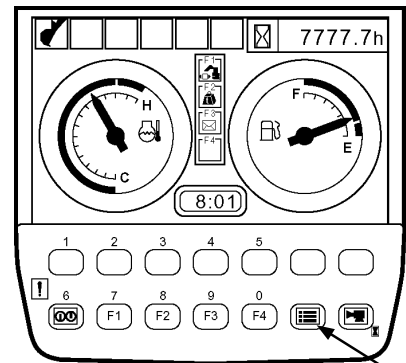
Key 6 Back Key T1V5-05-01-174

OPERATOR'S STATION

Auto-Control: OFF

Set automatic switching function of images between monitor unit and back monitor when traveling to OFF.

1. When the basic screen displays, push the menu key and display main menu.

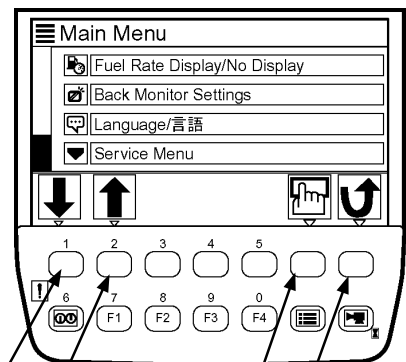


Basic Screen

Menu Key

T1V1-05-01-123

2. Select back monitor settings from main menu by using keys 1 and 2. Push the determination key. Then, the back monitor settings screen displays.



Key 1

Key 2

Determination Key

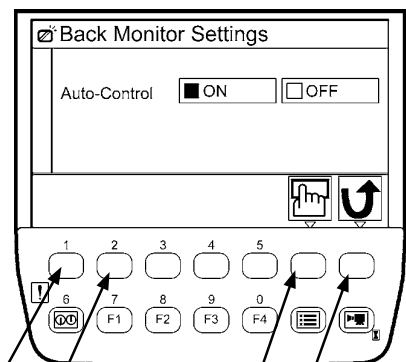
Back Key

T1V5-05-01-118

3. Push the determination key. Then, auto-control is set to OFF.

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

4. Push key 6 , and return to the basic screen.



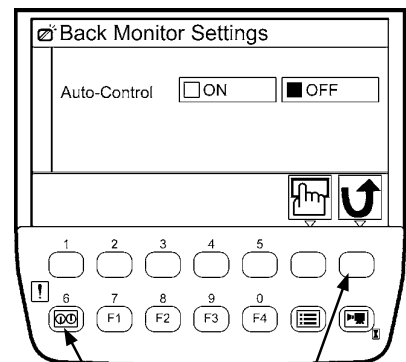
Key 1

Key 2

Determination Key

Back Key

T1V5-05-01-174



Key 6

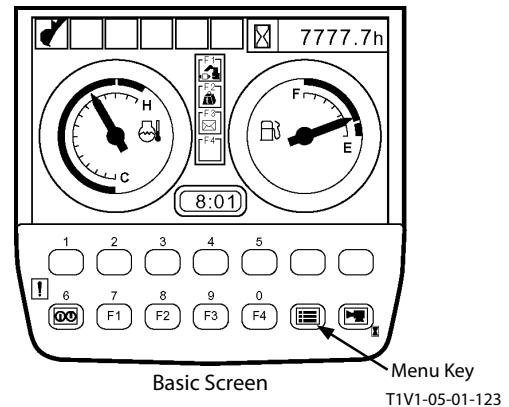
Back Key

T1V5-05-01-173

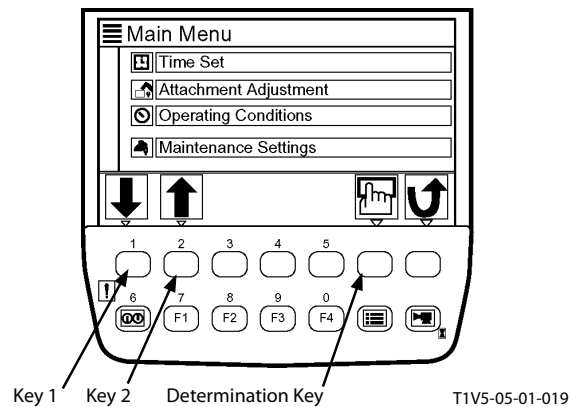
OPERATOR'S STATION

MAINTENANCE SETTINGS

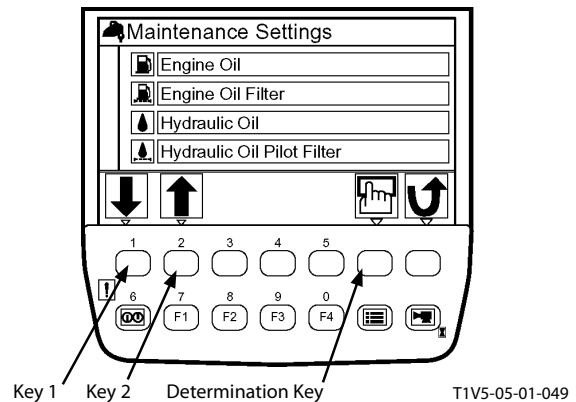
1. When the basic screen displays, push the menu key and display main menu.



2. Select maintenance settings from main menu by using keys 1 (↓) and 2 (↑). Push the determination key. Then, the maintenance settings screen displays.



3. Select an item to be set from among the list of maintenance settings screen by using keys 1 (↓) and 2 (↑). Push the determination key. Then, the Interval ON/OFF settings screen displays. (In the right example, Engine Oil is selected.)



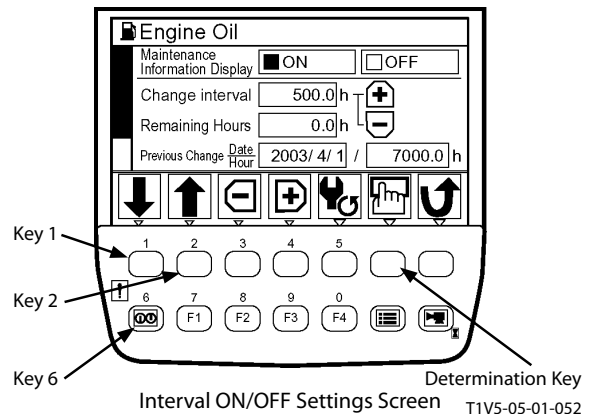
Maintenance Information Display ON/OFF

1. Select ON or OFF for maintenance information display by using keys 1 (↓) and 2 (↑). Push the determination key.

ON: When time comes to change, a information message is displayed on the screen.

OFF: No information message is displayed.

2. In order to complete setting, push key 6 (↻). Then, the basic screen displays.

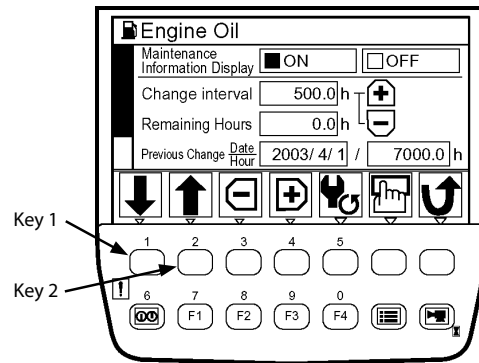


OPERATOR'S STATION

Change Interval Settings

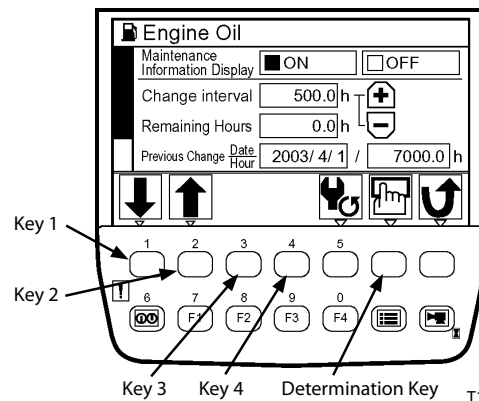
IMPORTANT: Change interval can only be set when maintenance information display is set to ON.

1. Select change interval by using keys 1 and 2 .
2. Set time for change interval by using keys 3 and 4 .
3. Select remaining hours by using keys 1 and 2 , and push determination key.
4. The message "Adjust remaining hours to new change interval. OK?" displays. Then, push the determination key.
5. Push key 6 , and the basic screen displays.



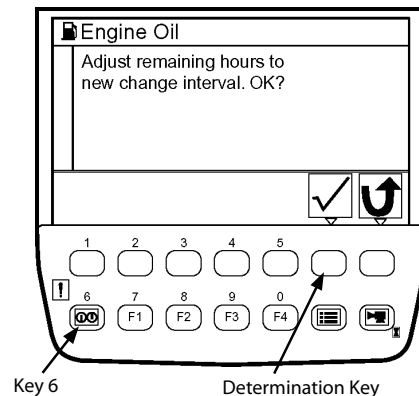
Interval ON/OFF Settings Screen

T1V5-05-01-052



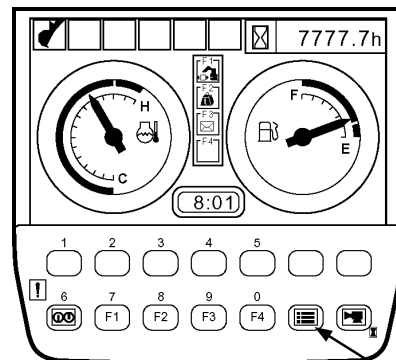
Key 3 Key 4 Determination Key

T1V5-05-01-138



Key 6 Determination Key

T1V5-05-01-139



Basic Screen

Menu Key

T1V1-05-01-123

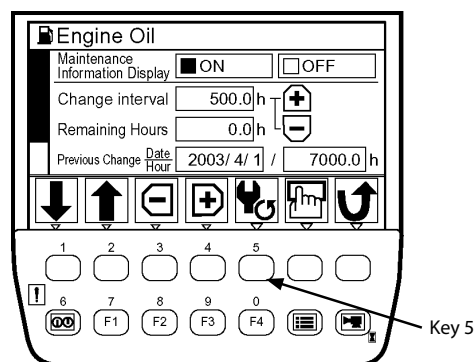
OPERATOR'S STATION

Resetting Data

If data is reset, push key 5  on the Interval ON/OFF settings screen.

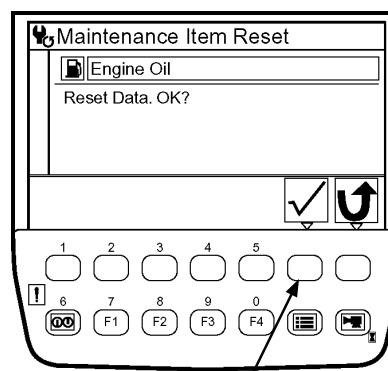
The message "Reset Data. OK?" displays. Then, push the determination key.

The value of remaining hours is reset to that of change interval. Previous change date/hour is updated with current date and time.



Interval ON/OFF Settings Screen

T1V5-05-01-052



Determination Key

T1V5-05-01-140

OPERATOR'S STATION

Screen Display when Maintenance Information Display is ON

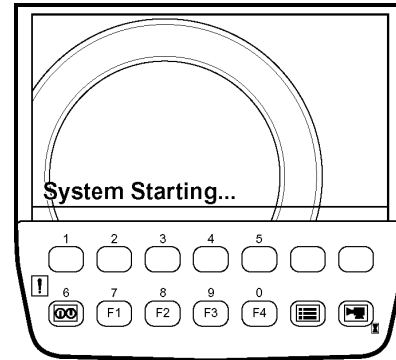
- When only one item displays
 - If turning the key switch to the ON position, the starting screen displays. Then, the scheduled maintenance screen for the item whose change interval has expired displays for three to ten seconds. Finally the basic screen displays. (In the right example, Hydraulic Oil applies.)

NOTE: For a machine which the basic screen is displayed according to a password on, the scheduled maintenance screen for the item whose change interval has expired displays for three to ten seconds, after the password is input successfully and the determination key is pushed. And then the basic screen displays.

- If data is reset, push the reset key while the scheduled maintenance screen is displayed. The message "Reset Data. OK?" displays. Then, push the determination key. The value of remaining hours is reset to that of change interval. Previous change date/hour is updated with current date and time.

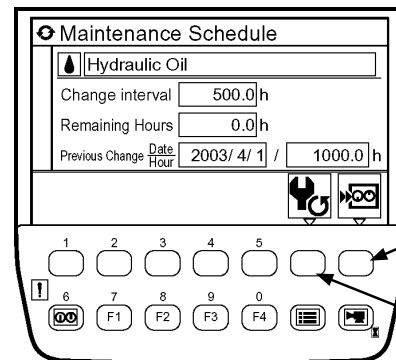
NOTE: When pushing the back key while the maintenance information display screen is displayed, return to the basic screen.

NOTE: When pushing the back key while reset screen is displayed, return to the maintenance information display screen.



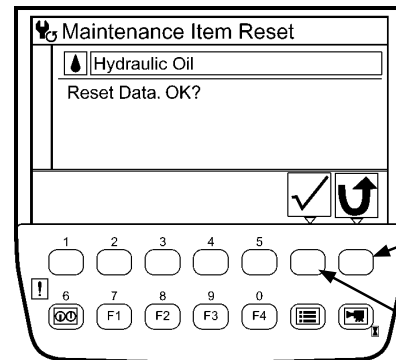
Starting Screen

T1V1-05-01-115



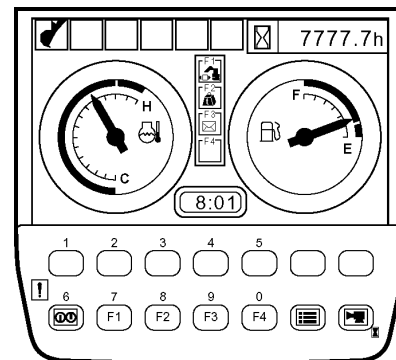
Maintenance Information Display Screen

T1V5-05-01-170



Reset Screen

T1V5-05-01-171



Basic Screen

T1V1-05-01-123

OPERATOR'S STATION

- When more than two items apply

- If turning the key switch to the ON position, the starting screen displays. Then, the scheduled maintenance screen for the items whose change interval has expired displays for three to ten seconds. Finally the basic screen displays.

NOTE: For a machine which the basic screen is displayed according to a password on, the scheduled maintenance screen for the items whose change interval has expired displays for three to ten seconds, after the password is input successfully and the determination key is pushed. And then the basic screen displays.

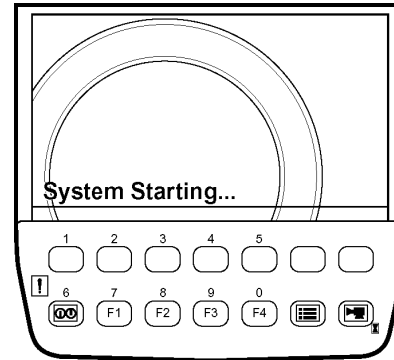
- If data is reset, while the scheduled maintenance screen is displayed, select desired item by using keys 1 (↓) and 2 (↑). Push the determination key. Then, the maintenance information display screen for the selected item displays. (In the right example, Hydraulic Oil is selected.)

NOTE: When pushing the back key while the scheduled maintenance screen is displayed, the basic screen displays.

- Push the reset key while the maintenance information display screen is displayed. The message "Reset Data. OK?" displays. Then, push the determination key. The value of remaining hours is reset to that of change interval. Previous change date/hour is updated with current date and time.

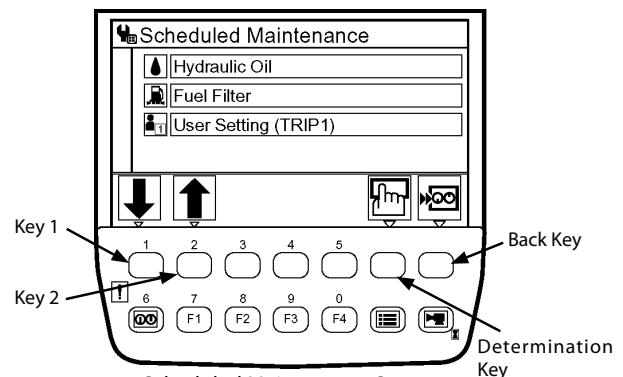
NOTE: When pushing the back key while the maintenance information display screen is displayed, return to the scheduled maintenance screen.

NOTE: When pushing the back key while the reset screen is displayed, return to the maintenance information display screen.



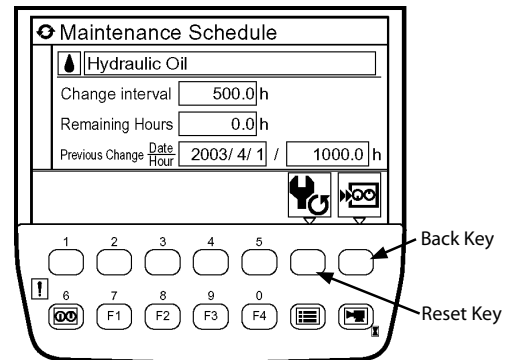
Starting Screen

T1V1-05-01-115



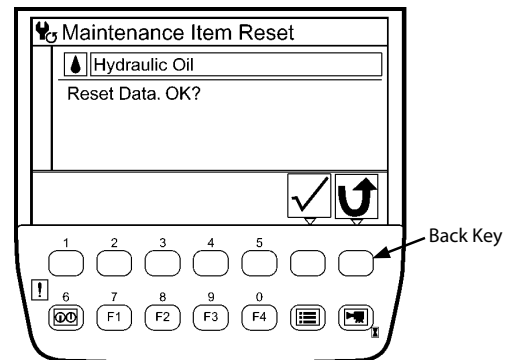
Scheduled Maintenance Screen

T1V5-05-01-169



Maintenance Information Display Screen

T1V5-05-01-170



Reset Screen

T1V5-05-01-171

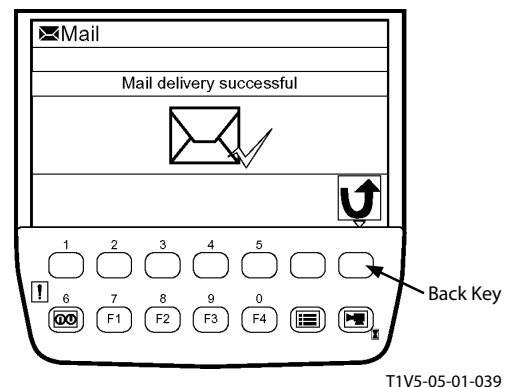
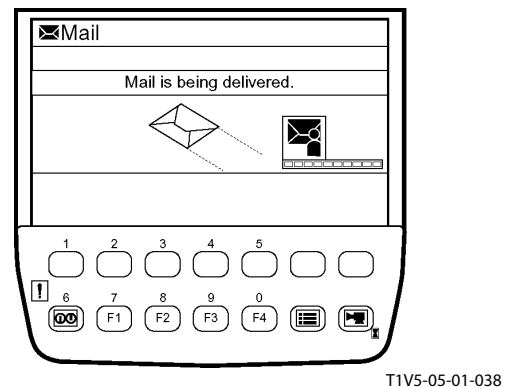
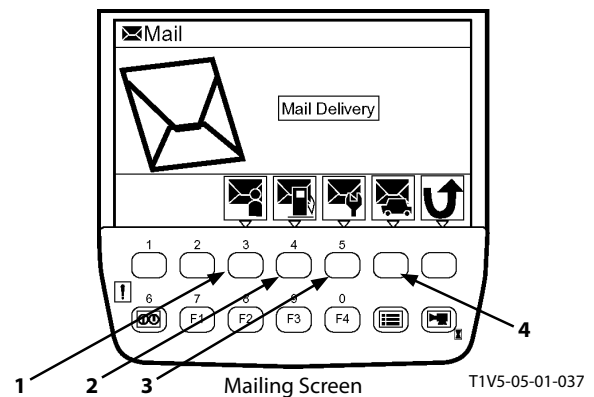
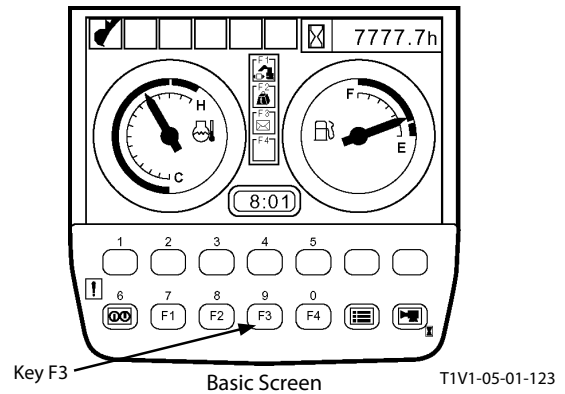
OPERATOR'S STATION

Mail (Optional)

IMPORTANT: This function is available only to a machine equipped with a satellite terminal.
When using the mail function, consult your nearest Hitachi dealer.

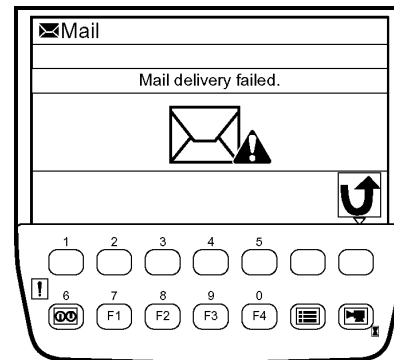
1. When the basic screen displays, push mail selection key F3 and display mail screen.
2. If pushing a relevant request key, mail information is sent to ICF.
 - 1 - General Request
 - 2 - Fuel Replenishment Request
 - 3 - Service Maintenance Request
 - 4 - Forwarding Request
3. While mail information is sent to ICF, the message "Mail is being delivered." is displayed on the screen.
4. When ICF completes receives mail information, the message "Mail delivery successful." is displayed on the screen. When pushing the back key, return to the mail screen.
5. Then, a mail is sent from the satellite terminal to the central server via the satellite.

 **NOTE:** Depending on machine's operating environment or position of the satellite on its orbit, the mail may not be sent.



OPERATOR'S STATION

 **NOTE:** When satellite terminal could not receive the mail, the message "Mail delivery failed." is displayed on the screen.



T1V5-05-01-040

OPERATOR'S STATION

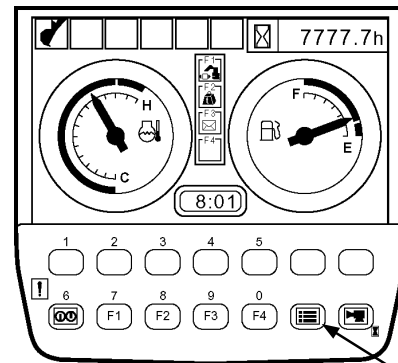
LANGUAGE SETTINGS

1. When the basic screen displayed, push the menu key and display main menu.
2. Select language from main menu by using keys 1  and 2 . Push the determination key. Then, the language settings screen displays.
3. Select a desired language by using keys 1  and 2 . Push the determination key.

 **NOTE:** Languages to be displayed on the screen of monitor unit have been selected from twelve languages, namely display languages 1 or 2, at the time of shipping from the factory.
(Refer to the next section)

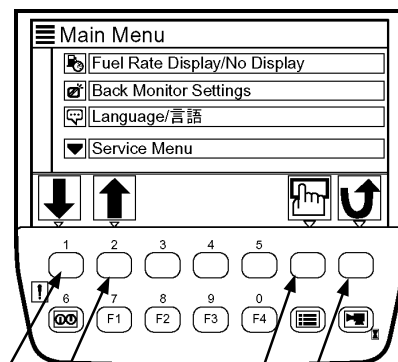
 **NOTE:** When pushing the back key, return to the previous screen.

4. Push key 6 , and the basic screen displays.

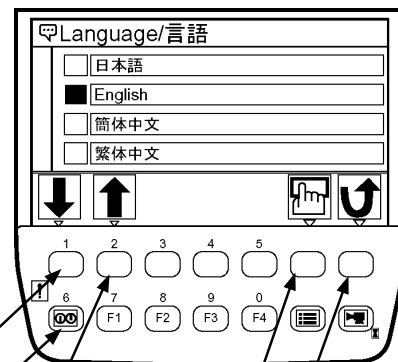


Basic Screen

Menu Key
T1V1-05-01-123



Key 1 Key 2 Determination Key Back Key T1V5-05-01-114



Key 1 Key 6 Key 2 Determination Key Back Key T1V1-05-01-137

OPERATOR'S STATION

Lists of Display Language

Display Languages 1

Language	Screen Display	
Japanese	日本語	TIV1-05-01-141
English	English	TIV1-05-01-142
Chinese (Simplified)	简体中文	TIV1-05-01-143
Chinese (Traditional)	繁体中文	TIV1-05-01-144
Korean	한국어	TIV1-05-01-145
Indonesian	Bahasa Indonesia	TIV1-05-01-146
Thai	ภาษาไทย	TIV1-05-01-147
Vietnamese	Tiếng Việt	TIV1-05-01-148
Myanmarese	မြန်မာဘာသာ	TIV1-05-01-149
Arabic	اللغة العربية	TIV1-05-01-150
Persian	اللغة الفارسية	TIV1-05-01-151
Turkish	Türkçe	TIV1-05-01-152

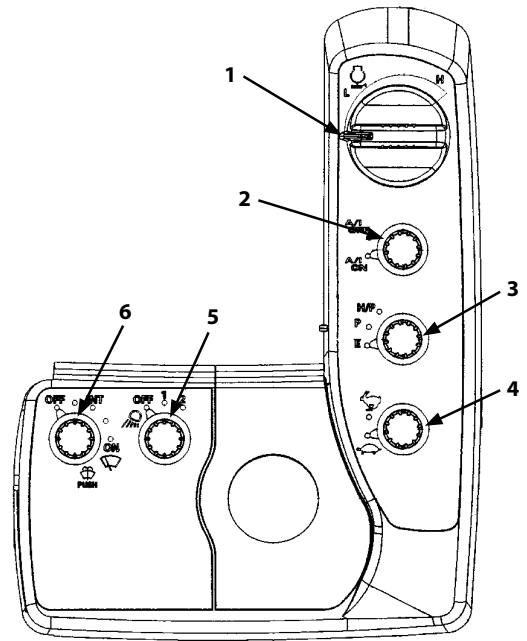
Display Languages 2

Language	Screen Display	
English	English	TIV1-05-01-142
Spanish	Español	TIV1-05-01-153
Italian	Italiano	TIV1-05-01-154
French	Français	TIV1-05-01-155
German	Deutsch	TIV1-05-01-156
Dutch	Nederlands	TIV1-05-01-157
Russian	Русский	TIV1-05-01-158
Portuguese	Português	TIV1-05-01-159
Finnish	Suomi	TIV1-05-01-160
Swedish	Svensk	TIV1-05-01-161
Norwegian	Norsk	TIV1-05-01-162
Danish	Dansk	TIV1-05-01-163

OPERATOR'S STATION

SWITCH PANEL

- 1- Engine Control Dial
- 2- Auto-Idle Switch
- 3- Power Mode Switch
- 4- Travel Mode Switch
- 5- Work Light Switch
- 6- Wiper/Washer Switch



Std. Model

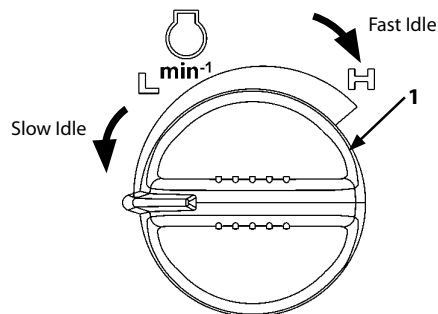
M1U1-01-015

OPERATOR'S STATION

ENGINE CONTROL DIAL

Use engine control dial (1) to adjust engine speed. Turn it clockwise to increase engine speed or counterclockwise to decrease engine speed.

- The fully clockwise position : Fast idle
- The fully counterclockwise position : Slow idle



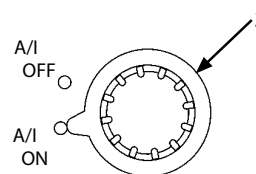
M1U1-01-033

AUTO-IDLE SWITCH

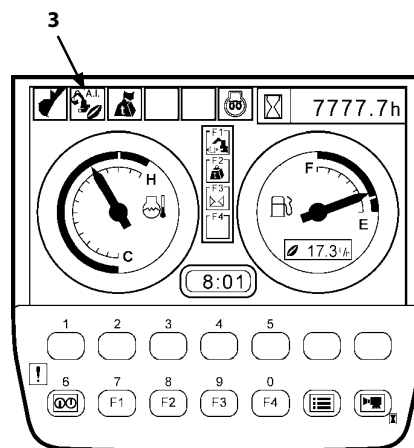
Auto-idle switch (2) sets the engine speed control mode to Auto-Idle.

- Auto-Idle Mode

When auto-idle switch (2) is turned to the A/I ON position, the engine speed is reduced to slow idle speed 4 seconds after releasing all control levers (neutral), reducing the fuel consumption. When the auto-idle mode is selected, auto-idle indicator (3) on the monitor panel lights.



M1U1-01-017



M1U1-01-004

OPERATOR'S STATION

POWER MODE SWITCH

Three engine speed modes, E, P, and H/P modes, are selected by operating the power mode switch.

- E (Economy) Mode

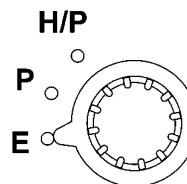
Although production is slightly reduced more than in the P mode, the fuel consumption and noise levels are reduced, allowing the machine to operate efficiently.

- P (Power) Mode

Use the P mode when general digging work is needed.

- H/P (High Power) Mode

Use the H/P mode when extra horsepower is needed, i.e. when rolling in the arm in excavation work, etc.



M178-01-013

TRAVEL MODE SWITCH

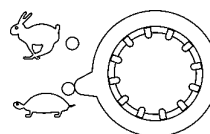
Two travel modes, FAST and SLOW, are selected by turning the travel mode switch to either position.



Mark (Fast Speed Mode)



Mark (Slow Speed Mode)



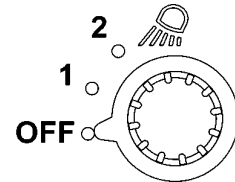
M178-01-096

OPERATOR'S STATION

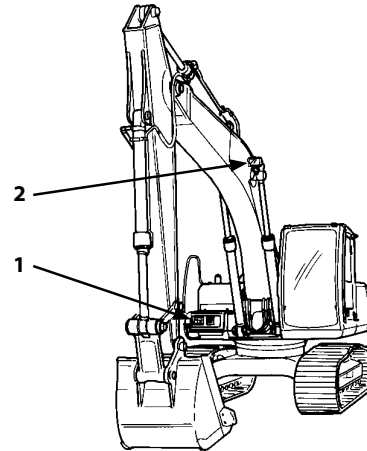
WORK LIGHT SWITCH

Work light switch has the following positions:

- 1 Position
Work light (1) on the base machine will light. Also, the instrument panel illumination will light.
- 2 Position
Work light (2) will light in addition.
- OFF Position
Work lights (1) and (2) and the instrument panel illumination will turn off.



M178-01-015



M157-01-146

OPERATOR'S STATION

WIPER/WASHER SWITCH

The wiper and the window washer are operated using the wiper/washer switch.

- Wiper

Turn the wiper/washer switch to the specified position to operate the wiper.

OFF Position: The wiper stops and is retracted.

INT Position: The wiper operates intermittently at the interval selected by the switch position as described below.

INT (Slow): The wiper operates at 8-second interval.

INT (Mid): The wiper operates at 6-second interval.

INT (Fast): The wiper operates at 3-second interval.

ON Position: The wiper operates continuously.

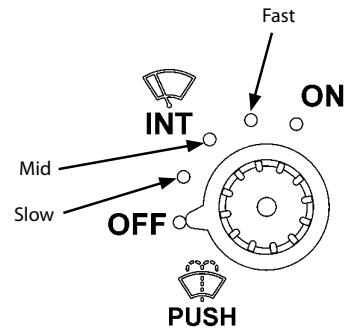
 **NOTE:** • When the front window (upper) is opened, the wiper and washer will not operate. Even if the front window (upper) is closed, the wiper and washer will not operate until the lock pin on the right side is placed in the lock position. If the front window is opened while during operating the wiper, the wiper will be retracted and the washer function is deactivated.

- In case either the wiper or washer is operated with the front window (upper) opened, or if front window (upper) is opened while operating either the wiper or washer, the front window opening alarm buzzer will sound intermittently at one-second intervals. Close the front window (upper).

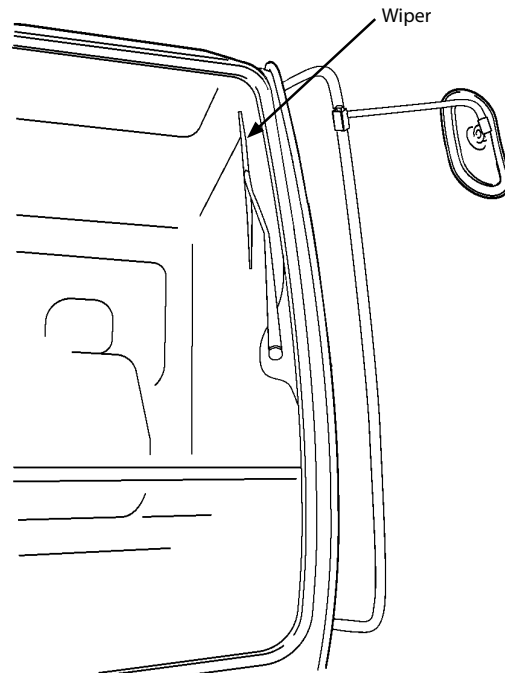
- Washer (Std. Model)

Press and hold the wiper/washer switch to squirt washer fluid onto the front window. When the wiper/washer switch is pressed for more than 2 seconds, the wiper operates until the switch is released. When the wiper/washer switch is released, the wiper automatically retracts. While operating the wiper in the INT mode, when the wiper/washer switch is pressed, the wiper operation mode is changed to the continuous operation mode.

IMPORTANT: Washer motor may be damaged if wiper/washer switch is held for more than 20 seconds, or continually operated with no fluid in the washer tank.



M178-01-016

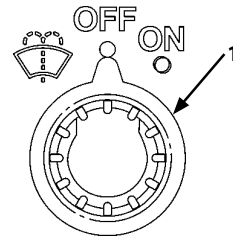


M1U1-01-018

OPERATOR'S STATION

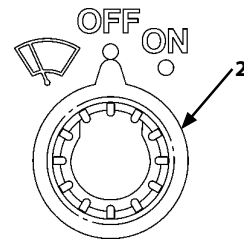
- Washer (Overhead Window)

As long as wiper washer switch (1) is held down, washer fluid will be squirted from the nozzles on the front window and overhead window. Continue holding wiper washer switch (1) for more than 2 seconds to automatically operate the front window wiper. Release wiper washer switch (1) to stop fluid from being squirted from the nozzles and to automatically stop and retract the wipers. While the wiper is operating in the INT position, when wiper washer switch (1) is pushed, the wiper will change to operate continuously.



M1U1-01-007

IMPORTANT: The washer motor in the washer fluid tank may be damaged if washer fluid is kept squirted for more than 20 seconds or the motor is continuously operated with the washer fluid tank empty. Monitor the washer fluid squirting time and the fluid level in the washer reservoir.



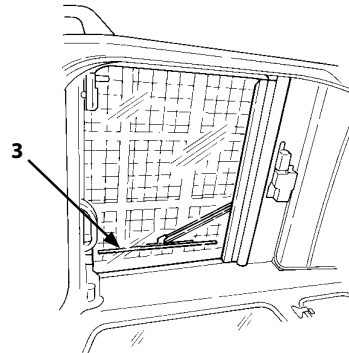
M1U1-01-008

Wiper Switch (2) (Overhead Window: Optional)

Wiper switch (2) has two positions as follows:

ON Position Overhead window wiper (3) operates.

OFF Position.....Overhead window wiper (3) stops.



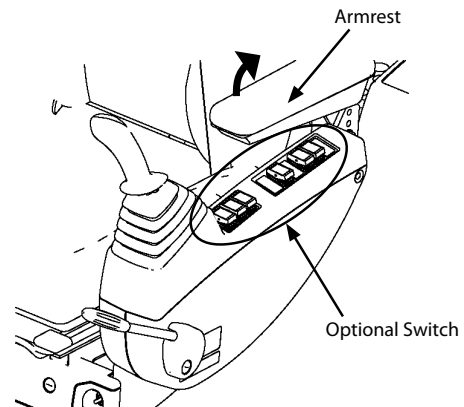
M157-01-081

OPERATOR'S STATION

SWITCH PANEL (Optional)

-  **NOTE:** • The optional switch locations differ depending on the kinds of optional devices are equipped. Before using the switches on the switch panel, make sure what kind of optional devices are equipped. All available optional devices are shown below.
- Raise the armrest when operating the optional switch.

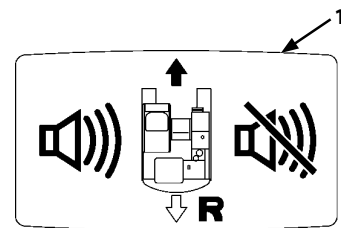
- Travel Alarm Deactivation
- Swing Alarm
- Rear Light
- Overload Alarm Device Switch
- Seat Heat Switch
- Rotating Lamp
- Electric Type Control Lever



T1V1-05-02-004

Travel Alarm Deactivation Switch (Optional)

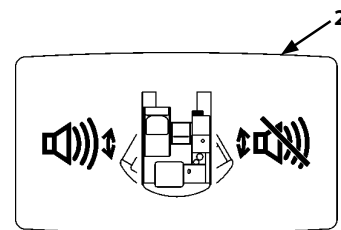
The travel alarm buzzer sounds during travel operation. When push travel alarm deactivation switch (1) to the off position () , the travel alarm buzzer function is deactivated.



M1U1-01-035

Swing Alarm Switch (Optional)

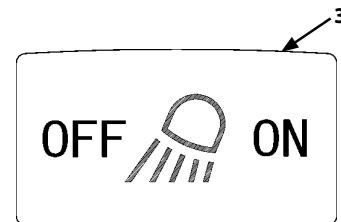
The swing alarm system sounds the buzzer and turns the beacon light ON during swing operation. When push swing alarm switch (2) to the off position () , the swing alarm buzzer function is deactivated.



M1U1-01-036

Rear Light Switch (Optional)

When rear light switch (3) is turned ON. The rear light at the rear of the cab roof comes ON.

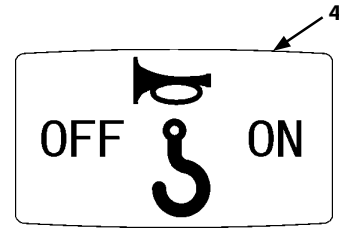


M1U1-01-009

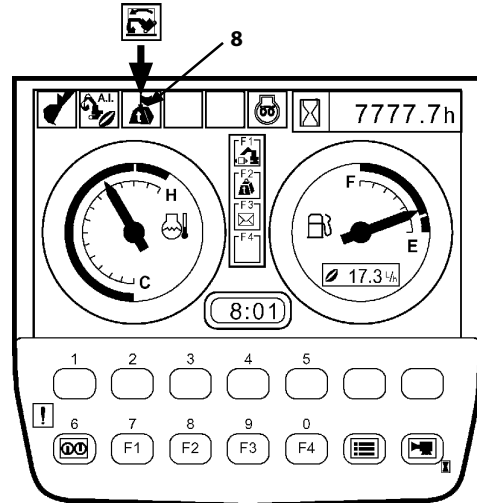
OPERATOR'S STATION

Overload Alarm Switch (Optional)

During lifting load work with overload alarm switch (4) ON, if overloading is detected, the buzzer sounds and overload alarm indicator (8) on the multi-monitor comes ON. Turn overload alarm switch (4) OFF to deactivate the overload alarm system function.



M1U1-01-010



T1V1-05-01-094

Seat Heater Switch

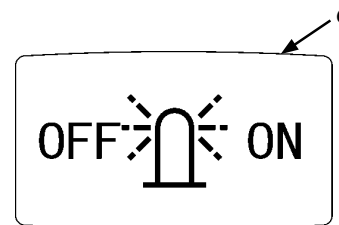
When seat heater switch (5) is turned ON, the seat surface is heated so that the seat section becomes warm. When the temperature of the seat section is raised to the specified temperature, heating is automatically stopped.



M1U1-01-011

Revolving Light Switch (Optional)

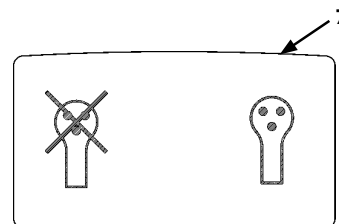
When revolving light switch (6) is turned ON, the revolving light provided at the rear on the cab roof comes ON.



M1U1-01-012

Electrical Control Main Switch (Optional)

When the (⚡) mark side of electrical control main switch (7) is pressed, the electrical control (grip switch) system becomes operable. When there is no need to use the electrical control (grip switch) system, press the (⚡) mark side of main switch (7) to avoid misoperation.

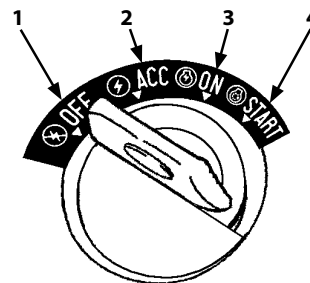


M1U1-01-013

OPERATOR'S STATION

KEY SWITCH

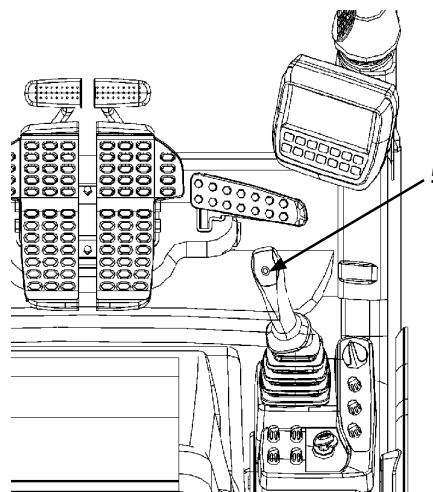
- 1- OFF (Engine Off)
- 2- ACC (Horn, Radio etc.)
- 3- ON (Engine On)
- 4- START (Engine Start)



M178-01-049

POWER BOOST SWITCH (ZX180-3, 200-3, 270-3, 330-3 Class)

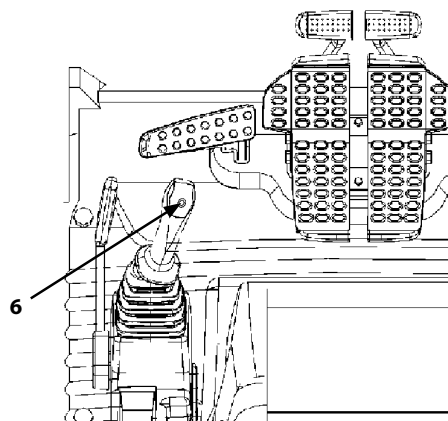
Power boost switch (5) is used to gain maximum digging power, and is located on the top of the right control lever.



M1J1-01-024

HORN SWITCH

Horn switch (6) is provided on the top of the left control lever. The horn continuously sounds as long as switch (6) is pressed.



M1J1-01-025

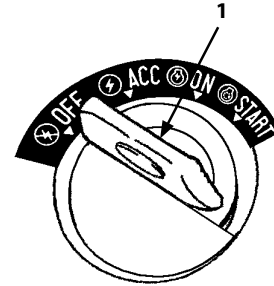
OPERATOR'S STATION

CIGAR LIGHTER

Operation

IMPORTANT: In case cigar lighter (2) does not pop out automatically 30 seconds after pushing cigar lighter (2) in, pull out cigar lighter (2) manually. Then, consult the your nearest Hitachi dealer.

1. Turn key switch (1) to the ACC or ON position.
2. Press and release cigar lighter (2) knob.
3. Cigar lighter (2) knob will return to the original position when cigar lighter (2) becomes usable. Pull cigar lighter (2) out to use.
4. After using cigar lighter (2), insert cigar lighter (2) into the panel until the knob is seated in the original position.

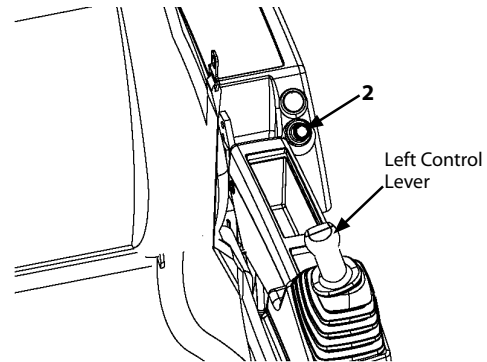


M178-01-049

Using Cigar Lighter (2) Port as External Power Source

Use cigar lighter (2) port to supply power to lighting equipment for servicing the machine.

IMPORTANT: Only 24 V electric power is available from cigar lighter (2) port on this machine. Never connect accessories that use power other than 24 V. Damage to the batteries and accessories may result. Do not supply power to accessories for a long time without running the engine. Failure to do so may discharge the batteries.



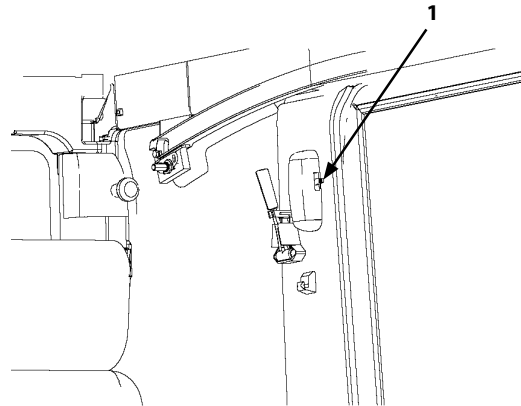
M1U1-01-021

1. Pull cigar lighter (2) knob out.
2. Correctly insert the accessory socket into cigar lighter (2) port.
3. Turn key switch (1) to the ACC or ON position. Power is supplied to the connected accessory.
4. After using the accessory, disconnect the accessory socket and insert cigar lighter (2) into the port.

OPERATOR'S STATION

CAB LIGHT

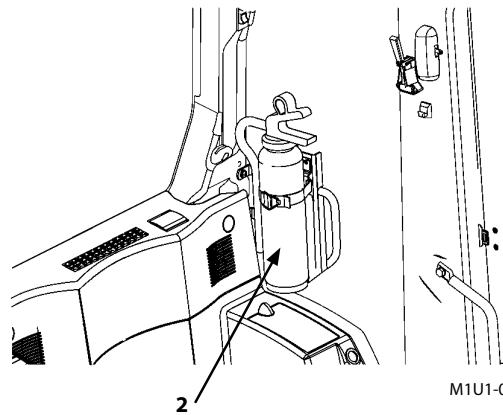
Turn the cab light ON or OFF by using switch (1).



M1U1-01-022

INSTALLING FIRE EXTINGUISHER (Optional)

A fire extinguisher (2) can be installed at the left rear corner inside the cab. Consult your nearest HITACHI dealer to install a fire extinguisher (2).



M1U1-01-023

OPERATOR'S STATION

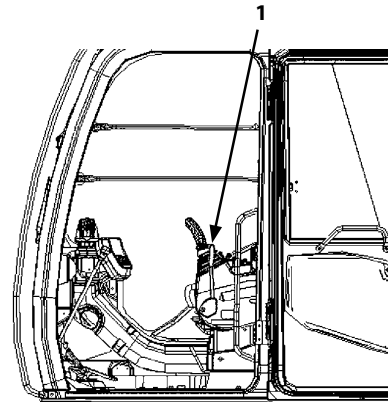
PILOT CONTROL SHUT-OFF LEVER

Pilot control shut-off lever (1) functions to prevent the machine from being mistakenly operated when the operator is getting on or off the machine.



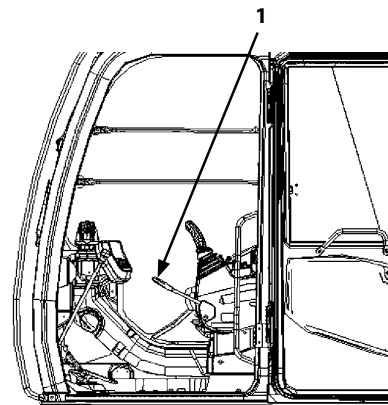
WARNING:

- Pilot control will not be shut-off unless pilot control shut-off lever (1) is completely pulled-up to the LOCK position.
- Before leaving the operator's seat, always stop the engine and pull pilot control shut-off lever (1) up to the LOCK position.
- Also, pull pilot control shut-off lever (1) up to the LOCK position when transporting the machine or when the day's work is complete.
- Confirm that pilot control shut-off lever (1) is in the LOCK position before starting the engine.



LOCK Position

M1U1-01-025

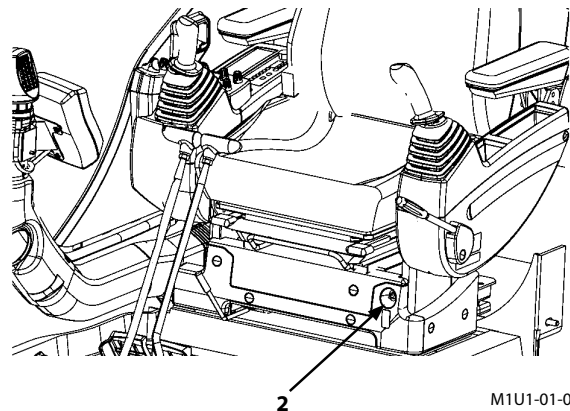


UNLOCK Position

M1U1-01-024

ENGINE STOP SWITCH

In case the engine does not stop even if the key switch is turned OFF due to failure of the machine, move engine stop switch (2) located at the front-left side of the seat stand downward to stop the engine. After operating switch (2), be sure to return switch (2) back to the upward position.

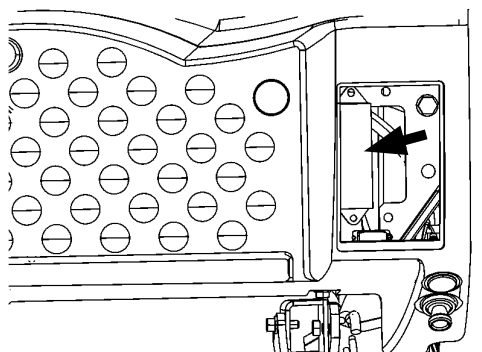


M1U1-01-029

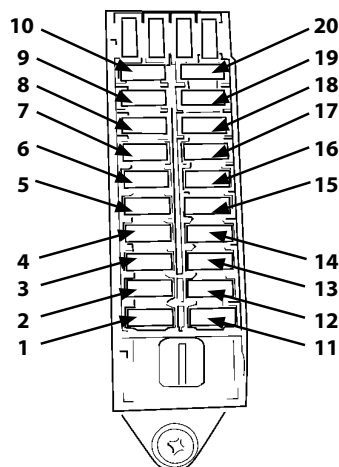
OPERATOR'S STATION

FUSE BOX

10- CONTROLLER 5A	20- OPTION3 5A
9- BACKUP 10A	19- SW. BOX 5A
8- ECM 30A	18- POWER ON 5A
7- LUBRICATOR 10A	17- AIRCON. 5A
6- OPTION2 10A	16- GLOW RELAY 5A
5- OPTION1 5A	15- AUXILIARY 10A
4- SOLENOID 10A	14- FUEL PUMP 5A
3- HEATER 20A	13- LIGHTER 10A
2- WIPER 10A	12- ROOM LAMP/RADIO 5A
1- LAMP 20A	11- HORN 10A



M1U1-01-026



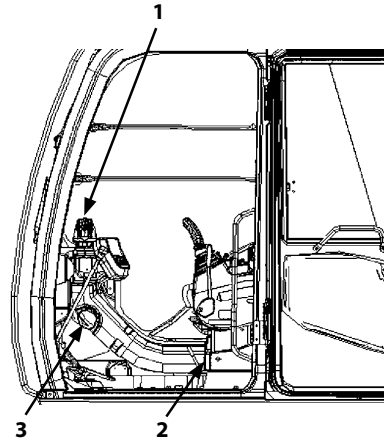
M1GR-01-003

OPERATOR'S STATION

AUTO AIR CONDITIONER

Distinctive Feature

- **Temperature Control:**
Automatically controls the cab temperature to maintain the temperature set by the temperature control switch regardless of outside air temperature and insolation.
- **Max. Cooling and Heating:**
Maximum cooling or heating can be obtained by moving the temperature control switch to the full right or left respectively.
- **Preheating:**
During preheating the cab in winter with the foot vent selected, the air volume is reduced to Low until the coolant temperature rises to prevent cool air from entering the cab.



M1U1-01-025

1- Front Vent

2- Foot Vent

3- Defroster Vent

4- Rear Vent

5- Control Panel

6- Blower Switch

7- Liquid-Crystal Display (LCD)

8- Air Conditioner Switch

9- AUTO Switch

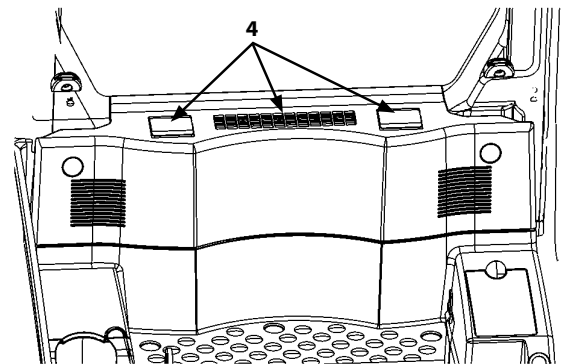
10- OFF Switch

11- Temperature Control Switch

12- Circulation Mode Switch

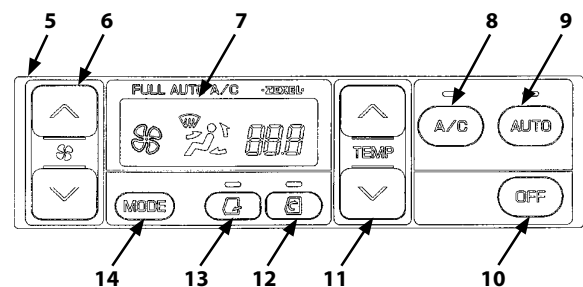
13- Fresh Air Mode Switch

14- Mode Switch



M1U1-01-027

NOTE: Except for foot vent (2), all vents are provided with louvers to adjust the air flow direction. In addition, the louvers on front vent (1) and defroster vent (3) can be completely opened and closed by hand.



M178-01-073

OPERATOR'S STATION

Control Panel Designation and Function

- Mode Switch (14):

Selects the air vent. The selected air vent is indicated on LCD (7).

-  Air flows out of front vent and the defroster vents.
-  Air flows out of the front and rear vents and the defroster vents.
-  Air flows out of the front and foot vents and the defroster vents.
-  Air flows out of the foot vent.

Each time mode switch (14) is pressed, the vent location can be changed in four stages as illustrated below.



- When AUTO switch (9) is selected the AUTO, the air vent location is automatically selected.

- Temperature Control Switch (11):

Sets temperature in the cab from 18.0 to 32.0 °C or 63 to 91 °F by 0.5 °C or 1 °F step. The set-temperature is displayed on LCD (7).

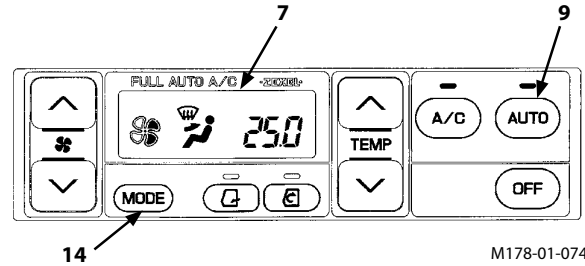
- FC (Full-Cool)

Push the  button after setting air temperature to 18 °C or 63 °F. Air flow temperature is set to the lowest and the "FC" symbol is displayed on LCD (7).

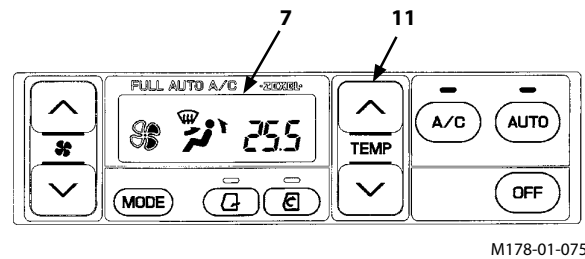
- FH (Full-Heat)

Push the  button after setting air temperature to 32 °C or 91 °F. Air flow temperature is set to the highest and the "FH" symbol is displayed on LCD (7).

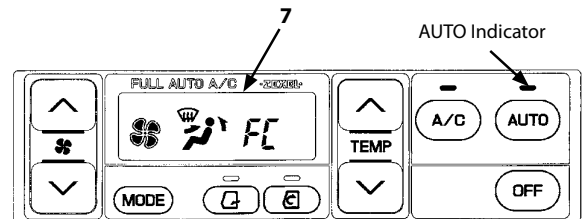
- When the AUTO indicator is ON, air temperature at the vents is automatically set together with the blower speed and vent locations.
- When the AUTO indicator is OFF, only air temperature at the vents is automatically set.
- When the "FC" symbol is displayed on LCD (7), air temperature at the vent, air vent (front and rear vents) locations, recirculation air suction port, and blower speed are maintained at the lowest cooling conditions. However, in case the circulation indicator is ON before the "FC" symbol is displayed, circulation operation is maintained.



Display when AUTO switch (9) is pressed:



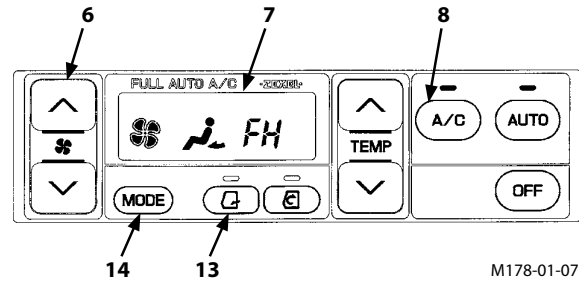
Display when the  button is pressed after displaying 25.0 °C (77 °F):



Display when the LCD displays "FC" symbol:

OPERATOR'S STATION

- When the "FH" symbol is displayed on LCD (7), air flow-in temperature at the vent, air vent (front and rear vents) locations, fresh air suction port, and blower speed are maintained at the highest heating conditions. However, in case the circulation indicator is ON before the "FH" symbol is displayed, circulation operation is maintained.



M178-01-077

Selecting Display Between Celsius And Fahrenheit

- While depressing both A/C (8) and mode (14) switches, turn the key switch "ON".
- LCD (7) will display "Sd" for approx. 5 seconds.
- After display "Sd" is deleted, all LED (7) will come ON.
- After all LED (7) come ON, repeat to press blower switch (6) four times.
- Sequentially, press A/C (8) and blower (6) switches at the same time.
- Then, the selection mode between celsius and fahrenheit starts.

Each time fresh air mode switch (13) is pressed, the display is shifted between celsius and fahrenheit.

When celsius is displayed, LED (7) displays "C."

When fahrenheit is displayed, LED (7) displays "F."

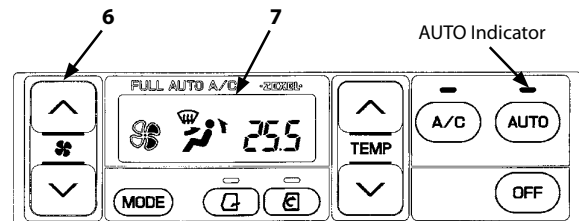
Select either one to be preferred.

- After selection is complete, end by turning the key switch "OFF".

LED (7) will display in the selected mode when the machine is operated next time.

	Display on LCD
Celsius (°C)	18.0 to 32.0
Fahrenheit (°F)	63 to 91

- Blower Switch (6):
 - When the AUTO indicator is ON, the blower speed is automatically controlled.
 - When the AUTO indicator is OFF, the blower speed is controlled in 4 steps. When the button is pressed with the blower OFF, the blower starts running in the HI mode. Then, each time the button is pressed, the blower speed is reduced by one step. LCD (7) indicates the blower fan speed. When the button is pressed with the blower OFF, the blower starts running in the LO mode. Then, each time the button is pressed, the blower speed is increased by one step. LCD (7) indicates the corresponding blower fan speed.



M178-01-075

-
- Diagram of the M178-01-078 remote control. The display shows 'FULL AUTO A/C', a fan icon, a person icon, and '25.0'. Buttons are labeled with numbers: 13 points to the fan speed up/down buttons, 12 points to the mode buttons, and 9 points to the A/C and AUTO buttons. The temperature button is labeled 'TEMP'.

Diagram of the remote control interface showing the A/C Indicator and various buttons. The interface includes a display screen showing 'FULL AUTO A/C', a fan icon, a person icon, and the temperature '25.5'. The buttons are labeled: 'MODE', 'TEMP', 'A/C', 'AUTO', and 'OFF'. The A/C Indicator is located above the 'A/C' button. The diagram is labeled with '6', '8', and '10' pointing to specific buttons.

9

AUTO Indicator

A/C

AUTO

OFF

TEMP

MODE

25.5

FULL AUTO A/C

Diagram of the remote control showing the AUTO Indicator button. The remote has a central display showing 'FULL AUTO A/C', a fan icon, a person icon, and the temperature '25.5'. Below the display are buttons for 'MODE', a fan speed icon, and a timer icon. To the left of the display are four buttons: an up arrow, a fan icon, a down arrow, and a 'TEMP' button. To the right of the display are three buttons: an up arrow, a 'TEMP' button, and a down arrow. At the bottom right are three buttons: 'A/C', 'AUTO', and 'OFF'. An arrow labeled '9' points to the 'AUTO' button, which is also labeled 'AUTO Indicator'.

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OPERATOR'S STATION

CAB HEATER OPERATION

1. Operate AUTO switch (9).

According to signals sent from various sensors, the air conditioner amplifier automatically selects the air flow-in vents, air suction ports, and air flow-in temperature at the vent, and controls the blower speed.

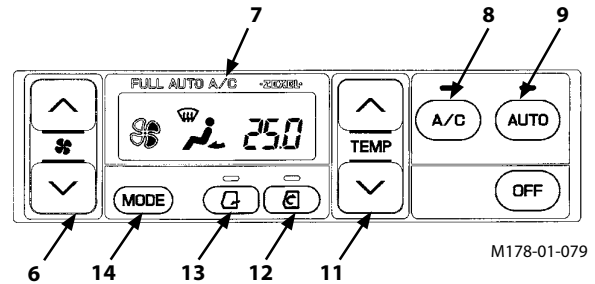
2. Operate Temperature Control Switch (11).

Set temperature control switch (11) so that "25.0" is indicated on LCD (7). Control air temperature inside cab using this switch as necessary.

3. As Necessary:

- Operate Mode switch (14) to manually select the air vent.
- Operate blower switch (6) to manually control the blower speed.
- Operate fresh air mode switch (13) to maintain the air vent in the fresh air circulation mode.
- Operate circulation mode switch (12) to maintain the air suction port in the circulation mode.

When the A/C indicator is ON, the air conditioner functions as a dehumidifier. Press A/C switch (8) to turn OFF the dehumidifier function.



COOLING OPERATION

1. Press AUTO Switch (9)

The AUTO and the A/C indicators come ON. Then, the air temperature at the vent, blower speed, vent locations, and air suction ports are automatically controlled by the air conditioner amplifier according to signals sent from various sensors.

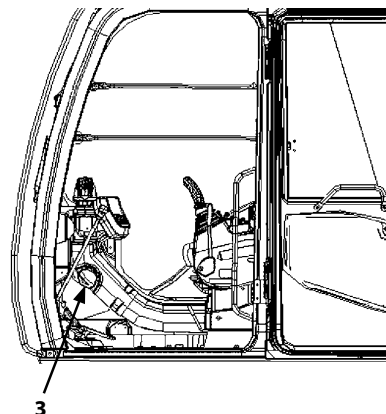
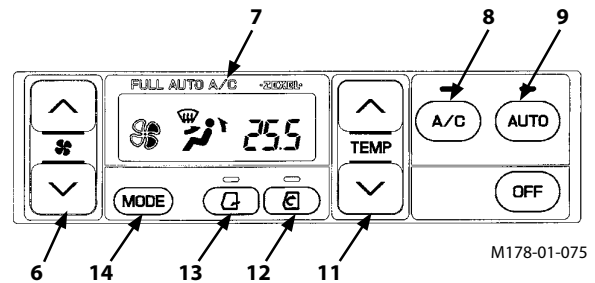
2. Operate Temperature Control Switch (11).

Set temperature control switch (11) so that "25.0" is indicated on LCD (7). Control air temperature inside the cab using this switch (11) as necessary.

3. As Necessary:

- Operate Mode switch (14) to manually select the air vent.
- Operate blower switch (6) to manually control the blower speed.
- Operate fresh air mode switch (13) to maintain the air vent in the fresh air circulation mode.
- Operate circulation mode switch (12) to maintain the air suction port in the circulation mode.

In case the front window (lower) becomes clouded, manually close defroster vent (3).



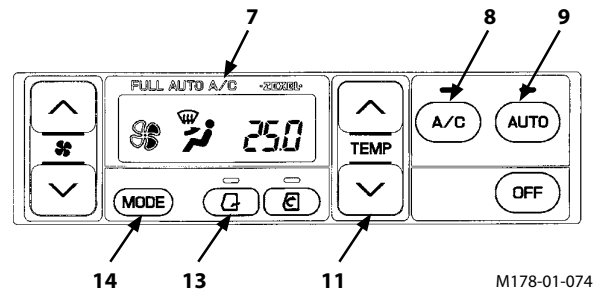
OPERATOR'S STATION

DEFROSTER OPERATION

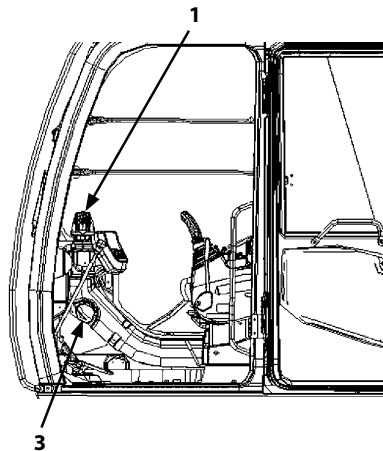
1. Press AUTO Switch (9). Temperature-controlled air blows out. During cold weather season when starting the engine, the engine coolant temperature and air temperature in the cab are low. Then, cool air is restricted not to flow in the cab to the minimum (LO) by the Heater Start-Operation Control System.
2. Set temperature control switch (11) so that "25.0" is indicated on LCD (7). Set fresh air vent switch (13) in the fresh air circulation mode.
3. Select the front vents  or the front and rear vents  using MODE switch (14).

Control air flow direction by adjusting the louvers at front vent (1) and defroster vent (3).

Control air temperature in the cab by operating temperature control switch (11). If the windowpanes become clouded in rainy season or when dehumidifying, turn the indicator of A/C switch (8) ON.



M178-01-074



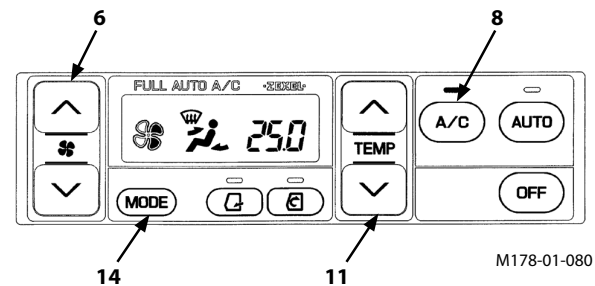
M1U1-01-025

Cool Head / Warm Feet Operation

Cool and warm air is simultaneously supplied to the head vents and feet vents respectively.

1. Press blower switch (6) to adjust the blower speed.
2. Press MODE switch (14) to display the front and rear vent  mark on the liquid crystal panel. Then, turn A/C switch (8) ON (indicator lights).

Control air temperature inside the cab by operating temperature control switch (11).



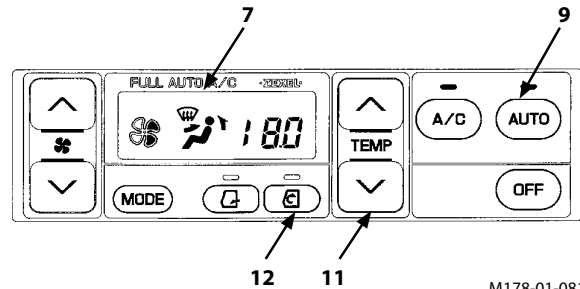
M178-01-080

OPERATOR'S STATION

TIPS FOR OPTIMAL AIR CONDITIONER USAGE

For Rapid Cooling

Temperature in the cab may rise over 80 °C (176 °F) when the machine is exposed to sun light in the summer. In this case, ventilate air in the cab first by opening the windows for rapid cooling. After starting the engine, press AUTO switch (9). Set temperature to "18.0" on LCD (7) using temperature control switch (11). Turn circulation mode switch (12) ON.



M178-01-081

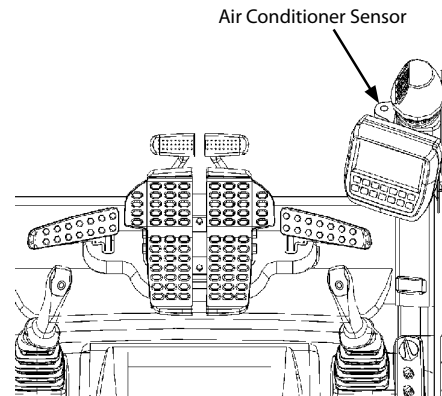
When Windows Become Clouded

If the insides of the windows become clouded during rainy weather or on humid days, operate the air conditioner to aid in keeping the windows clear. When the atmosphere is very damp, and if the air conditioner has run excessively, the outside of the windows may become clouded. If this happens, turn off the air conditioner to adjust the temperature in the cab.

Off-Season Air Conditioner Maintenance

To protect each part of the compressor from a lack of lubricant, operate the air conditioner at least once a month for several minutes with the engine running at a slow speed during off-season. When the cab temperature is lower than 15 °C (59 °F), the air conditioner may not operate. If this happens, warm the cab using the heater first.

- IMPORTANT:**
- Do not suddenly increase the engine speed.
 - Refer to the item "Check Air Conditioner Filter" in the Maintenance Section for maintenance of the air conditioner filters.
 - Always clean the auto air conditioner sensor for effective air conditioner performance. Avoid placing any obstructions around the sensor.



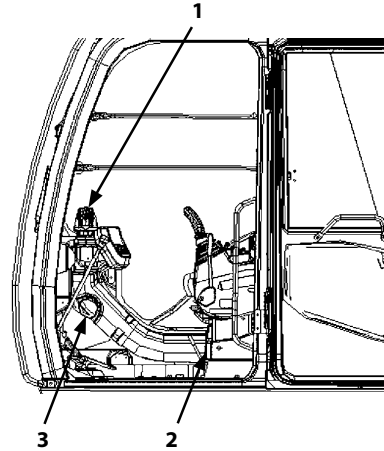
M1J1-01-028

OPERATOR'S STATION

CAB HEATER (Optional)

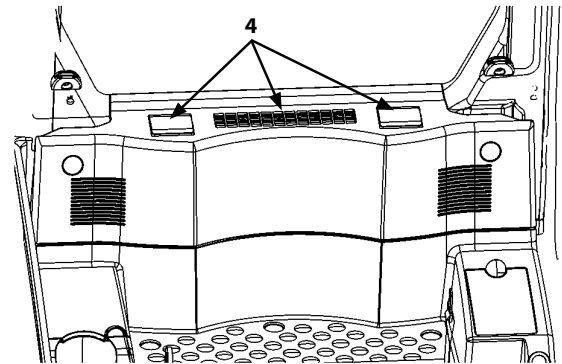
Part Name and Location

- 1- Front Vent
- 2- Foot Vent
- 3- Defroster Vent
- 4- Rear Vents
- 5- Control Panel
- 6- Mode Switch
- 7- Fresh Air Vent Switch
- 8- Temperature Control Switch
- 9- Blower Switch
- 10- OFF Switch



M1U1-01-025

NOTE: Air flow direction can be changed by controlling the louvers at all air vents except for foot vent (2). The louvers at front (1) and defroster (3) vents can be manually opened or closed.



M1U1-01-027

Control Panel Designation and Function

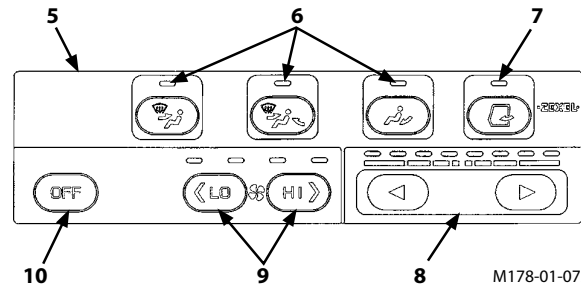
- Mode Switch (6)

Selects the air vent.

-  Air flows out of front vent (1) and defroster vent (3).
-  Air flows out of front (1), rear (4) vents and the defroster vent (3).
-  Air flows out of foot vent (2).

- Temperature Control Switch (8)

One of 8 indicators is lit. The air flow temperature at the vent is lower or higher as the indicator closer to the left or right end is lit respectively. Both warmed and cooled air flow out of the same air vent.

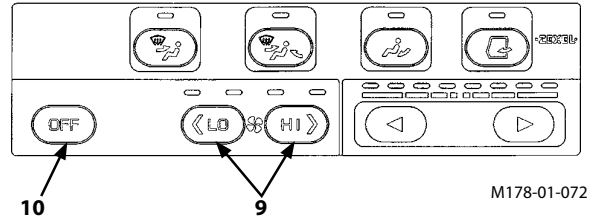


M178-01-072

OPERATOR'S STATION

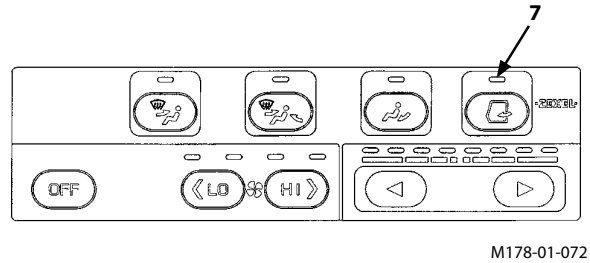
- Blower Switch (9)

The blower speed is controlled from Lo to Hi in 4 steps. When the (HI) button is pressed first, the blower starts running in the HI mode. Then, each time the (LO) button is pressed, the blower speed is reduced by one step. The blower speed indicator corresponding to the blower speed is lit. When the (LO) button is pressed first, the blower starts running in the LO mode. Then, each time the (HI) button is pressed, the blower speed is increased by one step. Press blower OFF switch (10) to stop the blower operation.



- Fresh Air Vent Switch (7)

Changes the air circulation mode. When fresh air vent switch (7) is pressed, the indicator comes ON and the fresh air circulation mode is selected, allowing fresh air to flow in. When fresh air vent switch (7) is pressed again, the indicator goes OFF and the circulation mode is selected.

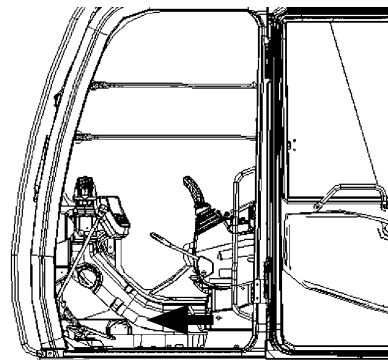
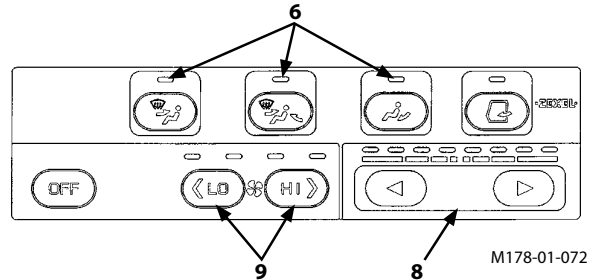


CAB HEATER OPERATION

When any mode switches (6) are pressed ((fan), (fan), (fan)), warm air will flow out from the corresponding vent. However, the foot vent mode (fan) is commonly used for cab heating.

Press foot mode (fan) switch (6). Set temperature control switch (8) to the right end position.

Press blower switch (9) to blow warm air out of the foot vent. Adjust the air temperature in the cab by operating temperature control switch (8) and blower switch (9). When required to quickly increase air temperature in the cab, select the air recirculation mode. However, if air recirculation mode is used for a long time, the windowpanes will become clouded due to a difference in temperature between outside and inside the cab. Occasionally ventilate the cab. (When the fresh air circulation mode is selected, the windowpanes will be prevented from becoming clouded.)



OPERATOR'S STATION

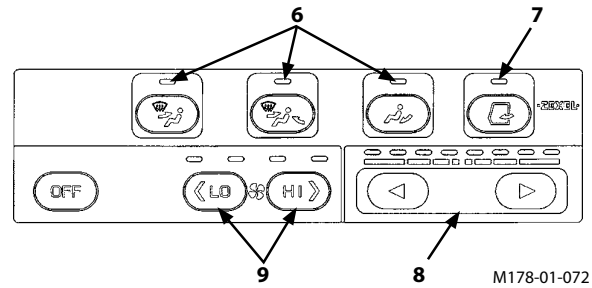
DEFROSTER OPERATION

Press mode switch (6) (either the front (🌀) or front/rear vent mode (🌀➔) switch). Set temperature control switch (8) to the heat operation position. Press fresh air vent switch (7).

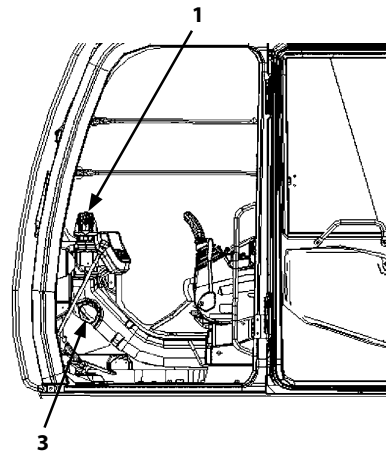
Press blower switch (9). Warm air will blow out from the front or front/ rear vents.

Adjust air flow direction from front vent (1) and defroster vent (3) by controlling the louver direction.

Use temperature control switch (8) and blower switch (9) to adjust air temperature in the cab.



M178-01-072



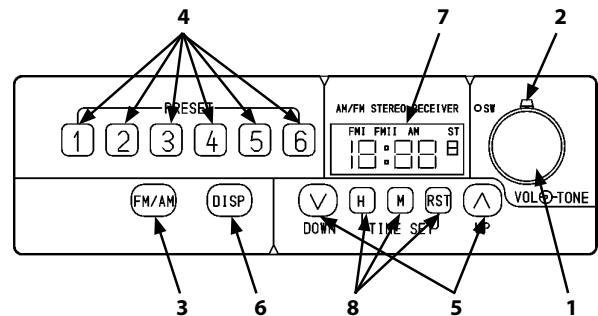
M1U1-01-025

OPERATOR'S STATION

AM/FM RADIO OPERATION

Controls on the Radio

- 1- Power Switch/Volume Control Knob
- 2- Tone Adjustment Ring
- 3- AM/FM Switch
- 4- Station Presets
- 5- Tuning Switches
- 6- Display Mode Change Switch
- 7- Digital Display
- 8- Time Set Switches



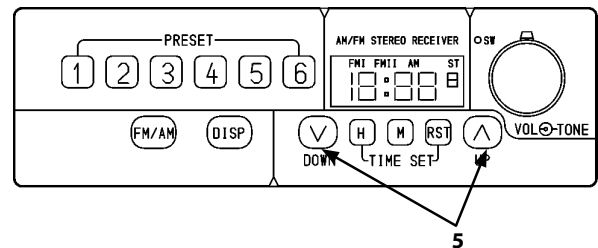
M1G6-01-026

Tuning Procedure

- Manual Tuning Procedure
Repeatedly tap one of tuning switches (5) until the desired station is reached.
Each time the tuning switch is pressed, the frequency changes at an interval.

Tap the tuning switch [UP] (^) to increase the frequency.

Tap the tuning switch [DOWN] (v) to decrease the frequency.



M1G6-01-026

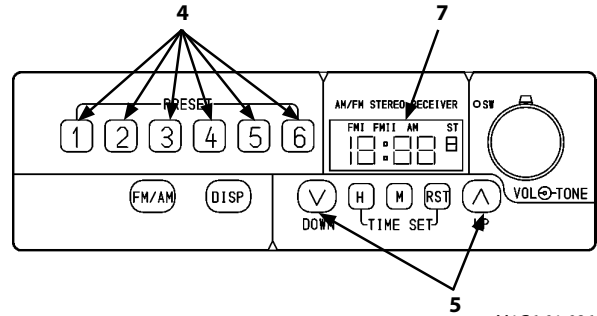
- Automatic Search Function
Press and hold one tuning switch (5) for more than half a second, then release. The frequency display will move up to the next higher frequency station.
To go up to the next higher frequency station, press and hold the tuning switch [UP] (^).
To go down to the next lower frequency station, press and hold the tuning switch [DOWN] (v).

In order to deactivate the automatic search function while it is operating (while searching the next available frequency station), simply tap tuning switch (5) again.
If the receiving radio waves are weak, i. e. such as when the machine is located between high rising buildings, etc., use the manual tuning procedure to select the desired station.

OPERATOR'S STATION

Station Presetting Procedure

1. Select the desired station using tuning switches (5). (Refer to the "Tuning Procedure" section.)
2. Press and hold one station preset (4) for more than 1 second until an electronic tone is heard. Now, the selected station is preset for selected station preset (4). The frequency of the preset station will be indicated on digital display (7).



Once the presetting is complete for a station preset (4), the radio will be tuned to the preset station when station preset (4) is pressed (for less than 1 second).

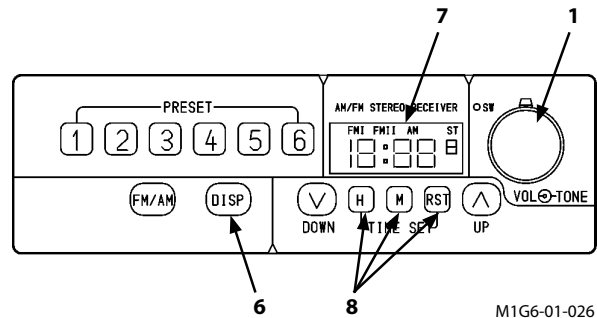
DIGITAL CLOCK SETTING PROCEDURE

NOTE: In order to set the clock, digital display (7) must be in the time display mode.

1. Press display mode button (6) to indicate the hour display on digital display (7).
2. Press and hold time set button (RST) (8) for longer than 1 second. The hour display will start flashing and the time set mode will be selected.
3. Press time set button (H or M) (8) to set the clock. Each time time set button (H or M) (8) is pressed, the time display will increase by one. If time set button (H or M) (8) is pressed and held, the time display will change continuously.
- When setting the hour, press time set button (H) (8).
- When setting the minute, press time set button (M) (8).

The time is displayed in 12 hour standard.
If either of the switches (H) or (M) is pressed and held, the hour or minute display will change continuously until the switch is released.

4. When the hour display is "12," if time set button (H) (8) is pressed, the hour display will be reset to "1." When the minute display is "59," if time set button (M) (8) is pressed, the minute display will be reset to "00." However, the hour display remains unchanged in this case.
5. After the clock setting is complete, press and hold time set button (RST) (8) again for longer than 1 second, or turn power switch (1) OFF to end the clock time setting procedure. Digital display (7) stops flashing and changes to stay ON.



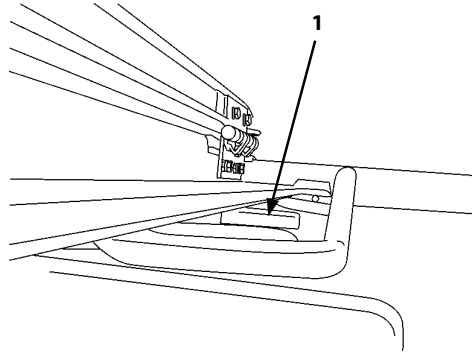
OPERATOR'S STATION

CAB DOOR RELEASE LEVER



CAUTION:

- Open the cab door all the way until it securely locks in the latch on the side of the cab.
- Do not keep the cab window open when the machine is parked on a slope, or while the wind is blowing hard. The cab window may close accidentally, possibly resulting in personal injury.
- When opening or closing the cab window, take extra care not to catch fingers between the base machine and the cab window.



M1J1-07-051

To unlock the door from this position, push down on lever (1).

OPENING UPPER FRONT WINDOW



WARNING: Open or close the upper-front cab window only after pulling up the pilot control shut-off lever to the LOCK position. Failure to do so may allow the machine to move unexpectedly if a control lever is touched with a part of the body by mistake, possibly resulting in personal injury or death.

1. Press lock release lever (2) at the upper center to release the upper front window lock.



NOTE: Use caution when releasing the lock. The upper section of the upper front window will move approx. 10 cm inward.

2. Holding the upper and lower handles (one each) on the upper front window, pull the upper front window up and back until it securely catches into auto locks (4).

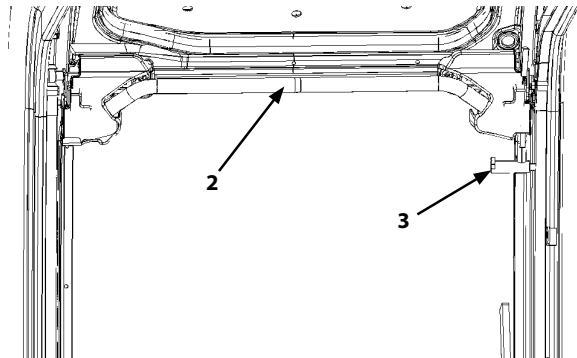


CAUTION: Always secure lock pin (3) in the lock position after the upper front window is opened.

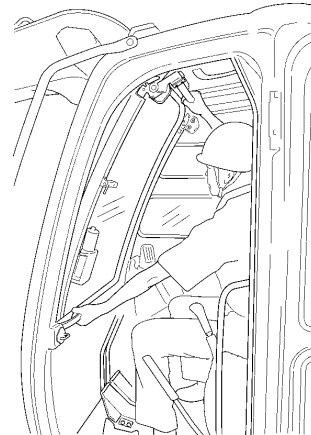
3. After confirming that the window securely catches into auto locks (4), slide lock pin (3) into the left bracket boss hole to lock the window in position.



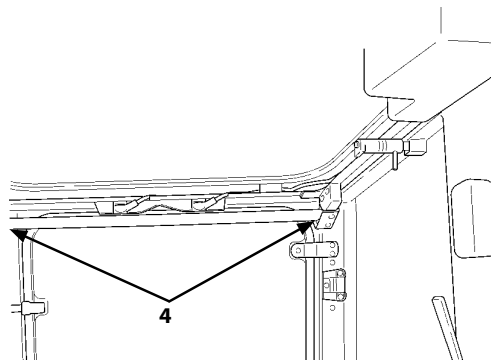
NOTE: When the upper front window is opened, the wiper and washer are inoperable.



M1U1-01-028



M1CC-01-020



M1CC-01-031

OPERATOR'S STATION

CLOSING UPPER FRONT WINDOW

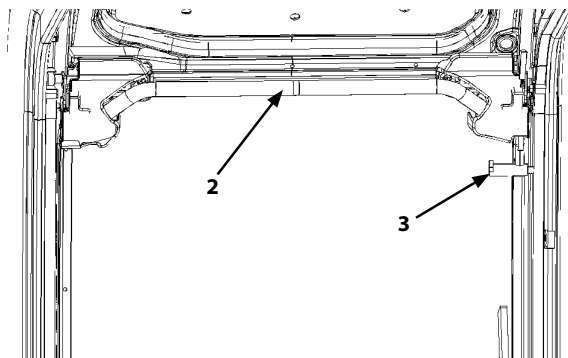


CAUTION: Avoid possible injury while closing window.
Upper front window comes down very forcefully.
Close window only when sitting in the operator's seat.
Guide window down slowly.

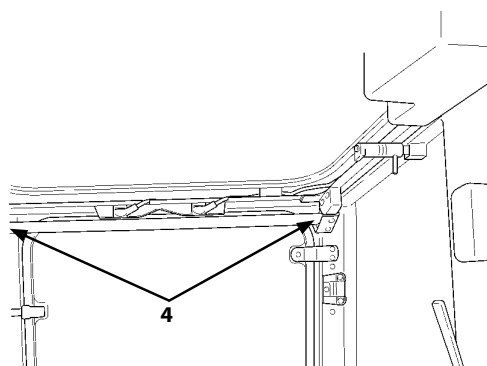
1. Pull out lock pin (3) to unlock window.
2. Slightly move the window forward while pushing lock release lever (2) to release auto locks (4).
3. Pull window down slowly until it securely catches into auto locks (4).



NOTE: *The wiper and washer will not operate until the upper front window is completely closed.*



M1U1-01-028



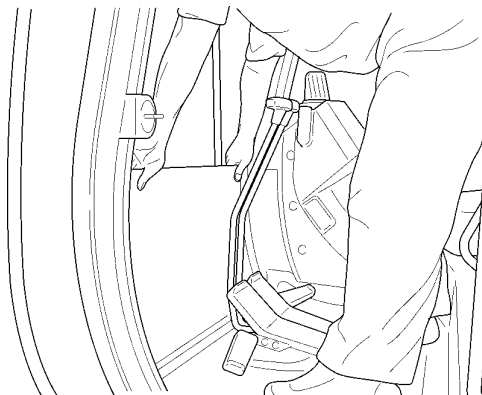
M1CC-01-031

OPERATOR'S STATION

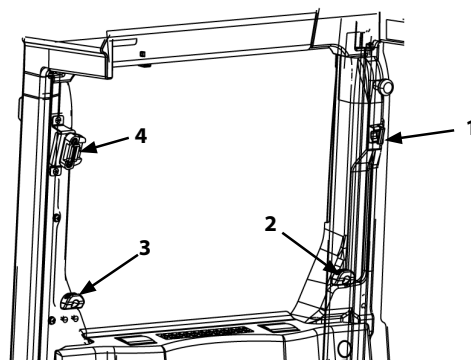
REMOVING AND STORING LOWER FRONT WINDOW

CAUTION: Take care not to pinch your fingers when handling the lower front window.

1. Open the upper front window beforehand when removing the lower front window.
2. While pulling the lower front window inward, raise it to remove.
3. Store the removed windowpane in the storing position. After inserting the windowpane into rubbers (2 and 3), slide it sideways securely into rubber (1). Then, push fastener (4) to lock.



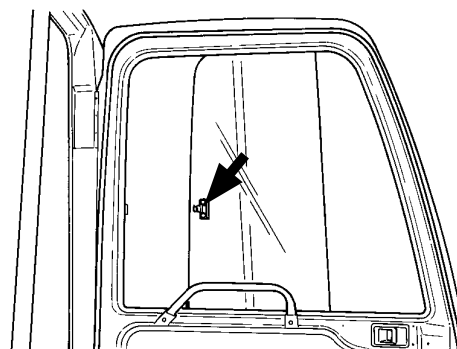
M1CC-01-022



M1U1-01-056

OPENING SIDE WINDOWS

Opening Cab Door Window
Slide rear pane to the front.



Cab Door Window

M178-01-061

OPERATOR'S STATION

OPENING/CLOSING OVERHEAD WINDOW

(Std. Model)

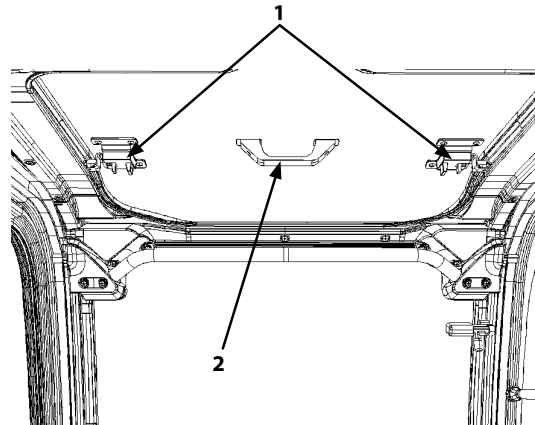
Opening

1. Move locks (1) toward center of window.
2. Hold handle (2) and lift window until it rises upright. With the window positioned upright, it will be secured in position by dampers (3).

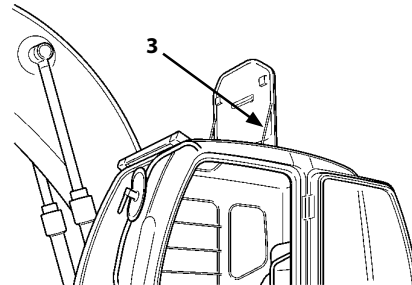
Closing

1. Hold handle (2) and pull window down until "click" sound is heard from locks (1).

Note that the overhead window can be used as an emergency exit.



M1U4-01-011



M1U1-01-054

OPENING/CLOSING OVERHEAD WINDOW

(Clear Hatch: If Equipped)

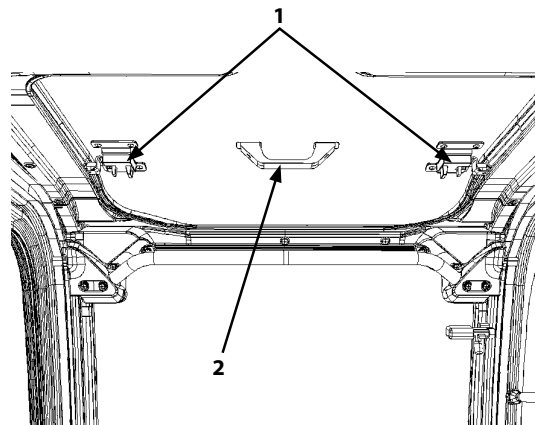
Opening

1. Move locks (1) toward center of window.
2. Hold handle (2) and lift window until it rises upright. With the window positioned upright, it will be secured in position by dampers (3).

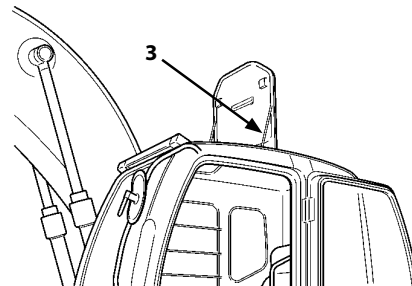
Closing

1. Hold handle (2) and pull window down until "click" sound is heard from locks (1).

Note that the overhead window can be used as an emergency exit.



M1U4-01-011



M1U1-01-054

IMPORTANT:

- Replace the clear hatch with a new one every 5 years even if undamaged. In case it was remarkably damaged or has received severe shock loads, replace it even if it has been not in use for 5 years.
- When cleaning the clear hatch, use a neutral detergent. If acidic or alkaline detergent is used, the clear hatch may become discolored or crack.
- Keep organic solvent away from the clear hatch. Failure to do so may cause the clear hatch to become discolored or crack.

OPERATOR'S STATION

EMERGENCY EXIT

Escape from the cab in emergency in the following methods:

CAUTION: The danger of downfall is always present when escaping from the cab in emergency, possibly resulting in serious personal injury. Escape from the cab as safely as possible, depending on the posture of machine and the outside situation.

1. Open the cab door. Escape through the door.
2. If the cab door should be difficult to open or use, open the upper front window. Escape through the window.

NOTE: • Emergency exit decals (2) are affixed to the front and rear windows.
• See page "OPENING UPPER FRONT WINDOW" for the opening method of the upper front window.

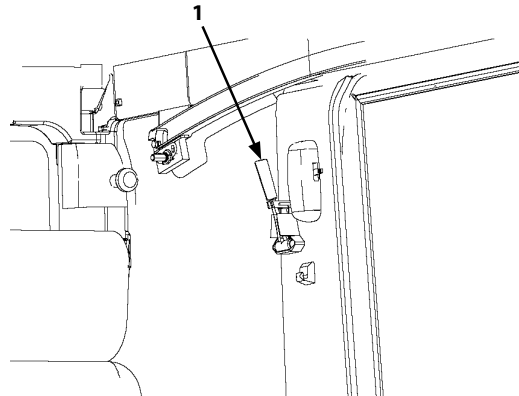
CAUTION:

- If decal (3) is affixed to the front window glass, the glass can be broken. However if decal (3) is not affixed to the front window glass, the glass cannot be broken.
- Take care not to be injured with pieces of broken glass.

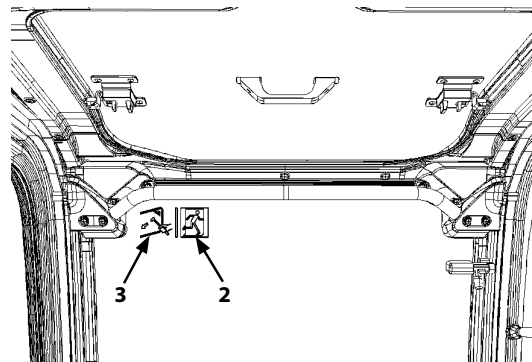
3. If upper front window should be difficult to open, check decal (3) affixed to the window glass.

If decal (3) is affixed to the front window glass, break the front window glass using emergency evacuation tool (1) installed the cab left side. Then escape through the broken window.

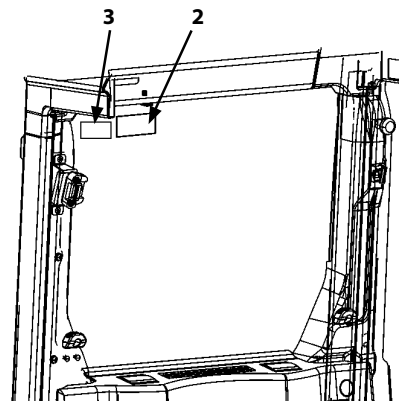
4. If decal (3) is not affixed to the front window glass, or if the front window is not available for escaping, break the rear window glass using emergency evacuation tool (1). Then escape through the broken window.
5. If neither of front and rear windows are available for emergency exit, open the overhead window to escape from the cab.



M1U1-01-022



M1U4-01-012



M1U1-01-115

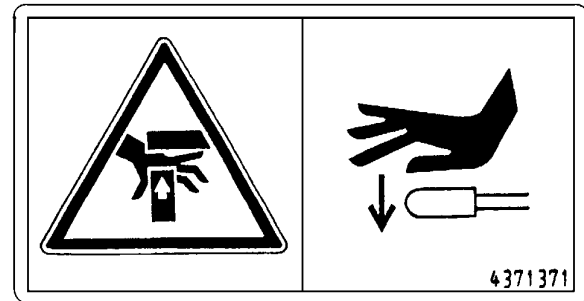
OPERATOR'S STATION

ADJUSTING THE SEAT

Seat Height and Angle Adjustment

Seat height adjustment range is 60 mm (2.4 in) with steps every 15 mm (0.6 in) (5 positions in total). Moreover, the height of the front part and the rear part of the seat are adjusted independently, thus allowing the angle of the seat to be adjusted.

CAUTION: Avoid possible injury while operating lever (1). When pushing down lever (1), do not grab it. Fingers may be pinched between lever (1) and the seat stand. Be sure to push on the upper face of lever (1).



Caution: Possibility of pinched fingers

Push down with the palm.

SS-955

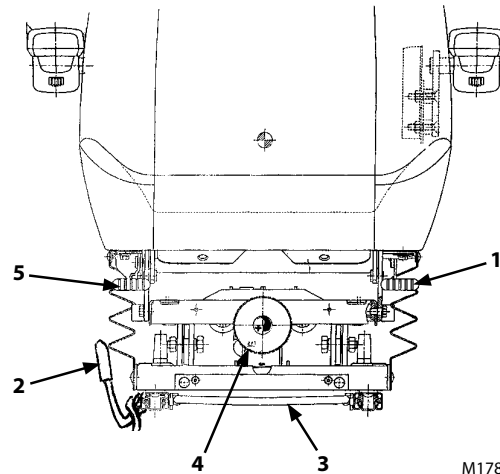
Use lever (1) to adjust the seat height and/or seat angle as follows:

- To adjust the front part of the seat:
Push down lever (1) while sitting on the seat, and apply or remove body weight to obtain the desired height. When the desired height is obtained, release lever (1).
- To adjust the rear part of the seat:
Pull up lever (1) while sitting on the seat, and apply or remove body weight to obtain the desired height. When the desired height is obtained, release lever (1).

Console and Seat Fore-aft Adjustment

Pull lever (2) to the right to adjust the seat and both right and left consoles to desired distance from the travel pedals and levers. Release lever (2) to lock seat and consoles into position.

NOTE: Seat and console fore-aft adjustment range is 120 mm (4.7 in) with steps every 20 mm (0.8 in).



M178-01-065

Seat Fore-Aft Adjustment

Pull lever (3) to unlock the seat from both consoles. With lever (3), slide the seat to the desired distance from pilot control levers. Release lever (3).

NOTE: Seat fore-aft adjustment range is 160 mm (6.3 in) with steps every 16 mm (0.6 in).

Suspension Adjustment

Turn knob (4) clockwise to increase suspension stiffness. Turn knob (4) counterclockwise to decrease suspension stiffness.

Backrest Adjustment

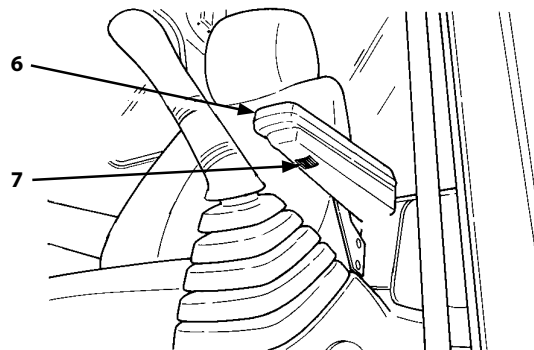
Pull up lever (5) to release backrest lock. Move backrest to the desired position and release lever (5).

OPERATOR'S STATION

Armrest Adjustment

Armrest (6) can be pulled upright by hand to get on and off the machine easily.

The angle of armrest (6) can be adjusted to the desired position by turning adjusting dial (7) located on the bottom of armrest (6).



M1G6-01-017

SEAT WITH A BUILT-IN HEATER

The heater installed inside the seat activates by operating seat heater switch (8) on the optional equipment control switch panel.

 **NOTE:** Depending on what kinds of optional equipments are installed, the switch button function may differ. Use the switch only after confirming the kinds of the installed optional equipment.



M1U1-01-011

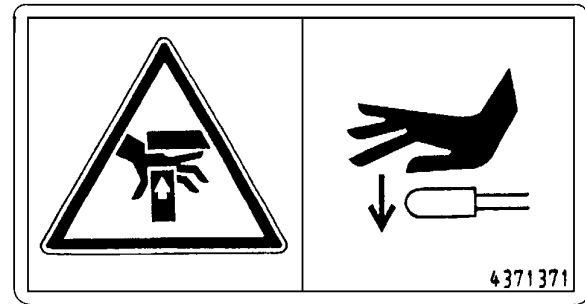
OPERATOR'S STATION

ADJUSTING THE AIR-SUSPENSION SEAT (Optional)

Seat Height and Angle Adjustment

Seat height adjustment range is 60 mm (2.4 in) with steps every 15 mm (0.6 in) (5 positions in total). Moreover, the height of the front part and the rear part of the seat are adjusted independently, thus allowing the angle of the seat to be adjusted.

CAUTION: Avoid possible injury while operating lever (1). When pushing down lever (1), do not grab it. Fingers may be pinched between lever (1) and the seat stand. Be sure to push on the upper face of lever (1).



Caution: Possibility of pinched fingers

Push down with the palm.

SS-955

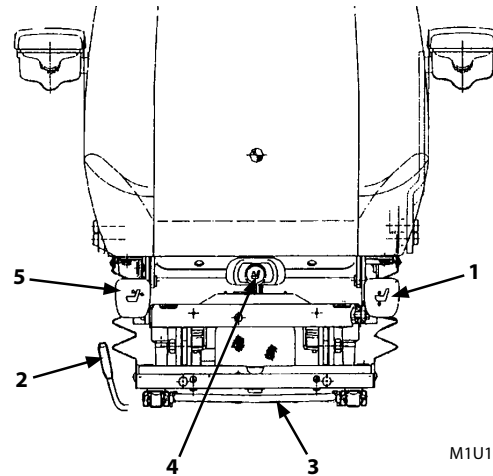
Use lever (1) to adjust the seat height and/or seat angle as follows:

- To adjust the front part of the seat:
Push down lever (1) while sitting on the seat, and apply or remove body weight to obtain the desired height. When the desired height is obtained, release lever (1).
- To adjust the rear part of the seat:
Pull up lever (1) while sitting on the seat, and apply or remove body weight to obtain the desired height. When the desired height is obtained, release lever (1).

Console and Seat Fore-aft Adjustment

Pull lever (2) to the right to adjust the seat and both right and left consoles to desired distance from the travel pedals and levers. Release lever (2) to lock seat and consoles into position.

NOTE: Seat and console fore-aft adjustment range is 120 mm (4.7 in) with steps every 20 mm (0.8 in).



M1U1-01-014

Seat Fore-Aft Adjustment

Pull lever (3) to unlock the seat from both consoles. With lever (3), slide the seat to the desired distance from pilot control levers. Release lever (3).

NOTE: Seat fore-aft adjustment range is 160 mm (6.3 in) with steps every 16 mm (0.6 in).

Suspension Adjustment

Push knob (4) to increase suspension stiffness.
Pull knob (4) to decrease suspension stiffness.

Backrest Adjustment

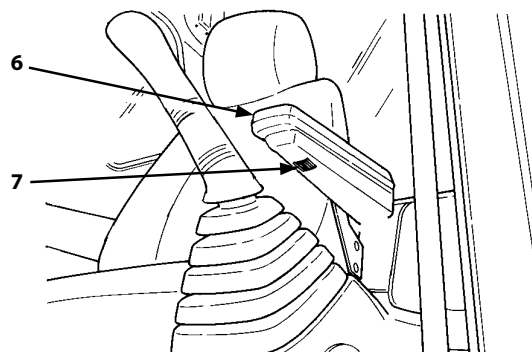
Pull up lever (5) to release backrest lock. Move backrest to the desired position and release lever (5).

OPERATOR'S STATION

Armrest Adjustment

Armrest (6) can be pulled upright by hand to get on and off the machine easily.

The angle of armrest (6) can be adjusted to the desired position by turning adjusting dial (7) located on the bottom of armrest (6).



M1G6-01-017

SEAT WITH A BUILT-IN HEATER

The heater installed inside the seat activates by operating seat heater switch (8) on the optional equipment control switch panel.

 **NOTE:** Depending on what kinds of optional equipments are installed, the switch button function may differ. Use the switch only after confirming the kinds of the installed optional equipment.



M1U1-01-011

OPERATOR'S STATION

ADJUSTING CONSOLE HEIGHT

Adjust the console height to the operator's comfort and/or work conditions. Adjusting console height can be achieved using three positions provided vertically at 20 mm (0.8 in) intervals.

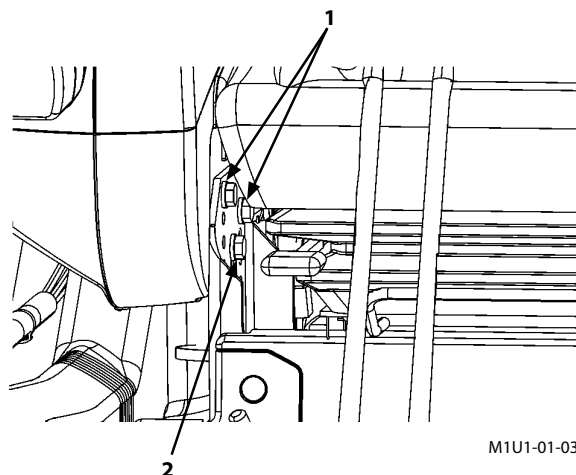


CAUTION: Before loosening the console, support the console. Otherwise, the console may suddenly drop, possibly causing personal injury.

Adjusting Procedures

1. Lower the bucket to the ground. Stop the engine.
2. Move the pilot control shut-off lever to the LOCK position.
3. Remove left and right console holding bolts (1). Loosen bolts (2) to adjust the console height.
4. After adjusting, tighten bolts (1) and (2).

Tightening Torque: 50 N·m (5 kgf·m)



M1U1-01-030

OPERATOR'S STATION

SEAT BELT



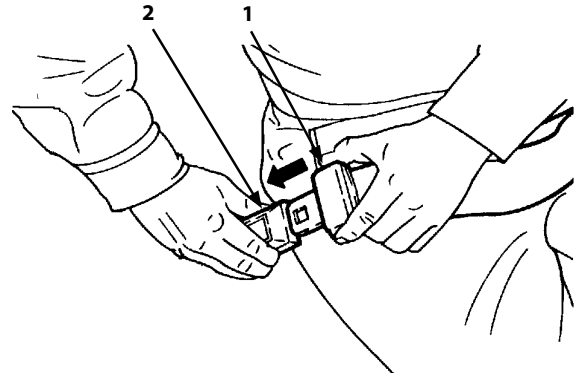
WARNING: Be sure to use seat belt (1) when operating the machine.

Before operating the machine, be sure to examine seat belt (1), buckle (2), and attaching hardware. Replace seat belt (1), buckle (2), or attaching hardware if they are damaged, or worn.

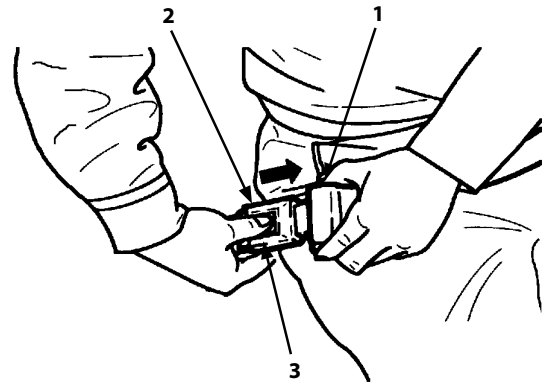
Replace seat belt (1) every three years, regardless of appearance.

Seat Belt

1. Confirm that seat belt (1) is not twisted. Securely insert the end of seat belt (1) into buckle (2). Lightly pull on the belt to confirm that buckle (2) latches securely.
2. Push button (3) on buckle (2) to unfasten seat belt (1).



M1U1-01-031



M1U1-01-032

BREAK-IN

OBSERVE ENGINE OPERATION CLOSELY

IMPORTANT: Be extra cautious during the first 50 hours, until you become thoroughly familiar with the sound and feel of your new machine.

1. Operate the machine only in economy (E) mode and limit the engine horsepower up to about 80 % of full load.
2. Avoid excess engine idling.
3. Check indicator lights and gauges frequently during operation.

EVERY 8 HOURS OR DAILY

1. Perform 8-hour or daily service. (See Maintenance guide -- 8 hours.)
2. Watch for fluid leaks.
3. Lubricate working tool pivots every 8 hours for the first 50 hours, and every 8 hours when working in mud and water.

AFTER THE FIRST 50 HOURS

1. Perform 50-hour service. (See Maintenance guide -- 50 hours.)
2. Check accessible hardware torque. (See Hardware Torque Specifications in Maintenance chapter.)

AFTER THE FIRST 100 HOURS

Perform 50-hour and 100-hour service. (See Maintenance Guide -- 50 hours and 100 hours.)

2-2

OPERATING THE ENGINE

INSPECT MACHINE DAILY BEFORE STARTING

ELECTRICAL SYSTEM

Check for worn or frayed wires and loose connections.

BOOM, BUCKET, SHEET METAL, TRACKS

Check for bent, broken or missing parts.

HARDWARE

Check for loose or missing parts.

FUEL SYSTEM

Drain water and sediments from fuel tank.

HYDRAULIC SYSTEM

Check for leaks, kinked hoses, and lines or hoses that rub against each other or other parts.

LUBRICATION

Check lubrication points on the Periodic Service Chart.

PROTECTIVE DEVICES

Check guards, fenders.

SAFETY

Walk around machine to clear all bystanders/obstacles from machine area.

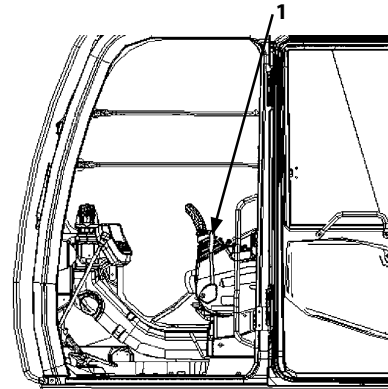


OPERATING THE ENGINE

BEFORE STARTING ENGINE

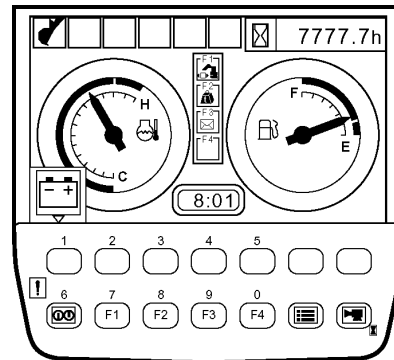
1. Confirm that pilot control shut-off lever (1) is in the LOCK position.
2. Confirm that all control levers are placed in neutral.
3. Adjust the seat to allow full pedal and control levers stroke with operator's back against the backrest. Fasten the seat belt.

 **NOTE:** Use a wet cloth when wiping dust off monitor or switch panels to prevent damaging the panel face. Rubber is used on the switch parts. Take care not to tear the rubber-made parts with sharp-edged tool, such as a screwdriver.



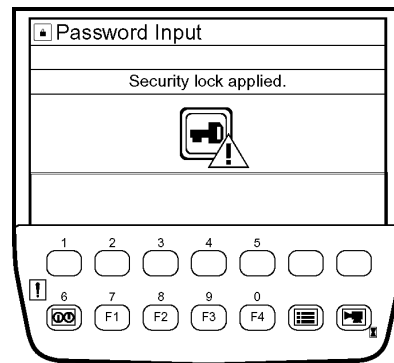
LOCK Position

M1U1-01-025



T1V1-05-01-117

 **CAUTION:** If the security lock screen is displayed when turn the key switch to ON position, return key switch to OFF. Wait for more than 30 seconds (the buzzer stopped), then try again. If the security lock screen is displayed again, contact your nearest HITA-CHI dealer.



Security Lock Screen

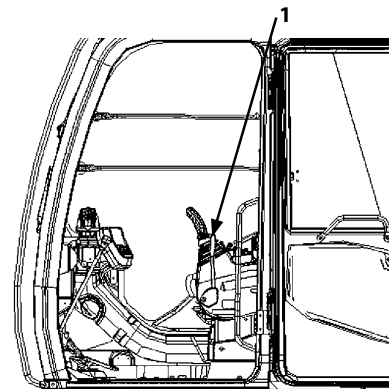
T1V5-05-01-005

OPERATING THE ENGINE

STARTING THE ENGINE IN ORDINARY TEMPERATURE

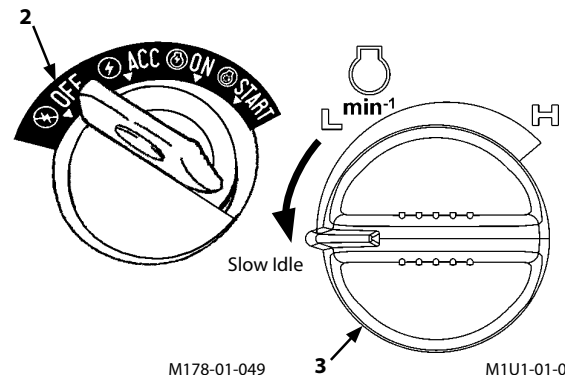
1. Pull pilot control shut-off lever (1) up to the LOCK position.
2. Turn engine control dial (3) to the slow idle position.
3. Sound horn to alert bystanders.
4. Insert key switch (2). Turn it ON position.
5. "Wait-screen (nothing is displayed)" is displayed on the monitor for 2 seconds. Regardless of pilot control shut-off lever (1) position, the engine can not be cranked during this duration.
6. When the password input screen is displayed on the monitor, input the password. Unless the TEN-key function (ignition block system) is activated, this screen is not displayed.

IMPORTANT: When required to activate the TEN-key function (ignition block system), consult your nearest Hitachi dealer.



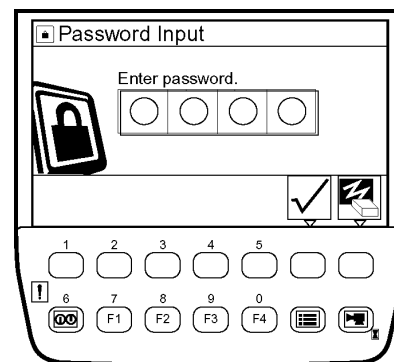
LOCK Position

M1U1-01-025



M178-01-049

M1U1-01-033



Password Input Screen

T1V5-05-01-002

OPERATING THE ENGINE

 **NOTE:** When the maintenance information display is ON with the maintenance setting, the scheduled maintenance screen for the item whose change interval has expired displays for three to ten seconds. Then, the basic screen displays.

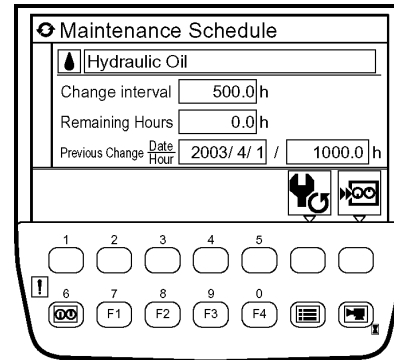
7. The basic screen will be displayed on the monitor. Check that preheat indicator (4) is OFF at this time.
8. Turn key switch (2) to start the engine.

IMPORTANT: Prevent the starter damage.

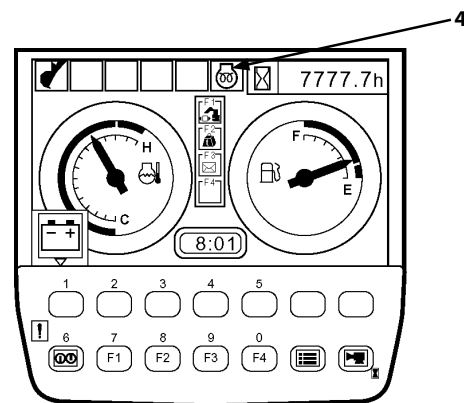
Never operate the starter motor for more than 10 seconds at a time. If the engine fails to start, return the key switch to OFF. Wait for more than 30 seconds, then try again. After a false start, do not turn the key switch until the engine stops or the starter may be damaged.

9. Release key switch (2) immediately after the engine has started. It will return to ON position.

 **NOTE:** For a while after the engine starts, the automatic heating system operates so that even though the engine control dial is set in the slow idle position, the engine speed will temporarily increase.



T1V5-05-01-170



Basic Screen

M1U1-03-001

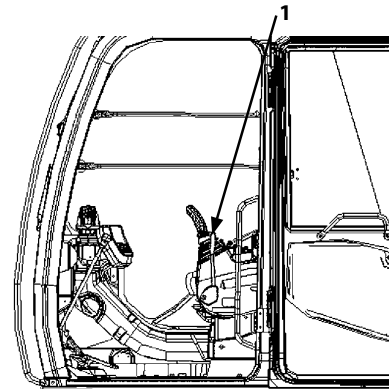
OPERATING THE ENGINE

STARTING IN COLD WEATHER

Preheating

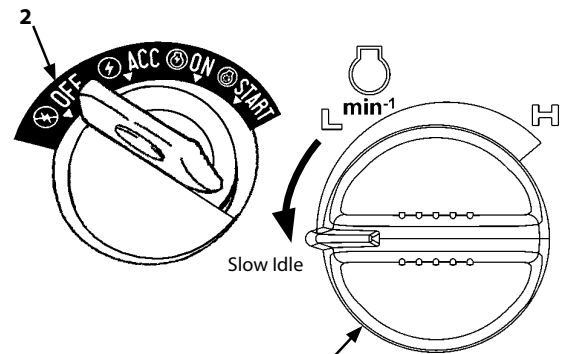
1. Pull pilot control shut-off lever (1) up to the LOCK position.
2. Turn engine control dial (3) to around the middle between the L and H positions.
3. Sound horn to alert bystanders.
4. Insert key switch (2). Turn it ON position.
5. "Wait-screen (nothing is displayed)" is displayed on the monitor for 2 seconds. Regardless of pilot control shut-off lever (1) position, the engine can not be cranked during this duration.
6. When the password input screen is displayed on the monitor, input the password. Unless the TEN-key function (ignition block system) is activated, this screen is not displayed.

IMPORTANT: When required to activate the TEN-key function (ignition block system), consult your nearest Hitachi dealer.



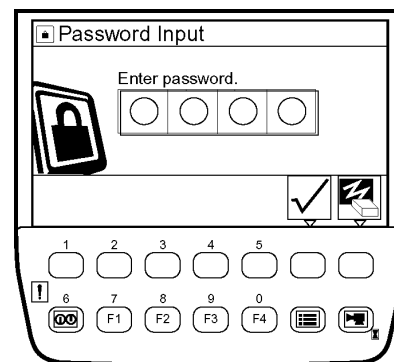
LOCK Position

M1U1-01-025



M178-01-049

M1U1-01-033



Password Input Screen

T1V5-05-01-002

OPERATING THE ENGINE

 **NOTE:** When the maintenance information display is ON with the maintenance setting, the scheduled maintenance screen for the item whose change interval has expired displays for three to ten seconds. Then, the basic screen displays.

- The basic screen will be displayed on the monitor. The machine will automatically check if preheating is required or not. When preheating is required, preheat indicator (4) is lit for automatically.

 **NOTE:** In case, preheat indicator (4) does not come ON, preheating is not required.

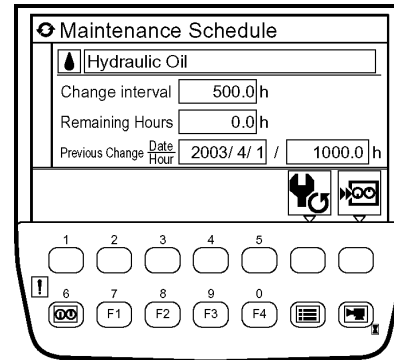
- As soon as preheat indicator (4) goes OFF, turn the key switch to the START position to rotate the starter.

IMPORTANT: Prevent the starter damage.

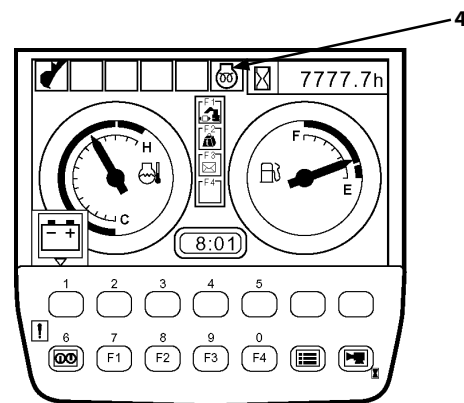
Never operate the starter motor for more than 10 seconds at a time. If the engine fails to start, return the key switch to OFF. Wait for more than 30 seconds, then try again. After a false start, do not turn the key switch until the engine stops or the starter may be damaged.

- Release the key switch immediately after the engine has started. It will return to ON position.

 **NOTE:** For a while after the engine starts, the automatic heating system operates so that the engine control dial is set in the slow idle position, the engine speed will not become slow idle immediately.



T1V5-05-01-170



Basic Screen

M1U1-03-001

OPERATING THE ENGINE

CHECK INSTRUMENTS AFTER STARTING

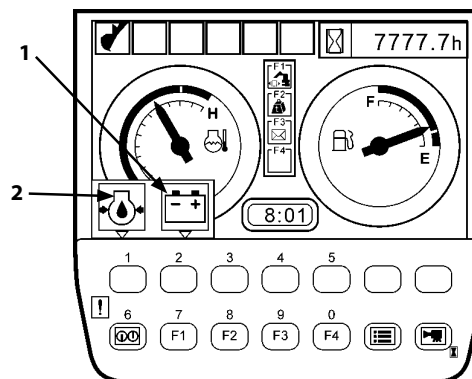
Checking instruments through monitor functions.
After starting the engine, check the following points through the monitor functions.

Check that

1. Alternator indicator (1) is off.
2. Engine oil pressure indicator (2) is off.
3. Engine noise and exhaust gas are normal.

IMPORTANT: Prevent possible damage to engine. If indicator lights do not go out after starting engine, IMMEDIATELY STOP THE ENGINE and correct the cause.

Operate machine at less-than-normal loads and speeds until the engine is at normal operating temperature.



M1U1-03-002

OPERATING THE ENGINE

USING BOOSTER BATTERIES



WARNING:

- An explosive gas is produced while batteries are in use or being charged. Keep flames or sparks away from the battery area. Charge the batteries in a well ventilated area.
Do not continue to use or charge the battery when electrolyte level is lower than specified. Explosion of the battery may result.
Park the machine on a dry, firm or concrete surface, not on steel plates, if the machine is parked on steel plates, dangerous sparks may be unexpectedly created on the machine.
Never connect a positive terminal to a negative terminal, as a dangerous short circuit will occur.
- 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.



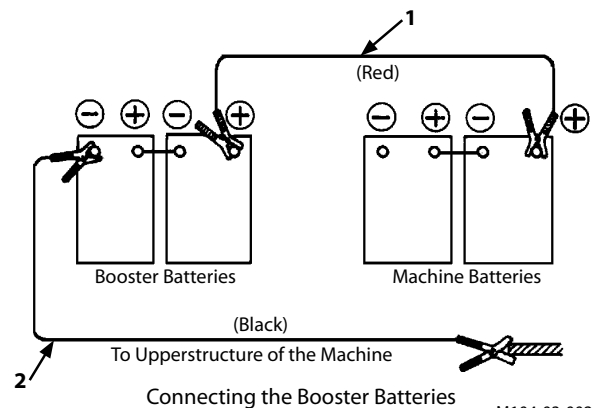
SA-032

IMPORTANT: The machine electrical system is a 24 volt negative (-) ground. Use only 24 volt booster batteries.

When the machine batteries are exhausted, start the engine using booster batteries as shown below.

Connecting the booster batteries

1. Stop the engine of the machine on which booster batteries are mounted.
2. Connect one end of red cable (1) to the positive (+) terminal of the machine batteries, and the other end to the positive (+) terminal of the booster batteries.
3. Connect one end of black cable (2) to the negative (-) terminal of the booster batteries, and then make ground connection to the frame of the machine to be started with the other end of black (-) cable (2). In the last connection to frame, be sure to connect the cable end as far away from the machine batteries as possible.
4. Start the engine of the machine on which booster batteries are mounted.
5. Start the engine of the troubling machine.
6. After the engine starts, disconnect cables (2) and (1), following the procedure below.

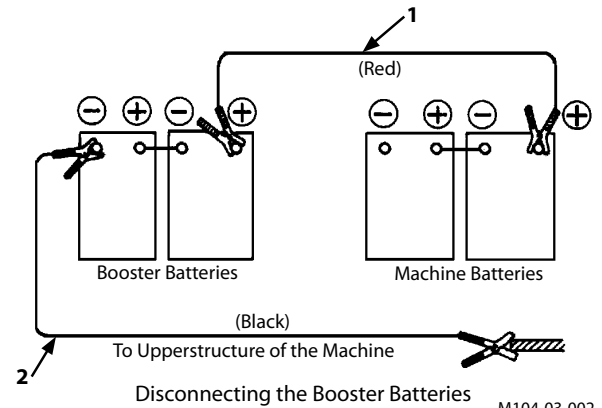


M104-03-002

OPERATING THE ENGINE

Disconnecting the booster batteries

1. Disconnect black negative (–) cable (2) from the machine frame first.
2. Disconnect the other end of black negative (–) cable (2) from the booster batteries.
3. Disconnect red positive (+) cable (1) from the booster batteries.
4. Disconnect red positive (+) cable (1) from the machine batteries.

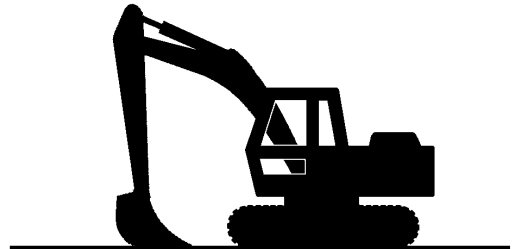


OPERATING THE ENGINE

STOPPING THE ENGINE

Engine stop procedure

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn engine control dial (1) to the slow idle position and run the engine for 5 minutes to cool the engine.



SA-390

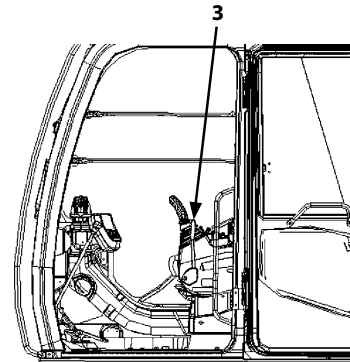
IMPORTANT: Turbocharger may be damaged if the engine is not properly shut down.

4. Turn key switch (2) OFF. Remove the key from the key switch.
5. Pull pilot control shut-off lever (3) to the LOCK position.

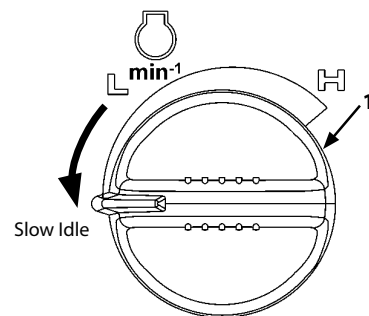
If the engine does not stop with key switch (2) turned in the OFF position

In case the engine does not stop even if key switch (2) is turned OFF due to failure of the machine, move engine stop switch (4) downward to stop the engine.

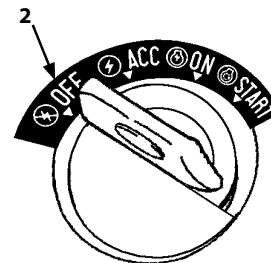
CAUTION: Do not use engine stop switch (4), except when unavoidable. Moreover, Do not operate the machine until repair is completed when stopping the engine with the failure of the machine.



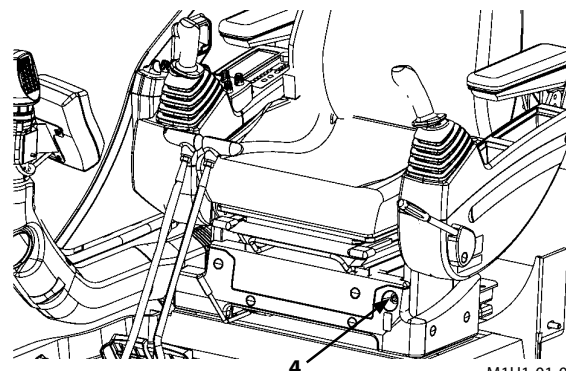
M1U1-01-025



M1U1-01-033



M178-01-049



M1U1-01-029

DRIVING THE MACHINE

DRIVE THE MACHINE CAREFULLY

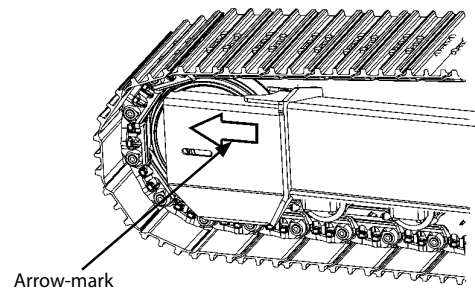
IMPORTANT: During freezing weather, park machine on a hard surface to prevent tracks from freezing to the ground. Clean debris from tracks and track frame.

If tracks are frozen to the ground, raise tracks using boom, move machine carefully to prevent damage to drive train and tracks.

Select a route that is as flat as possible. Steer machine as straight as possible making small, gradual changes in direction.

When driving over rough terrain, reduce the engine speed to lessen possibility of undercarriage damage.

 **NOTE:** An arrow-mark seal is stuck on the inside surface of the side frame to indicate the machine front direction.



M178-03-001

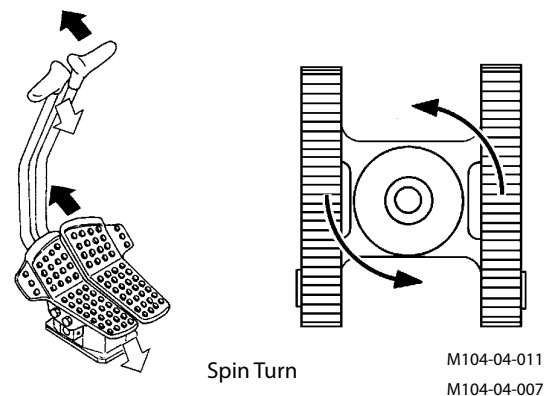
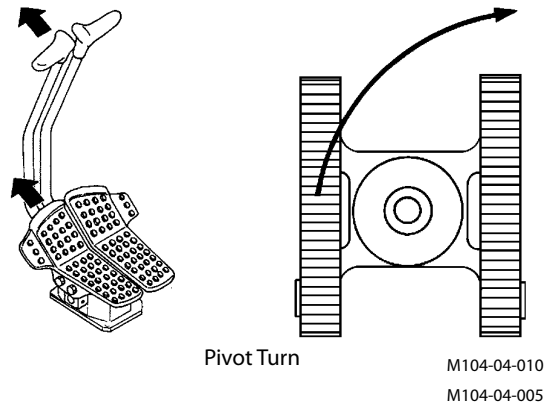
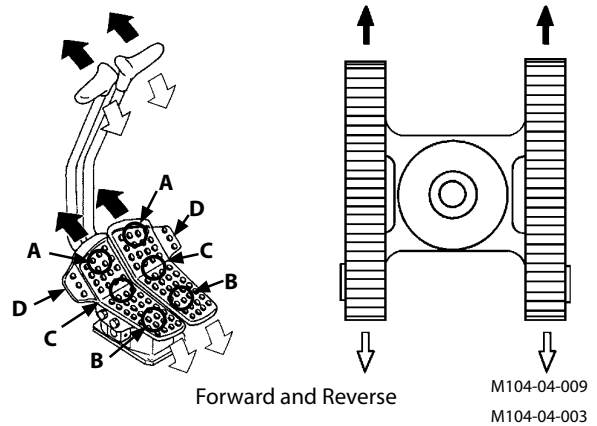
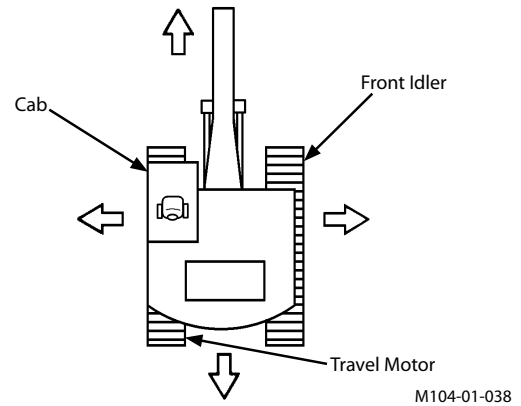
DRIVING THE MACHINE

STEERING THE MACHINE USING PEDALS

WARNING: In the standard travel position, the front idlers are positioned at the front of the machine and the travel motors at the rear. If the travel motors are positioned at the front of the machine, the control actions of the travel pedals will be reversed. Be sure to confirm the position of the travel motors before traveling.

- **FORWARD TRAVEL**
Push down on front (A) of both pedals.
- **REVERSE TRAVEL**
Push down on rear (B) of both pedals.
- **NEUTRAL POSITION (C)**
When the travel pedals are placed in neutral, travel brakes automatically will stop and/or hold the machine.
- **RIGHT TURN**
Push down on front of left pedal.
- **LEFT TURN**
Push down on front of right pedal.
- **SHORT TURN (Spin turn)**
Push down the front of one pedal and the rear of the other.

NOTE: For long-term traveling, push down on pedal tabs (D) and rest feet on the footrests.



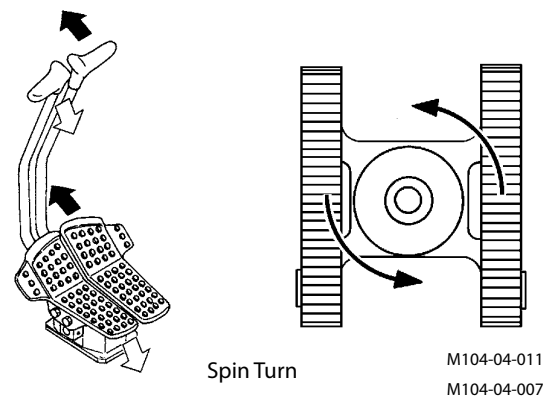
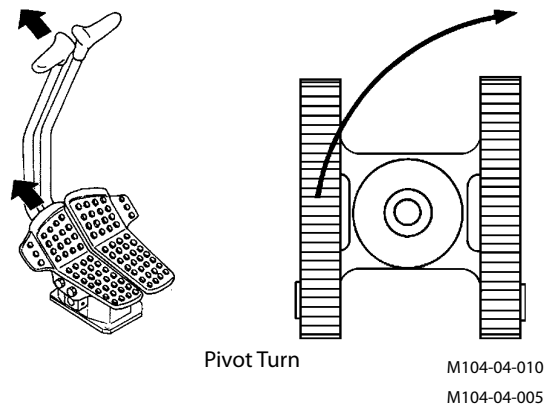
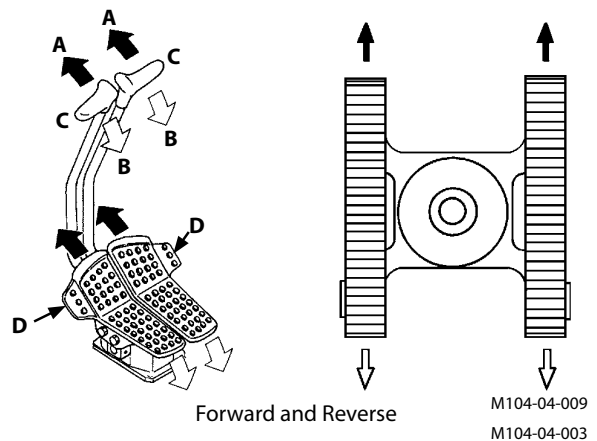
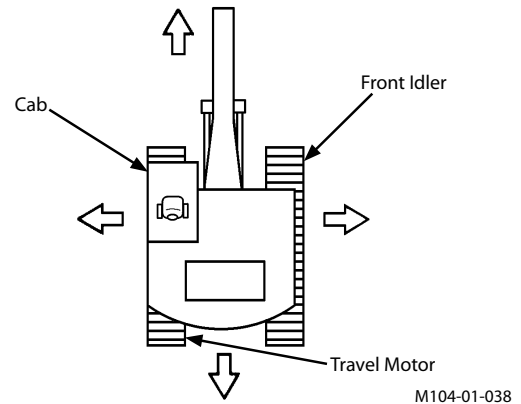
DRIVING THE MACHINE

STEERING THE MACHINE USING LEVERS

WARNING: In the standard travel position, the front idlers are positioned at the front of the machine and the travel motors at the rear. If the travel motors are positioned at the front of the machine, the control actions of the travel levers will be reversed. Be sure to confirm the position of the travel motors before traveling.

- **FORWARD TRAVEL**
Push both levers forward (A).
- **REVERSE TRAVEL**
Pull both levers rearward (B).
- **NEUTRAL POSITION (C)**
When the travel levers are placed in neutral, travel brakes automatically will stop and/or hold the machine.
- **RIGHT TURN**
Push left lever forward.
- **LEFT TURN**
Push right lever forward.
- **SHORT TURN (Spin turn)**
Push one lever forward and pull the other rearward.

NOTE: For long-term traveling, push down on pedal tabs (D) and rest feet on the footrests.



DRIVING THE MACHINE

TRAVEL MODE SWITCH

⚠ WARNING: Tipping-over accidents can cause serious personal injury. Do not change travel mode switch (1) while traveling; especially, changing to fast mode (2) when descending slopes will create a very dangerous situation. Always stop the machine before changing the travel speed mode.

Turn travel mode switch (1) on the switch panel to the specified position to select the travel mode (Fast/Slow).

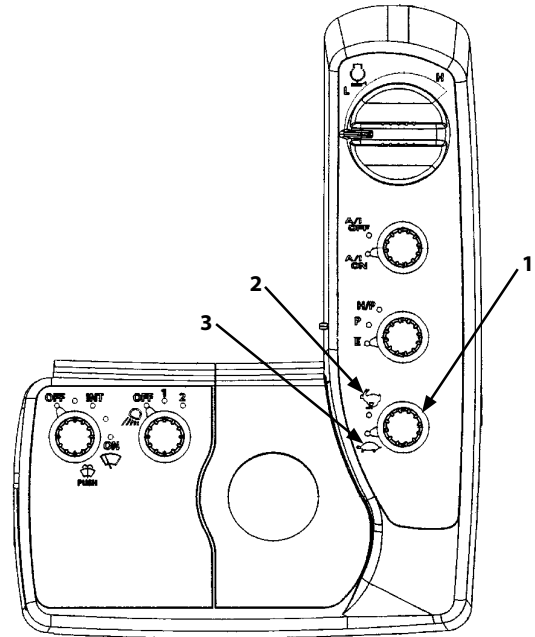
- Fast Mode: Turn travel mode switch (1) to  mark (2) position.
- Slow Mode: Turn travel mode switch (1) to  mark (3) position.



Mark (Fast Speed Mode)



Mark (Slow Speed Mode)



M1U1-01-015

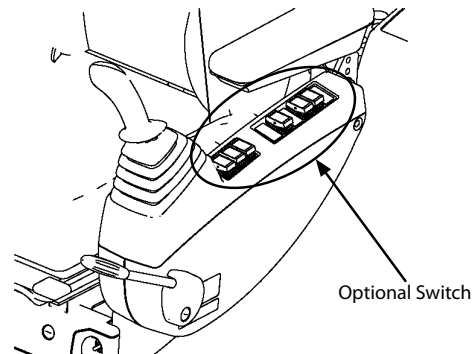
TRAVEL ALARM (Optional)

During travel operation, the travel alarm sounds the buzzer to warn the people near the machine that the machine is traveling.

Deactivating Travel Alarm

More than 12 seconds after starting to travel the machine, raise the armrest and push the travel alarm deactivation switch to stop the travel alarm. (Within 12 seconds, the travel alarm deactivation switch is inoperable.)

Once the machine stops traveling and when restarting to travel, the travel alarm will sound again. If desired to stop the alarm, operate the deactivation switch once more.



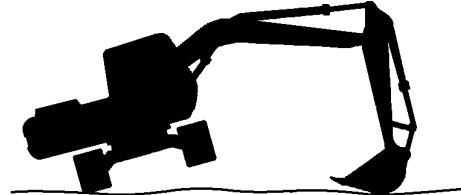
T1V1-05-02-004

✎ NOTE: The optional switch locations differ depending on what kinds of optional devices are equipped. Before using the switches, make sure what kinds of optional devices are equipped.

DRIVING THE MACHINE

OPERATING ON SOFT GROUND

- Avoid traveling on very soft ground that does not have sufficient strength to firmly support the machine.
- If the machine is operated on very soft ground or becomes stuck, it may be necessary to clean the track frame area.
- Swing the upperstructure 90 ° and lower the bucket to raise one track off the ground. Make sure to keep the angle between the boom and arm 90 to 110 ° and position the bucket's round side on the ground.
- Rotate the raised track back and forth to remove mud and dirt.
- After lowering the track to the ground, select slow travel speed. Carefully move the machine to firm ground.
- Utilize the boom and arm functions to pull the machine toward firm ground.
- Tow the machine if the machine becomes stuck but only if the engine is still operating. Be sure to attach a tow line correctly. (Refer to the "TOWING MACHINE A SHORT DISTANCE" section on the next page.)



M104-05-012

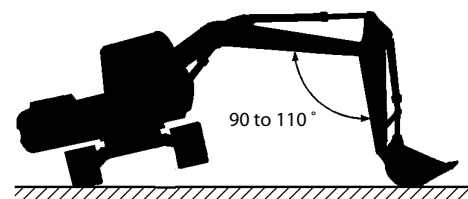
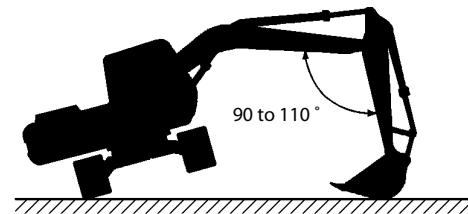
RAISE ONE TRACK USING BOOM AND ARM

WARNING: Keep the angle between boom and arm 90 to 110 ° and position the bucket's round side on the ground.

Swing the upperstructure 90 ° and lower the bucket to raise track off ground. Do not dig bucket teeth into the ground when using the hoe bucket reversed.

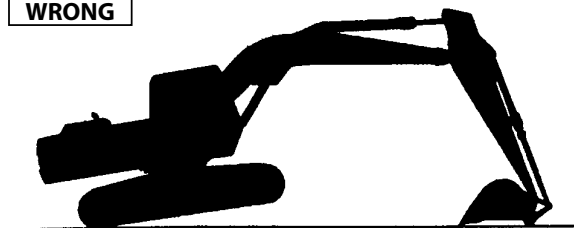
Place blocks under machine frame to support the machine.

IMPORTANT: When the machine is modified as a face shovel by installing the hoe bucket in reverse, avoid raising the machine above the ground using the front attachment with the bucket cylinder fully extended. Excessive loads will be applied to the pins around the bucket and the bucket cylinder, resulting in breakage of the pins.



M104-05-013

WRONG



SA-817

DRIVING THE MACHINE

TOWING MACHINE A SHORT DISTANCE

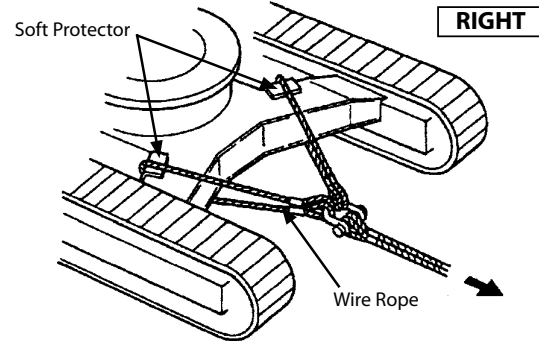
CAUTION: Cables, straps, or ropes can break causing serious injury. Do not tow machine with damaged chains, frayed cables, slings, straps, or wire ropes. Always wear gloves when handling cable, straps or wire ropes.

When your machine becomes stuck but the engine is still operational, attach wire ropes to the machine as illustrated at right, and slowly tow your machine to firm ground using another machine.

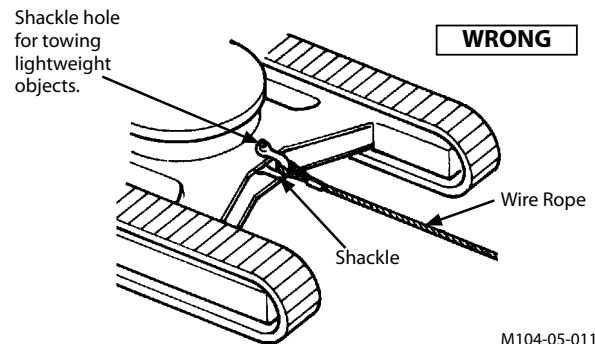
Be sure to attach the wire ropes around the track frames of both machines as illustrated.

To prevent the wire ropes from being damaged, place some protective material between the track frame and the wire ropes.

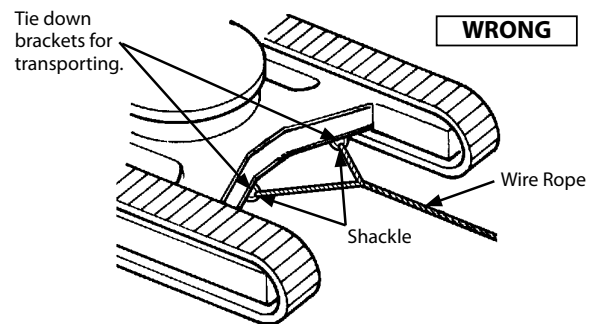
IMPORTANT: Do not use the shackle holes on the track frame for towing the machine. A center shackle hole on the track frame is provided to pull only lightweight objects. The shackle holes on the bottom of the track frame are used to secure the machine for transportation. Refer to the instructions on page 5-32 for using the center shackle hole appropriately.



M104-05-010



M104-05-011



M1U1-05-001

DRIVING THE MACHINE

OPERATING IN WATER OR MUD

The machine can be operated in water up to the upper edge of the upper rollers only if worksite footing has sufficient strength to prevent the machine from sinking past the upper edge of the upper roller, and only if the water is flowing slowly.

When operating in such conditions, check the machine's position often. Reposition the machine if necessary.

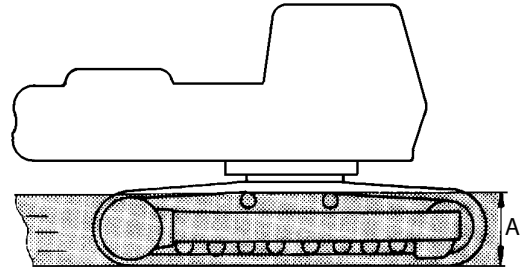
Avoid submerging the swing bearing, swing gears and center joint.

If the swing bearing, swing gears and center joint are submerged, remove the drain plug to drain mud and water. Clean swing area. Install plug. Lubricate swing internal gear and swing bearing.

Swing Internal Gear Capacity

ZX120-3 Class:	9 L (2.4 US gal)
ZX180-3, 200-3, 270-3 Class:	17 L (4.5 US gal)
ZX330-3 Class:	19 L (5.0 US gal)

Lubricate swing bearing. (See Maintenance Guide, 500 hours)



M104-05-009

Model	A
ZX120-3 Class (Except ZX110M-3)	660 mm (26 in)
ZX110M-3 ZX180-3 Class ZX200-3 Class ZX270-3 Class (Except ZX280LC-3, 280LCN-3)	770 mm (30 in)
ZX280LC-3, 280LCN-3 ZX330-3 Class	860 mm (34 in)

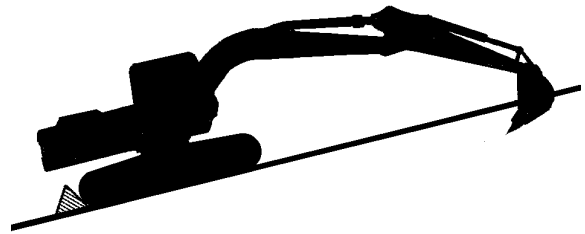
DRIVING THE MACHINE

PARKING THE MACHINE ON SLOPES

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

If parking the machine on a slope is unavoidable:

- Thrust the bucket teeth into the ground.
- Return the control levers to neutral and pull pilot control shut-off lever (2) to the LOCK position.
- Block both tracks.



M104-05-014

PARKING THE MACHINE

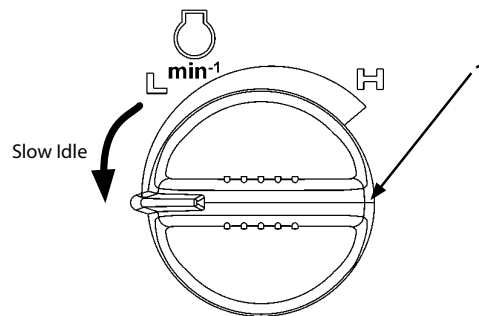
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: Turbocharger may be damaged if the engine is not properly shut down.

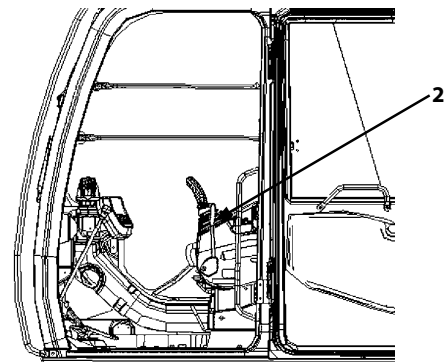
4. Turn engine control dial (1) counterclockwise to the stop (the slow idle position). Run the engine approximately 5 minutes to cool the engine.
5. Turn the key switch to OFF. Remove the key from the key switch.
6. Pull pilot control shut-off lever (2) to the LOCK position.

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

7. Close windows, roof vent, and cab door.
8. Lock all access doors and compartments.



M1U1-01-033



Lock Position

M1U1-01-025

OPERATING THE MACHINE

CONTROL LEVER (ISO PATTERN)

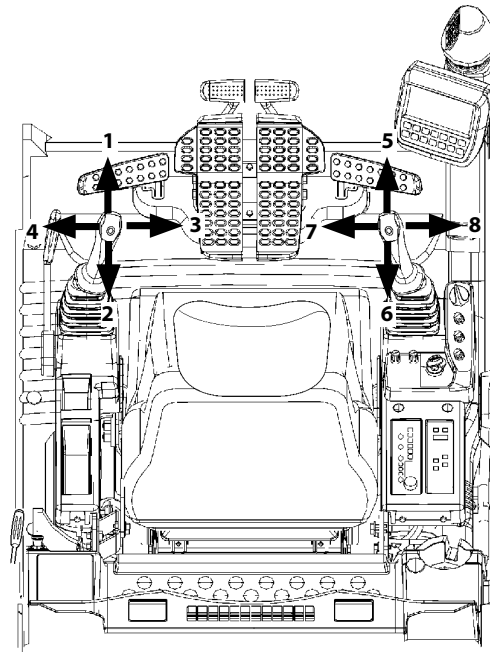
⚠ WARNING: Never place any part of body beyond window frame. It could be crushed by the boom if boom control lever is accidentally bumped or otherwise engaged. If window is missing or broken, replace immediately.
Prevent possible injury from unexpected machine movement.
Make sure you know the location and function of each control before operating.

The machine is equipped with a label showing the control patterns of the levers and pedals.

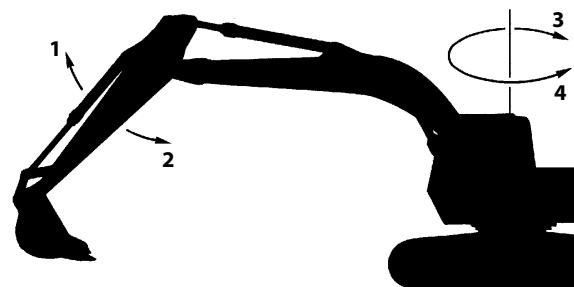
IMPORTANT: When digging, avoid hitting tracks with boom cylinders.
When digging over the end of the tracks, travel motors should be at the rear to maximize machine stability and lift capacity.

When a lever is released, it will automatically return to neutral, and that machine function will stop.

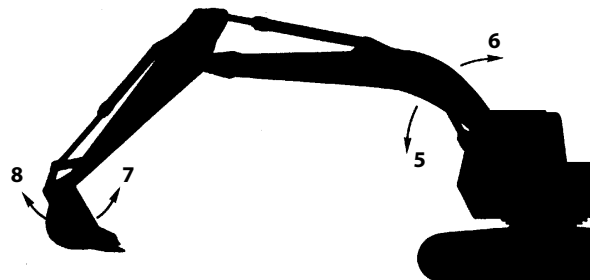
- 1- Arm Roll-Out
- 2- Arm Roll-In
- 3- Swing Right
- 4- Swing Left
- 5- Boom Lower
- 6- Boom Raise
- 7- Bucket Roll-In
- 8- Bucket Roll-Out



M1J1-01-022



M104-05-001



M104-05-002

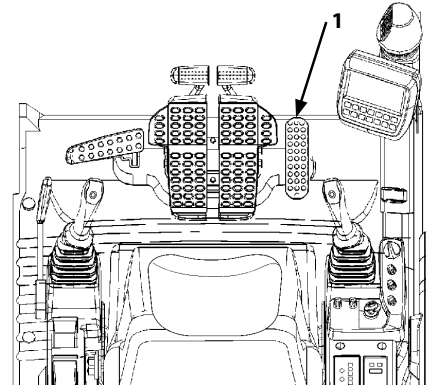
OPERATING THE MACHINE

ATTACHMENT PEDAL (HYDRAULIC BREAKER) (OPTIONAL)

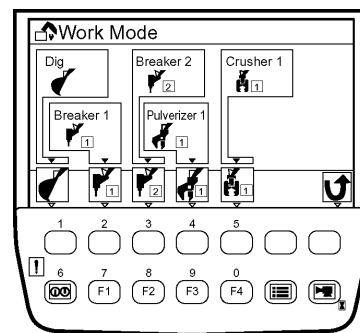
The breaker can be operated using attachment pedal (1) located on the right front of the seat, as illustrated.

CAUTION: Be sure to lock attachment pedal (1) with pedal lock (2) when attachment pedal (1) is not in use.

1. Select the hydraulic breaker icon on monitor work mode selection screen (4). Refer to the descriptions about the work mode on page 5-9 for work mode selecting procedures.
2. Move pedal lock (2) forward to unlock attachment pedal (1).
3. Push down on attachment pedal (1) to operate the breaker. Loosen the stopper bolt (3) until stopper bolt (3) comes in contact with the bracket in attachment pedal (1) neutral to prevent attachment pedal (1) from being stepped backward.
4. Remove foot from attachment pedal (1) to stop the breaker.
5. Always keep attachment pedal (1) locked with pedal lock (2) when attachment pedal (1) is not in use.

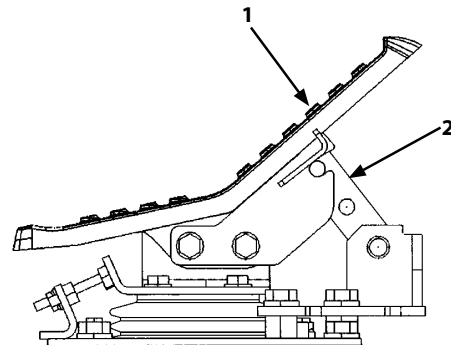


M1U1-05-008



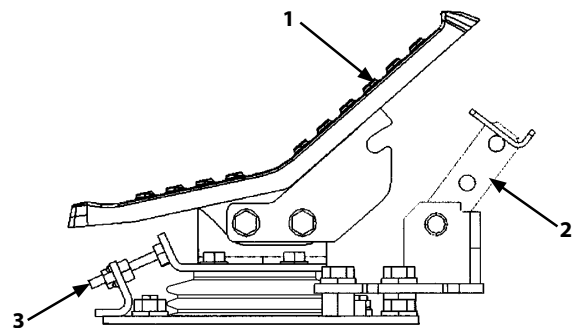
T1V5-05-01-109

IMPORTANT: When operating a hydraulic breaker, do not step on attachment pedal (1) rearward. Damage to the hydraulic breaker may result.



Locked Attachment Pedal

M1J1-13-002



Unlocked Attachment Pedal

M1J1-13-003

OPERATING THE MACHINE

ATTACHMENT PEDAL (HYDRAULIC CRUSHER) (OPTIONAL)

Machine stability, applicable hydraulic oil pressure and oil quantity for crusher, etc. must be examined when selecting a crusher.

Be sure to consult your authorized dealer when selecting a crusher.

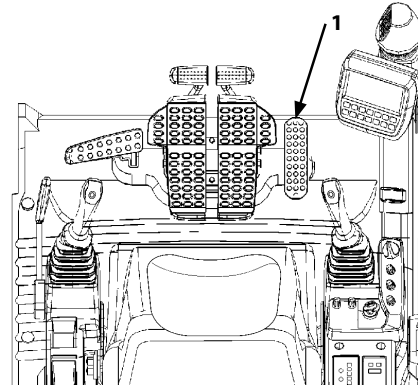
For operational instructions, refer to the crusher instruction manual.

Operation

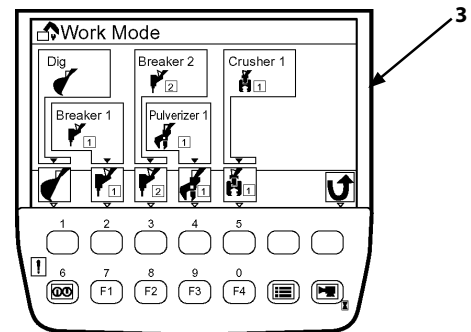
The crusher can be operated using attachment pedal (1) located on the right front of the seat, as illustrated.

CAUTION: Be sure to lock attachment pedal (1) with pedal lock (2) when attachment pedal (1) is not in use.

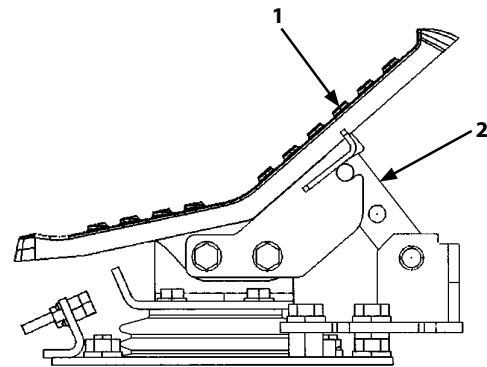
1. Select the hydraulic crusher icon on monitor work mode selection screen (3). Refer to the descriptions about the work mode on page 5-9 for work mode selecting procedures.
2. Move pedal lock (2) forward to unlock attachment pedal (1).
3. Push down on attachment pedal (1) either forward or backward to open or close the crusher.
4. Remove foot from attachment pedal (1) to stop the crusher.
5. Always keep attachment pedal (1) locked with pedal lock (2) when attachment pedal (1) is not in use.



M1U1-05-008

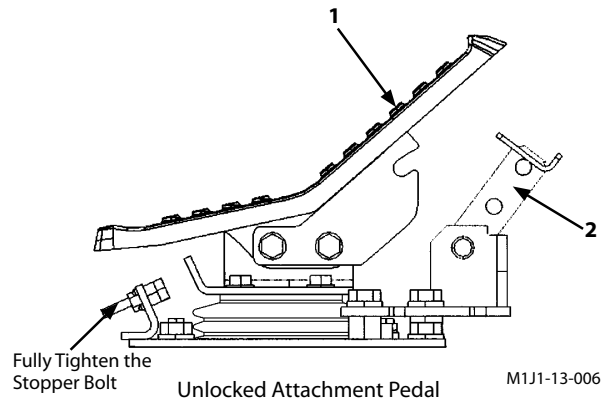


T1V5-05-01-109



Locked Attachment Pedal

M1J1-13-012



Fully Tighten the Stopper Bolt

Unlocked Attachment Pedal

M1J1-13-006

OPERATING THE MACHINE

PILOT CONTROL SHUT-OFF LEVER

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.



WARNING:

- **Always pull pilot control shut-off lever (1) into the full LOCK position. The pilot control shut-off function will not be activated otherwise.**
- **When leaving the machine:**
 - **Stop the engine.**
 - **Then, pull pilot control shut-off lever (1) up to the LOCK position.**
- **Always check to be sure that pilot control shut-off lever (1) is pulled up to the LOCK position before:**
 - **Transporting the machine.**
 - **Leaving the machine at the end of the shift.**

Pilot Control Shut-Off Lever Operation

Before Leaving the Machine:

1. Park the machine on a firm, level surface. Lower the bucket to the ground. Return all control levers to neutral. Properly shut down the engine.
2. Pull pilot control shut-off lever (1) up into the full LOCK position.

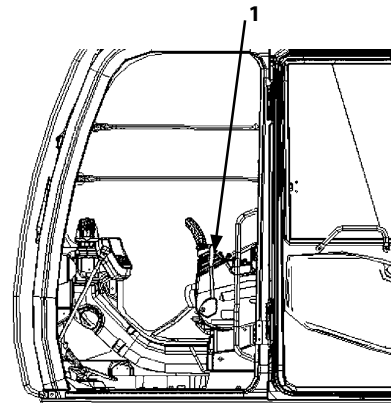
Before Starting Operation:

1. Confirm that pilot control shut-off lever (1) is pulled up to the LOCK position.

After starting the engine:

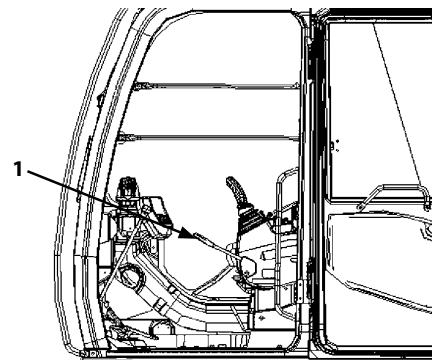
1. Confirm that all control levers and pedals are in neutral and that no part of the machine is in motion.
2. Lower pilot control shut-off lever (1) to the UNLOCK position.

If any part of the machine (any actuator) moves when pilot control shut-off lever (1) is lowered to the UNLOCK position despite the fact that all controls are placed in neutral, the machine is malfunctioning. Immediately pull pilot control shut-off lever (1) back to the LOCK position, and stop the engine. Then, see your authorized dealer.



LOCK Position

M1U1-01-025



UNLOCK Position

M1U1-01-024

OPERATING THE MACHINE

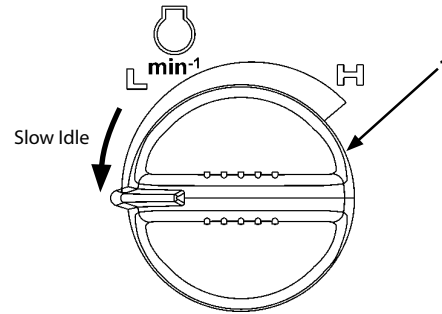
Warming-up Operation

In cold weather, warm up the machine until coolant and hydraulic oil temperature increases to the appropriate operating temperature.

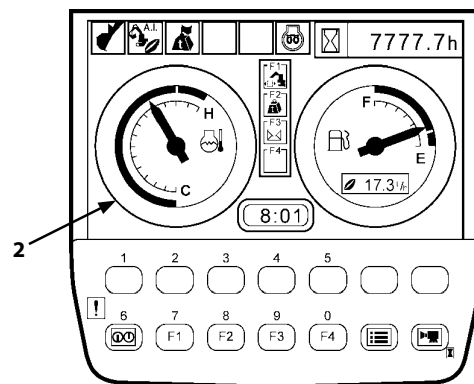
IMPORTANT: The appropriate hydraulic oil operating temperature on this machine is 50 to 80 °C. Hydraulic components may be seriously damaged if the machine is operated with low temperature hydraulic oil. In case warming up the machine by relieving the hydraulic system, continuously relieve the relief valve for 10 to 15 seconds while taking a pause for 5 to 10 seconds.

1. Run the engine with engine control dial (1) turned to the slow idle position.
Do not operate the machine until the needle of coolant temperature gauge (2) starts swinging.
2. After the needle of coolant temperature gauge (2) starts swinging, turn engine control dial (1) to approx. medium position.
3. Operate the boom, arm and bucket cylinders slowly to each stroke end several times.
4. Operate the travel and swing functions slowly to allow hydraulic oil to circulate through the systems.
5. Warming up operation ends after the above operation is completed.

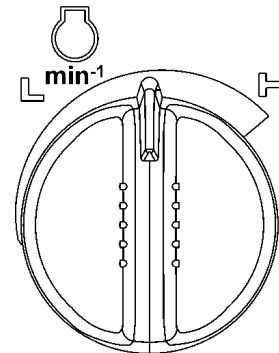
 **NOTE:** During cold weather season, the warm-up operation system automatically operates so that the engine speed increases for a moment even though engine control dial (1) is in the slow idle position.



M1U1-01-033



M1U1-01-004



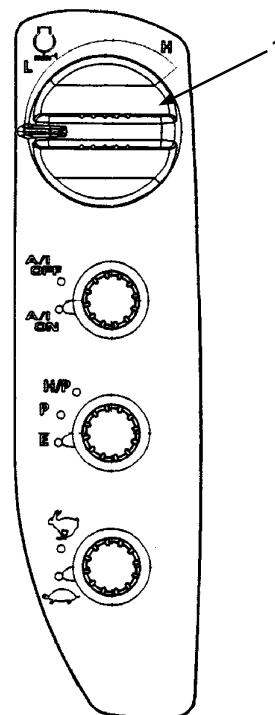
M1U1-03-006

OPERATING THE MACHINE

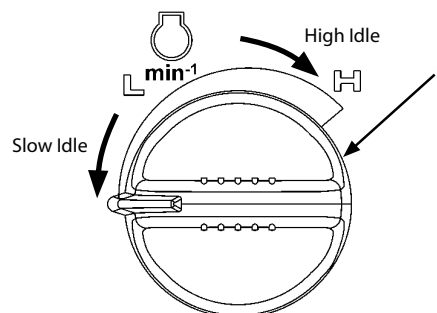
ENGINE SPEED CONTROL

Increase and decrease the engine speed using engine control dial (1) located on the right console, as illustrated.

- Turn engine control dial (1) clockwise to increase the engine speed. Turn engine control dial (1) counterclockwise to decrease the engine speed.
- Note that the auto-idle function will be deactivated if engine control dial (1) is operated while the engine is running at the auto-idle setting.
- Before stopping the engine, always turn engine control dial (1) counterclockwise to the stop (to the slow idle setting). Run the engine five minutes to cool the engine. Then, turn key switch to OFF position to stop the engine.



M1V1-01-001



M1U1-01-033

OPERATING THE MACHINE

AUTO-IDLE

With auto-idle switch (3) turned to the A/I ON position, approximately 4 seconds after all control levers are returned to neutral, the engine speed decreases to the auto-idle setting to save fuel consumption. The engine speed will immediately increase to the speed set by engine control dial (2) when any control lever is operated.

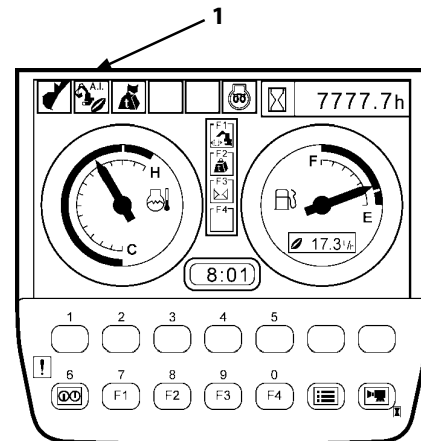
- IMPORTANT:**
- Always check if auto-idle indicator (1) is turned on or off before starting operation. If the indicator is on, the auto-idle function will be activated.
 - Always be aware of engine control dial (2) setting when auto-idle switch (3) turned to the A/I ON position. If the engine speed is set high with engine control dial (2), and if the operator is not aware of the high engine speed setting, the engine speed will unexpectedly increase when any control lever is operated, causing unexpected machine movement, thus possibly resulting in serious personal injury.

WARNING: Prevent the machine from unexpected movement. Be sure to turn off auto-idle switch (3) when unexpected machine movement is undesirable, especially when loading/unloading the machine for transportation.

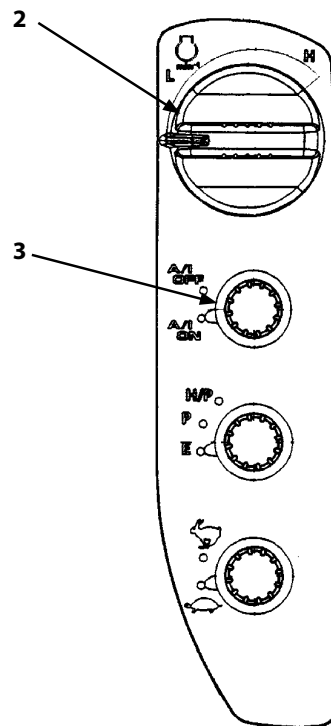
Note that auto-idle function can be turned on or off only when the key switch is in ON position. Always check if the auto-idle function is turned on or off with auto-idle indicator (1).

Auto-Idle Function ON :	Auto-Idle Indicator (1) ON
Auto-Idle Function OFF :	Auto-Idle Indicator (1) OFF

- When auto-idle switch (3) is turned OFF with auto-idle indicator (1) ON, indicator (1) will go OFF and the auto-idle system is deactivated.
- Even if the engine is stopped by turning the key switch with auto-idle switch (3) in the A/I ON position [indicator (1) ON], the auto-idle system is not deactivated. When the engine is restarted, the auto-idle system remains activated, allowing auto-idle indicator (1) to flash for 5 seconds and stay ON later.



M1U1-01-004



M1V1-01-001

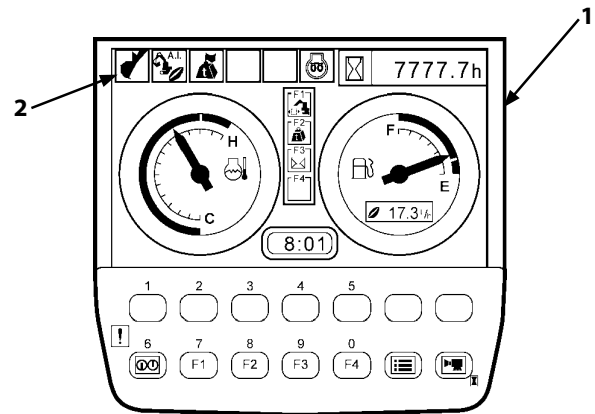
OPERATING THE MACHINE

WORK MODE

Five work modes can be selected for most appropriate hydraulic circuit and pump flow rate for the front attachment.

When the engine is started, the digging mode is automatically set. Each time work mode switch is pressed, the five following modes are selected alternately.

- Digging Mode
- Breaker 1
- Breaker 2
- Pulverizer 1
- Crusher 1



M1U1-01-004

The selected work mode is indicated by attachment mode indicator (2) of basic screen (1). Select the work mode corresponding to the work in which the machine is engaged while referring to the table below.

	Work Mode	Description
	Digging Mode	Select this mode when using bucket or fork grapple.
	Breaker 1 Mode	Select this mode when using breakers other than NPK breaker.
	Breaker 2 Mode	Select this mode when using NPK breaker.
	Pulverizer 1 Mode	Select this mode when using pulverizer.
	Crusher 1 Mode	Select this mode when using crusher.

NOTE: Five work modes shown above are designated as the standard specifications. Up to five attachment modes other than the digging mode can be designated. Consult your nearest Hitachi dealer for adding or changing the designation of the attachment modes.

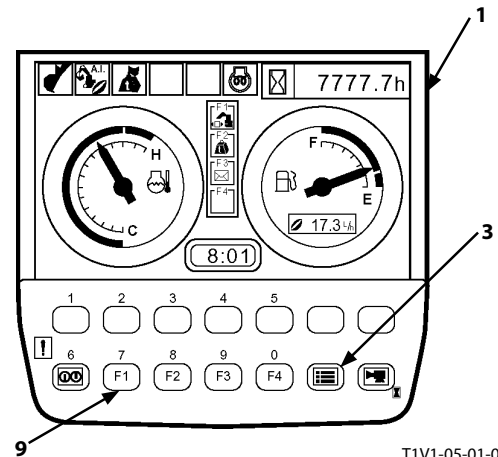
OPERATING THE MACHINE

WORK MODE SELECT

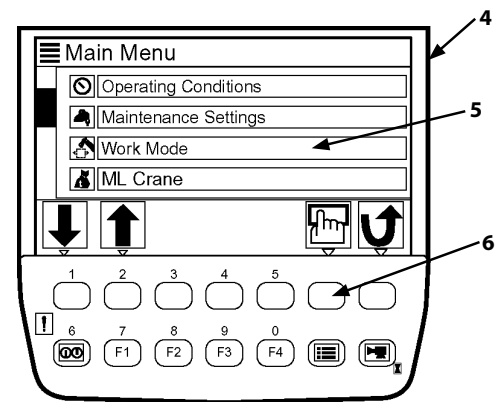
Press menu key (3) on basic screen (1) to display main menu screen (4). Select work mode (5) by operating   key on menu screen (4). Then, press determination key (6). Select the work mode matching the work to be done by pressing bottom key (8) on work mode selection screen (7). Then, press determination key (6).

Selecting Work Mode By Pressing Key F1

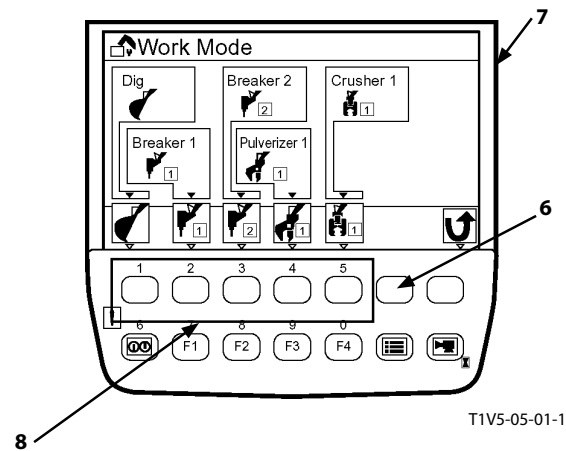
Press Key F1 (9) on basic screen (1). Then, work mode selection screen (7) is displayed. Set the work mode by following procedure mentioned above.



T1V1-05-01-008



T1V5-05-01-121



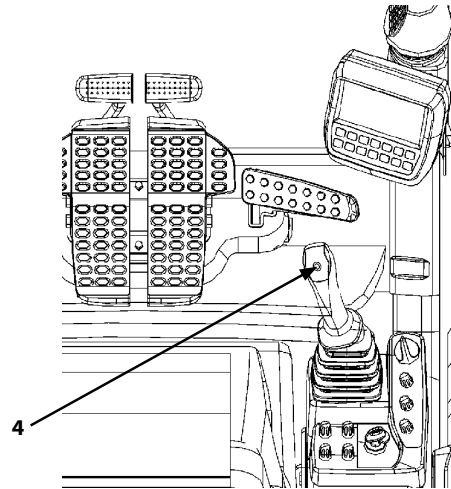
T1V5-05-01-109

OPERATING THE MACHINE

POWER BOOST (ZX180-3, 200-3, 270-3, 330-3 Class)

Power boost switch (4) is used to gain maximum digging power, and is located on the top of the right control lever.

When power boost switch (4) is pushed, increased front attachment power will be supplied for about 8 seconds.



M1J1-01-024

OPERATING THE MACHINE

POWER MODE

One of three engine speed modes, E, P or H/P mode, can be selected using power mode switch (1).

- E (Economy) Mode

Even if the engine speed is reduced in the E mode, digging force remains unchanged from that in the P mode. Although production is reduced slightly more than in the P mode, the fuel consumption and noise levels are reduced, allowing the machine to operate most efficiently.

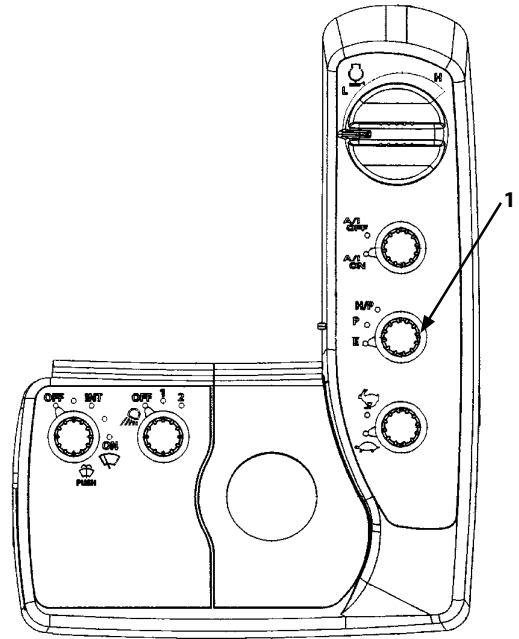
- P (Power) Mode

Operate the machine in this mode when performing normal work.

- H/P (High Power) Mode



WARNING: In the H/P mode, the engine speed will change quickly. To ensure safety, be sure to turn power mode switch (1) to the P or E mode position before starting such works as loading the machine on or off a trailer or lifting a load with the front attachment, which may result in personal accidents if the engine speed is suddenly changed.



M1U1-01-015

When rolling in the arm while digging deep trenches for example, more power may be required. In such cases, use the H/P mode. The maximum power of the machine can be utilized in this mode, increasing work efficiency when more power is required than in the P mode.

The H/P mode is activated and the engine speed is increased when the boom raise or the arm rolled-in operation is made with the engine fast idle speed set at faster than approx. 1650 min⁻¹. In case of ZX180-3 class, it is faster than approx. 1850 min⁻¹.

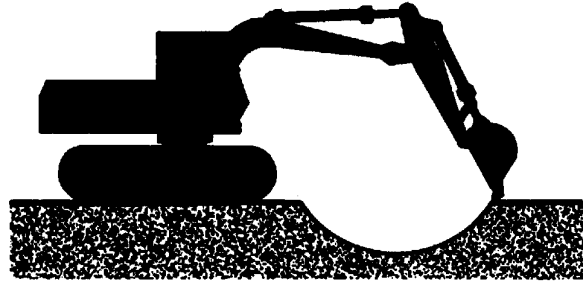


NOTE: In the H/P mode, the engine speed changes depending on load applied to the machine.

OPERATING THE MACHINE

OPERATING BACKHOE

1. Place the bucket teeth on the ground with the bottom of the bucket at a 45 degree angle to the ground.
2. Pull the bucket toward the machine using the arm as the main digging force.
3. When soil sticks to the bucket, remove it by moving the arm and/or bucket rapidly back and forth.
4. When trenching a straight line, position the tracks parallel to the trench. After digging to the desired depth, move the machine as required to continue the trench.



M107-05-037

IMPORTANT: When lowering the boom, avoid sudden stops that may cause shock load damage to the machine.

When operating the arm, avoid bottoming the cylinder to prevent cylinder damage.

When digging at an angle, avoid striking the tracks with the bucket teeth.

When digging a deep excavation, avoid striking the boom or bucket cylinder hoses against the ground.

GRADING OPERATION

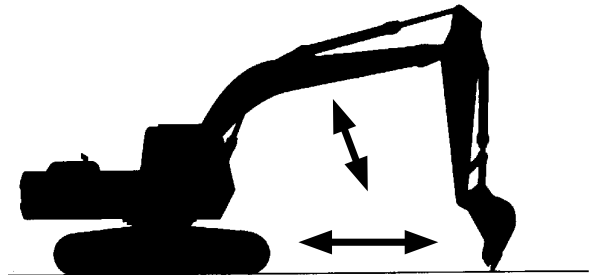
IMPORTANT: Do not pull or push dirt with the bucket when traveling.

Select grading mode when finishing work is required.

Position the arm slightly forward of the vertical position with bucket rolled back, as shown.

Operate arm roll-in function while slowly raising the boom. Once the arm moves past the vertical position slowly lower the boom to allow the bucket to maintain a smooth surface.

Grading operation can be more precisely done by operating the boom, arm and bucket simultaneously.



M104-05-017

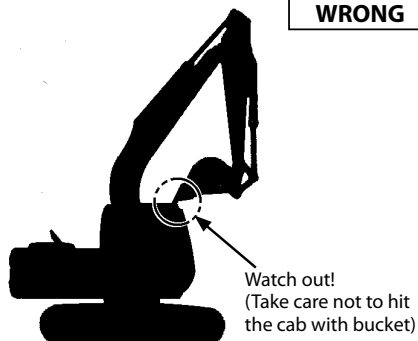
OPERATING THE MACHINE

FACE SHOVEL OPERATION



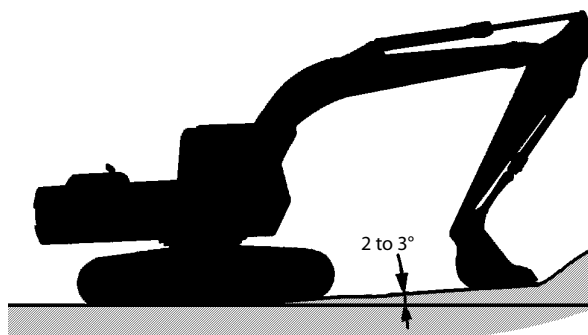
WARNING: Take care not to hit the cab when rolling in the arm with the reversed-installed bucket.

- For face shovel operation, dig the ground using the arm cylinder in a scraping motion.
- When underground water is expected, make a slope angle of 2 to 3° to drain this water as shown.



WRONG

M107-05-045

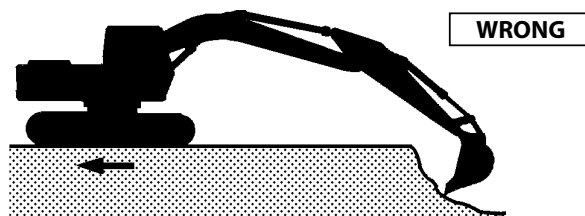


M104-05-020

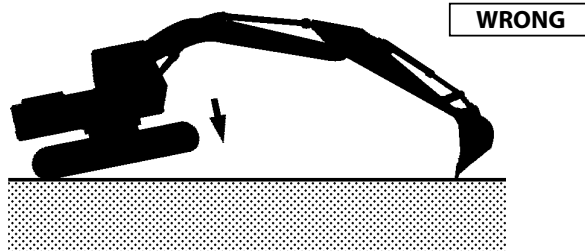
AVOID ABUSIVE OPERATION

Do not use travel as an additional digging force. Severe machine damage may result.

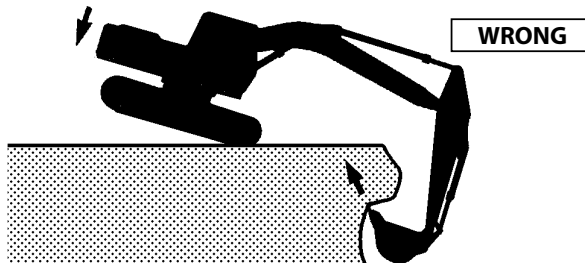
Do not raise rear of machine to use the machine's weight as additional digging force. Severe machine damage may result.



WRONG



WRONG



WRONG

M104-05-018

OPERATING THE MACHINE

OPERATING TIPS

Do not hit the track with the bucket when digging.
Whenever possible, position your machine on a level surface.
Do not use the bucket as a hammer or pile driver. Do not attempt to shift rocks and break walls using swing motion.

IMPORTANT: To avoid damaging cylinders, do not strike the ground with the bucket nor use the bucket for tamping with the bucket cylinder fully extended (the bucket completely curled under).

Adjust the length and depth of each cut to produce a full bucket with every pass.
Full loads on every pass is more productive than a faster cycle with a partially filled bucket.
Full load should be the first objective, followed by speed, to increase productivity.

IMPORTANT: Do not attempt to break ledge rock by extending the arm to maximum reach and dropping the front of the bucket on the bucket teeth for penetration. Serious damage to the machine can result.

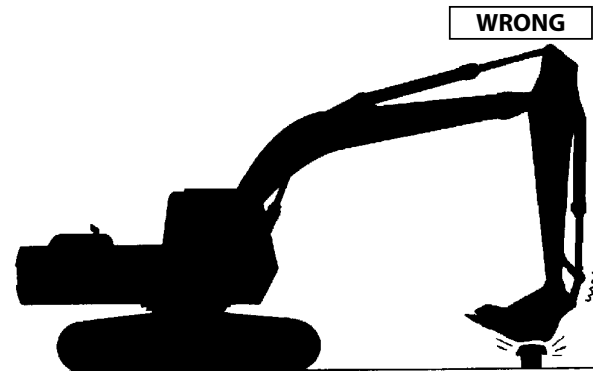
Once the trench is open, ledge rock can be broken by pulling the bucket up under the layers. The top layers are pulled out first, with one or two layers being lifted at a time.
Do not side load the bucket. For example, do not swing the bucket to level material or do not strike objects from the side with the bucket.

SELECT CORRECT TRACK SHOES

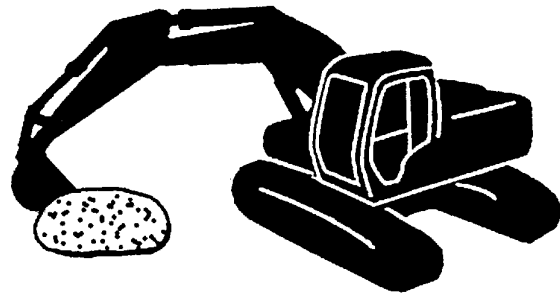
IMPORTANT: Using wide track shoes on rough ground may result in shoe bending and/or loosening, and may damage other undercarriage components.

Never use wide track shoes on rough ground such as rocks, sand or gravel. Wide track shoes are designed for soft ground.

Track shoe bolts should be checked periodically for tightness.



M104-05-019



M161-05-006

OPERATING THE MACHINE

HYDRAULIC BREAKER AND HYDRAULIC CRUSHER

Select a breaker or crusher that is the correct size and weight for your machine. See your authorized dealer for correct breaker information.

Carefully study the operation manuals of the machine, breaker and crusher, and perform the required checks and/or inspection before connecting the breaker or the crusher to the arm.

IMPORTANT: Precautions for connecting breaker or crusher piping.

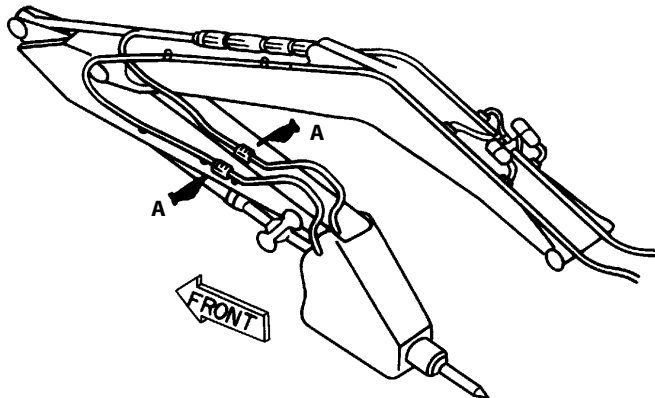
- **Do not allow impurities to enter into the system when switching the breaker or the crusher with the bucket.**
- **When the breaker or crusher is not used, apply the cover to the pipe opening on the arm top and install the plug into the hose end of the breaker or the crusher to prevent impurities from entering the system.**
Be sure to provide spare covers and plugs in the tool box so that they will be available when needed.
- **After connecting, check the connecting seal fitting for oil leakage, and pipe clamp bolts for looseness.**

OPERATING THE MACHINE

PIPING FOR BREAKER AND CRUSHER (OPTIONAL)

ZX120-3 Class

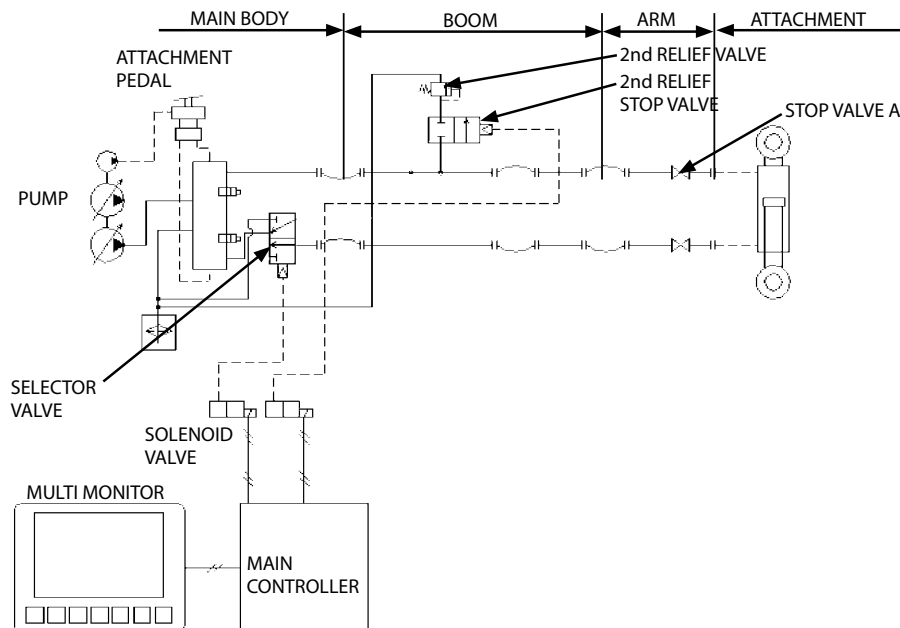
Operational procedures for stop valves and selector valve.



A Stop Valves	Close
	Open

Stop Valves A
Close : When not using attachment or is detached.
Open : When using attachment

M1U1-05-007

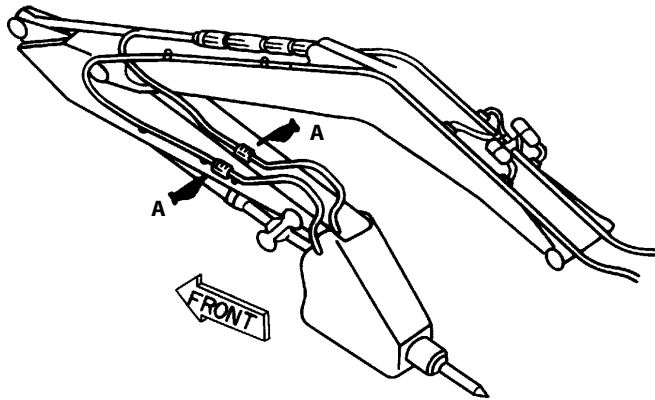


M1U1-05-012

OPERATING THE MACHINE

ZX180-3, 200-3, 270-3, 330-3 Class

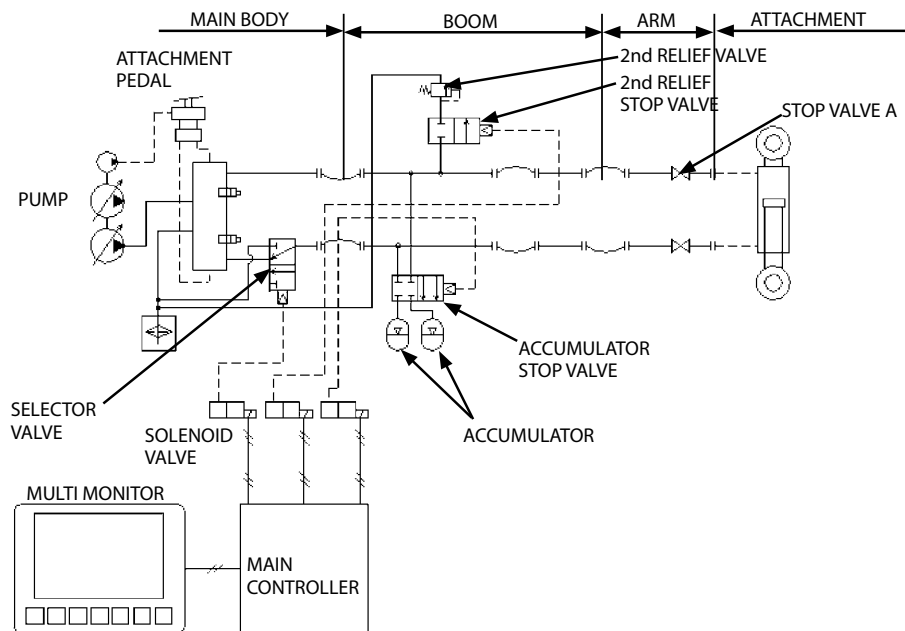
Operational procedures for stop valves and selector valve.



A Stop Valves	Close
	Open

Stop Valves A
Close : When not using attachment or is detached.
Open : When using attachment

M1U1-05-007



M1U1-05-005

OPERATING THE MACHINE

SECONDARY RELIEF PRESSURE ADJUSTMENT

When attaching the breaker other than the NPK, it is necessary to install the secondary relief valve in line. For this purpose, the boom piping for the attachment is provided with a part to which the secondary relief valve is connected.

Pressure is set to A when shipped from HITACHI.

Model	Set Pressure A
ZX120-3, 180-3, 200-3 class ZX250LC-3, 250LCN-3	17.6 MPa (180 kgf/cm ²)
ZX280LC-3, 280LCN-3 ZX330-3 class	19.6 MPa (200 kgf/cm ²)

After completing piping, reset this pressure to the specified level of each breaker.

Adjust the pressure as follows :

1. Attach the pressure gauge to the pressure gauge port.
2. Loosen the lock nut, then gradually turn the pressure-adjust screw clockwise to increase the pressure, or counterclockwise to reduce the pressure.
One turn of the screw changes about 4.9 MPa (50 kgf/cm²) in pressure.
3. After adjusting the pressure, make sure to tighten the lock nut.

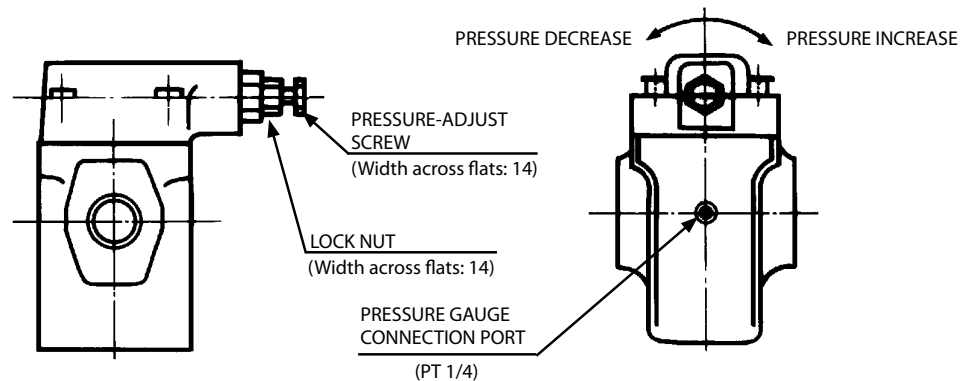
OPERATING THE MACHINE

Pressure Measurement

There are three points to measure the pressure; at the relief valve, at the arm tip attachment hose and by Dr.ZX.

Measurement at the relief valve:

1. Install a pressure gauge to the pressure gauge connection port shown below.
2. Close the stop valve located at the arm tip. Increase the hydraulic oil pressure in the hydraulic line by operating the attachment pedal. Refer to the separate table described in the "ATTACHMENT" group for the set-pressure value.



M107-05-005

Measurement at the arm tip attachment hose:

1. Disconnect the attachment connection hose and connect a pressure gauge.
2. Refer to the separate table described in the "ATTACHMENT" group for the set-pressure value.

Measurement by Dr.ZX:

(Consult with your nearest Hitachi dealer.)

Set the pressure value equivalent to the higher set-pressure value shown in the separate table described in the "ATTACHMENT" group by 1 to 1.5 MPa (10 to 15 kgf/cm²).

OPERATING THE MACHINE

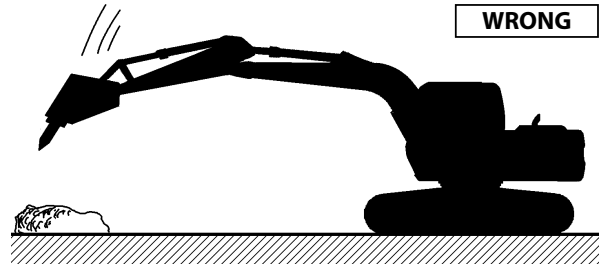
PRECAUTIONS FOR BREAKER OPERATION



WARNING: Machine stability is reduced as the breaker is much heavier than the bucket.

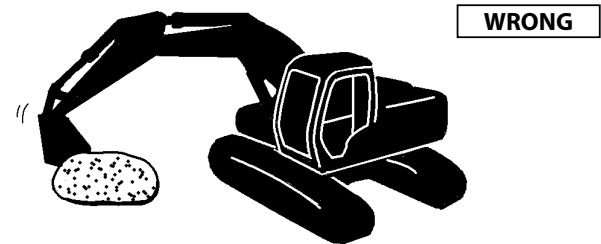
When using a breaker, the machine is more apt to tip over. Also, flying objects may hit the cab or other part of the machine. Observe the following precautions and take any other precautions necessary to prevent accidents and machine damage from occurring.

- Avoid hitting objects with breaker.
The breaker is heavier than the bucket, causing the breaker to lower faster.
Take care not to hit any objects with breaker. Doing so will result in damage to the breaker, the front attachment, and/or the upperstructure. Always move (lower) the breaker slowly to position the tip of the chisel on the object to be broken before starting breaker operation.



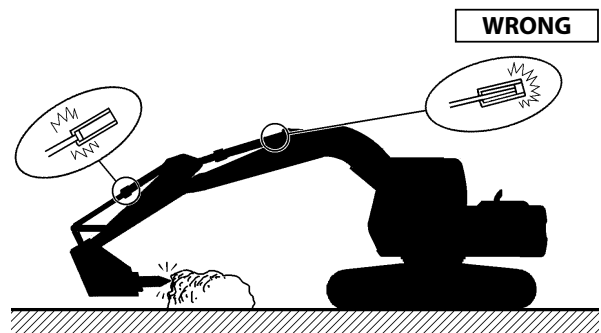
M104-05-055

- Do not use the breaker and/or the swing function to move objects. Damage to the boom, arm, and/or breaker may result.



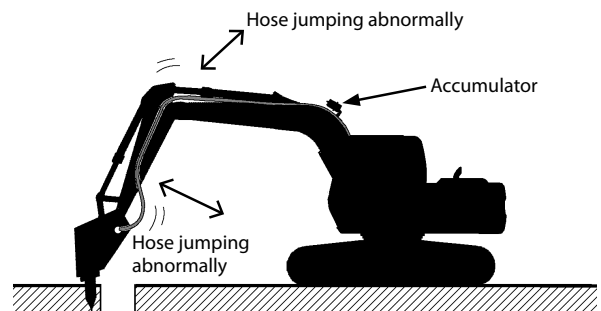
M104-05-056

- To prevent cylinder/machine damage, do not operate the breaker with the hydraulic cylinder rod fully retracted or fully extended.



M104-05-057

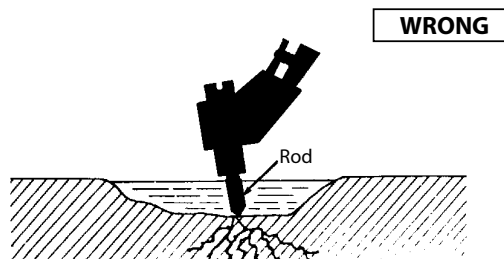
- Stop operation if breaker hydraulic hoses jump abnormally. Change in breaker accumulator pressure or a damaged accumulator will cause abnormal hose jumping and may cause breaker and/or machine damage. Immediately contact your authorized dealer if this happens.



M104-05-058

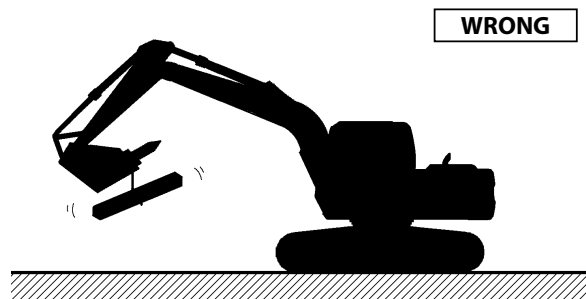
OPERATING THE MACHINE

- Do not operate the breaker in water. Doing so will cause rust and seal damage, resulting in damage to the hydraulic system components.



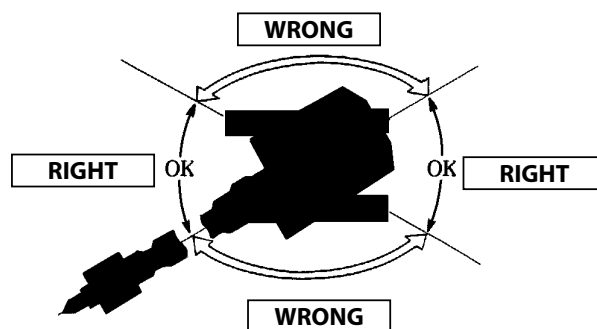
M104-05-059

- Do not use breaker for lifting operation. The machine tipping over and/or breaker damage may result.



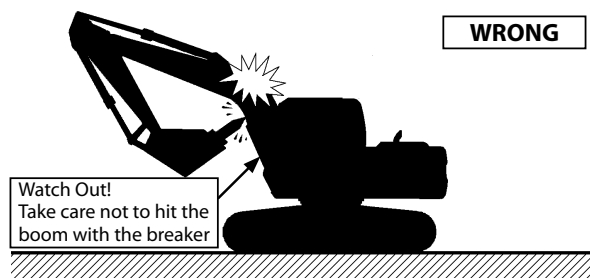
M104-05-060

- Do not operate the breaker to the side of the machine. The machine may become unstable and undercarriage component life may shorten as a result from operating the breaker to the side of the machine.



M104-05-061

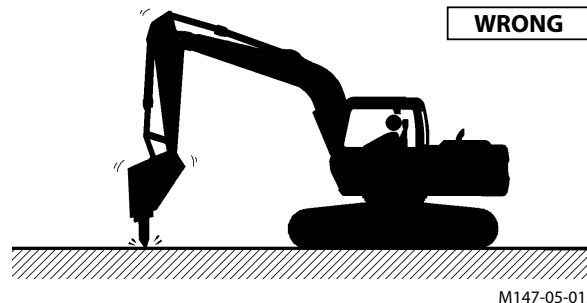
- Operate the hydraulic excavator carefully to avoid hitting the boom.



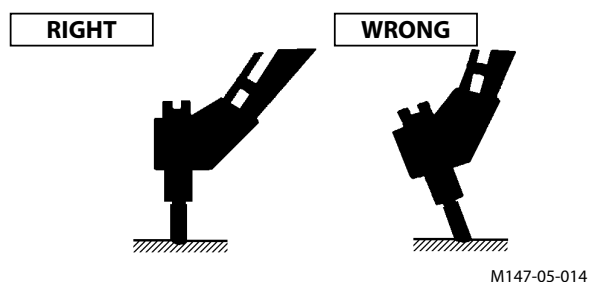
M104-05-062

OPERATING THE MACHINE

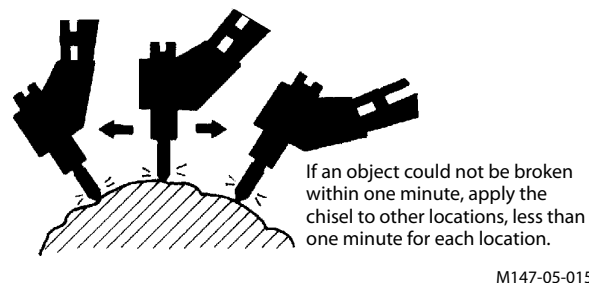
- Do not operate breaker with the arm positioned vertically. Excessive vibration to the arm cylinder will occur, causing oil leakage.



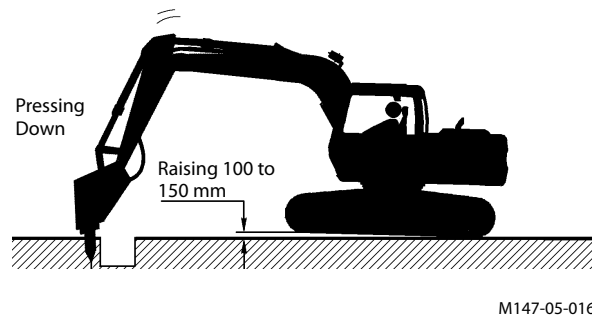
- Press the breaker so that the chisel (the axis) is positioned and thrust perpendicular to the object.



- Do not operate the breaker continuously longer than one minute. Excessive chisel wear will result. If an object could not be broken within one minute, apply the chisel to other locations, less than one minute for each location.



- Raising the front part of the undercarriage by pressing down the breaker may cause damage to the front attachment. Although raising the front edge of the undercarriage up to 150 mm (6 in) is tolerable, do not practice this method more than necessary. Never raise the front edge of the undercarriage higher than 150 mm (6 in) by pressing the breaker down.



OPERATING THE MACHINE

BREAKER MAINTENANCE

Change Hydraulic Oil and Replace Hydraulic Oil Tank Filter

Hydraulic breaker operation subjects the hydraulic system to become contaminated faster and to quickly deteriorate the hydraulic oil. For this reason, hydraulic oil must be changed and the hydraulic oil tank filter must be replaced more often than the machine equipped with a bucket. Failure to do so may result in damage to the breaker, hydraulic oil pump, and other

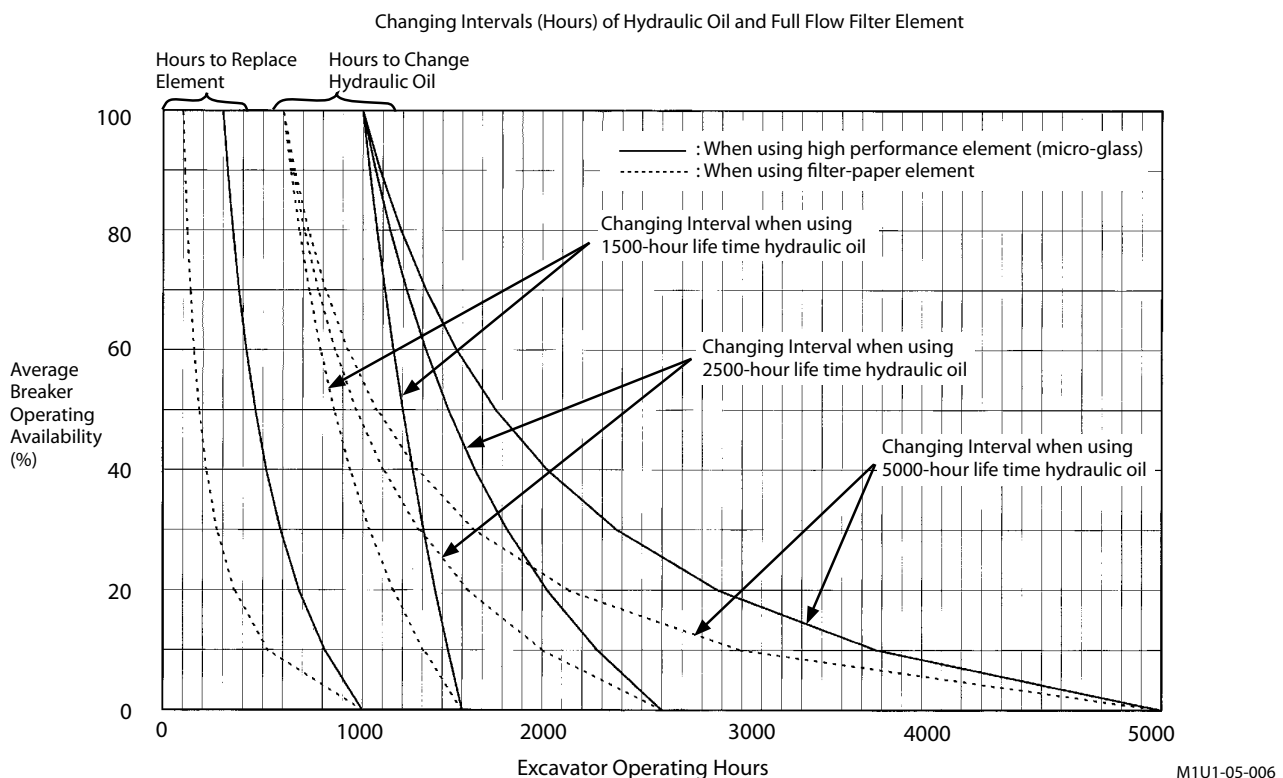
related hydraulic system components. Recommended changing intervals are shown below. For filter replacement and oil changing intervals are shown below. (For filter replacement and oil changing procedures, refer to the "Hydraulic System" in the "MAINTENANCE" Section.)

Changing intervals (Hours)

Attachment	Availability	*Hydraulic Oil	Full Flow Filter Element	**Element Type
Bucket	100%	1500	1000	Standard Filter Paper High Performance Element
		2500		
		5000		
Hydraulic Breaker	100%	600	100	Standard Filter Paper
		1000	300	High Performance Element

* : Changing intervals differ depending on the brand of hydraulic oil used. Refer to the Hydraulic System in the MAINTENANCE section.

** : Use the high performance element (micro-glass) on excavators engaged in demolition and logging work.



IMPORTANT: Use a high performance element (micro-glass) on excavators engaged in demolition and logging work. In case using a filter-paper element is unavoidable, change hydraulic oil and the filter element at the intervals as illustrated with dotted lines.

NOTE: Full-flow filter restriction indicator is optional. If a filter-paper element is used, this indicator does not operate. (Refer to the Hydraulic System in the Maintenance section.)

OPERATING THE MACHINE

PRECAUTIONS FOR CRUSHER OPERATION

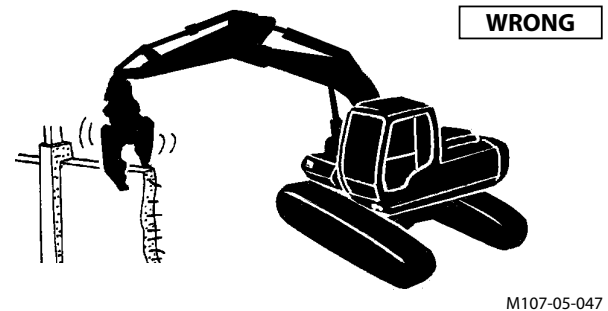
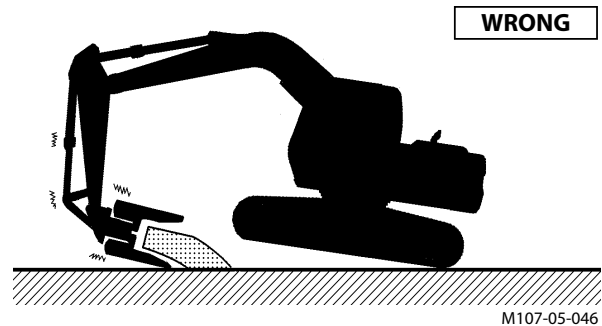
Prevent machine tipping over and damage to the front attachment. Observe the following precautions for crusher operation.



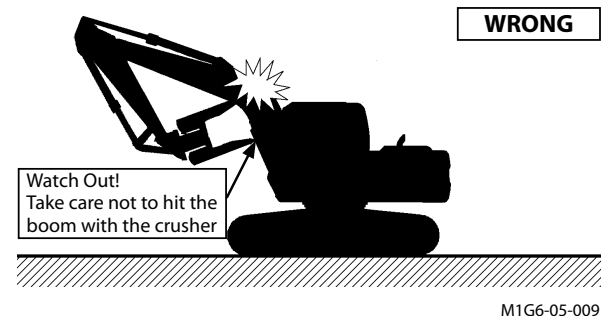
WARNING: Machine stability is reduced as crusher is much heavier than bucket.

When operating with a crusher, the machine is more apt to tip over. Also, falling or flying objects may hit the cab or other part of the machine. Observe the following precautions and take any other precautions necessary to prevent accidents and machine damage from occurring.

- Do not allow the machine's weight to be supported by the crusher or bucket cylinder with the bucket cylinder fully extended or retracted. Doing so may damage the front attachment. In particular, avoid doing so with the bucket cylinder fully extended, as the front attachment will be easily damaged.
Take care to prevent this from happening when dismantling foundation structures using the crusher.
- Using the front attachment, do not raise the base machine off the ground with the arm cylinder fully extended. Failure to do so may result in damage to the arm cylinder.
- When a heavyweight attachment such as a crusher is installed, avoid quickly starting or stopping the front attachment. Failure to do so may result in damage to the front attachment.
- Do not attempt to perform crushing on either side of the machine. Always perform crushing operations to the fore or rear, parallel with the tracks. Otherwise, tipping over may occur.



- Operate the hydraulic excavator carefully to avoid hitting the boom, and cab.



OPERATING THE MACHINE

- When operating the crusher up high with the boom fully raised, be careful of falling objects.

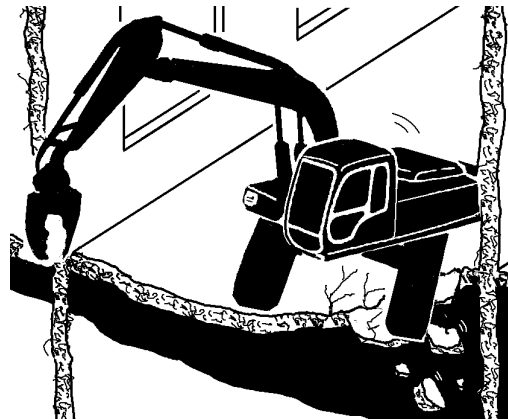
WRONG



M107-05-048

- When operating the crusher on a floor in a building, first confirm that the floor has sufficient strength to support the load caused by crushing, in addition to the machine weight.
- Always operate the crusher on a stable, level surface, not on a slope or on crushed scraps.
- Do not use the crusher to haul or load crushed scraps.
- If a multiple number of attachments, such as crusher and bucket, or crusher and breaker, are used, replacing them with each other at intervals, impurities are more apt to enter the hydraulic system and the hydraulic oil deteriorates quickly. For this reason, replace the hydraulic oil tank filter and change the hydraulic oil at the intervals specified in the breaker time sharing diagram in the previous section. Read the breaker time sharing diagram supposing that time sharing percentage of attachment (s) other than the crusher is that of the breaker.
- Always remove the crusher from the excavator before transporting the machine. Do not fully extend the bucket cylinder when transporting, as this may damage the front attachment, when vibrations arise during transportation.

WRONG



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OPERATING THE MACHINE

ATTACHMENT

Allowable Weight Limits of Installed Attachment

- When an attachment other than the standard bucket is installed on the machine, the machine stability will be different. If a heavy attachment is used, not only will controllability be affected but also machine stability will be reduced, possibly causing safety hazard.
- Before installing attachments such as hydraulic breaker, crusher (concrete crusher), or pulverizer, take machine controllability into account when selecting the weight of the attachment by referring to the table below.

Unit: kg (lb)

Specification	Base Machine		Breaker		Crusher/Pulverizer	
	Model	Arm	Std. Weight	Max. Weight	Std. Weight	Max. Weight
Standard Type	ZX110-3	Std.	1000 (2200)	1100 (2420)	1200 (2640)	1400 (3080)
	ZX110M-3	Std.	1250 (2750)	1400 (3080)	1500 (3300)	1750 (3850)
	ZX130-3, 130LCN-3	Std.	1000 (2200)	1150 (2530)	1250 (2750)	1450 (3190)
	ZX160LC-3	Std.	1250 (2750)	1350 (2970)	1500 (3300)	1750 (3850)
	ZX180LC-3	Std.	1400 (3080)	1550 (3410)	1700 (3740)	2000 (4400)
	ZX180LCN-3	Std.	1300 (2860)	1450 (3190)	1600 (3520)	1850 (4070)
	ZX210-3, 210LCN-3, 240N-3	Std.	1550 (3410)	1750 (3850)	1900 (4180)	2200 (4840)
	ZX210LC-3	Std.	1750 (3850)	1950 (4290)	2100 (4620)	2450 (5390)
	ZX250LCN-3	Std.	1950 (4290)	2150 (4730)	2350 (5170)	2700 (5940)
	ZX250LC-3	Std.	2150 (4730)	2400 (5280)	2600 (5720)	3050 (6710)
	ZX280LCN-3	Std.	2350 (5170)	2600 (5720)	2850 (6270)	3300 (7260)
	ZX280LC-3	Std.	2400 (5280)	2650 (5830)	2900 (6380)	3400 (7480)
	ZX350LCN-3	Std.	2600 (5720)	2850 (6270)	3100 (6820)	3600 (7920)
	ZX350LC-3	Std.	2650 (5830)	2900 (6380)	3150 (6930)	3700 (8140)

OPERATING THE MACHINE

- Breaker operation speed is faster than crusher operation so that the recommended breaker max. weights are reduced more than those of the crushers.
- The weight is not the only factor to be considered when selecting a breaker. Select proper manufacturers' breaker models while referring to the table on the next page.
- Avoid installing an attachment with a long overall length. Damage to the front attachment may result.
- When an attachment of the max. weight is installed, always operate the attachment over the front or rear side of the machine. In addition, avoid operating the attachment at the maximum reach.
- Crushers are heavier than breakers. Slowly move the control lever when operating a crusher.

OPERATING THE MACHINE

Attachments

Example commercial attachment models (breakers and crushers) for excavators are shown in the following table. Among the crusher models, some models are heavier than the recommended weight on the previous page. Before installing them, sufficiently coordinate with the attachment manufacture. Always contact your nearest HITACHI dealer before installing attachments shown with this mark *.

When the machine is operated with an attachment other than bucket, generally heavier loads are applied to the base machine comparing with bucket only operation. Therefore, unless the machine is properly operated, damage not only the attachment but to the base machine may result. Thoroughly read and understand the base machine operator's manual and the attachment manual to prevent accidents.

Breaker (ZX120-3 Class)

Maker	HITACHI		NPK	Okada	Furukawa	Mitsubishi	Toukuu	Matsuda	MON-TABERT	STK	Ranma	GERMANY KRUPP
Model	HSB29	HSB29S	H-7X	OUB308	HB10G	MKB900	TNB7E	THBB801	BRH625	SIB215	E-64	HM560CS
Weight kg (lb)	820 (1810)	920 (2030)	940 (2070)	810 (1790)	790 (1740)	870 (1920)	910 (2010)	740 (1630)	1000 (2200)	900 (1980)	1000 (2200)	870 (1920)
Flow Rate (L/min)	60~120	60~120	90~140	90~120	70~90	65~110	70~140	60~110	80~130	80~130	70~130	50~110
Operating Pressure MPa (kgf/cm ²)	12.3~14.7 (125~150)	12.3~14.7 (125~150)	11.8~13.7 (120~140)	11.8~15.7 (120~160)	13.7~15.7 (140~160)	13.7~16.7 (140~170)	11.8~16.7 (120~170)	13.7~17.6 (140~180)	~113 (~115)	13.7~15.7 (140~160)	13.2~14.2 (135~145)	11.8~16.7 (120~170)
Secondary Relief Valve Set Pressure MPa (kgf/cm ²)	21.6 (220)	21.6 (220)	—	17.6 (180)	20.6 (210)	17.6 (180)	17.6 (180)	19.6 (200)	11.8 (120)	17.6 (180)	15.7 (160)	16.7 (170)

Breaker (ZX200-3 Class)

Maker	HITACHI		NPK	Okada	Furukawa	Mitsubishi	Toukuu	Matsuda	MON-TABERT	STK	Ranma	GERMANY KRUPP
Model	HSB66	HSB66S	H-10XB	OUB312B	F22	MKB1500V	TNB-14E	THBB-1401	BRH501	SIB312	E-66	HM960CS
Weight kg (lb)	1510 (3300)	1520 (3350)	1450 (3200)	1500 (3310)	1550 (3420)	1530 (3370)	1550 (3420)	1350 (3000)	1350 (2980)	1310	1300 (2870)	1500 (3310)
Flow Rate (L/min)	110~160	110~160	160~200	140~180	145~180	130~175	130~170	130~200	110~140	140~180	100~160	130~170
Operating Pressure MPa (kgf/cm ²)	13.2~14.2 (135~145)	13.2~14.2 (135~145)	11.7~13.7 (120~140)	13.7~16.7 (140~170)	15.7~17.7 (160~180)	14.7~17.7 (150~180)	12.7~16.7 (130~170)	15.7~17.7 (160~180)	7.8~10.8 (80~110)	14.7~16.7 (150~170)	13.2~14.2 (135~145)	11.8~13.7 (120~140)
Secondary Relief Valve Set Pressure MPa (kgf/cm ²)	21.6 (220)	21.6 (220)	—	17.6 (180)	17.6 (180)	17.6 (180)	17.6 (180)	17.6 (180)	10.8 (110)	17.6 (180)	14.2 (145)	13.7 (140)

Breaker (ZX270-3 Class)

Maker	HITACHI		NPK	Okada	Furukawa	Mitsubishi	Toukuu	Matsuda	MON-TABERT	STK	Ranma	GERMANY KRUPP
Model	HSB68	HSB68S	E-216	OUB316	F27	MKB1800V	TNB-160	THBB1650	BRH100	SIB316	E-68	HM960CS
Weight kg (lb)	1930 (4250)	1940 (4280)	1960 (4320)	1900 (4190)	1845 (4070)	1800 (3970)	1707 (3760)	1950 (4300)	1840 (4060)	1800 (3970)	1700 (3750)	—
Flow Rate (L/min)	120~200	120~200	170~220	145~185	155~190	135~180	150~200	120~170	110~180	145~185	120~200	130~170
Operating Pressure MPa (kgf/cm ²)	13.2~14.2 (135~145)	13.2~14.2 (135~145)	14.7~16.7 (150~170)	13.7~16.7 (140~170)	15.7~17.7 (160~180)	14.7~17.7 (150~180)	12.7~16.7 (130~170)	9.8~12.7 (100~130)	~13.7 (~140)	13.7~16.7 (140~170)	13.2~14.2 (135~145)	11.7~13.7 (120~140)
Secondary Relief Valve Set Pressure MPa (kgf/cm ²)	21.6 (220)	21.6 (220)	—	17.6 (180)	17.6 (180)	17.6 (180)	17.6 (180)	12.7 (130)	13.7 (140)	17.6 (180)	14.2 (145)	13.7 (140)

Breaker (ZX330-3 Class)

Maker	HITACHI	NPK	Okada	Furukawa	Mitsubishi	Toukuu	Matsuda	MON-TABERT	STK	Ranma	GERMANY KRUPP
Model	HSB80S	E-220	OUB318	F35	MKB2500V	TNB-220	THBB-2000	BRV43	SIB318	S-83	HM150CS
Weight kg (lb)	2430 (5360)	2500 (5510)	2400 (5290)	2345 (5170)	2400 (5290)	2403 (5300)	2330 (5140)	2480 (5470)	2100 (4630)	2200 (4850)	2100 (4630)
Flow Rate (L/min)	160~230	200~250	160~210	175~220	140~210	180~220	150~180	180~250	160~210	160~230	120~180
Operating Pressure MPa (kgf/cm ²)	13.7~14.7 (140~150)	14.7~16.7 (150~170)	13.7~16.7 (140~170)	15.7~17.7 (160~180)	14.7~17.7 (150~180)	12.7~16.7 (130~170)	14.7~17.7 (150~180)	15.2 (155)	13.7~16.7 (140~170)	13.7~16.7 (140~170)	15.7~17.6 (160~180)
Secondary Relief Valve Set Pressure MPa (kgf/cm ²)	21.6 (220)	—	17.6 (180)	17.6 (180)	17.6 (180)	17.6 (180)	17.6 (180)	15.2 (155)	17.6 (180)	14.2 (145)	17.6 (180)

OPERATING THE MACHINE

Crusher (ZX120-3 Class)

Maker	SANGO JYUKI	NPK*	Sakato*	Oosumi*	STK*
Model	TS700RCD	S-15X	SPAC70R-3	MR800	CX750
Weight kg (lb)	1200 (2650)	1410 (3110)	1300 (2870)	1400 (3090)	1250 (2760)
Overall Length mm (ft-in)	1980 (6'6")	2230 (7'4")	1620 (5'4")	1900 (6'3")	2000 (6'7")
Rated Pressure MPa (kgf/cm ²)	24.5 (250)	20.6 (210)	27.4 (280)	~31.4 (~320)	27.4 (280)
Maximum Opening Width mm (ft-in)	700 (2'4")	750 (2'6")	750 (2'6")	800 (2'8")	750 (2'6")
Swing Method	Free	Free		Free	Free

Crusher (ZX200-3 Class)

Maker	HITACHI		SANGO JYUKI	NPK*	Sakato*	Oosumi*		STK*
Model	HSC100	HSC160	TS850RCD	S-22XA	SDS250 RC	MR1000L	MR1100	DX-900
Weight kg (lb)	2430 (5360)	2300 (5070)	2000 (4410)	2010 (4430)	2390 (5270)	1900 (4190)	2350 (5180)	2100 (4630)
Overall Length mm (ft-in)	2340 (7'8")	2600 (8'6")	2400 (7'11")	2326 (7'8")	2425 (7'11")	2200 (7'3")	2250 (7'5")	2380 (7'10")
Rated Pressure MPa (kgf/cm ²)	27.9 (285)	27.9 (285)	27.5 (280)	24.5 (250)	31.4 (320)		27.5 (280)	
Maximum Opening Width mm (ft-in)	900 (2'11")	850 (2'9")	850 (2'9")	850 (2'9")	1050 (3'5")	1060 (3'6")	1060 (3'6")	900 (2'11")
Swing Method	Hydraulic	Hydraulic	Free	Free	Free	Free	Free	Free
Jaw Tip Crushing Force	kN (tf-f)	640 (65)	980 (100)	970 (99)	834 (85)			
Jaw Center Crushing Force	kN (tf-f)	980 (100)	1570 (160)	1570 (160)	1470 (150)	1240 (126)	1540 (157)	

Crusher (ZX270-3 Class)

Maker	HITACHI		NPK*	Oosumi*	STK
Model	HSC100	HSC160	S-26X	MR1300	CX-1100
Weight kg (lb)	2430 (5360)	2300 (5070)	2520 (5560)	3070 (6770)	2650 (5840)
Overall Length mm (ft-in)	2340 (7'8")	2600 (8'6")	2602 (8'6")	2800 (9'3")	2450 (8'0")
Rated Pressure MPa (kgf/cm ²)	27.9 (285)	27.9 (285)	24.5 (250)	27.5 (280)	27.5 (280)
Maximum Opening Width mm (ft-in)	900 (2'11")	850 (2'9")	1000 (3'3")	1300 (4'4")	1100 (3'7")
Swing Method	Hydraulic	Hydraulic	Free	Free	Free
Jaw Tip Crushing Force	kN (tf-f)	640 (65)	1080 (110)		
Jaw Center Crushing Force	kN (tf-f)	980 (100)	1570 (160)	1660 (169)	1540 (157)

Crusher (ZX330-3 Class)

Maker	SANGO JYUKI	NPK*	Sakato*	Oosumi*	STK*
Model	1100RCD	S-35X	SDS350 RC	MR1500	DX-1500
Weight kg (lb)	2940 (6480)	3500 (7720)	3550 (7830)	4200 (9260)	3400 (7500)
Overall Length mm (ft-in)	2700 (8'8")	2824 (9'3")	3285 (10'9")	2950 (9'7")	2550 (8'4")
Rated Pressure MPa (kgf/cm ²)	27.5 (280)	27.5 (280)	31.4 (320)	31.4 (320)	
Maximum Opening Width mm (ft-in)	1500 (4'11")	1100 (3'7")	1300 (4'3")	1500 (5'0")	1300 (4'3")
Swing Method	Free	Free	Free	Free	Free
Jaw Tip Crushing Force	kN (tf-f)	1180 (120)	1230 (125)	981 (100)	
Jaw Center Crushing Force	kN (tf-f)	1780 (180)	1770 (180)	2080 (211)	

OPERATING THE MACHINE

ATTACHMENT CONNECTION PARTS

The attachment hydraulic line and connection parts are located as illustrated below. When the attachment is disconnected, be sure to install caps or plugs to the ends of both the arm and attachment side hydraulic lines to prevent dust from entering or from sticking.

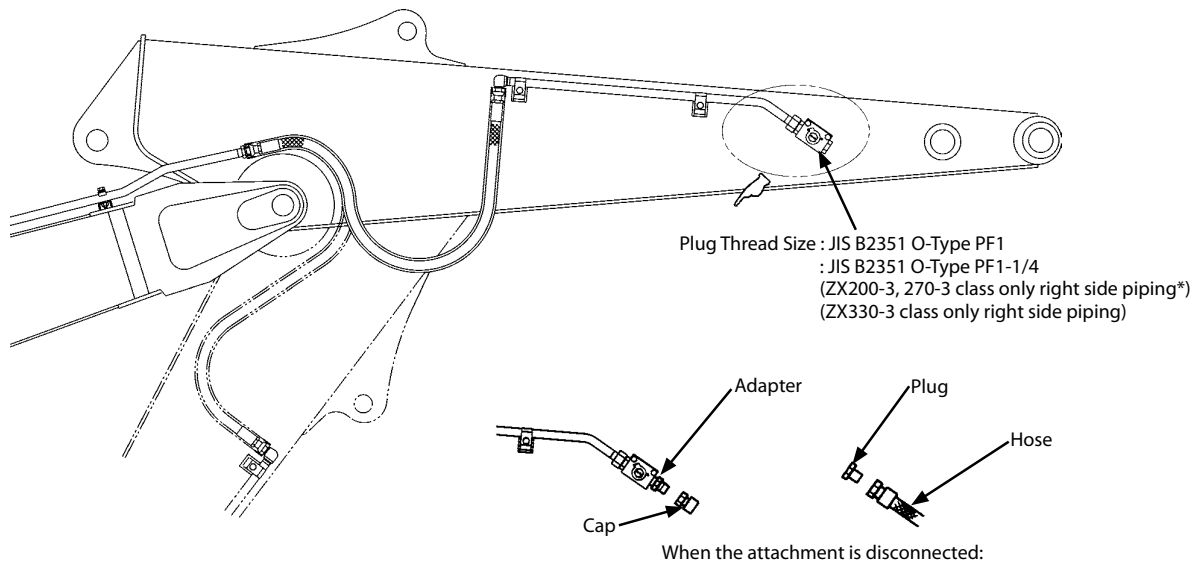
Adapter tightening torque:

PF1 210 N·m (21 kgf·m)

PF1-1/4 340 N·m (34 kgf·m)

(ZX200-3, 270-3 class only right side piping*)

(ZX330-3 class only right side piping)



M175-05-005

Part No. List (Fill attachment manufacturer's part Nos. in the blank spaces.)

Maker	Adapter Size	Adapter	Cap	Plug	Hose
Form / Size	Male-Type PF-UNF				
ZX120-3 Class	PF1-1-1/16UN	4456399	4222711	4222264	
ZX180-3, 200-3, 270-3 Class ZX330-3 Class left side piping	PF1X1-5/16UN	4214444	4222712	4222265	
ZX200-3, 270-3 Class only right side piping* ZX330-3 Class only right side piping	PF1-1/4X1-5/16UN	4314094			
Form / Size	Female-Type PF-PF30°				
ZX120-3 Class	PF1-PF3/4	4129457	9718916	4222047	
ZX180-3, 200-3, 270-3 Class ZX330-3 Class left side piping	PF1XPF1	4042034	9718917	4168177	
ZX200-3, 270-3 Class only right side piping* ZX330-3 Class only right side piping	PF1-1/4XPF1	4317614			
Form / Size	Male-Type PF-PF30°				
ZX120-3 Class	PF1-PF3/4	4456120	4222715	4222044	
ZX180-3, 200-3, 270-3 Class ZX330-3 Class left side piping	PF1XPF1	4456118	4222716	4222045	
ZX200-3, 270-3 Class only right side piping* ZX330-3 Class only right side piping	PF1-1/4XPF1	4653961			

* If equipped

OPERATING THE MACHINE

PRECAUTION FOR ARM ROLL-IN/BUCKET ROLL-IN COMBINED OPERATION

--- If Headguard-Integrated Cab or Rainguard is Equipped

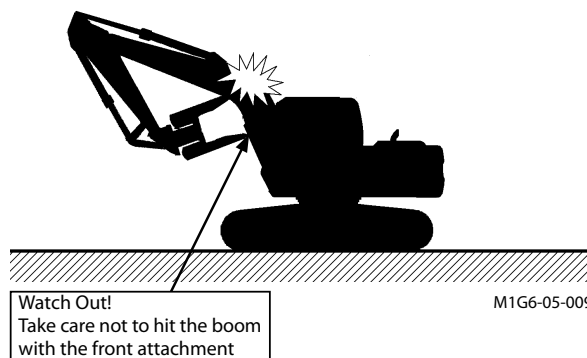
- !** **WARNING:** The bucket teeth will hit the headguard or rainguard if the bucket is rolled in with the arm fully rolled in, as illustrated. When performing combined operation of long arm roll-in/bucket roll-in or when rolling in the bucket with the arm fully retracted, be careful not to hit the headguard or rainguard with the bucket teeth.



M107-05-072

WHEN INSTALLING AN ATTACHMENT LONGER THAN STANDARD BUCKET

- !** **WARNING:** When an attachment (such as a hydraulic breaker or crusher), the overall length of which is longer than that of the bucket, is installed, the attachment may come in contact with the cab and/or the boom. Operate the machine with care not to allow the tip of the front attachment to hit the cab and/or the boom while rolling in the front attachment.



M1G6-05-009

OPERATING THE MACHINE

SHACKLE HOLE USAGE

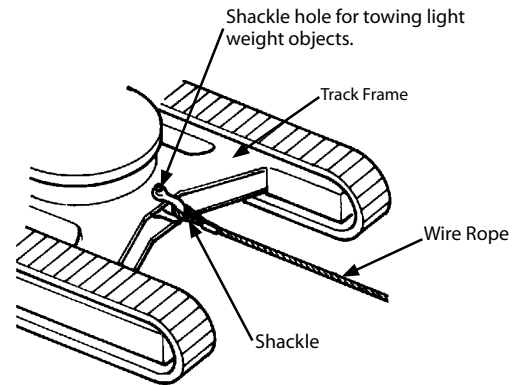
A shackle hole is provided on the track frame to tow light weight objects as specified below.

IMPORTANT: Be sure to conform to the restrictions and precautions stated below when towing a light weight object using the shackle hole provided on the track frame. The track frame and/or the shackle hole may be damaged otherwise.

- The maximum drawbar pull.

Model	Maximum Drawbar Pull
ZX110-3	39200 N (4.0 tf)
ZX110M-3	53900 N (5.5 tf)
ZX130-3, 130LCN-3	44100 N (4.5 tf)
ZX180-3 Class	53900 N (5.5 tf)
ZX200-3 Class	73600 N (7.5 tf)
ZX270-3 Class (Except 280LC-3, 280LCN-3)	83400 N (8.5 tf)
ZX280LC-3, 280LCN-3	98000 N (10.0 tf)
ZX330-3 Class	108000 N (11.0 tf)

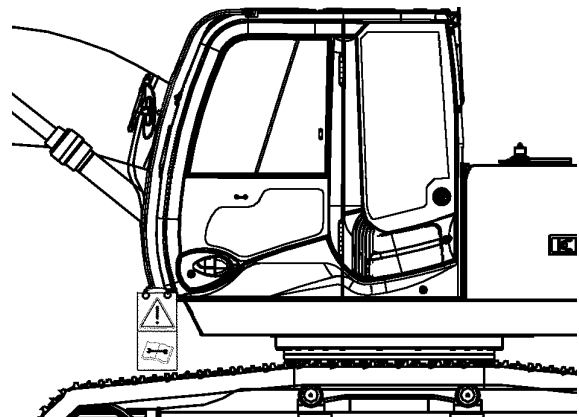
- Be sure to use a shackle.
- Keep the tow line horizontal, straight, and parallel to the tracks.
- Select the slow travel mode. Slowly drive the machine when towing.



M104-05-011

OVERNIGHT STORAGE INSTRUCTIONS

1. After finishing the day's operation, drive the machine to a firm, level ground where no possibility of falling stones, ground collapse, or floods.
Park the machine referring to the "PARKING THE MACHINE" in the "DRIVING THE MACHINE" section.
2. Fill the fuel tank with fuel.
3. Clean the machine.
4. 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 tag in a visible place if the coolant has been drained.



M1U1-05-003

OPERATING THE MACHINE

EMERGENCY BOOM LOWERING PROCEDURE (Without hose-rupture safety valve)

⚠ WARNING: Prevent personal injury. Confirm that no one is under the front attachment before starting the procedure below.

ZX120-3 class

If the engine abnormally stalls and cannot be restarted, lower the boom to the ground by following the emergency procedures described below.

1. Remove rubber caps (1) and (2) from the boom 1 section on the 4 spool control valve.
2. Turn lock nut (8) (with hexagonal width across flats: 17 mm) counterclockwise to remove with an offset box wrench or a spanner.
3. Turn screw (7) (with hexagonal hole width across flats: 4 mm) clockwise with a hexagon wrench until it comes to stop.
4. Turn lock nut (5) (with hexagonal width across flats: 17 mm) counterclockwise to slightly loosen with an offset wrench or a spanner.
5. While turning screw (6) (with hexagonal hole width across flats: 4 mm) clockwise with a hexagon wrench to adjust the boom lowering speed, lower the boom. Do not remove snap ring (3) and washer (4) at this time. In addition, do not turn screw (6) to such extent as washer (4) is deformed.

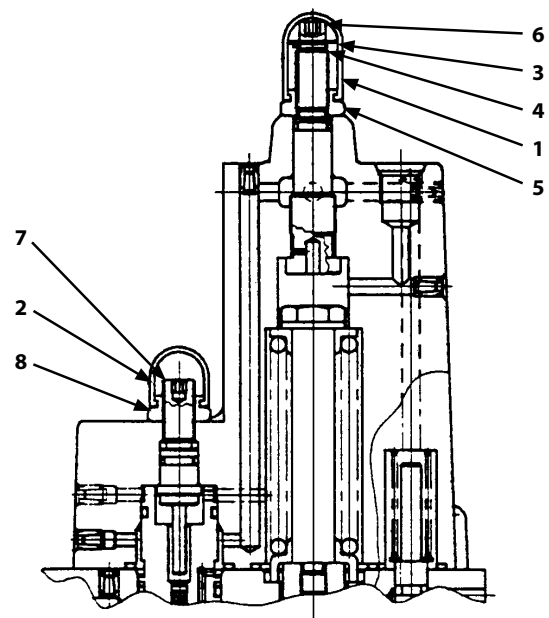
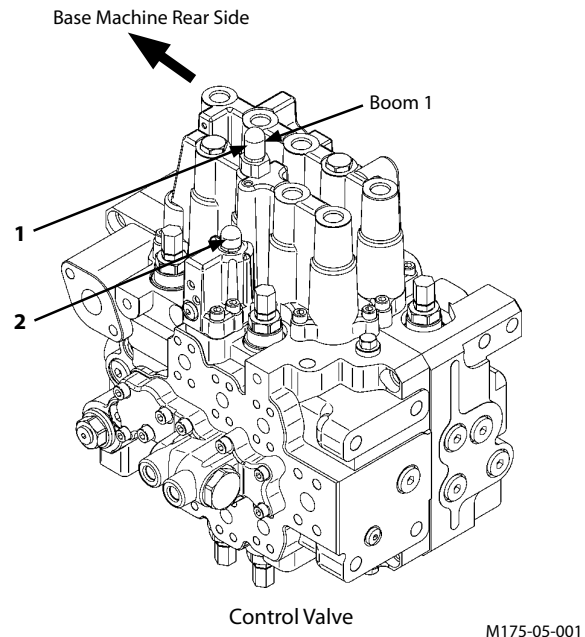
IMPORTANT: Unless lock nuts (5) and (8) are sufficiently tightened, oil leakage may increase. Be sure to completely tighten the lock nuts (5) and (8) to the torque specified below.

6. After the boom is lowered to the ground, allow screws (6) and (7) to be fully loosened by turning them counterclockwise. Then, turn screw (7) one eighth of a turn clockwise and tighten lock nuts (5) and (8).

Tightening torque: 20 N·m (2 kgf·m)

7. Take care to correctly install rubber caps (1) and (2) in their respective original position.

🔧 NOTE: Conduct the work of screw (7) and screw (6) in order.



OPERATING THE MACHINE

EMERGENCY BOOM LOWERING PROCEDURE (Without hose-rupture safety valve)



WARNING: Prevent personal injury. Confirm that no one is under the front attachment before starting the procedure below.

ZX180-3, 200-3, 270-3, 330-3 class

If the engine stalls and cannot be restarted, lower the boom to lower the bucket to the ground referring to the emergency boom lowering procedure stated below.

IMPORTANT: Never loosen screw (2) more than 2 turns. Screw (2) may come off.

1. Loosen lock nut (1). Loosen screw (2) one half of a turn. The boom will start to lower. The boom lowering speed can be somewhat adjusted by loosening screw (2) more.
2. After the bucket is lowered to the ground, retighten screw (2), then lock nut (1) to the specifications below.

Lock Nut (1)

Tool : 13 mm

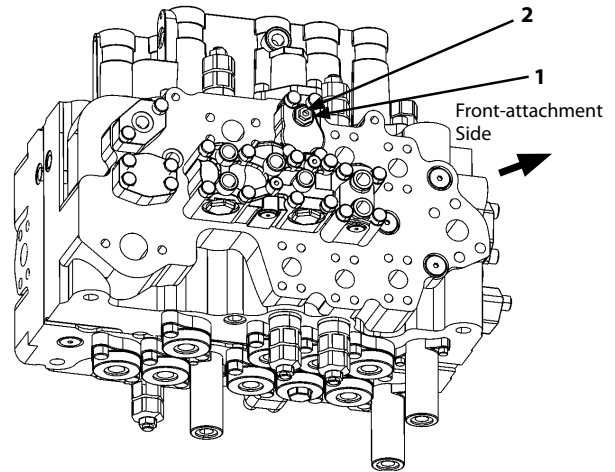
Torque : 13 N·m (1.3 kgf·m, 9.4 lbf·ft)

Screw (2)

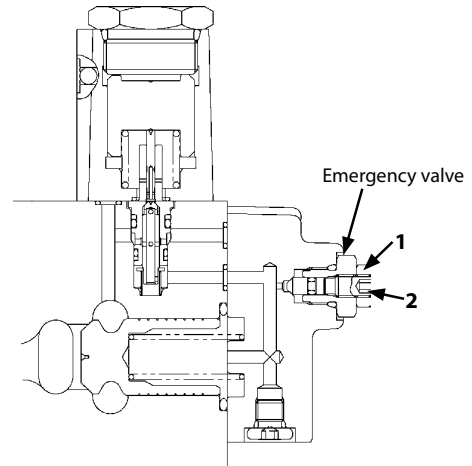
Tool : 4 mm (Hexagonal wrench)

Torque : 7 N·m (0.7 kgf·m, 5.0 lbf·ft)

IMPORTANT: Excessive leakage may result if screw (2) and lock nut (1) are tightened insufficiently. Be sure to retighten screw (2) and lock nut (1) to specifications.



T1V1-03-03-073



T1V1-03-03-038

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 hose rupture 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.

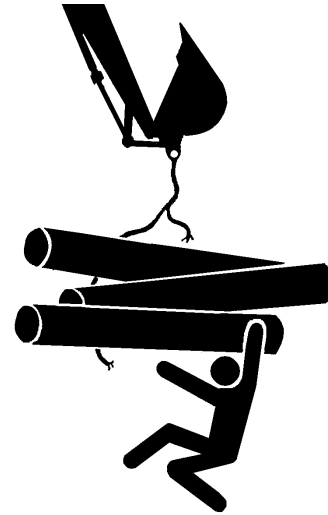
Be sure that the maximum lifting load does not exceed the rated load as shown in the lifting load table plate or operator's manual.

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.

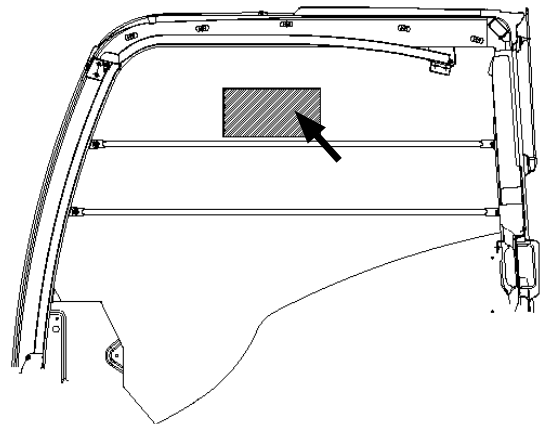
When the machine specifications are modified from the original specifications of the machine delivered, for example, changing the front attachment or track shoes, changing or new installing the overload alarm device may be require. Be sure to consult your authorized Hitachi dealer.

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.

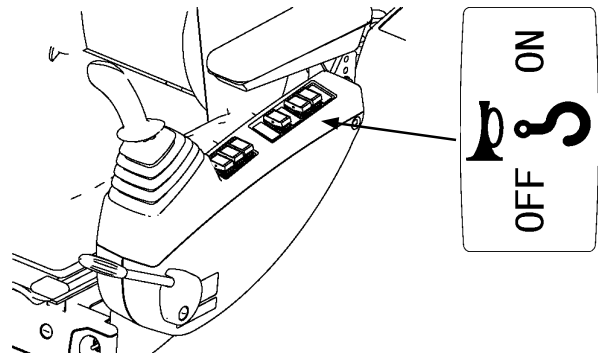


Rated lifting load table

SA-014



M1U1-05-004



T1V1-05-02-004

M1U1-01-010

OPERATING THE MACHINE

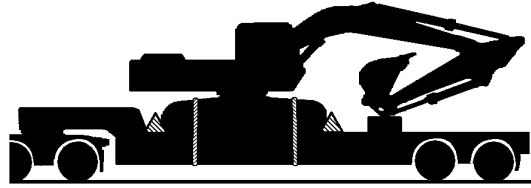
1. Secure sling/chain tightly to the load being lifted. Wear gloves when securing sling/chain.
2. Fasten sling/chain to bucket loop, with the bucket curled and arm retracted.
3. Coordinate hand signals with your signal man before starting.
4. Be aware of the location of all persons in the working area.
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.

TRANSPORTING

TRANSPORTING BY ROAD

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

- When transporting using a trailer, check the width, height, length and weight of the trailer with the machine loaded. Note that transporting the weight and dimensions may vary depending on the type of shoe or front attachments installed.
- Investigate beforehand the conditions of the route to be traveled, such as dimensional limits, weight limits, and traffic regulations.



M1V1-06-001

In some cases, disassemble the machine to bring it within dimensional limits or weight limits of local regulations.

LOADING/UNLOADING ON A TRAILER

Always load and unload the machine on a firm, level surface.



WARNING: Be sure to use a loading dock or a ramp for loading/unloading. 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.

Ramp/Loading Dock:

1. Before loading, thoroughly clean the ramp and flatbed. Dirty ramps or flatbeds with oil, mud, or ice on them are slippery and dangerous.
2. Place blocks against the truck and trailer wheels while using a ramp or loading dock.
3. Ramps must be sufficient in width, length, and strength. Be sure that the incline of the ramp is less than 15 degrees.
4. Loading docks must be sufficient in width and strength to support the machine and have an incline of less than 15 degrees.

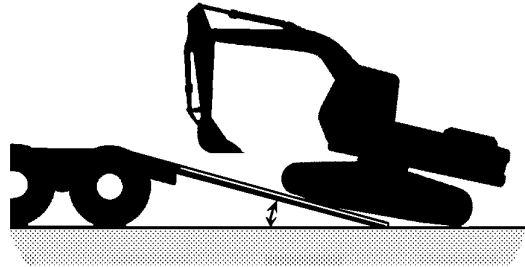
TRANSPORTING

Loading/Unloading



WARNING:

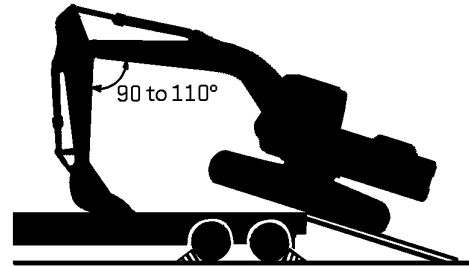
- Always turn the auto-idle switch OFF and the power mode switch E or P when loading or unloading the machine, to avoid unexpected speed increase due to unintentional operation of a control lever.
- Always select the slow speed mode with the travel mode switch. In the fast speed mode, travel speed may automatically increase.
- NEVER steer while driving up or down a ramp as it is extremely dangerous. If repositioning is necessary, first move back to the ground or flatbed, modify traveling direction, and begin to drive again.
- The top end of the ramp where it meets the flatbed is a sudden bump. Take care when traveling over it.
- Prevent possible injury from machine tipping while the upperstructure is rotating. Keep the arm tucked under and rotate the upperstructure slowly for best stability.



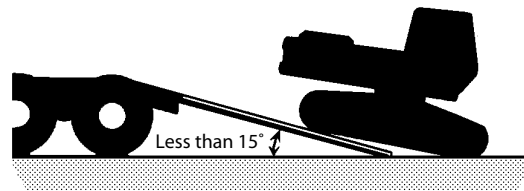
M1G6-06-002

Loading

1. The machine direction should be as follows:
With the front attachment: Travel forward with the front attachment at the front.
Without the front attachment: Travel in reverse, as illustrated.
2. The centerline of the machine should be over the centerline of the trailer.
3. Drive the machine onto the ramp slowly.
With the front attachment:
 - Position the bucket with its flat surface resting on the trailer. Angle of the arm to boom should be 90 to 110°.
 - Rest the bucket on the trailer just before the machine begins to tip forward onto the trailer. Slowly travel forward until the tracks are firmly on the trailer.
 - Slightly raise the bucket. Keeping the arm tucked under, slowly rotate the upperstructure 180°.
 - Lower the bucket onto blocks.



M107-06-021



M107-06-018



M107-06-013

TRANSPORTING

4. Stop the engine. Remove the key from the key switch.
5. Move the control levers several times until hydraulic pressure in the cylinders is released.
6. Pull the pilot control shut-off lever to LOCK position.
7. Close cab windows, roof vent and door, and cover the exhaust opening, to prevent entry of wind and water.



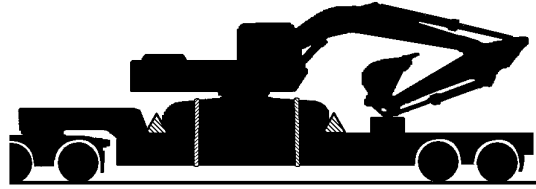
CAUTION: In cold weather, be sure to warm up the machine before loading or unloading it.

TRANSPORTING

Transporting

! WARNING: Fasten chains or cables to the machine frame. Do not place chains or cables over or against the hydraulic lines or hoses.

1. Place blocks in front of and behind the tracks.
2. Fasten each corner of the machine and front attachment to the trailer with a chain or cable.

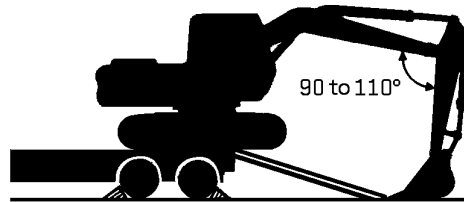


M1V1-06-001

Unloading

! WARNING: The rear end of the flatbed where it meets the ramp is a sudden bump. Take care when traveling over it.

IMPORTANT: Prevent possible damage to the front attachment. Always position the arm at 90 to 110 ° to the boom when unloading the machine. Unloading the machine with the arm tucked in may cause machine damage.



M107-06-023

1. To move the machine over end of the trailer onto the ramp, rest the flat surface of the bucket on the ground. Angle of the arm to the boom should be 90 to 110°.

IMPORTANT: Prevent possible damage to the hydraulic cylinders. Do not allow the machine to hit the ground hard with the bucket.



M107-06-015

2. The bucket must be on the ground before the machine begins to tip forward.
3. As the machine moves forward, raise the boom and extend the arm until the machine is completely off the ramp.

TRANSPORTING

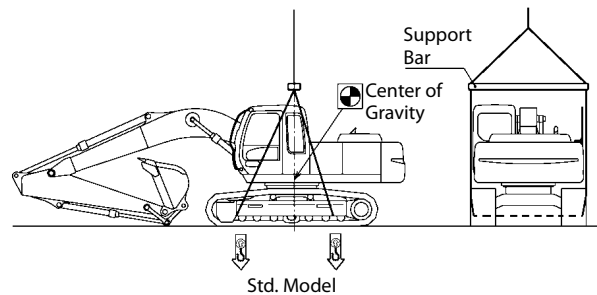
MACHINE LIFTING PROCEDURE



WARNING:

- **Lifting wire ropes and other lifting tools can break, possibly causing serious personal injury. Do not use damaged or deteriorated wire ropes or lifting tools.**
- **Be sure to contact your authorized dealer for correct lifting procedure, and size and kinds of lifting wire ropes and lifting tools.**
- **Pull the pilot control shut-off lever to the LOCK position so that the machine does not accidentally move while being lifted.**
- **Incorrect lifting procedure and/or incorrect wire rope attachment will cause the machine to move (shift) while being lifted, resulting in machine damage and/or personal injury.**
- **Do not lift the machine quickly. Excessive load will be applied to the lifting wire ropes and/or lifting tools, possibly causing them to break.**
- **Do not allow anyone to come close to or under the lifted machine.**
- **The indicated gravity center is for the standard specification machine. The gravity center will vary depending on the kinds of attachments and/or optional equipment to be installed or their position to be taken. Therefore, take care not to lose the balance of the machine while lifting.**

1. Fully extend the arm and bucket cylinders. Lower the boom until the bucket comes in contact with the ground.
2. Pull the pilot control shut-off lever to the LOCK position.
3. Stop the engine. Remove the key from the key switch.
4. Use wire ropes and support bar of sufficient length so that they do not come in contact with the machine while lifting.
Wrap some protectors around wire ropes and/or support bar as required to prevent the machine from being damaged.
5. Drive a crane to an appropriate position for lifting.
6. Thread the wire rope through and under both sides of the track frames as illustrated. Attach the wire ropes to the crane.



M1G6-06-001

This image shows a full page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook or legal stationery. There are no margins, text, or other markings on the page.

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.



SA-005

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.**

MAINTENANCE

Hitachi machine models are classified into 5 classes and 1 model as shown in the table below. When referring to the texts and/or illustrations indicated with the applicable machine class names in this manual, check that the machine models concerned are included using this table.

Class

ZX120-3 Class	ZX110-3, 110M-3, 130-3, 130LCN-3
ZX180-3 Class	ZX160LC-3, 180LC-3, 180LCN-3
ZX200-3 Class	ZX210-3, 210LC-3, 210LCN-3, 240N-3
ZX270-3 Class	ZX250LC-3, 250LCN-3, 280LC-3, 280LCN-3
ZX330-3 Class	ZX350LC-3, 350LCN-3

Model

Std. Model	ZX110-3, 110M-3, 130-3, 130LCN-3, 160LC-3, 180LC-3, 180LCN-3, 210-3, 210LC-3, 210LCN-3, 240N-3, 250LC-3, 250LCN-3, 280LC-3, 280LCN-3, 350LC-3, 350LCN-3
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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.

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 (see page 7-4 and 7-5).

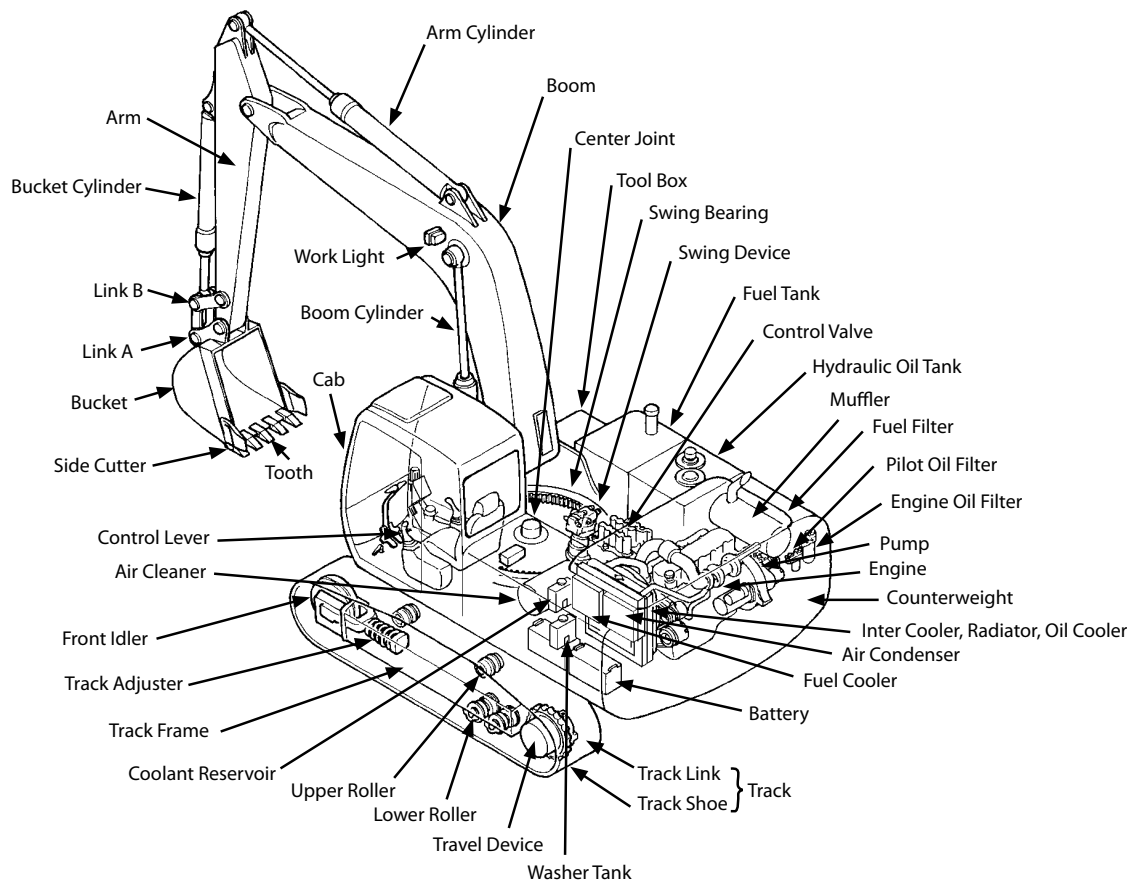
USE CORRECT FUELS AND LUBRICANTS

IMPORTANT: Always use recommended fuels and lubricants.

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

MAINTENANCE

LAYOUT



M1U1-01-005

MAINTENANCE

MAINTENANCE GUIDE TABLE

The maintenance guide table is affixed to the reverse side of the tool box cover. Lubricate and/or service the parts at the intervals as instructed in the table so that all necessary maintenance can be performed regularly.

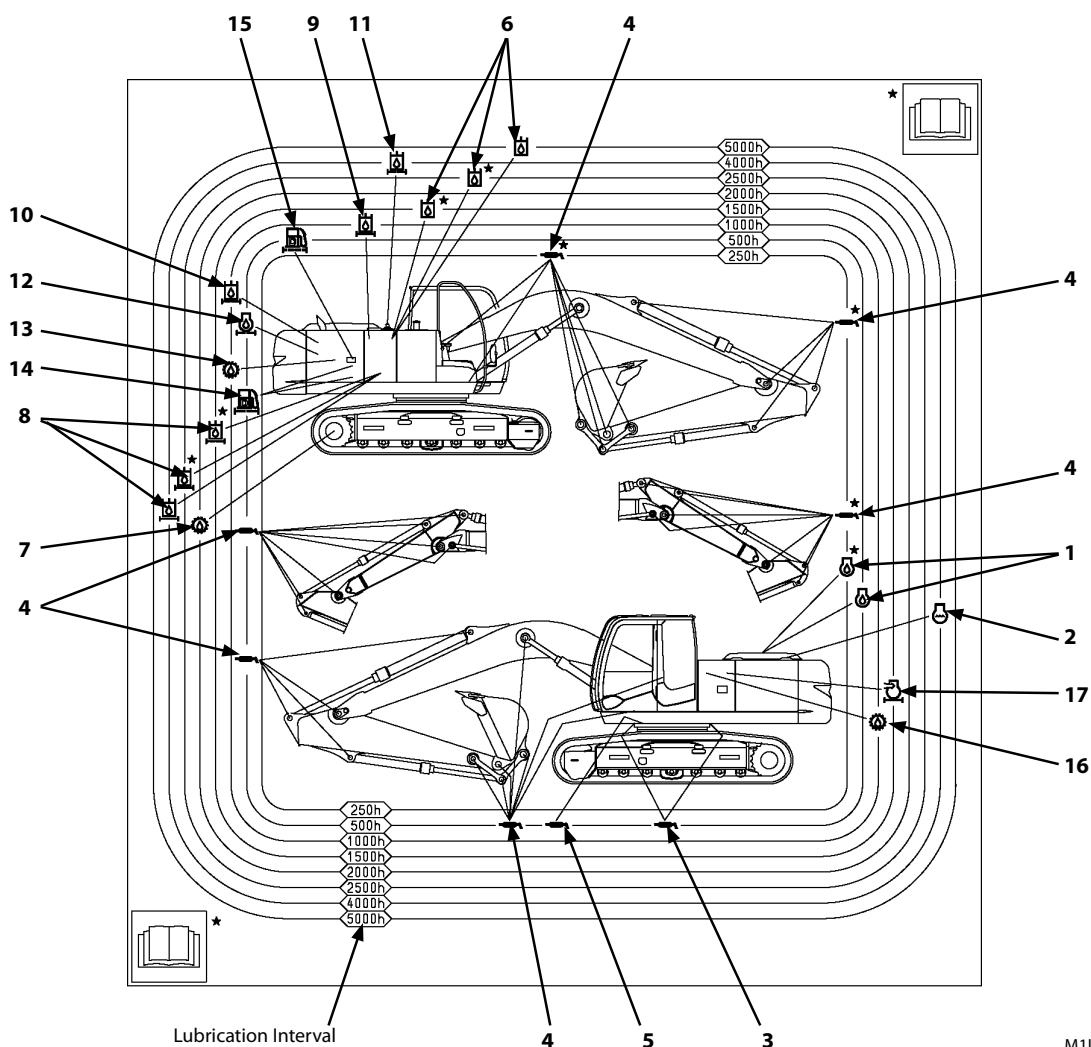
- Symbol Marks

The following marks are used in the maintenance guide table.

	Grease (Front Joint Pin, Swing Bearing, Swing Gear)		Hydraulic Oil Filter (Pilot Oil Filter, Hydraulic Oil Tank Filter, Suction Filter)
	Gear Oil (Travel Reduction Device, Swing Reduction Device)		Air Cleaner Element
	Engine Oil		Coolant (Long-Life Coolant)
	Engine Oil Filter		Fuel Filter (Fuel Main Filter, Pre-Filter)
	Hydraulic Oil		

MAINTENANCE

Maintenance Guide Table



	Item	Page		Item	Page
1	Engine Oil	7-20	10	Hydraulic Oil Filter (Pilot)	7-35
2	Coolant (Long-Life Coolant)	7-55	11	Hydraulic Oil Filter (Air Breather)	7-36
3	Grease	7-18	12	Engine Oil Filter	7-21
4	Grease	7-16	13	Gear Oil (Pump Transmission) ★1	7-23
5	Grease	7-19	14	Fuel Filter (Main/Pre)	7-49
6	Hydraulic Oil	7-30	15	Fuel Solenoid Pump Strainer	7-51
7	Gear Oil (Travel Device)	7-25	16	Gear Oil (Swing Device)	7-24
8	Hydraulic Oil Filter (Suction)	7-31	17	Air Cleaner Element	7-53
9	Hydraulic Oil Filter (Main)	7-34			

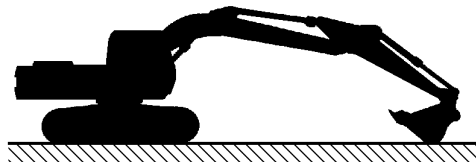
NOTE: ★1. ZX180-3, 200-3, 270-3, 330-3 class

MAINTENANCE

PREPARE MACHINE FOR MAINTENANCE

Before performing the maintenance procedures given in the following chapters, park the machine as described below, unless otherwise specified.

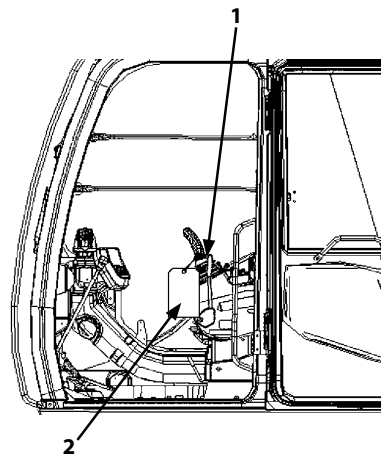
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.



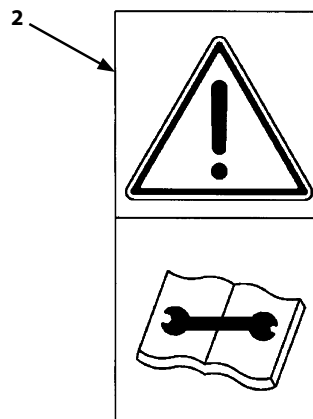
M104-07-021

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Turn the key switch OFF. Remove the key from the key switch. (If maintenance must be performed with engine running, do not leave machine unattended.)
6. Pull pilot control shut-off lever (1) to the LOCK position.
7. Before performing any work on the machine, attach a tag (2) on the right control lever.



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SS2045102

MAINTENANCE

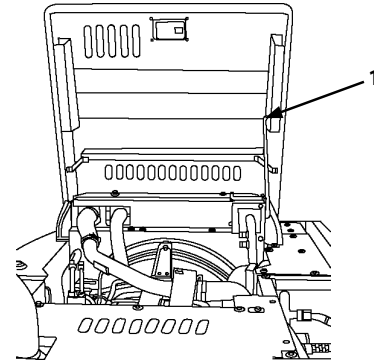
HOOD AND ACCESS COVERS

ZX120-3, 180-3 Class



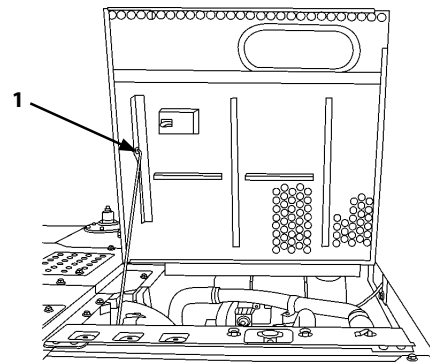
WARNING:

- Do not keep the hood and access covers open when the machine is parked on a slope, or while the wind is blowing hard. The hood or access covers may close accidentally, possibly resulting in personal injury.
 - When opening or closing the hood and access covers, take extra care not to catch fingers between the base machine and the hood or access covers.
-
- Remove locks (2 used) to open the engine access cover. Holding the handle on the access cover, raise the cover until the cover is secured with catch (1).
 - After opening the right and/or left access covers, be sure to insert rods (2) into cover lock holes (3) to hold the covers.



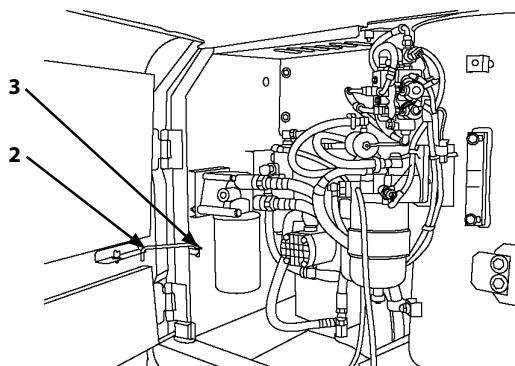
Engine Cover ZX120-3 Class

M1U1-07-099



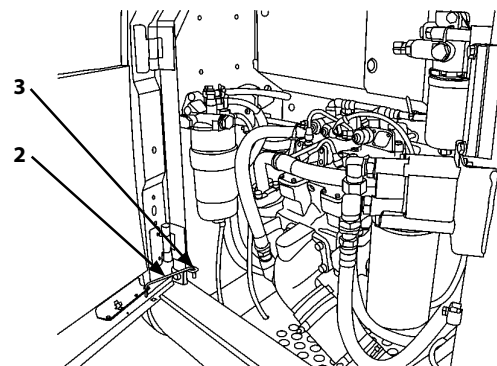
Engine Cover ZX180-3 Class

M1U1-07-090



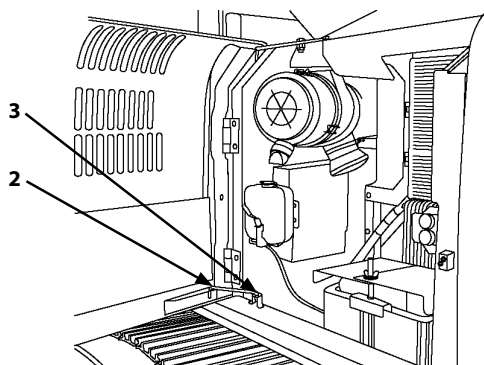
Right Cover ZX120-3 Class

M1U1-07-100



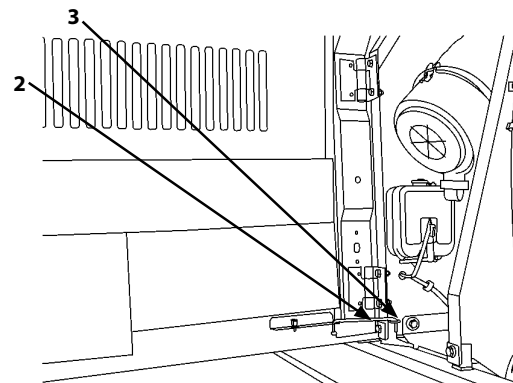
Right Cover ZX180-3 Class

M1U1-07-098



Left Cover ZX120-3 Class

M1U1-07-101



Left Cover ZX180-3 Class

M1U1-07-092

MAINTENANCE

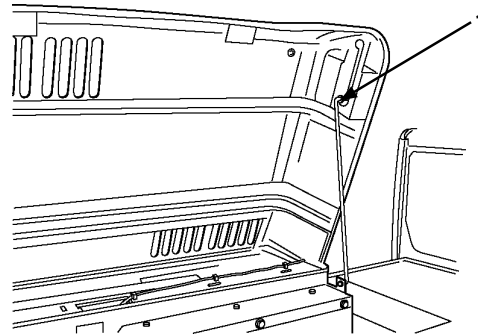
HOOD AND ACCESS COVERS

ZX200-3, 270-3, 330-3 Class



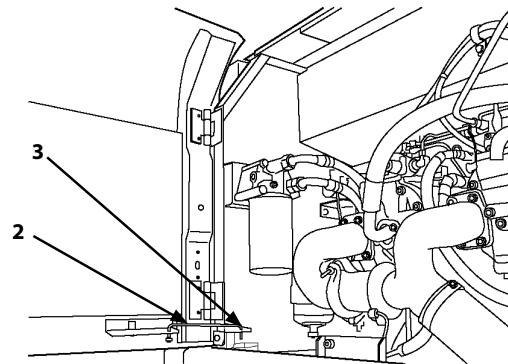
WARNING:

- Do not keep the hood and access covers open when the machine is parked on a slope, or while the wind is blowing hard. The hood or access covers may close accidentally, possibly resulting in personal injury.
 - When opening or closing the hood and access covers, take extra care not to catch fingers between the base machine and the hood or access covers.
-
- Remove locks (2 used) to open the engine access cover. Holding the handle on the access cover, raise the cover until the cover is secured with catch (1).
 - After opening the right and/or left access covers, be sure to insert rods (2) into cover lock holes (3) to hold the covers.
 - When opening the rear left cover, open the front left cover first. Then, pull to open the rear left cover as illustrated.



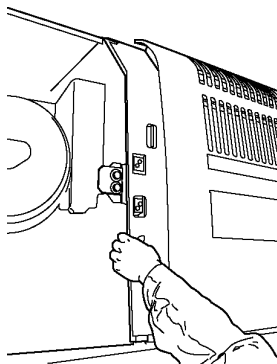
Engine Cover

M1U1-07-030



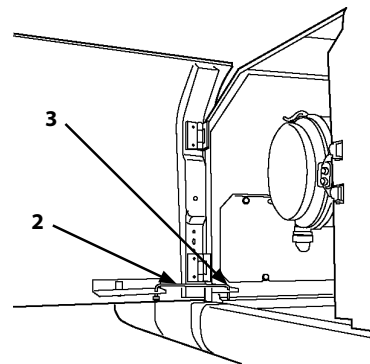
Right Cover

M1U1-07-032



Rear Left Cover

M1U1-07-033



Front Left Cover

M1U1-07-031

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
Engine		Fuel hose (Fuel tank to Supply pump)	Every 2 years
		Oil filter hose (Engine to oil filter)	Every 2 years
		Heater hose (Heater to engine)	Every 2 years
Hydraulic System	Base Machine	Pump suction hose	Every 2 years
		Pump delivery hose	Every 2 years
		Swing hose	Every 2 years
		Travel high pressure hose	Every 2 years
	Front Attachment	Boom cylinder line hose	Every 2 years
		Arm cylinder line hose	Every 2 years
		Bucket cylinder line hose	Every 2 years
Seat belt			Every 3 years
Clear hatch (If equipped)			Every 5 years

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

IMPORTANT:

- **Replace the clear hatch with a new one every 5 years even if undamaged. In case it was remarkably damaged or has received severe shock loads, replace it even if it has been not in use for 5 years.**
- **When cleaning the clear hatch, use a neutral detergent. If acidic or alkaline detergent is used, the clear hatch may become discolored or crack.**
- **Keep organic solvent away from the clear hatch. Failure to do so may cause the clear hatch to become discolored or crack.**

MAINTENANCE

MAINTENANCE GUIDE

A. GREASING (See Page 7-16)

Parts		Quantity	Interval (hours)						
			8	50	100	250	500	1000	2000
1. Front Joint Pins	Bucket and Link Pins	9	★			★★			
	Others	11	★			★★			
2. Swing Bearing		2							
3. Swing Internal Gear		1					★★★		

 **NOTE:** ★ Maintenance required when operating in water or mud and under extremely severe condition.
 ★★ Maintenance required only during first time check.
 ★★★ Check and add grease.

IMPORTANT: Grease bucket and link pivots every day until break-in operation (50 hours) is complete. When the bucket joint boss end faces are not finished with WC thermal spraying, grease the bucket two joint pin sections at an interval of every 250 hours.

B. ENGINE (See Page 7-20)

Parts		Quantity	Interval (hours)						
			8	50	100	250	500	1000	2000
1. Engine Oil	Oil Level Check	1							
2. Engine Oil	Change	ZX120-3, 180-3 Class 17.0 L (4.5 US gal)				★			
		ZX200-3, 270-3 Class 23.0 L (6.1 US gal)				★			
		ZX330-3 Class 41.0 L (10.8 US gal)				★			
3. Engine Oil Filter	Replacement	1				★			

 **NOTE:** ★ Change 250 operating hours, if the content of sulfur of fuel is 2000 ppm or more.
 Consult your nearest Hitachi dealer for the details.

MAINTENANCE

C. TRANSMISSION (See Page 7-23)

Parts			Quantity	Interval (hours)						
				8	50	100	250	500	1000	2000
1. Pump Transmission	Oil Level Check		1							
	Change	ZX180-3, 200-3, 270-3 Class	1.0 L (1.1 US qt)							
		ZX330-3 Class	1.4 L (1.5 US qt)							
2. Swing Reduction Gear	Oil Level Check		1							
	Change	ZX120-3 Class	3.2 L (3.4 US qt)							
		ZX180-3, 200-3 Class	6.2 L (1.6 US gal)							
		ZX270-3 Class (Except 280LC-3, 280LCN-3)	9.1 L (2.4 US gal)							
		ZX280LC-3, 280LCN-3	11.7 L (3.1 US gal)							
		ZX330-3 Class	17.0 L (4.5 US gal)							
3. Travel Reduction Gear	Oil Level Check		2							
	Change	ZX120-3 Class	4.0 L x2 (4.2 US qt)							
		ZX180-3, 200-3 Class	6.8 L x2 (1.8 US gal)							
		ZX270-3 Class (Except 280LC-3, 280LCN-3)	7.8 L x2 (2.1 US gal)							
		ZX280LC-3, 280LCN-3, 330-3 Class	9.2 L x2 (2.4 US gal)							

D. HYDRAULIC SYSTEM (See Page 7-27)

Parts		Quantity	Interval (hours)										
			8	50	100	250	300	500	1000	1500	2500	5000	
1. Check Hydraulic Oil Level		1											
2. Change Hydraulic Oil	ZX120-3 Class	130 L (34.3 US gal)							*	*	*	*	
	ZX180-3 Class	190 L (50.2 US gal)							*	*	*	*	
	ZX210-3, 210LC-3	200 L (52.8 US gal)							*	*	*	*	
	ZX210LCN-3, 240N-3	170 L (44.9 US gal)							*	*	*	*	
	ZX270-3 Class	243 L (64.2 US gal)							*	*	*	*	
	ZX330-3 Class	298 L (78.7 US gal)							*	*	*	*	
3. Suction Filter Cleaning		1	When changing hydraulic oil										
4. Replace Hydraulic Oil Tank Filter		1					**	*	*				
5. Replace Pilot Oil Filter		1											
6. Replace Air Breather Element		1											
7. Check Hoses and Lines	for leaks	–											
	for cracks, bend, etc.	–											

 **NOTE:** * Changing interval differs according to the brand of hydraulic oil used, kind of filter element or average attachment operating availability. Refer to the "changing intervals of hydraulic oil and full flow filter element" on page 7-29. See recommended oil chart.

** While demolition and logging work.

MAINTENANCE

E. FUEL SYSTEM (See Page 7-42)

Parts	Quantity	Interval (hours)						
		8	50	100	250	500	1000	2000
1. Drain Fuel Tank Sump	1							
2. Drain Fuel Filter	1							
3. Replace Fuel Main Filter Element	1							
4. Replace Fuel Pre-Filter Element	1							
5. Clean Fuel Solenoid Pump Strainer	1							
6. Check Fuel Hoses	for leaks, cracks, etc.	–						
	for cracks, bend, etc.	–						

F. AIR CLEANER (See Page 7-53)

Parts		Quantity	Interval (hours)						
			8	50	100	250	500	1000	2000
1. Air Cleaner Outer Element	Cleaning	1	(Or when indicator lit)						
	Replacement	1	After cleaning 6 times or 1 year						
2. Air Cleaner Inner Element	Replacement	1	When outer element is replaced						

G. COOLING SYSTEM (See Page 7-55)

Parts		Quantity	Interval (hours)						
			8	50	100	250	500	1000	2000
1. Check Coolant Level		1							
2. Check and Adjust Fan Belt Tension		1		★★					
3. Change Coolant	ZX120-3 Class	16 L (4.2 US gal)	Twice a year * ₁						
	ZX180-3 Class	18 L (4.8 US gal)	Twice a year * ₁						
	ZX200-3, 270-3 Class	26 L (6.9 US gal)	Twice a year * ₁						
	ZX330-3 Class	32 L (8.5 US gal)	Twice a year * ₁						
4. Clean Radiator, Oil Cooler Core and Inter Cooler	Outside	1					* ₂		
	Inside	1	Once a year						
5. Clean Oil Cooler, Radiator and Inter Cooler Front Screen		1					* ₂		
6. Clean Air Conditioner Condenser		1					* ₂		
7. Clean Fuel Oil Cooler		1					* ₂		
8. Clean Air Conditioner Front Screen (Opt.)		1					* ₂		

 NOTE: ★★ Maintenance required only during first time check.

*₁ When genuine Hitachi Long-Life Coolant is used, change every two years or 4000 operating hours, whichever comes first.

*₂ Shorten the maintenance interval when the machine is operated in dusty areas.

IMPORTANT: Use fresh water or normal tap water as a coolant. Do not use strong acid or alkaline water. Use the coolant with genuine Hitachi Long-Life Coolant (LLC) mixed by 30 to 50 %.

MAINTENANCE

H. ELECTRICAL SYSTEM (See Page 7-62)

I. MISCELLANEOUS (See Page 7-68)

Parts			Quantity	Interval (hours)							
				8	50	100	250	500	1000	2000	4000
1. Check Bucket Teeth for Wear and Looseness			—								
2. Change Bucket			—	As required							
3. Convert Bucket Connection Into Face Shovel			—	As required							
4. Adjust Bucket Linkage			1	As required							
5. Remove Travel Levers			2	As required							
6. Check and Replace Seat Belt			1		Every 3 years (Replace)						
7. Check Windshield Fluid Level			1	As required							
8. Check Track Sag			2								
9. Check Air Conditioner Filter (Opt.)	Circulating Air Filter	Cleaning	1								
		Replacement	1	After cleaning 6 times or so							
	Fresh Air Filter	Cleaning	1								
		Replacement	1	After cleaning 6 times or so							
10. Check Air Conditioner (Opt.)			—								
11. Clean Cab Floor			—	As required							
12. Retighten Cylinder Head Bolt			—	*As required							
13. Inspect and Adjust Valve Clearance			—					*			
14. Measure Engine Compression Pressure			—					*			
15. Check Starter and Alternator			—					*			
16. Check and Replace EGR Device			—	*As required							
17. Check Tightening Torque of Bolts and Nuts			—		**						

 **NOTE:** * Contact your authorized dealer for maintenance.
 ★★ Maintenance required only during first time check.

MAINTENANCE

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

Recommended Engine Oil

IMPORTANT: Use only genuine Hitachi engine oil as shown below or engine oil equivalent to DH-1 specified in JASO. Failure to do so may deteriorate the engine performance and/or shorten the engine service life. Please be noted that all engine failures caused by using engine oil other than specified are excluded from Hitachi Warranty Policy. Consult your nearest Hitachi dealer for the unclear points.

Brand Names of Recommended Engine Oil

Kind of Oil	Engine Oil		
Application	Engine Crank Case		
Air Temp.	-20 to 30 °C (-4 to 86 °F)	-15 to 40 °C (5 to 104 °F)	
Manufacturer			JASO
Hitachi	Super wide DH-1 10W-30	Super wide DH-1 15W-40	DH-1

MAINTENANCE

Brand Names of Recommended Oil					
Application	Swing and Travel Reduction Gear		Pump Transmission		
Kind of Oil	Gear oil		Engine Oil		
Air Temp.	-20 to 40 °C (-4 to 104 °F)		-20 to 40 °C (-4 to 104 °F)	-10 to 35 °C (14 to 95 °F)	25 to 40 °C (77 to 104 °F)
Manufacturer					
British Petroleum	BP Gear oil	SAE80W-90		BP Vanellus C3	
				30	40
Caltex Oil	Thuban	SAE 90		RPM DELO 300 Oil	
				30	40
Esso	Esso Gear Oil	GP80W-90		Essolube D-3	
				30	40
Idemitsu Kosan	Apollo Gear	HE90	Apolloil super wide 15W-40	Apolloil diesel motive	
				S-330	S-340
Mobil Oil	Mobilube	GX80W-90		Mobil Delvac	
				1330	1340
Nippon Oil	Gear Lube SP90	*2	Hidiesel S3		
			15W-40 *1	-20 to 35 °C (-4 to 95 °F)	
				10W-30	
Shell Oil	Shell Spirax	EP90	Rymla D		
				30	40
Remarks	API GL 4 Class		API CD Class		

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

*1 Engine oil for pump transmission

*2 Gear oil for swing and travel reduction device.

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)
Manufacturer						
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 4000 cSt at -40 °C

High Temperature Viscosity: More than 6.5 cSt 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.

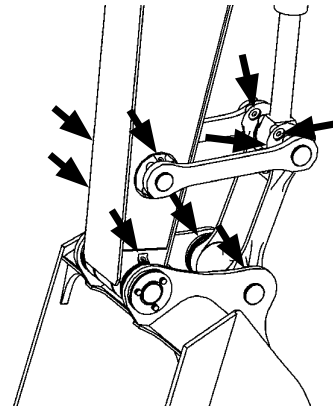
MAINTENANCE

A. GREASING

1 Front Joint Pins

Bucket --- every 250 hours

Link Pins --- every 500 hours

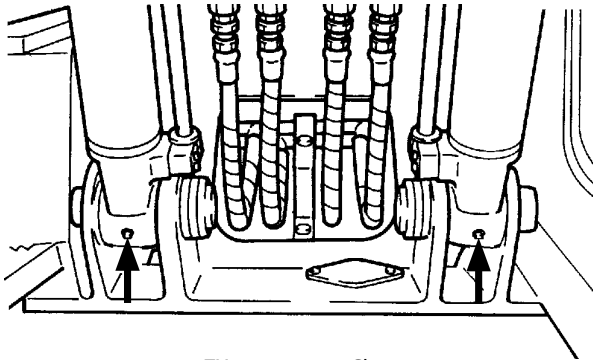


ZX120-3, 180-3, 200-3, 270-3, 330-3 Class

M178-07-007

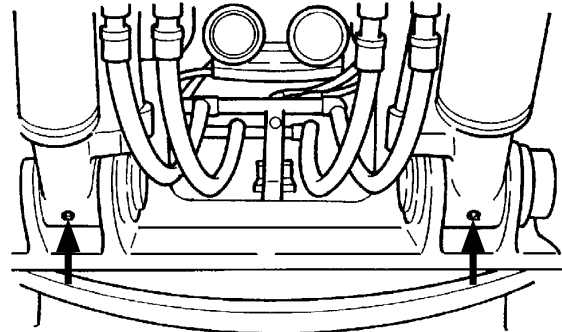
Others --- every 500 hours

• Boom Cylinder Bottom



ZX120-3, 180-3 Class

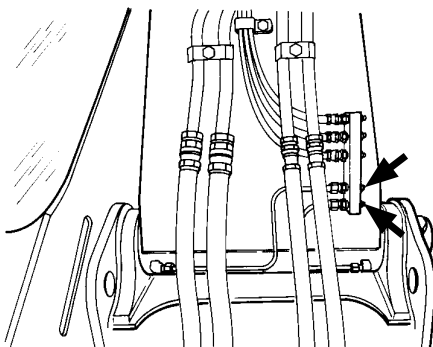
M104-07-002



ZX200-3, 270-3, 330-3 Class

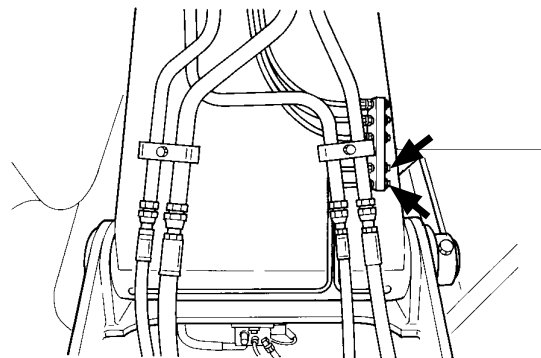
M157-07-156

• Boom Foot



ZX120-3, 180-3 Class

M154-07-002

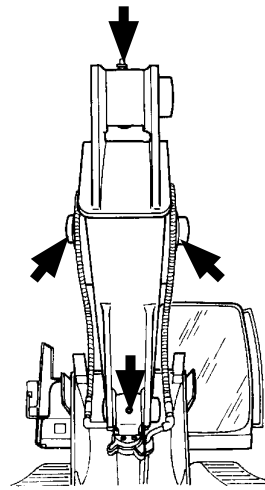


ZX200-3, 270-3, 330-3 Class

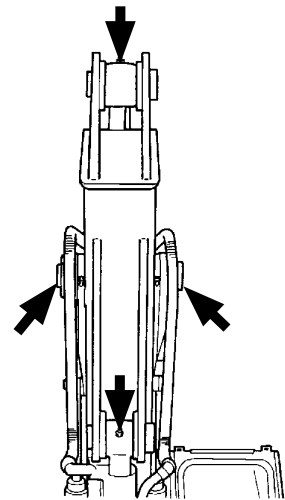
M157-07-155

MAINTENANCE

- Boom and Arm Joint Pin, Arm Cylinder Rod Pin and Bucket Cylinder Bottom Pin.

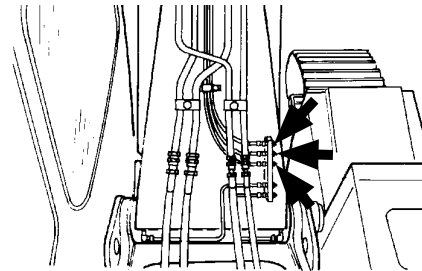


ZX120-3, 180-3 Class
M154-07-003

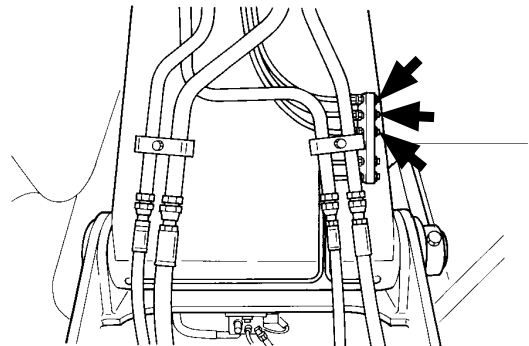


ZX200-3, 270-3, 330-3 Class
M157-07-157

- Boom Cylinder Rod Pins and Arm Cylinder Bottom Pin.
(Centralized greasing system)



ZX120-3, 180-3 Class
M175-07-036



ZX200-3, 270-3, 330-3 Class
M157-07-155

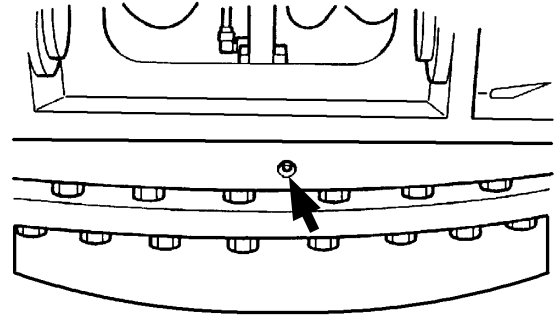
MAINTENANCE

2 Swing Bearing --- every 500 hours

CAUTION: Lubricating both the swing bearing and gear and rotating the upperstructure must be done by one person. Before you lubricate the swing bearing, clear the area of all persons.

Each time you leave the cab

- Lower the bucket to the ground.
- Stop the engine.
- Pull the pilot control shut-off lever to the LOCK position.
- Use handrails.



M157-07-159

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Turn the key switch OFF. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. With the upperstructure stationary, apply grease via the two grease fittings.
8. Start the engine. Raise the bucket several inches off the ground and rotate the upperstructure 45° (1/8 turn).
9. Lower the bucket to the ground.
10. Repeat the procedure three times, beginning with step 3.
11. Apply grease to the swing bearing until grease can be seen escaping from the swing bearing seals.

Model	Capacity
ZX120-3 Class	0.25 L (0.26 US qt)
ZX180-3, 200-3 Class	0.30 L (0.32 US qt)
ZX270-3 Class	0.35 L (0.37 US qt)
ZX330-3 Class	0.40 L (0.42 US qt)

12. Take care not to supply excessive grease.

MAINTENANCE

3 Swing Internal Gear --- every 500 hours

CAUTION: Adding or changing swing internal gear grease and rotating the upperstructure must be done by one person. Before you start, clear the area of all persons.

Each time you leave the cab

- Lower the bucket to the ground.
- Stop the engine.
- Pull the pilot control shut-off lever to the LOCK position.
- Use handrails.

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

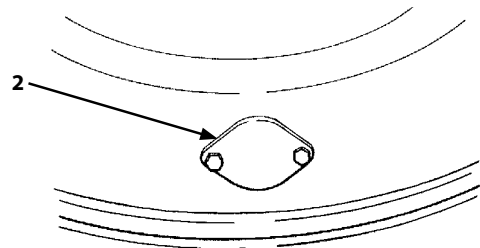
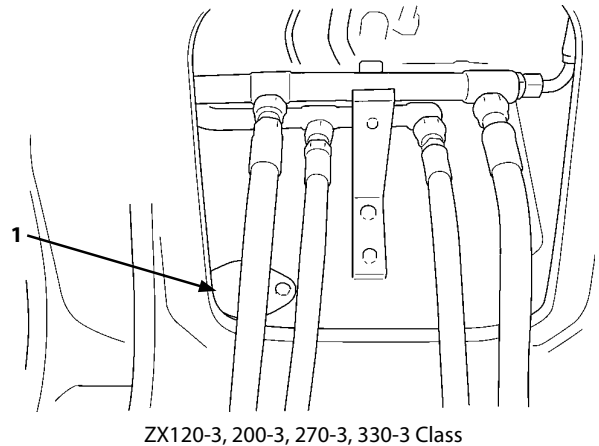
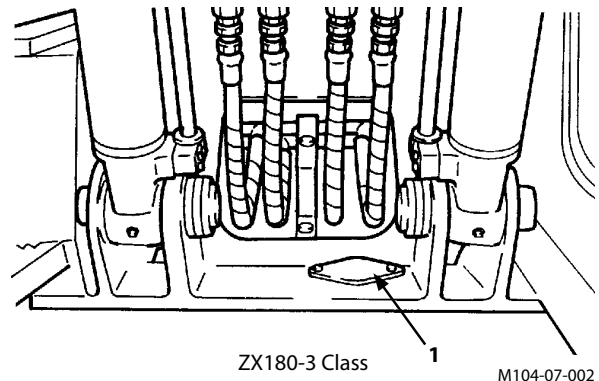
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Turn the key switch OFF. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Open the tool box cover on the upperstructure and remove cover (1).
8. Grease must be to the top of all internal gear teeth of the swing bearing and be free of contamination. Add approximately 0.5 kg of grease, if required. If the grease is contaminated, remove grease and replace with clean grease.

IMPORTANT: If water or mud is found in the swing gear area, see **Operating in Water or Mud in the "Driving the Machine" section.**

9. Install cover (1).
10. If grease shows any sign of water or mud, replace all the grease on the internal gear. Remove cover (2) from the bottom of the swing gear housing, located near the center joint.
11. Install cover (2)

Model	Capacity
ZX120-3 Class	9 L (2.4 US gal)
ZX180-3, 200-3, 270-3 Class	17 L (4.5 US gal)
ZX330-3 Class	19 L (5.0 US gal)



MAINTENANCE

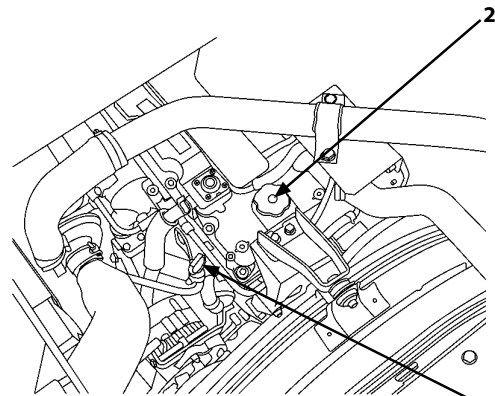
B. ENGINE

1 Engine Oil Level --- check daily

IMPORTANT: For most accurate readings, check the oil level every day before starting the machine. Be sure the machine is on a level surface.

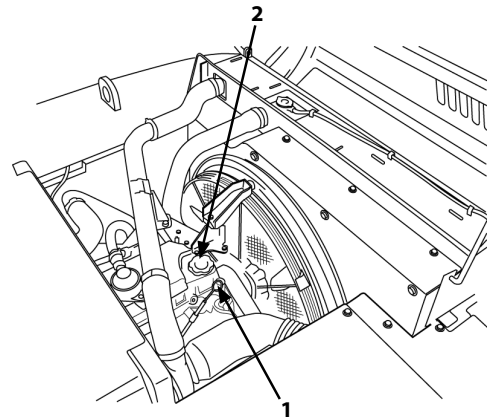
1. Remove dipstick (1). Wipe oil off with a clean cloth. Reinsert dipstick (1).
2. Remove dipstick (1) again. Read level. Oil level must be between the circle marks.
3. If necessary, add oil via oil filler cap (2).
Be sure to use only recommended oil (see Recommended Engine Oil Chart).

 **NOTE:** Checking the oil level immediately after shut down will result in inaccurate readings. Be sure to allow the oil to settle for at least 10 minutes before checking.



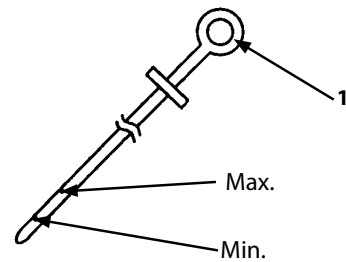
ZX120-3, 180-3 Class

M1U1-07-093



ZX200-3, 270-3, 330-3 Class

M1U1-07-044



M178-07-011

MAINTENANCE

2 Change Engine Oil --- every 500 hours

IMPORTANT: Change 250 operating hours, if the content of sulfur of fuel is 2000 ppm or more. Consult your nearest Hitachi dealer for the details.

3 Replace Engine Oil Filter --- every 500 hours

IMPORTANT: Change 250 operating hours, if the content of sulfur of fuel is 2000 ppm or more. Consult your nearest Hitachi dealer for the details.

1. Run the engine to warm oil.
DO NOT run the engine until oil is hot.
2. Park the machine on a level surface.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

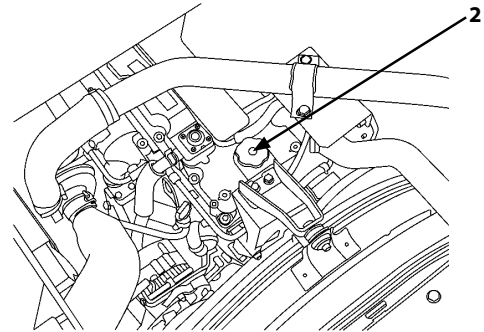
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

5. Run the engine at slow idle speed without load for five minutes.
6. Turn the key switch OFF. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.

CAUTION: Engine oil may be hot just after operation. Take extra care to avoid burns.

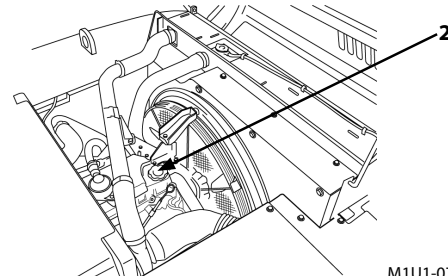
IMPORTANT: Install drainer (5) to drain valve (3) slowly. Oil may exhaust in large quantities when suddenly tightened.

8. Remove oil filler cap (2).
9. Remove cap (4) from oil pan drain valve (3). Install drainer (5) to drain valve. (3)
10. Screw drainer (5) into drain valve (3). Drain valve (3) will be opened to drain oil.
11. Remove oil filler cap (2). Then, allow oil to drain through a clean cloth into a 50-liter (13 US gal) container.
12. After all oil has been drained, inspect the cloth for any debris such as small pieces of metal.
13. Remove drainer (5). Install cap (4) to drain valve (3).



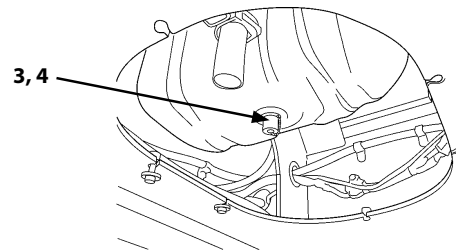
ZX120-3, 180-3 Class

M1U1-07-093

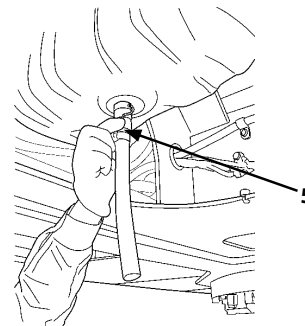


ZX200-3, 270-3, 330-3 Class

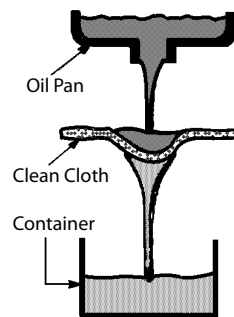
M1U1-07-044



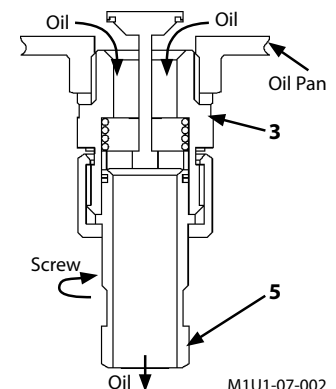
M1U1-07-045



M1U1-07-046



M104-07-010

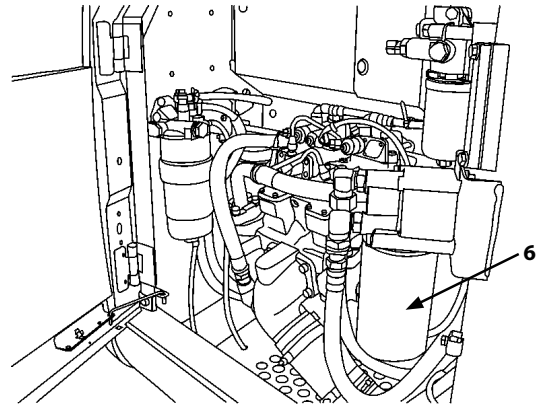


M1U1-07-002

MAINTENANCE

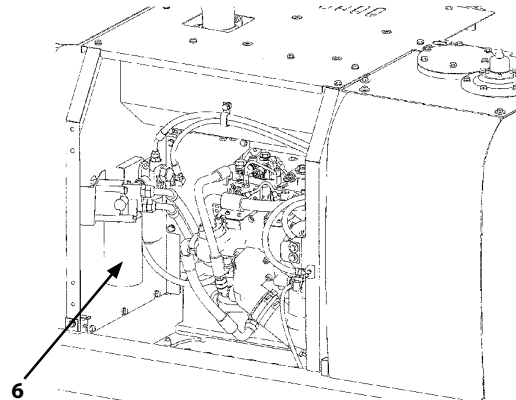
14. Open the right access cover and secure the cover with rod.
15. Remove the filter cartridges of engine oil filter (6) by turning it counterclockwise with the filter wrench.
16. Clean the filter gasket contact area on the engine.
17. Apply a thin film of clean oil to the gasket of new filter (6).
18. Install new filter (6). Turn the filter cartridge clockwise by hand until the gasket touches the contact area. Be sure not to damage the gasket when installing filter (6).
19. Tighten engine oil filter (6) 3/4 to 1 turn more using the filter wrench.
Be careful not to overtighten.
20. Remove the oil filler cap. Fill the engine with recommended oil. Check that oil level is between the circle marks on the dipstick after 15 minutes.
21. Install the oil filler cap.
22. Start the engine. Run the engine at slow idle for 5 minutes.
23. Check that the engine oil pressure indicator on the monitor panel goes out immediately. If not, stop the engine immediately and find the cause.
24. Stop the engine. Remove the key from the key switch.
25. Check for any leakage at the drain plug.
26. Check oil level on the dipstick.

IMPORTANT: Do not re-use the cartridge element.



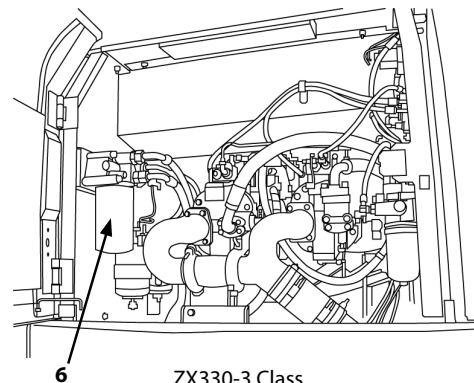
ZX180-3 Class

M1U1-07-098



ZX120-3, 200-3, 270-3 Class

M1U1-07-070



ZX330-3 Class

M1U1-07-014

MAINTENANCE

C. TRANSMISSION

1 Pump Transmission (ZX180-3, 200-3, 270-3, 330-3 Class)

Check Oil Level --- every 250 hours

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Remove dipstick (1). Oil must be within the specified range.
8. If necessary, remove filler plug (2) and add oil. (See gear oil chart)
9. Recheck oil level.

Change Oil --- every 1000 hours

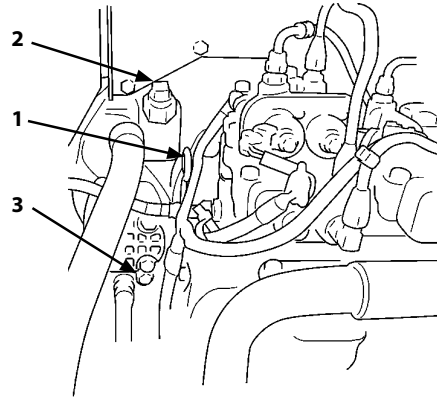
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.

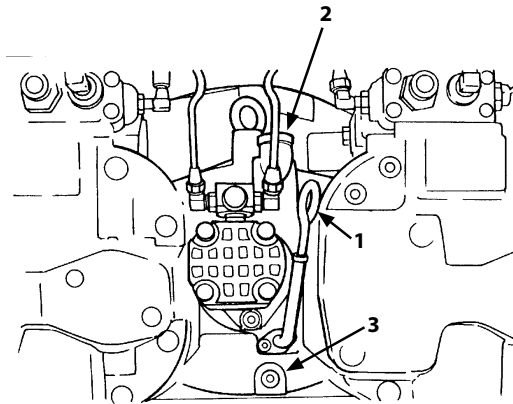
CAUTION: Oil may be hot just after operation. Wait for oil to cool before starting work.

7. Remove filler plug (2).
8. Remove drain plug (3). Allow oil to drain through a clean cloth into a 2-liter (2.1 US qt) container.
9. After all oil has drained, inspect cloth for any debris such as small pieces of metal.
10. Reinstall drain plug (3).
11. Add oil via filler plug (2) until it is within the specified range on dipstick (1).
12. Reinstall filler plug (2).



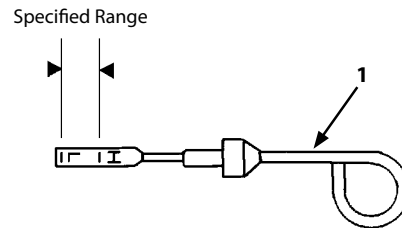
ZX180-3, 200-3, 270-3 Class

M178-07-085



ZX330-3 Class

M110-07-015



M1G6-07-004

MAINTENANCE

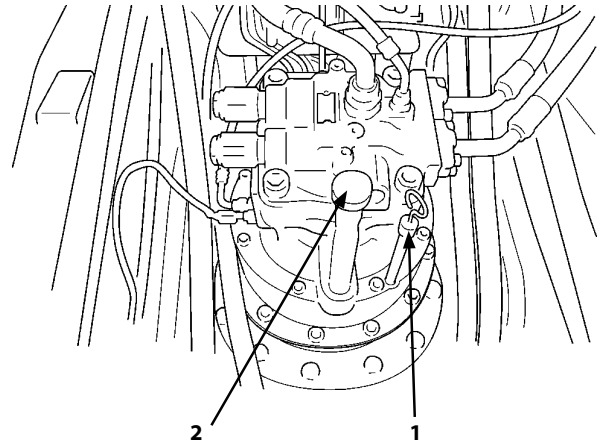
2 Swing Reduction Gear

Check Oil Level --- every 250 hours

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Remove dipstick (1). Oil must be between marks.
8. If necessary, remove oil filler cap (2) and add oil. (See gear oil chart)
9. Recheck oil level.



M178-07-086

Change Gear Oil --- every 1000 hours

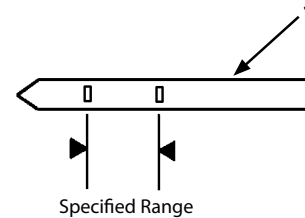
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.

CAUTION: Gear oil may be hot just after operation. Wait for gear oil to cool before starting work.

7. Remove the drain plug mounted on the end of drain pipe to drain oil.
8. Reinstall the drain plug.
9. Remove oil filler cap (2) and add oil until it is between the marks on dipstick (1).
10. Reinstall oil filler cap (2).



M104-07-017

MAINTENANCE

3 Travel Reduction Gear

Check Oil Level --- every 250 hours

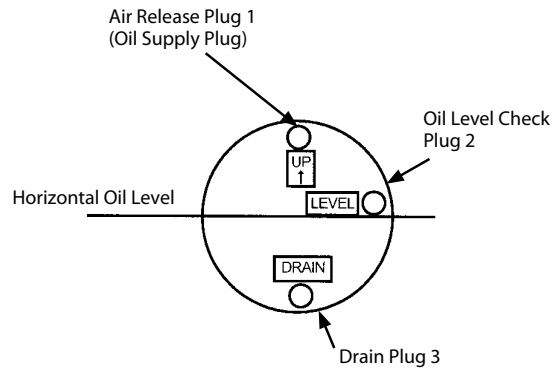
1. Park the machine on a level surface.
2. Rotate the travel motor until the imaginary line through plug (1) and plug (3) is vertical.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

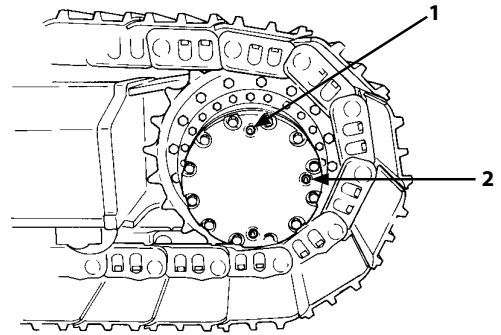
5. Run the engine at slow idle speed without load for five minutes.
6. Stop the engine. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.

⚠ WARNING: Keep body and face away from the air release plug. Gear oil may be hot just after operation. Wait for gear oil to cool and then gradually loosen the air release plug to release pressure.

8. After gear oil has cooled, slowly loosen air release plug (1) to release pressure.
9. Remove air release plug (1) and oil level check plug (2). Oil must be up to the bottom of hole.
10. If necessary, add oil until oil flows out of oil level check plug (2) hole. (See gear oil chart)
11. Wrap plugs (1) and (2) threads with sealing-type tape. Install plugs (1) and (2). Tighten plugs (1) and (2) to 50 N·m (5 kgf·m).
12. Check the gear oil level in the other travel reduction gear.



M104-07-019



M157-07-170

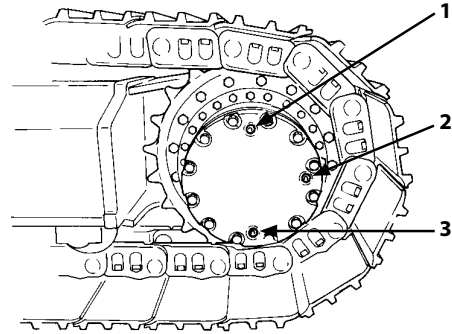
MAINTENANCE

Change Gear Oil --- every 2000 hours

1. Park the machine on a level surface.
2. Rotate the travel motor until the imaginary line through plug (1) and plug (3) is vertical.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

5. Run the engine at slow idle speed without load for five minutes.
6. Stop the engine. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.



M157-07-170

! WARNING: Keep body and face away from the air release plug. Gear oil may be hot just after operation. Wait for gear oil to cool and then gradually loosen the air release plug to release pressure.

8. After gear oil has cooled, slowly loosen air release plug (1) to release pressure, and temporarily retighten plug (1).
9. Remove drain plug (3) and plug (1), in that order, to drain oil.
10. Clean drain plug (3). Wrap the threads of drain plug (3) with sealing-type tape. Install plug (3). Tighten plug (3).
Tightening Torque: 50 N·m (5 kgf·m)
11. Remove oil level check plug (2).
12. Add oil until oil flows out of oil level check plug (2) hole.
(See gear oil chart)
13. Clean plugs (1) and (2). Wrap the threads of oil level check plug (2) and air release plug (1) with sealing-type tape. Reinstall plugs (1) and (2). Tighten plugs (1) and (2).
Tightening Torque: 50 N·m (5 kgf·m)
14. Repeat steps 8. to 13. for the other travel reduction gear.

MAINTENANCE

D. HYDRAULIC SYSTEM

INSPECTION AND MAINTENANCE OF HYDRAULIC EQUIPMENT



CAUTION: During operation, the parts of the hydraulic system become very hot. Allow the machine to cool down before beginning inspection or maintenance.

1. Be sure that the machine is parked on a level, firm surface before servicing hydraulic equipment.
2. Lower the bucket to the ground and stop the engine.
3. Begin servicing hydraulic components only after components, hydraulic oil and lubricants are completely cooled, and after releasing residual pressure.
 - 3.1 Bleed air from the hydraulic oil tank to release internal pressure.
 - 3.2 Allow the machine to cool down.
Note that servicing heated and pressurized hydraulic components may cause hot parts and/or oil to fly off or escape suddenly, possibly resulting in personal injury.
 - 3.3 Keep body parts and face away from plugs or screws when removing them.
Hydraulic components may be pressurized even when cooled.
 - 3.4 Never attempt to service or inspect the travel and swing motor circuits on slopes. They are highly pressurized due to self-weight.
4. When connecting hydraulic hoses and pipes, take special care to keep seal surfaces free from dirt and to avoid damaging them. Keep these precautions in mind:
 - 4.1 Wash hoses, pipes, and the tank interior with a washing liquid and thoroughly wipe it out before reconnecting them.
 - 4.2 Only use O-rings that are free of damage or defects. Be careful not to damage them during reassembly.
 - 4.3 Do not allow high pressure hoses to twist when connecting them. The life of twisted hoses will be shortened considerably.
 - 4.4 Carefully tighten low pressure hose clamps.
Do not overtighten them.

MAINTENANCE

5. When adding hydraulic oil, always use the same brand of oil; do not mix brands of oil. As the machine is filled with Super EX 46 HN when it is shipped from the factory, use it as a general rule. When selecting to use another brand of oil listed in the table "Brand names of recommended hydraulic oil", be sure to completely change the oil in the system.
6. Do not use hydraulic oils other than those listed in the table "Brand names of recommended hydraulic oil".
7. Never run the engine without oil in the hydraulic oil tank.

MAINTENANCE

BREAKER MAINTENANCE

Change Hydraulic Oil and Replace Hydraulic Oil Tank Filter

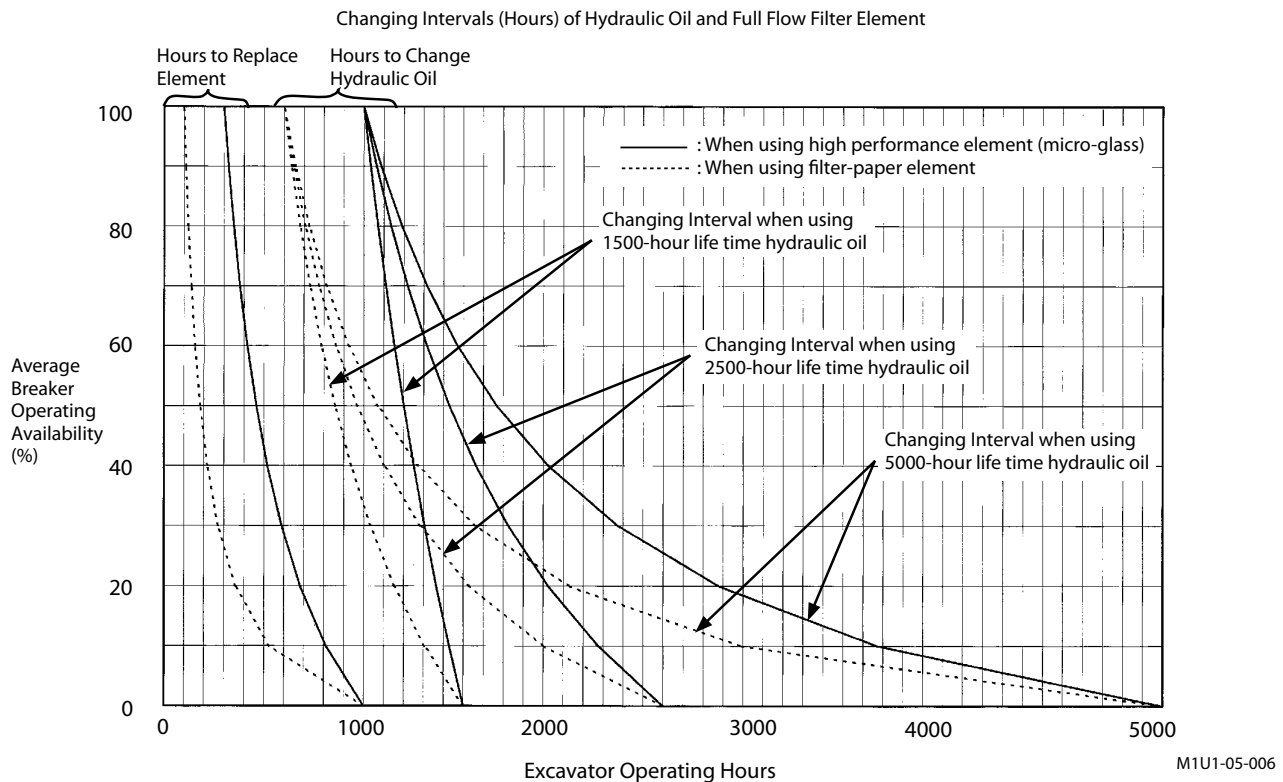
Hydraulic breaker operation subjects the hydraulic system to become contaminated faster and to quickly deteriorate the hydraulic oil. For this reason, hydraulic oil must be changed and the hydraulic oil tank filter must be replaced more often than the machine equipped with a bucket. Failure to do so may result in damage to the breaker, hydraulic oil pump, and other

related hydraulic system components. Recommended changing intervals are shown below. For filter replacement and oil changing intervals are shown below. (For filter replacement and oil changing procedures, refer to the "Hydraulic System" in the "MAINTENANCE" Section.)

Changing intervals (Hours)				
Attachment	Availability	*Hydraulic Oil	Full Flow Filter Element	**Element Type
Bucket	100%	1500	1000	Standard Filter Paper High Performance Element
		2500		
		5000		
Hydraulic Breaker	100%	600	100	Standard Filter Paper
		1000	300	High Performance Element

* : Changing intervals differ depending on the brand of hydraulic oil used. Refer to the Hydraulic System in the MAINTENANCE section.

** : Use the high performance element (micro-glass) on excavators engaged in demolition and logging work.



IMPORTANT: Use a high performance element (micro-glass) on excavators engaged in demolition and logging work. In case using a filter-paper element is unavoidable, change hydraulic oil and the filter element at the intervals as illustrated with dotted lines.

NOTE: Full-flow filter restriction indicator is optional. If a filter-paper element is used, this indicator does not operate. (Refer to the Hydraulic System in the Maintenance section.)

MAINTENANCE

1 Check Hydraulic Oil Level --- daily

IMPORTANT: Never run the engine without oil in hydraulic oil tank.

1. Park the machine on a level surface.
2. Position the machine with the arm cylinder fully retracted and the bucket cylinder fully extended.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

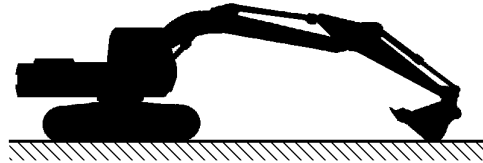
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

5. Run the engine at slow idle speed without load for five minutes.
6. Turn the key switch OFF. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.
8. Open the access door in front of the main pump. Check oil level with level gauge (1) on hydraulic oil tank. Oil must be between marks on gauge (1). If necessary, add oil.

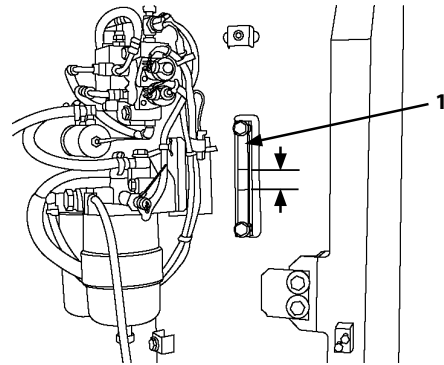
CAUTION: The hydraulic oil tank is pressurized. Push the pressure release button on the tank cap to release pressure, and carefully remove the cap.

To add oil:

9. Push the pressure release button on the air breather to release pressure. Remove the cover.
10. Add oil. Recheck oil level with level gauge (1).
11. Install the cover. Make sure the filter and rod assembly is in correct position.

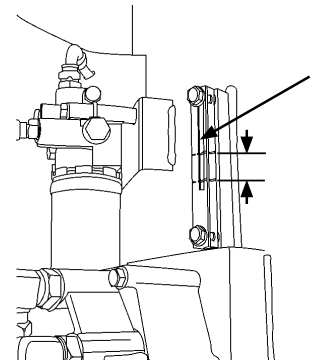


M104-07-021



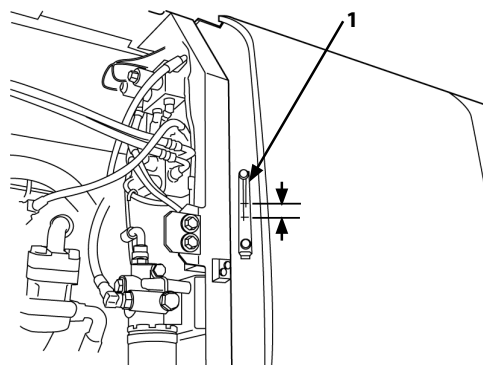
ZX120-3 Class

M1U1-07-102



ZX180-3 Class

M1U1-07-075



ZX200-3, 270-3, 330-3 Class

M1U1-07-048

MAINTENANCE

2 Change Hydraulic Oil

3 Suction Filter Cleaning

Std. Model --- every 5000 hours, 2500 hours or 1500 hours

K Model , L Model --- every 1000 hours

CAUTION: Hydraulic oil may be hot just after operation. Wait for oil to cool before starting work.

IMPORTANT: Hydraulic oil changing intervals differ according to kind of hydraulic oils used. (See Recommended Oil Chart in this group)

1. Park the machine on a level surface with the upperstructure rotated 90° for easier access.
2. Position the machine with the arm cylinder fully retracted and the bucket cylinder fully extended.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

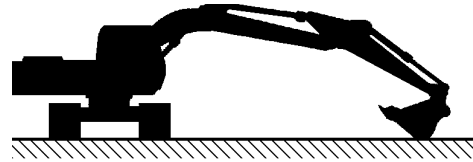
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

5. Run the engine at slow idle speed without load for five minutes.
6. Stop the engine. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.
8. Clean the top of the hydraulic oil tank to keep dirt out of the hydraulic system.

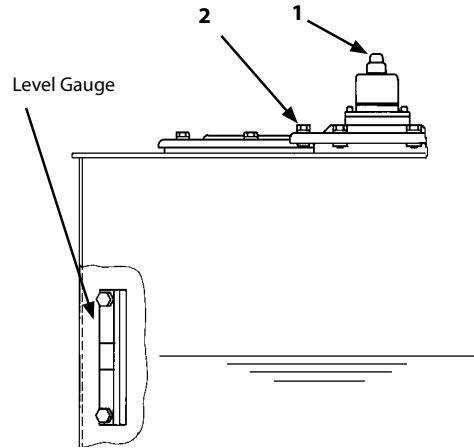
CAUTION: The hydraulic oil tank is pressurized. Push pressure release button (1) on the air breather before removing the air breather.

9. Push pressure release button (1) on the air breather.
10. Remove cover (2).
11. Remove oil using a suction pump. The hydraulic oil tank capacity, up to specified oil level, is approximately A.

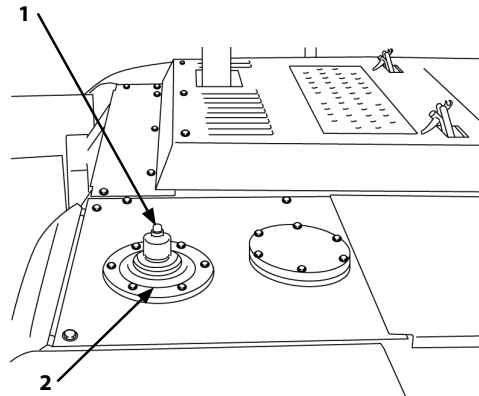
Model	A
ZX120-3 Class	130 L (34.3 US gal)
ZX180-3 Class	190 L (50.2 US gal)
ZX210-3, 210LC-3	200 L (52.8 US gal)
ZX210LCN-3, 240N-3	170 L (44.9 US gal)
ZX270-3 Class	243 L (64.2 US gal)
ZX330-3 Class	298 L (78.7 US gal)



M104-07-117



M157-07-016

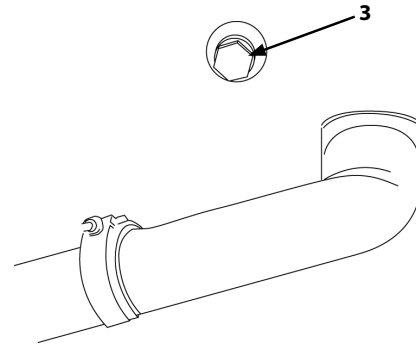


M1U1-07-042

MAINTENANCE

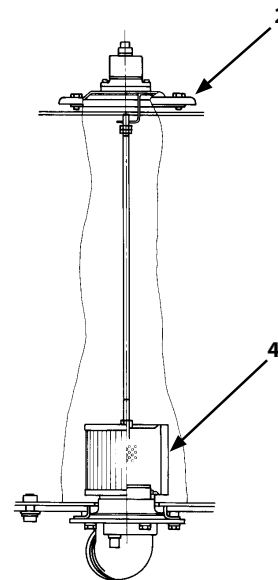
12. Remove drain plug (3). Allow oil to drain.
13. Remove suction filter and rod assembly (4).
14. Clean the filter and tank interior. If the filter is to be re-placed, install new filter on the rod as shown. Tighten nut to 15 to 20 N•m (1.5 to 2.0 kgf•m, 11.0 to 14.5 lbf•ft).

Model	A
ZX120-3 Class	732 mm (28.8 in)
ZX180-3, 200-3, 270-3, 330-3 Class	869 mm (34.2 in)

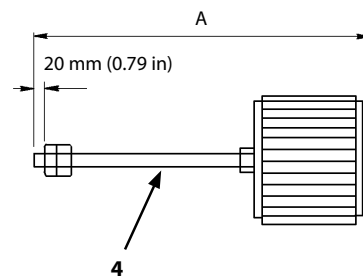


M1U1-07-047

15. Install filter and rod assembly (4). Make sure the filter is positioned correctly on the outlet.
16. Replace the hydraulic tank oil filter. (See "Maintenance Every 500 Hours" Section)
17. Clean, install and tighten drain plug (3).
18. Add oil until it is between the marks on the oil level gauge.
19. Install cover (2). Make sure filter and rod assembly (4) are in correct positions. Tighten the bolts to 50 N•m (5 kgf•m, 36 lbf•ft).
20. Be sure to bleed air from the system following the procedures shown next page.



M157-07-062



M107-07-070

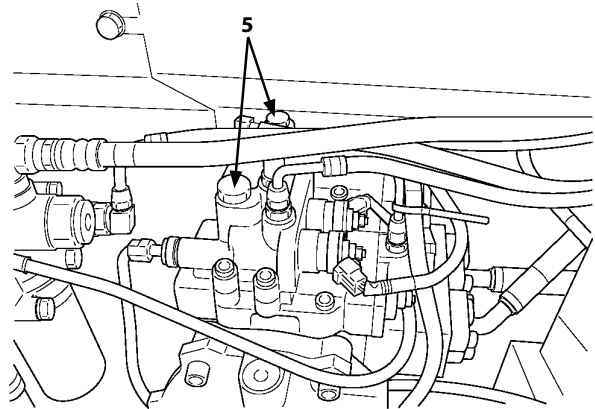
MAINTENANCE

Air Bleeding Procedures

IMPORTANT: If the hydraulic pump is not filled with oil, it will be damaged when the engine is started.

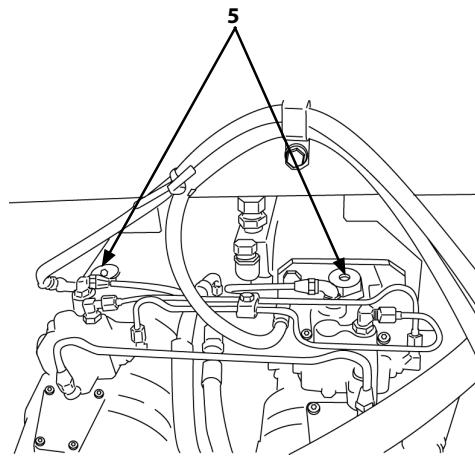
The machine is equipped with two main pumps. Bleed air from these pumps after changing hydraulic oil.

1. Remove air bleed plug (5) on each pump.
2. Fill the pump with oil through air bleed plug (5) port on each pump until oil flows out of air bleed plug (5) hole.
3. Temporarily tighten air bleed plug (5) on each pump, start the engine and run at slow idle. Loosen one of air bleed plugs (5) slightly until oil flows from plug port to release trapped air completely. Tighten air bleed plug (5). Repeat this step for the rest of plugs (5).
4. Purge air from the hydraulic system by running the engine at slow idle and operating the control levers slowly and smoothly for 15 minutes.
5. Position the machine as illustrated in the oil level checking procedure.
6. Lower the bucket to the ground.
7. Turn the auto-idle switch off.
8. Stop the engine. Remove the key from the key switch.
9. Pull the pilot control shut-off lever to the LOCK position
10. Check the hydraulic oil tank gauge. Remove cover (2) to add oil if necessary.



ZX120-3 Class

M175-07-005



ZX180-3, 200-3, 270-3, 330-3 Class

M1U1-07-035

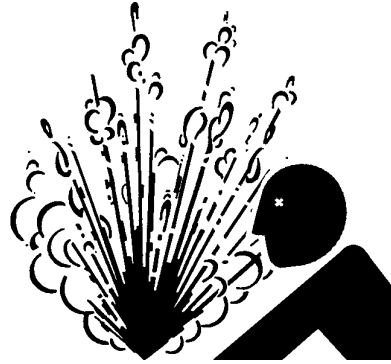
MAINTENANCE

4 Replace Hydraulic Oil Tank Filter --- every 1000 hours

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.



SA-039

CAUTION: The hydraulic oil tank is pressurized. Push the pressure release button on the air breather before removing the air breather.

7. Push the pressure release button on the hydraulic oil tank to release pressure.

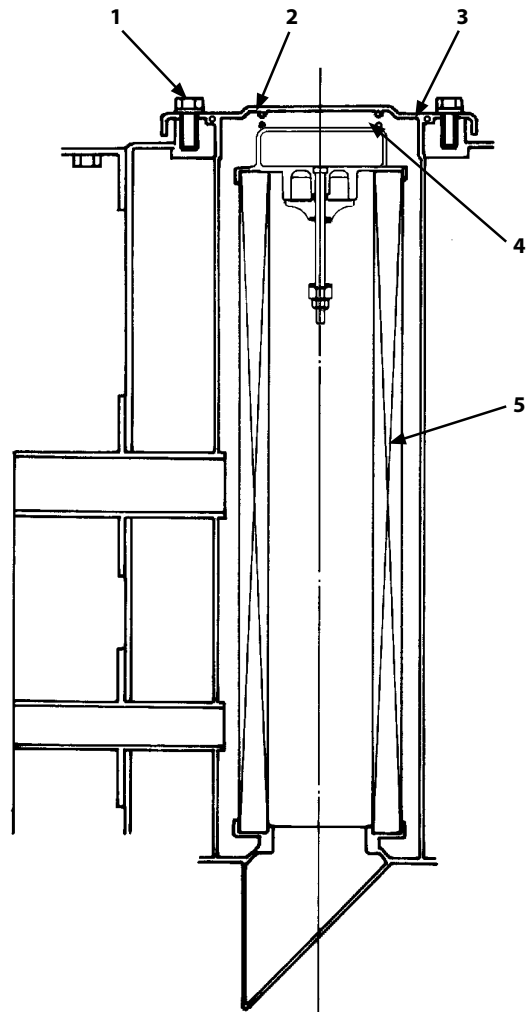
NOTE: There is spring (4) tension under cover (2). Hold down cover (2) when removing last two bolts (1).

8. Hold down filter cover (2) against light spring (4) load when removing last two bolts (1). Remove filter cover (2).

9. Remove spring (4), and element (5).

NOTE: Remove element (5) and inspect for metal particles and debris in the bottom of the filter can. Excessive amounts of brass and steel particles can indicate a failed hydraulic pump, motor, valve or an impending failure. A rubber type of material can indicate cylinder packing failure.

10. Discard element (5) and O-ring (3).
11. Install a new element (5) and spring (4).
12. Install filter cover (2) with a new O-ring (3).
13. Install and tighten bolts (1) to 50 N•m (5 kgf•m, 36 lbf•ft).



M178-07-069

MAINTENANCE

5 Replace Pilot Oil Filter --- every 1000 hours

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

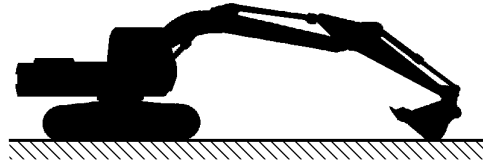
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.

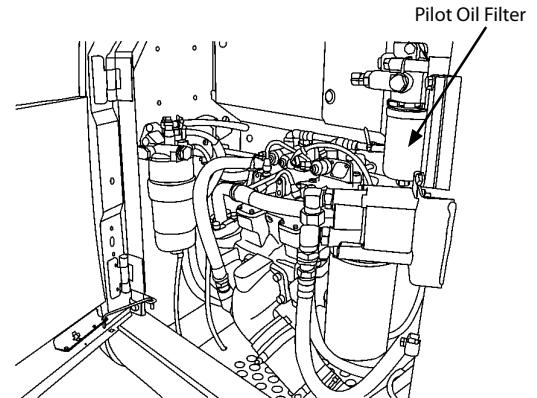
CAUTION: The hydraulic oil tank is pressurized. Push the pressure release button on the air breather before removing the air breather.

7. Remove the filter cartridges of pilot oil filter (2) by turning it counterclockwise with the filter wrench.
8. Clean the filter O-ring contact area on filter head (1).
9. Apply a thin film of clean oil to the gasket of new filter (2).
10. Install new filter (2). Turn the filter cartridge clockwise by hand until the O-ring touches the contact area. Be sure not to damage the O-ring when installing filter (2).

IMPORTANT: Do not re-use the filter cartridge.

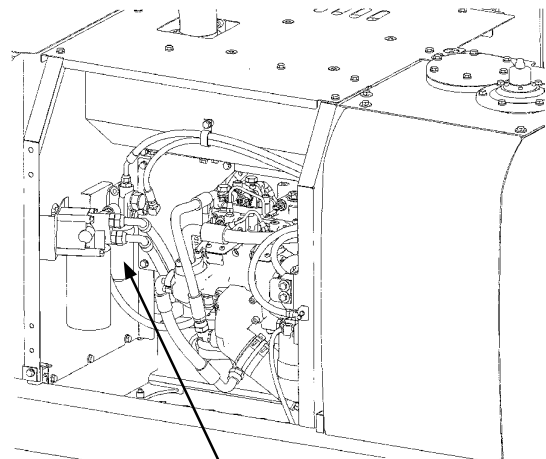


M104-07-021



ZX180-3 Class

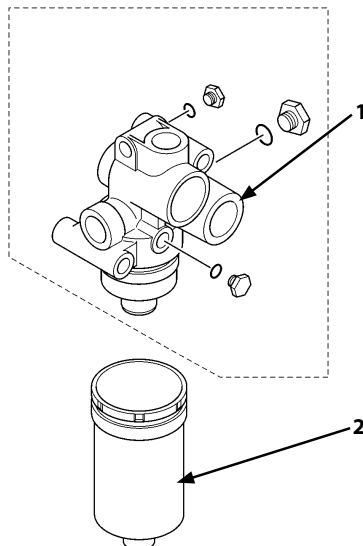
M1U1-07-098



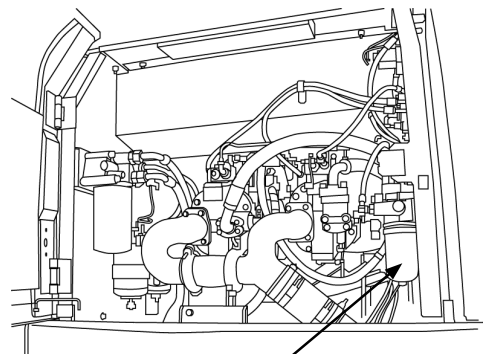
Pilot Oil Filter

ZX120-3, 200-3, 270-3 Class

M1U1-07-070



M1U1-07-050



Pilot Oil Filter

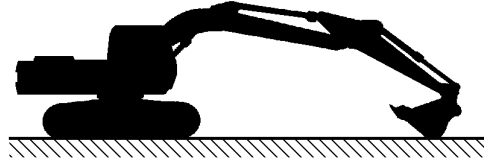
ZX330-3 Class

M1U1-07-014

MAINTENANCE

6 Replace Air Breather Element --- every 4000 hours

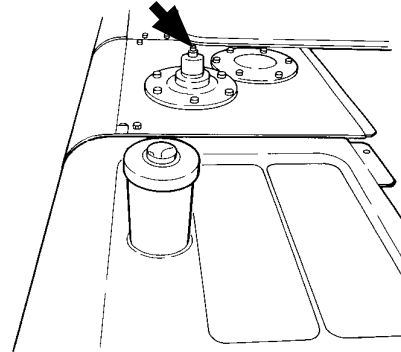
CAUTION: Hydraulic oil may be hot just after operation. Hot hydraulic oil may spout, possibly causing severe burns. Be sure to wait for oil to cool before starting work.



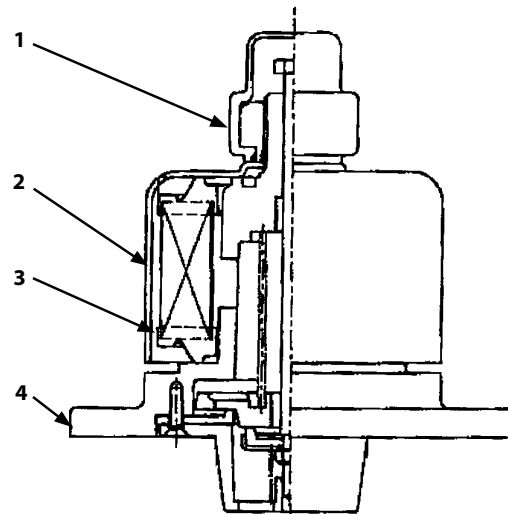
M104-07-021

Replacement Procedures

1. Park the machine on solid and level ground. Fully extend the bucket cylinder, fully retract the arm cylinder, and lower the bucket to the ground as illustrated to the right. Stop the engine.
2. Before replacing element (3), be sure to bleed air pressure from the hydraulic oil tank by pressing the air bleed valve on the hydraulic oil tank.
3. Turn cover (2) clockwise about 1/4 turn. Turn cap (1) counterclockwise to remove it.
4. Turn cover (2) counterclockwise to remove it. Then, remove element (3).
5. Install new element (3). Tighten to install cover (2) until cover (2) comes in contact with element (3). Then, further tighten cover (2) 1/4 turn.
6. Securely tighten cap (1) clockwise by hand. While holding cap (1) by hand so that cap (1) does not rotate, securely tighten cover (2) by rotating counterclockwise 5 to 10° by hand.
7. Take care never to allow water and/or contaminant to stay between cover (2) and body (4) (air breathing port).
8. Replace element (3) periodically to keep hydraulic oil clean and to extend hydraulic components service life.



M157-07-185



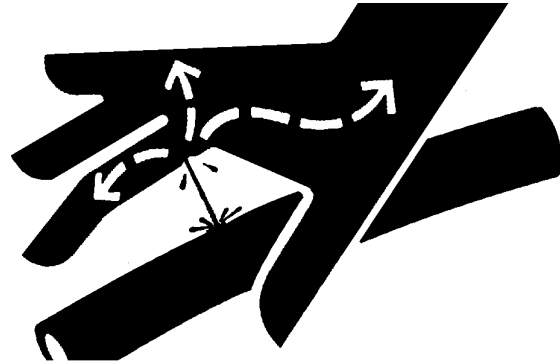
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MAINTENANCE

7 Check Hoses and Lines

- daily
- every 250 hours

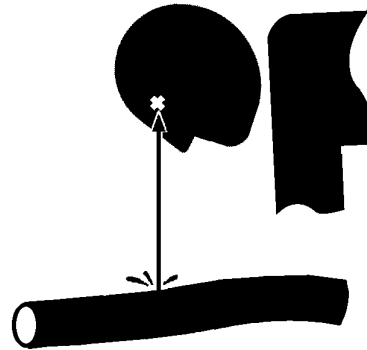
CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. To avoid this hazard, search for leaks with a piece of cardboard. Take care to protect hands and body from high-pressure fluids. If an accident occurs, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



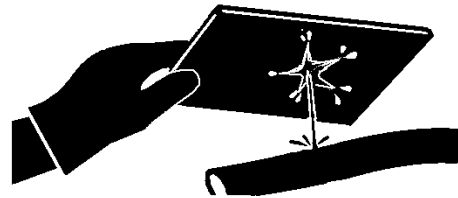
SA-031

CAUTION: Hydraulic oil and lubricant leaks can lead to fire that may result in serious injury. To avoid this hazard :

- Park the machine on a firm, level surface. Lower the bucket to the ground. Stop the engine. Remove key from the key switch. Pull the pilot control shut-off lever to the LOCK position.
- Check for missing or loose clamps, kinked hoses, lines or hoses that rub against each other, damaged oil cooler, and loose oil cooler flange bolts, for leaks. Check hoses, lines and oil cooler at the check points indicated below for leaks and other damage that may result in future leaks. If any abnormalities are found, replace or retighten them, as shown in Tables 1-3.
- Tighten, repair or replace any missing, loose or damaged clamps, hoses, lines, oil cooler, and loose oil cooler flange bolts. Do not bend or strike high-pressure lines. Never install bent or damaged hoses or lines.



SA-292



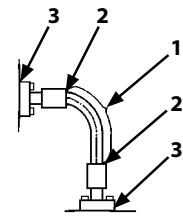
SA-044

MAINTENANCE

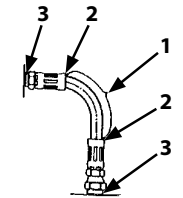
Table 1. Hoses

Interval (hours)	Check Points	Abnormalities	Remedies
Daily	Hose covers Hose ends Fittings	Leak (1) Leak (2) Leak (3)	Replace Replace Retighten or replace hose or O-ring
Every 250 hours	Hose covers Hose ends	Crack (4) Crack (5)	Replace Replace
	Hose covers Hose covers	Exposed reinforcement (6) Blister (7)	Replace Replace
	Hose	Bend (8)	Replace
	Hose	Collapse (9)	Replace (Use proper bend radius)
	Hose ends and fittings	Deformation or corrosion (10)	Replace

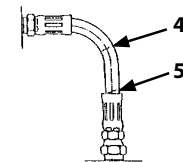
 NOTE: Refer to the illustrations in Fig.1 for each check point location or for a description of the abnormality. Use genuine Hitachi parts.



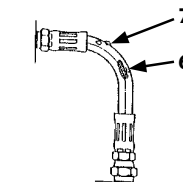
M137-07-008



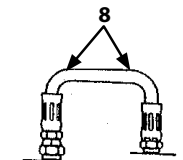
M115-07-145



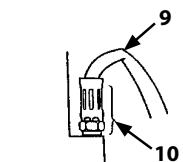
M115-07-146



M115-07-147



M115-07-148



M115-07-149

Fig. 1

MAINTENANCE

Table 2. Lines

Interval (hours)	Check Points	Abnormalities	Remedies
Daily	Contact surfaces of flange joints	Leak (11)	Replace O-ring and/or retighten bolts
	Welded surfaces on joints	Leak (12)	Replace
Every 250 hours	Joint neck Welded surfaces on joints Clamps	Crack (13)	Replace
		Crack (12)	Replace
		Missing Deformation Loose	Replace Replace Retighten

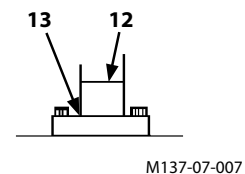
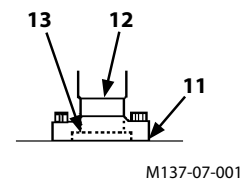


Fig. 2

NOTE: Refer to the illustrations in Fig.2 for each check point location or for a description of the abnormality. Use genuine Hitachi parts

Table 3. Oil cooler

Interval (hours)	Check Points	Abnormalities	Remedies
Every 250 hours	Contact surfaces of flange joints	Leak (14)	Replace O-ring and/or retighten bolts
	Oil cooler Coupling and rubber hose	Leak (15) Leak (16)	Replace Retighten or replace

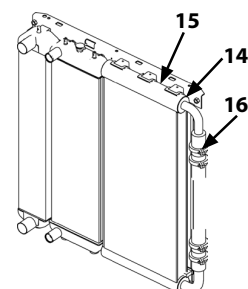


Fig. 3

NOTE: Refer to the illustrations in Fig.3 for each check point location.

MAINTENANCE

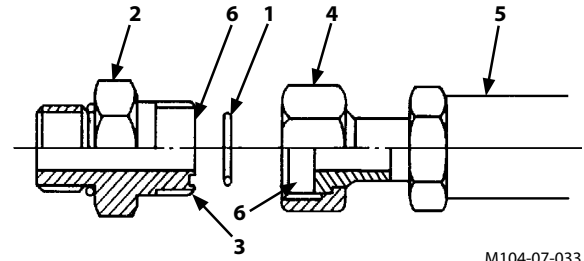
SERVICE RECOMMENDATIONS FOR HYDRAULIC FITTINGS

Two hydraulic fitting designs are used on this machine.

Flat Face O-ring Seal Fitting (ORS Fitting)

An O-ring is used on the sealing surfaces to prevent oil leakage.

1. Inspect fitting sealing surfaces (6). They must be free of dirt or defects.
2. Replace O-ring (1) with a new one when assembling fitting (2).
3. Lubricate O-ring (1) and install it into groove (3) using petroleum jelly to hold it in place.
4. Tighten fitting (2) by hand, pressing the fitting joint together to ensure O-ring (1) remains in place and is not damaged.
5. Tighten fitting (2) or nut (4) to the torque values shown. Do not allow hose (5) to twist when tightening fittings.
6. Check for leaks. If oil leaks from a loose connection, do not tighten fitting (2). Open the connection, replace O-ring (1) and check for correct O-ring position before tightening the connection.



Torque specifications		±10%			
Width across flats (mm)		27	32	36	41,46
Fastening torque	N•m	95	140	180	210
	(kgf•m)	(9.5)	(14)	(18)	(21)

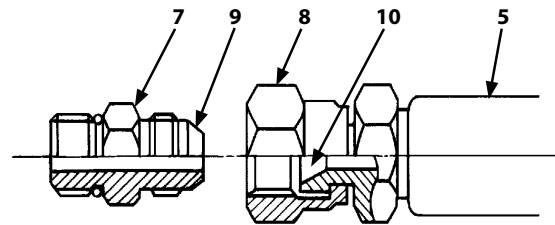
MAINTENANCE

Metal Face Seal Fittings

Fittings are used on smaller hoses and consist of a metal flare (10) and a metal flare seat (9).

1. Inspect flare (10) and flare seat (9). They must be free of dirt or obvious defects.

IMPORTANT: Defects in the tube flare cannot be repaired. Overtightening a defective flare fitting will not stop a leak.



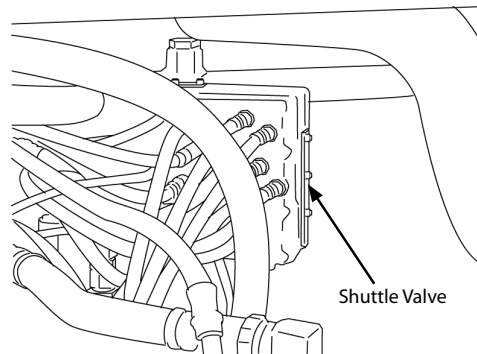
M202-07-051

2. Tighten fitting (7) by hand.
3. Tighten fitting (7) or nut (8) to the torque values shown. Do not allow hose (5) to twist when tightening fittings.

Width across flats (mm)		17	19	22	27
Fastening torque	N•m	25	30	40	80
	(kgf•m)	(2.5)	(3)	(4)	(8)

Pilot Piping Fittings (For shuttle valve)

Width across flats (mm)		17, 19
Fastening torque	N•m	35
	(kgf•m)	(3.5)



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MAINTENANCE

E. FUEL SYSTEM

Recommended Fuel

Use high quality DIESEL FUEL only (JIS K-2204) (ASTM 2-D). Kerosene must NOT be used.

Refueling

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

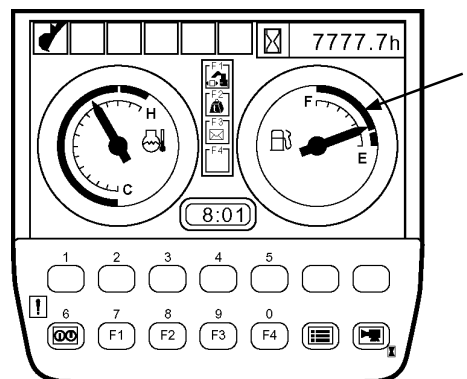
IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.

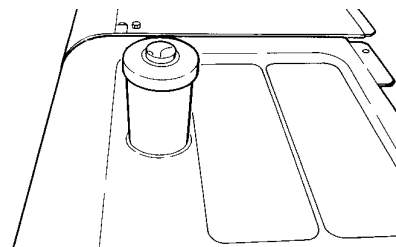
CAUTION: Handle fuel carefully. Shut the engine off before fueling. Do not smoke while you fill the fuel tank or work on fuel system.

7. Check fuel level gauge (3) or fuel gauge (1) of the monitor panel. Add fuel if necessary.

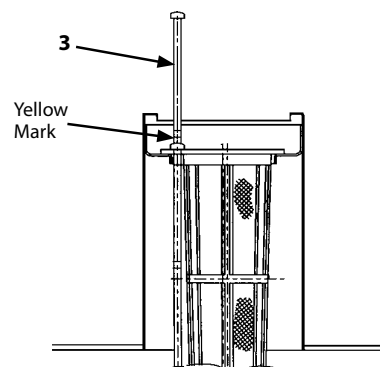
IMPORTANT: Keep all dirt, dust, water and other foreign materials out of the fuel system.



T1V1-05-01-123



M178-07-087



M157-07-060

MAINTENANCE

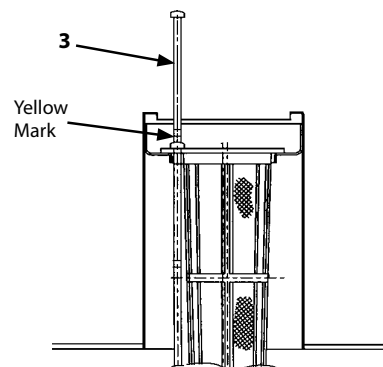
8. To avoid condensation, fill the tank at the end of each day's operation. Take care not to spill fuel on the machine or ground.

Model	Tank Capacity
ZX120-3 Class	250 L (66 US gal)
ZX180-3 Class	320 L (85 US gal)
ZX210-3, 210LC-3	400 L (106 US gal)
ZX210LCN-3, 240N-3	330 L (87 US gal)
ZX270-3 Class	500 L (132 US gal)
ZX330-3 Class	630 L (166 US gal)

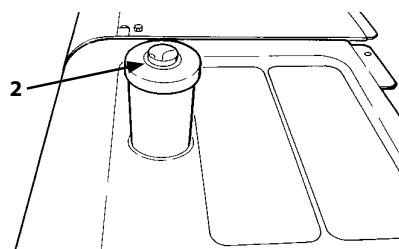
Do not fill the tank more than specified. Stop filling when a yellow mark on fuel level gauge (3) becomes visible. Be sure to position the fuel service nozzle so that any part of the nozzle does not obstruct rising of float-type fuel level gauge (3).

9. Reinstall filler cap (2) on the filler tube. Be sure to lock filler cap (2) with the key to prevent the cap from being lost as well as to prevent vandalism.

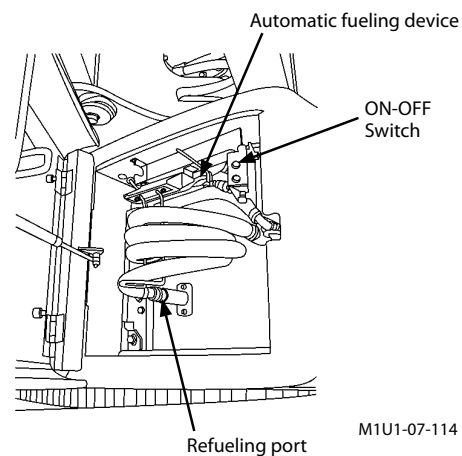
NOTE: Take precautions for Fueling with Automatic Fueling Device (Optional).
Avoid overfilling. Never fail to remove filler cap (2) when refueling with the automatic fueling device and be sure to stop fueling when the yellow mark on the float becomes visible.



M157-07-060



M178-07-087

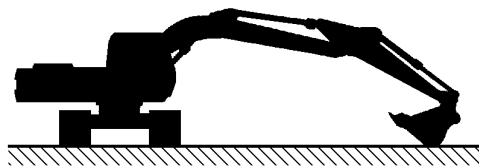


M1U1-07-114

MAINTENANCE

1 Drain Fuel Tank Sump --- daily

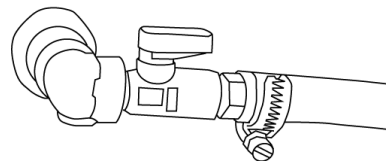
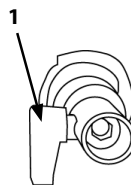
1. Park the machine on a level surface with the upperstructure rotated 90° for easier access.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.



M104-07-117

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

4. Run the engine at slow idle speed without load for five minutes.
5. Turn the key switch OFF. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Open drain cock (1) for several seconds to drain water and sediment. Close drain cock (1).



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MAINTENANCE

2 Drain Fuel Filter --- daily

IMPORTANT: The engine may be damaged if you do not drain fuel filter daily.
Fuel main filter and pre-filter separates that may mixed with the fuel.

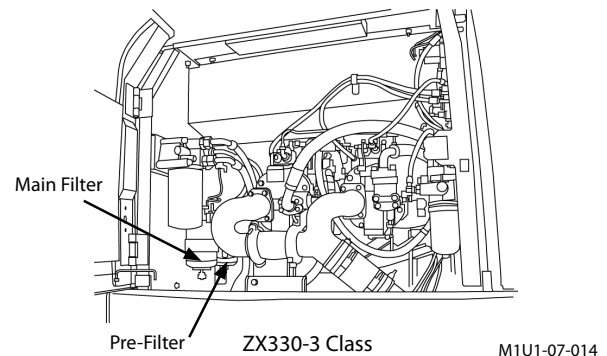
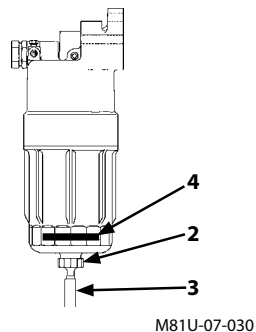
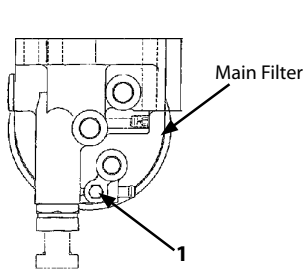
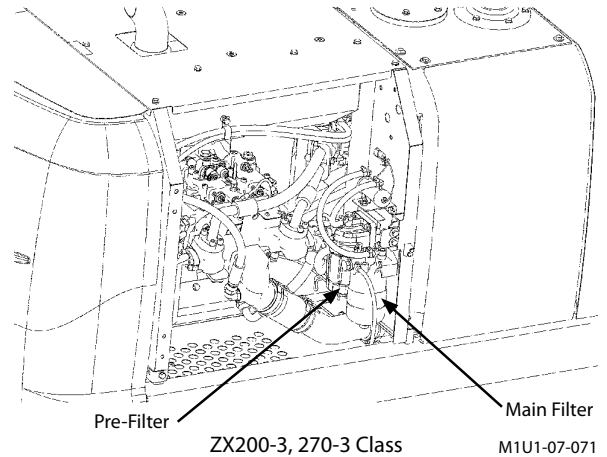
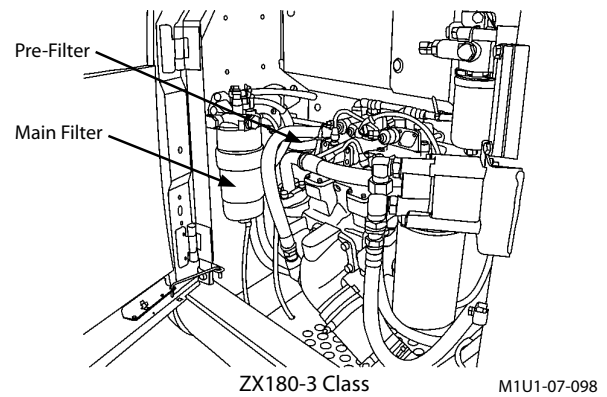
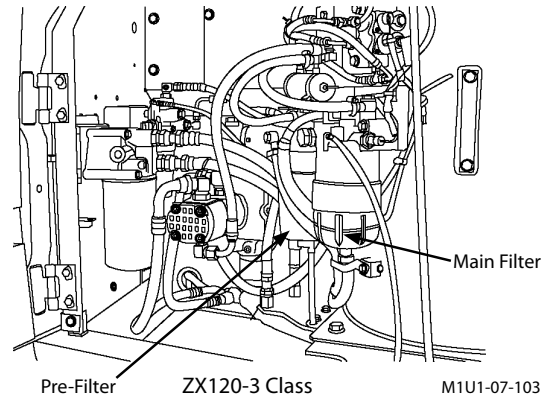
Fuel filter contains a float (4) which rises as water accumulates.

Be sure to drain daily the water accumulated in the filter until float (4) goes to the bottom of case.

Draining Procedures (Main Filter)

1. Place 0.5 liters or larger capacity container under drain hose (3) to collect the drained water.
2. Rotate drain plug (2) on the bottom of the filter about 4-turns counterclockwise. Drain the water accumulated in the filter until float (4) goes to the bottom of case. If it is difficult to drain, loosen plug (1) on the top of the main filter.
3. After draining water, securely tighten drain plug (2) and plug (1).
4. Start the engine. Check drain plug (2) and plug (1) for fuel leaks.

Wrench size: 10 mm



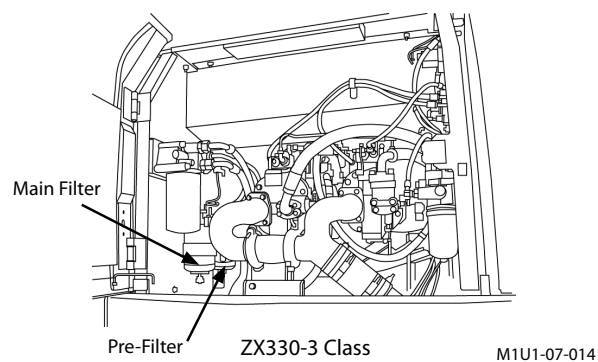
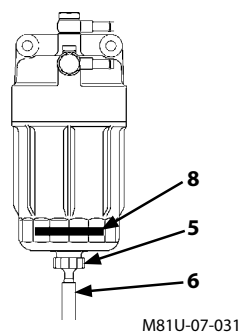
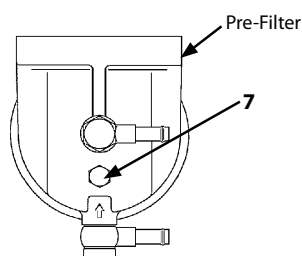
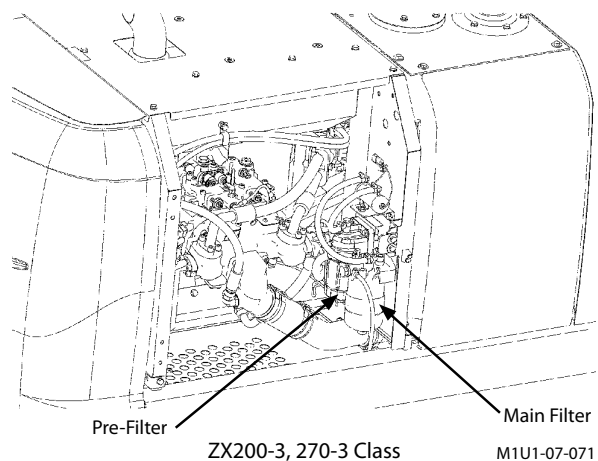
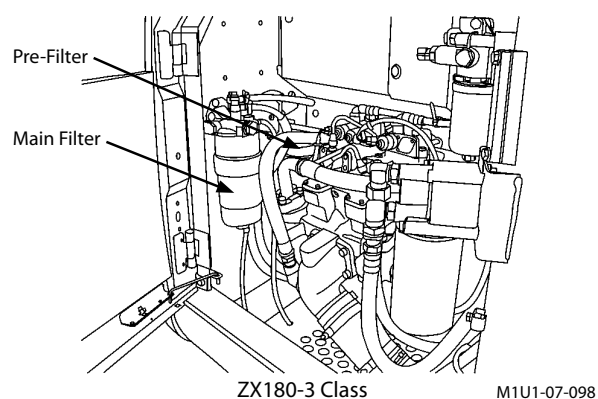
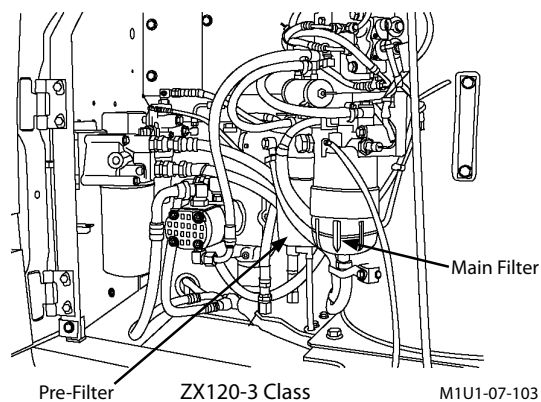
MAINTENANCE

Draining Procedures (Pre-Filter)

1. Place 0.5 liters or larger capacity container under drain hose (6) to collect the drained water.
2. Rotate drain plug (5) on the bottom of the filter counterclockwise. Drain the water accumulated in the filter until float (8) goes to the bottom of case. If it is difficult to drain, loosen plug (7) on the top of the fuel pre-filter.
3. After draining water, securely tighten drain plug (5) and plug (7).
4. Start the engine. Check drain plug (5) and plug (7) for fuel leaks.

IMPORTANT: After draining water mixed in fuel, bleed air from the fuel supply system.

Wrench size: 14 mm



MAINTENANCE

Air Bleeding Procedures

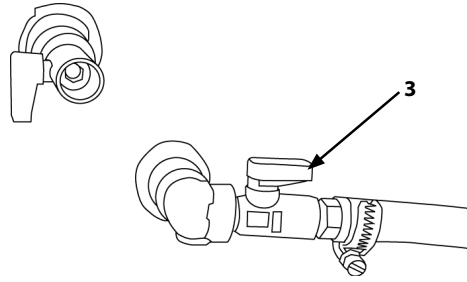
IMPORTANT: Air in the fuel system may make the engine hard to start or make it run irregularly. After draining water and sediment from the fuel filter, replacing the fuel filter, cleaning the fuel solenoid pump strainer or running the fuel tank dry, be sure to bleed the air from the fuel system.

This machine is equipped with a fuel solenoid pump.

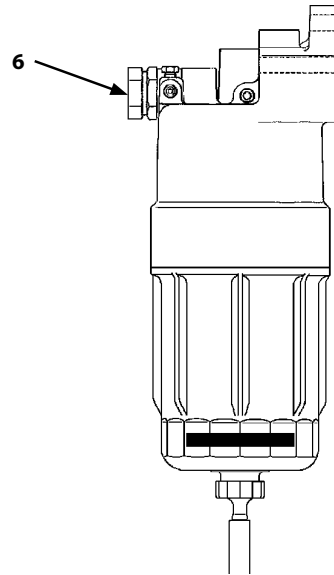
CAUTION: Fuel leaks may lead to fires.

1. Check that fuel cock (3) on the bottom of the fuel tank is opened.
2. Turn the key switch ON and hold it in that position for approx. 3 minutes. Thereby, the electrical fuel pump operates, starting to bleed air.
3. While holding the key switch in the ON position, reciprocate fuel main filter priming pump (6). After air is bled from the main filter, return priming pump (6) to the original position.
4. After the main filter is filled with fuel, hold the key switch in the ON position for 30 seconds.
5. Start the engine. Check the fuel supply system for fuel leaks.

IMPORTANT: Even if air is not thoroughly bled, do not hold the key switch in the ON position for more than 5 minutes. In case air is not thoroughly bled, first return the key switch to the OFF position. Then, after waiting for more than 30 seconds, turn the key switch ON again. Failure to do so may cause damage to the electrical pump and/or discharging the batteries.



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M81U-07-030

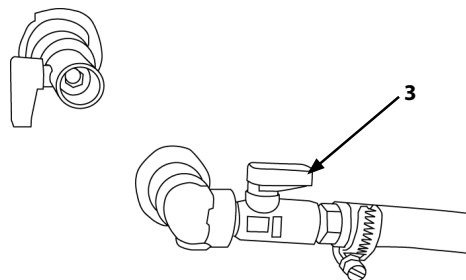
MAINTENANCE

Air Bleeding by Priming Pump

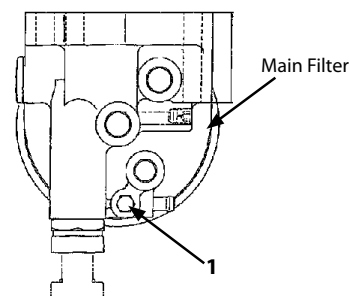
In case air is not bled due to malfunction of the fuel solenoid pump, operating the priming pump only can bleed air.

1. Check that fuel cock (3) on the bottom of the fuel tank is opened.
2. Loosen air bleed plug (1) on the fuel main filter.
3. Supply fuel by reciprocating priming pump (6). After no air bubbles are spouted through air bleed plug (1), tighten air bleed plug (1).
4. After tightening air bleed plug (1), reciprocate priming pump (6) approx. 150 strokes.
5. Wipe off any spilled fuel.
6. Start the engine. Check that no fuel leaks are present. If the engine does not start, repeat the above procedures from step 1.

Wrench size: 10 mm



M1U1-07-015



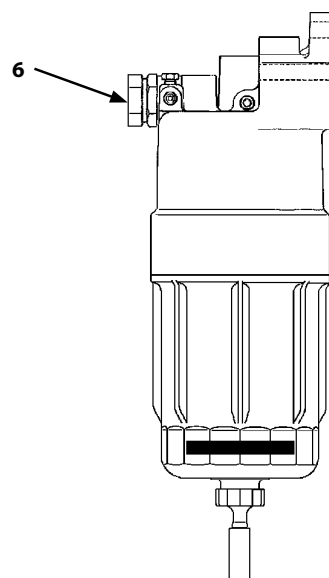
M1GR-07-010

Air Bleeding by Cranking

Bleed air from the fuel system after changing the common rail.

Bleeding Procedures

1. Bleed air until the engine supply pump entrance enough according to the above-mentioned procedures.
2. Operate starter motor for long cranking within 20 seconds. If engine falls to start, return key switch to OFF. Wait more than about 60 seconds, then try again.



M81U-07-030

MAINTENANCE

3 Replace Fuel Main Filter Element --- every 500 hours

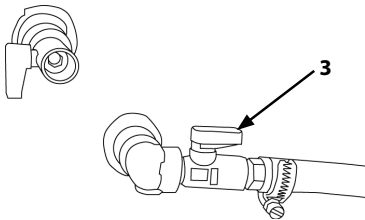
IMPORTANT: Be sure to use only genuine Hitachi elements for the main fuel filter element and the pre-filter element. Failure to do so may deteriorate the engine performance and/or shorten the engine service life. Please be noted that all engine failures caused by using other manufacturers' elements are excluded from Hitachi Warranty Policy.

Procedures:

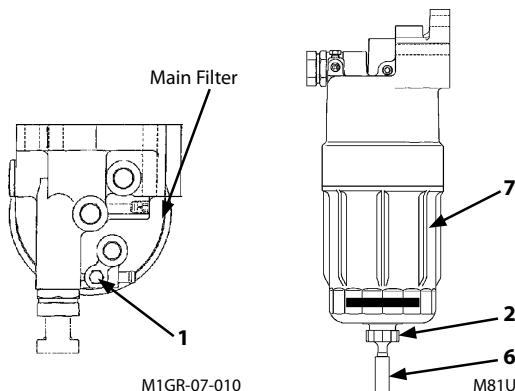
1. Close cock (3) on the bottom of the fuel tank.
2. Place a 1-liter or larger capacity drain container under drain hose (6).
3. Loosen air bleed plug (1) and drain plug (2). Drain fuel until fuel does not flow out of the filter.
4. Remove transparent filter case (7) using the exclusive tool.
5. When transparent filter case (7) is removed, the element is exposed. Remove the element by hand.
6. Install a new element. Tighten transparent filter case (7) to 30 ± 2 N·m (3 ± 0.2 kgf·m) using the exclusive tool.
7. Tighten air bleed plug (1) and drain plug (2).
8. Open cock (3) on the bottom of the fuel tank.
9. Bleed air from the fuel supply system.

After replacing the fuel filter element, bleed air from the fuel supply system. (Refer to the air bleed procedures described on page 7-47.)

Wrench size: 10 mm

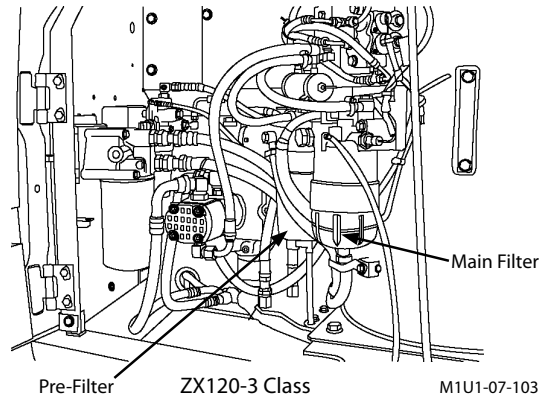


M1U1-07-015



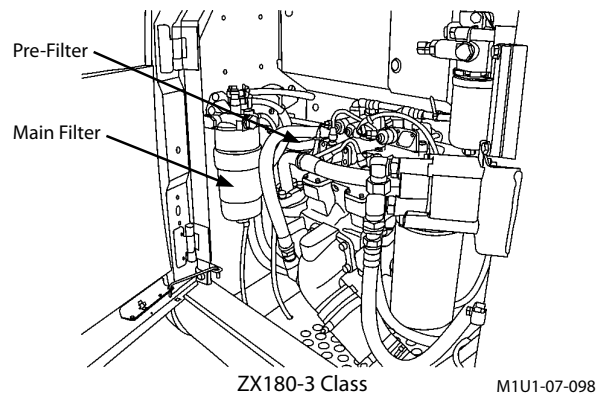
M1GR-07-010

M81U-07-030



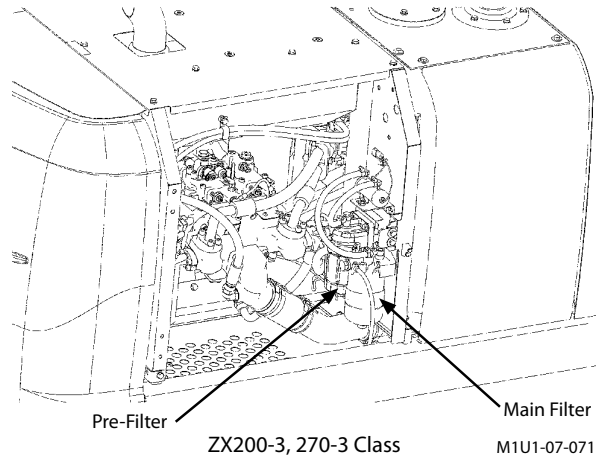
ZX120-3 Class

M1U1-07-103



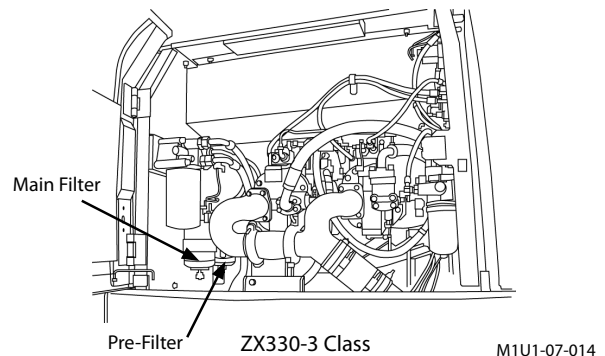
ZX180-3 Class

M1U1-07-098



ZX200-3, 270-3 Class

M1U1-07-071



ZX330-3 Class

M1U1-07-014

MAINTENANCE

4 Replace Fuel Pre-Filter Element --- every 500 hours

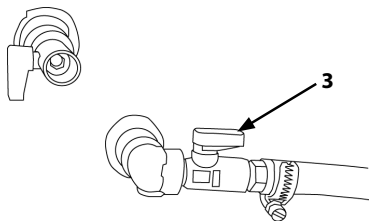
IMPORTANT: Be sure to use only genuine Hitachi elements for the main fuel filter element and the pre-filter element. Failure to do so may deteriorate the engine performance and/or shorten the engine service life. Please be noted that all engine failures caused by using other manufacturers' elements are excluded from Hitachi Warranty Policy.

Procedures:

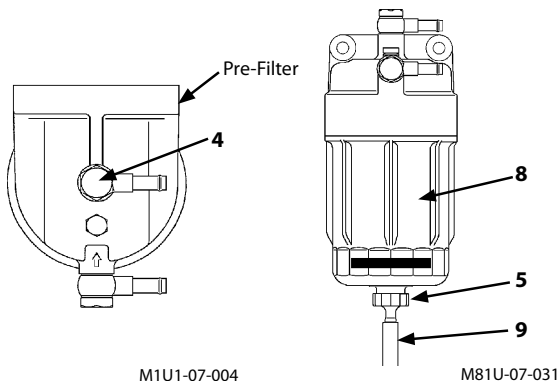
1. Close cock (3) on the bottom of the fuel tank.
2. Place a 1-liter or larger capacity container under drain hose (9).
3. Loosen air bleed plug (4) and drain plug (5). Drain fuel until fuel does not flow out of the filter.
4. Remove transparent filter case (8) using an exclusive tool.
5. When transparent filter case (8) is removed, the element is exposed. Remove the element by hand.
6. Install a new element. Tighten transparent filter case (8) to 30 ± 2 N·m (3 ± 0.2 kgf·m) using the exclusive tool.
7. Tighten air bleed plug (4) and drain plug (5).
8. Open cock (3) on the bottom of the fuel tank.
9. Bleed air from the fuel supply system.

After replacing the fuel filter element, bleed air from the fuel supply system. (Refer to the air bleed procedures described on page 7-47.)

Wrench size: 14 mm

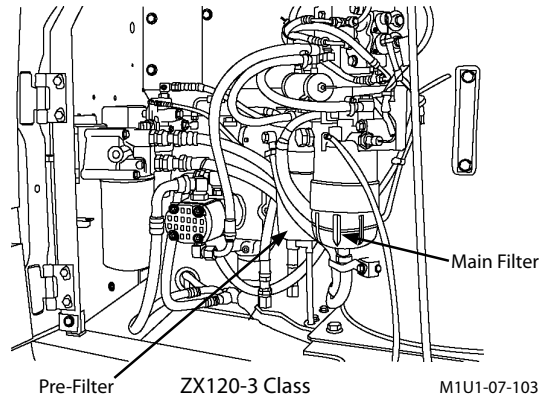


M1U1-07-015

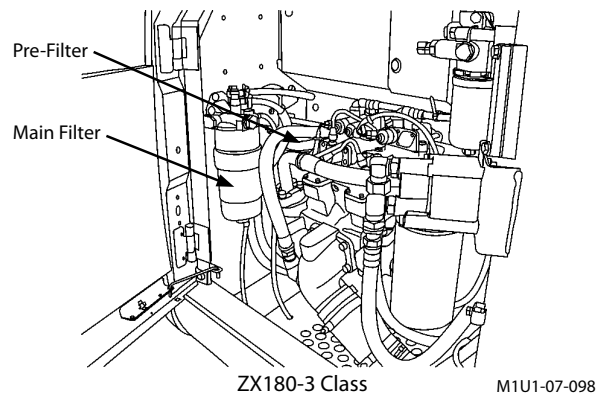


M1U1-07-004

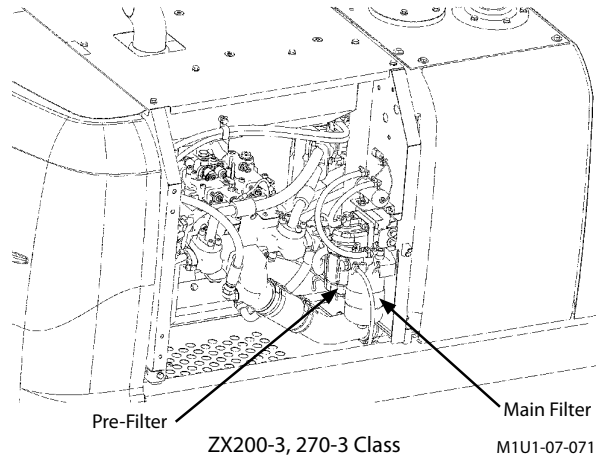
M81U-07-031



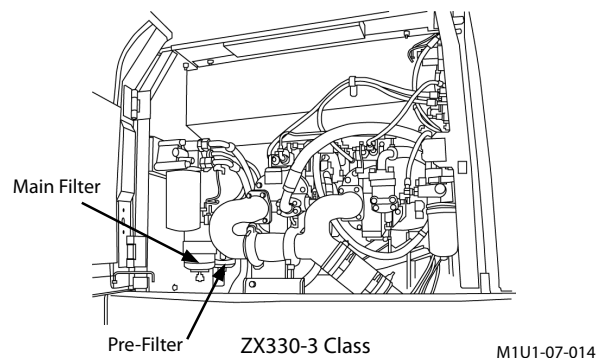
M1U1-07-103



M1U1-07-098



M1U1-07-071



M1U1-07-014

MAINTENANCE

5 Clean Fuel Solenoid Pump Strainer --- every 500 hours

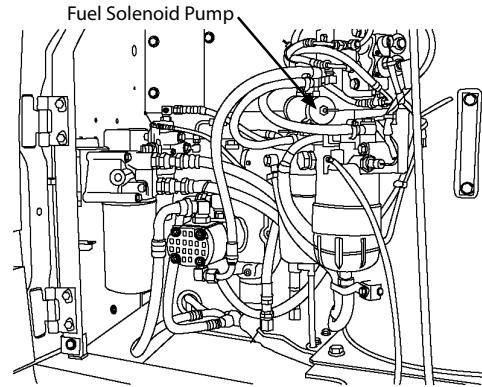
Cleaning

When strainer (3) is disassembled, be sure to replace gasket (2) and (4). Install cover (1) and the magnet only after sufficiently cleaning them. After being assembled, closely check the air-tightness of strainer (3).

Disassembling/Assembling

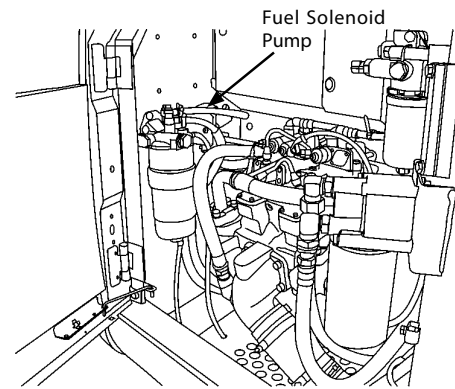
To remove cover (1), loosen with a spanner. After cover (1) is removed, gasket (2), strainer (3), and gasket (4) are easily removed in order. Wash removed strainer (3) with light oil. Install strainer (3) in the reverse order of disassembling. At that time, install gasket (2) into cover (1) first. Then, securely tighten cover (1) to pump (5) using a spanner.

 NOTE: Wrench size: 17 mm



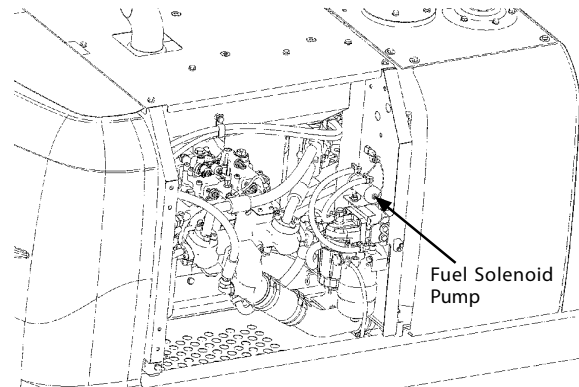
ZX120-3 Class

M1U1-07-103



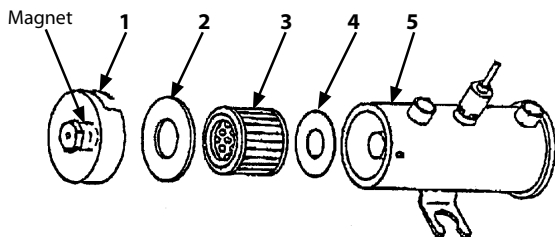
ZX180-3 Class

M1U1-07-098

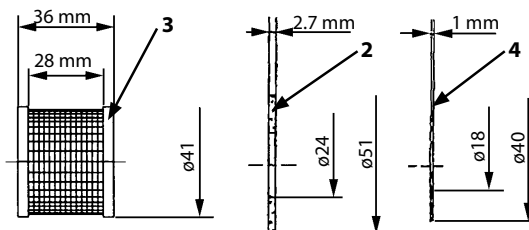


ZX200-3, 270-3 Class

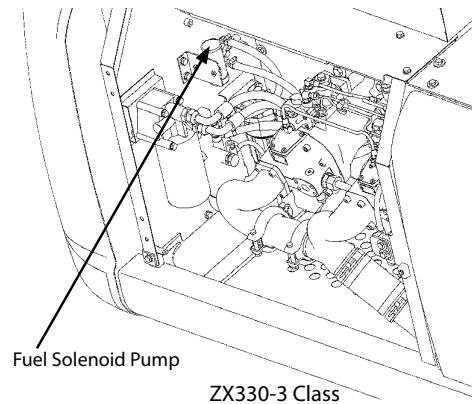
M1U1-07-071



M1GR-07-004



M1U1-07-006



ZX330-3 Class

M1U1-07-074

MAINTENANCE

6 Check Fuel Hoses

- daily
- every 250 hours

CAUTION: Fuel leaks can lead to fires that may result in serious injury.
To avoid this hazard :

1. Park the machine on a firm, level surface. Lower the bucket to the ground. Stop the engine. Remove the key from the key switch. Pull the pilot control shut-off lever to the LOCK position.
2. Check for kinked hoses, and hoses that rub against each other parts for leaks.
Check hoses at the check points indicated below for leaks and other damage that may result in future leaks. If any abnormalities are found, replace or retighten them, as shown in Table 4.
3. Repair or replace any loose or damaged hoses. Never install bent or damaged hoses.

Table 4. Hoses

Interval (hours)	Check Points	Abnormalities	Remedies
Daily	Hose ends	Leak (1)	Retighten or replace
	Soutache braid hose	Friction (2) Crack (2)	Replace Replace
Every 250 hours	Soutache braid hose	Crack (3)	Replace
	Hose ends	Crack (4)	Replace
	Hose	Bend (5)	Replace
	Hose	Collapse (6)	Replace (Use proper bend radius)
	Hose ends and fittings	Deformation or corrosion (7)	Replace

NOTE: Refer to the illustrations in Fig.1 for each check point location or for a description of the abnormality. Use genuine Hitachi parts.

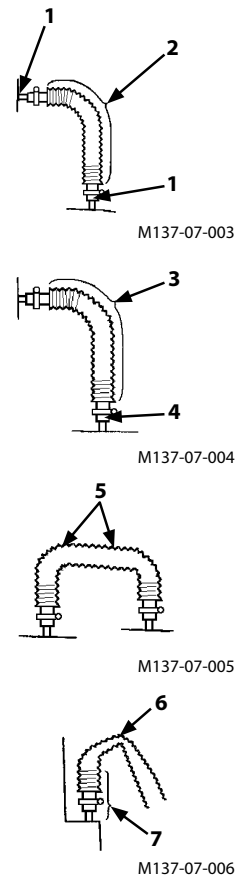


Fig. 1

MAINTENANCE

F. AIR CLEANER

- 1** Clean Air Cleaner Outer Element
--- every 250 hours or when the restriction indicator comes ON

- 2** Replace Air Cleaner Outer and Inner Elements
--- after cleaning six times or after one year

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

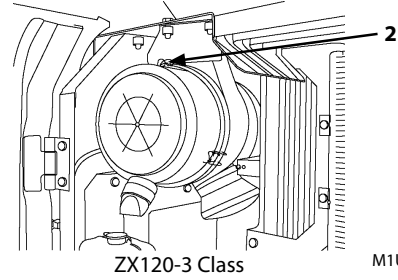
4. Run the engine at slow idle speed without load for five minutes.
5. Stop the engine. Remove the key from the key switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Loosen clamps (2) to remove the cover.

IMPORTANT: Do not install the element and/or the cover forcibly when installing the clamps. Failure to do so may result in deformation of the clamps, element, and/or cover.

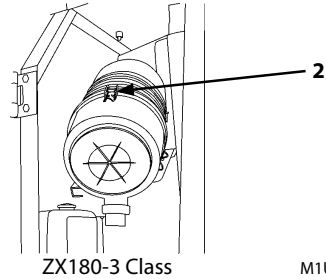
8. Remove outer element (1).
9. Tap outer element (1) with the palm of your hand, NOT ON A HARD SURFACE.

CAUTION: Use reduced compressed air pressure. (Less than 0.2 MPa, 2 kgf/cm²). Clear area of bystanders, guard against flying chips, and wear personal protection equipment including goggles or safety glasses.

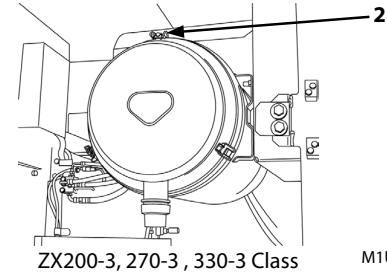
10. Clean outer element (1) using compressed air. Direct the air to the inside of the filter element, blowing out.
11. Clean the filter interior before installing outer element (1).
12. Install outer element (1).
13. Install cover and tighten clamps (2).
14. Start the engine and run at slow idle.
15. Check the air filter restriction indicator on the monitor panel. If the air filter restriction indicator comes ON, stop the engine and replace outer element (1).



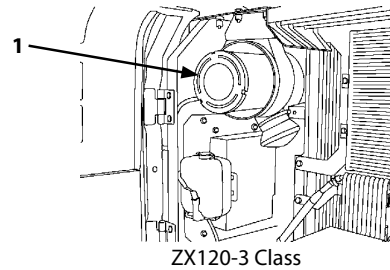
M1U1-07-104



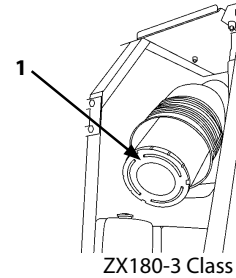
M1U1-07-079



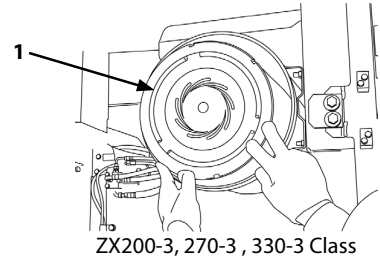
M1U1-07-027



M1U1-07-105



M1U1-07-080

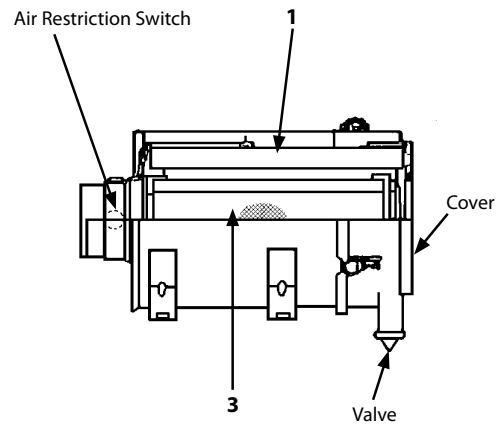


M1U1-07-028

MAINTENANCE

16. When replacing the air cleaner filter element, replace both outer (1) and inner (3) elements together. Remove outer element (1). Clean the filter interior before removing inner element (3). Remove inner element (3). First install inner element (3) and then install outer element (1).

IMPORTANT: Do not reuse inner element (3). Always replace the new one.



M157-07-061

MAINTENANCE

G. COOLING SYSTEM

Coolant

Use fresh water or normal tap water as a coolant. Do not use strong acid or alkaline water. Use the coolant with genuine Hitachi Long-Life Coolant (LLC) mixed by 30 to 50 %.

If the air temperature is expected to fall below 0 °C (32 °F), fill the cooling system with an genuine Hitachi Long-Life Coolant (LLC) and soft water mix. As a general rule, the ratio of LLC should range between 30 % and 50 % as shown in the table below. If the ratio is below 30 %, the system may develop rust, and if it is above 50 %, the engine may over-heat.

MAINTENANCE

LLC Mixing Table (ZX120-3 Class)

Air temperature		Mixing ratio	Refill capacities	
			LLC	Soft water
°C	°F	%	liters	liters
-1	30	30	4.8	11.2
-4	25	30	4.8	11.2
-7	19	30	4.8	11.2
-11	12	30	4.8	11.2
-15	5	35	5.6	10.4
-20	-4	40	6.4	9.6
-25	-13	45	7.2	8.8
-30	-22	50	8.0	8.0

LLC Mixing Table (ZX180-3 Class)

Air temperature		Mixing ratio	Refill capacities	
			LLC	Soft water
°C	°F	%	liters	liters
-1	30	30	5.4	12.6
-4	25	30	5.4	12.6
-7	19	30	5.4	12.6
-11	12	30	5.4	12.6
-15	5	35	6.3	11.7
-20	-4	40	7.2	10.8
-25	-13	45	8.1	9.9
-30	-22	50	9.0	9.0

LLC Mixing Table (ZX200-3, 270-3 Class)

Air temperature		Mixing ratio	Refill capacities	
			LLC	Soft water
°C	°F	%	liters	liters
-1	30	30	7.8	18.2
-4	25	30	7.8	18.2
-7	19	30	7.8	18.2
-11	12	30	7.8	18.2
-15	5	35	9.1	16.9
-20	-4	40	10.4	15.6
-25	-13	45	11.7	14.3
-30	-22	50	13.0	13.0

LLC Mixing Table (ZX330-3 Class)

Air temperature		Mixing ratio	Refill capacities	
			LLC	Soft water
°C	°F	%	liters	liters
-1	30	30	9.6	22.4
-4	25	30	9.6	22.4
-7	19	30	9.6	22.4
-11	12	30	9.6	22.4
-15	5	35	11.2	20.8
-20	-4	40	12.8	19.2
-25	-13	45	14.4	17.6
-30	-22	50	16.0	16.0



CAUTION:

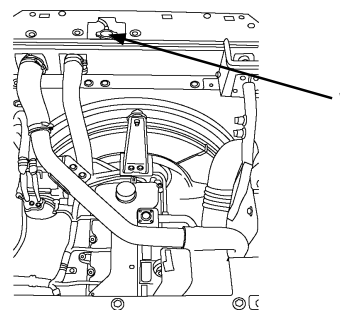
- Antifreeze is poisonous; if ingested, it can cause serious injury or death. Induce vomiting and get emergency medical attention immediately.
- When storing antifreeze, be sure to keep it in a clearly marked container with a tight lid. Always keep ANTIFREEZE out of the reach of children.
- If antifreeze is accidentally splashed into eyes, flush with water for 10 to 15 minutes and get emergency medical attention.
- When storing or disposing of antifreeze, be sure to comply with all local regulations.

MAINTENANCE

1 Check Coolant Level --- daily

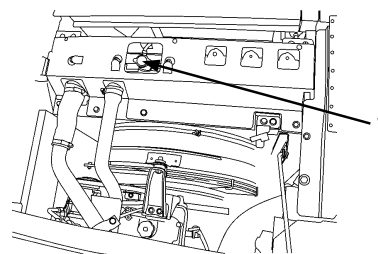
CAUTION: Do not loosen radiator filler cap (1) unless the system is cool. Loosen cap (1) slowly to the stop. Release all pressure before removing cap (1).

With the engine cold, the coolant level must be between the FULL and LOW marks on coolant reservoir (2), located behind the radiator access door. If the coolant level is below the low mark, add coolant to coolant reservoir (2). If coolant reservoir (2) is empty, add coolant to the radiator and then to coolant reservoir (2).



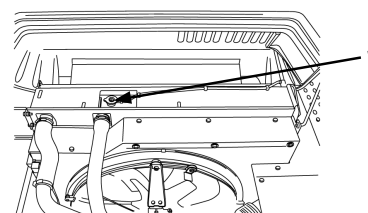
ZX120-3 Class

M1U1-07-106



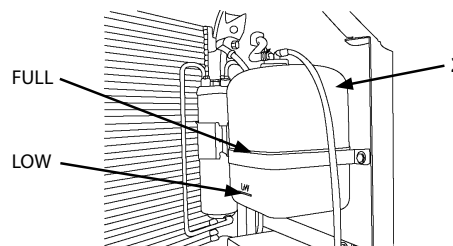
ZX180-3 Class

M1U1-07-081



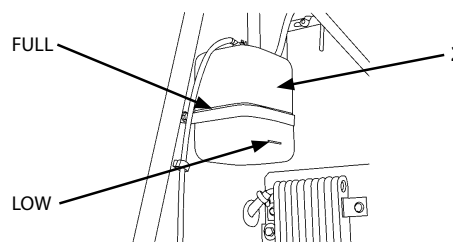
ZX200-3, 270-3, 330-3 Class

M1U1-07-024



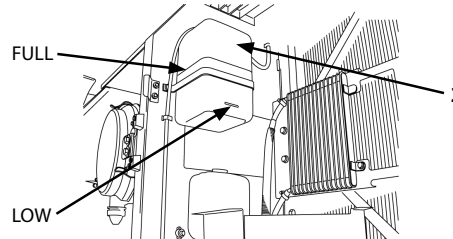
ZX120-3 Class

M1U1-07-107



ZX180-3 Class

M1U1-07-082



ZX200-3, 270-3, 330-3 Class

M1U1-07-022

MAINTENANCE

2 Check and Adjust Fan Belt Tension (ZX120-3, 180-3 Class)

--- every 100 hours (first time after 50 hours)

IMPORTANT: Loose fan belt may result in insufficient battery charging, engine overheating as well as a rapid, abnormal belt wear. Belts that are too tight, however, can damage both bearings and belts.

Visually check the belt for wear. Replace if necessary. Check fan belt tension by depressing the midpoint between fan pulley (3) and alternator pulley (4) with the thumb. Deflection must be A with a depressing force of approximately 98 N (10 kgf, 22 lbf).

Model	A
ZX120-3, 180-3 Class	7 to 8 mm (0.28 to 0.32 in)

Checking

Check the drive belt for any wear and/or damage. Replace the belt as needed. Check the belt tension if required.

Adjust Drive Belt Tension

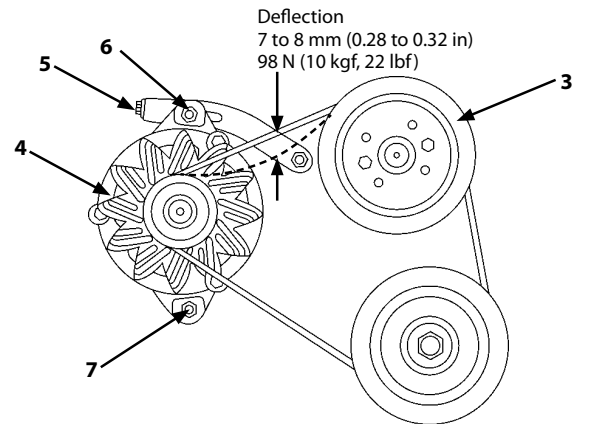
1. Loosen lock nut (6) and alternator lower mounting bolt (7).
2. Rotate tension adjust bolt (5) to adjust the belt tension.
3. After completing adjustment, tighten lock nut (6) and alternator lower mounting bolt (7) to specifications.

Standard Tightening Torque:

Nut: 25 N·m (2.5 kgf·m, 18 lbf·ft)

Bolt: 52 N·m (5.2 kgf·m, 38 lbf·ft)

IMPORTANT: When a new belt is installed, be sure to re-adjust the tension after operating the engine for 3 to 5 minutes at slow idle speed to be sure that the new belt is seated correctly.



ZX120-3, 180-3 Class

M1U1-07-089

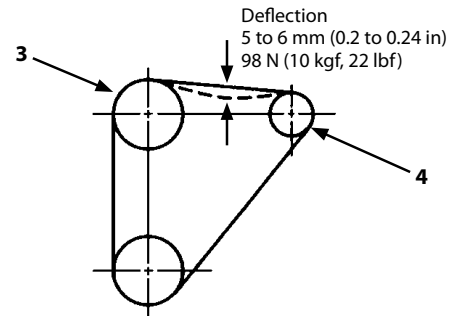
MAINTENANCE

2 Check and Adjust Fan Belt Tension (ZX200-3, 270-3, 330-3 Class) --- every 100 hours (first time after 50 hours)

IMPORTANT: Loose fan belt may result in insufficient battery charging, engine overheating as well as a rapid, abnormal belt wear. Belts that are too tight, however, can damage both bearings and belts.

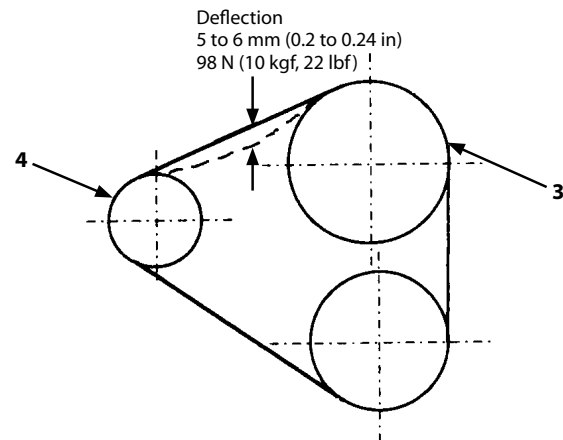
Visually check the belt for wear. Replace if necessary. Check fan belt tension by depressing the midpoint between fan pulley (3) and alternator pulley (4) with the thumb. Deflection must be A with a depressing force of approximately 98 N (10 kgf, 22 lbf).

Model	A
ZX200-3, 270-3, 330-3 Class	5 to 6 mm (0.2 to 0.24 in)



ZX200-3, 270-3 Class

M178-07-030

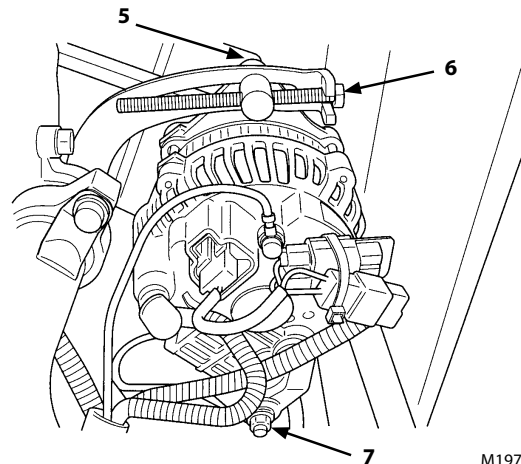


ZX330-3 Class

M1HM-07-001

If tension is not within specifications, loosen nuts (5) and (7) for the adjusting plate and alternator bracket. Move the alternator by bolt (6) until tension is correct. Tighten nuts (5) and (7).

IMPORTANT: When a new belt is installed, be sure to re-adjust the tension after operating the engine for 3 to 5 minutes at slow idle speed to be sure that the new belt is seated correctly.



M197-07-072

MAINTENANCE

3 Change Coolant --- twice a year (in spring and autumn)

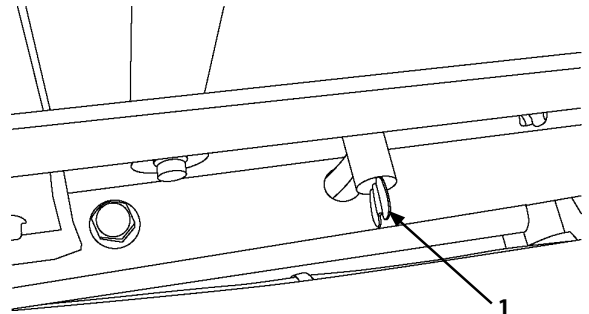
 **NOTE:** When genuine Hitachi Long-Life coolant is used, change every two years or 4000 hours, whichever comes first.

Clean Radiator Interior --- when changing coolant

 **CAUTION:** Do not loosen the radiator cap until the system is cool. Loosen the cap slowly to the stop. Release all pressure before removing the cap.

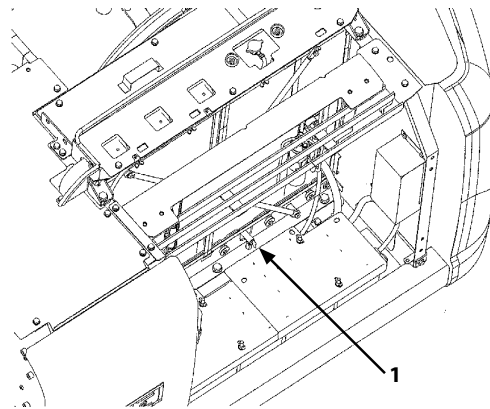
IMPORTANT: Use fresh water or normal tap water as a coolant. Do not use strong acid or alkaline water. Use the coolant with genuine Hitachi Long-Life Coolant (LLC) mixed by 30 to 50 %.

1. Remove the radiator cap. Open drain cock (1) on the radiator to allow the coolant to drain completely.
2. Close drain cock (1). Fill the radiator with tap water and a radiator cleaner agent. Start the engine and run at a speed slightly higher than slow idle; when the needle of the temperature gauge reaches the green zone, run the engine for about ten more minutes.
3. Stop the engine and open drain cock (1). Flush out the cooling system with tap water, until draining water is clear. This helps remove rust and sediment.
4. Close drain cock (1). Fill the radiator with tap water and LLC at the specified mixing ratio. When adding coolant, do so slowly to avoid mixing air bubbles in the system.
5. Run the engine to sufficiently bleed the air from the cooling system.
6. After adding coolant, operate the engine for several minutes. Check the coolant level again, and add coolant if necessary.



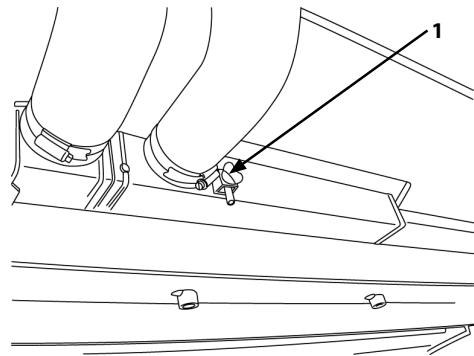
ZX120-3 Class

M1U1-07-108



ZX180-3, 200-3, 270-3 Class

M1U1-07-072



ZX330-3 Class

M1U1-07-029

MAINTENANCE

- 4** Clean Radiator, Oil Cooler Core and Inter Cooler
Outside --- every 500 hours
Inside --- once a year

- 5** Clean Oil Cooler, Radiator and Inter Cooler Front
Screen
--- every 500 hours

- 6** Clean Air Conditioner Condenser
--- every 500 hours

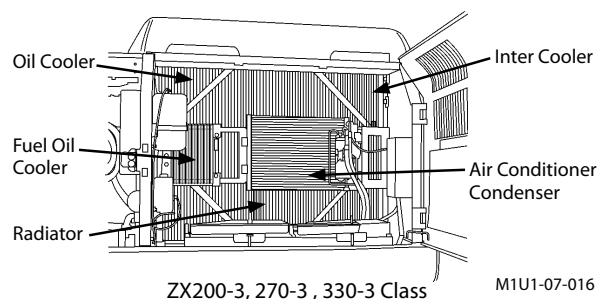
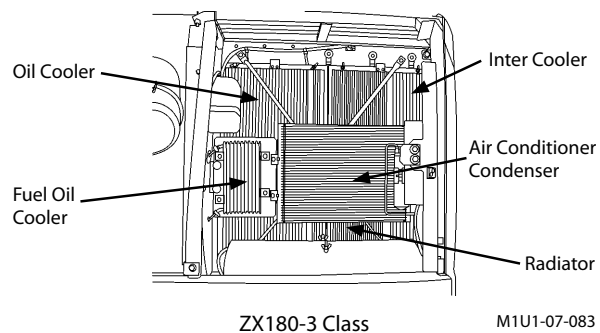
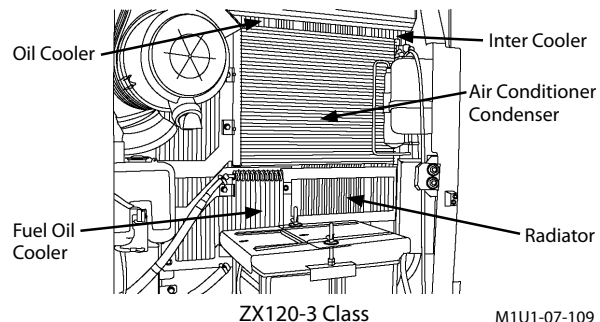
- 7** Clean Fuel Oil Cooler
--- every 500 hours

- 8** Clean Air Conditioner Front Screen
(Opt.) --- every 500 hours

CAUTION: Use reduced compressed air pressure (Less than 0.2 MPa, 2 kgf/cm²) for cleaning purposes. Clear the area of bystanders, guard against flying chips, and wear personal protection equipment including eye protection.

IMPORTANT: When operating the machine in a dusty environment, check the screen every day for dirt and clogging. If clogged, remove, clean and reinstall the screen.

1. Open the radiator access door and hood.
2. Clean the air conditioner condenser.
3. Remove the oil cooler front screen and clean it.
4. Clean both the radiator and oil cooler using compressed air (Less than 0.2 MPa, 2 kgf/cm²) or water.



MAINTENANCE

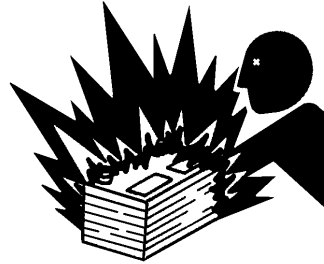
H. ELECTRICAL SYSTEM

IMPORTANT: Improper radio communication equipment and associated parts, and/or improper installation of radio communication equipment effects the machine's electronic parts, causing involuntary movement of the machine.

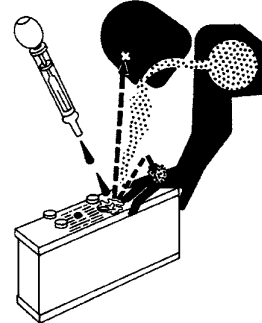
Also, improper installation of electrical equipment's may cause machine failure and/or a fire on the machine.

Be sure to consult your authorized dealer when installing a radio communication equipment or additional electrical parts, or when replacing electrical parts.

Never attempt to disassemble or modify the electrical/electronic components. If replacement or modification of such components is required, contact your authorized dealer.



SA-032



SA-036

BATTERIES

WARNING: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check the battery electrolyte level.

Do not continue to use or charge the battery when electrolyte level is lower than specified. Explosion of the battery may result.

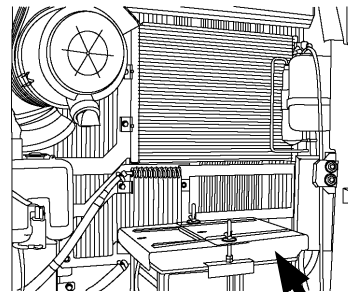
Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into the eyes.

Avoid hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Using proper booster battery starting procedures.

If you spill acid on yourself:

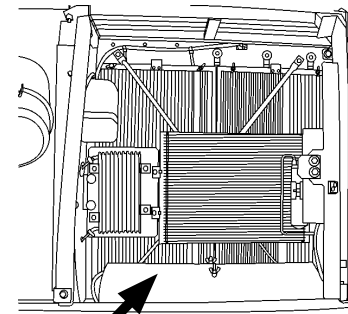
1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. If splashed in eyes, flush with water for 10 to 15 minutes. Get medical attention immediately.



ZX120-3 Class

Batteries Location

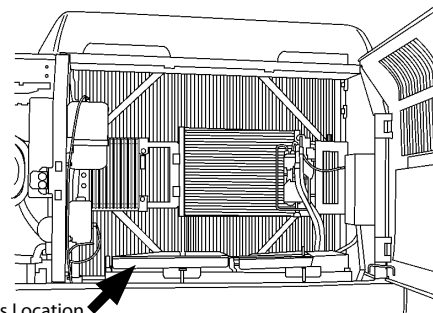
M1U1-07-109



Batteries Location

ZX180-3 Class

M1U1-07-084



Batteries Location

ZX200-3, 270-3, 330-3 Class

M1U1-07-016

MAINTENANCE

If acid is swallowed:

- 1. Drink large amounts of water or milk.**
- 2. Then drink milk of magnesia, beaten eggs, or vegetable oil.**
- 3. Get medical attention immediately.**

IMPORTANT: Add water to batteries in freezing weather before you begin operating your machine for the day, or else charge the batteries.

IMPORTANT: If the battery is used with the electrolyte level lower than the specified lower level, the battery may deteriorate quickly.

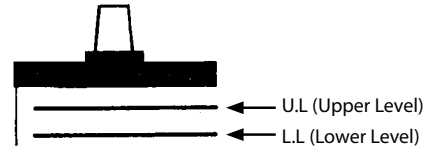
IMPORTANT: Do not refill electrolyte more than the specified upper level. Electrolyte may spill, damaging the painted surfaces and/or corroding other machine parts.

 **NOTE:** *In case electrolyte is refilled more than the specified upper level line or beyond the bottom end of the sleeve, remove the excess electrolyte until the electrolyte level is down to the bottom end of the sleeve using a pipette. After neutralizing the removed electrolyte with sodium bicarbonate, flush it with plenty of water, otherwise, consult the battery manufacturer.*

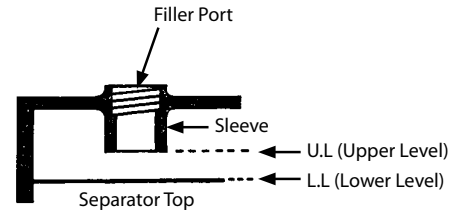
MAINTENANCE

Electrolyte Level Check --- every one month

1. Check the electrolyte level at least once a month.
2. Park the machine on level ground and stop the engine.
3. Check the electrolyte level.
 - 3.1 When checking the level from the battery side:
Clean around the level check lines with a wet towel.
Do not use a dry towel. Static electricity may be developed, causing the battery gas to explode. Check if the electrolyte level is between U.L (Upper Level) and L.L (Lower Level). In case the electrolyte level is lower than the middle level between the U.L and L.L, immediately refill distilled water or commercial battery fluid. Be sure to refill with distilled water before recharging (operating the machine). After refilling, securely tighten the filler plug.
 - 3.2 When impossible to check the level from the battery side or no level check mark is indicated on the side:
After removing the filler plug from the top of the battery. Check the electrolyte level by viewing through the filler port. It is difficult to judge the accurate electrolyte level in this case. Therefore, when the electrolyte level is flush with the U.L, the level is judged to be proper. Then, referring to the right illustrations, check the level. When the electrolyte level is lower than the bottom end of the sleeve, refill with distilled water or commercial battery fluid up to the bottom end of the sleeve. Be sure to refill with distilled water before recharging (operating the machine). After refilling, securely tighten the filler plug.
 - 3.3 When an indicator is available to check the level, follow its check result.
4. Always keep clean around the battery terminals to prevent battery discharge. Check terminals for loose and/or rust. Coat terminals with grease or petroleum jelly to prevent corrosion build up.



M146-07-109



M146-07-110

Proper



Since the electrolyte surface touches the bottom end of the sleeve, the electrolyte surface is raised due to surface tension so that the electrode ends are seen curved.

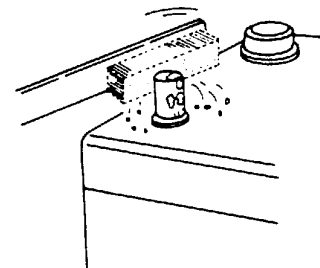
M146-07-111

Lower



When the electrolyte surface is lower than the bottom end of the sleeve, the electrode ends are seen straight.

M146-07-112



M409-07-072

MAINTENANCE

Check electrolyte specific gravity --- every one month



WARNING: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check the battery electrolyte level.

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into the eyes.

Never check the battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove the grounded (–) battery clamp first and replace it last.

Avoid hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Using proper booster battery starting procedures.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. If splashed in eyes, flush with water for 10 to 15 minutes. Get medical attention immediately.

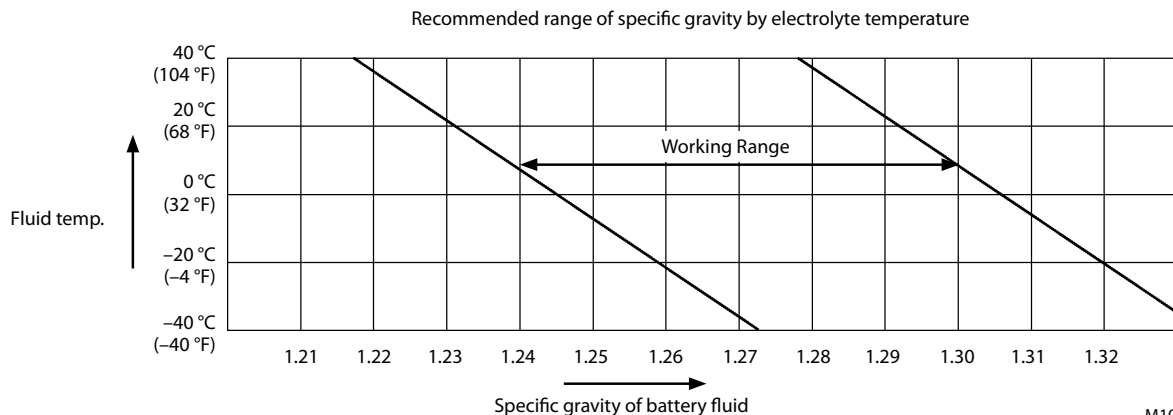
If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.

IMPORTANT: Check the specific gravity of the electrolyte after it is cooled, not immediately after operation.

Check the electrolyte specific gravity in each battery cell.

The lowest limit of the specific gravity for the electrolyte varies depending on electrolyte temperature. The specific gravity should be kept within the range shown below. Charge the battery if the specific gravity is below the limit.



M104-07-054

REPLACE BATTERIES

Your machine has two 12-volt batteries with negative (–) ground.

If one battery in a 24-volt system has failed but the other is still good, replace the failed battery with one of the same type. For example, replace a failed maintenance-free battery with a new maintenance-free battery. Different types of batteries may have different rates of charge. This difference could overload one of the batteries and cause it to fail.

MAINTENANCE

Remove and Installing Batteries

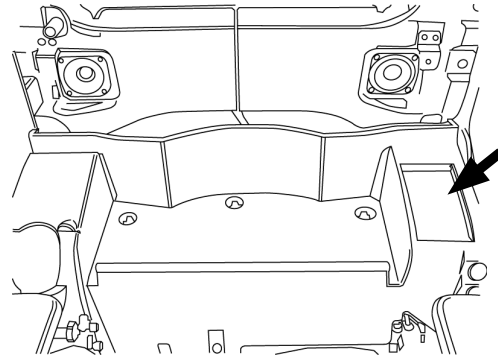
CAUTION: When removing the battery disconnect the negative (–) terminal (ground) first, while taking care not to cause a short circuit. When installing the battery, connect the positive (+) terminal before connecting the negative (–) terminal.

REPLACING FUSES

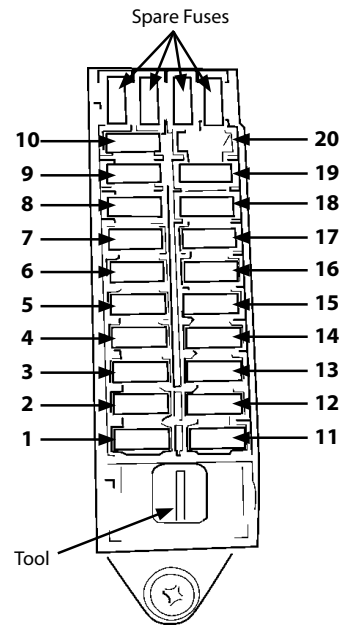
If any electrical equipment fails to operate, first check the fuses. Fuse box is located behind the operator's seat. A fuse location/specification decal is attached to the fuse box cover. Remove the fuse box cover by lifting it upward. Spare fuses are located on the underside of the cover.

IMPORTANT: Be sure to install fuses with correct amperage ratings to prevent electrical system damage due to overload.

10- CONTROLLER 5A	20- OPTION3 5A
9- BACKUP 10A	19- SW. BOX 5A
8- ECM 30A	18- POWER ON 5A
7- LUBRICATOR 10A	17- AIRCON. 5A
6- OPTION2 10A	16- GLOW RELAY 5A
5- OPTION1 5A	15- AUXILIARY 10A
4- SOLENOID 10A	14- FUEL PUMP 5A
3- HEATER 20A	13- LIGHTER 10A
2- WIPER 10A	12- ROOM LAMP/RADIO 5A
1- LAMP 20A	11- HORN 10A



M1U1-07-017



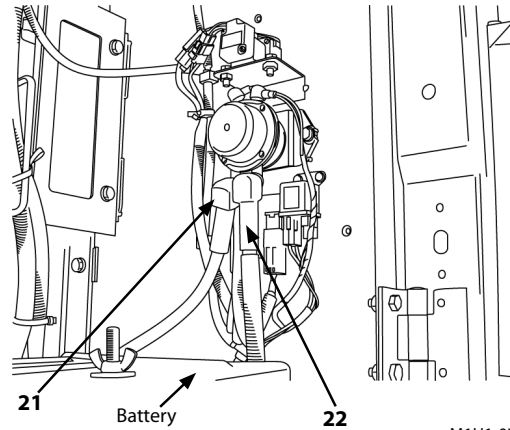
M178-07-034

MAINTENANCE

- Fusible Link (Main Fuse)

In case the starter will not rotate even if the key switch is turned to the START position, fusible link may be the cause of the trouble. Remove the cover next to the engine coolant reservoir to check the fuse. Replace it if blown.

21- + Side (Red)	45A
22- - Side (Black)	65A



M1U1-07-023

MAINTENANCE

I. MISCELLANEOUS

1 Check Bucket Teeth --- daily

Check the bucket teeth for wear and looseness

Replace teeth (1) if tooth wear exceeds the designated service limit shown below.

Dimension A in mm (in)

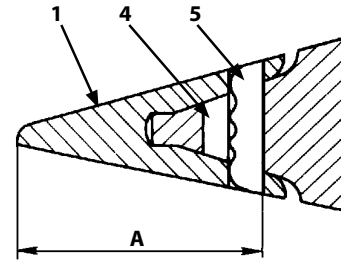
Model	New	Limit of Use
ZX120-3 Class, ZX160LC-3	166 (6.5)	85 (3.3)
ZX180LC-3, 180LCN-3, 200-3 Class	200 (7.9)	95 (3.7)
ZX270-3 Class	230 (9.1)	110 (4.3)
ZX330-3 Class	230 (9.1)	115 (4.5)

Replacing procedure

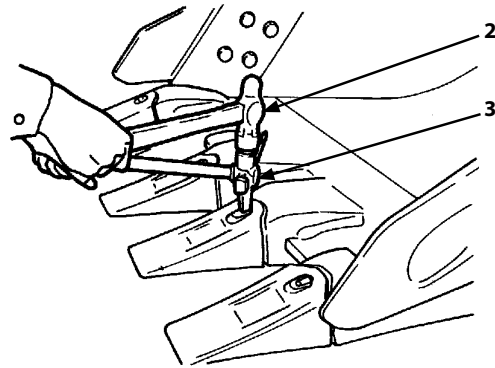


CAUTION: Guard against injury from flying pieces of metal. Wear goggles or safety glasses, and safety equipment appropriate to the job.

1. Use hammer (2) and drift (3) to drive out locking pin (5). Be careful not to damage rubber pin lock (4) while removing locking pin (5).
2. Remove tooth (1). Inspect locking pin (5) and rubber pin lock (4) for damage, replace if necessary. Short locking pins (5) and damaged rubber pin locks (4) must be replaced with new ones.

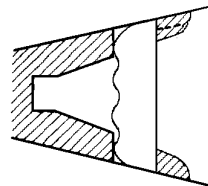


M104-07-056

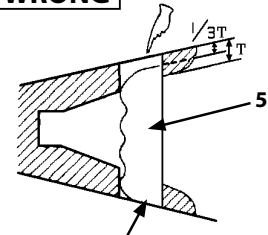


M104-07-116

RIGHT



WRONG

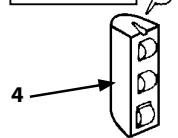


Flush one end of the locking pin to evaluate. In this instance, the locking pin is too short.

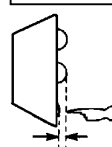
M104-07-118

M104-07-058

WRONG



WRONG

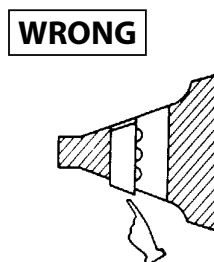
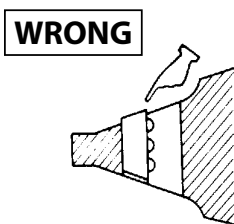
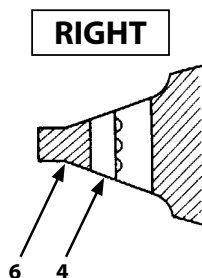


M104-07-059

MAINTENANCE

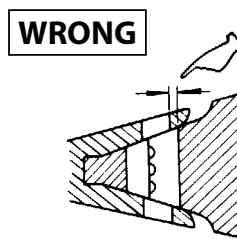
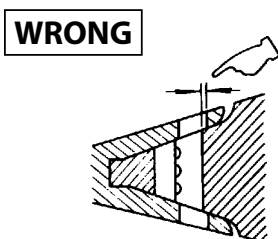
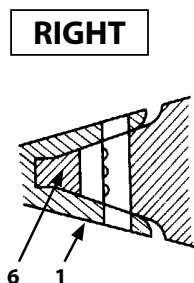
3. Clean shank (6) surface.

4. Install rubber pin lock (4) into shank (6) hole as shown.



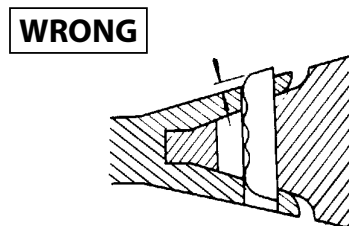
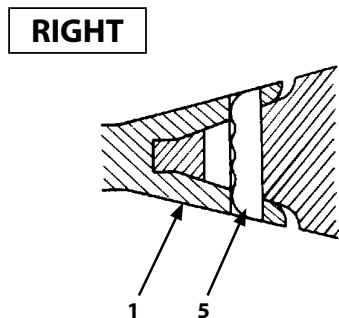
M104-07-060

5. Position new tooth (1) over shank (6).



M104-07-061

6. Drive locking pin (5) fully into the hole as shown.



M104-07-062

IMPORTANT: Check the bucket teeth periodically to ensure that wear does not exceed the designed service limit.

MAINTENANCE

Check Bucket Teeth for H and BE Type Front or Super V Type Bucket Teeth (ZX 200-3, 330-3 Class)

--- daily

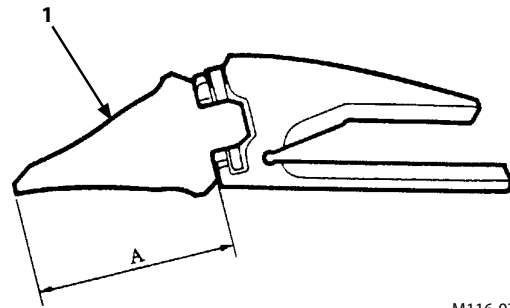
Check for wearing and looseness of the Bucket tooth points.

1. Replacement intervals

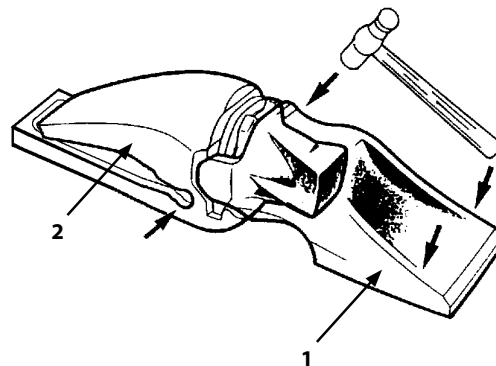
When tooth points (1) wear beyond the service limit, replace them.

Dimension A in mm (in)

ZX200-3 Class	Part No.	New	Limit of Use
0.8 m ³ Reinforced Hoe Bucket with Super V Type Bucket Teeth	4383048	211 (8.3)	90 (3.5)
ZX330-3 Class	Part No.	New	Limit of Use
1.40 m ³ Hoe Bucket with Super V Type Bucket Teeth	4400250	232 (9.1)	99 (3.9)
Rock Bucket 1.38 m ³ 1.50 m ³	4400253	229 (9.0)	112 (4.4)



M116-07-124



M116-07-125

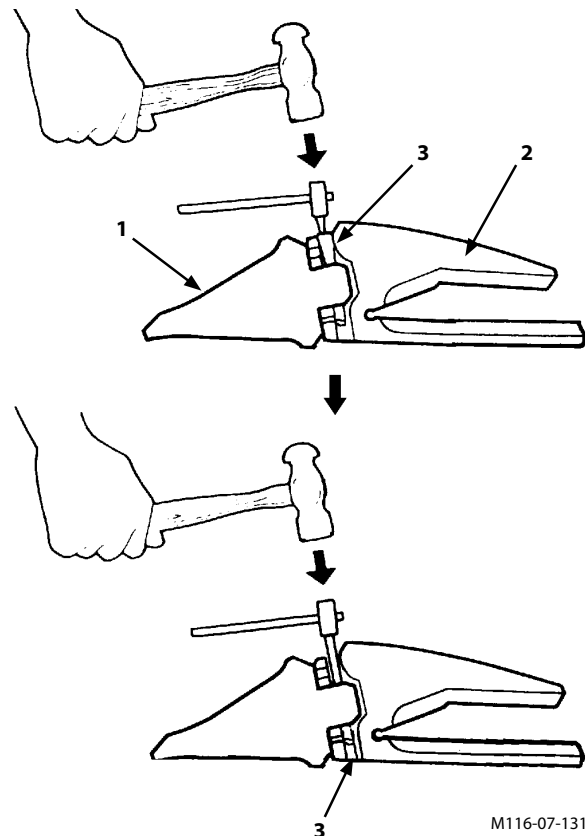
NOTE: When tooth point (1) is used in excess of the service limit, a hole will be made on tooth point (1), which makes the nose exposed and worn out, and will eventually break or let tooth point (1) fall off.

2. Replacement

(1) Removing the tooth point

CAUTION: Guard against injury from flying pieces of metal. Wear goggles or safety glasses.

- Preparations for removing tooth point.
Hit the left and right top ends and the left and right lugs of tooth point (1) alternately with hammer to knock off pebbles, soil, etc., stuck in the gap between tooth point (1) and adapter (2).
- Inserting lock removal tool.
Remove pebbles, dirt, etc., completely from the gap between lock pin (3) and adapter (2). Place pin-removing jig on the top end of lock pin (3) and hit it with hammer to remove lock pin (3).
When driving out the pin, first hit with a shorter jig until top end of lock pin (3) comes to the upper end position of the lug of tooth point (1), and then use the longer jig to remove lock pin (3).



M116-07-131

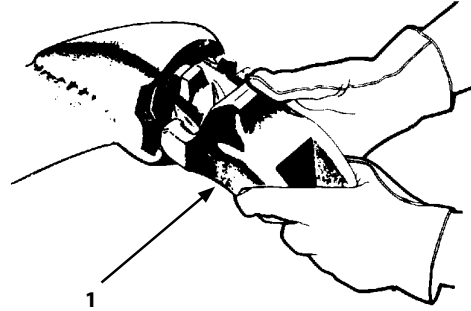
MAINTENANCE

c. Removing the tooth point

Turn tooth point (1) to the left, twist and pull it toward you to remove it.

Remove the plug, and check if rubber has cracking; if it has, replace the rubber with new one.

While the pin and plug can withstand several replacements of tooth point (1), be sure to check whether they are usable or not when replacing tooth point (1).



M113-07-078

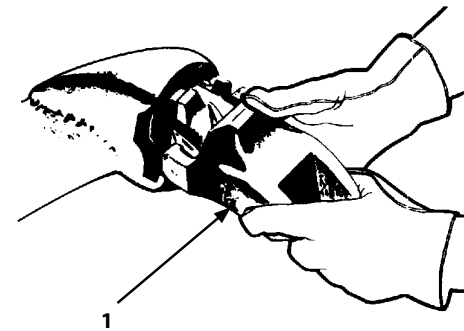
(2) Mounting the tooth point

a. Mounting the tooth point

Clean the top end of the adapter nose. If pebbles, dirt, etc., are stuck to the adapter nose, tooth point (1) will not insert properly and the pin cannot be driven in.

Also check that lock pin (3) has no cracks.

Insert tooth point (1) slowly until tooth point (1) comes to the end of the adapter nose while twisting and turning it to the right.

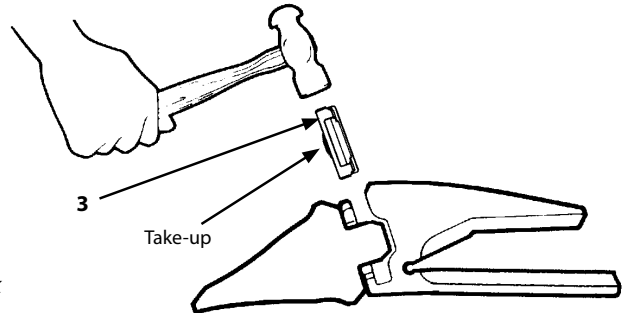


M113-07-080

b. Inserting the pin

(1) Insert lock pin (3) with take-up facing toward the adapter nose.

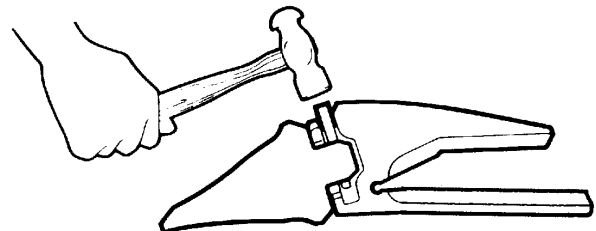
(2) With tooth point (1) fully inserted onto adapter (2), tap lock pin (3) into tooth point (1) with a hammer until the top of lock pin (3) comes flat with the nose surface. (i.e. until the take-up on lock pin (3) fits into the grooves of tooth point (1).)



M173-07-001

NOTE: • Since rubber is susceptible to corrosion, do not use grease, oil and other oily materials when inserting lock pin (3).

• When mounting welding-type nose and adapter (2) onto the bucket, lock pin (3) should be removed from the nose when preheating and welding. Otherwise, the rubber will be spoiled.



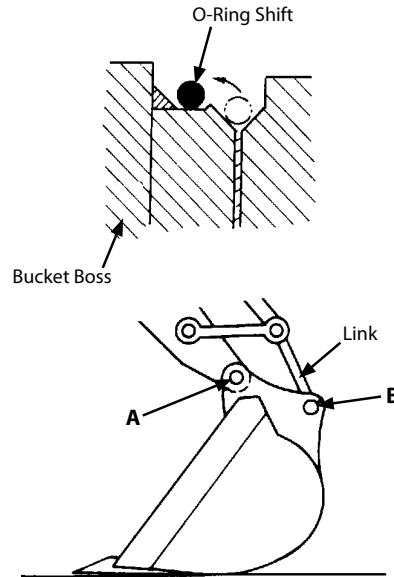
M116-07-128

MAINTENANCE

2 Change Bucket

CAUTION: When driving the connecting pins in or out, guard against injury from flying pieces of metal or debris; wear goggles or safety glasses, and safety equipment appropriate to the job.

1. Park the machine on a level surface. Lower the bucket to the ground and position it with the flat surface resting on the ground. Be sure the bucket will not roll when the pins are removed.
2. Slide the O-rings out of the way, as shown.
3. Remove bucket pins A and B to separate the arm and bucket. Clean the pins and pin bores. Apply sufficient grease to the pins and pin bores.
4. Align the arm and alternate bucket. Be sure the bucket will not roll.
5. Install bucket pins A and B.
6. Install the locking pins and snap rings on pins A and B.
7. Adjust bucket linkage clearance for pin A. See adjusting bucket linkage clearance procedure.
8. Apply grease to pin joints A and B.
9. Start the engine and run at slow idle. Slowly operate the bucket in both directions to check for any interference in bucket movement. Do not operate a machine that has any movement interference. Correct interference problem.



M104-07-063

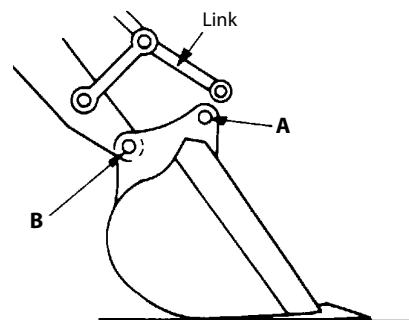
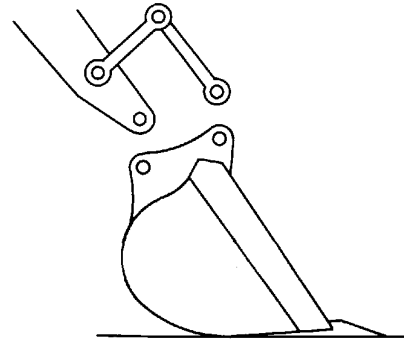
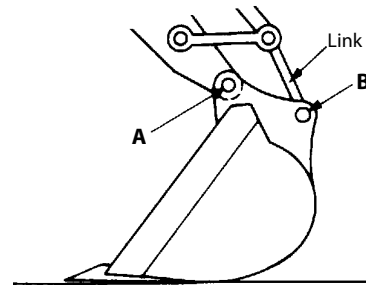
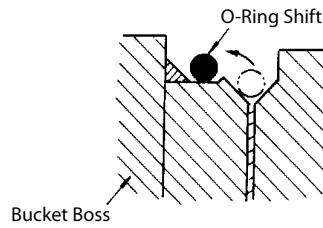
MAINTENANCE

3 Convert Bucket Connection Into Face Shovel

CAUTION: When driving the connecting pins in or out, guard against injury from flying pieces of metal or debris; wear goggles or safety glasses, and safety equipment appropriate to the job.

IMPORTANT: Provide ample space for turning the bucket 180°. Before starting converting work, keep bystanders clear of the machine. When using a signal person, coordinate hand signals before starting.

1. Park the machine on a level surface. Lower the bucket to the ground and position it with the flat surface resting on the ground. Be sure the bucket will not roll when the pins are removed.
2. Slide the O-rings out of the way, as shown.
3. Remove bucket pins A and B to separate the arm and bucket. Clean the pins and pin bores. Apply sufficient grease to the pins and pin bores.
4. Turn the bucket 180°. Be sure the bucket will not roll.
5. Align the arm and bucket. Install bucket pins A and B, then install the locking pins and snap rings on pins A and B.
6. Apply grease to pin joints A and B.
7. Start the engine and run at slow idle. Slowly operate the bucket in both directions and check for any interference in bucket movement. Do not operate a machine that has any movement interference. Correct interference problem.



M104-07-064

MAINTENANCE

4 Adjust Bucket Linkage

The machine is provided with a bucket adjustment system to take up play in the linkage. When play in the linkage increases, remove and install shims as follows:

1. Park the machine on a level surface. Lower the bucket to the ground with the flat side down so that the bucket will not roll.
2. Run the engine at slow idle. With the bucket on the ground, slowly swing counterclockwise slightly until the top of the left bucket boss contacts the arm.
3. Stop the engine. Pull the pilot control shut-off lever to the LOCK position.

 **NOTE:** Bolt (1) does not need to be removed to remove shims (2). Shims (2) are of a split type that can be easily pushed off with a screwdriver after bolts (1) have been loosened.

4. Slightly loosen three (M14) bolts (1) using a 22 mm wrench. Remove all shims (2) from clearance (c) between plate (3) and bucket.
5. Push and hold bolts (1) to remove all clearance (a) between arm and boss (4). Holding boss (4) against arm increases clearance (b). Measure distance (b) using a feeler gauge. This distance should not be adjusted below 0.5 mm (0.02 in).

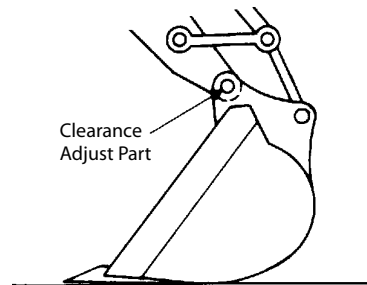
6. Install as many shims (2) into clearance (b) as possible.

 **NOTE:** Remaining shims (2) must be installed in clearance (c) to prevent arm end face or bolt damage.

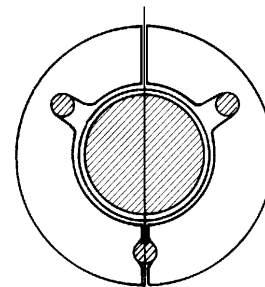
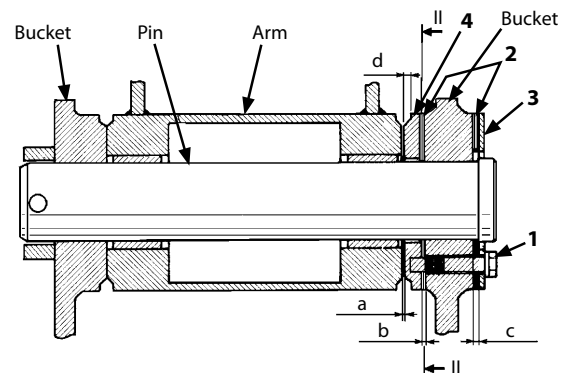
7. Install remaining shims (2) into clearance (c) and tighten bolts (1) to 140 N·m (14 kgf·m, 103 lbf·ft).

 **NOTE:** The total number of shims (2) used is A.
A : 12 (6 pairs)

8. Replace boss (4) if measurement (d) is 5 mm (0.2 in) or less.



M503-07-056



SECTION II

M104-07-066

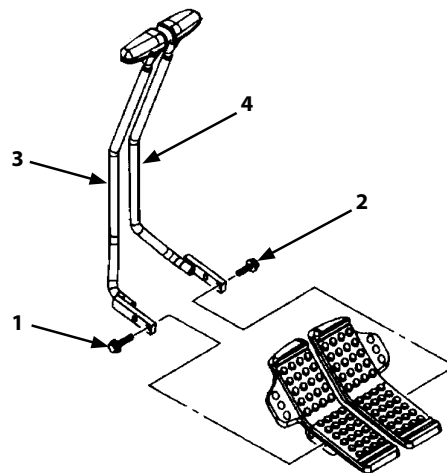
MAINTENANCE

5 Remove Travel Levers

The travel levers may be removed if desired.

1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.
4. Turn the key switch OFF. Remove the key from the key switch.
5. Pull the pilot control shut-off lever to the LOCK position.
6. Remove bolts (1) and (2) to remove levers (3) and (4) from brackets.

 **NOTE:** Wrench size 17 mm
Tightening torque 50 N•m (5 kgf•m, 37 lbf•ft)



M178-07-077

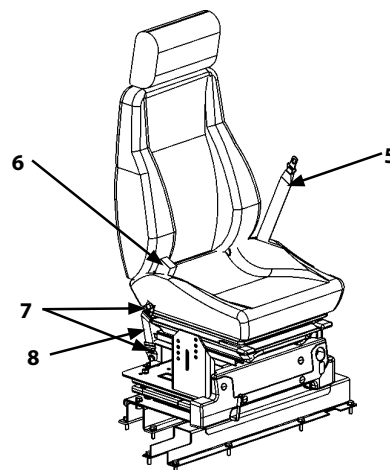
6 Check and Replace Seat Belt

Check --- daily
Replace --- every 3 years

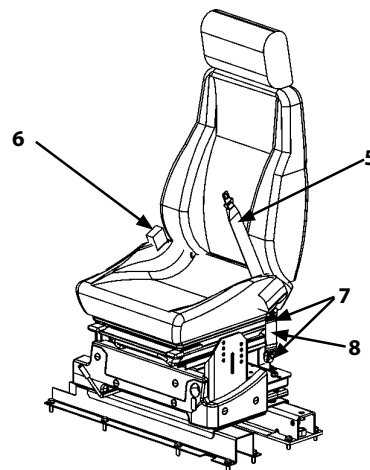
Always maintain seat belt (5) in a functional condition and replace when necessary to ensure proper performance.

Prior to operating the machine, thoroughly examine belt (5), buckle (6) and attaching hardware (7) and tether belt (8). If any item is damaged or materially worn, replace seat belt (5) or component before operating the machine.

We recommend that seat belt (5) be replaced every three years regardless of its apparent condition.



M1U1-07-008

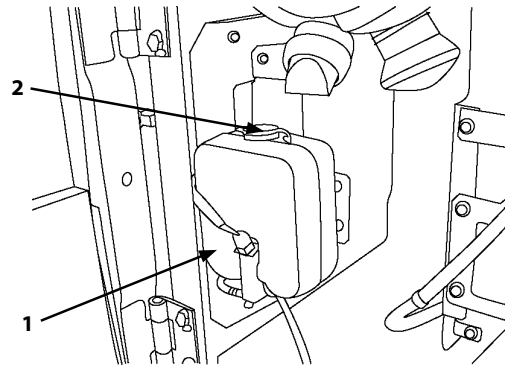


M1U1-07-009

MAINTENANCE

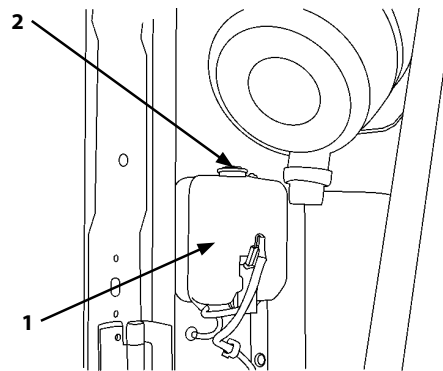
7 Check Windshield Washer Fluid Level --- as required

Check fluid in windshield washer tank (1).
If the fluid level is low, remove cap (2) and add fluid via the opening.
During winter season, use all season windshield washer which will not freeze.



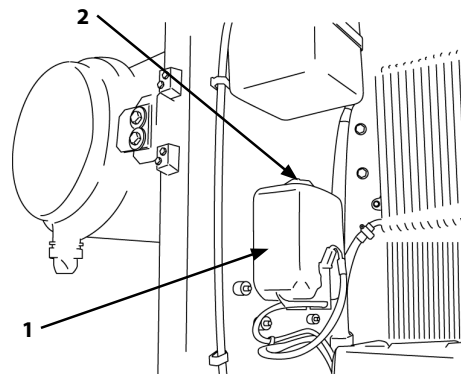
ZX120-3 Class

M1U1-07-110



ZX180-3 Class

M1U1-07-085



ZX200-3, 270-3, 330-3 Class

M1U1-07-036

MAINTENANCE

8 Check Track Sag --- every 50 hours

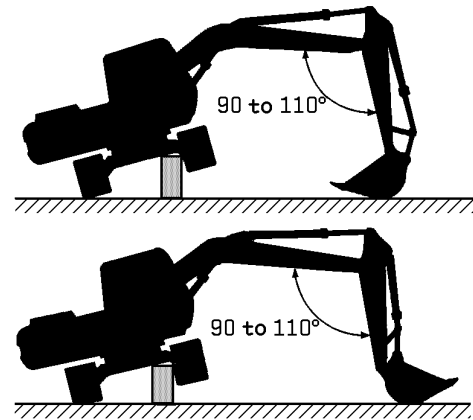
Swing the upperstructure 90° and lower the bucket to raise the track off the ground as shown.

Keep the angle between the boom and arm 90 to 110° and position the bucket's round side on the ground. Place blocks under the machine frame to support the machine. Rotate the raised track in reverse two full rotations and then forward two full rotations.

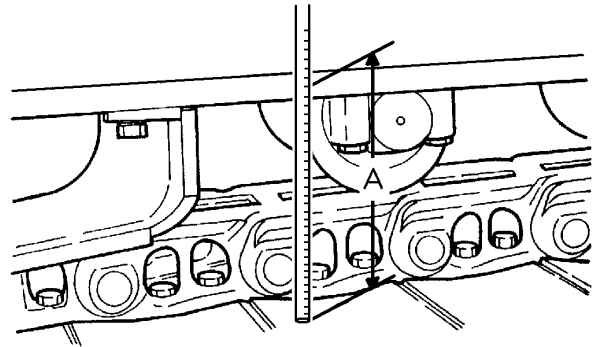
Measure distance (A) at the middle of the track frame from the bottom of the track frame to the back face of the track shoe.

Track sag specifications

Model	A
ZX120-3 Class (Except ZX110M-3)	250 to 280 mm (9.8 to 11.0 in)
ZX110M-3	265 to 295 mm (10.4 to 11.6 in)
ZX160LC-3	285 to 320 mm (11.2 to 12.6 in)
ZX180LC-3, 180LCN-3 ZX200-3, 270-3 Class (Except ZX280LC-3, 280LCN-3)	300 to 335 mm (11.8 to 13.2 in)
ZX280LC-3, 280LCN-3 ZX330-3 Class	340 to 380 mm (13.4 to 15.0 in)



SA-283



M107-07-068

NOTE: Check track sag after thoroughly removing soil stuck on the track area by washing.

Adjust Track Sag

Precautions for Adjusting Track Sag

1. If track sag is not within specifications, loosen or tighten the track following the procedures shown on the next page.
2. When adjusting track sag, lower the bucket to the ground to raise one track off the ground. Repeat this procedure to raise the other track. Each time, be sure to place blocks under the machine frame to support the machine.
3. After adjusting track sag of both tracks, move the machine back and forth several times.
4. Check track sag again. If track sag is not within specifications, repeat adjustment until correct sag is obtained.

MAINTENANCE

Loosen the Track

CAUTION: Do not loosen valve (1) quickly or loosen it too much as high-pressure grease in the adjusting cylinder may spout out. Loosen carefully, keeping body parts and face away from valve (1). Never loosen grease fitting (2).

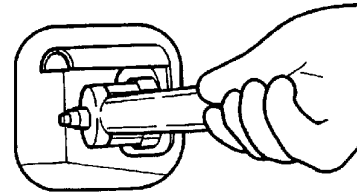
IMPORTANT: When gravel or mud is packed between sprockets and track links, remove it before loosening.

1. To loosen the track, slowly turn valve (1) counterclockwise using long socket 24; grease will escape from the grease outlet.
2. Between 1 to 1.5 turns of valve (1) is sufficient to loosen the track.
3. If grease does not drain smoothly, slowly rotate the raised track.
4. When proper track sag is obtained, turn valve (1) clockwise and tighten to 90 N·m (9 kgf·m, 67 lbf·ft).

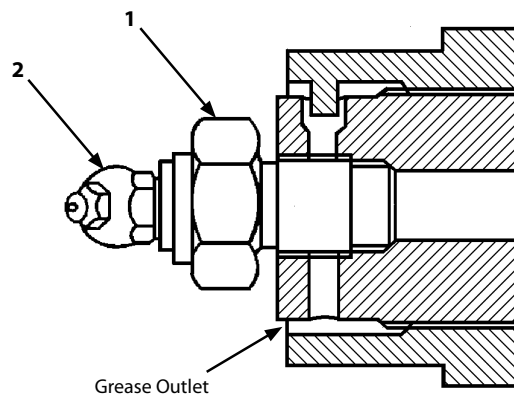
Tighten the Track

CAUTION: It is abnormal if the track remains tight after turning valve (1) counterclockwise or if the track is still loose after charging grease to fitting (2). In such cases, NEVER ATTEMPT TO DISASSEMBLE the track or track adjuster, because of dangerous high-pressure grease inside the track adjuster. See your authorized dealer immediately.

To tighten the track, connect a grease gun to grease fitting (2) and add grease until the sag is within specifications.



M107-07-075



M104-07-119

MAINTENANCE

9 Clean and Replace Air Conditioner Filter Clean Filter

Circulating Air Filter --- every 500 hours

Fresh Air Filter --- every 500 hours

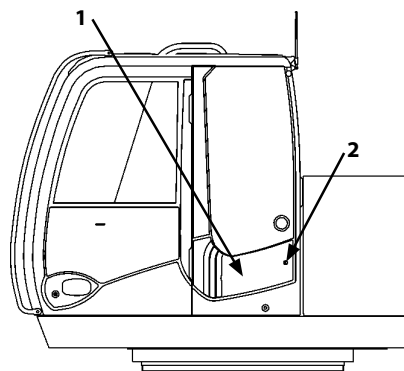
Replace Filter

Circulating Air Filter --- After cleaning 6 times or so

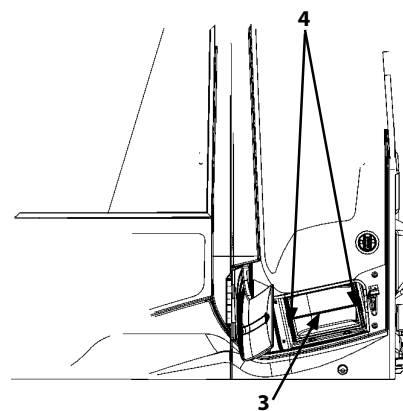
Fresh Air Filter --- After cleaning 6 times or so

Removing Fresh Air Filter

1. Insert the key into keyhole (2) on left cab side cover (1). Then, rotate the key counterclockwise to unlock the key. Open cover (1).
2. While pressing knobs (4) on both sides of fresh air filter (3) inward, horizontally remove fresh air filter (3).



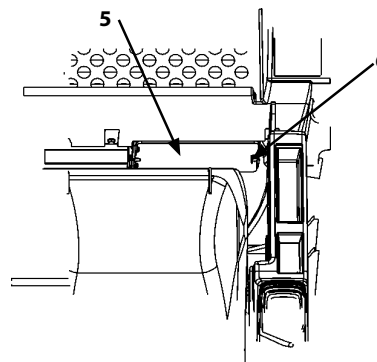
M1U1-07-010



M1U1-07-011

Removing Circulating Air Filter

1. Circulating air filter (5) is located under the rear deck.
2. Holding grips (6), pull them toward you to remove.



M1U1-07-012

MAINTENANCE

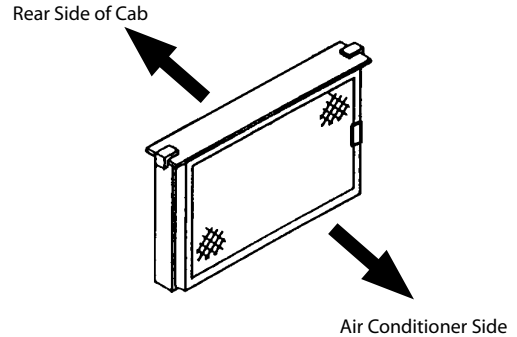
CAUTION: Use reduced compressed air pressure (less than 0.2 MPa, 2 kgf/cm²) for cleaning purposes. Clear the area of bystanders, guard against flying chips, and wear personal protection equipment including eye protection.

Cleaning

Clean both the external and internal filters by blowing compressed air or washing with water.

When washing the filters with water, follow the procedures below:

1. Wash with tap water.
2. Soak the filters in neutral detergent-mixed water for approx. 5 minutes.
3. Wash the filters with water again.
4. Dry the filters.

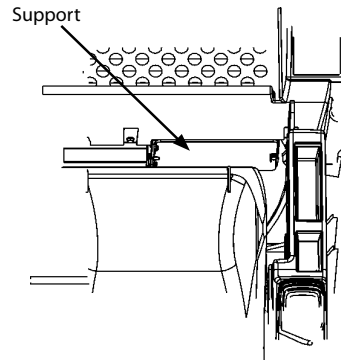


M1U1-07-013

Installation

When installing the cleaned circulating and/or fresh air filter or new filters, follow the reverse order of the removing filter procedures described on the front page.

- **Fresh Air Filter**
Use attention when installing the filter so that the notch faces the back of the cab and the stamped arrows face the air conditioner unit. After installing the filter, install the upper cover while aligning it with the duct.
- **Circulating Air Filter**
While contacting the attached filter plate onto the duct, install the filter so that the clips align with the duct mounting holes.



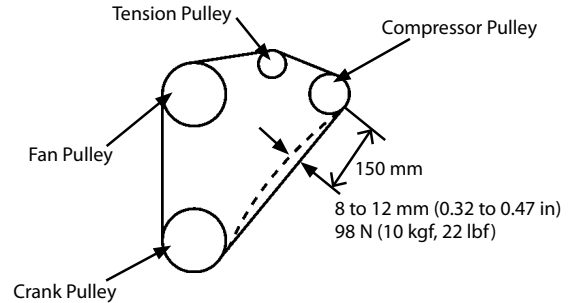
M1U1-07-012

MAINTENANCE

10 Check Air Conditioner --- daily

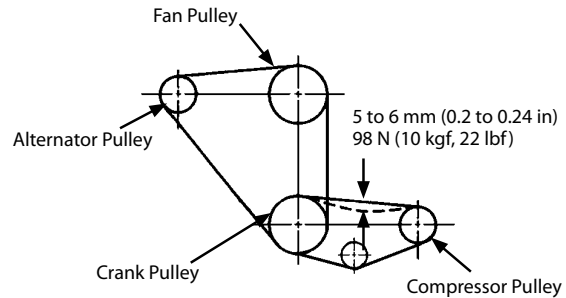
1. Check pipe connections for refrigerant gas leakage.
If oil seepage is found around pipe connections, it indicates possible gas leakage.
2. Check the condenser.
If the condenser fins become clogged with dirt or insects, the cooling effect will be decreased. Be sure to keep it clean at all times. (Refer to "Clean Radiator Core" in Maintenance Section.)
3. Check the compressor
After operating the air conditioner for 5 to 10 minutes, touch the high-pressure side and low-pressure side pipes with your hand. If normal, the high-pressure side pipe will be hot, and the low-pressure side cold.
4. Check mounting bolts for looseness.
Confirm that the compressor mounting bolts and other mounting/fastening bolts are securely tightened.
5. Inspect belt, check and adjust tension.
Visually check the compressor and fan belts for wear. Check and adjust belt tension, referring to the illustration (right).

If cool air does not come out, or any other abnormalities are found in air conditioner system, see your authorized dealer for inspection.



ZX120-3, 180-3 Class

M1U1-07-086



ZX200-3, 270-3, 330-3 Class

M1GR-07-007

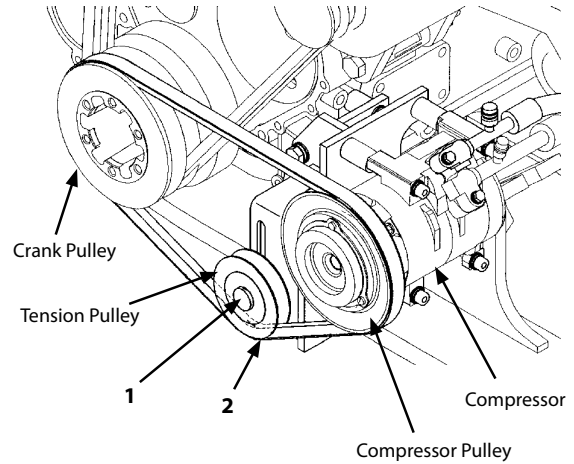
MAINTENANCE

Adjust Compressor Belt Tension

Visually check the belt for wear. Replace if necessary. Check compressor belt tension by depressing the midpoint between compressor pulley and crank pulley with the thumb. Deflection must be 9 to 12 mm (0.35 to 0.47 in) with a depressing force of approximately 98 N (10 kgf, 22 lbf).

If tension is not within specifications, loosen bolt (1). Move the tension pulley by adjusting bolt (2) until tension is correct. Tighten bolt (1).

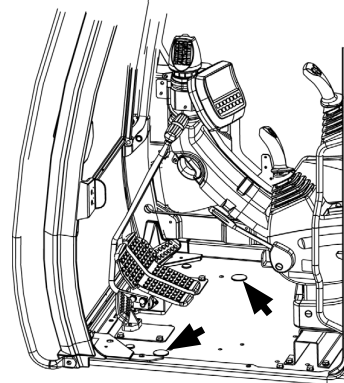
IMPORTANT: When a new belt is installed, be sure to re-adjust the tension after operating the engine for 3 to 5 minutes at slow idle speed to be sure that the new belt is seated correctly.



11 Clean Cab Floor --- as required

IMPORTANT: When cleaning the cab floor with tap water, spray the floor only. Take care not to splash the surrounding area. Do not increase water spray speed by restricting the hose end, and do not use high pressure steam for cleaning. Be sure to completely remove any moisture from the surrounding area.

1. Park the machine on solid and level surface. Lower the bucket to the ground. Before cleaning, stop the engine.
2. Sweep the cab floor clean using a brush, and brush dust from the cab floor while spraying water.
3. When cleaning the floor mat, sweep dust (water) along the grooves on the floor mat.
4. When cleaning after removing the floor mat, sweep dust (water) through two cleaning holes.



M1G6-07-013

M1U1-07-052

MAINTENANCE

12 Retighten Cylinder Head Bolt
--- as required

See your authorized dealer.

13 Inspect and Adjust Valve Clearance
--- every 1000 hours

See your authorized dealer.

14 Measure Engine Compression Pressure
--- every 1000 hours

See your authorized dealer.

15 Check Starter and Alternator
--- every 1000 hours

See your authorized dealer.

16 Check and Replace EGR Device
--- as required

See your authorized dealer.

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX120-3 Class

No.	Descriptions	Bolt Dia	Q'ty	Wrench Size	Torque		
		mm		mm	N·m	(kgf·m)	
1	Engine cushion rubber mounting bolt and nut	16	4	24	240	(24)	
2	Engine bracket mounting bolt (Pump side)	12	8	19	110	(11)	
3	Hydraulic oil tank mounting bolt	16	4	24	270	(27)	
4	Fuel tank mounting bolt	16	4	24	270	(27)	
5	Radiator mounting bolt (Upper side)	10	4	17	50	(5)	
	Radiator mounting bolt (Lower side)	12	3	19	90	(9)	
6	Pump transmission mounting bolt	10	8	17	65	(6.5)	
7	Control valve mounting bolt	14	4	22	140	(14)	
	Control valve bracket mounting bolt	16	4	24	270	(27)	
8	Swing device mounting bolt	20	10	30	510	(51)	
9	Swing motor mounting bolt	10	7	8	65	(6.5)	
10	ORS fittings for hydraulic hoses and piping			17	25	(2.5)	
				19	30	(3)	
				22	40	(4)	
				27	95	(9.5)	
				32	140	(14)	
				36	180	(18)	
			41	210	(21)		
11	Hycolin tube mounting nut	–	–	17	35	(3.5)	
12	Battery mounting nut	10	4	17	50	(5)	
13	Cab mounting nut	16	4	24	210	(21)	
	Cab mounting anchor bolt	20	1	30	550	(55)	
	Cab cushion rubber mounting bolt	12	8	19	110	(11)	
14	Cover mounting bolt	6		10	10	(1)	
		10	–	17	50	(5)	
		12		19	90	(9)	
15	Flexible master coupling of piping	1/4-28UNF	–	11	6	(0.6)	
	T-bolt clamp of high pressure piping	–	8	10	6	(0.6)	
16	Swing bearing mounting bolt to	(Upperstructure)	18	30	27	400	(40)
		(Undercarriage)	16	36	24	270	(27)
17	Travel device mounting bolt	ZX110-3, 130-3	16	28	24	320	(32)
		ZX110M-3, 130LCN-3	16	32	24	320	(32)
	Travel reduction device cover mounting bolt	ZX110-3, 130-3	14	8	22	180	(18)
		ZX110M-3, 130LCN-3	14	12	22	180	(18)
	Sprocket mounting bolt	ZX110-3, 130-3	16	32	24	270	(27)
		ZX110M-3, 130LCN-3	20	32	30	470	(47)
18	Upper roller mounting bolt	ZX110-3, 130-3	12	8	19	100	(10)
		ZX110M-3, 130LCN-3	16	16	24	270	(27)
19	Lower roller mounting bolt	ZX110-3	16	48	24	310	(31)
		ZX130-3, 130LCN-3	16	56	24	310	(31)
		ZX110M-3	18	48	27	460	(46)
20	Track shoe mounting bolt	ZX110-3	16	328	24	420	(42)
		ZX130-3, 130LCN-3	16	352	24	420	(42)
		ZX110M-3	20	336	27	820	(82)
21	Track quard mounting bolt	ZX110M-3	18	8	27	510	(51)

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX180-3 Class

No.	Descriptions		Bolt Dia	Q'ty	Wrench Size	Torque	
			mm		mm	N·m	(kgf·m)
1	Engine cushion rubber mounting bolt and nut (Pump side)		18	4	27	400	(40)
	Engine cushion rubber mounting bolt and nut (Fan side)		16	4	24	240	(24)
2	Engine bracket mounting bolt (Pump side)		12	8	19	110	(11)
3	Hydraulic oil tank mounting bolt		16	4	27	550	(55)
4	Fuel tank mounting bolt		18	4	24	270	(27)
5	Radiator mounting bolt (Upper side)		16	2	24	270	(27)
	Radiator mounting bolt (Lower side)		16	3	24	270	(27)
6	Pump transmission mounting bolt		10	8	17	65	(6.5)
7	Control valve mounting bolt		16	4	24	210	(21)
	Control valve bracket mounting bolt		16	4	24	270	(27)
8	Swing device mounting bolt		20	12	30	500	(50)
9	Swing motor mounting bolt		12	8	10	90	(9)
10	ORS fittings for hydraulic hoses and piping				17	25	(2.5)
					19	30	(3)
					22	40	(4)
					27	95	(9.5)
					32	140	(14)
					36	180	(18)
				41	210	(21)	
11	Hycolin tube mounting nut		–	–	17	35	(3.5)
12	Battery mounting nut		10	4	17	50	(5)
13	Cab mounting nut		16	4	24	210	(21)
	Cab mounting anchor bolt		22	2	32	550	(55)
	Cab cushion rubber mounting bolt		12	8	19	110	(11)
14	Cover mounting bolt		6	–	10	10	(1)
			10	–	17	50	(5)
			12	–	19	90	(9)
15	Flexible master coupling of piping		1/4-28UNF		11	6	(0.6)
	Jubilee clamp of high pressure piping			9	7	6	(0.6)
				11	7	6	(0.6)
				4	8	6	(0.6)
	T-bolt clamp of high pressure piping			9	10	6	(0.6)
16	Swing bearing mounting bolt to	(Upperstructure)	20	37	30	510	(51)
		(Undercarriage)	20	36	30	490	(49)
17	Travel device mounting bolt		20	28	30	630	(63)
	Travel reduction device cover mounting bolt		14	12	22	180	(18)
	Sprocket mounting bolt		20	32	30	480	(48)
18	Upper roller mounting bolt		16	16	24	270	(27)
19	Lower roller mounting bolt		18	72	27	460	(46)
20	Track shoe mounting bolt	ZX160-3	20	344	27	820	(82)
		ZX180LC-3, 180LCN-3	20	392	27	820	(82)
21	Track guard mounting bolt		18	16	27	500	(50)

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX200-3 Class

No.	Descriptions		Bolt Dia	Q'ty	Wrench	Torque	
			mm		Size mm	N-m	(kgf-m)
1	Engine cushion rubber mounting bolt and nut (Pump side)		18	4	27	400	(40)
	Engine cushion rubber mounting bolt and nut (Fan side)		14	4	22	180	(18)
2	Engine bracket mounting bolt (Pump side)		16	8	24	270	(27)
	Engine bracket mounting bolt (Fan side)		10	8	17	65	(6.5)
3	Hydraulic oil tank mounting bolt		20	4	30	550	(55)
4	Fuel tank mounting bolt		16	4	24	270	(27)
5	Radiator mounting bolt (Upper side)		16	4	24	210	(21)
	Radiator mounting bolt (Lower side)		16	3	24	210	(21)
6	Pump transmission mounting bolt		10	8	17	65	(6.5)
7	Control valve mounting bolt		16	4	24	210	(21)
	Control valve bracket mounting bolt		16	4	24	270	(27)
8	Swing device mounting bolt		20	14	30	500	(50)
9	Swing motor mounting bolt		12	8	10	90	(9)
10	ORS fittings for hydraulic hoses and piping				17	25	(2.5)
					19	30	(3)
					22	40	(4)
					27	95	(9.5)
					32	140	(14)
					36	180	(18)
				41	210	(21)	
11	Hycolin tube mounting nut		–	–	17	35	(3.5)
12	Battery mounting nut		10	4	17	50	(5)
13	Cab mounting nut		16	4	24	210	(21)
	Cab mounting anchor bolt		22	2	32	550	(55)
	Cab cushion rubber mounting bolt		12	8	19	110	(11)
14	Cover mounting bolt		6	–	10	10	(1)
			8	–	13		
			10	–	17	50	(5)
			12	–	19	90	(9)
15	Flexible master coupling of piping		8 1/4-28UNF	4 pairs	13	11 to 13	(1.1 to 1.3)
			11		6	(0.6)	
	Jubilee clamp of high pressure piping		9		7	6	(0.6)
			11		7	6	(0.6)
	T-bolt clamp of high pressure piping			4	8	6	(0.6)
16	Swing bearing mounting bolt to	(Upperstructure)	20	37	30	510	(51)
		(Undercarriage)	20	36	30	490	(49)
17	Travel device mounting bolt		20	28	30	630	(63)
	Travel reduction device cover mounting bolt		14	12	22	180	(18)
	Sprocket mounting bolt		20	32	30	490	(49)
18	Upper roller mounting bolt		16	16	24	270	(27)
19	Lower roller mounting bolt	ZX210-3	18	64	27	460	(46)
		ZX210LC-3, 210LCN-3, 240N-3	18	72	27	460	(46)
20	Track shoe mounting bolt	ZX210-3	20	368	27	820	(82)
		ZX210LC-3, 210LCN-3, 240N-3	20	392	27	820	(82)
21	Track guard mounting bolt	ZX210-3	18	8	27	500	(50)
		ZX210LC-3, 210LCN-3, 240N-3	18	16	27	500	(50)

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX250LC-3, 250LCN-3

No.	Descriptions	Bolt Dia	Q'ty	Wrench Size	Torque	
		mm		mm	N·m	(kgf·m)
1	Engine cushion rubber mounting bolt and nut (Pump side)	18	4	27	400	(40)
	Engine cushion rubber mounting bolt and nut (Fan side)	14	4	22	180	(18)
2	Engine bracket mounting bolt (Pump side)	16	8	24	270	(27)
	Engine bracket mounting bolt (Fan side)	10	8	17	65	(6.5)
3	Hydraulic oil tank mounting bolt	18	4	27	400	(40)
4	Fuel tank mounting bolt	20	4	30	550	(55)
5	Radiator mounting bolt (Upper side)	16	4	24	210	(21)
	Radiator mounting bolt (Lower side)	16	3	24	270	(27)
6	Pump transmission mounting bolt	10	8	17	65	(6.5)
7	Control valve mounting bolt	16	4	24	210	(21)
	Control valve bracket mounting bolt	16	4	24	270	(27)
8	Swing device mounting bolt	22	14	32	650	(65)
9	Swing motor mounting bolt	12	8	10	90	(9)
10	ORS fittings for hydraulic hoses and piping			17	25	(2.5)
				19	30	(3)
				22	40	(4)
				27	95	(9.5)
				32	140	(14)
				36	180	(18)
				41	210	(21)
11	Hycolin tube mounting nut	—	—	17	35	(3.5)
12	Battery mounting nut	10	4	17	25	(2.5)
13	Cab mounting nut	16	4	24	210	(21)
	Cab mounting anchor bolt	22	2	32	550	(55)
	Cab cushion rubber mounting bolt	12	8	19	110	(11)
14	Cover mounting bolt	6	—	10	10	(1)
		8	—	13	10	(1)
		10	—	17	50	(5)
15	Flexible master coupling of piping	8 1/4-28UNF	4 pairs	13	11 to 13	(1.1 to 1.3)
				11	6	(0.6)
	Jubilee clamp of high pressure piping			9	7	(0.6)
				4	8	(0.6)
	T-bolt clamp of high pressure piping		9	10	6	(0.6)
16	Swing bearing mounting bolt to	(Upperstructure)	22	35	32	650 (65)
		(Undercarriage)	22	36	32	650 (65)
17	Travel device mounting bolt	20	32	30	630	(63)
	Travel reduction device cover mounting bolt	14	12	22	180	(18)
	Sprocket mounting bolt	20	40	30	550	(55)
18	Upper roller mounting bolt	16	16	24	270	(27)
19	Lower roller mounting bolt	18	72	27	460	(46)
20	Track shoe mounting bolt	20	408	27	860	(86)
21	Track guard mounting bolt	18	8	27	500	(50)

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX280LC-3, 280LCN-3

No.	Descriptions	Bolt Dia	Q'ty	Wrench Size	Torque		
		mm		mm	N·m	(kgf·m)	
1	Engine cushion rubber mounting bolt and nut (Pump side)	18	4	27	400	(40)	
	Engine cushion rubber mounting bolt and nut (Fan side)	14	4	22	180	(18)	
2	Engine bracket mounting bolt (Pump side)	16	8	24	270	(27)	
	Engine bracket mounting bolt (Fan side)	10	8	17	65	(6.5)	
3	Hydraulic oil tank mounting bolt	18	4	27	400	(40)	
4	Fuel tank mounting bolt	20	4	30	550	(55)	
5	Radiator mounting bolt (Upper side)	16	4	24	210	(21)	
	Radiator mounting bolt (Lower side)	16	3	24	270	(27)	
6	Pump transmission mounting bolt	10	8	17	65	(6.5)	
7	Control valve mounting bolt	16	4	24	210	(21)	
	Control valve bracket mounting bolt	16	4	24	270	(27)	
8	Swing device mounting bolt	22	14	32	650	(65)	
9	Swing motor mounting bolt	12	8	10	90	(9)	
10	ORS fittings for hydraulic hoses and piping			17	25	(2.5)	
				19	30	(3)	
				22	40	(4)	
				27	95	(9.5)	
				32	140	(14)	
				36	180	(18)	
				41	210	(21)	
11	Hycolin tube mounting nut	—	—	17	35	(3.5)	
12	Battery mounting nut	10	4	17	25	(2.5)	
13	Cab mounting nut	16	4	24	210	(21)	
	Cab mounting anchor bolt	22	2	32	550	(55)	
	Cab cushion rubber mounting bolt	12	8	19	110	(11)	
14	Cover mounting bolt	6	—	10	10	(1)	
		8	—	13	10	(1)	
		10	—	17	50	(5)	
15	Flexible master coupling of piping	8 1/4-28UNF	4 pairs	13	11 to 13	(1.1 to 1.3)	
				11	6	(0.6)	
	Jubilee clamp of low pressure piping		9	7	6	(0.6)	
			4	8	6	(0.6)	
	T-bolt clamp of low pressure piping		9	10	6	(0.6)	
16	Swing bearing mounting bolt	22	(Upperstructure)	35	32	650	(65)
	(Undercarriage)		36	32	650	(65)	
17	Travel device mounting bolt	20	40	30	630	(63)	
	Travel reduction device cover mounting bolt	14	12	22	180	(18)	
	Sprocket mounting bolt	20	48	30	550	(55)	
18	Upper roller mounting bolt	18	16	27	460	(46)	
19	Lower roller mounting bolt	22	64	32	840	(84)	
20	Track shoe mounting bolt	22	384	32	1160	(116)	
21	Track guard mounting bolt	22	8	32	750	(75)	

MAINTENANCE

17 Check Tightening Torque of Bolts and Nuts --- every 250 hours (first time after 50 hours)

Check tightness after the first 50 hours then every 250 hours. Tighten to torque shown if any are loose. Bolts and nuts should be replaced with those of the same or higher grade.

For tightening nuts and bolts other than specified in the table below, refer to the Tightening Torque Chart at the end of this section.

IMPORTANT: Check and tighten bolts and nuts using a torque wrench.

ZX330-3 Class

No.	Descriptions		Bolt Dia	Q'ty	Wrench Size	Torque		
			mm		mm	N·m	(kgf·m)	
1	Engine cushion rubber mounting bolt and nut		18	4	27	400	(40)	
2	Engine bracket mounting bolt (Pump side)		12	8	19	110	(11)	
	Engine bracket mounting bolt (Fan side)		10	10	17	65	(6.5)	
3	Hydraulic oil tank mounting bolt		18	4	27	400	(40)	
4	Fuel tank mounting bolt		20	4	30	550	(55)	
5	Radiator mounting bolt (Upper side)		10	6	17	65	(6.5)	
	Radiator mounting bolt (Lower side)		16	4	24	270	(27)	
6	Pump transmission mounting bolt		10	8	17	65	(6.5)	
7	Control valve mounting bolt		16	4	24	210	(21)	
	Control valve bracket mounting bolt		16	4	24	270	(27)	
8	Swing device mounting bolt		22	14	32	650	(65)	
9	Swing motor mounting bolt		12	8	12	90	(9)	
10	ORS fittings for hydraulic hoses and piping				17	25	(2.5)	
					19	30	(3)	
					22	40	(4)	
					27	95	(9.5)	
					32	140	(14)	
					36	180	(18)	
					41	210	(21)	
				50	260	(26)		
11	Hycolin tube mounting nut		–	–	17	35	(3.5)	
12	Battery mounting nut		10	4	17	25	(2.5)	
13	Cab mounting nut		16	4	24	210	(21)	
	Cab mounting anchor bolt		22	2	32	550	(55)	
	Cab cushion rubber mounting bolt		12	8	19	110	(11)	
14	Cover mounting bolt		6	–	10	10	(1)	
			10	–	17	50	(5)	
			12	–	17	90	(9)	
15	Flexible master coupling of piping		–	5 pairs	13	11 to 13	(1.1 to 1.3)	
	T-bolt clamp of high pressure piping				17	21 to 23	(2.1 to 2.3)	
16	Swing bearing mounting bolt to		(Upperstructure)	27	36	41	1250	(125)
			(Undercarriage)	27	36	41	1250	(125)
17	Travel device mounting bolt		20	48	30	630	(63)	
	Travel reduction device cover mounting bolt		14	12	22	180	(18)	
	Sprocket mounting bolt		22	44	32	680	(68)	
18	Upper roller mounting bolt		18	16	27	460	(46)	
19	Lower roller mounting bolt		22	72	32	840	(84)	
20	Track shoe mounting bolt		22	384	32	1130	(113)	
21	Track guard mounting bolt		22	24	32	750	(75)	

MAINTENANCE

Tightening Torque Chart

Bolt Dia.	Wrench Size	Hexagon Wrench Size	   M552-07-091			   M552-07-090			   M157-07-225		
			N·m	(kgf·m)	(lbf·ft)	N·m	(kgf·m)	(lbf·ft)	N·m	(kgf·m)	(lbf·ft)
M8	13	6	30	(3.0)	(22)	20	(2.0)	(15)	10	(1.0)	(7.4)
M10	17	8	65	(6.5)	(48)	50	(5.0)	(37)	20	(2.0)	(15)
M12	19	10	110	(11)	(81)	90	(9)	(66)	35	(3.5)	(26)
M14	22	12	180	(18)	(135)	140	(14)	(103)	55	(5.5)	(41)
M16	24	14	270	(27)	(200)	210	(21)	(155)	80	(8.0)	(59)
M18	27	14	400	(40)	(295)	300	(30)	(220)	120	(12)	(89)
M20	30	17	550	(55)	(410)	400	(40)	(295)	170	(17)	(125)
M22	32	17	750	(75)	(550)	550	(55)	(410)	220	(22)	(160)
M24	36	19	950	(95)	(700)	700	(70)	(520)	280	(28)	(205)
M27	41	19	1400	(140)	(1030)	1050	(105)	(770)	400	(40)	(295)
M30	46	22	1950	(195)	(1440)	1450	(145)	(1070)	550	(55)	(410)
M33	50	24	2600	(260)	(1920)	1950	(195)	(1440)	750	(75)	(550)
M36	55	27	3200	(320)	(2360)	2450	(245)	(1810)	950	(95)	(700)



CAUTION: If fixing bolts for counterweight are loosened, consult your nearest authorized dealer.

IMPORTANT: Make sure bolt and nut threads are clean before installing.
 Apply lubricant (e. g. white zinc B solved into spindle oil) to bolts and nuts to stabilize their friction coefficient.



NOTE: Tightening torque required is shown in N·m.
 For example, when tightening a bolt or nut with a wrench of 1 m length, turning the end of it with a force of 120 N, the torque produced will be:

$$1 \text{ m} \times 120 \text{ N} = 120 \text{ N} \cdot \text{m}$$

To produce the same torque with a wrench of 0.25 m:

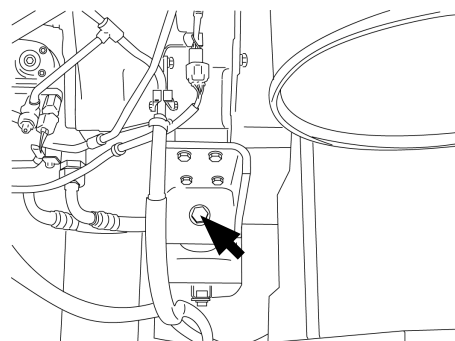
$$0.25 \text{ m} \times \boxed{} \text{ N} = 120 \text{ N} \cdot \text{m}$$

Necessary force will be:

$$120 \text{ N} \cdot \text{m} \div 0.25 \text{ m} = 480 \text{ N}$$

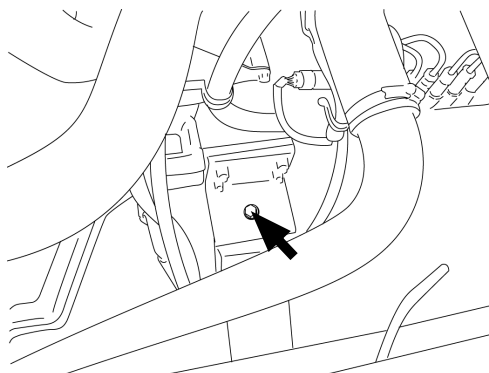
MAINTENANCE

1. Engine cushion rubber mounting bolts and nuts



Pump Side

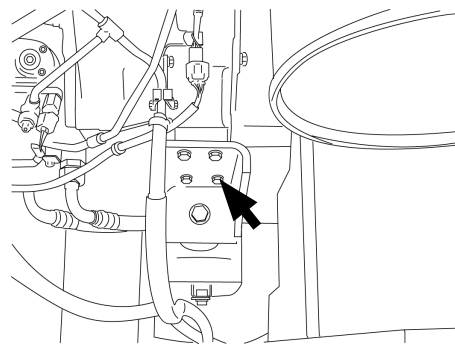
M1U1-07-040



Fan Side

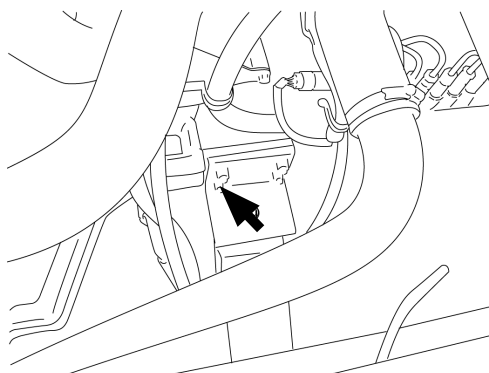
M1U1-07-034

2. Engine bracket mounting bolts



Pump Side

M1U1-07-040



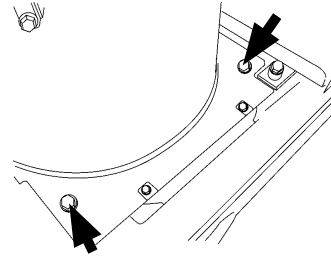
Fan Side

M1U1-07-034

(ZX200-3, 270-3, 330-3 Class)

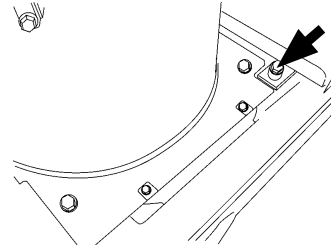
MAINTENANCE

3. Hydraulic oil tank mounting bolts



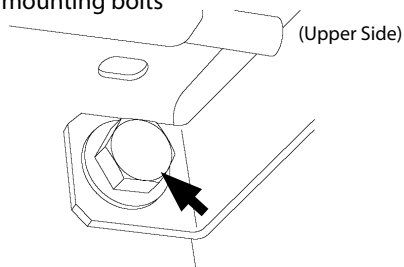
M1U1-07-038

4. Fuel tank mounting bolts



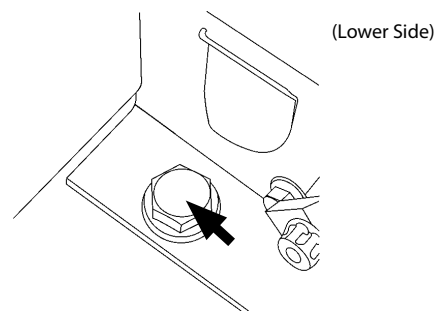
M1U1-07-038

5. Radiator mounting bolts



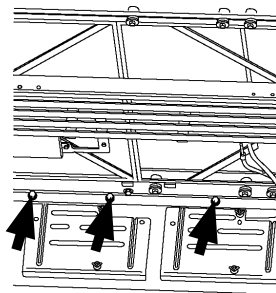
ZX120-3, 180-3 Class

M1U1-07-096



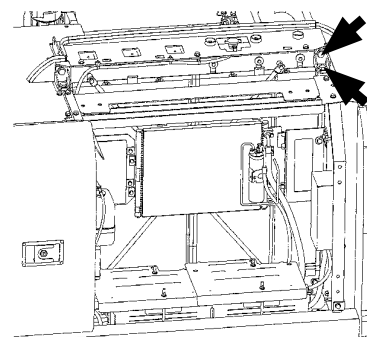
ZX120-3, 180-3 Class

M1U1-07-097



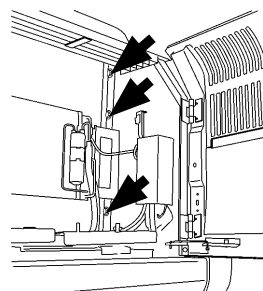
ZX330-3 Class

M1U1-07-057



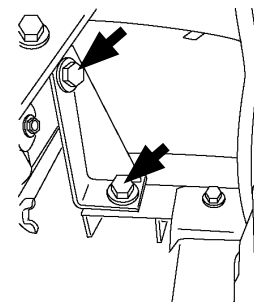
ZX200-3 Class

M1U1-07-073



ZX330-3 Class

M1U1-07-055

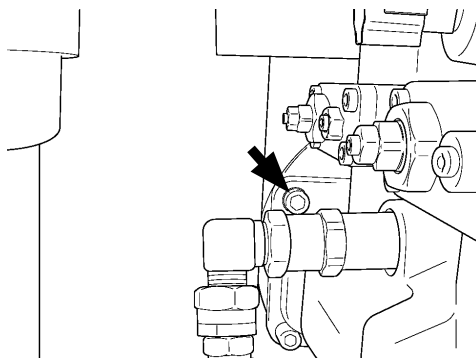


ZX270-3 Class

M1U1-07-056

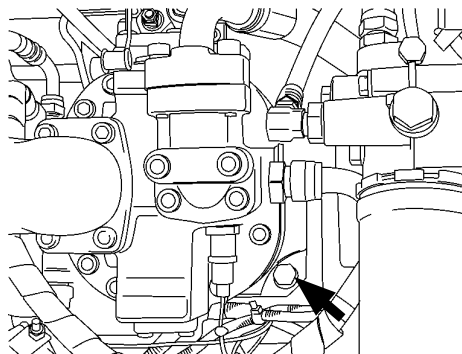
MAINTENANCE

6. Pump transmission mounting bolts



ZX120-3 Class

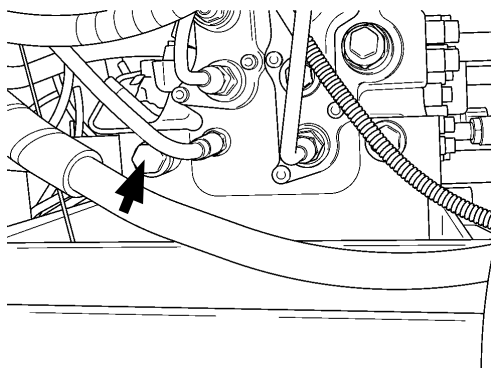
M175-07-024



ZX180-3, 200-3, 270-3, 330-3 Class

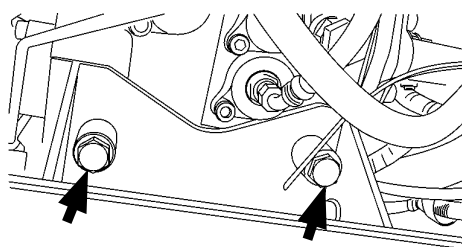
M1U1-07-021

7. Control valve mounting bolts



ZX120-3 Class

M175-07-023

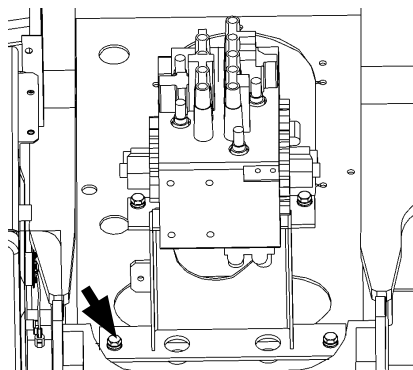


ZX180-3, 200-3, 270-3, 330-3 Class

M1U1-07-025

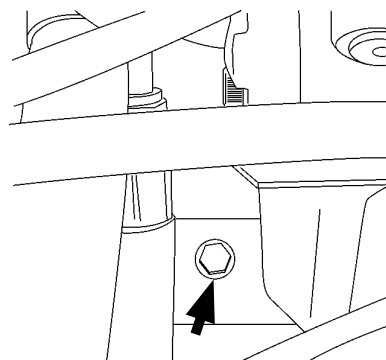


Control valve bracket mounting bolts



ZX120-3 Class

M175-07-026

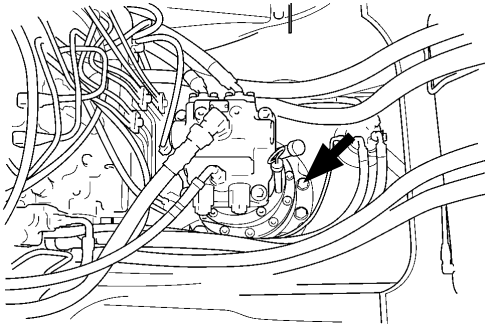


ZX180-3, 200-3, 270-3, 330-3 Class

M1U1-07-041

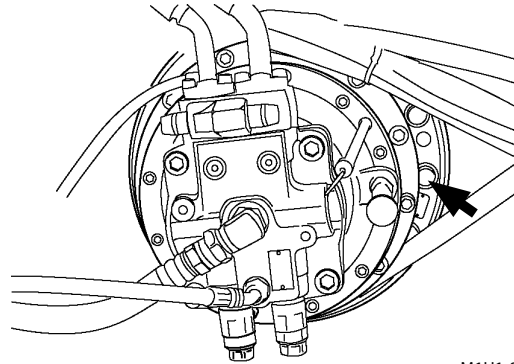
MAINTENANCE

8. Swing device mounting bolts



ZX120-3 Class

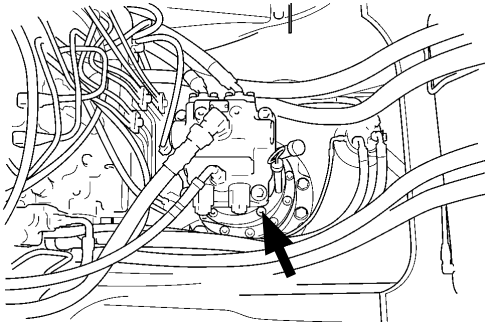
M175-00-002



ZX180-3, 200-3, 270-3, 330-3 Class

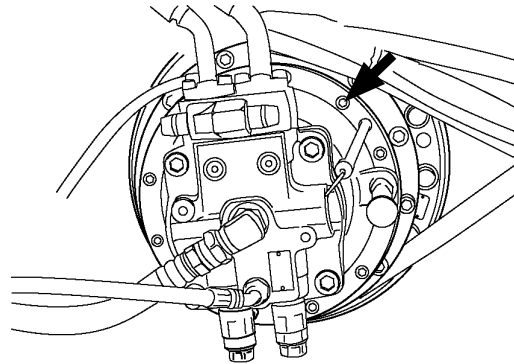
M1U1-07-053

9. Swing motor mounting bolts



ZX120-3 Class

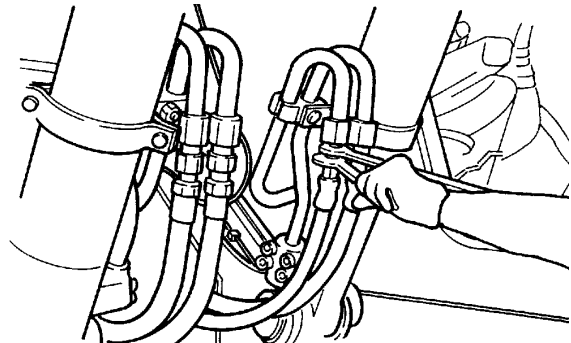
M175-00-002



ZX180-3, 200-3, 270-3, 330-3 Class

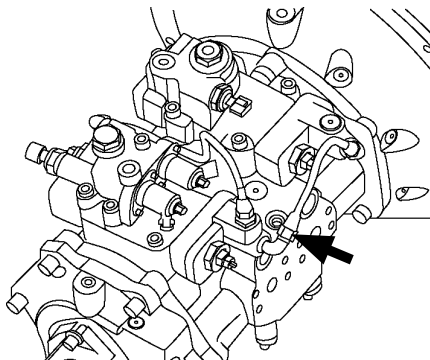
M1U1-07-053

10. ORS fittings for hydraulic hoses and pipings



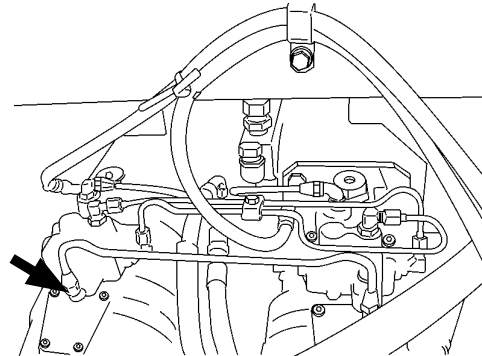
M104-07-079

11. Hycolin tube mounting nuts



ZX120-3 Class

M1U1-07-111

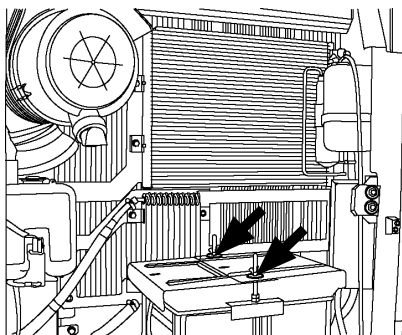


ZX180-3, 200-3, 270-3, 330-3 Class

M1U1-07-035

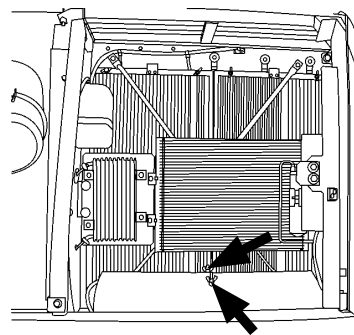
MAINTENANCE

12. Battery mounting nuts



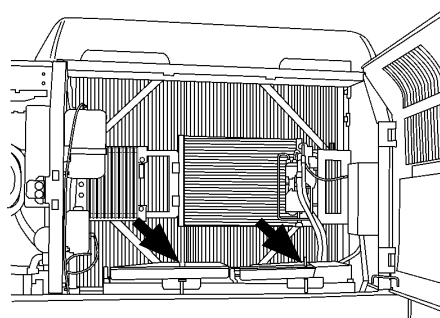
ZX120-3 Class

M1U1-07-109



ZX180-3 Class

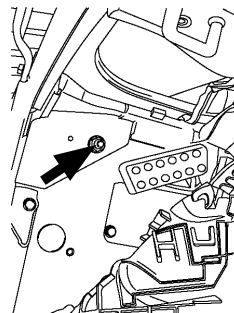
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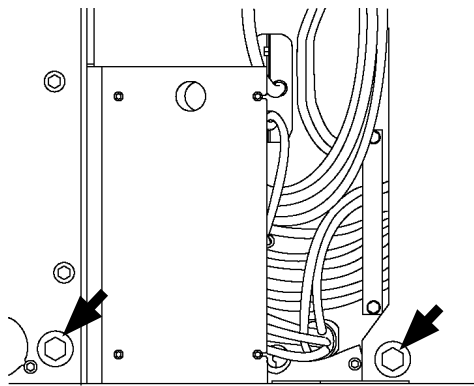
ZX200-3, 270-3, 330-3 Class

M1U1-07-016

13. Cab mounting nuts



M1U1-07-026

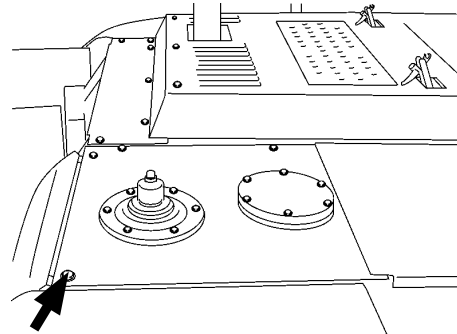


Anchor Bolt Bottom View

M1U1-07-054

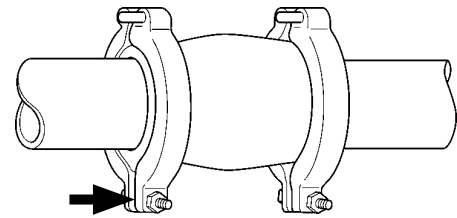
MAINTENANCE

14. Cover mounting bolts



M1U1-07-042

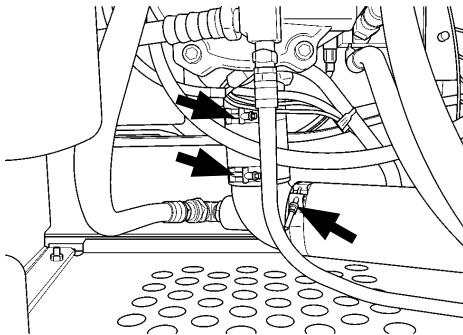
15. Flexible master couplings



Flexible Master Coupling

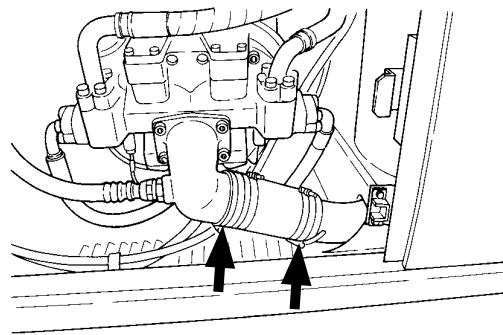
M1G6-07-008

Jubilee and T-bolt clamps



ZX120-3 Class

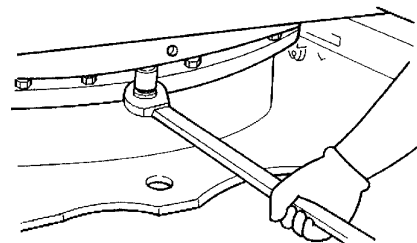
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ZX180-3, 200-3, 270-3, 330-3 Class

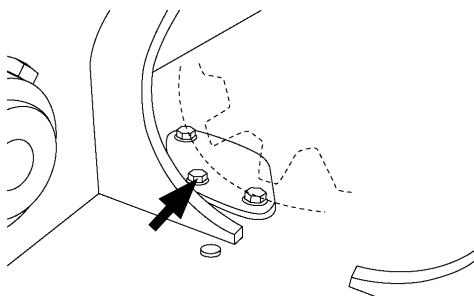
M157-07-215

16. Swing bearing mounting bolts to the upperstructure



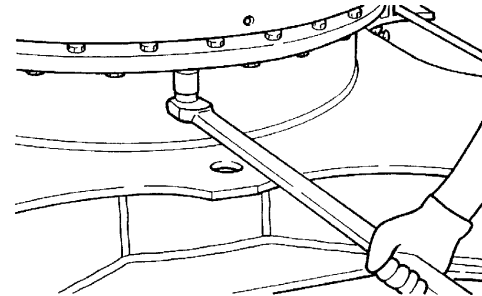
M107-07-088

Swing bearing mounting bolts to the undercarriage



ZX120-3 Class

M1U1-07-113

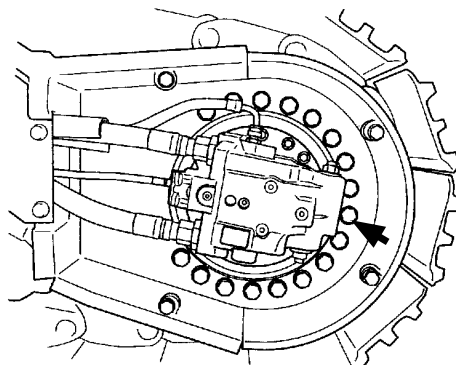


ZX180-3, 200-3, 270-3, 330-3 Class

M107-07-089

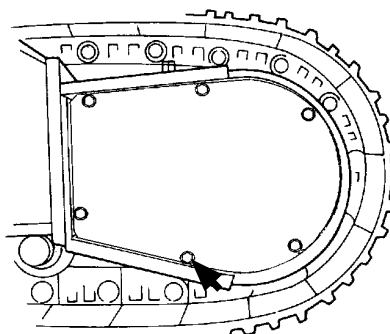
MAINTENANCE

17. Travel device mounting bolts



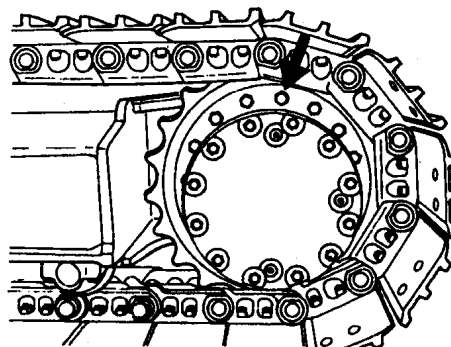
M164-07-005

Travel reduction device cover mounting bolts



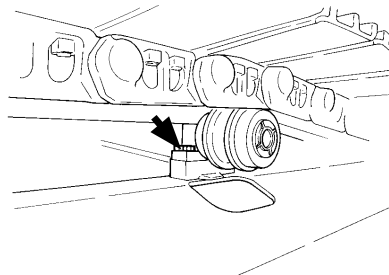
M1G6-07-007

Sprocket mounting bolts



M154-07-050

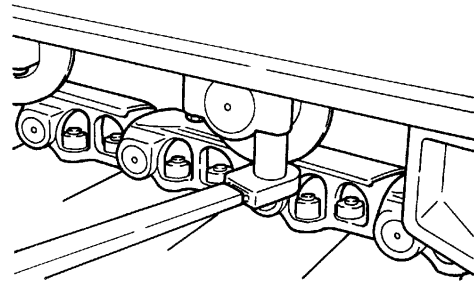
18. Upper roller mounting bolts



M157-07-224

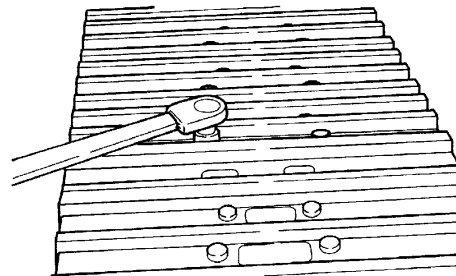
MAINTENANCE

19. Lower roller mounting bolts



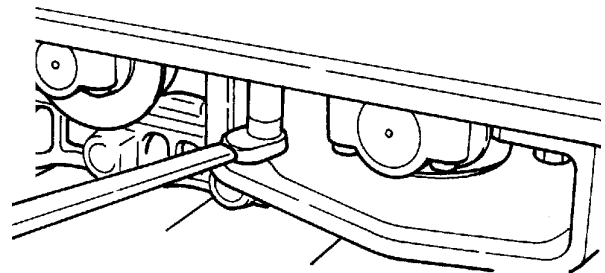
M107-07-092

20. Track shoe mounting bolts



M107-07-093

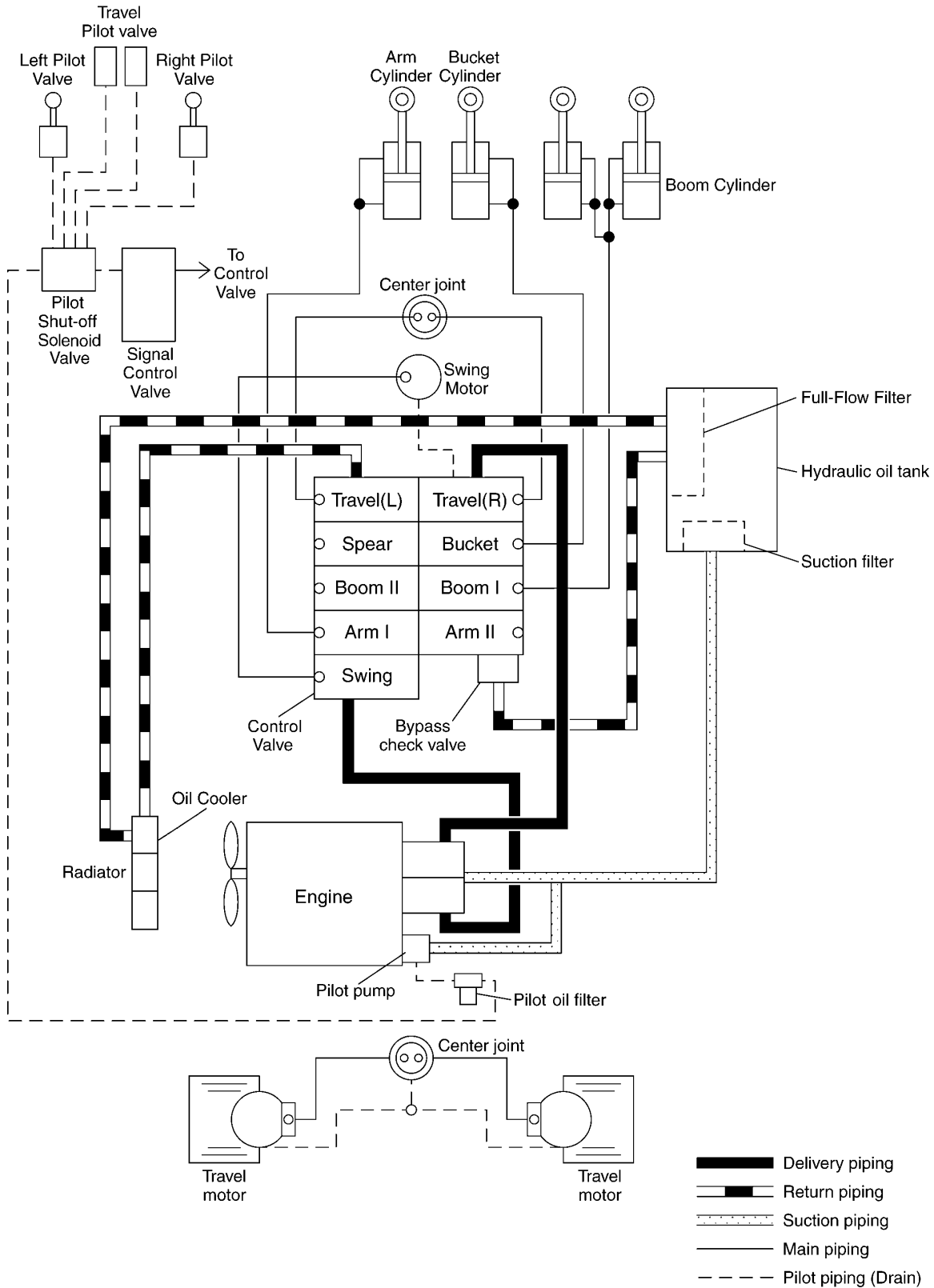
21. Track guard mounting bolts



M107-07-094

HYDRAULIC CIRCUIT AND ELECTRICAL CIRCUIT

HYDRAULIC CIRCUIT



M1V1-08-001

HYDRAULIC CIRCUIT AND ELECTRICAL CIRCUIT

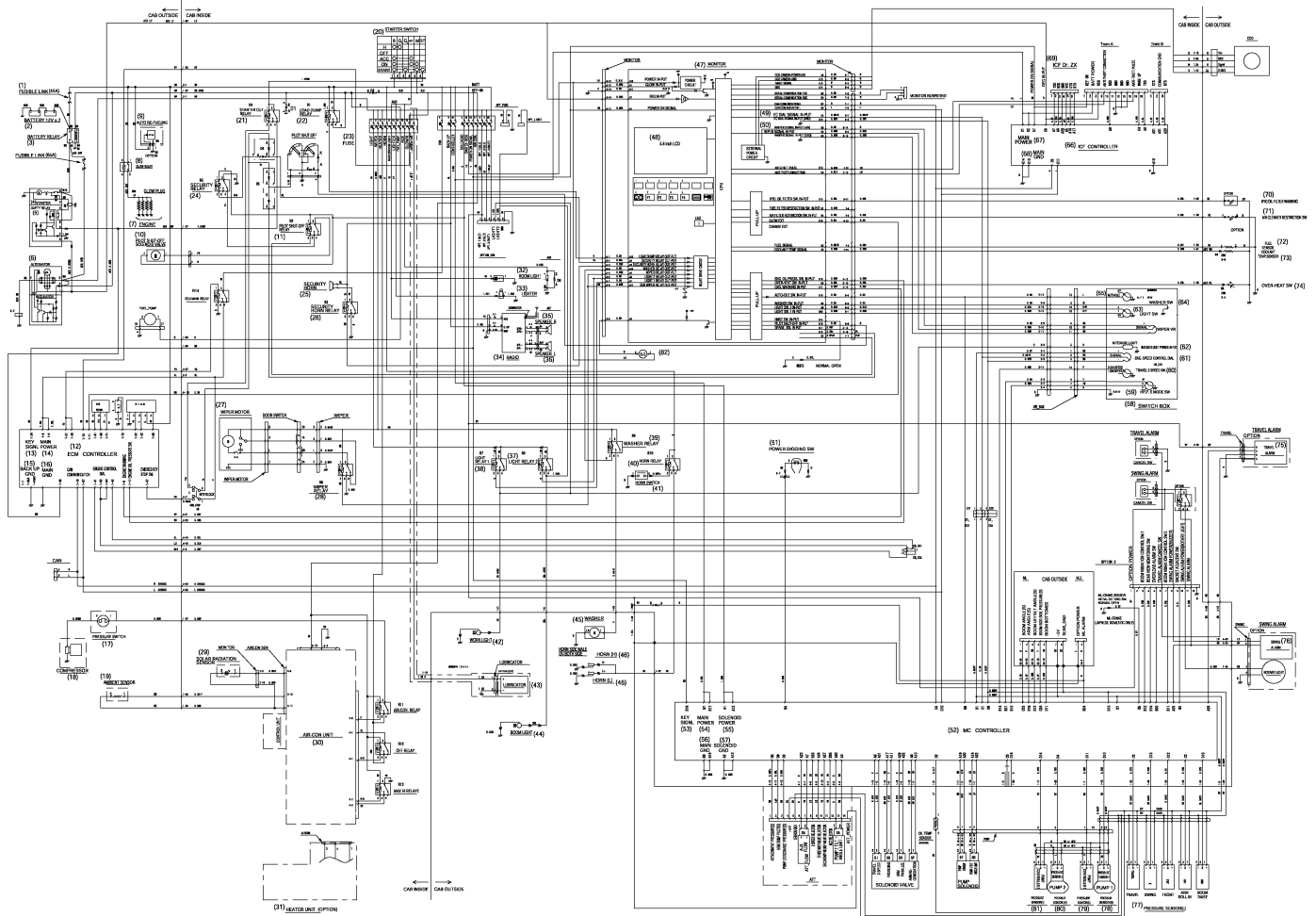
ELECTRICAL CIRCUIT

ZX120-3/180-3/200-3/270-3/330-3 CLASS ELECTRICAL DIAGRAM

- | | |
|-----------------------------------|---------------------------------|
| 1. FUSIBLE LINK | 42. WORK LIGHT |
| 2. BATTERY | 43. LUBRICATOR |
| 3. BATTERY RELAY | 44. BOOM LIGHT |
| 4. STARTER | 45. WASHER |
| 5. SAFETY RELAY | 46. HORN (H), HORN (L) |
| 6. ALTERNATOR | 47. MONITOR |
| 7. ENGINE | 48. 5.8 INCH LCD. |
| 8. GLOW RELAY | 49. EC DIAL SIGNAL IN-PUT |
| 9. AUTO RE-FUELING SYSTEM | 50. WIPER SIGNAL IN-PUT |
| 10. PILOT SHUT-OFF SOLENOID VALVE | 51. POWER DIGGING SWITCH |
| 11. PILOT SHUT-OFF RELAY | 52. MC CONTROLLER |
| 12. ECM CONTROLLER | 53. KEY SIGNAL |
| 13. KEY SIGNAL | 54. MAIN POWER |
| 14. MAIN POWER | 55. SOLENOID POWER |
| 15. BACK UP GND. | 56. MAIN GND. |
| 16. MAIN GND. | 57. SOLENOID GND. |
| 17. PRESSURE SWITCH | 58. SWITCH BOX |
| 18. COMPRESSOR | 59. HP, P, E MODE SW. |
| 19. AMBIENT SENSOR | 60. TRAVEL 2-SPEED SW. |
| 20. STARTER SWITCH | 61. ENGINE SPEED CONTROL DIAL |
| 21. STARTER CUT RELAY | 62. INTERIOR LIGHT |
| 22. LOAD DUMP RELAY | 63. LIGHT SW. |
| 23. FUSE | 64. WASHER SW. |
| 24. SECURITY RELAY | 65. AUTO-IDLE |
| 25. SECURITY HORN | 66. ICF CONTROLLER |
| 26. SECURITY HORN RELAY | 67. MAIN POWER |
| 27. WIPER MOTOR | 68. MAIN GND. |
| 28. WIPER RELAY | 69. ICF Dr. ZX |
| 29. SOLAR RADIATION SENSOR | 70. HYD. OIL FILTER WARNING |
| 30. AIR-CON. UNIT | 71. AIR CLEANER RESTRICTION SW. |
| 31. HEATER UNIT (OPTIONAL) | 72. FUEL SENSOR |
| 32. ROOM LIGHT | 73. COOLANT TEMP. SENSOR |
| 33. LIGHTER | 74. OVER-HEAT SW. |
| 34. RADIO | 75. TRAVEL ALARM |
| 35. SPEAKER R | 76. SWING ALARM |
| 36. SPEAKER L | 77. PRESSURE SENSOR (L) |
| 37. LIGHT RELAY2 | 78. PRESSURE SENSOR (H) |
| 38. LIGHT RELAY1 | 79. PRESSURE SENSOR (L) |
| 39. WASHER RELAY | 80. PRESSURE SENSOR (H) |
| 40. HORN RELAY | 81. PRESSURE SENSOR (L) |
| 41. HORN SWITCH | 82. BUZZER |

ELECTRICAL DIAGRAM

CAUTION: Parts numbers on the drawing are provided only for reference purposes. To order parts on this drawing, be sure to consult the Parts Catalog.



HYDRAULIC CIRCUIT AND ELECTRICAL CIRCUIT

MEMO

This image shows a full page of a document template designed for handwritten notes or essays. It features approximately 30 evenly spaced, thin horizontal grey lines across the entire width of the page. The margins are consistent on all sides, providing ample space for writing. There are no pre-printed questions, headings, or other markings on the page.

MAINTENANCE UNDER SPECIAL ENVIRONMENTAL CONDITIONS

MAINTENANCE UNDER SPECIAL ENVIRONMENTAL CONDITIONS

Operating Conditions	Precautions for Maintenance	
Muddy Soil, Rainy or Snowy Weather	Before Operation:	Check the tightness of plugs and all drain cocks.
	After Operation:	Clean the machine and check for cracks, damaged, loose or missing bolts and nuts. Lubricate all necessary parts without delay.
Near the Ocean	Before Operation:	Check tightness of plugs and all drain cocks.
	After Operation:	Thoroughly clean the machine with fresh water to wash off salt. Service electrical equipment often to prevent corrosion.
Dusty Atmosphere	Air Cleaner:	Clean the element regularly at shorter service intervals.
	Radiator:	Clean the oil cooler screen to prevent clogging of the radiator core.
	Fuel System:	Clean the filter element and strainer regularly at shorter service intervals.
	Electrical Equipment:	Clean them regularly, in particular, the commutator surface of the alternator and starter.
Rocky Ground	Tracks:	Carefully operate while checking for cracks, damage and loose bolts and nuts. Loosen the tracks a little more than usual.
	Front Attachment:	Standard attachment may be damaged when digging rocky ground. Reinforce the bucket before using it, or use a heavy duty bucket.
Freezing Weather	Fuel:	Use high quality fuel suitable for low temperature.
	Lubricant:	Use high quality low viscosity hydraulic oil and engine oil.
	Engine Coolant:	Be sure to use antifreeze.
	Battery:	Fully charge the batteries regularly at shorter service intervals. If not fully charged, electrolyte may freeze.
	Tracks:	Keep the track clean. Park the machine on a hard surface to prevent the tracks from freezing to the ground.
Falling Stones	Cab:	Provide a cab guard to protect the machine from falling stones when necessary.

[illegible]

STORAGE

STORING THE MACHINE

1. Inspect the machine. Repair worn or damaged parts.
Install new parts if necessary.
2. Clean the primary air cleaner element.
3. Retract all hydraulic cylinders, if possible. If not, coat exposed cylinder rods with grease.
4. Lubricate all grease points.
5. Park the tracks on long stable blocks.
6. Wash the machine.
7. Remove the batteries and store them in a dry protected place after charging fully. If not removed, disconnect the negative battery cable from the (-) terminal.
8. Add an antirust agent to the coolant. In cold weather, add an antifreeze, or drain the coolant completely. Be sure to attach a "No Water in Radiator" tag on a clearly visible location if the system is drained.
9. Loosen the alternator belt and fan belt.
10. Paint necessary areas to prevent rust.
11. Store the machine in a dry, protected place. If stored outside, cover with a waterproof cover.
12. If the machine is stored for a long time, operate hydraulic functions for travel, swing and digging two to three times for lubrication, at least once a month.
Be sure to check the coolant level and lubrication conditions before operating.

Precautions for Disconnecting or Connecting

Batteries

In case the batteries are kept disconnected for more than one month or when the batteries are reconnected, contact your nearest Hitachi dealer. Resetting of the ICF (Information Controller) may be required.



STORAGE

REMOVING THE MACHINE FROM STORAGE



CAUTION: Start the engine **ONLY** in a well-ventilated place.

1. Remove grease from the cylinder rods if coated.
2. Adjust alternator and fan belt tension.
3. Fill the fuel tank. Bleed air from the fuel system. Check all fluid levels.
4. Start the engine.
Run the engine at half speed for several minutes before full load operation.
5. Cycle all hydraulic functions several times.
6. Carefully check all systems before operating the machine at full load.



NOTE: When the machine has been stored for a long time, be sure to perform the following steps as well:

- (a) Check condition of all hoses and connections.
- (b) Warm up the engine.
- (c) Stop the engine.
- (d) Install new fuel filters. Replace the engine oil filter and fill the engine with oil.

IMPORTANT: If the machine has not been used for a long time, oil films on sliding surfaces may have broken down. Cycling hydraulic functions for travel, swing and digging two to three times is necessary to lubricate the sliding surfaces.

TROUBLESHOOTING

IMPOSSIBLE TO START THE ENGINE

	Problem	Cause	Solution
Engine will not start	Starter does not rotate or is not powerful	Discharged battery Disconnected, loose, or corroded battery terminals Lowered pilot control shut-off lever. Disconnected, loose, or corroded starter ground line terminals. Faulty pilot control shut-off lever electrical system Too high engine oil viscosity Faulty starter and/or electrical system	Charge or replace battery. After repairing the corroded area, securely tighten the connectors. Pull pilot control shut-off lever up. After repairing the corroded area, securely tighten the connectors. See your authorized dealer. Change engine oil with appropriate viscosity. See your authorized dealer.
	Starter rotates	No fuel Air in the fuel system Clogged fuel filter Frozen fuel Faulty injection pump Faulty engine control system The engine stop SW is ON. Faulty preheat system	After checking that no fuel is leaking, refill fuel. Bleed air. After draining water, replace the element. Warm the fuel pump with hot water or wait until the atmospheric temperature rises. See your authorized dealer. See your authorized dealer. Move the engine stop switch to the upward position to start the engine. See your authorized dealer.
	Even though the engine is started, the engine stalls soon	Too slow idle speed Clogged fuel filter Clogged pre-fuel filter Faulty engine control system Clogged air cleaner Faulty injection pump	See your authorized dealer. After draining water, replace the element. Clean or replace the element. See your authorized dealer. Clean or replace the element. See your authorized dealer.
	Engine runs irregularly	Faulty fuel system Water or air in the fuel system Faulty engine control system	See your authorized dealer. Drain water or bleed air. See your authorized dealer.

TROUBLESHOOTING

ENGINE		
Problem	Cause	Solution
Engine Not Developing Full Power	Air filters plugged	Replace filter elements.
	Fuel line restricted	Repair or replace fuel line.
	Contaminated fuel	Drain fuel tank and clean outlet screen. Refill.
	Fuel filters plugged	Change filters.
	Plugged vent in fuel tank cap	Clean or install new cap.
	Injection nozzles dirty or malfunctioning	See your authorized dealer.
	Injection pump linkage adjustment	See your authorized dealer.
	Wrong fuel	Use correct fuel.
	Wrong oil	Use correct oil.
	Turbocharger failure	See your authorized dealer.
	Injection pump out of timing	See your authorized dealer.
	Exhaust restriction	Remove muffler and run engine.
	Engine is too hot or cold	See below.
	Engine failure	See your authorized dealer.
	Valve clearance	Check and adjust valves.
	Intake or exhaust system leakage	See your authorized dealer.
Engine Overheats	Low coolant level	Add coolant.
	Thermostat	See your authorized dealer.
	Engine overloaded	Check hydraulic relief valves.
	Radiator cap faulty	Install new cap.
	Radiator core or oil cooler core plugged	Clean radiator and oil cooler.
	Radiator screen plugged	Clean screen.
	Injection pump out of timing	See your authorized dealer.
	Fan damaged	Replace fan.
	Air cleaner plugged	Clean air cleaner.
	Alternator and fan belt loose	Tighten or install new belt.
	Pulley grooves worn	Replace pulleys.
	Cooling system passages dirty	Flush cooling system.
	Temperature gauge or sending unit	See your authorized dealer.

TROUBLESHOOTING

ENGINE

Problem	Cause	Solution
Coolant Temperature Too Low	Thermostat	See your authorized dealer.
	Temperature gauge or sending unit	See your authorized dealer.
Low Engine Oil Pressure	Engine oil pump or pump drive	See your authorized dealer.
	Low oil level	Add oil.
	Engine oil pressure regulation valve	See your authorized dealer.
	Plugged oil pump intake screen	See your authorized dealer.
	Plugged oil filter	Install a new oil filter.
	Oil leaks	Check for leaks.
	Oil diluted with fuel or coolant	See your authorized dealer.
	Engine temperature too high	Check cooling system.
Engine Uses Too Much Oil	Wrong oil	Drain oil. Use correct oil.
	Oil leaks	Check engine oil drain plug.
	Engine temperature too high	Check cooling system.
	Plugged air cleaner	Clean element or install new element.
	Internal engine component wear	See your authorized dealer.
Engine Uses Too Much Fuel	Plugged or dirty air intake system	Clean air intake system.
	Wrong fuel	Use correct fuel.
	Fuel injection nozzles	See your authorized dealer.
	Injection pump out of time	See your authorized dealer.
Excessive Black or Gray Exhaust Smoke	Wrong fuel	Drain tank. Use correct fuel.
	Plugged or dirty air intake or exhaust system	Clean air intake and exhaust system.
	Injection pump out of timing	See your authorized dealer.
	Injection nozzles dirty or faulty	See your authorized dealer.
	Basic engine failures	See your authorized dealer.

TROUBLESHOOTING

ENGINE

Problem	Cause	Solution
Nothing Works	Battery	Recharge or replace.
Nothing Works (Except clock)	Battery relay	Replace relay.
Batteries Undercharged	Loose or corroded connections Alternator belt loose Alternator not charging Fuse Key switch failure	Clean and tighten or replace batteries. Tighten or install new belt. See your authorized dealer. Replace fuse. Replace key switch.
Starting Motor Will Not Turn	Battery undercharged or dead Battery cables making poor connections Fusible link Key switch Start relay Starter solenoid Starter Starter pinion jammed in flywheel gear Major engine failure	Recharge or replace battery. Clean connections. Replace fusible link. See your authorized dealer. See your authorized dealer. See your authorized dealer. Repair or replace start motor. Repair or replace starter. See your authorized dealer.
Starter Solenoid Chatters	Poor connections at batteries or starter Low battery charge Starter solenoid "hold-in" windings open	Clean connections. Recharge or replace batteries. See your authorized dealer.
Starter Motor Turns but Will Not Crank Engine	Starter pinion gear not engaging flywheel ring gear Pinion shift mechanism jammed or malfunctioning Pinion gear teeth broken Flywheel gear teeth broken	See your authorized dealer. See your authorized dealer. See your authorized dealer. See your authorized dealer.
Engine Cranks Slowly	Battery cables damaged or broken internally Battery or starter cable connections loose or corroded	Inspect and replace cables. Clean and tighten connections.

TROUBLESHOOTING

ENGINE

Problem	Cause	Solution
Exhaust Gas is White	Wrong fuel Cold engine Thermostat faulty or too "cool" Injection pump out of time Coolant leakage into engine cylinder	Drain tank. Use correct fuel. Run engine until warm. See your authorized dealer. See your authorized dealer. See your authorized dealer.
Turbocharger Excessively Noisy or Vibrates	Bearings not lubricated Worn bearings Air leak in engine, intake or exhaust manifold Improper clearance between turbine wheel and turbine housing Broken blades on turbine	Insufficient oil pressure. Check for restricted turbocharger oil line. See your authorized dealer. Inspect, repair. See your authorized dealer. Remove exhaust elbow and air inlet hose and inspect.
Oil Dripping from Turbocharger Adapter	Damaged or worn bearings and/or worn seals Excessive crankcase pressure Turbocharger oil return line carbon build up where line passes exhaust manifold	See your authorized dealer. Inspect and clean air cleaner. Check for proper engine service intervals or dirt enter into engine. Check vent tube to ensure tube is not plugged. Clean. Remove line. Inspect, clean.
Excessive Drag in Turbocharger Rotating Members	Carbon build-up behind turbine wheel caused by combustion deposits Dirt build-up behind compressor wheel caused by air intake leaks Bearing seizure or dirty or worn bearings, caused by excessive temperature, unbalanced wheel, dirty oil, oil starvation, or insufficient lubrication	Inspect, clean. Inspect, clean. See your authorized dealer.

TROUBLESHOOTING

ELECTRICAL SYSTEM

Problem	Cause	Solution
Engine Cranks Slowly	Battery discharged or will not hold a charge Starter "dragging" Low battery voltage	Replace battery. See your authorized dealer. Recharge or replace battery.
Starter Motor Continues to Run After Engine Starts	Start relay stuck Starter solenoid stuck Starter not disengaging Key switch	See your authorized dealer. See your authorized dealer. See your authorized dealer. See your authorized dealer.
Charging Indicator Light On-Engine Running	Loose or glazed alternator belt Engine rpm slow Excessive electrical load from added accessories Loose or corroded electrical connections on battery, ground strap, starter, or alternator Battery voltage low Alternator or regulator Indicator circuit	Check belt. Replace if glazed, tighten if loose. Adjust rpm to specification. Remove accessories or install higher output alternator. Inspect, clean, or tighten electrical connections. Change or replace battery. See your authorized dealer. See your authorized dealer.
Noisy Alternator	Worn drive belt Worn pulleys Pulley misaligned Alternator bearing	Replace belt. Replace pulleys and belt. Adjust alternator mount. Loosen alternator belts. Turn pulley by hand. If any roughness is felt, repair alternator.
No Monitor Panel Indicators Work	Fuse Wiring harness	Replace fuse. See your authorized dealer.
Individual Light in Monitor Panel is Not Working	Bulb Fuse Wiring harness	Replace bulb. Replace fuse. See your authorized dealer.

TROUBLESHOOTING

ELECTRICAL SYSTEM

Problem	Cause	Solution
No Indicators in Gauge Panel Operate	Circuit board Wiring harness Fuse	See your authorized dealer. See your authorized dealer. Replace fuse.
Indicator Light in Gauge Panel is Inoperative	Fuse Sender Wiring harness failure	Replace fuse. Do sender check. See your authorized dealer.
Coolant Temperature Gauge Does Not Work	Fuse Gauge Gauge sender Wiring harness	Replace fuse. See your authorized dealer. Do coolant temperature gauge sender check. See your authorized dealer.
Indicator Lights Do Not Operate Auto-idle	Fuse Auto-idle switch	Replace fuse. See your authorized dealer.
Fuel Gauge Does Not Work	Fuse Gauge Wiring harness	Replace fuse. See your authorized dealer. See your authorized dealer.

TROUBLESHOOTING

MODE SELECTION

Problem	Cause	Solution
Work Mode Selector Does Not Work	Mode switch	See your authorized dealer.
	Electrical connector	See your authorized dealer.
	Wire harness (between Main controller (MC) and Monitor)	See your authorized dealer.
	Main controller (MC)	See your authorized dealer.
	Solenoid valve unit	See your authorized dealer.
Fast/Slow Travel Speed Does Not Function	Travel mode switch	See your authorized dealer.
	Pilot pressure switch (Travel)	See your authorized dealer.
	Pump 1,2 pressure sensors	See your authorized dealer.
	Pump 1,2 control pressure sensors	See your authorized dealer.
	Pump delivery pressure sensor wire harness	See your authorized dealer.
	Main controller (MC)	See your authorized dealer.
	Solenoid valve unit	See your authorized dealer.
Auto-Idle Does Not Work	Damaged travel motors	See your authorized dealer.
	Fuse	Replace fuse.
	Switch panel	See your authorized dealer.
	Electrical connector	See your authorized dealer.
	Wire harness	See your authorized dealer.
	ECM	See your authorized dealer.
	Pressure switches (Travel, Front)	See your authorized dealer.
	Main controller (MC)	See your authorized dealer.

TROUBLESHOOTING

CONTROL LEVERS

Problem	Cause	Solution
Moves Hard	Corroded joint	See your authorized dealer.
	Worn out pusher	See your authorized dealer.
Does Nothing	Worn out pusher	See your authorized dealer.
	Pilot valve	See your authorized dealer.
Does Not Return to Neutral	Pilot valve	See your authorized dealer.
Too Much Play	Worn out pivot joint	See your authorized dealer.
Lever is Not Vertical In Neutral	Pilot valve	See your authorized dealer.

HYDRAULIC SYSTEM

Problem	Cause	Solution
Hydraulic Functions are Slow	Low oil level	Fill reservoir to full mark.
	Cold oil	Push hydraulic warm up switch.
	Wrong oil	Drain tank. Use correct oil.
	Engine speed too slow	Increase speed or see your authorized dealer.
	Pilot circuit	See your authorized dealer.
	Worn pump	See your authorized dealer.
	Restricted pump suction line	See your authorized dealer.
Hydraulic Oil Overheats	Wrong oil	Use correct oil.
	Air leak in pump suction line	See your authorized dealer.
	Oil lines restricted	See your authorized dealer.
	Low oil level	Fill reservoir to full mark.
	Plugged filters	Install new filters.
	Worn pump	See your authorized dealer.
	Plugged radiator or oil cooler	Clean and straighten fins.
	Oil cooler bypass	See your authorized dealer.

TROUBLESHOOTING

HYDRAULIC SYSTEM

Problem	Cause	Solution
Hydraulic Oil Overheats	Relief valve Contaminated oil Travel motors Improperly adjusted hydraulic components	See your authorized dealer. Drain oil and refill. See your authorized dealer. See your authorized dealer.
Oil Foams	Air leak in line from reservoir to pump Kinks or dents in oil lines Wrong oil Water in oil High or low oil level	Repair leak or see your authorized dealer. Check lines. Use correct oil. Change oil. Correct level.
Low or No Oil Pressure	Wrong oil Improperly adjusted hydraulic components No oil in system Worn cylinder packing Relief valve	Use correct oil. See your authorized dealer. Fill with correct oil. See your authorized dealer. See your authorized dealer.
No Hydraulic Functions (Noise from pumps)	Hydraulic pump Decreased set-pressure of main relief valve in control valve Lack of hydraulic oil Damaged suction line or hose Clogged suction filter Sucked air from oil suction port	See your authorized dealer. See your authorized dealer. Add oil. See your authorized dealer. Clean. Tighten.
Hydraulic Cylinders Operate but Cannot Lift Load	Hydraulic pump worn Main relief valve pressure low Hydraulic oil level low Suction screen plugged Pump suction line leaking Pressure sensors Solenoid valve	See your authorized dealer. See your authorized dealer. Add oil. Clean strainer and system. Inspect suction line. See your authorized dealer. See your authorized dealer.

TROUBLESHOOTING

HYDRAULIC SYSTEM

Problem	Cause	Solution
One Control Lever Does Not Work	Relief valve pressure low Tube or hose damaged Hydraulic fittings loose Damaged O-rings in fittings Hydraulic Pump Pilot valve Pilot lines	See your authorized dealer. Repair or replace. Tighten. Install new O-ring. See your authorized dealer. See your authorized dealer. Repair or replace.
One Cylinder Does Not Work	Control valve spool damaged or contaminated with dirt Hydraulic lines damaged Fittings loose O-ring in fitting damaged Pilot valve Pilot lines	See your authorized dealer. Repair or replace. Tighten. Install new O-ring. See your authorized dealer. Repair or replace.
One Cylinder Does Not Work or Has Little Power	Piston seals leaking Cylinder rod damaged Pilot lines Pilot valve Failed wiring harness	See your authorized dealer. See your authorized dealer. Repair or replace. See your authorized dealer. See your authorized dealer.
Both Travel Motors Do Not Work	Center joint failure	See your authorized dealer.
One Travel Motor Does Not Work	Travel motor Parking brake not releasing Pilot valve Pilot lines	See your authorized dealer. See your authorized dealer. See your authorized dealer. Repair or replace.
Travel is Not Smooth	Track adjustment Front idler or rollers damaged Track frame bent	Adjust tension. See your authorized dealer. See your authorized dealer.

TROUBLESHOOTING

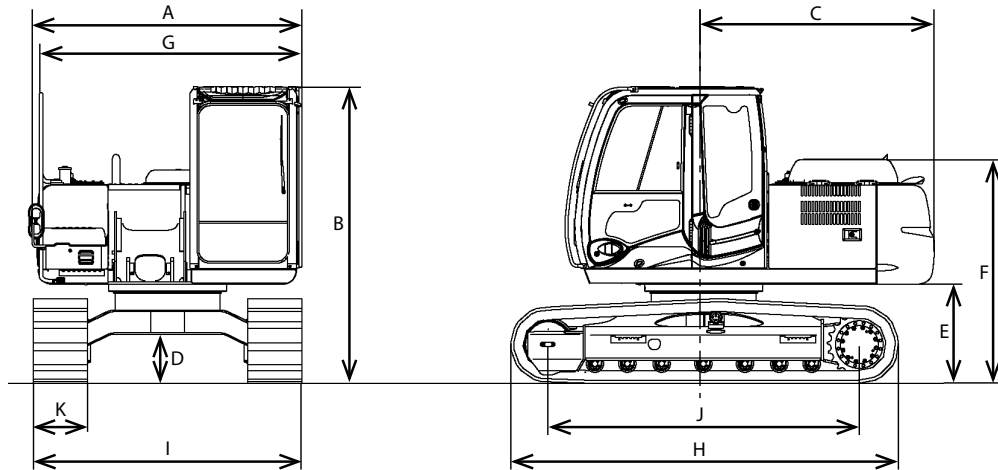
HYDRAULIC SYSTEM

Problem	Cause	Solution
Travel is Not Smooth	Rocks or mud "jammed" in track frame	Remove and repair.
	Travel brake not releasing	See your authorized dealer.
Swing Does Not Work	Swing brake release valve	See your authorized dealer.
	Swing motor	See your authorized dealer.
	Pilot valve	See your authorized dealer.
Swing is Not Smooth	Swing gear	See your authorized dealer.
	Swing bearing	See your authorized dealer.
	Lack of grease	Apply grease.
	Combination valve	See your authorized dealer.
Engine Stops When Travel or/ and Control Lever Moved	Failure of connector contact	Repair or replace.
	Failed wiring harness	See your authorized dealer.
	Failed Main controller	See your authorized dealer.

SPECIFICATIONS

SPECIFICATIONS

ZX110-3, 110M-3



M1U1-12-001

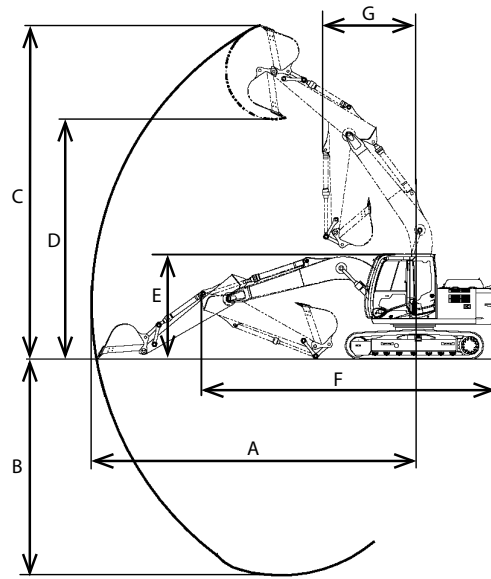
Model	ZX110-3	ZX110M-3
Type of Front-End Attachment	2.26 m (7 ft 5 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.45 m ³ (0.59 yd ³), CECE 0.40 m ³	
Operating Weight	11100 kg (24500 lb)	13100 kg (28900 lb)
Base Machine Weight	8600 kg (19000 lb)	10700 kg (23600 lb)
Engine	Isuzu AJ-4JJ1XYSA-03 66 kW/1800 min ⁻¹ (90 PS/1800 rpm) * 69 kW/2000 min ⁻¹ (90 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	2490 mm (8 ft 2 in)	2690 mm (8 ft 10 in)
B: Cab Height	2740 mm (9 ft 0 in)	2950 mm (9 ft 8 in)
C: Rear End Swing Radius	2130 mm (7 ft 0 in)	
D: Minimum Ground Clearance	* 440 mm (1 ft 5 in)	* 595 mm (1 ft 11 in)
E: Counterweight Clearance	* 890 mm (2 ft 11 in)	* 1100 mm (3 ft 7 in)
F: Engine Cover Height	* 2050 mm (6 ft 9 in)	* 2260 mm (7 ft 5 in)
G: Overall Width of Upperstructure	2460 mm (8 ft 1 in)	
H: Undercarriage Length	3340 mm (11 ft 0 in)	3790 mm (12 ft 5 in)
I: Undercarriage Width	2490 mm (8 ft 2 in)	2690 mm (8 ft 10 in)
J: Sprocket Center to Idler Center	2620 mm (8 ft 7 in)	2990 mm (9 ft 10 in)
K: Track Shoe Width	500 mm (20 in) (Grouser shoe)	700 mm (28 in) (Grouser shoe)
Ground Pressure	38 kPa (0.39 kgf/cm ² , 5.5 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)
Swing Speed	13.9 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.6 km/h (3.4/2.2 mph)	4.2/2.4 km/h (2.6/1.5 mph)
Gradeability	35° (tanθ = 0.70)	

 NOTE: * H/P mode
* The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX110-3, 110M-3



Backhoe

M1U1-12-005

Model		ZX110-3		
Item	Category	1.96 m (6 ft 5 in) Arm	2.26 m (7 ft 5 in) Arm	2.81 m (9 ft 3 in) Arm
		Backhoe	Backhoe	Backhoe
A: Maximum Digging Reach	mm (ft·in)	7490 (24' 7")	7760 (25' 6")	8240 (27' 0")
*1 B: Maximum Digging Depth	mm (ft·in)	4780 (15' 8")	5080 (16' 8")	5630 (18' 6")
*1 C: Maximum Cutting Height	mm (ft·in)	7940 (26' 1")	8110 (26' 7")	8360 (27' 5")
*1 D: Maximum Dumping Height	mm (ft·in)	5530 (18' 2")	5700 (18' 8")	5960 (19' 7")
E: Overall Height	mm (ft·in)	2740 (9' 0")	2740 (9' 0")	*2 2740 (9' 0")
F: Overall Length	mm (ft·in)	7280 (23' 11")	7280 (23' 11")	*2 7300 (23' 11")
G: Minimum Swing Radius	mm (ft·in)	2370 (7' 9")	2400 (7' 11")	2660 (8' 9")

Model		ZX110M-3		
Item	Category	1.96 m (6 ft 5 in) Arm	2.26 m (7 ft 5 in) Arm	2.81 m (9 ft 3 in) Arm
		Backhoe	Backhoe	Backhoe
A: Maximum Digging Reach	mm (ft·in)	7490 (24' 7")	7760 (25' 6")	8240 (27' 0")
*1 B: Maximum Digging Depth	mm (ft·in)	4580 (15' 0")	4880 (16' 0")	5430 (17' 10")
*1 C: Maximum Cutting Height	mm (ft·in)	8140 (26' 9")	8320 (27' 4")	8570 (28' 1")
*1 D: Maximum Dumping Height	mm (ft·in)	5730 (18' 10")	5910 (19' 5")	6170 (20' 3")
E: Overall Height	mm (ft·in)	2950 (9' 8")	2950 (9' 8")	*2 2950 (9' 8")
F: Overall Length	mm (ft·in)	7260 (23' 10")	7260 (23' 10")	*2 7280 (23' 11")
G: Minimum Swing Radius	mm (ft·in)	2370 (7' 9")	2400 (7' 11")	2660 (8' 9")

NOTE: *1 The dimensions do not include the height of the shoe lug.
 *2 The dimensions asterisked are for transport pin position.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX110-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	11100 (24500)	11300 (24900)	11500 (25400)	11700 (25800)
Base Machine Weight	kg (lb)	8600 (19000)	8800 (19400)	9000 (19800)	9200 (20300)
Cab Height	mm (ft•in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2750 (9' 0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")
Undercarriage Length	mm (ft•in)	3340 (11' 0")	3340 (11' 0")	3340 (11' 0")	3340 (11' 0")
Undercarriage Width	mm (ft•in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2790 (9' 2")
Ground Pressure		38 kPa (0.39 kgf/cm ² , 5.5 psi)	32 kPa (0.33 kgf/cm ² , 4.6 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)	25 kPa (0.25 kgf/cm ² , 3.6 psi)

Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	10900 (24000)
Base Machine Weight	kg (lb)	8500 (18700)
Cab Height	mm (ft•in)	2780 (9' 1")
Minimum Ground Clearance	mm (ft•in)	500 (1' 8")
Undercarriage Length	mm (ft•in)	3420 (11' 3")
Undercarriage Width	mm (ft•in)	2490 (8' 2")
Ground Pressure		37 kPa (0.38 kgf/cm ² , 5.4 psi)

 NOTE: • The specifications for the front-end attachment are for a 2.26 m (7 ft 5 in) arm with PCSA 0.45 m³ (0.59 yd³) standard bucket.

- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
- * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX110M-3

Shoe Width		700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe	960 mm (38") High Grouser Shoe
Application		For Weak Footing (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	13100 (28900)	13400 (29500)	13600 (30000)	14000 (30900)
Base Machine Weight	kg (lb)	10700 (23600)	11000 (24300)	11200 (24700)	11500 (25400)
Cab Height	mm (ft•in)	2950 (9' 8")	2950 (9' 8")	2950 (9' 8")	2980 (9' 9")
Minimum Ground Clearance	mm (ft•in)	* 595 (1' 11")	* 595 (1' 11")	* 595 (1' 11")	* 600 (2' 0")
Undercarriage Length	mm (ft•in)	3790 (12' 5")	3790 (12' 5")	3790 (12' 5")	3790 (12' 5")
Undercarriage Width	mm (ft•in)	2690 (8' 10")	2790 (9' 2")	2890 (9' 6")	2950 (9' 8")
Ground Pressure		28 kPa (0.29 kgf/cm ² , 4.1 psi)	25 kPa (0.26 kgf/cm ² , 3.6 psi)	23 kPa (0.23 kgf/cm ² , 3.3 psi)	22 kPa (0.22 kgf/cm ² , 3.2 psi)

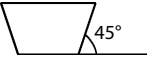
-  NOTE: • The specifications for the front-end attachment are for a 2.26 m (7 ft 5 in) arm with PCSA 0.45 m³ (0.59 yd³) standard bucket.
- 800 mm (31 in), 900 mm (35 in) grouser shoe and 960 mm (38 in) high grouser shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX110-3, 110M-3

[]: ZX110M-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in)		Front-End Attachment			
	PCSA Heaped	CECE Heaped	With Side Cutters	Without Side Cutters	1.96 m (6' 5") Arm	2.26 m (7' 5") Arm	2.81 m (9' 3") Arm	2.26 m (7' 5") Arm and extension
Hoe Bucket	0.19 (0.25)	0.17	550 (22")	450 (18")	●	●	●	○
	0.30 (0.39)	0.25	700 (28")	580 (23")	●	●	●	○
	0.40 (0.52)	0.33	800 (31")	680 (27")	●	●	●	○
	0.45 (0.59)	0.40	970 (38")	850 (33")	●	●	*○ [●]	—
	0.50 (0.65)	0.45	1010 (40")	890 (35")	●	○	— [●]	—
	0.59 (0.77)	0.50	1070 (42")	950 (37")	○	□	—	—
Reinforced Hoe Bucket	0.45 (0.59)	0.40	970 (38")	850 (33")	●	●	*○ [●]	—
One Point Ripper	—	—	—	—	■ [—]	■ [—]	—	—
Slope-Finishing Blade	—	—	1000 (39") x 1600 (63")		◇	◇	◇	—
V-Type Bucket	—	—			○	○	○	—

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

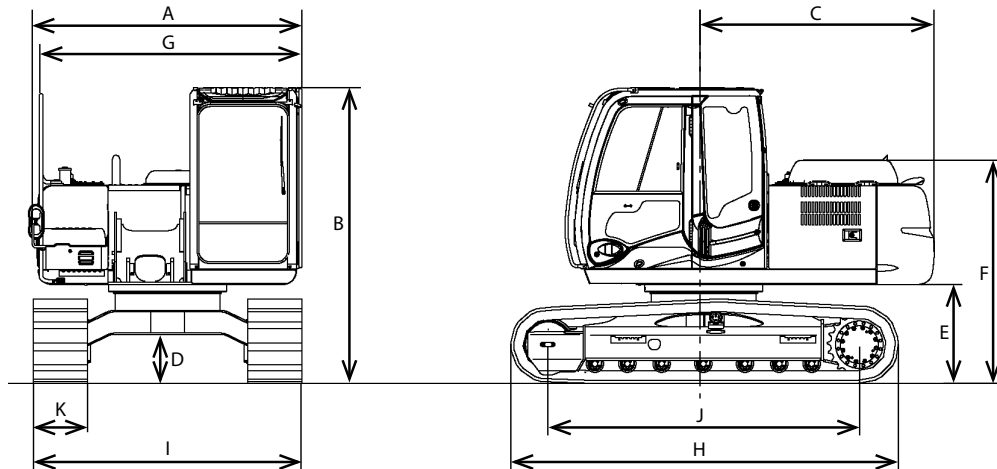
- * Applicable only to 700 mm (28 in) grouser shoe.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX130-3, 130LCN-3



M1U1-12-001

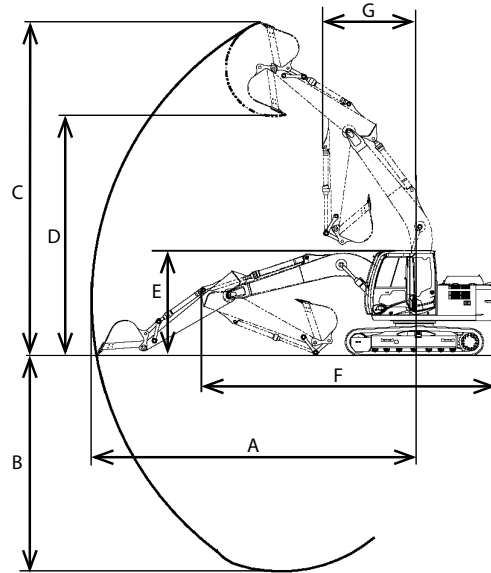
Model	ZX130-3	ZX130LCN-3
Type of Front-End Attachment	2.52 m (8 ft 3 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.50 m ³ (0.65 yd ³), CECE 0.45 m ³	
Operating Weight	12500 kg (27600 lb)	12700 kg (28000 lb)
Base Machine Weight	9900 kg (21800 lb)	10000 kg (22100 lb)
Engine	ISUZU AJ-4JJ1XYSA-03, 66 kW (90 PS)/1800 min ⁻¹ (rpm) *69 kW (94 PS)/2000 min ⁻¹ (rpm)	
A: Overall Width (Excluding back mirrors)	2490 mm (8 ft 2 in)	
B: Cab Height	2740 mm (9 ft 0 in)	
C: Rear End Swing Radius	2130 mm (7 ft 0 in)	
D: Minimum Ground Clearance	* 440 mm (1 ft 5 in)	
E: Counterweight Clearance	* 890 mm (2 ft 11 in)	
F: Engine Cover Height	* 2050 mm (6 ft 9 in)	
G: Overall Width of Upperstructure	2460 mm (8 ft 1 in)	
H: Undercarriage Length	3580 mm (11 ft 9 in)	3750 mm (12 ft 4 in)
I: Undercarriage Width	2490 mm (8 ft 2 in)	
J: Sprocket Center to Idler Center	2880 mm (9 ft 5 in)	3050 mm (10 ft 0 in)
K: Track Shoe Width	500 mm (20 in) (Grouser Shoe)	
Ground Pressure	39 kPa (0.40 kgf/cm ²) (5.7 psi)	38 kPa (0.39 kgf/cm ²) (5.5 psi)
Swing Speed	13.7 min ⁻¹ (13.7 rpm)	
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.1 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * H/P mode
* The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX130-3, 130LCN-3



Backhoe

M1U1-12-005

Model		ZX130-3, 130LCN-3		
Item	Category	2.10 m (6 ft 11 in) Arm	2.52 m (8 ft 3 in) Arm	3.01 m (9 ft 11 in) Arm
		Backhoe	Backhoe	Backhoe
A: Maximum Digging Reach	mm (ft·in)	7960 (26' 1")	8320 (27' 4")	8790 (28' 10")
*1 B: Maximum Digging Depth	mm (ft·in)	5150 (16' 11")	5570 (18' 3")	6060 (19' 11")
*1 C: Maximum Cutting Height	mm (ft·in)	8370 (27' 6")	8570 (28' 1")	8900 (29' 2")
*1 D: Maximum Dumping Height	mm (ft·in)	5960 (19' 7")	6160 (20' 3")	6490 (21' 4")
E: Overall Height	mm (ft·in)	2740 (9' 0")	2740 (9' 0")	*2 2740 (9' 0")
F: Overall Length	mm (ft·in)	7660 (25' 2")	7660 (25' 2")	*2 7670 (25' 2")
G: Minimum Swing Radius	mm (ft·in)	2370 (7' 9")	2390 (7' 10")	2640 (8' 8")

NOTE: *1 The dimensions do not include the height of the shoe lug.

*2 The dimensions asterisked are for transport pin position.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX130-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	12500 (27600)	12700 (28000)	12900 (28400)	13200 (29100)
Base Machine Weight	kg (lb)	9900 (21800)	10100 (22300)	10300 (22700)	10500 (23200)
Cab Height	mm (ft•in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")
Undercarriage Length	mm (ft•in)	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")
Undercarriage Width	mm (ft•in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2790 (9' 2")
Ground Pressure		39 kPa (0.40 kgf/cm ² , 5.7 psi)	33 kPa (0.34 kgf/cm ² , 4.8 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)	25 kPa (0.25 kgf/cm ² , 3.6 psi)

Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	12400 (27300)
Base Machine Weight	kg (lb)	9700 (21400)
Cab Height	mm (ft•in)	2780 (9' 1")
Minimum Ground Clearance	mm (ft•in)	500 (1' 8")
Undercarriage Length	mm (ft•in)	3660 (12' 0")
Undercarriage Width	mm (ft•in)	2490 (8' 2")
Ground Pressure		38 kPa (0.39 kgf/cm ² , 5.5 psi)

 **NOTE:** • The specifications for the front-end attachment are for a 2.52 m (8 ft 3 in) arm with PCSA 0.50 m³ (0.65 yd³) standard bucket.

- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
- * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX130LCN-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For weak Footing (Option)	For weak Footing (Option)	For weak Footing (Option)
Operating Weight	kg (lb)	12700 (28000)	13000 (28700)	13200 (29100)	13400 (29500)
Base Machine Weight	kg (lb)	10000 (22100)	10300 (22700)	10500 (23200)	10700 (23600)
Cab Height	mm (ft•in)	2740 (9'0")	2740 (9'0")	2740 (9'0")	2740 (9'0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1'5")	* 440 (1'5")	* 440 (1'5")	* 440 (1'5")
Undercarriage Length	mm (ft•in)	3750 (12'4")	3750 (12'4")	3750 (12'4")	3750 (12'4")
Undercarriage Width	mm (ft•in)	2490 (8'2")	2590 (8'6")	2690 (8'10")	2790 (9'2")
Ground Pressure		38 kPa (0.39 kgf/cm ² , 5.5 psi)	32 kPa (0.33 kgf/cm ² , 4.6 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)	25 kPa (0.25 kgf/cm ² , 3.6 psi)

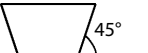
Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	12800 (28200)
Base Machine Weight	kg (lb)	10100 (22300)
Cab Height	mm (ft•in)	2780 (9'1")
Minimum Ground Clearance	mm (ft•in)	500 (1'8")
Undercarriage Length	mm (ft•in)	3830 (12'7")
Undercarriage Width	mm (ft•in)	2490 (8'2")
Ground Pressure		38 kPa (0.39 kgf/cm ² , 5.5 psi)

-  **NOTE:** • The specifications for the front-end attachment are for a 2.52 m (8 ft 3 in) arm with PCSA 0.50 m³ (0.65 yd³) standards bucket.
- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX130-3, 130LCN-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in)		Front-End Attachment			
	PCSA Heaped	CECE Heaped	With Side Cutters	Without Side Cutters	2.10 m (6' 11") Arm	2.52 m (8' 3") Arm	3.01 m (9' 11") Arm	2.52 m (8' 3") Arm and extension
Hoe Bucket	0.19 (0.25)	0.17	550 (22")	450 (18")	●	●	●	○
	0.30 (0.39)	0.25	700 (28")	580 (23")	●	●	●	○
	0.40 (0.52)	0.33	800 (31")	680 (27")	●	●	●	○
	0.45 (0.59)	0.40	970 (38")	850 (33")	●	●	○	○
	0.50 (0.65)	0.45	1010 (40")	890 (35")	●	●	*○	—
	0.59 (0.77)	0.50	1070 (42")	950 (37")	●	○	—	—
	0.66 (0.86)	0.55	—	1030 (41")	□	—	—	—
Reinforced Hoe Bucket	0.50 (0.65)	0.45	1010 (40")	890 (35")	●	●	*○	—
One Point Ripper	0.59 (0.77)	0.50	1070 (42")	950 (37")	●	○	—	—
One Point Ripper	—	—	—	—	■	■	—	—
Slope-Finishing Blade	—	—	1000 (39") x 1600 (63")		◇	◇	◇	—
V-Type Bucket	—	—			○	○	○	—

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

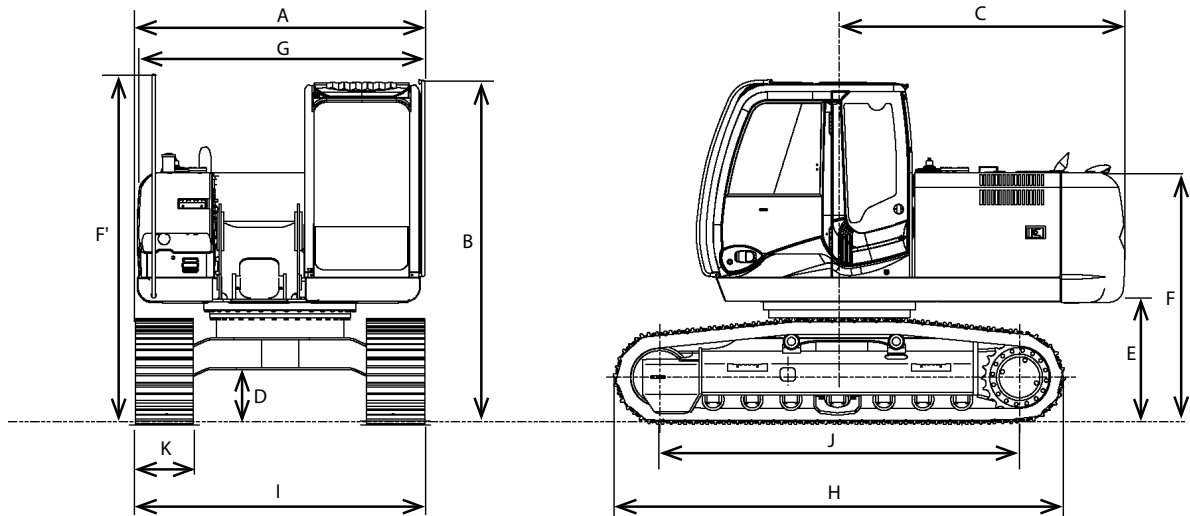
- * Applicable only to 700 mm (28 in) grouser shoe.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX160LC-3



T1T1-01-01-001

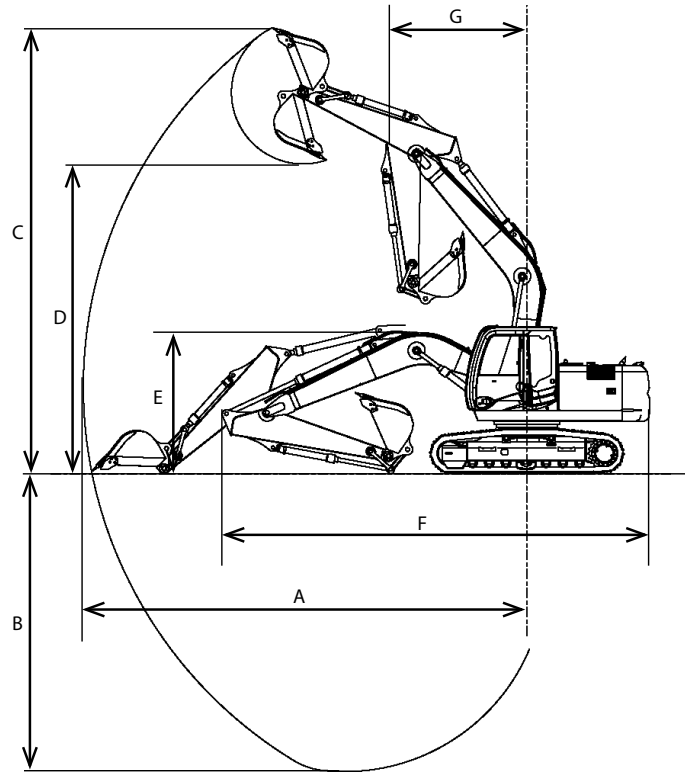
Model	ZX160LC-3
Type of Front-End Attachment	2.58 m (8 ft 6 in) Arm
Bucket Capacity (Heaped)	PCSA 0.6 m ³ (0.76 yd ³), CECE 0.55 m ³
Operating Weight	16600 kg (36600 lb)
Base Machine Weight	13100 kg (28880 lb)
Engine	Isuzu AI-4JJ1XYSA-01 90.2 kW/2200 min ⁻¹ (123 PS/2200 rpm)
A: Overall Width (Excluding back mirrors)	2500 mm (8 ft 2 in)
B: Cab Height	2950 mm (9 ft 8 in)
C: Rear End Swing Radius	2490 mm (8 ft 2 in)
D: Minimum Ground Clearance	* 470 mm (19 in)
E: Counterweight Clearance	* 1030 mm (3 ft 5 in)
F: Engine Cover Height	* 2140 mm (8 ft 0 in)
F': Overall Height of Handrail	3010 mm (9 ft 11 in)
G: Overall Width of Upperstructure	2480 mm (8 ft 2 in)
H: Undercarriage Length	3920 mm (12 ft 10 in)
I: Undercarriage Width	2490 mm (8 ft 2 in)
J: Sprocket Center to Idler Center	3100 mm (10 ft 2 in)
K: Track Shoe Width	500 mm (20 in) (Grouser shoe)
Ground Pressure	48 kPa (0.49 kgf/cm ² , 7.0 psi)
Swing Speed	13.3 min ⁻¹ (rpm)
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.2 mph)
Gradeability	35° (tanθ = 0.70)

 NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX160LC-3 (Machine with Mono Boom)



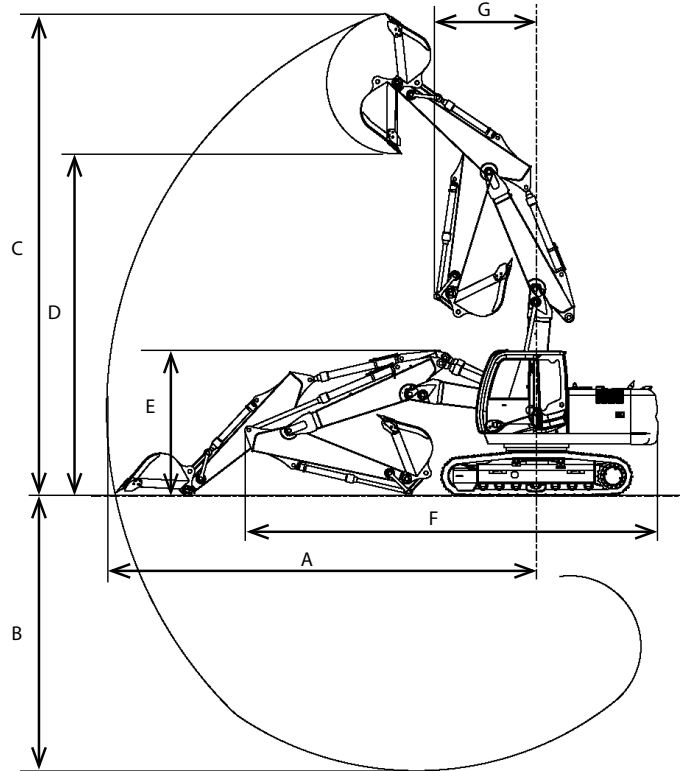
T1T1-01-01-003

Item	Category	2.22 m (7 ft 4 in) Arm		2.58 m (8 ft 6 in) Arm	
		mm	ft·in	mm	ft·in
A: Maximum Digging Reach		8520	27'12"	8870	29'2"
B: Maximum Digging Depth		* 5620	* 18'6"	* 5980	* 19'8"
C: Maximum Cutting Height		* 8620	* 28'4"	* 8880	* 29'2"
D: Maximum Dumping Height		* 5940	* 19'6"	* 6170	* 20'3"
E: Overall Height		3190	10'6"	3010	9'5"
F: Overall Length		8650	28'5"	8550	28'1"
G: Minimum Swing Radius		3290	10'10"	2910	9'7"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

ZX160LC-3 (Machine with 2-Piece Boom)



T1T1-01-01-005

Item	Category	2.22 m (7 ft 4 in) Arm		2.58 m (8 ft 6 in) Arm	
		mm	ft·in	mm	ft·in
A: Maximum Digging Reach		8330	27'4"	8690	28'7"
B: Maximum Digging Depth		* 5210	* 17'2"	* 5580	* 18'4"
C: Maximum Cutting Height		* 9420	* 30'11"	* 9740	* 31'12"
D: Maximum Dumping Height		* 6600	* 21'8"	* 6900	* 22'8"
E: Overall Height		3090	10'2"	3010	9'11"
F: Overall Length		8450	27'9"	8350	27'5"
G: Minimum Swing Radius		2580	8'7"	2070	6'10"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX160LC-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	16600 (36600)	16800 (37000)	17100 (37700)	17400 (38400)
Base Machine Weight	kg (lb)	13100 (28880)	13300 (29300)	13600 (30000)	13900 (30600)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	*470 (19")	*470 (19")	*470 (19")	*470 (19")
Undercarriage Length	mm (ft•in)	3920 (12'10")	3920 (12'10")	3920 (12'10")	3950 (12'10")
Undercarriage Width	mm (ft•in)	2490 (8'2")	2590 (8'6")	2690 (8'9")	2890 (9'6")
Ground Pressure		48 kPa (0.49 kgf/cm ² , 7.0 psi)	40 kPa (0.41 kgf/cm ² , 5.8 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)	31 kPa (0.32 kgf/cm ² , 4.5 psi)

 NOTE: • The specifications for the front-end attachment is for 2.58 m (8 ft 6 in) arm with PCSA 0.6 m³ (0.79 yd³) bucket.
• 600 (24 in), 700 mm (28 in) and 800 mm (31 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX160LC-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment	
	PCSA (Heaped)	CECE (Heaped)			2.22 m (7'3") Arm	2.58 m (8'6") Arm
Hoe Bucket	0.52 (0.68)	0.45	910 (36")		●	●
	0.60 (0.79)	0.55	1045 (41")		●	●
	0.70 (0.92)	0.60	1125 (44")		●	●
	0.82 (1.07)	0.7	1260 (50")		○	○
Bucket reinforcement can be welded in four places upon customer's request	0.60 (0.79)	0.55	1045 (41")		●	●
	0.70 (0.92)	0.6	1120 (44")		●	○
One Point Ripper	—		—		■	—
Clamshell Bucket		0.40 (0.52)	Bucket width 590 (23")	Side ditching	●	●
Slope-Finishing Blade	—		1700 (67")	Bank cutting finish	◇	◇

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

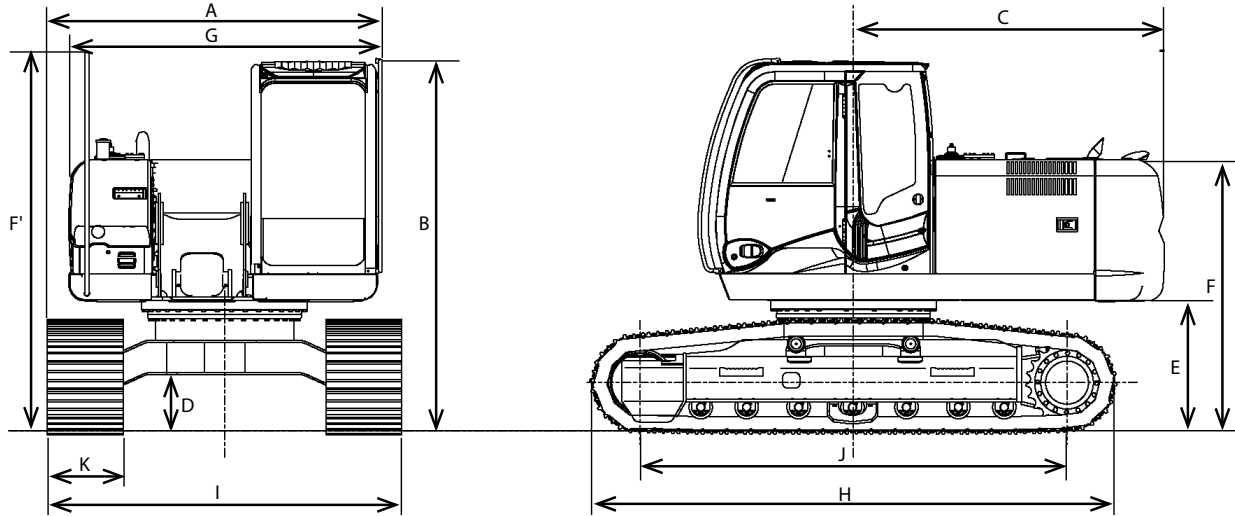
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX180LC-3, 180LCN-3



T1T1-01-01-002

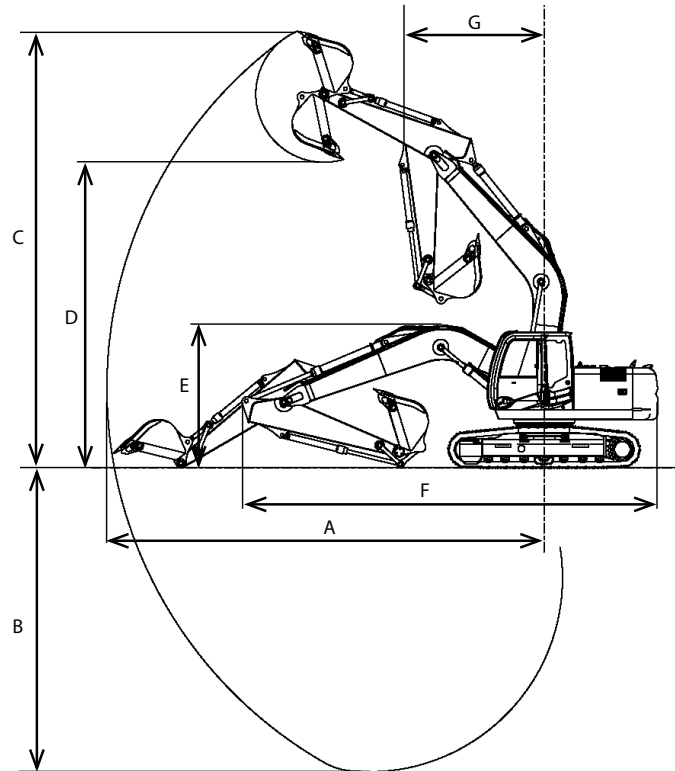
Model	ZX180LC-3	ZX180LCN-3
Type of Front-End Attachment	2.71 m (8 ft 11 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.7 m ³ (0.92 yd ³), CECE 0.6 m ³	
Operating Weight	18500 kg (40790 lb)	18100 kg (39900 lb)
Base Machine Weight	14500 kg (31970 lb)	14200 kg (31310 lb)
Engine	Isuzu AI-4JJ1XYSA-01 90.2 kW/2200 min ⁻¹ (123 PS/2200 rpm)	
A: Overall Width (Excluding back mirrors)	2800 mm (9 ft 2 in)	2500 mm (8 ft 3 in)
B: Cab Height	2950 mm (9 ft 8 in)	
C: Rear End Swing Radius	2490 mm (9 ft 8 in)	
D: Minimum Ground Clearance	* 450 mm (18 in)	
E: Counterweight Clearance	* 1030 mm (3 ft 5 in)	
F: Engine Cover Height	* 2140 mm (7 ft 0 in)	
F': Overall Height of Handrail	3010 mm (9 ft 11 in)	
G: Overall Width of Upperstructure	2480 mm (8 ft 2 in)	
H: Undercarriage Length	4170 mm (13 ft 8 in)	
I: Undercarriage Width	2800 mm (9 ft 2 in)	2490 mm (8 ft 2 in)
J: Sprocket Center to Idler Center	3370 mm (11 ft 1 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	500 mm (20 in) (Grouser shoe)
Ground Pressure	41 kPa (0.42 kgf/cm ² , 5.9 psi)	49 kPa (0.50 kgf/cm ² , 7.0 psi)
Swing Speed	14.1 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.3/3.4 km/h (3.4/2.2 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX180LC-3, 180LCN-3 (Machine with Mono Boom)



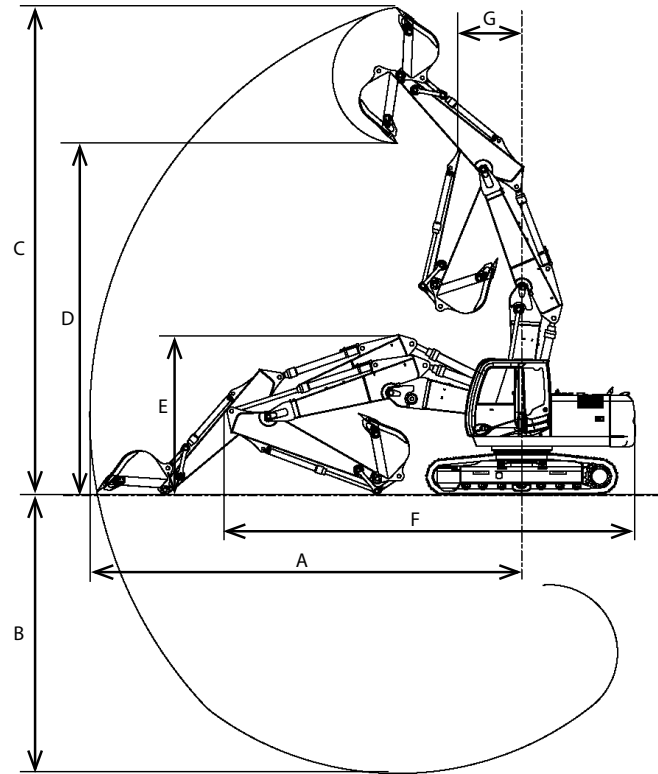
T1T1-01-01-004

Item	Category	2.26 m (7 ft 5 in) Arm		2.71 m (8 ft 11 in) Arm	
		mm	ft·in	mm	ft·in
A: Maximum Digging Reach		9070	29'10"	9430	31'0"
B: Maximum Digging Depth		* 6120	* 20'1"	* 6570	* 21'7"
C: Maximum Cutting Height		* 9290	* 30'6"	* 9400	* 30'11"
D: Maximum Dumping Height		* 6450	* 21'2"	* 6570	* 21'7"
E: Overall Height		3100	10'2"	3080	10'2"
F: Overall Length		9000	29'7"	8970	29'6"
G: Minimum Swing Radius		3140	10'4"	3130	10'4"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

ZX180LC-3, 180LCN-3 (Machine with 2-Piece Boom)



T1T1-01-01-006

Item	Category	2.26 m (7 ft 5 in) Arm		2.71 m (8 ft 11 in) Arm	
		mm	ft·in	mm	ft·in
A: Maximum Digging Reach		8980	29'6"	9350	30'9"
B: Maximum Digging Depth		* 5640	* 18'6"	* 6050	* 19'11"
C: Maximum Cutting Height		* 10260	* 33'8"	* 10530	* 34'7"
D: Maximum Dumping Height		* 7320	* 24'1"	* 7590	* 24'11"
E: Overall Height		3030	9'12"	3030	9'12"
F: Overall Length		8850	29'1"	8840	29'0"
G: Minimum Swing Radius		2280	7'6"	2230	7'4"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX180LC-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	18500 (40800)	18700 (41200)	19000 (41900)	19300 (42500)
Base Machine Weight	kg (lb)	14500 (32000)	14800 (32600)	15000 (33000)	15300 (33700)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4170 (13'8")	4170 (13'8")	4170 (13'8")	4170 (13'8")
Undercarriage Width	mm (ft•in)	2800 (9'2")	2900 (9'6")	3000 (9'10")	3100 (10'2")
Ground Pressure		41 kPa (0.42 kgf/cm ² , 6.0 psi)	36 kPa (0.37 kgf/cm ² , 5.1 psi)	31 kPa (0.32 kgf/cm ² , 4.5 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)

ZX180LCN-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Ordinary Ground (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	18100 (39900)	18400 (40600)	18600 (41000)
Base Machine Weight	kg (lb)	14200 (31300)	14500 (32000)	14700 (32400)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4170 (13'8")	4170 (13'8")	4170 (13'8")
Undercarriage Width	mm (ft•in)	2490 (8'2")	2590 (8'6")	2690 (8'10")
Ground Pressure		49 kPa (0.50 kgf/cm ² , 7.1 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)

 NOTE: • The specifications for the front-end attachment is for 2.71 m (8 ft 11 in) arm with PCSA 0.70 m³ (0.92 yd³) bucket.
• 700, 800 mm (28, 31 in) and 900 mm (35 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX180LC-3, 180LCN-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment	
	PCSA (Heaped)	CECE (Heaped)			2.26 m (7'5") Arm	2.71 m (8'11") Arm
Hoe Bucket	0.51 (0.67)	0.45	830 (33")		●	●
	0.70 (0.92)	0.6	1010 (40")		●	●
	0.80 (1.05)	0.7	1140 (45")		●	●
	0.91 (1.19)	0.8	1260 (50")		○	○
	1.10 (1.44)	0.9	1440 (57")		○	—
	1.20 (1.57)	1.0	1450 (57") (Without side cutter)		□	—
Bucket reinforcement can be welded in four places upon customer's request	0.70 (0.92)	0.6	1010 (40")		●	●
	0.80 (1.05)	0.7	1140 (45")		●	●
	0.91 (1.19)	0.8	1260 (50")		○	○
V-Type Bucket	—		90°	Excavating V-trenches	○	○
Ripper Bucket	0.60 (0.79)	0.50	800 (31.5") (Without side cutter)		■	—
One Point Ripper	—		—		■	—
Clamshell Bucket		0.60	Bucket width 940 (37")	Side ditching	●	●
Slope-Finishing Blade	—		1800 (70")	Bank cutting finish	◇	◇

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

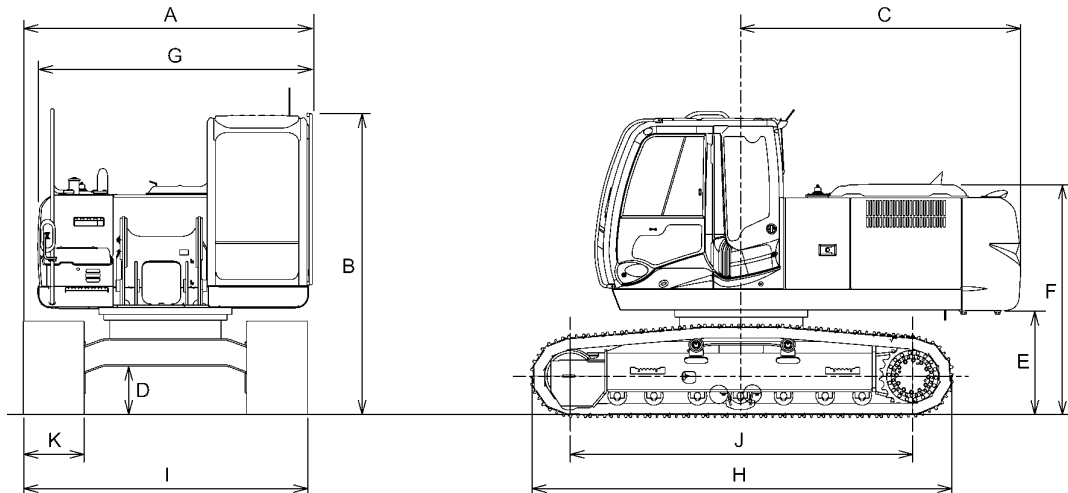
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX210-3, 210LC-3



T1V1-01-01-006

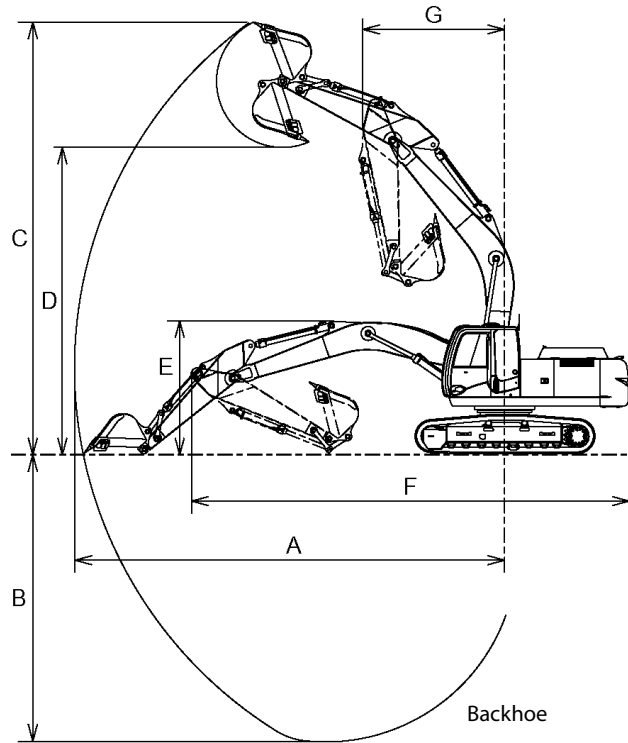
Model	ZX210-3	ZX210LC-3
Type of Front-End Attachment	2.91 m (9 ft 7 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.80 m ³ (1.05 yd ³), CECE 0.7 m ³	
Operating Weight	20300 kg (44800 lb)	20900 kg (46100 lb)
Base Machine Weight	15900 kg (35100 lb)	16500 kg (36400 lb)
Engine	Isuzu AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	2860 mm (9 ft 5 in)	2990 mm (9 ft 10 in)
B: Cab Height	2950 mm (9 ft 8 in)	
C: Rear End Swing Radius	2750 mm (9 ft 0 in)	
D: Minimum Ground Clearance	* 450 mm (18 in)	
E: Counterweight Clearance	* 1030 mm (3 ft 5 in)	
F: Engine Cover Height	* 2270 mm (7 ft 5 in)	
G: Overall Width of Upperstructure	2710 mm (8 ft 11 in)	
H: Undercarriage Length	4170 mm (13 ft 8 in)	4470 mm (14 ft 8 in)
I: Undercarriage Width	2800 mm (9 ft 2 in)	2990 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	3370 mm (11 ft 1 in)	3660 mm (12 ft 0 in)
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	45 kPa (0.46 kgf/cm ² , 6.5 psi)	43 kPa (0.44 kgf/cm ² , 6.3 psi)
Swing Speed	13.3 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.5 km/h (3.4/2.2 mph)	
Gradeability	35° (tan θ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX210-3, 210LC-3



T1V1-01-01-002

Category	2.03 m (6 ft 8 in) Arm		2.42 m (7 ft 11 in) Arm		2.91 m (9 ft 7 in) Arm	
	Backhoe		Backhoe		Backhoe	
	mm	ft•in	mm	ft•in	mm	ft•in
A: Maximum Digging Reach	9230	30'3"	9430	30'11"	9920	32'7"
B: Maximum Digging Depth	*5800	*19'0"	*6180	*20'3"	*6670	*21'11"
C: Maximum Cutting Height	*9850	*32'4"	*9670	*31'9"	*10040	*32'11"
D: Maximum Dumping Height	*6940	*22'9"	*6830	*22'5"	*7180	*23'7"
E: Overall Height	3150	10'4"	3180	10'5"	2940	9'8"
F: Overall Length	9680	31'9"	9680	31'9"	9520	31'5"
G: Minimum Swing Radius	3410	11'2"	3280	10'9"	3180	10'5"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX210-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	20300 (44800)	20700 (45600)	21000 (46300)	21500 (47400)
Base Machine Weight	kg (lb)	15900 (35100)	16300 (35900)	16600 (36600)	17000 (37500)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4170 (13'8")	4170 (13'8")	4170 (13'8")	4170 (13'8")
Undercarriage Width	mm (ft•in)	2800 (9'2")	2900 (9'6")	3000 (9'10")	3100 (10'2")
Ground Pressure		45 kPa (0.46 kgf/cm ² , 6.5 psi)	40 kPa (0.41 kgf/cm ² , 5.8 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)	32 kPa (0.33 kgf/cm ² , 4.7 psi)

ZX210LC-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	20900 (46100)	21300 (47000)	21600 (47600)	22100 (48700)
Base Machine Weight	kg (lb)	16500 (36400)	16900 (37300)	17100 (37700)	17600 (38800)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4470 (14'8")	4470 (14'8")	4470 (14'8")	4470 (14'8")
Undercarriage Width	mm (ft•in)	2990 (9'10")	3090 (10'2")	3190 (10'6")	3290 (10'10")
Ground Pressure		43 kPa (0.44 kgf/cm ² , 6.3 psi)	38 kPa (0.39 kgf/cm ² , 5.5 psi)	33 kPa (0.34 kgf/cm ² , 4.8 psi)	30 kPa (0.31 kgf/cm ² , 4.4 psi)

 NOTE: • The specifications for the front-end attachment is for 2.58 m (8 ft 6 in) arm with PCSA 0.6 m³ (0.79 yd³) bucket.
• 700, 800 mm (28, 31 in) and 900 mm (35 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX210-3, 210LC-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment			
	PCSA (Heaped)	CECE (Heaped)			ZX210-3		ZX210LC-3	
					2.42 m (7'11") Arm	2.91 m (9'7") Arm	2.42 m (7'11") Arm	2.91 m (9'7") Arm
Hoe Bucket	0.51 (0.67)	0.45	830 (33")		●	●	●	●
	0.80 (1.05) HD	0.7	1150 (45")		●	●	●	●
	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
	0.91 (1.19)	0.8	1260 (50")		●	○	●	●
	1.10 (1.44)	0.9	1440 (57")		□	—	○	○
	1.20 (1.57)	1.0	1450 (57")		□	—	□	—
			(Without side cutter)					
Bucket reinforcement can be welded in four places upon customer's request	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
	0.91 (1.19)	0.8	1260 (50")		●	○	●	●
Reinforced Hoe Bucket HD Type (Transverse- Type-Pin-Used Type)	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
V-Type Bucket	—		90°	Excavating V-trenches	○	○	○	○
Ripper Bucket		0.50 (0.65)	800 (31.5") (Without side cutter)		■	—	■	—
One Point Ripper	—		—		■	—	■	—
Clamshell Bucket		0.60 (0.78)	Bucket width 940 (37")	Side ditching	●	●	●	●
Slope-Finishing Blade	—		1800 (70")	Bank cutting finish	◇	◇	◇	◇

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

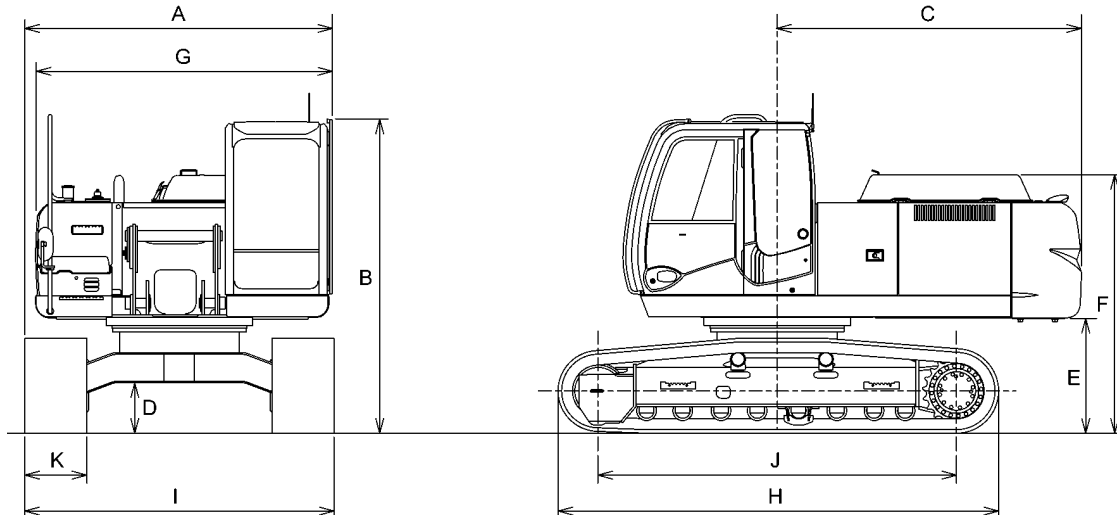
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX210LCN-3, 240N-3



T1V1-01-01-001

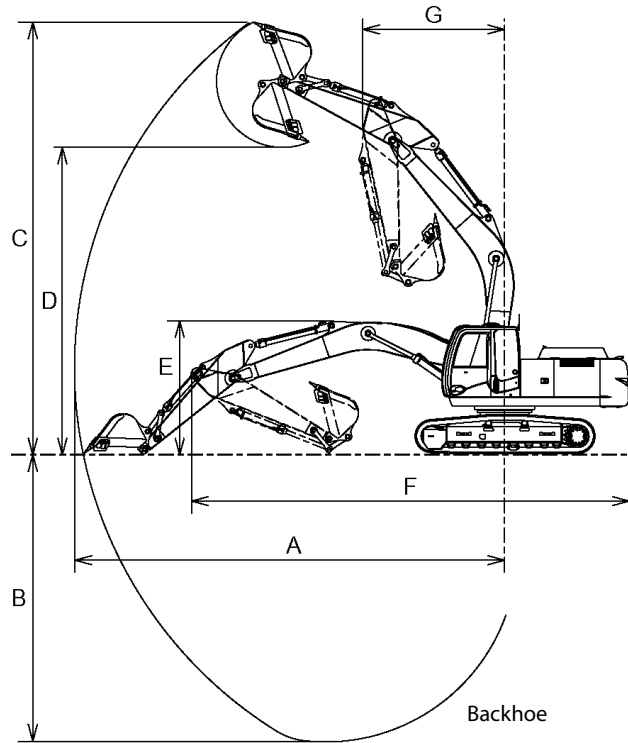
Model	ZX210LCN-3	ZX240N-3
Type of Front-End Attachment	2.91 m (9 ft 7 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.80 m ³ (1.05 yd ³), CECE 0.7 m ³	
Operating Weight	20900 kg (46100 lb)	22500 kg (49600 lb)
Base Machine Weight	16700 kg (36800 lb)	18200 kg (40100 lb)
Engine	Isuzu AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	2500 mm (8 ft 2 in)	
B: Cab Height	2950 mm (9 ft 8 in)	
C: Rear End Swing Radius	2750 mm (9 ft 0 in)	
D: Minimum Ground Clearance	* 450 mm (18 in)	
E: Counterweight Clearance	* 1020 mm (3 ft 4 in)	
F: Engine Cover Height	* 2270 mm (7 ft 5 in)	
G: Overall Width of Upperstructure	2480 mm (8 ft 2 in)	
H: Undercarriage Length	4460 mm (14 ft 8 in)	4260 mm (14 ft 0 in)
I: Undercarriage Width	2480 mm (8 ft 2 in)	
J: Sprocket Center to Idler Center	3660 mm (12 ft 0 in)	3460 mm (11 ft 4 in)
K: Track Shoe Width	500 mm (20 in) (Grouser shoe)	550 mm (22 in) (Grouser shoe)
Ground Pressure	52 kPa (0.53 kgf/cm ² 7.5 psi)	54 kPa (0.55 kgf/cm ² 7.8 psi)
Swing Speed	13.3 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.5 km/h (3.4/2.2 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX210LCN-3, 240N-3



T1V1-01-01-002

Item	Category	2.03 m (6 ft 8 in) Arm		2.42 m (7 ft 11 in) Arm		2.91 m (9 ft 7 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft•in	mm	ft•in	mm	ft•in
A: Maximum Digging Reach		9300	30'6"	9500	31'2"	9990	32'9"
B: Maximum Digging Depth		*5800	*19'0"	*6180	*20'3"	*6670	*21'11"
C: Maximum Cutting Height		*9850	*32'4"	*9670	*31'9"	*10040	*32'11"
D: Maximum Dumping Height		*6940	*22'9"	*6830	*22'5"	*7180	*23'7"
E: Overall Height		3150	10'4"	3180	10'5"	3010	9'11"
F: Overall Length		9680	31'9"	9680	31'9"	9580	31'5"
G: Minimum Swing Radius		3480	11'5"	3350	11'0"	3250	10'8"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX210LCN-3

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)
Operating Weight	kg (lb)	20900 (46100)	21000 (46300)
Base Machine Weight	kg (lb)	16700 (36800)	16800 (37000)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4460 (14'8")	4460 (14'8")
Undercarriage Width	mm (ft•in)	2480 (8'2")	2580 (8'6")
Ground Pressure		52 kPa (0.53 kgf/cm ² , 7.5 psi)	44 kPa (0.45 kgf/cm ² , 6.4 psi)

ZX240N-3

Shoe Width		550 mm (22") Grouser Shoe
Application		For Ordinary Ground (Standard)
Operating Weight	kg (lb)	22500 (49600)
Base Machine Weight	kg (lb)	18200 (40100)
Cab Height	mm (ft•in)	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")
Undercarriage Length	mm (ft•in)	4260 (14'0")
Undercarriage Width	mm (ft•in)	2480 (8'2")
Ground Pressure		54 kPa (0.55 kgf/cm ² , 7.8 psi)

-  NOTE: • The specifications for the front-end attachment is for 2.91 m (9 ft 7 in) arm with PCSA 0.8 m³ (1.05 yd³) bucket.
• 600 mm (24 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX210LCN-3, 240N-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment			
	PCSA (Heaped)	CECE (Heaped)			ZX210LCN-3		ZX240N-3	
					2.42 m (7'11") Arm	2.91 m (9'7") Arm	2.42 m (7'11") Arm	2.91 m (9'7") Arm
Hoe Bucket	0.51 (0.67)	0.45	830 (33")		●	●	●	●
	0.80 (1.05) HD	0.7	1150 (45")		●	●	●	●
	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
	0.91 (1.19)	0.8	1260 (50")		●	○	●	●
	1.10 (1.44)	0.9	1440 (57")		□	—	□	○
	1.20 (1.57)	1.0	1450 (57") (Without side cutter)		□	—	□	—
Bucket reinforcement can be welded in four places upon customer's request	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
	0.91 (1.19)	0.8	1260 (50")		●	○	●	●
Reinforced Hoe Bucket HD Type (Transverse- Type-Pin-Used Type)	0.80 (1.05)	0.7	1140 (45")		●	●	●	●
V-Type Bucket	—		90°	Excavating V-trenches	○	○	○	○
Ripper Bucket		0.50 (0.65)	800 (31.5") (Without side cutter)		■	—	■	—
One Point Ripper	—		—		■	—	■	—
Clamshell Bucket		0.60 (0.78)	Bucket width 940 (37")	Side ditching	●	●	●	●
Slope-Finishing Blade	—		1800 (70")	Bank cutting finish	◇	◇	◇	◇

 **NOTE:** • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- ◇ : Slope-finishing work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

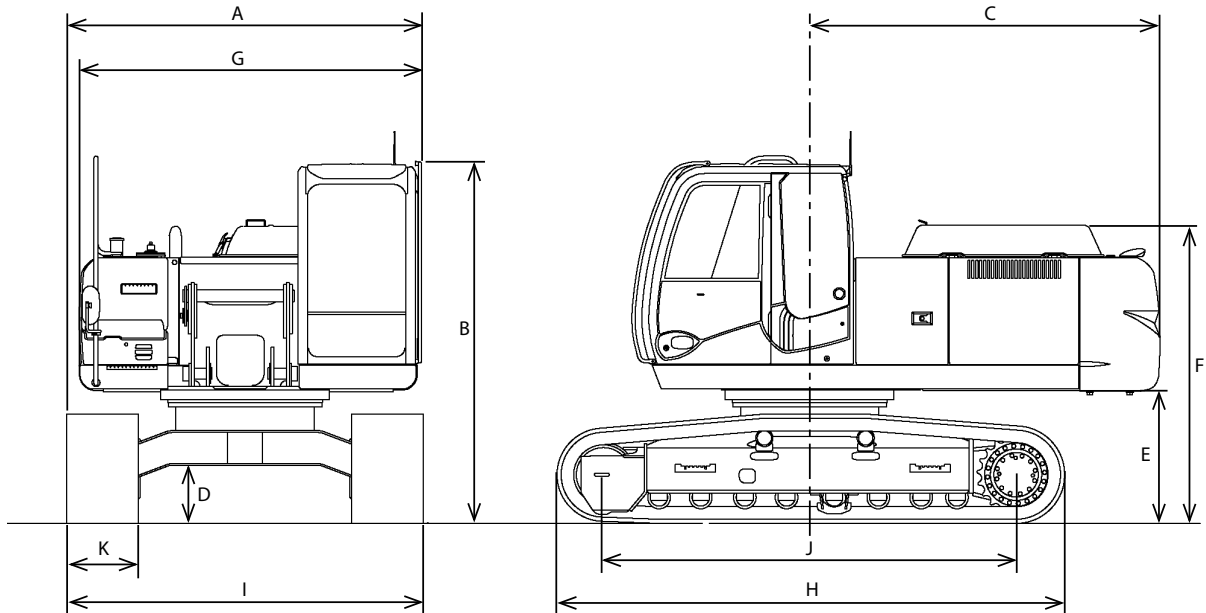
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX250LC-3, 250LCN-3



M1V1-12-001

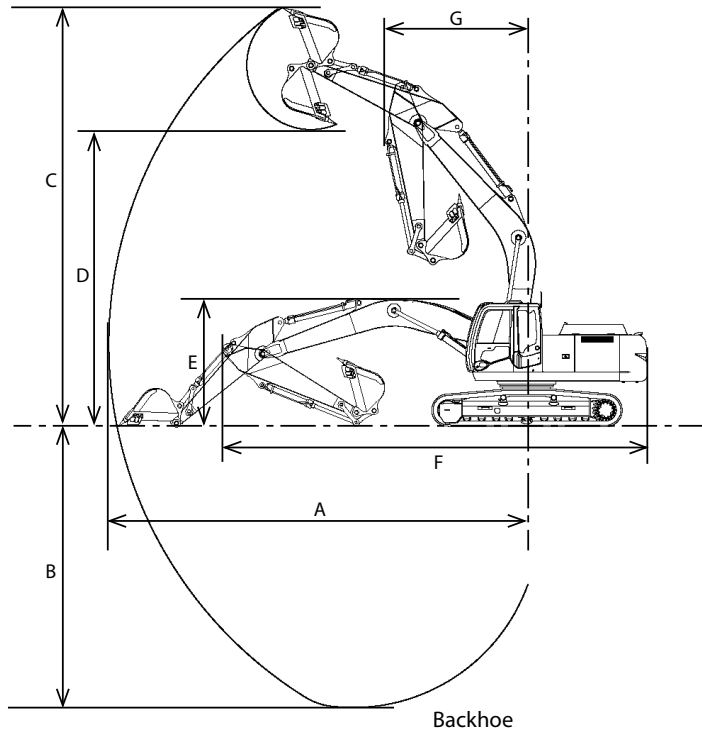
Model	ZX250LC-3	ZX250LCN-3
Type of Front-End Attachment	2.96 m (9 ft 9 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.0 m ³ (1.3 yd ³), CECE 0.9 m ³	
Operating Weight	24700 kg (54500 lb)	24600 kg (54200 lb)
Base Machine Weight	19200 kg (42300 lb)	19100 kg (42100 lb)
Engine	Isuzu AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	2990 mm (9 ft 10 in)
B: Cab Height	3010 mm (9 ft 11 in)	
C: Rear End Swing Radius	2940 mm (9 ft 8 in)	
D: Minimum Ground Clearance	* 460 mm (18 in)	
E: Counterweight Clearance	* 1090 mm (3 ft 7 in)	
F: Engine Cover Height	* 2425 mm (8 ft)	
G: Overall Width of Upperstructure	2890 mm (9 ft 6 in)	
H: Undercarriage Length	4640 mm (15 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	2990 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	3845 mm (12 ft 7 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	49 kPa (0.50 kgf/cm ² , 7.1 psi)	
Swing Speed	13.5 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.1 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX250LC-3, 250LCN-3



M1V1-12-002

Item	Category	2.19 m (7 ft 2 in) Arm		2.50 m (8 ft 2 in) Arm		2.96 m (9 ft 9 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft·in	mm	ft·in	mm	ft·in
A: Maximum Digging Reach		9660	31'8"	9880	32'5"	10290	33'9"
B: Maximum Digging Depth		*6190	*20'4"	*6500	*21'4"	*6960	*22'10"
C: Maximum Cutting Height		*10000	*32'10"	*9950	*32'8"	*10160	*33'4"
D: Maximum Dumping Height		*6970	*22'10"	*6990	*22'11"	*7200	*23'8"
E: Overall Height		3340	11'0"	3370	11'1"	3070	10'1"
F: Overall Length		10240	33'7"	10270	33'8"	10150	33'3"
G: Minimum Swing Radius		3580	11'9"	3480	11'5"	3440	11'3"

Item	Category	3.61 m (11 ft 10 in) Arm	
		Backhoe	
		mm	ft·in
A: Maximum Digging Reach		10910	35'10"
B: Maximum Digging Depth		*7610	*25'0"
C: Maximum Cutting Height		*10560	*34'8"
D: Maximum Dumping Height		*7580	*24'10"
E: Overall Height		3320	10'11"
F: Overall Length		10200	33'6"
G: Minimum Swing Radius		3430	11'3"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX250LC-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe	900 mm (35") Triangular Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	24700 (54500)	25000 (55100)	25300 (55800)	25400 (56000)	26800 (59100)
Base Machine Weight	kg (lb)	19200 (42300)	19500 (43000)	19800 (43700)	19900 (43900)	21300 (47000)
Cab Height	mm (ft·in)	3010 (9'11")	3010 (9'11")	3010 (9'11")	3020 (9'11")	3060 (10'1")
Minimum Ground Clearance	mm (ft·in)	* 460 (18")	* 460 (18")	* 460 (18")	500 (20")	* 460 (18")
Undercarriage Length	mm (ft·in)	4640 (15'3")	4640 (15'3")	4640 (15'3")	4660 (15'3")	4750 (15'7")
Undercarriage Width	mm (ft·in)	3190 (10'6")	3290 (10'10")	3390 (11'1")	3190 (10'6")	3490 (11'5")
Ground Pressure		49 kPa (0.50 kgf/cm ² , 7.1 psi)	42 kPa (0.43 kgf/cm ² , 6.1 psi)	37 kPa (0.38 kgf/cm ² , 5.4 psi)	50 kPa (0.51 kgf/cm ² , 7.3 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)

ZX250LCN-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe	900 mm (35") Triangular Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	24600 (54200)	24900 (54900)	25200 (55600)	25300 (55800)	26700 (58900)
Base Machine Weight	kg (lb)	19100 (42100)	19400 (42800)	19700 (43400)	19800 (43700)	21200 (46700)
Cab Height	mm (ft·in)	3010 (9'11")	3010 (9'11")	3010 (9'11")	3020 (9'11")	3060 (10'1")
Minimum Ground Clearance	mm (ft·in)	* 460 (18")	* 460 (18")	* 460 (18")	500 (20")	* 460 (18")
Undercarriage Length	mm (ft·in)	4640 (15'3")	4640 (15'3")	4640 (15'3")	4660 (15'3")	4750 (15'7")
Undercarriage Width	mm (ft·in)	2990 (9'10")	3090 (10'2")	3190 (10'6")	2990 (9'10")	3290 (10'10")
Ground Pressure		49 kPa (0.50 kgf/cm ² , 7.1 psi)	42 kPa (0.43 kgf/cm ² , 6.1 psi)	37 kPa (0.38 kgf/cm ² , 5.4 psi)	50 kPa (0.51 kgf/cm ² , 7.3 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)

-  NOTE: • The specifications for the front-end attachment is for 2.96 m (9 ft 9 in) arm with PCSA 1.0 m³ (1.3 yd³) bucket.
 • 700, 800 mm (28, 31 in) grouser shoe, 600 mm (24 in) flat shoe and 900 mm (35 in) triangular shoe should not be used on gravel or rocky ground.
 • * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX250LC-3, 250LCN-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment			
	PCSA (Heaped)	CECE (Heaped)			2.19 m (7'2") Arm	2.50 m (8'2") Arm	2.96 m (9'9") Standard Arm	3.61 m (11'10") Arm
Hoe Bucket	0.80 (1.05)	0.70	1080 (42.5")		●	●	●	●
	1.00 (1.31)	0.90	1300 (51.2")		●	●	●	●
	1.15 (1.50)	1.00	1410 (55.6")		○	○	○	○
	1.25 (1.64)	1.10	1520 (59.8")		○	○	○	□
	1.40 (1.83)	1.20	1490 (58.7") (Without side cutter)		□	—	—	—
Bucket reinforce- ment can be welded in four places upon customer's request	1.00 (1.31)	0.90	1300 (51.2")		●	●	●	●
	1.15 (1.50)	1.00	1410 (55.6")		○	○	○	○
Reinforced Hoe Bucket (HD Type)	1.00 (1.31)	0.90	1300 (51.2")		●	●	●	●
Reinforced Hoe Bucket HD Type (Transverse-Type- Pin-Used Type)	1.00 (1.31)	0.90	1300 (51.2")		●	●	●	●
Rock Bucket	0.92 (1.20)	0.80	1210 (47.6")		■	■	■	●
Ripper Bucket	0.80 (1.05)	0.70 (0.92)	1000 (39.4") (Without side cutter)		■	■	■	—
One Point Ripper	—	—	—		■	■	■	—
Clamshell Bucket		0.60 (0.78)	Bucket width 870 (34")	Side ditching	●	●	●	—

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

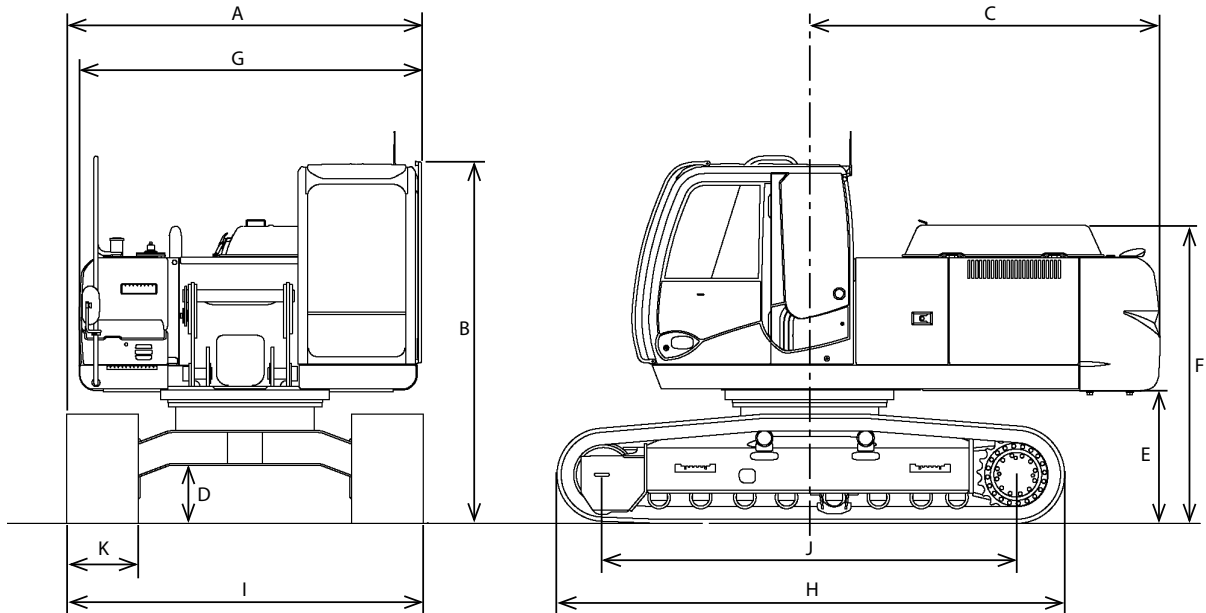
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX280LC-3, 280LCN-3



M1V1-12-001

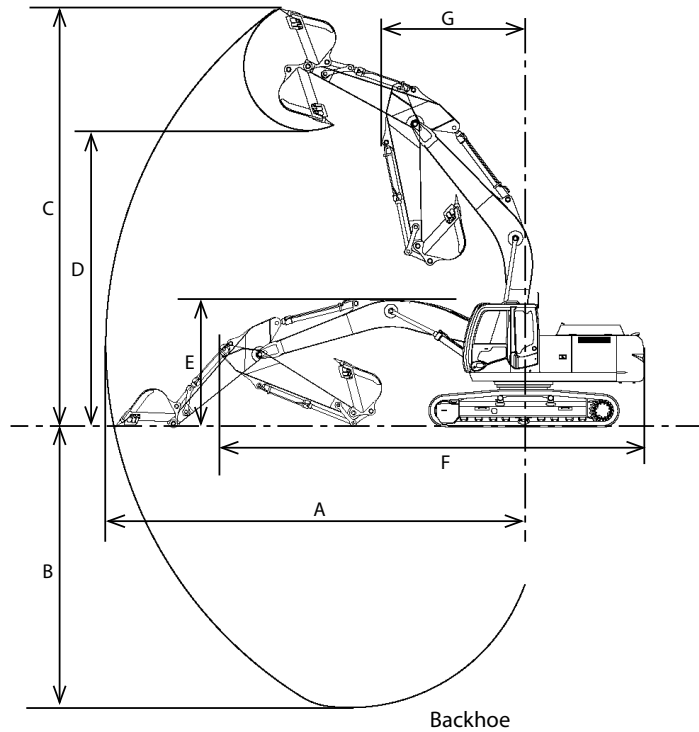
Model	ZX280LC-3	ZX280LCN-3
Type of Front-End Attachment	3.11 m (10 ft 2 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.1 m ³ (1.44 yd ³), CECE 1.0 m ³	
Operating Weight	28200 kg (62200 lb)	28000 kg (61700 lb)
Base Machine Weight	22000 kg (48500 lb)	21800 kg (48100 lb)
Engine	Isuzu AH-4HK1XSA-03 140 kW/2100 min ⁻¹ (190 PS/2100 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
B: Cab Height	3100 mm (10 ft 2 in)	
C: Rear End Swing Radius	2940 mm (9 ft 8 in)	
D: Minimum Ground Clearance	* 510 mm (20 in)	
E: Counterweight Clearance	* 1180 mm (3 ft 10 in)	
F: Engine Cover Height	* 2515 mm (8 ft 3 in)	
G: Overall Width of Upperstructure	2890 mm (9 ft 6 in)	
H: Undercarriage Length	4940 mm (16 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	4052 mm (13 ft 3 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	53 kPa (0.54 kgf/cm ² , 7.7 psi)	52 kPa (0.53 kgf/cm ² , 7.5 psi)
Swing Speed	12.6 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.3 km/h (3.4/2.0 mph)	
Gradeability	35° (tanθ = 0.70)	

 NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX280LC-3, 280LCN-3



M1V1-12-002

Item	Category	2.42 m (7 ft 10 in) Arm		3.11 m (10 ft 2 in) Arm		3.76 m (12 ft 4 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft•in	mm	ft•in	mm	ft•in
A: Maximum Digging Reach		10060	33'0"	10710	35'2"	11270	37'0"
B: Maximum Digging Depth		* 6540	* 21'5"	* 7230	* 23'9"	* 7880	* 25'10"
C: Maximum Cutting Height		* 9890	* 32'5"	* 10260	* 33'8"	* 10460	* 34'4"
D: Maximum Dumping Height		* 6970	* 22'10"	* 7310	* 24'0"	* 7520	* 24'8"
E: Overall Height		3410	11'2"	3170	10'5"	3310	10'10"
F: Overall Length		10440	34'3"	10340	33'11"	10390	34'1"
G: Minimum Swing Radius		4070	13'4"	3910	12'10"	3900	12'10"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX280LC-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	28200 (62200)	28800 (63500)	29100 (64200)	29100 (64200)
Base Machine Weight	kg (lb)	22000 (48500)	22600 (49800)	22900 (50500)	22900 (50500)
Cab Height	mm (ft•in)	3100 (10'2")	3100 (10'2")	3100 (10'2")	3260 (10'8")
Minimum Ground Clearance	mm (ft•in)	* 510 (20")	* 510 (20")	* 510 (20")	550 (22")
Undercarriage Length	mm (ft•in)	4940 (16'2")	4940 (16'2")	4940 (16'2")	4940 (16'2")
Undercarriage Width	mm (ft•in)	3190 (10'6")	3290 (10'10")	3390 (11'1")	3190 (10'6")
Ground Pressure		53 kPa (0.54 kgf/cm ² , 7.7 psi)	46 kPa (0.47 kgf/cm ² , 6.7 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	55 kPa (0.56 kgf/cm ² , 8.0 psi)

ZX280LCN-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	28000 (61700)	28600 (63100)	29000 (63900)	29000 (63900)
Base Machine Weight	kg (lb)	21800 (48100)	22400 (49400)	22800 (50300)	22800 (50300)
Cab Height	mm (ft•in)	3100 (10'2")	3100 (10'2")	3100 (10'2")	3260 (10'8")
Minimum Ground Clearance	mm (ft•in)	* 510 (20")	* 510 (20")	* 510 (20")	550 (22")
Undercarriage Length	mm (ft•in)	4940 (16'2")	4940 (16'2")	4940 (16'2")	4940 (16'2")
Undercarriage Width	mm (ft•in)	3000 (9'10")	3100 (10'2")	3200 (10'6")	3000 (9'10")
Ground Pressure		52 kPa (0.53 kgf/cm ² , 7.5 psi)	46 kPa (0.47 kgf/cm ² , 6.7 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	54 kPa (0.55 kgf/cm ² , 7.8 psi)

 NOTE: • The specifications for the front-end attachment is for 3.11 m (10 ft 2 in) arm with PCSA 1.1 m³ (1.44 yd³) bucket.
• 700, 800 mm (28, 31 in) grouser shoe and 600 mm (24 in) flat shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX280LC-3, 280LCN-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in) (With side cutter)	Application	Front-End Attachment		
	PCSA (Heaped)	CECE (Heaped)			2.42 m (7'10") Arm	3.11 m (10'2") Arm	3.76 m (12'4") Arm
Hoe Bucket	1.00 (1.31) 1.10 (1.44) 1.39 (1.82) 1.62 (2.12)	0.90 1.00 1.20 1.40	1290 (51") 1340 (53") 1560 (61") 1640 (65") (With side cutter)		● ● ● □	● ● ● □	● ● □ —
Hoe Bucket reinforcement can be welded in four places upon customer's request	1.10 (1.31) 1.39 (1.82)	0.90 1.20	1340 (53") 1560 (61")		● ○	● ○	● □
Rock Bucket	0.92 (1.20)	0.80	1210 (48")		●	●	●
Ripper Bucket		0.80 (1.05)	1000 (39.4") (With side cutter)		■	■	—
One Point Ripper	—		—		■	■	—
Clamshell Bucket		0.80 (1.05)	Bucket width 975 (38")	Side ditching	●	●	—

 **NOTE:** • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

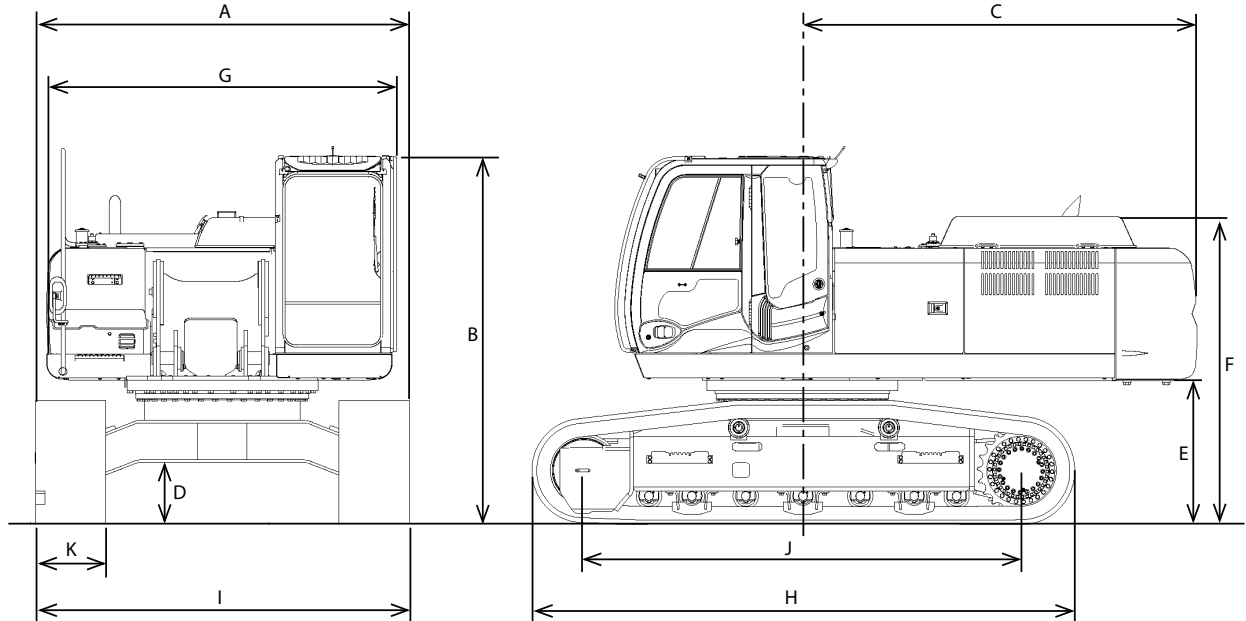
For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SPECIFICATIONS

ZX350LC-3, 350LCN-3



M1V1-12-003

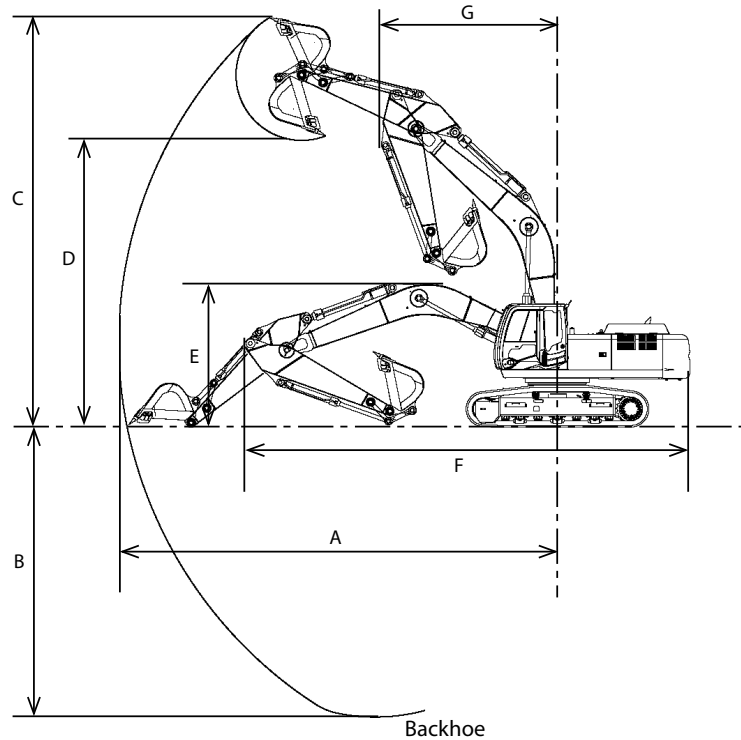
Model	ZX350LC-3	ZX350LCN-3
Type of Front-End Attachment	3.20 m (10 ft 6 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.4 m ³ (1.83 yd ³), CECE 1.2 m ³ (1.57 yd ³)	
Operating Weight	33300 kg (73400 lb)	33200 kg (73200 lb)
Base Machine Weight	25500 kg (56200 lb)	25400 kg (56000 lb)
Engine	Isuzu AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
B: Cab Height	3140 mm (10 ft 4 in)	
C: Rear End Swing Radius	3390 mm (11 ft 2 in)	
D: Minimum Ground Clearance	* 500 mm (20 in)	
E: Counterweight Clearance	* 1160 mm (3 ft 10 in)	
F: Engine Cover Height	* 2590 mm (8 ft 6 in)	
G: Overall Width of Upperstructure	2990 mm (9 ft 10 in)	
H: Undercarriage Length	4940 mm (16 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	4050 mm (13 ft 3 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	63 kPa (0.64 kgf/cm ² , 9.1 psi)	62 kPa (0.63 kgf/cm ² , 9.0 psi)
Swing Speed	10.7 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.0/3.2 km/h (3.1/2.0 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

WORKING RANGES

ZX350LC-3, 350LCN-3



M1V1-12-004

Category	2.33 m (7 ft 8 in) Arm		2.67 m (8 ft 9 in) Arm		3.20 m (10 ft 6 in) Arm		4.00 m (13 ft 1 in) Arm	
	Backhoe		Backhoe		Backhoe		Backhoe	
	mm	ft•in	mm	ft•in	mm	ft•in	mm	ft•in
A: Maximum Digging Reach	10310	33'10"	10570	34'8"	11100	36'5"	11860	38'11"
B: Maximum Digging Depth	* 6500	* 21'4"	* 6840	* 22'5"	* 7380	* 24'3"	* 8180	* 26'10"
C: Maximum Cutting Height	* 9980	* 32'9"	* 9990	* 32'9"	* 10360	* 34'0"	* 10570	* 34'8"
D: Maximum Dumping Height	* 6900	* 22'8"	* 6940	* 22'9"	* 7240	* 23'9"	* 7630	* 25'0"
E: Overall Height	3510	11'6"	3470	11'5"	3270	10'9"	3600	11'10"
F: Overall Length	11170	36'8"	11130	36'6"	11000	36'1"	11090	36'5"
G: Minimum Swing Radius	4460	14'8"	4610	15'2"	4460	14'8"	4470	14'8"

NOTE: * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

SHOE TYPES AND APPLICATIONS

ZX350LC-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	33300 (73400)	33700 (74300)	34100 (75200)	34000 (75000)
Base Machine Weight	kg (lb)	25500 (56200)	25900 (57100)	26200 (57800)	26200 (57800)
Cab Height	mm (ft•in)	3140 (10'4")	3140 (10'4")	3140 (10'4")	3140 (10'4")
Minimum Ground Clearance	mm (ft•in)	* 500 (20")	* 500 (20")	* 500 (20")	540 (21")
Undercarriage Length	mm (ft•in)	4940 (16'3")	4950 (16'3")	4950 (16'3")	4950 (16'3")
Undercarriage Width	mm (ft•in)	3190 (10'6")	3290 (10'10")	3390 (11'1")	3190 (10'6")
Ground Pressure		63 kPa (0.64 kgf/cm ² , 9.1 psi)	54 kPa (0.55 kgf/cm ² , 7.8 psi)	48 kPa (0.49 kgf/cm ² , 7.0 psi)	64 kPa (0.65 kgf/cm ² , 9.2 psi)

ZX350LCN-3

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	33200 (73200)	33600 (74100)	34000 (75000)	33900 (74700)
Base Machine Weight	kg (lb)	25400 (56000)	25800 (56900)	26200 (57800)	26100 (57500)
Cab Height	mm (ft•in)	3140 (10'4")	3140 (10'4")	3140 (10'4")	3140 (10'4")
Minimum Ground Clearance	mm (ft•in)	* 500 (20")	* 500 (20")	* 500 (20")	540 (21")
Undercarriage Length	mm (ft•in)	4940 (16'3")	4950 (16'3")	4950 (16'3")	4950 (16'3")
Undercarriage Width	mm (ft•in)	3000 (9'10")	3100 (10'2")	3200 (10'6")	3000 (9'10")
Ground Pressure		62 kPa (0.63 kgf/cm ² , 9.0 psi)	54 kPa (0.55 kgf/cm ² , 7.8 psi)	48 kPa (0.49 kgf/cm ² , 7.0 psi)	64 kPa (0.65 kgf/cm ² , 9.2 psi)

-  NOTE: • The specifications for the front-end attachment are for 3.2 m (10 ft 6 in) arm with PCSA 1.4 m³ (1.83 yd³) bucket.
• 700 mm (28 in) grouser shoe, 800 mm (31 in) grouser shoe and 600 mm (24 in) flat shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

SPECIFICATIONS

BUCKET TYPES AND APPLICATIONS

ZX350LC-3, 350LCN-3

Bucket	Bucket Capacity m ³ (yd ³)		Bucket Width mm (in)		Front-End Attachment			
	PCSA (Heaped)	CECE (Heaped)	With side cutter	Without side cutter	2.33 m (7'8") Arm	2.66 m (8'9") Arm	3.2 m (10'6") Arm	4 m (13'1") Arm
Hoe Bucket	1.15 (1.50)	1.00 (1.31)	1 230 (4'0")	1 100 (3'7")	●	●	●	●
	1.40 (1.83)	1.20 (1.57)	1 410 (4'8")	1 280 (4'2")	●	●	●	●
	1.62 (2.12)	1.40 (1.83)	1 590 (5'3")	1 460 (4'9")	○	○	○	□
	1.86 (2.43)	1.60 (2.09)	—	1 640 (5'5")	□	□	—	—
	1.40 (1.83)	1.20 (1.57)	1 410 (4'8")	1 280 (4'2")	●	●	●	●
Reinforced Bucket	1.40 (1.83)	1.20 (1.57)	1 410 (4'8")	1 280 (4'2")	●	●	●	●
	1.62 (2.12)	1.40 (1.83)	1 590 (5'3")	1 460 (4'9")	○	○	○	□
Rock Bucket	1.15 (1.50)	1.00 (1.31)	—	1 160 (3'10")	■	■	■	●
	1.38 (1.81)	1.20 (1.57)	1 350 (4'5")	—	■	■	■	●
	1.38 (1.81)	1.20 (1.57)	1 350 (4'5")	—	■	■	■	●
	1.50 (1.96)	1.30 (1.70)	1 450 (4'9")	—	■	■	■	●
	1.50 (1.96)	1.30 (1.70)	1 450 (4'9")	—	■	■	■	●
Ripper Bucket	0.90 (1.18)	0.80 (1.05)	—	1 010 (3'4")	■	■	■	—
One Point Ripper	—				■	■	■	—
Clamshell Bucket	1.00 (1.31)		—		●	●	●	○

 NOTE: • Symbols in the above table have the following meanings.

- : General excavating
- : Light duty excavating
- : Rock digging
- : Loading work
- : Not applicable (not warrantable)

- Hoe bucket is applicable to the following types of work.

General excavating:

For digging and loading operation of sand, gravel, clay, ordinary earth and so on.

Light duty excavating:

For digging and loading operation of dry, loosened earth, sand, mud and so on.

Their bulk density shall be less than 1.60 t/m³ (2700 lb/yd³) as a standard.

Loading:

For loading operation of dry, loosened earth and sand.

Their bulk density shall be less than 1.10 t/m³ (1850 lb/yd³) as a standard.

Rock digging:

For digging/loading operation of mountain gravels, blasted rock, hard clay, soft rock and so on.

IMPORTANT: Using inapplicable buckets may cause serious damage to the front structure such as boom, arm and hydraulic cylinders.

SPECIFICATIONS

SOUND LEVEL RESULTS (2000/14/EC)

LwA: sound-power level of airborne noise

LpA: sound level at operator's station

Unit: dB(A)

	LwA	LpA
ZX110-3, 110M-3	99	68
ZX130-3, 130LCN-3	99	69
ZX160LC-3	101	70
ZX180LC-3, 180LCN-3	102	70
ZX210-3, 210LC-3	101	69
ZX210LCN-3, 240N-3	102	72
ZX250LC-3, 250LCN-3	103	72
ZX280LC-3, 280LCN-3	103	72
ZX350LC-3, 350LCN-3	105	72

VIBRATION LEVEL

Hands/Arms: The acceleration to which the operator's hands and arms will be exposed is lower than 2.5 m/s^2 .

Entire body: The acceleration to which the operator's entire body will be exposed is lower than 0.5 m/s^2 .

 NOTE: The acceleration is measured in accordance with ISO 2631/1; ISO 5349 and SAE J1166.

[illegible]

OPTIONAL ATTACHMENTS AND DEVICES

USING PAD CRAWLER SHOE

ZX120-3, 200-3 class

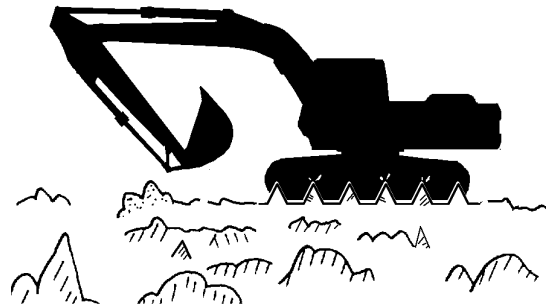
Pad crawler is a tract link on which a rubber pad is installed so the machine does not damage road surfaces when traveling. Be sure to observe all precautions for handling pad crawler. Avoid operating the machine in the following conditions:

Forbidden Operations

Do not operate on sharp, rocky, uneven surfaces, such as river rock, gravel, etc.

Do not allow engine oil, gasoline, etc. to remain on the track, and avoid traveling in oil in order to reduce the danger of slipping.

While raising the machine using the front attachment do not allow the other side track to drive, possibly causing personal injury, damaging or displacing pad crawler.



M107-05-051

OPTIONAL ATTACHMENTS AND DEVICES

TRAVELING AND OTHER CAUTIONS

Do not keep the pad crawler shoe under direct sunlight for more than three months.

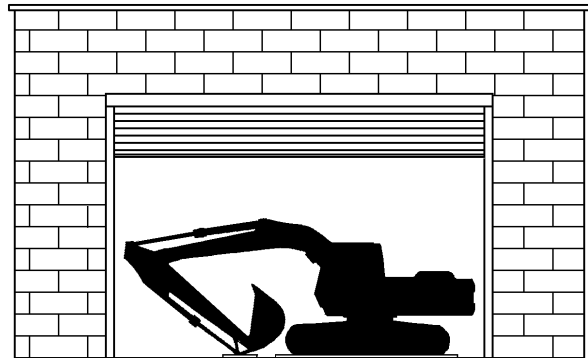
Avoid reckless steering operations on concrete road to the extent possible, as this will cause wear to the shoe lug. Also, avoid running on asphalt road of more than 60 °C (140 ° F) in temperature, as this will cause wear to the shoe as well as damage to the road surface.

Ease the machine down from the jacked-up position. Do not let it drop.

Pad crawler has large friction force. Therefore to avoid damaging the pad crawler slowly operate the control levers to gradually turn the machine.

After raising one side track with the front attachment, slowly lower the pad crawler equipped machine.

If the pad crawler becomes severely damaged, contact your nearest Hitachi Dealer for replacement.



M107-05-052

OPTIONAL ATTACHMENTS AND DEVICES

TRANSPORTING

Transporting

CAUTION: Fasten chains or cables to the machine frame. Do not place chains or cables over or against the hydraulic lines or hoses.

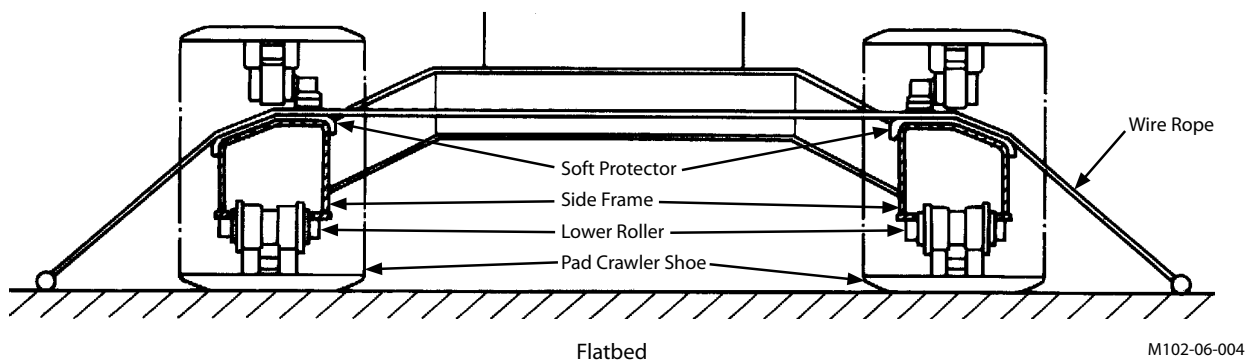
1. Place blocks in front of and behind the tracks.
2. Fasten each corner of the machine and front attachment to the trailer with a chain or cable.



M107-06-013

PRECAUTIONS FOR TRANSPORTING MACHINES WITH PAD CRAWLER SHOES

When transporting a machine with pad crawler shoes, be sure to fasten the right and left track frames securely to the flatbed with wire ropes and soft protectors, as shown. Do not allow wire ropes to come into direct contact with pad crawler shoes.



M102-06-004

OPTIONAL ATTACHMENTS AND DEVICES

Check Track Sag --- every 50 hours

Swing the upperstructure 90 ° and lower the bucket to raise the track off the ground as shown.

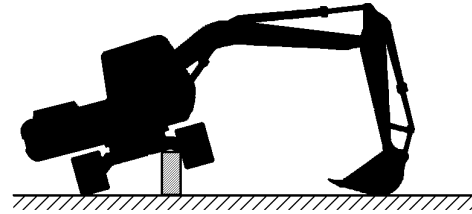
Keep the angle between the boom and arm 90 to 110 ° and position the bucket's round side on the ground. Place blocks under the machine frame to support the machine. Rotate the raised track in reverse two full rotations and then forward two full rotations.

Measure distance (A) at the middle of the track frame from the bottom of the track frame to the back face of the track shoe.

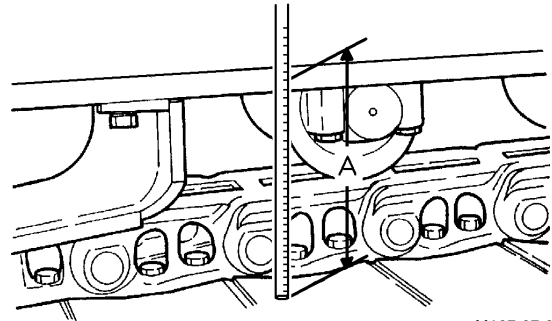
Track sag specifications

Model	A
ZX120-3 class	250 to 280 mm (9.8 to 11.0 in)
ZX200-3 class	300 to 335 mm (11.8 to 13.2 in)

 **NOTE:** Check track sag after thoroughly removing soil stuck on the track area by washing.



M104-07-067



M107-07-068

Adjust Track Sag

Precautions for Adjusting Track Sag

1. If track sag is not within specifications, loosen or tighten the track following the procedures shown on the next page.
2. When adjusting track sag, lower the bucket to the ground to raise one track off the ground. Repeat this procedure to raise the other track. Each time, be sure to place blocks under the machine frame to support the machine.
3. After adjusting track sag of both tracks, move the machine back and forth several times.
4. Check track sag again. If track sag is not within specifications, repeat adjustment until correct sag is obtained.

OPTIONAL ATTACHMENTS AND DEVICES

Loosen the Track

CAUTION: Do not loosen valve (1) quickly or loosen it too much as high-pressure grease in the adjusting cylinder may spout out. Loosen carefully, keeping body parts and face away from valve (1). Never loosen grease fitting (2).

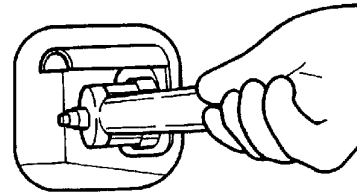
IMPORTANT: When gravel or mud is packed between sprockets and track links, remove it before loosening.

1. To loosen the track, slowly turn valve (1) counterclockwise using long socket 19; grease will escape from the grease outlet.
2. Between 1 to 1.5 turns of valve (1) is sufficient to loosen the track.
3. If grease does not drain smoothly, slowly rotate the raised track.
4. When proper track sag is obtained, turn valve (1) clockwise and tighten to 90 N·m (9 kgf·m, 66 lbf·ft).

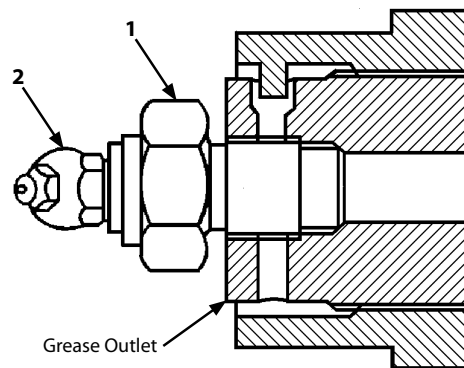
Tighten the Track

CAUTION: It is abnormal if the track remains tight after turning valve (1) counterclockwise or if the track is still loose after charging grease to fitting (2). In such cases, NEVER ATTEMPT TO DISASSEMBLE the track or track adjuster, because of dangerous high-pressure grease inside the track adjuster. See your authorized dealer immediately.

To tighten the track, connect a grease gun to grease fitting (2) and add grease until the sag is within specifications.



M107-07-075



M104-07-119

OPTIONAL ATTACHMENTS AND DEVICES

LONG ARM OPERATION --- IF EQUIPPED

ZX110-3, 110M-3, 130-3

- The optional [ZX110-3, 110M-3: 2.81 m (9' 3")] [ZX130-3: 3.01 m (9' 11")] long arm is only for light works such as loam loading, sludge handling, etc.. Do not use it for heavy works such as digging gravel.
When the arm is used for digging, apply shallow cut to the ground to avoid tough digging, or arm damage may result.
- When the machine is equipped with the [ZX110-3, 110M-3: 2.81 m (9' 3")] [ZX130-3: 3.01 m (9' 11")] long arm, the hoe-bucket size must be limited to the followings due to stability and strength of the machine;

ZX110-3	*PCSA 0.40 m ³ (0.52 yd ³)
	PCSA 0.45 m ³ (0.59 yd ³)
ZX110M-3	*PCSA 0.50 m ³ (0.65 yd ³)
ZX130-3	*PCSA 0.45 m ³ (0.59 yd ³)
	PCSA 0.50 m ³ (0.65 yd ³)

*with 700 mm (28 in) shoe
- When the machine is equipped with the long arm, connect the arm cylinder end to:

Pin bore A (when the machine is in operation)

Pin bore B (when the machine is transported)

IMPORTANT: Connect the arm cylinder rod end to pin bore B only when the machine is transported. Do not operate the digging or loading function with the arm cylinder connected to pin bore B as the bucket may hit the cab accidentally with this connection.

When transporting the machine, follow the procedure shown below to convert it into the transporting posture.

- Position the bucket cylinder with rod retracted a little from the fully extended position.
- Position the arm cylinder with rod retracted a little from the fully extended position.
- Lower the boom until the arm top comes into contact with the ground.



M163-05-001

Unit: mm (ft-in)

Arm Cylinder Rod End Connected To:	Height of Front Attachment (H)					
	ZX110-3		ZX110M-3		ZX130-3	
	Without Bucket	With Bucket	Without Bucket	With Bucket	Without Bucket	With Bucket
Pin Bore A	2810 (9' 2")	3070 (10' 2")	2840 (9' 2")	3060 (10' 2")	2810 (9' 2")	3100 (10' 2")
Pin Bore B	2520 (8' 3")	2680 (8' 9")	2560 (8' 3")	2690 (8' 9")	2540 (8' 3")	2680 (8' 9")

Dimensions include shoe lug height.

OPTIONAL ATTACHMENTS AND DEVICES

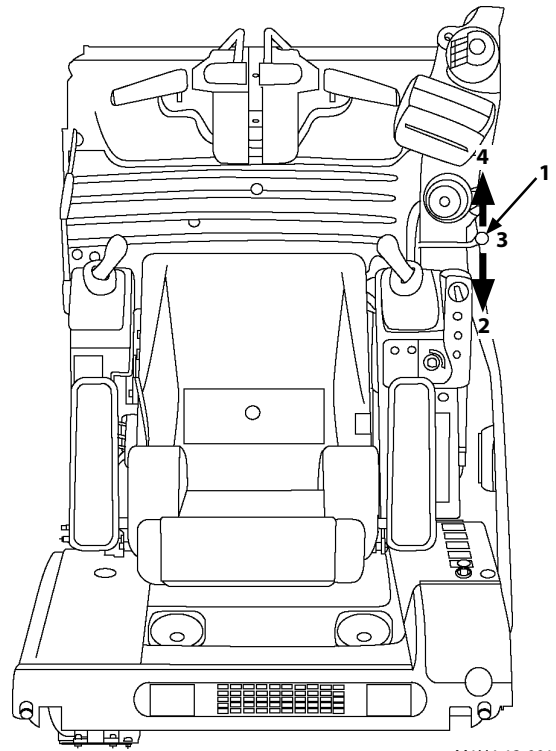
BLADE LEVER

ZX110-3, 130-3

Use blade lever (1) on the operator's right to raise and lower the blade.

When the lever is released, it automatically returns to neutral, keeping the blade in its position until the lever is operated again.

- 1- Blade Lever
- 2- Blade Raise
- 3- Neutral
- 4- Blade Lower



M1U4-13-001

PRECAUTIONS FOR BLADE OPERATION

This blade is designed as a light service attachment for the hydraulic excavator. Please keep the following points in mind:

1. This blade is designed to be used for dozing work only. Do not attempt to dig deeply with the blade. Doing so will damage not only the blade but the undercarriage as well.
2. Do not apply intensive or uneven loads. Never apply high-speed impact to the blade by running the machine into a load.
3. Jacking up the machine with this blade, the surface beneath the blade comes under high pressure, increasing the risk of surface collapse. Always be sure that the surface is strong enough to support the weight of the machine during operation. Avoid dangerously uneven distribution of weight on the blade by maintaining even contact between the blade and the ground.
4. Never use this blade as an outrigger.
5. Avoid contact between the bucket and the blade while digging.

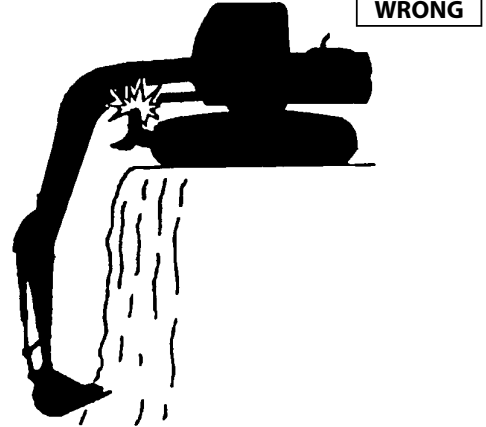


M155-14-008

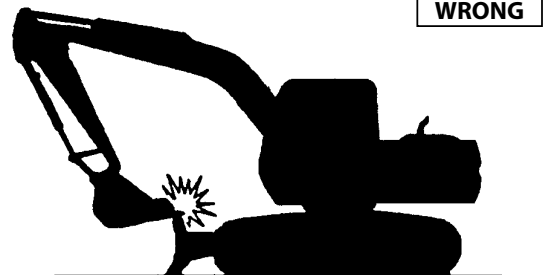
OPTIONAL ATTACHMENTS AND DEVICES

AVOID HITTING BLADE WITH FRONT-END ATTACHMENT

When operating the machine with the blade positioned towards the front, the bucket or boom cylinder may come into contact with the blade if you are not careful. Be sure to prevent this from happening.



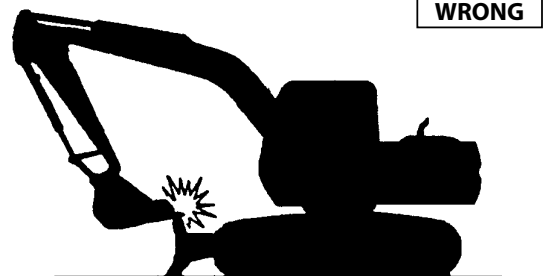
M155-14-009



M155-14-010

AVOID HITTING BLADE WITH BUCKET

When crowding the arm into a traveling or transporting position, be careful not to let the bucket hit the blade.



M155-14-010

AVOID STRIKING THE BLADE INTO A ROCK

Do not attempt to strike large rocks with the blade, as doing so will damage the blade and the blade cylinders, shortening their operating lives.



M155-14-011

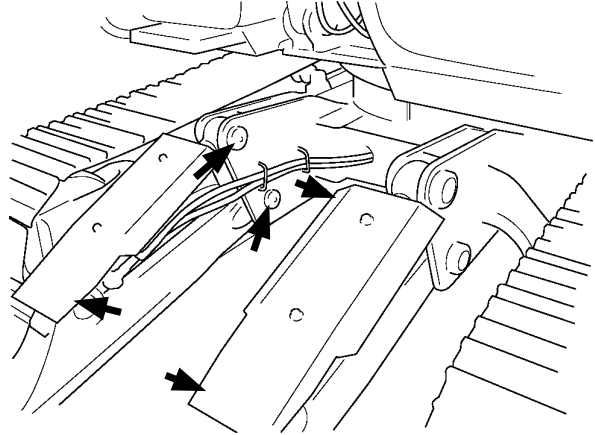
OPTIONAL ATTACHMENTS AND DEVICES

BLADE MAINTENANCE

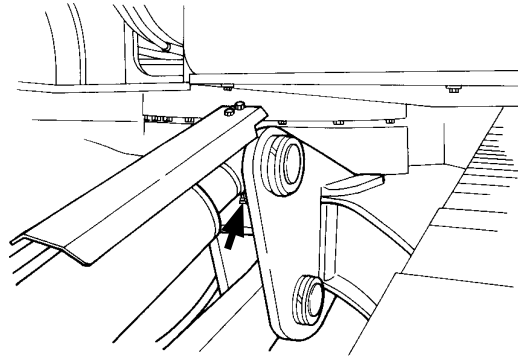
Greasing --- every 250 hours

Lubricate all fittings shown in the figure.

- Blade Joint Pins (4 points)
- Blade Cylinder Rod (2 points)
- Blade Cylinder Bottom (2 points)



M175-13-002



M198-07-017

Transportation Figure for Machine Equipped with Blade

When transporting the machine equipped with a blade and a long arm front attachment on a trailer, place the blade in the opposite position toward the front attachment. Otherwise, the bucket may come in contact with the blade.

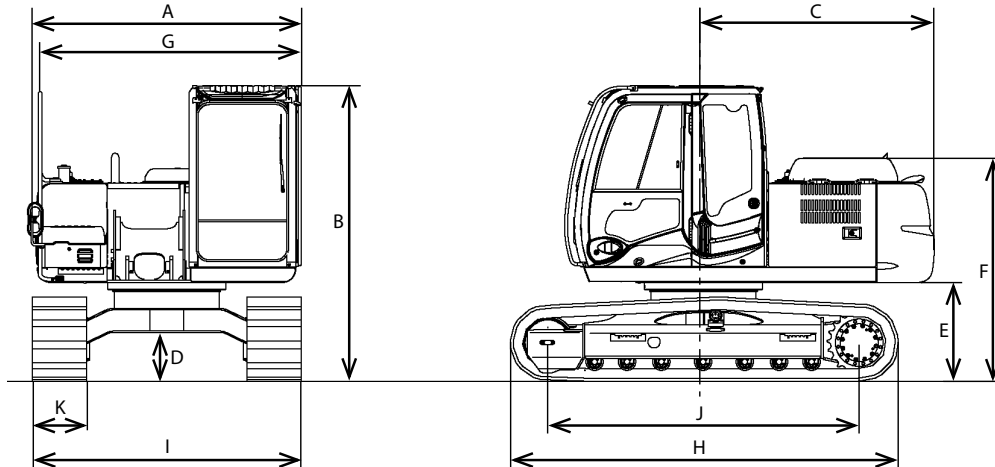


M175-13-005

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX110-3 with Blade



M1U1-12-001

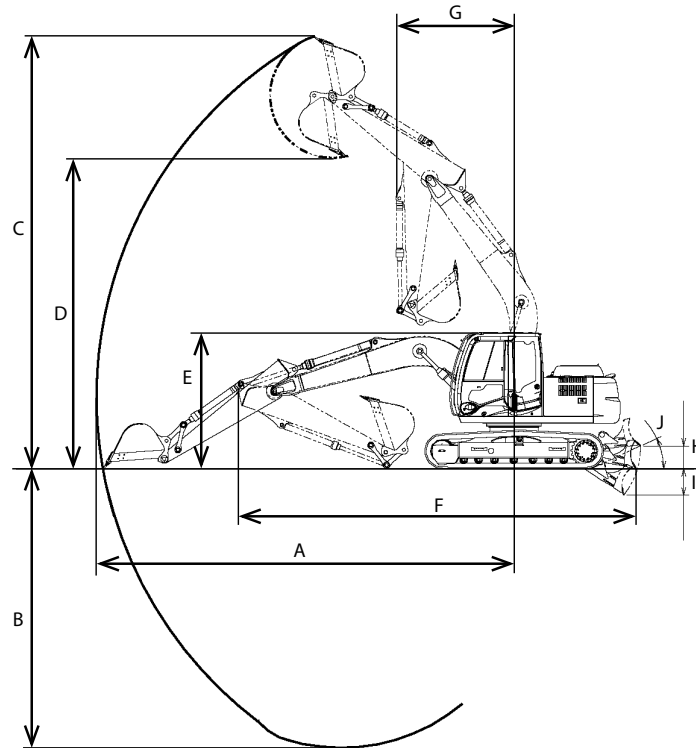
Model	ZX110-3 with Blade
Type of Front-End Attachment	2.26 m (7 ft 5 in) Arm
Bucket Capacity (Heaped)	PCSA 0.45 m ³ (0.59 yd ³), CECE 0.4 m ³
Operating Weight	12200 kg (26900 lb)
Base Machine Weight	9700 kg (21400 lb)
Engine	ISUZU AJ-4JJ1XYSA-03, 66 kW (90 PS)/1800 min ⁻¹ (rpm) * 69 kW (94 PS)/2000 min ⁻¹ (rpm)
A : Overall Width (Excluding Rearview Mirrors)	2490 mm (8 ft 2 in)
B : Cab Height	2740 mm (9 ft 0 in)
C : Rear End Swing Radius	2130 mm (7 ft 0 in)
D : Minimum Ground Clearance	* 440 mm (1 ft 5 in)
E : Counterweight Clearance	* 890 mm (2 ft 11 in)
F : Engine Cover Height	* 2050 mm (6 ft 9 in)
G : Overall Width of Upperstructure	2460 mm (8 ft 1 in)
H : Undercarriage Length	3340 mm (10 ft 11 in)
I : Undercarriage Width	2490 mm (8 ft 2 in)
J : Sprocket Center to Idler Center	2620 mm (8 ft 7 in)
K : Track Shoe Width	500 mm (20 in) (Grouser Shoe)
Ground Pressure	41 kPa (0.42 kgf/cm ² , 6.0 psi)
Swing Speed	13.9 min ⁻¹ (13.9 rpm)
Travel Speed (fast/slow)	5.5/3.6 km/h (3.4/2.2 mph)
Gradeability	35° (tanθ = 0.70)

NOTE: * H/P mode
* The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX110-3 with Blade



M1U1-12-004

Model		ZX110-3 with Blade		
Item	Category			
		1.96 m (6 ft 5 in) Arm	2.26 m (7 ft 5 in) Arm	2.81 m (9 ft 3 in) Arm
A: Maximum Digging Reach	mm (ft·in)	7490 (24' 7")	7760 (25' 6")	8240 (27' 0")
*1 B: Maximum Digging Depth	mm (ft·in)	4780 (15' 8")	5080 (16' 8")	5630 (18' 6")
*1 C: Maximum Cutting Height	mm (ft·in)	7940 (26' 1")	8110 (26' 7")	8360 (27' 5")
*1 D: Maximum Dumping Height	mm (ft·in)	5530 (18' 2")	5700 (18' 8")	5960 (19' 7")
E: Overall Height	mm (ft·in)	2740 (9' 0")	2740 (9' 0")	*2 2740 (9' 0")
F: Overall Length	mm (ft·in)	7280 (23' 11")	7280 (23' 11")	*2 7300 (23' 11")
G: Minimum Swing Radius	mm (ft·in)	2370 (7' 9")	2400 (7' 11")	2660 (8' 9")
H: Max. Raising Height	mm (ft·in)	480 (1' 7")		
I: Max. Digging Depth	mm (ft·in)	510 (1' 8")		
J: Blade Angle	degree	25		

NOTE: *1 The dimensions do not include the height of the shoe lug.

*2 The dimensions asterisked are for transport pin position.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX110-3 with Blade

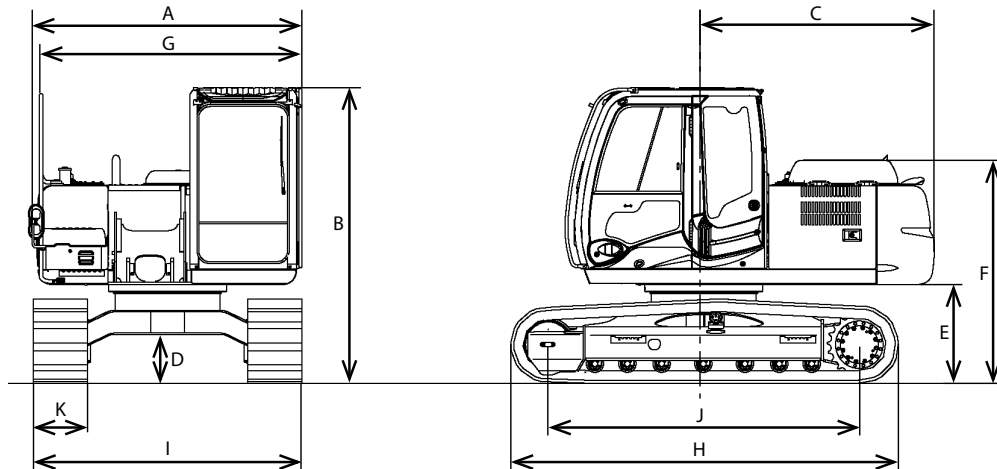
Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	500 mm (20") Pad Crawler Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	12200 (26900)	12400 (27300)	12600 (27800)	12800 (28200)	12000 (26500)
Base Machine Weight	kg (lb)	9700 (21400)	9900 (21800)	10100 (22300)	10300 (22700)	9600 (21200)
Cab Height	mm (ft·in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2750 (9' 0")	2790 (9' 2")
Minimum Ground Clearance	mm (ft·in)	* 440 (17")	* 440 (17")	* 440 (17")	* 470 (19")	490 (19")
Undercarriage Length	mm (ft·in)	3340 (10' 11")	3340 (10' 11")	3340 (10' 11")	3360 (11' 0")	3440 (11' 3")
Undercarriage Width	mm (ft·in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2500 (8' 2")	2690 (8' 10")
Ground Pressure		41 kPa (0.42 kgf/cm ² , 6.0 psi)	35 kPa (0.36 kgf/cm ² , 5.1 psi)	30 kPa (0.31 kgf/cm ² , 4.4 psi)	27 kPa (0.28 kgf/cm ² , 4.0 psi)	40 kPa (0.41 kgf/cm ² , 5.8 psi)

-  NOTE: • The specifications for the front-end attachment are for a 2.26 m (7 ft 5 in) arm with PCSA 0.45 m³ (0.59 yd³) standard bucket.
- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX130-3 with Blade



M1U1-12-001

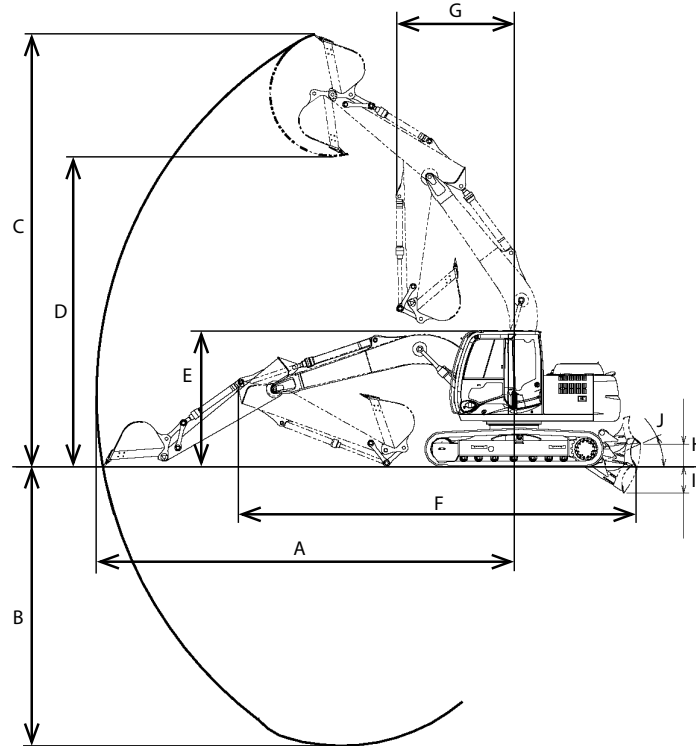
Model	ZX130-3 with Blade
Type of Front-End Attachment	2.52 m (8 ft 3 in) Arm
Bucket Capacity (Heaped)	PCSA 0.50 m ³ (0.65 yd ³), CECE 0.45 m ³
Operating Weight	13600 kg (30000 lb)
Base Machine Weight	10900 kg (24000 lb)
Engine	ISUZU AJ-4JJ1XYSA-03, 66 kW (90 PS)/1800 min ⁻¹ (rpm) * 69 kW (94 PS)/2000 min ⁻¹ (rpm)
A : Overall Width (Excluding Rearview Mirrors)	2490 mm (8 ft 2 in)
B : Cab Height	2740 mm (9 ft 0 in)
C : Rear End Swing Radius	2130 mm (7 ft 0 in)
D : Minimum Ground Clearance	* 440 mm (1 ft 5 in)
E : Counterweight Clearance	* 890 mm (2 ft 11 in)
F : Engine Cover Height	* 2050 mm (6 ft 9 in)
G : Overall Width of Upperstructure	2460 mm (8 ft 1 in)
H : Undercarriage Length	3580 mm (11 ft 9 in)
I : Undercarriage Width	2490 mm (8 ft 2 in)
J : Sprocket Center to Idler Center	2880 mm (9 ft 5 in)
K : Track Shoe Width	500 mm (Grouser Shoe) (20 in)
Ground Pressure	43 kPa (0.44 kgf/cm ² , 6.3 psi)
Swing Speed	13.7 min ⁻¹ (13.7 rpm)
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.1 mph)
Gradeability	35° (tanθ = 0.70)

NOTE: * H/P mode
* The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX130-3 with Blade



M1U1-12-004

Model		ZX130-3 with Blade		
Category		2.10 m (6 ft 11 in) Arm	2.52 m (8 ft 3 in) Arm	3.01 m (9 ft 11 in) Arm
Item				
A: Maximum Digging Reach	mm (ft·in)	7960 (26' 1")	8320 (27' 4")	8790 (28' 10")
*1 B: Maximum Digging Depth	mm (ft·in)	5150 (16' 11")	5570 (18' 3")	6060 (19' 11")
*1 C: Maximum Cutting Height	mm (ft·in)	8370 (27' 6")	8570 (28' 1")	8900 (29' 2")
*1 D: Maximum Dumping Height	mm (ft·in)	5960 (19' 7")	6160 (20' 3")	6490 (21' 4")
E: Overall Height	mm (ft·in)	2740 (9' 0")	2740 (9' 0")	*2 2740 (9' 0")
F: Overall Length	mm (ft·in)	7660 (25' 2")	7660 (25' 2")	*2 7670 (25' 2")
G: Minimum Swing Radius	mm (ft·in)	2370 (7' 9")	2390 (7' 10")	2640 (8' 8")
H: Max. Raising Height	mm (ft·in)	480 (1' 7")		
I: Max. Digging Depth	mm (ft·in)	510 (1' 8")		
J: Blade Angle	degree	25		

NOTE: *1 The dimensions do not include the height of the shoe lug.

*2 The dimensions asterisked are for transport pin position.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX130-3 with Blade

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	13600 (30000)	13800 (30400)	14000 (30900)	14300 (31500)
Base Machine Weight	kg (lb)	10900 (24000)	11100 (24500)	11400 (25100)	11600 (25600)
Cab Height	mm (ft•in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")
Undercarriage Length	mm (ft•in)	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")
Undercarriage Width	mm (ft•in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2790 (8' 2")
Ground Pressure		43 kPa (0.44 kgf/cm ² , 6.3 psi)	36 kPa (0.37 kgf/cm ² , 5.3 psi)	31 kPa (0.32 kgf/cm ² , 4.6 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)

Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	13500 (29800)
Base Machine Weight	kg (lb)	10800 (23800)
Cab Height	mm (ft•in)	2780 (9' 1")
Minimum Ground Clearance	mm (ft•in)	500 (1' 8")
Undercarriage Length	mm (ft•in)	3660 (12' 0")
Undercarriage Width	mm (ft•in)	2490 (8' 2")
Ground Pressure		42 kPa (0.43 kgf/cm ² , 6.1 psi)

-  **NOTE:** • The specifications for the front-end attachment are for a 2.52 m (8 ft 3 in) arm with PCSA 0.50 m³ (0.65 yd³) standard bucket.
- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

OFFSET ARM FRONT

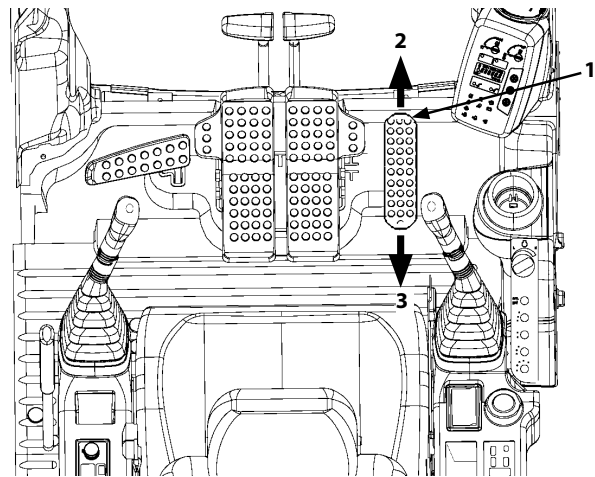
ZX110-3, 110M-3

Offset Control Pedal

Pedal (1) is located at the operator's right foot. When pressed forward, it moves the arm to the right offset position. When pushed backward, it moves the arm to the left offset position.

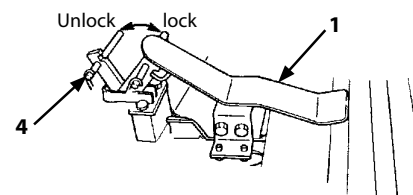
(2) Right Offset Position

(3) Left Offset Position



M178-13-001

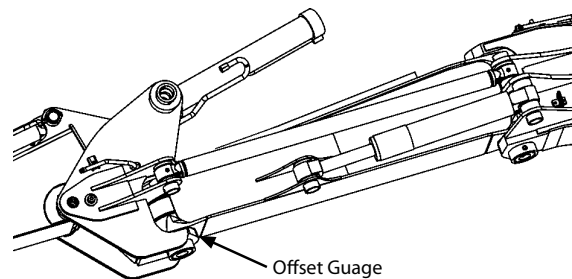
When traveling or using the arm in the center position, fix pedal (1) in the lock position with stopper (4) as illustrated here.



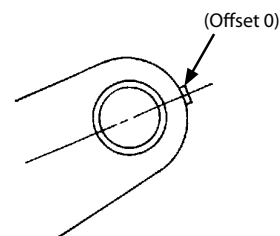
Pedal

M201-05-007

The center position of the arm (offset 0) can be confirmed by consulting the gauge at the top end of the boom.



M175-13-006



M175-13-009

OPTIONAL ATTACHMENTS AND DEVICES

OFFSET DIRECTION AND WORKING RANGE

Right and left offset directions are taken from the point of view of the operator. Accordingly, "left" offset means that the front attachment is moved towards the cab.

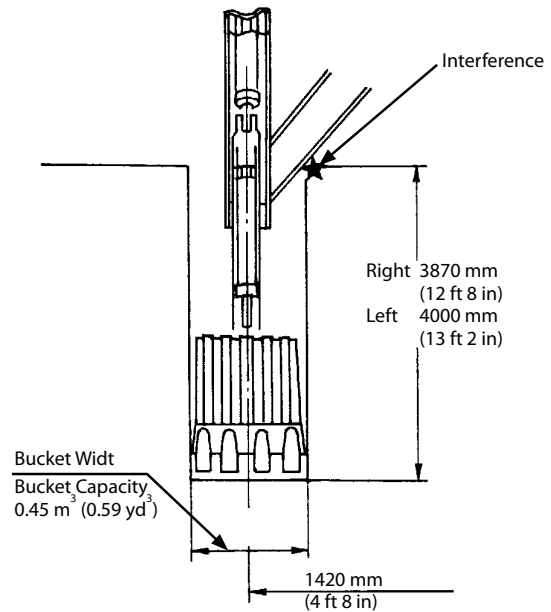
Maximum digging depth with maximum offset distance of 1420 mm (4 ft 8 in) is A due to interference of the boom with the ground surface, as illustrated.

A : 3870 mm (12 ft 8 in) Right
4000 mm (13 ft 2 in) Left

Working Range :

Offset distance can be selected up to a maximum distance of 1420 mm (4 ft 8 in) for both right and left directions.

1. Maximum digging depth with maximum offset distance using 0.45 m³ (0.59 yd³) bucket is as shown in the illustration.
2. Distance L from the end surface of the crawler to the farthest end of the bucket will differ with the width of the bucket and track shoes as shown below.

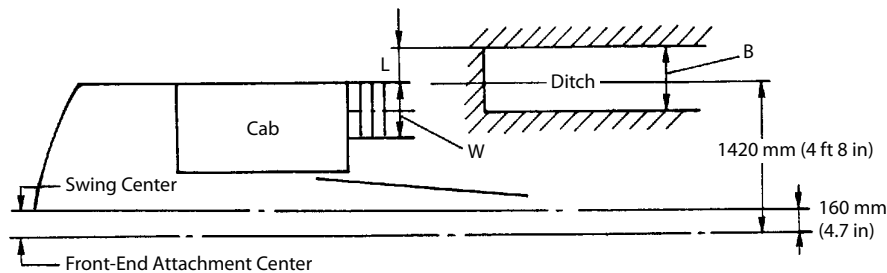


M104-11-006

Dimension L by width of Bucket and Shoe

ZX110-3				ZX110M-3	
Bucket		Shoe Width 500 mm (20 in)		Shoe Width 700 mm (28 in)	
Capacity* m ³ (yd ³)	Width mm (in)	Left Offset mm (in)	Right Offset mm (in)	Left Offset mm (in)	Right Offset mm (in)
0.19 (0.25)	550 (22)	290 (11)	610 (24)	165 (7)	485 (19)
0.30 (0.39)	700 (28)	365 (14)	685 (27)	240 (9)	560 (22)
0.40 (0.52)	800 (31)	415 (16)	735 (29)	290 (11)	610 (24)
0.45 (0.59)	970 (38)	500 (20)	820 (32)	375 (15)	695 (27)

* PCSA Heaped



M104-11-007

OPTIONAL ATTACHMENTS AND DEVICES

PRECAUTIONS FOR OPERATING WITH THE OFFSET FUNCTION



CAUTION: Never jack up the machine with the front in the offset position. This is extremely dangerous, as the machine is unstable.

IMPORTANT:

- Never use a hydraulic breaker when the front is in the offset position, as this will damage the lower and upper booms.
- Do not perform heavy duty work, or dig gravel with the front in the offset position. Do not perform tamping work with a slope-finishing bucket attached. These operation will damage the lower and upper booms.

1. When digging with the front in the offset position, the bucket will come in contact with the track link if the arm is crowded.
Even if bucket does not touch the track link, watch for the bucket digging under the track, as this will cause instability.
2. Be sure to follow the precautions shown below.
 - (1) Do not use the 2.26 m (7' 5") arm and 2.81 m (9' 3") arm as it will interfere with the cab when in the offset position.
 - (2) Do not use the bucket as a pile driver with the boom in the offset position.
 - (3) When digging with the boom in offset position, be careful not to damage the cylinder stay.
3. In order to prevent the offset pins from getting rusty, operate the offset function regularly. Check offset function operation every time before starting work.

OPTIONAL ATTACHMENTS AND DEVICES

MAINTENANCE

Refer to the Greasing Front Joint Pins pages in the MAINTENANCE section.

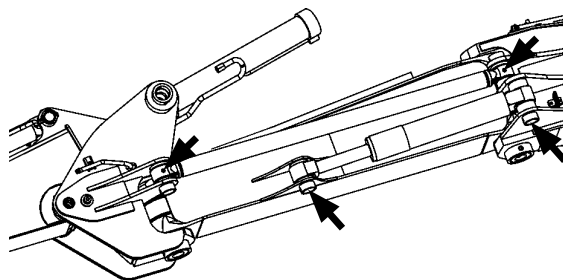
Boom Foot, Boom Cylinder Bottom Side, Arm Cylinder Rod Side, and Bucket Cylinder Bottom Side Pins:
--- every 500 hours

Refer to the Greasing Front Joint Pins pages in the MAINTENANCE section.

Offset Front Attachment Joint Pins
Greasing Fittings Other Than Illustrated:
--- every 250 hours

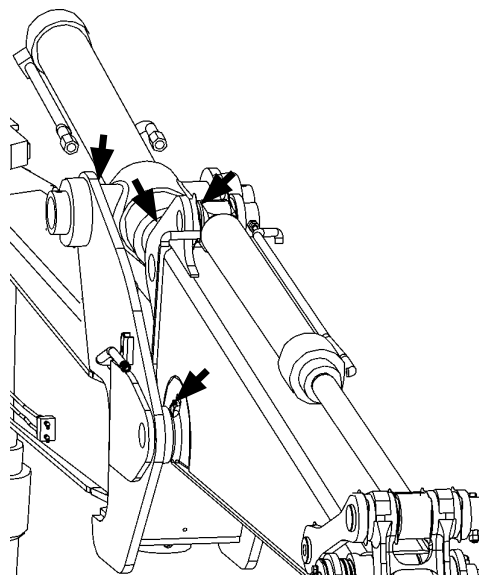
Add greasing to all illustrated grease fittings.

Offset Cylinder Bottom and Rod End Stay
--- every 500 hours



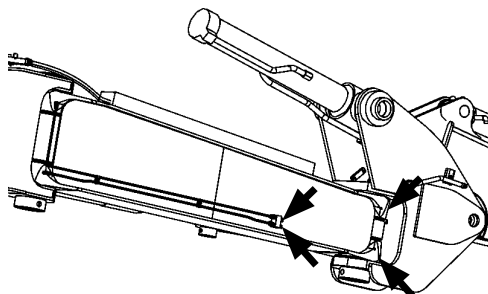
M175-13-006

Arm Cylinder Bottom and Rod End.
Bucket Cylinder Bottom End
Arm Joint Pin
--- every 500 hours



M175-13-007

Lower Boom and Upper Boom Joint Pin.
Upper Boom and Stay Cylinder Joint Pin.
--- every 250 hours

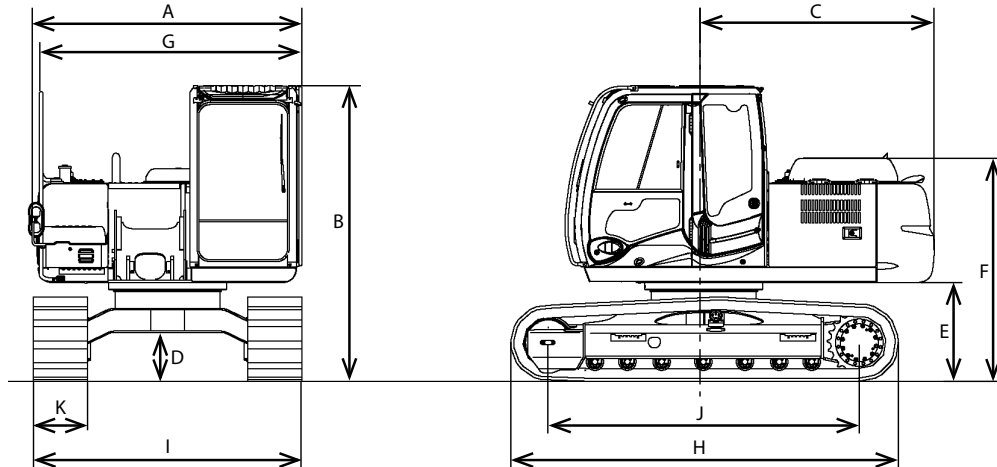


M175-13-008

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX110-3, 110M-3 Offset



M1U1-12-001

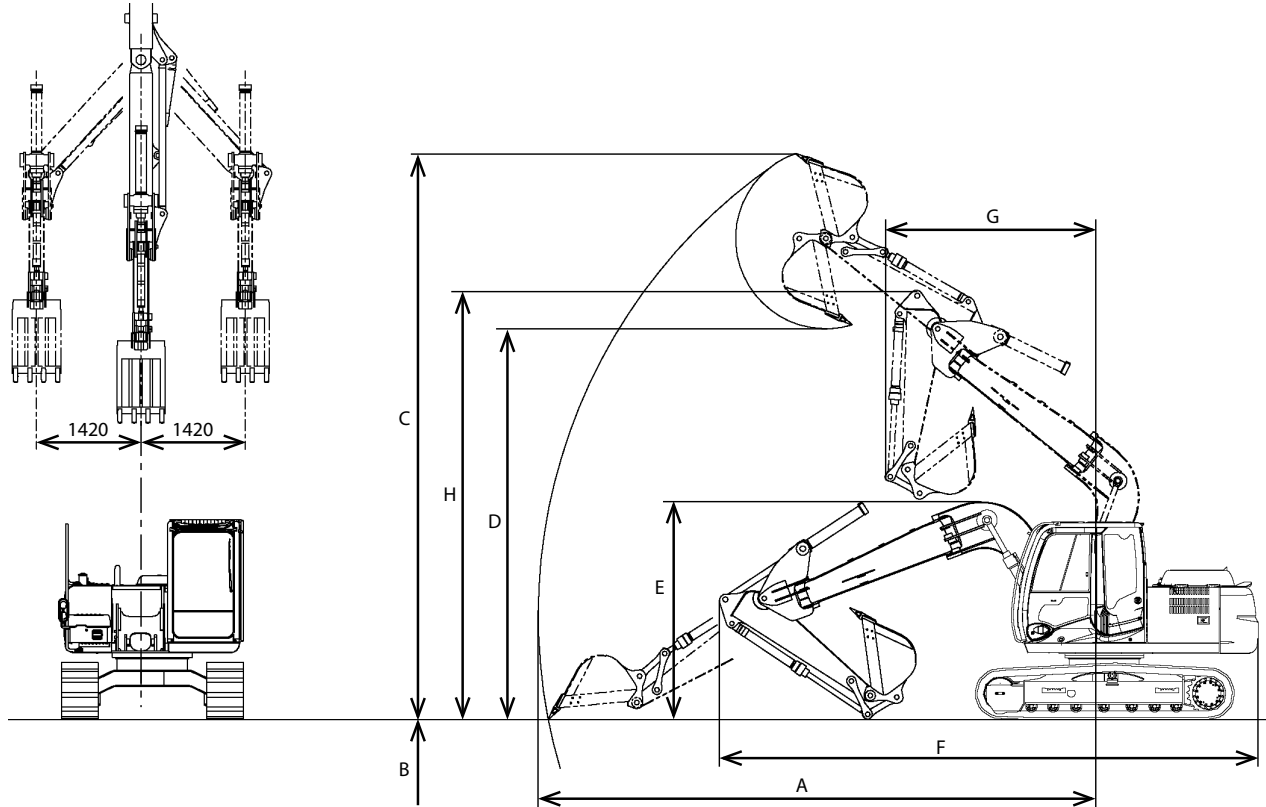
Model	ZX110-3 Offset	ZX110M-3 Offset
Type of Front-End Attachment	1.95 m (6 ft 5 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.45 m ³ (0.59 yd ³), CECE 0.4 m ³	
Operating Weight	11700 kg (25800 lb)	13800 kg (30400 lb)
Base Machine Weight	8600 kg (19000 lb)	10700 kg (23600 lb)
Engine	ISUZU AJ-4JJ1XYSA-03, 66 kW (90 PS)/1800 min ⁻¹ (rpm) * 69 kW (94 PS)/2000 min ⁻¹ (rpm)	
A : Overall Width (Excluding Rearview Mirrors)	2490 mm (8 ft 2 in)	2690 mm (8 ft 10 in)
B : Cab Height	2740 mm (9 ft 0 in)	2950 mm (9 ft 8 in)
C : Rear End Swing Radius	2130 mm (7 ft 0 in)	
D : Minimum Ground Clearance	* 440 mm (1 ft 5 in)	* 595 mm (1 ft 11 in)
E : Counterweight Clearance	* 890 mm (2 ft 11 in)	* 1100 mm (3 ft 7 in)
F : Engine Cover Height	* 2050 mm (6 ft 9 in)	* 2260 mm (7 ft 5 in)
G : Overall Width of Upperstructure	2460 mm (8 ft 1 in)	
H : Undercarriage Length	3340 mm (11 ft 0 in)	3790 mm (12 ft 5 in)
I : Undercarriage Width	2490 mm (8 ft 2 in)	2690 mm (9 ft 0 in)
J : Sprocket Center to Idler Center	2620 mm (8 ft 7 in)	2990 mm (9 ft 10 in)
K : Track Shoe Width	500 mm (Grouser Shoe) (20 in)	700 mm (Grouser Shoe) (28 in)
Ground Pressure	40 kPa (0.41 kgf/cm ² , 5.8 psi)	29 kPa (0.30 kgf/cm ² , 4.3 psi)
Offset Distance	0 to 1420 mm (0 to 4 ft 8 in)	
Swing Speed	13.9 min ⁻¹ (13.9 rpm)	
Travel Speed (fast/slow)	5.5/3.6 km/h (3.4/2.2 mph)	4.2/2.4 km/h (2.6/1.5 mph)
Gradeability	35° (tanθ = 0.70)	

NOTE: * H/P mode
* The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX110-3, 110M-3 Offset



M1U1-12-002

Model		ZX110-3 Offset		ZX110M-3 Offset	
Item	Category	Off-Set Distance	Max. Off-Set Distance	Off-Set Distance	Max. Off-Set Distance
		(0 mm) (0")	(1420 mm) (4' 8")	(0 mm) (0")	(1420 mm) (4' 8")
A: Maximum Digging Reach	mm (ft·in)	7670 (25' 2")	7140 (23' 5")	7670 (25' 2")	7140 (23' 5")
*1 B: Maximum Digging Depth	mm (ft·in)	5340 (17' 6")	4800 (15' 9")	5140 (16' 10")	4600 (15' 1")
*1 C: Maximum Cutting Height	mm (ft·in)	7720 (25' 4")	7370 (24' 2")	7920 (26' 0")	7570 (24' 10")
*1 D: Maximum Dumping Height	mm (ft·in)	5330 (17' 6")	4980 (16' 4")	5530 (18' 2")	5180 (17' 0")
E: Overall Height	mm (ft·in)	3050 (10' 0")	2910 (9' 7")	3140 (10' 4")	2980 (9' 9")
F: Overall Length	mm (ft·in)	7320 (24' 0")	6830 (22' 5")	7320 (24' 0")	6830 (22' 5")
G: Minimum Swing Radius	mm (ft·in)	2940 (9' 8")	2500 (8' 2")	2940 (9' 8")	2500 (8' 2")
H: Front-End Attachment Height at Min. Swing Radius	mm (ft·in)	5850 (19' 2")	5510 (18' 1")	6050 (19' 10")	5710 (18' 9")

NOTE: *1 The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

BUCKET TEETH (Transverse-Type-Pin-Used Type)

ZX200-3, 270-3, 330-3 Class

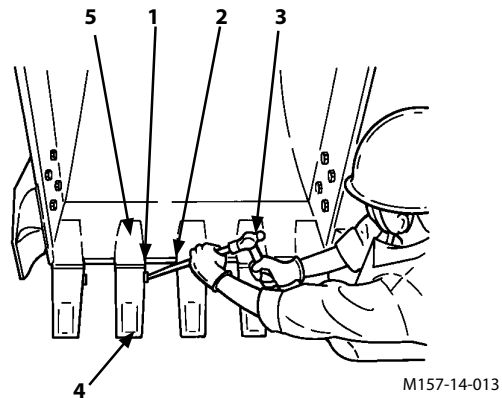
Replacement Procedure

⚠ CAUTION: Guard against injury from flying pieces of metal. Wear goggles or safety glasses.

1. Securely lower the bucket to the ground.
2. Use hammer (3) and drift (2) to drive out transverse-type locking pin (1) to remove tooth (4).

🔧 NOTE: Be sure to use a drift (2) thinner than pin (1).

3. Clean shank (5) surface. Attach a new tooth (4) onto shank (5). Insert pin (1) as deep as it goes. Then, drive pin (1) using hammer (3) and drift (2) to securely lock tooth (4).



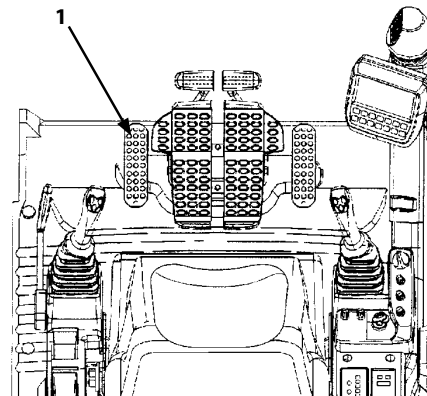
OPTIONAL ATTACHMENTS AND DEVICES

2-PIECE BOOM

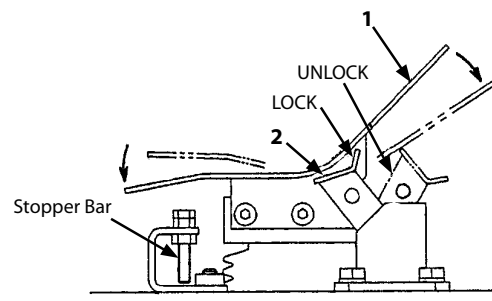
2-piece boom operation

The 2-piece boom can be operated using attachment pedal (1) located on the left front of the seat, as illustrated.

CAUTION: Be sure to lock attachment pedal (1) with pedal lock (2) when attachment pedal (1) is not in use. Do not step on attachment pedal (1).

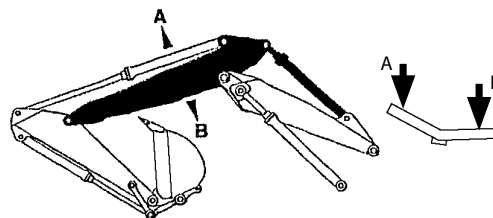


M1V1-13-001



M1G6-05-011

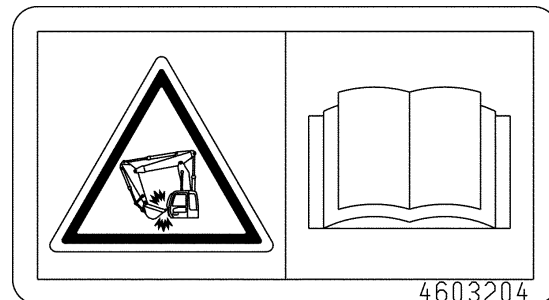
A: Raise
B: Lower



M1G6-05-018

Precautions for operating 2-piece boom.

WARNING: When operating with 2-piece boom, the bucket may come in contact with the cab. Operate the machine with care not to allow the tip of bucket to hit the cab while rolling in the front attachment.



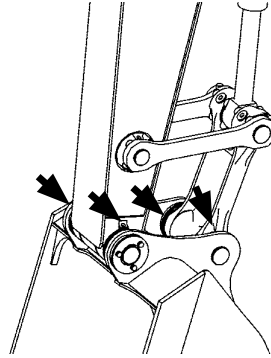
SS4603204

OPTIONAL ATTACHMENTS AND DEVICES

MAINTENANCE (2-PIECE BOOM)

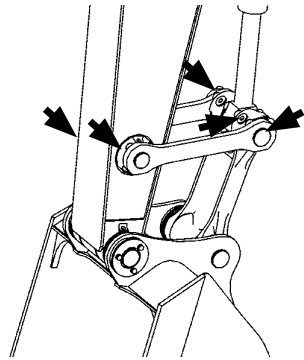
Front Joint Pins

Bucket --- every 250 hours



M178-07-007

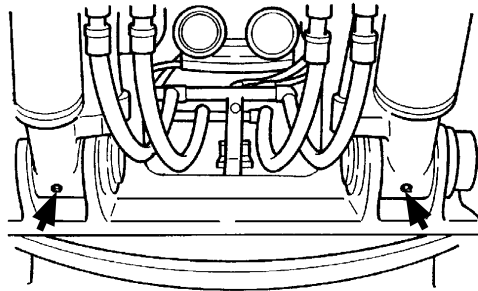
Link Pins --- every 500 hours



M178-07-007

Other --- every 500 hours

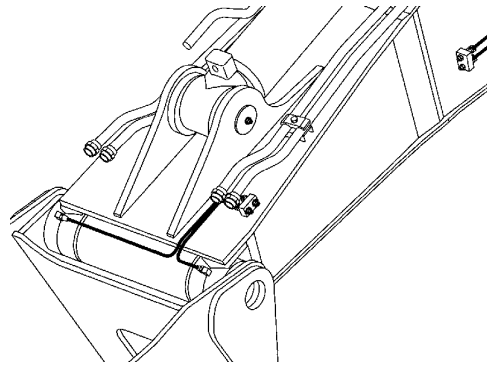
- Boom Cylinder Bottom



M157-07-156

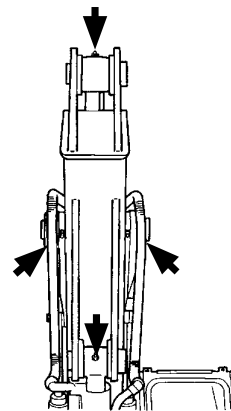
OPTIONAL ATTACHMENTS AND DEVICES

- Boom Foot



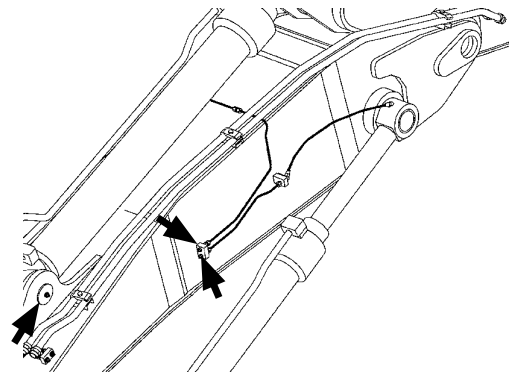
M1G6-13-005

- Boom and Arm Joint Pins, Arm Cylinder Rod Pin and Bucket Cylinder Bottom Pin.



M157-07-175

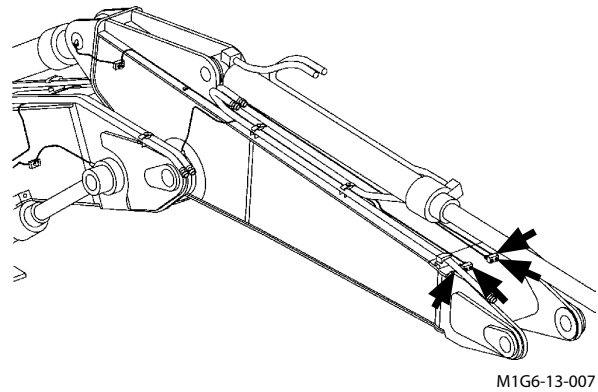
- Boom Cylinder Rod Pins and Positioning Cylinder Bottom Pin.



M1G6-13-006

OPTIONAL ATTACHMENTS AND DEVICES

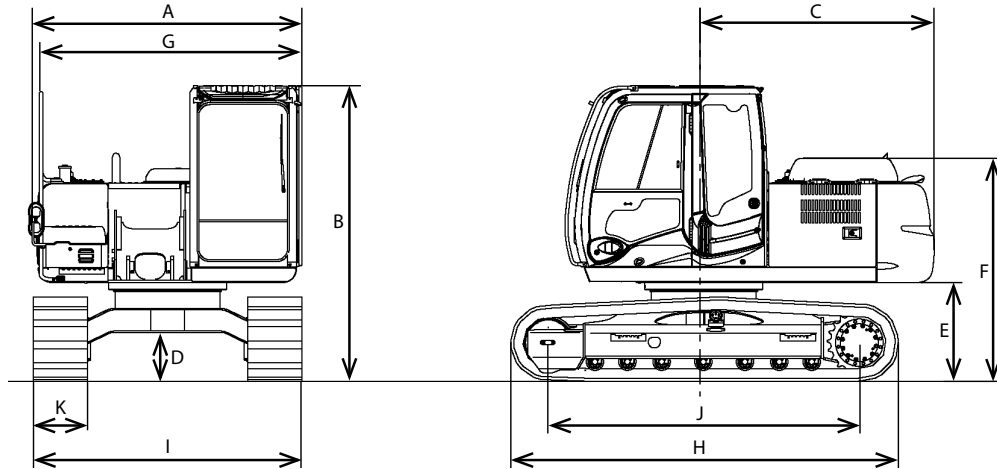
- Bottom Boom and Upper Boom Joint Pin, Positioning Cylinder Rod Pin and Arm Cylinder Bottom Pin.



OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX130-3, 130LCN-3 2-piece Boom



M1U1-12-001

Model	ZX130-3 2-piece Boom	ZX130LCN-3 2-piece Boom
Type of Front-End Attachment	2.10 m (6 ft 11 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.50 m ³ (0.65 yd ³), CECE 0.45 m ³	
Operating Weight	12900 kg (28400 lb)	13100 kg (28900 lb)
Base Machine Weight	9900 kg (21600 lb)	10000 kg (22100 lb)
Engine	ISUZU AJ-4JJ1XYSA-03, 66 kW (90 PS)/1800 min ⁻¹ (rpm) * 69 kW (94 PS)/2000 min ⁻¹ (rpm)	
A: Overall Width (Excluding back mirrors)	2490 mm (8 ft 2 in)	
B: Cab Height	2740 mm (9 ft 0 in)	
C: Rear End Swing Radius	2130 mm (7 ft 0 in)	
D: Minimum Ground Clearance	*440 mm (1 ft 5 in)	
E: Counterweight Clearance	* 890 mm (2 ft 11 in)	
F: Engine Cover Height	* 2050 mm (6 ft 9 in)	
G: Overall Width of Upperstructure	2460 mm (8 ft 1 in)	
H: Undercarriage Length	3580 mm (11 ft 9 in)	3750 mm (12 ft 4 in)
I: Undercarriage Width	2490 mm (8 ft 2 in)	
J: Sprocket Center to Idler Center	2880 mm (9 ft 5 in)	3050 mm (10 ft 0 in)
K: Track Shoe Width	500 mm (20 in) (Grouser Shoe)	
Ground Pressure	40 kPa (0.41 kgf/cm ²) (5.8 psi)	39 kPa (0.40 kgf/cm ²) (5.7 psi)
Swing Speed	13.7 min ⁻¹ (13.7 rpm)	
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.1 mph)	
Gradeability	35° (tanθ = 0.70)	



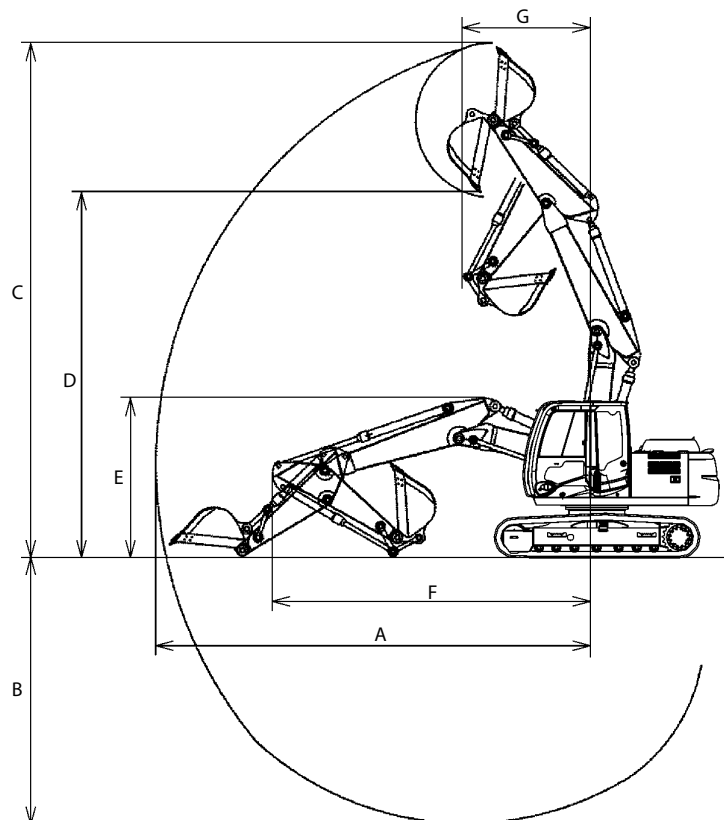
NOTE: * H/P mode

* The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX130-3, 130LCN-3 2-piece Boom



M1U1-12-006

Item	Category		2.10 m (6 ft 11 in) Arm	2.52 m (8 ft 3 in) Arm	3.01 m (9 ft 11 in) Arm
			Backhoe	Backhoe	Backhoe
A: Maximum Digging Reach	mm (ft·in)		7950 (26' 1")	8320 (27' 4")	8800 (28' 11")
*1 B: Maximum Digging Depth	mm (ft·in)		4940 (16' 3")	5340 (17' 6")	5830 (19' 2")
*1 C: Maximum Cutting Height	mm (ft·in)		9070 (29' 9")	9390 (30' 10")	9820 (32' 3")
*1 D: Maximum Dumping Height	mm (ft·in)		6610 (21' 8")	6930 (22' 9")	7360 (24' 2")
E: Overall Height	mm (ft·in)		2740 (9' 0")	2740 (9' 0")	*2 2740 (9' 0")
F: Overall Length	mm (ft·in)		7610 (25' 0")	7590 (24' 11")	7590 (24' 11")
G: Minimum Swing Radius	mm (ft·in)		1750 (5' 9")	1820 (6' 0")	2000 (6' 7")

NOTE: *1 The dimensions do not include the height of the shoe lug.

*2 The dimensions asterisked are for transport pin position.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX130-3 2-piece Boom

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	12900 (28400)	13100 (28900)	13300 (29300)	13600 (30000)
Base Machine Weight	kg (lb)	9900 (21600)	10100 (22300)	10300 (22700)	10500 (23200)
Cab Height	mm (ft•in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")
Undercarriage Length	mm (ft•in)	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")	3580 (11' 9")
Undercarriage Width	mm (ft•in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2790 (8' 2")
Ground Pressure		40 kPa (0.41 kgf/cm ² , 5.8 psi)	34 kPa (0.35 kgf/cm ² , 5.0 psi)	29 kPa (0.30 kgf/cm ² , 4.3 psi)	26 kPa (0.27 kgf/cm ² , 3.8 psi)

Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	12800 (28200)
Base Machine Weight	kg (lb)	9700 (21800)
Cab Height	mm (ft•in)	2780 (9' 1")
Minimum Ground Clearance	mm (ft•in)	500 (1' 8")
Undercarriage Length	mm (ft•in)	3660 (12' 0")
Undercarriage Width	mm (ft•in)	2490 (8' 2")
Ground Pressure		40 kPa (0.41 kgf/cm ² , 5.8 psi)

-  **NOTE:** • The specifications for the front-end attachment are for a 2.10 m (6 ft 11 in) arm with PCSA 0.50 m³ (0.65 yd³) standard bucket.
- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX130LCN-3 2-piece Boom (without Blade)

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	13100 (28900)	13300 (29300)	13500 (29800)	13700 (30200)
Base Machine Weight	kg (lb)	10000 (22100)	10200 (22700)	10400 (23200)	10700 (23600)
Cab Height	mm (ft•in)	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")	2740 (9' 0")
Minimum Ground Clearance	mm (ft•in)	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")	* 440 (1' 5")
Undercarriage Length	mm (ft•in)	3750 (12' 4")	3750 (12' 4")	3750 (12' 4")	3750 (12' 4")
Undercarriage Width	mm (ft•in)	2490 (8' 2")	2590 (8' 6")	2690 (8' 10")	2790 (8' 2")
Ground Pressure		39 kPa (0.40 kgf/cm ² , 5.7 psi)	33 kPa (0.34 kgf/cm ² , 4.8 psi)	28 kPa (0.29 kgf/cm ² , 4.1 psi)	25 kPa (0.25 kgf/cm ² , 3.6 psi)

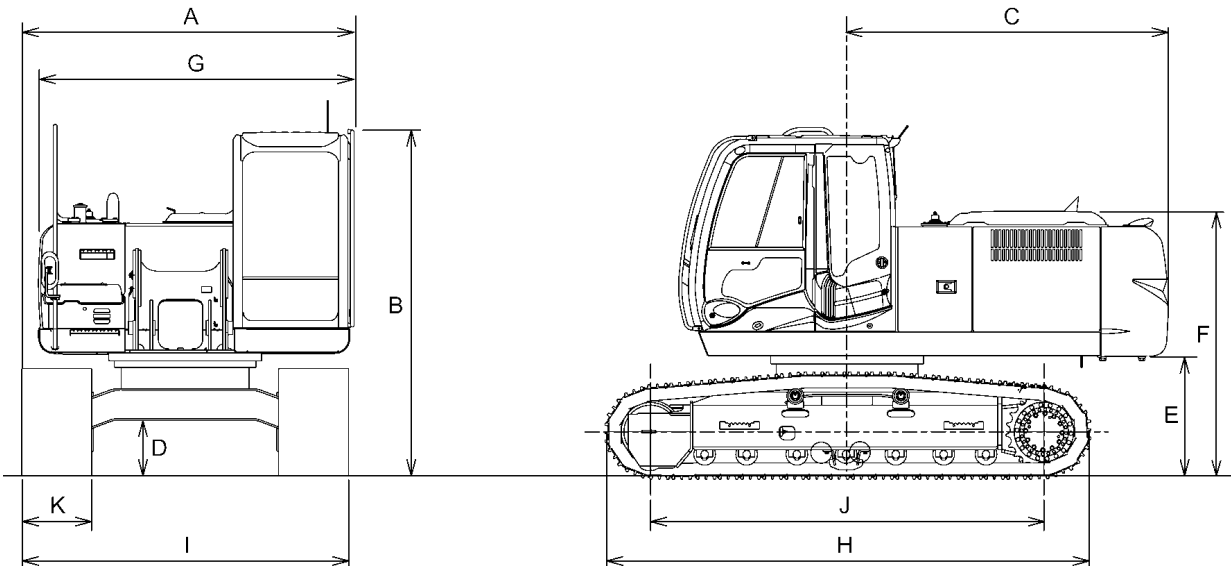
Shoe Width		500 mm (20") Pad Crawler Shoe
Application		For Paved Road (Option)
Operating Weight	kg (lb)	12900 (28400)
Base Machine Weight	kg (lb)	9900 (22300)
Cab Height	mm (ft•in)	2780 (9' 1")
Minimum Ground Clearance	mm (ft•in)	500 (1' 8")
Undercarriage Length	mm (ft•in)	3830 (12' 7")
Undercarriage Width	mm (ft•in)	2490 (8' 2")
Ground Pressure		38 kPa (0.39 kgf/cm ² , 5.5 psi)

-  **NOTE:** • The specifications for the front-end attachment are for a 2.10 m (6 ft 11 in) arm with PCSA 0.50 m³ (0.65 yd³) standard bucket.
- 600 mm (24 in), 700 mm (28 in), 800 mm (31 in) grouser shoe and 500 mm (20 in) pad crawler shoe should not be used on gravel or rocky ground.
 - * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX210-3, 210LC-3 2-piece Boom



T1V1-01-01-006

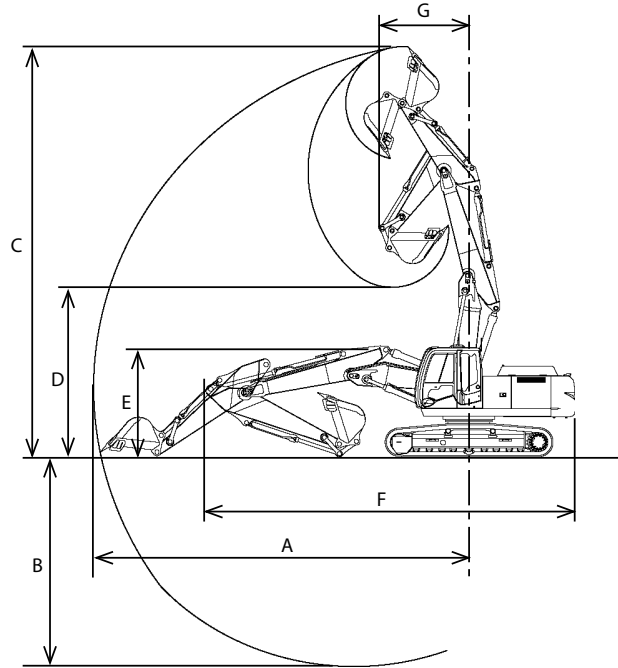
Model	ZX210-3 2-piece Boom	ZX210LC-3 2-piece Boom
Type of Front-End Attachment	2.91 m (9 ft 7 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.80 m ³ (1.05 yd ³), CECE 0.7 m ³	
Operating Weight	20900 kg (46100 lb)	21500 kg (47400 lb)
Base Machine Weight	15900 kg (35100 lb)	16500 kg (36400 lb)
Engine	Isuzu AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	2860 mm (9 ft 5 in)	2990 mm (9 ft 10 in)
B: Cab Height	2950 mm (9 ft 8 in)	
C: Rear End Swing Radius	2750 mm (9 ft 0 in)	
D: Minimum Ground Clearance	*450 mm (18 in)	
E: Counterweight Clearance	* 1030 mm (3 ft 5 in)	
F: Engine Cover Height	* 2270 mm (7 ft 5 in)	
G: Overall Width of Upperstructure	2710 mm (8 ft 11 in)	
H: Undercarriage Length	4170 mm (13 ft 8 in)	4470 mm (14 ft 8 in)
I: Undercarriage Width	2800 mm (9 ft 2 in)	2990 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	3370 mm (11 ft 1 in)	3660 mm (12 ft 0 in)
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	47 kPa (0.48 kgf/cm ² , 6.8 psi)	44 kPa (0.45 kgf/cm ² , 6.4 psi)
Swing Speed	13.3 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.5 km/h (3.4/2.2 mph)	
Gradeability	35° (tanθ = 0.70)	

 NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX210-3, 210LC-3 2-piece Boom



Backhoe

M1V1-13-003

Item	Category	2.03 m (6 ft 8 in) Arm		2.42 m (7 ft 11 in) Arm		2.91 m (9 ft 7 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft·in	mm	ft·in	mm	ft·in
A: Maximum Digging Reach		9210	30'3"	9430	30'11"	9930	32'7"
*B: Maximum Digging Depth		*5420	*17'9"	*5720	*18'9"	*6230	*20'5"
*C: Maximum Cutting Height		*10590	*34'9"	*10640	*34'11"	*11080	*36'4"
*D: Maximum Dumping Height		*7670	*25'2"	*7700	*25'3"	*8150	*26'9"
E: Overall Height		3020	9'11"	3060	10'0"	3010	9'11"
F: Overall Length		9650	31'8"	9620	31'7"	9560	31'4"
G: Minimum Swing Radius		2630	8'8"	2630	8'8"	2320	7'7"

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX210-3 2-piece Boom

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	20900 (46100)	21300 (47000)	21600 (47600)	22200 (48900)
Base Machine Weight	kg (lb)	15900 (35100)	16300 (35900)	16600 (36600)	17000 (37500)
Cab Height	mm (ft·in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft·in)	* 450 (18")	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft·in)	4170 (13'8")	4170 (13'8")	4170 (13'8")	4170 (13'8")
Undercarriage Width	mm (ft·in)	2800 (9'2")	2900 (9'6")	3000 (9'10")	3100 (10'2")
Ground Pressure		47 kPa (0.48 kgf/cm ² , 6.8 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	36 kPa (0.37 kgf/cm ² , 5.3 psi)	32 kPa (0.33 kgf/cm ² , 4.7 psi)

ZX210LC-3 2-piece Boom

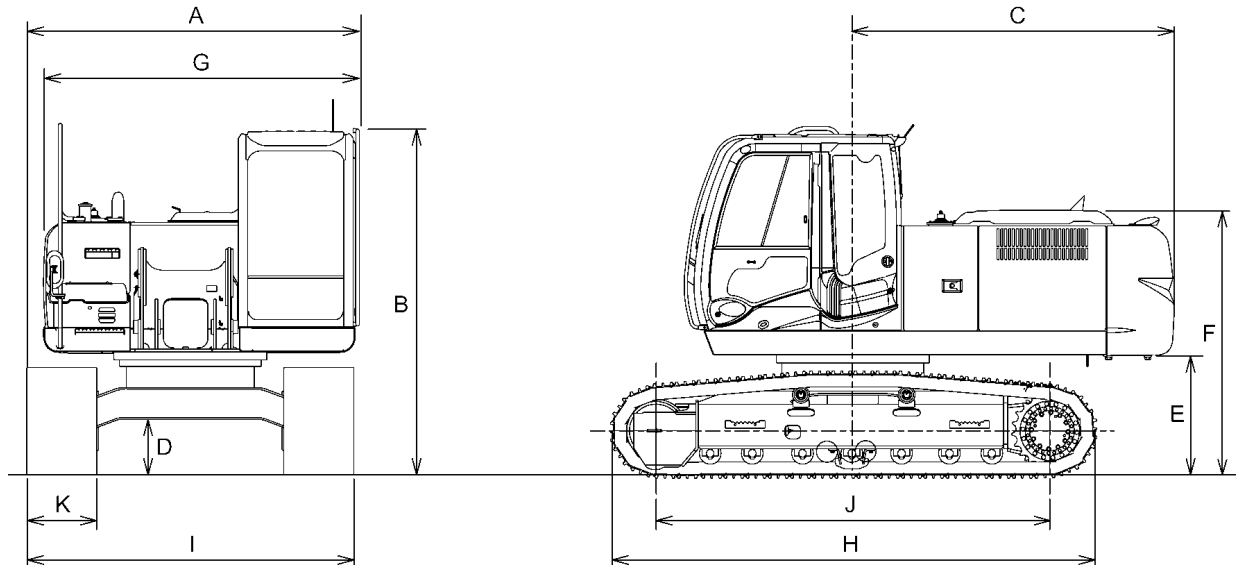
Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	900 mm (35") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	21500 (47400)	21900 (48300)	22100 (48700)	22600 (49800)
Base Machine Weight	kg (lb)	16500 (36400)	16900 (37300)	17100 (37700)	17600 (38800)
Cab Height	mm (ft·in)	2950 (9'8")	2950 (9'8")	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft·in)	* 450 (18")	* 450 (18")	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft·in)	4460 (14'8")	4460 (14'8")	4460 (14'8")	4460 (14'8")
Undercarriage Width	mm (ft·in)	2990 (9'14")	3090 (10'2")	3190 (10'6")	3290 (10'10")
Ground Pressure		44 kPa (0.45 kgf/cm ² , 6.4 psi)	39 kPa (0.40 kgf/cm ² , 5.7 psi)	34 kPa (0.35 kgf/cm ² , 5.0 psi)	31 kPa (0.32 kgf/cm ² , 4.6 psi)

 **NOTE:** • The specifications for the front-end attachment is for 2.91 m (9 ft 7 in) arm with PCSA 0.8 m³ (1.05 yd³) bucket.
• 700, 800 mm (28, 31 in) and 900 mm (35 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX210LCN-3, 240N-3 2-piece Boom



T1V1-01-01-006

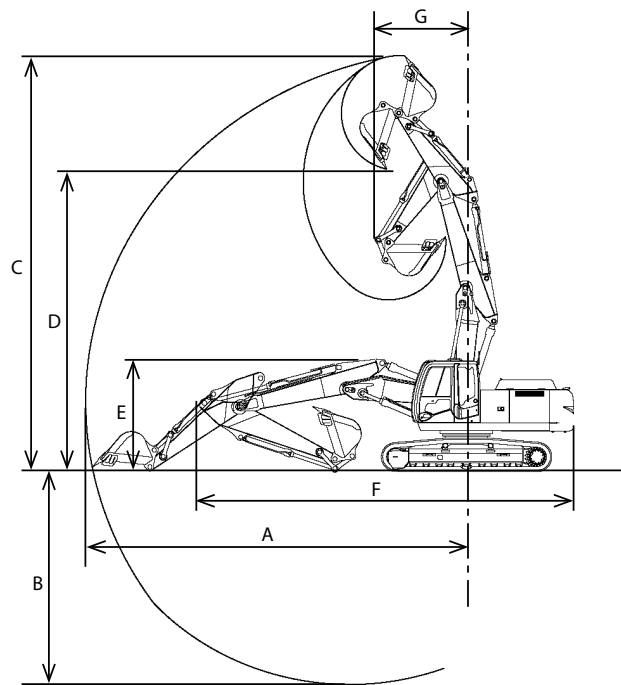
Model	ZX210LCN-3 2-piece Boom	ZX240N-3 2-piece Boom
Type of Front-End Attachment	2.91 m (9 ft 7 in) Arm	
Bucket Capacity (Heaped)	PCSA 0.80 m ³ (1.05 yd ³), CECE 0.7 m ³	
Operating Weight	21700 kg (47800 lb)	23200 kg (51100 lb)
Base Machine Weight	16700 kg (36800 lb)	18200 kg (40100 lb)
Engine	Isuzu AI-4HK1XYSA-02 122 kW/2000 min ⁻¹ (166 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	2500 mm (8 ft 2 in)	
B: Cab Height	2950 mm (9 ft 8 in)	
C: Rear End Swing Radius	2750 mm (9 ft 0 in)	
D: Minimum Ground Clearance	*450 mm (18 in)	
E: Counterweight Clearance	* 1020 mm (3 ft 4 in)	
F: Engine Cover Height	* 2270 mm (7 ft 5 in)	
G: Overall Width of Upperstructure	2480 mm (8 ft 2 in)	
H: Undercarriage Length	4460 mm (14 ft 8 in)	4260 mm (14 ft 0 in)
I: Undercarriage Width	2480 mm (8 ft 2 in)	
J: Sprocket Center to Idler Center	3660 mm (12 ft 0 in)	3460 mm (11 ft 4 in)
K: Track Shoe Width	500 mm (20 in) (Grouser shoe)	550 mm (22 in) (Grouser shoe)
Ground Pressure	54 kPa (0.55 kgf/cm ² , 7.8 psi)	55 kPa (0.56 kgf/cm ² , 8.0 psi)
Swing Speed	13.3 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.5 km/h (3.4/2.2 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX210LCN-3, 240N-3 2-piece Boom



Backhoe

M1V1-13-003

Item	Category	2.03 m (6 ft 8 in) Arm		2.42 m (7 ft 11 in) Arm		2.91 m (9 ft 7 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft·in	mm	ft·in	mm	ft·in
A: Maximum Digging Reach		9280	30'6"	9500	31'2"	10000	32'10"
*B: Maximum Digging Depth		*5420	*17'9"	*5720	*18'9"	*6230	*20'5"
*C: Maximum Cutting Height		*10590	*34'9"	*10640	*34'11"	*11080	*36'4"
*D: Maximum Dumping Height		*7670	*25'2"	*7700	*25'3"	*8150	*26'9"
E: Overall Height		3020	9'11"	3060	10'0"	3010	9'11"
F: Overall Length		9640	31'8"	9620	31'7"	9560	31'4"
G: Minimum Swing Radius		2700	8'10"	2700	8'10"	2390	7'10"

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX210LCN-3 2-piece Boom

Shoe Width		500 mm (20") Grouser Shoe	600 mm (24") Grouser Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)
Operating Weight	kg (lb)	21700 (47800)	21900 (48300)
Base Machine Weight	kg (lb)	16700 (36800)	16800 (37000)
Cab Height	mm (ft•in)	2950 (9'8")	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")	* 450 (18")
Undercarriage Length	mm (ft•in)	4460 (14'8")	4460 (14'8")
Undercarriage Width	mm (ft•in)	2480 (8'2")	2580 (8'6")
Ground Pressure		54 kPa (0.55 kgf/cm ² , 7.8 psi)	45 kPa (0.46 kgf/cm ² , 6.5 psi)

ZX240N-3 2-piece Boom

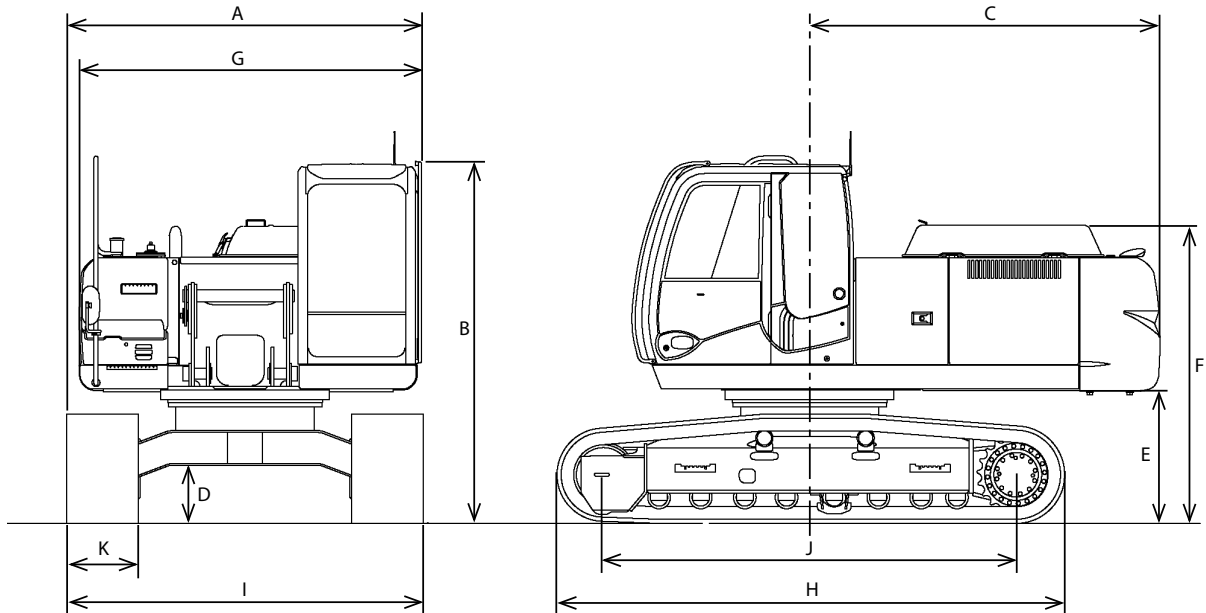
Shoe Width		550 mm (22") Grouser Shoe
Application		For Ordinary Ground (Standard)
Operating Weight	kg (lb)	23200 (51100)
Base Machine Weight	kg (lb)	18200 (40100)
Cab Height	mm (ft•in)	2950 (9'8")
Minimum Ground Clearance	mm (ft•in)	* 450 (18")
Undercarriage Length	mm (ft•in)	4200 (14'0")
Undercarriage Width	mm (ft•in)	2480 (8'2")
Ground Pressure		55 kPa (0.56 kgf/cm ² , 8.0 psi)

-  NOTE: • The specifications for the front-end attachment is for 2.91 m (9 ft 7 in) arm with PCSA 0.8 m³ (1.05 yd³) bucket.
• 600 mm (24 in) grouser shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX250LC-3, 250LCN-3 2-piece Boom



M1V1-12-001

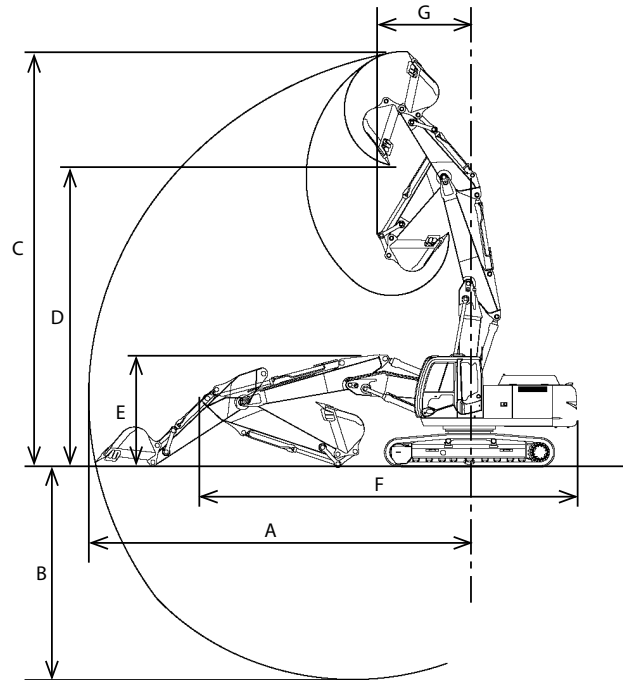
Model	ZX250LC-3 2-piece Boom	ZX250LCN-3 2-piece Boom
Type of Front-End Attachment	2.19 m (9 ft 9 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.0 m ³ (1.3 yd ³), CECE 0.9 m ³	
Operating Weight	25600 kg (56400 lb)	25500 kg (56200 lb)
Base Machine Weight	19600 kg (43200 lb)	19500 kg (43000 lb)
Engine	Isuzu AH-4HK1XYSA-01 132 kW/2000 min ⁻¹ (180 PS/2000 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	2990 mm (9 ft 10 in)
B: Cab Height	3010 mm (9 ft 11 in)	
C: Rear End Swing Radius	2940 mm (9 ft 8 in)	
D: Minimum Ground Clearance	*460 mm (18 in)	
E: Counterweight Clearance	* 1090 mm (3 ft 7 in)	
F: Engine Cover Height	* 2425 mm (8 ft)	
G: Overall Width of Upperstructure	2890 mm (9 ft 6 in)	
H: Undercarriage Length	4640 mm (15 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	2990 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	3845 mm (12 ft 7 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	51 kPa (0.52 kgf/cm ² , 7.4 psi)	
Swing Speed	13.5 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.4 km/h (3.4/2.1 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX250LC-3, 250LCN-3 2-piece Boom



Backhoe

M1V1-13-003

Item	Category	2.19 m (7 ft 2 in) Arm		2.50 m (8 ft 2 in) Arm		2.96 m (9 ft 9 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft·in	mm	ft·in	mm	ft·in
A: Maximum Digging Reach		9770	32'1"	10010	32'10"	10430	34'3"
*B: Maximum Digging Depth		5810	19'1"	6080	19'11"	6530	21'5"
*C: Maximum Cutting Height		11300	37'1"	11470	37'8"	11840	38'10"
*D: Maximum Dumping Height		8210	26'11"	8350	27'5"	8720	28'7"
E: Overall Height		3150	10'4"	3200	10'6"	3090	10'2"
F: Overall Length		10230	33'7"	10250	33'8"	10220	33'6"
G: Minimum Swing Radius		2500	8'2"	2560	8'5"	2310	7'7"

Item	Category	3.61 m (11 ft 10 in) Arm	
		Backhoe	
		mm	ft·in
A: Maximum Digging Reach		11070	36'4"
*B: Maximum Digging Depth		7190	23'7"
*C: Maximum Cutting Height		12420	40'9"
*D: Maximum Dumping Height		9300	30'6"
E: Overall Height		3340	11'0"
F: Overall Length		10190	33'5"
G: Minimum Swing Radius		2610	8'7"

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX250LC-3 2-piece Boom

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe	900 mm (35") Triangular Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	25600 (56400)	25900 (57100)	26200 (57800)	26300 (58000)	27700 (61100)
Base Machine Weight	kg (lb)	19600 (43200)	19900 (43900)	20200 (44500)	20300 (44800)	21700 (47800)
Cab Height	mm (ft·in)	3010 (9'11")	3010 (9'11")	3010 (9'11")	3020 (9'11")	3060 (10'1")
Minimum Ground Clearance	mm (ft·in)	* 460 (18")	* 460 (18")	* 460 (18")	500 (20")	* 460 (18")
Undercarriage Length	mm (ft·in)	4640 (15'3")	4640 (15'3")	4640 (15'3")	4660 (15'4")	4750 (15'7")
Undercarriage Width	mm (ft·in)	3190 (10'6")	3290 (10'10")	3390 (11'1")	3190 (10'6")	3490 (11'5")
Ground Pressure		51 kPa (0.52 kgf/cm ² , 7.4 psi)	44 kPa (0.45 kgf/cm ² , 6.4 psi)	39 kPa (0.40 kgf/cm ² , 5.7 psi)	52 kPa (0.53 kgf/cm ² , 7.5 psi)	36 kPa (0.37 kgf/cm ² , 5.3 psi)

ZX250LCN-3 2-piece Boom

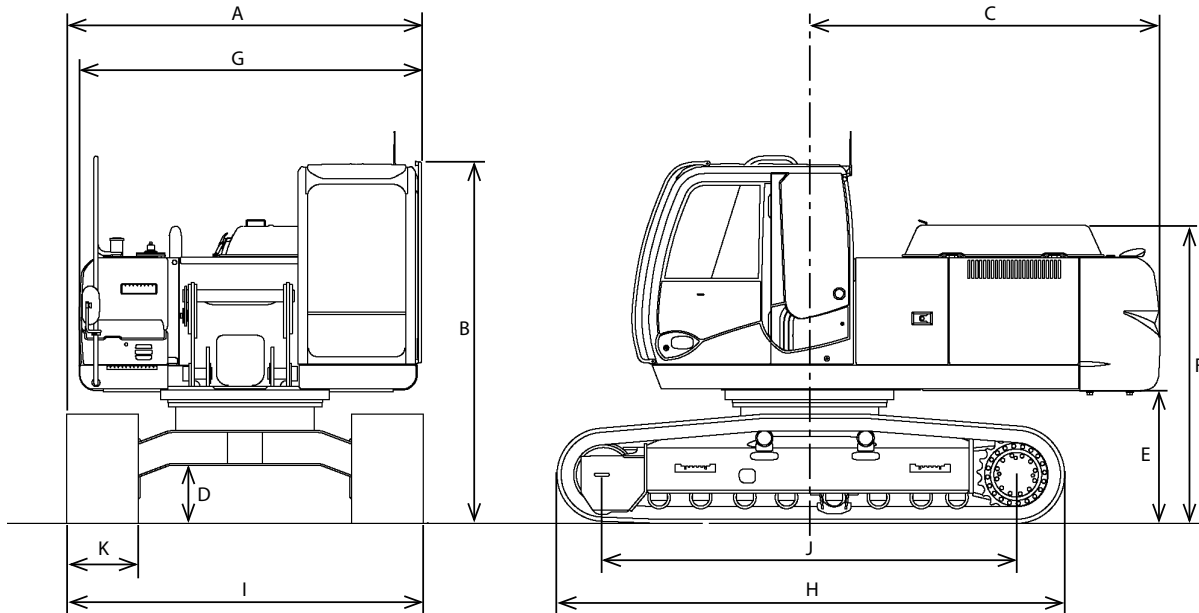
Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe	900 mm (35") Triangular Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)	For Weak Footing (Option)
Operating Weight	kg (lb)	25500 (56200)	25800 (56900)	26100 (57500)	26300 (58000)	27600 (60800)
Base Machine Weight	kg (lb)	19500 (43000)	19800 (43700)	20100 (44300)	20200 (44500)	21600 (47600)
Cab Height	mm (ft·in)	3010 (9'11")	3010 (9'11")	3010 (9'11")	3020 (9'11")	3060 (10'1")
Minimum Ground Clearance	mm (ft·in)	* 460 (18")	* 460 (18")	* 460 (18")	500 (20")	* 460 (18")
Undercarriage Length	mm (ft·in)	4640 (15'3")	4640 (15'3")	4640 (15'3")	4660 (15'4")	4750 (15'7")
Undercarriage Width	mm (ft·in)	2990 (9'10")	3090 (10'2")	3190 (10'6")	2990 (9'10")	3290 (10'10")
Ground Pressure		51 kPa (0.52 kgf/cm ² , 7.4 psi)	44 kPa (0.45 kgf/cm ² , 6.4 psi)	39 kPa (0.40 kgf/cm ² , 5.7 psi)	52 kPa (0.53 kgf/cm ² , 7.5 psi)	36 kPa (0.37 kgf/cm ² , 5.3 psi)

-  **NOTE:** • The specifications for the front-end attachment is for 2.19 m (7 ft 2 in) arm with PCSA 1.0 m³ (1.3 yd³) bucket.
• 700, 800 mm (28, 31 in) grouser shoe, 600 mm (24 in) flat shoe and 900 mm (35 in) triangular shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX280LC-3, 280LCN-3 2-piece Boom



M1V1-12-001

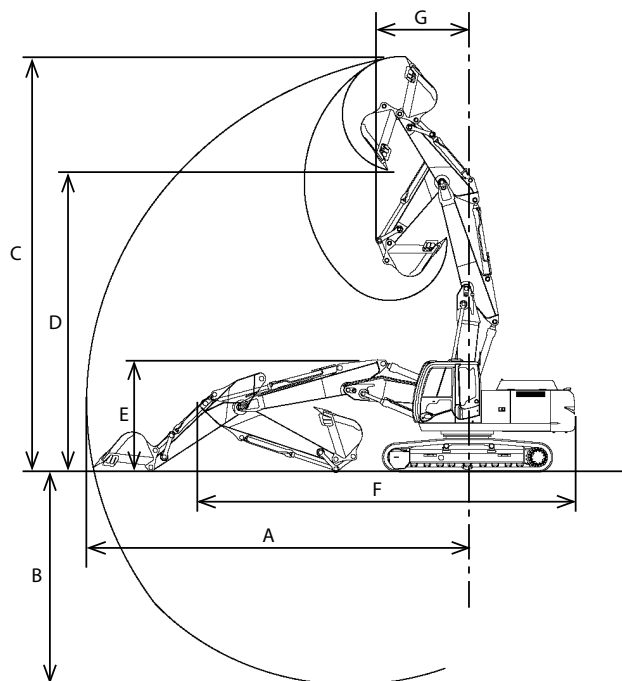
Model	ZX280LC-3 2-piece Boom	ZX280LCN-3 2-piece Boom
Type of Front-End Attachment	3.11 m (10 ft 2 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.1 m ³ (1.44 yd ³), CECE 1.0 m ³	
Operating Weight	28500 kg (62800 lb)	28300 kg (62400 lb)
Base Machine Weight	22400 kg (49400 lb)	22200 kg (48900 lb)
Engine	Isuzu AH-4HK1XSA-03 140 kW/2100 min ⁻¹ (190 PS/2100 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
B: Cab Height	3100 mm (10 ft 2 in)	
C: Rear End Swing Radius	2940 mm (9 ft 8 in)	
D: Minimum Ground Clearance	*510 mm (20 in)	
E: Counterweight Clearance	* 1180 mm (3 ft 10 in)	
F: Engine Cover Height	* 2515 mm (8 ft 3 in)	
G: Overall Width of Upperstructure	2890 mm (9 ft 6 in)	
H: Undercarriage Length	4940 mm (16 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	4052 mm (13 ft 4 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	53 kPa (0.54 kgf/cm ² , 7.7 psi)	
Swing Speed	12.6 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.5/3.3 km/h (3.4/2.0 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX280LC-3, 280LCN-3 2-piece Boom



Backhoe

M1V1-13-003

Item	Category	2.42 m (7 ft 10 in) Arm		3.11 m (10 ft 2 in) Arm		3.76 m (12 ft 4 in) Arm	
		Backhoe		Backhoe		Backhoe	
		mm	ft·in	mm	ft·in	mm	ft·in
A: Maximum Digging Reach		10070	33'1"	10740	35'3"	11330	37'2"
*B: Maximum Digging Depth		6020	19'9"	6690	21'11"	7330	24' 1"
*C: Maximum Cutting Height		11500	37'9"	12080	39'8"	12550	41'2"
*D: Maximum Dumping Height		8390	27'6"	8960	29'5"	9430	30'11"
E: Overall Height		3220	10'7"	3150	10'4"	3380	11'1"
F: Overall Length		10330	33'11"	10300	33'10"	10310	33'10"
G: Minimum Swing Radius		2820	9'3"	2580	8'6"	2740	9'0"

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX280LC-3 2-piece Boom

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	28500 (62800)	29100 (64200)	29400 (64800)	29400 (64800)
Base Machine Weight	kg (lb)	22400 (49400)	23000 (50700)	23300 (51400)	23300 (51400)
Cab Height	mm (ft•in)	3100 (10'2")	3100 (10'2")	3100 (10'2")	3160 (10'4")
Minimum Ground Clearance	mm (ft•in)	* 510 (20")	* 510 (20")	* 510 (20")	550 (22")
Undercarriage Length	mm (ft•in)	4940 (16'3")	4940 (16'3")	4940 (16'3")	4940 (16'3")
Undercarriage Width	mm (ft•in)	3190 (10'6")	3290 (10'10")	3390 (11'1")	3190 (10'6")
Ground Pressure		53 kPa (0.54 kgf/cm ² , 7.7 psi)	47 kPa (0.48 kgf/cm ² , 6.8 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	55 kPa (0.56 kgf/cm ² , 8.0 psi)

ZX280LCN-3 2-piece Boom

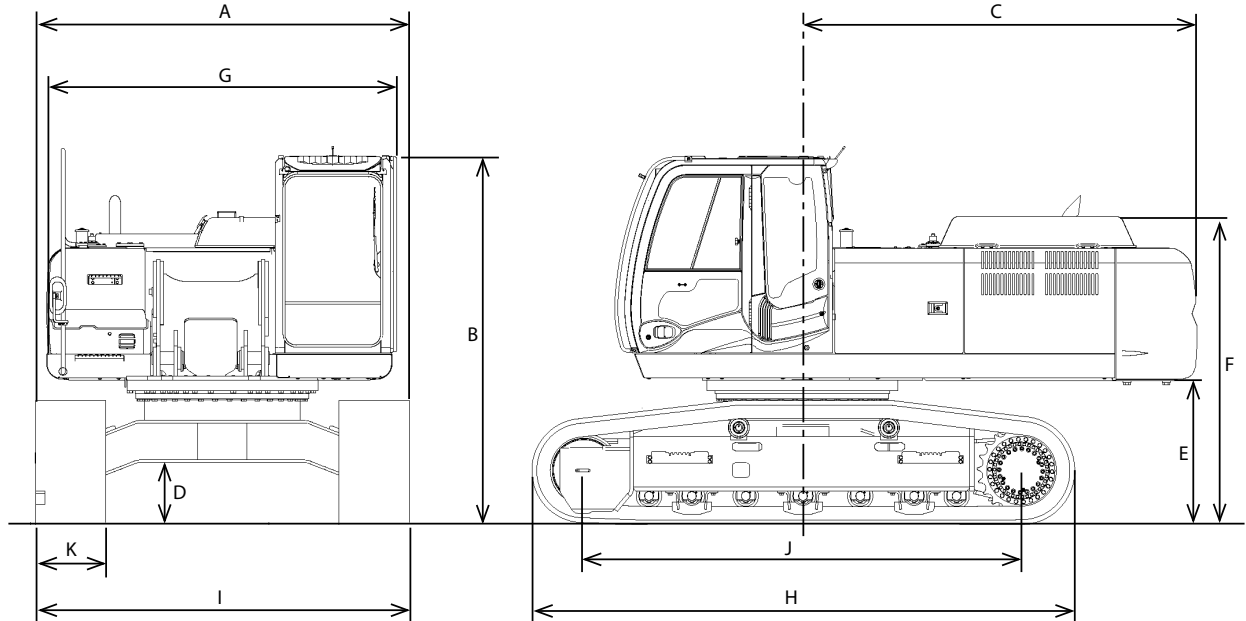
Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	28300 (62400)	28900 (63700)	29300 (64600)	29300 (64400)
Base Machine Weight	kg (lb)	22200 (48900)	22800 (50300)	23200 (51100)	23200 (51100)
Cab Height	mm (ft•in)	3100 (10'2")	3100 (10'2")	3100 (10'2")	3260 (10'8")
Minimum Ground Clearance	mm (ft•in)	* 510 (20")	* 510 (20")	* 510 (20")	550 (21")
Undercarriage Length	mm (ft•in)	4940 (16'3")	4940 (16'3")	4940 (16'3")	4940 (16'4")
Undercarriage Width	mm (ft•in)	3000 (10'6")	3100 (10'10")	3200 (11'1")	3000 (10'6")
Ground Pressure		53 kPa (0.54 kgf/cm ² , 7.7 psi)	46 kPa (0.47 kgf/cm ² , 6.7 psi)	41 kPa (0.42 kgf/cm ² , 6.0 psi)	55 kPa (0.56 kgf/cm ² , 8.0 psi)

 **NOTE:** • The specifications for the front-end attachment is for 2.40 m (7 ft 10 in) arm with PCSA 1.1 m³ (1.44 yd³) bucket.
• 700, 800 mm (28, 31 in) grouser shoe and 600 mm (24 in) flat shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SPECIFICATIONS

ZX350LC-3, 350LCN-3 2-piece Boom



M1V1-12-003

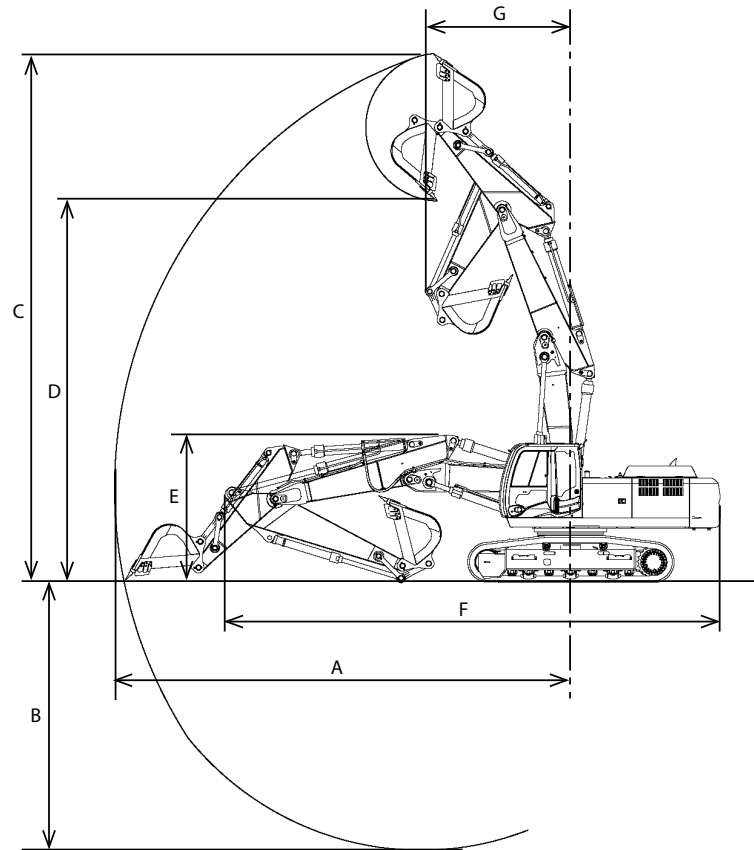
Model	ZX350LC-3 2-piece Boom	ZX350LCN-3 2-piece Boom
Type of Front-End Attachment	3.20 m (10 ft 6 in) Arm	
Bucket Capacity (Heaped)	PCSA 1.4 m ³ (1.83 yd ³), CECE 1.2 m ³ (1.57 yd ³)	
Operating Weight	32900 kg (72500 lb)	32800 kg (72300 lb)
Base Machine Weight	25500 kg (56200 lb)	25400 kg (56000 lb)
Engine	Isuzu AH-6HK1XYSA-01 202 kW/1900 min ⁻¹ (275 PS/1900 rpm)	
A: Overall Width (Excluding back mirrors)	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
B: Cab Height	3140 mm (10 ft 4 in)	
C: Rear End Swing Radius	3390 mm (11 ft 2 in)	
D: Minimum Ground Clearance	*500 mm (20 in)	
E: Counterweight Clearance	* 1160 mm (3 ft 10 in)	
F: Engine Cover Height	* 2590 mm (8 ft 6 in)	
G: Overall Width of Upperstructure	2990 mm (9 ft 10 in)	
H: Undercarriage Length	4940 mm (16 ft 3 in)	
I: Undercarriage Width	3190 mm (10 ft 6 in)	3000 mm (9 ft 10 in)
J: Sprocket Center to Idler Center	4050 mm (13 ft 3 in)	
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	66 kPa (0.67 kgf/cm ² , 9.6 psi)	
Swing Speed	10.7 min ⁻¹ (rpm)	
Travel Speed (fast/slow)	5.0/3.2 km/h (3.1/2.0 mph)	
Gradeability	35° (tanθ = 0.70)	

NOTE: * The dimensions do not include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

WORKING RANGES

ZX350LC-3, 350LCN-3 2-piece Boom



Backhoe

M1V1-13-004

Category	2.33 m (7 ft 8 in) Arm		2.67 m (8 ft 9 in) Arm		3.20 m (10 ft 6 in) Arm		4.00 m (13 ft 1 in) Arm	
	Backhoe		Backhoe		Backhoe		Backhoe	
	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in
A: Maximum Digging Reach	10390	34' 1"	10680	35' 0"	11220	36' 10"	12000	39' 4"
*B: Maximum Digging Depth	6040	19' 10"	6360	20' 10"	6900	22' 8"	7700	25' 3"
*C: Maximum Cutting Height	11870	38' 11"	12060	39' 7"	12550	41' 2"	13210	43' 4"
*D: Maximum Dumping Height	8550	28' 1"	8750	28' 9"	9240	30' 4"	9910	32' 6"
E: Overall Height	3380	11' 1"	3370	11' 1"	3310	10' 10"	3690	12' 1"
F: Overall Length	11150	36' 7"	11110	36' 5"	11070	36' 4"	10020	32' 11"
G: Minimum Swing Radius	3250	10' 8"	3120	10' 3"	2890	9' 6"	3230	10' 7"

NOTE: * The dimensions include the height of the shoe lug.

OPTIONAL ATTACHMENTS AND DEVICES

SHOE TYPES AND APPLICATIONS

ZX350LC-3 2-piece Boom

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	34200 (75400)	34600 (76300)	35000 (77200)	34900 (76900)
Base Machine Weight	kg (lb)	25500 (56200)	25900 (57100)	26200 (57800)	26200 (57800)
Cab Height	mm (ft·in)	3140 (10' 4")	3140 (10' 4")	3140 (10' 4")	3140 (10' 4")
Minimum Ground Clearance	mm (ft·in)	* 500 (20")	* 500 (20")	* 500 (20")	540 (21")
Undercarriage Length	mm (ft·in)	4940 (16' 3")	4950 (16' 3")	4950 (16' 3")	4950 (16' 3")
Undercarriage Width	mm (ft·in)	3190 (10' 6")	3290 (10' 10")	3390 (11' 1")	3190 (10' 6")
Ground Pressure		64 kPa (0.65 kgf/cm ² , 9.2 psi)	56 kPa (0.57 kgf/cm ² , 8.1 psi)	49 kPa (0.5 kgf/cm ² , 7.1 psi)	66 kPa (0.67 kgf/cm ² , 9.5 psi)

ZX350LCN-3 2-piece Boom

Shoe Width		600 mm (24") Grouser Shoe	700 mm (28") Grouser Shoe	800 mm (31") Grouser Shoe	600 mm (24") Flat Shoe
Application		For Ordinary Ground (Standard)	For Weak Footing (Option)	For Weak Footing (Option)	For Paved Road (Option)
Operating Weight	kg (lb)	34200 (75400)	34600 (76300)	34900 (76900)	34900 (76900)
Base Machine Weight	kg (lb)	25400 (56000)	25800 (56900)	26200 (57800)	26100 (57500)
Cab Height	mm (ft·in)	3140 (10' 4")	3140 (10' 4")	3140 (10' 4")	3140 (10' 4")
Minimum Ground Clearance	mm (ft·in)	* 500 (20")	* 500 (20")	* 500 (20")	540 (21")
Undercarriage Length	mm (ft·in)	4940 (16' 3")	4950 (16' 3")	4950 (16' 3")	4950 (16' 3")
Undercarriage Width	mm (ft·in)	3000 (9' 10")	3100 (10' 2")	3200 (10' 6")	3000 (9' 10")
Ground Pressure		64 kPa (0.65 kgf/cm ² , 9.2 psi)	56 kPa (0.57 kgf/cm ² , 8.1 psi)	49 kPa (0.5 kgf/cm ² , 7.1 psi)	66 kPa (0.67 kgf/cm ² , 9.5 psi)

-  NOTE: • The specifications for the front-end attachment are for 2.33 m (7 ft 8 in) arm with PCSA 1.4 m³ (1.83 yd³) bucket.
• 700 mm (28 in) grouser shoe, 800 mm (31 in) grouser shoe and 600 mm (24 in) flat shoe should not be used on gravel or rocky ground.
• * The dimensions do not include the height of the shoe lug.

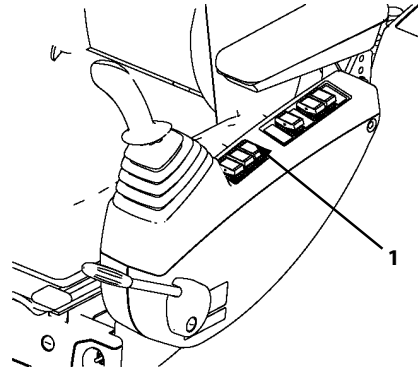
OPTIONAL ATTACHMENTS AND DEVICES

LIFTING HOOK

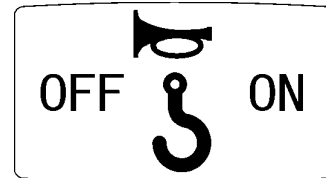
Handling suspended loads

This machine was specifically designed for excavation/loading application. Handling suspended loads, as a completion of excavation/loading application, is admitted on condition that the machine is equipped with the specific device supplied by HITACHI Construction Machinery on request. For handling suspended loads strictly follow the national laws on this subject, the rules indicated below.

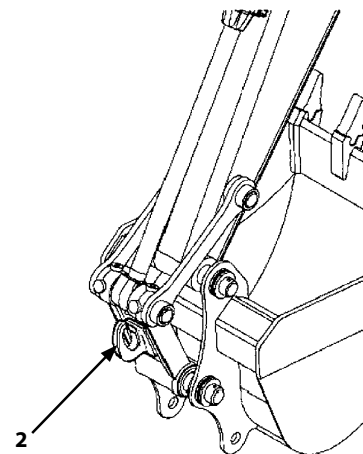
- ⚠ WARNING: Load holding and lowering pilot operated valves located on cylinders, overload warning device, the lifting capacity chart in the cabin and hook on the "A" link are SAFETY DEVICES being part of the version for suspended load handling. If one of these devices is missing or damaged, the machine cannot be used for handling suspended loads.**
- ⚠ WARNING: Before handling suspended loads, check that valves are not damaged or unusually noisy. If any defect is discovered, contact your dealer and do not use the machine for handling suspended loads. Lifting devices (hooks, chains, etc) must be undamaged and not worn. Check before use. Follow the current laws to check these devices. (they are not supplied with the machine)**
- ⚠ WARNING: To avoid any possible accident, do not exceed the machine's rated lifting capacity. If the machine is not on level ground, lifting capacity is reduced. Set the engine power suitable for the required hydraulic power. Estimate (if not known) the weight of the object to handle and compare with the data on the lifting chart in the cabin. Do not lift loads whose weight exceeds the maximum load on the chart. Before starting lifting operations, press switch (1) to engage the overload warning device sensor. When reaching the limit load the sensor activates an acoustic device. Fix the load by special hook (2) on the "A" link, by using coupling devices and chains suitable for the load to lift.**



T1V1-05-02-004



M1U1-01-010



M1V1-13-002

OPTIONAL ATTACHMENTS AND DEVICES

 **WARNING:** Lifting devices (hooks, chains, etc) must be undamaged and not worn: check them. Follow the current laws to check these devices (they are not supplied with machine). Do not lift objects fixed to the ground. Do not use this device to tow, uproot or tear out. In order to limit load oscillations, do not use too long ropes and/or chains to sling it. Check the working area and be sure there are no obstacles on the load run. To avoid sudden load oscillations, lift the load slowly and avoid any sharp movement. Keep the load close to the machine to improve stability and operate preferably on its longitudinal axis rather than its transversal axis. Lift the load to the bare minimum.

 **WARNING:** Lifted loads can oscillate or rotate in any direction: it is possible that they hit persons or the machine's cabin. Keep everybody away from the machine range and handle the load slowly in order to avoid danger. If the load starts oscillating or rotating, slacken and stop, place it carefully on firm ground and correct the way it was hooked up.

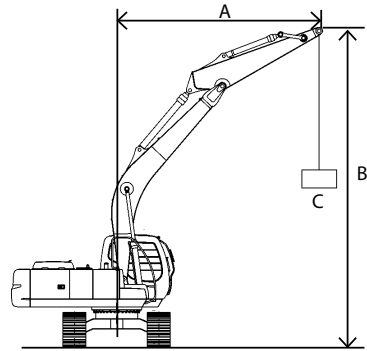
 **WARNING:** When the lifting hook is used, the maximum allowable lifting load is as follows.

Model	Maximum allowable lifting load
ZX120-3 class	4.0 t
ZX160LC-3	5.5 t
ZX180LC-3, 180LCN-3	8.0 t
ZX200-3 class	
ZX270-3 class	10.0 t

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX110-3 Monoblock boom, Arm 1.96 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					3160*	2890*					2120*	2110	5.42
3.0			4980*	4980*	3650*	2760	2320	1760			2080*	1740	6.05
1.5			0	0	3490	2600	2270	1710			2130	1600	6.26
0			6360*	4500	3360	2480	2220	1670			2180	1640	6.09
-1.5	4850*	4850*	6470	4500	3340	2460					2510	1880	5.51
-3.0			5370*	4630							3490*	2680	4.34
-4.5													

ZX110-3 Monoblock boom, Arm 2.26 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					2920*	2920					1790*	1790*	5.73
3.0			4530*	4530*	3450*	2790	2340	1780			1760*	1620	6.33
1.5			6580*	4760	3510	2610	2270	1710			1860*	1500	6.53
0			6470	4500	3370	2480	2220	1660			2040	1530	6.37
-1.5	4500*	4500*	6430	4480	3320	2440					2310	1730	5.81
-3.0	8500*	8500*	5800*	4580	3380	2500					3160	2350	4.73
-4.5													

ZX110-3 Monoblock boom, Arm 2.81 m, G 500 mm

Unit; kg

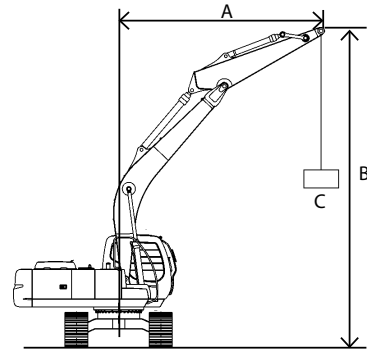
B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					2480*	2480*	2070*	1830			1550*	1550*	6.27
3.0			3600*	3600*	3030*	2840	2360	1790			1540*	1440	6.82
1.5			5830*	4880	3540	2640	2270	1710			1620*	1340	7.01
0			6470	4500	3360	2470	2200	1640			1810	1350	6.86
-1.5	4030*	4030*	6350	4400	3270	2390	2160	1600			2000	1490	6.35
-3.0	6960*	6960*	6380*	4450	3290	2410					2560	1900	5.37
-4.5													

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX110-3 Blade (Down), Monoblock boom, Arm 1.96 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					3160*	3160*					2119*	2119*	5.42
3.0			4980*	4980*	3650*	3070	2370*	1970			2077*	1948	6.05
1.5					4330*	2910	3400*	1920			2193*	1808	6.26
0			6360*	5050	4730*	2790	3250*	1880			2501*	1847	6.09
-1.5	4850*	4850*	6880*	5050	4590*	2760					3207*	2116	5.51
-3.0			5370*	5180							3491*	3005	4.34
-4.5													

ZX110-3 Blade (Down), Monoblock boom, Arm 2.26 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.			
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m					
													REACH m	
6.0														
4.5					2920*	2920*						1790*	1790*	5.73
3.0			4530*	4530*	3450*	3100	2840*	1990				1760*	1760*	6.33
1.5			6580*	5310	4170*	2920	3300*	1930				1860*	1700	6.53
0			6790*	5050	4670*	2790	3470*	1870				2100*	1730	6.37
-1.5	4500*	4500*	7070*	5030	4660*	2750						2640*	1950	5.81
-3.0	8500*	8500*	5800*	5130	3740*	2810						3420*	2640	4.73
-4.5														

ZX110-3 Blade (Down), Monoblock boom, Arm 2.81 m, G 500 mm

Unit; kg

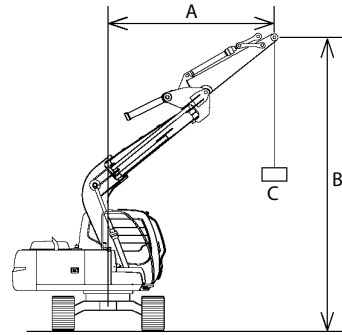
B: Load Point Height m	A: Load radius										Max.			
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m					
													REACH m	
6.0														
4.5					2480*	2480*	2070*	2050				1550*	1550*	6.27
3.0			3600*	3600*	3030*	3030*	2760*	2010				1540*	1540*	6.82
1.5			5830*	5430	3830*	2950	3080*	1930				1620*	1520	7.01
0			7140*	5050	4480*	2780	3360*	1850				1820*	1530	6.86
-1.5	4030*	4030*	7240*	4950	4680*	2700	3370*	1820				2240*	1690	6.35
-3.0	6960*	6960*	6380*	5000	4200*	2720						3250*	2150	5.37
-4.5														

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-017

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

METRIC MEASURE

ZX110-3 Off-set front, Arm 1.96 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		REACH m
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
6.0													
4.5					2150*	2150*					1860*	1840	5.63
3.0			3600*	3600*	2660*	2620	2170	1580			1800*	1460	6.24
1.5					3230	2320	2060	1480			1830	1310	6.44
0			5390*	3790*	3010	2110	1970	1400			1850	1310	6.28
-1.5	4460*	4460*	5750	3800	2950	2050					2110	1490	5.71
-3.0	9030*	9030*	5920*	3990	3090	2180					3000	2130	4.60
-4.5													

ZX110-3 Blade(Down), Off-set front, Arm 1.96 m, G 500 mm

Unit; kg

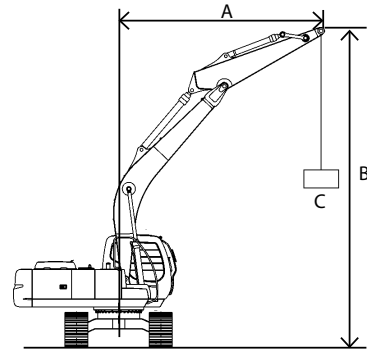
B: Load Point Height m	A: Load radius										Max.		REACH m
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
6.0													
4.5					2150*	2150*					1860*	1862*	5.63
3.0			3600*	3600*	2660*	2660*	2470*	1800			1800*	1661	6.24
1.5					3400*	2630	2750*	1700			1870*	1503	6.44
0			5390*	4340	4000*	2420	3030*	1610			2080*	1512	6.28
-1.5	4460*	4460*	6550*	4350	4240*	2360					2570*	1723	5.71
-3.0	9030*	9030*	5920*	4540	3790*	2490					3640*	2429	4.60
-4.5													

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX110M-3 Monoblock boom, Arm 1.96 m, G 700 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.			
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m					
													REACH m	
6.0														
4.5					3200*	3200*						2100*	2100*	5.53
3.0			5270*	5270*	3740*	3330	2640*	2160				2080*	2080*	6.10
1.5			5890*	5690	4410*	3160	3300*	2110				2220*	1980	6.26
0			6770*	5550	4750*	3060	2880*	2070				2570*	2060	6.03
-1.5	5430*	5430*	6740*	5570	4520*	3050						3370*	2400	5.39
-3.0			5020*	5020*								3450*	3450*	4.11
-4.5														

ZX110M-3 Monoblock boom, Arm 2.26 m, G 700 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					2970*	2970*					1770*	1770*	5.85
3.0			4820*	4820*	3540*	3360	3000*	2170			1760*	1760*	6.39
1.5			6780*	5760	4260*	3180	3310	2110			1880*	1860	6.53
0			7040*	5550	4710*	3060	3260	2060			2150*	1920	6.32
-1.5	4960*	4960*	6960*	5540	4610*	3030					2760*	2210	5.70
-3.0			5520*	5520*	3440*	3110					3410*	3100	4.52
-4.5													

ZX110M-3 Monoblock boom, Arm 2.81 m, G 700 mm

Unit; kg

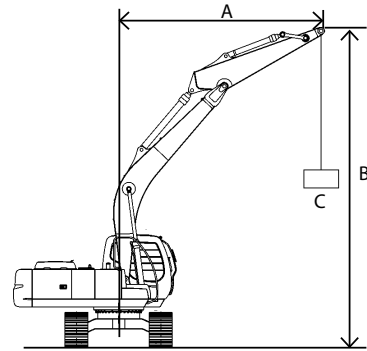
B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					2530*	2530*	2210*	2210*			1540*	1540*	6.37
3.0			3930*	3930*	3140*	3140*	2800*	2190			1540*	1540*	6.87
1.5			6090*	5870	3940*	3200	3130*	2100			1640*	1640*	7.01
0			7210*	5530	4540*	3040	3230	2030			1860*	1710	6.81
-1.5	4370*	4370*	7180*	5450	4660*	2970	3204	2010			2330*	1910	6.25
-3.0	7470*	7470*	6180*	5530	4050*	3010					3260*	2490	5.19
-4.5													

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX130-3 Monoblock boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					3730*	3500					2790*	2210	5.96
3.0			6340*	6180	4440*	3320	3100	2150			2700	1870	6.54
1.5					4640	3110	3010	2070			2540	1750	6.73
0			5410*	5370	4480	2970	2940	2010			2590	1780	6.57
-1.5	4760*	4760*	8390*	5380	4440	2940	2940	2000			2910	1990	6.04
-3.0			6880*	5510	4520	3010					3880	2620	5.00
-4.5													

ZX130-3 Monoblock boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0													
4.5					3350*	3350*	3180	2220			2310*	2000	6.37
3.0			5540*	5540	4100*	3360	3110	2160			2300*	1720	6.91
1.5			7960*	5650	4660	3130	3010	2070			2340	1610	7.09
0			6330*	5350	4480	2970	2930	1990			2380	1630	6.94
-1.5	4560*	4560*	8680*	5320	4400	2900	2890	1960			2630	1790	6.44
-3.0	8410*	8410*	7460*	5410	4440	2940					3340	2260	5.48
-4.5													

ZX130-3 Monoblock boom, Arm 3.01 m, G 500 mm

Unit; kg

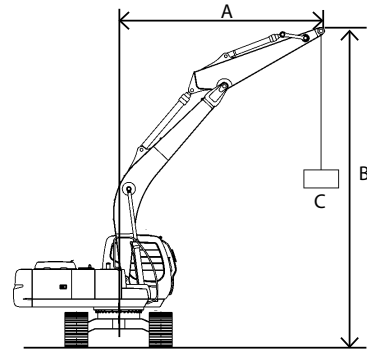
B: Load Point Height m	A: Load radius										Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
													REACH m
6.0											2140*	2140*	5.97
4.5					2900*	2900*	2950	2250			2000*	1760	6.89
3.0			4570*	4570*	3660*	3410	3130	2170			1990*	1530	7.39
1.5			7250*	5790	4660*	3160	3010	2060	2130	1460	2080*	1440	7.56
0			6970*	5340	4460	2950	2900	1970			2130	1450	7.42
-1.5	4030*	4030*	8710*	5220	4350	2850	2850	1910			2320	1570	6.95
-3.0	7050*	7050*	7960*	5270	4360	2850	2870	1940			2820	1910	6.08
-4.5			5810*	5480	3620*	3000					3510*	2940	4.57

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX130-3 Blade (Down), Monoblock boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					3730*	3730*					2790*	2430
3.0			6340*	6340*	4440*	3630	3770*	2370			2750*	2070
1.5					5300*	3420	4090*	2290			2890*	1940
0			5410*	5410*	5800*	3280	4280*	2220			3240*	1970
-1.5	4760*	4760*	8390*	5930	5690*	3250	4010*	2220			3960*	2200
-3.0			6880*	6060	4680*	3310					3940*	2890
-4.5												

ZX130-3 Blade (Down), Monoblock boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					3350*	3350*	3310*	2440			2310*	2200
3.0			5540*	5540*	4100*	3670*	3540*	2380			2300*	1900
1.5			7960*	6200	5040*	3440	3920*	2290			2430*	1790
0			6330*	5900	5680*	3280	4210*	2210			2710*	1810
-1.5	4560*	4560*	8680*	5870	5750*	3210	4150*	2180			3290*	1990
-3.0	8410*	8410*	7460*	5960	5070*	3250					3830*	2500
-4.5												

ZX130-3 Blade (Down), Monoblock boom, Arm 3.01 m, G 500 mm

Unit; kg

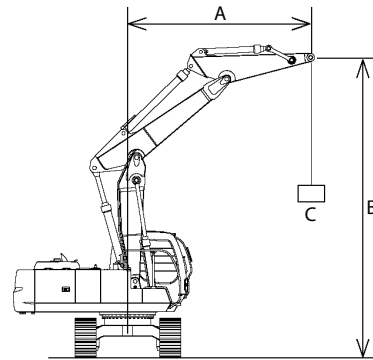
B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					2900*	2900*	2950*	2470			2140*	1940
3.0			4570*	4570*	3660*	3660*	3240*	2390			1990*	1700
1.5			7250*	6330	4660*	3460	3690*	2280	2330*	1620	2080*	1600
0			6970*	5890	5450*	3260	4060*	2180			2290*	1610
-1.5	4030*	4030*	8710*	5770	5720*	3160	4170*	2130			2710*	1750
-3.0	7050*	7050*	7960*	5820	5330*	3160	3660*	2150			3560*	2120
-4.5			5810*	5810*	3620*	3310					3510*	3240

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX130-3 2-piece boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											4620*	2.59
6.0			4810*	4810*	4230*	3580					3140*	4.86
4.5			5050*	5050*	4340*	3680					2800*	5.96
3.0	10750*	10750*	7800*	6500	4860*	3590	3160	2180			2700	6.54
1.5	8690*	8690*	8730*	6270	4870	3480	3090	2120			2530	6.73
0	8870*	8870*	9000*	5980	4830	3250	2990	2020			2580	6.57
-1.5	13320*	13320*	9140*	5680	4600	3040	2940	1980			2920	6.03
-3.0	16530*	16530*	7660*	5580	3690*	3000					2980*	4.74
-4.5												

ZX130-3 2-piece boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5			4180*	4180*							3360*	3.46
6.0			3870*	3870*	3870*	3670					2560*	5.36
4.5			3900*	3900*	4090*	3670	3210	2250			2330*	6.37
3.0			7070*	6540	4560*	3610	3210	2240			2300*	6.91
1.5	10590*	10590*	8750*	6320	4870	3550	3130	2160			2330	7.09
0	9120*	9120*	8940*	6090	4880	3290	3010	2050			2370	6.95
-1.5	11930*	11930*	9030*	5700	4630	3070	2920	1960			2630	6.44
-3.0	15200*	15200*	8520*	5560	4500	2950					2530*	5.42
-4.5												

ZX130-3 2-piece boom, Arm 3.01 m, G 500 mm

Unit; kg

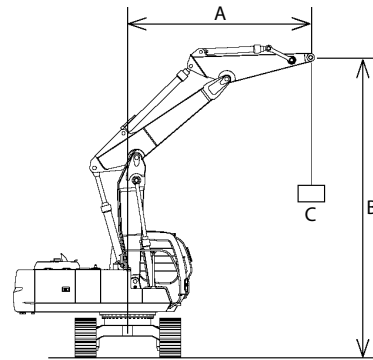
B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											2680*	4.37
6.0					3330*	3330*					2180*	5.98
4.5					3470*	3470*	3130*	2320			2010*	6.90
3.0			4480*	4480*	4230*	3620	3220	2310			1980*	7.40
1.5	11090*	11090*	8360*	6320*	4860	3480	3150	2220	2130	1440	2060*	7.57
0	9920*	9920*	8840*	6230	4740	3340	3050	2080			2120	7.43
-1.5	10990*	10990*	8890*	5720	4680	3110	2910	1950			2310	6.96
-3.0	14010*	14010*	8990*	5540	4480	2920	2590*	1920			2310*	6.09
-4.5	11510*	11510*	5220*	5220							4390*	3.34

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX130-3 Blade(Down), 2-piece boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											4620*	2.59
6.0			4810*	4810*	4230*	3880					3140*	4.86
4.5			5050*	5050*	4340*	3950					2800*	5.96
3.0	10750*	10750*	7800*	6950	4860*	3860	3690*	2390			2740*	6.54
1.5	8690*	8690*	8730*	6760	5740*	3790	3970*	2330			2840*	6.73
0	8870*	8870*	9000*	6530	5790*	3560	4220*	2240			3150*	6.57
-1.5	13320*	13320*	9140*	6230	5820*	3350	3080*	2190			2990*	6.03
-3.0	16530*	16530*	7660*	6130	3690*	3310					2980*	4.74
-4.5												

ZX130-3 Blade(Down), 2-piece boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5			4180*	4180*							3360*	3.46
6.0			3870*	3870*	3870*	3870*					2560*	5.36
4.5			3900*	3900*	4090*	3970					2330*	6.37
3.0			7070*	7000	4560*	3890	3270*	2460			2300*	6.91
1.5	10590*	10590*	8750*	6790	5420*	3770*	3490*	2460			2390*	7.09
0	9120*	9120*	8940*	6640	5750*	3600	3790*	2380			2640*	6.95
-1.5	11930*	11930*	9030*	6240	5810*	3380	4170*	2260			2950*	6.44
-3.0	15200*	15200*	8520*	6110	4760*	3260	3850*	2170			2530*	5.42
-4.5												

ZX130-3 Blade(Down), 2-piece boom, Arm 3.01 m, G 500 mm

Unit; kg

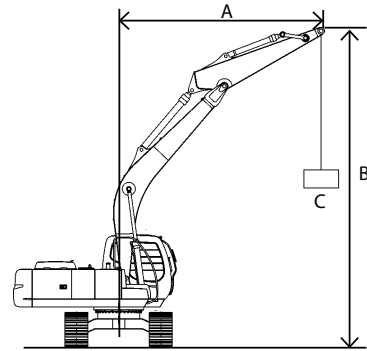
B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											2680*	4.37
6.0					3330*	3330*					2180*	5.98
4.5					3470*	3470*	3130*	2530			2010*	6.90
3.0			4480*	4480*	4230*	3890	3270*	2520			1980*	7.40
1.5	11090*	11090*	8360*	6760	5060*	3750	3570*	2430	2360*	1600	2060*	7.57
0	9920*	9920*	8840*	6570	5690*	3650	3960*	2300			2240*	7.43
-1.5	10990*	10990*	8890*	6270	5700*	3420	4120*	2170			2610*	6.96
-3.0	14010*	14010*	8990*	6090	5440*	3230	2590*	2130			2310*	6.09
-4.5	11510*	11510*	5220*	5220*							4390*	3.34

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX130LCN-3 Monoblock boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					3730*	3580					2790*	2270
3.0			6340*	6330	4440*	3410	3420	2210			2750*	1930
1.5					5170	3200	3340	2130			2810	1800
0			5410*	5410*	5010	3060	3270	2070			2870	1830
-1.5	4760*	4760*	8390*	5530	4970	3020	3260	2060			3240	2050
-3.0			6880*	5660	4680*	3090					3940*	2690
-4.5												

ZX130LCN-3 Monoblock boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					3350*	3350*	3310*	2290			2310*	2070
3.0			5540*	5540*	4100*	3460	3440	2230			2300*	1780
1.5			7960*	5830	5040*	3230	3340	2140			2430*	1670
0			6330*	5530	5010	3070	3250	2060			2630	1680
-1.5	4560*	4560*	8680*	5500	4930	3000	3220	2030			2920	1860
-3.0	8410*	8410*	7460*	5590	4980	3040					3720	2340
-4.5												

ZX130LCN-3 Monoblock boom, Arm 3.01 m, G 500 mm

Unit; kg

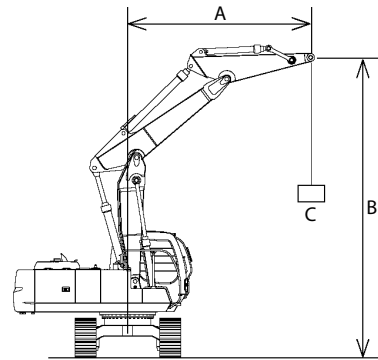
B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
6.0												
4.5					2900*	2900*	2950*	2310			2000*	1810
3.0			4570*	4570*	3660*	3490	3240*	2230			1990*	1580
1.5			7250*	5930	4660*	3240	3340	2120	2330*	1500	2080*	1480
0			6970*	5490	5000	3030	3230	2020			2290*	1490
-1.5	4030*	4030*	8710*	5370	4880	2930	3170	1970			2580	1620
-3.0	7050*	7050*	7960*	5420	4890	2940	3200	2000			3140	1960
-4.5			5810*	5630	3620*	3080					3510*	3020

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX130LCN-3 2-piece boom, Arm 2.10 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											4620*	2.59
6.0			4810*	4810*	4230*	3680					3140*	4.86
4.5			5050*	5050*	4340*	3370					2800*	5.96
3.0	10750*	10750*	7800*	6650	4860*	3680	3490	2250			2740*	6.54
1.5	8690*	8690*	8730*	6440	5340	3590	3420	2190			2810	6.73
0	8870*	8870*	9000*	6160	5380*	3350	3320	2090			2870	6.57
-1.5	13320*	13320*	9140*	5860	5140	3140	3080*	2050			2990*	6.03
-3.0	16530*	16530*	7660*	5760	3690*	3100					2980*	4.74
-4.5												

ZX130LCN-3 2-piece boom, Arm 2.52 m, G 500 mm

Unit; kg

B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5			4180*	4180*							3360*	3.46
6.0			3870*	3870*	3870*	3760					2560*	5.36
4.5			3900*	3900*	4090*	3780	3270*	2320			2330*	6.37
3.0			7070*	6700	4560*	3700	3490*	2310			2300*	6.91
1.5	10590*	10590*	8750*	6470	5320	3650	3450	2230			2390*	7.09
0	9120*	9120*	8940*	6270	5250	3390	3340	2120			2630	6.95
-1.5	11930*	11930*	9030*	5880	5180	3170	3250	2030			2920	6.44
-3.0	15200*	15200*	8520*	5740	4760*	3050					2530*	5.42
-4.5												

ZX130LCN-3 2-piece boom, Arm 3.01 m, G 500 mm

Unit; kg

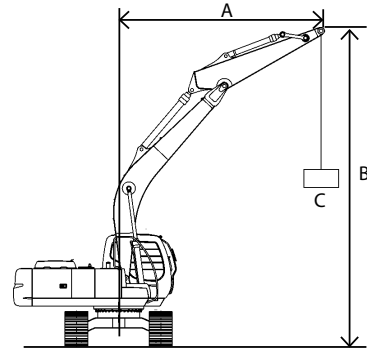
B: Load Point Height m	A: Load radius										Max.	
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m			REACH m
7.5											2670*	4.38
6.0					3320*	3320*					2180*	5.98
4.5					3470*	3470*	3130*	2390			2010*	6.90
3.0			4470*	4470*	4230*	3710	3270*	2380			1980*	7.40
1.5	11090*	11090*	8360*	6470*	5060*	3570	3440	2290	2360	1490	2050*	7.57
0	9930*	9930*	8840*	6410	5220	3440	3370	2150			2240*	7.43
-1.5	10990*	10990*	8890*	5900	5230	3210	3250	2020			2580	6.96
-3.0	14010*	14010*	8990*	5720	5020	3030	2590*	1990			2310*	6.09
-4.5	11510*	11510*	5220*	5220*							4390*	3.34

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 4 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX160LC-3 Mono block boom, Arm 2.22 m, G 500 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
4.5															
3.0					4440*	4440*	4100*	3140					4100*	2760	6.51
1.5					5580*	4580	4530*	3020					3700	2410	6.97
0					6720*	4280	4500	2890					3540	2290	7.08
-1.5					6740	4120	4400	2800					3640	2340	6.87
-3.0			10690*	7560	6710	4090	4390	2790					4110	2620	6.30
			9290*	7730	6500*	4190							5400*	3420	5.25

ZX160LC-3 Mono block boom, Arm 2.58 m, G 500 mm

Unit; kg

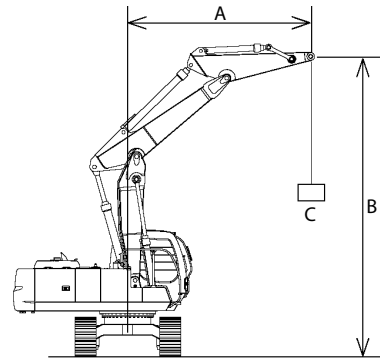
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
6.0															
4.5					4070*	4070*	3820*	3170					3160*	3160*	6.05
3.0			7910*	7910*	5230*	4650	4310*	3050					3090*	2530	6.89
1.5					6460*	4320	4520	2900					3200*	2240	7.33
0					6460*	4320	4520	2900					3290	2130	7.44
-1.5			6280*	6280*	6760	4130	4400	2800					3380	2170	7.23
-3.0	5750*	5750*	10430*	7510	6700	4080	4360	2760					3750	2400	6.69
-4.5	10320*	10320*	9820*	7660	6770	4140							4750	3010	5.72
													5410*	5190	3.98

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 5.5 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX160LC-3 2-piece boom, Arm 2.22 m, G 500 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5			6510*	6510*									6110*	6110*	3.84
6.0			6290*	6290*	5410*	5140							5140*	3650	5.50
4.5			7620*	7620*	5820*	5040	4830	3180					4310*	2800	6.41
3.0			8440*	8440*	6640*	4930	4770	3140					3780	2440	6.87
1.5			10540*	8540*	7060	4860	4670	3010					3610	2310	6.99
0	24510*	24510*	11390*	8290*	7070	4550	4520	2870					3730	2370	6.78
-1.5	24540*	24540*	11550*	7990	6980	4270	4430	2790					4240*	2680	6.20
-3.0	21560*	21560*	10330*	7880	5670*	4220							5980*	3710	4.95

ZX160LC-3 2-piece boom, Arm 2.58 m, G 500 mm

Unit; kg

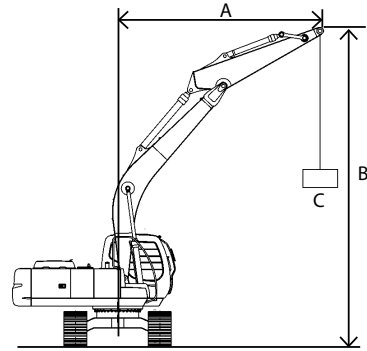
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5													5410*	5170	4.46
6.0					5050	5050*							4750*	3240	5.95
4.5			6970*	6970*	5510	5060*	4730*	3260					3940	2560	6.80
3.0	13390*	13390*	9500*	8800*	6380	4940*	4760	3210					3500	2260	7.24
1.5	23800*	23800*	11220*	8580	7070	4810	4710	3070					3350	2150	7.35
0	24370*	24370*	11350*	8420	7040	4600	4560	2910					3450	2190	7.15
-1.5	24610*	24610*	11470*	8030	7040	4330	4430	2790					3860	2440	6.60
-3.0	23230*	23230*	11110*	7890	6580*	4200							3730*	3120	5.58

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 5.5 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  NOTE: • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX180LC-3 Mono block boom, Arm 2.26 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0							4470*	3980					4480*	3710	6.25
4.5			6690*	6960*	5320*	5320*	4710*	3900					4390*	3000	7.06
3.0					6800*	5630	5330*	3730					4100	2670	7.49
1.5					8140*	5270	5580	3560	4020	2600			3940	2550	7.60
0					8460	5100	5450	3450					4040	2600	7.40
-1.5			8970*	8970*	8430	5070	5420	3420					4480	2870	6.87
-3.0			11120*	9790	7950*	5160							5610	3560	5.93
-4.5			8300*	8300*									5950*	5830	4.28

ZX180LC-3 Mono block boom, Arm 2.71 m, G 600 mm

Unit; kg

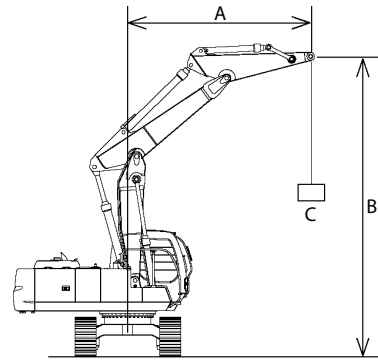
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0							4000*	4000*					3410*	3360	6.69
4.5					4780*	4780*	4340*	3930					3370*	2770	7.45
3.0					6270*	5720	5010*	3750	4100	2670			3480*	2480	7.86
1.5					7740*	5310	5590	3560	4010	2590			3670	2370	7.96
0			4890*	4890*	8450	5080	5430	3430	3940	2530			3750	2410	7.77
-1.5	5200*	5200*	8820*	8820*	8370	5020	5370	3370					4100	2620	7.27
-3.0	9340*	9340*	11800*	9630	8230*	5070	5410	3410					4970	3150	6.38
-4.5			9450*	9450*	6580*	5270							5900	4690	4.90

-  NOTE: When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  NOTE: • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX180LC-3 2-piece boom, Arm 2.26 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
7.5					5620*	5620*							4980*	4980*	4.72
6.0			5930*	5930*	6350*	6350*	5020*	3970					4400*	3790	6.14
4.5			9660*	9660*	7020*	6260	5770*	4040					4260*	3020	6.96
3.0	11630*	11630*	11020*	10890	8010*	6120*	5870	3950					4160	2670	7.40
1.5			12360*	10800*	8660*	6090	5840	3770	3990	2540			3990	2540	7.51
0	11840*	11840	13430*	10510	8650	5660	5640	3560					4100	2590	7.31
-1.5	17060*	17060	13640*	10050	8800	5300	5470	3410					4530*	2870	6.77
-3.0	20820*	20820	12610*	9860	7570*	5150							3850*	3600	5.81

ZX180LC-3 2-piece boom, Arm 2.71 m, G 600 mm

Unit; kg

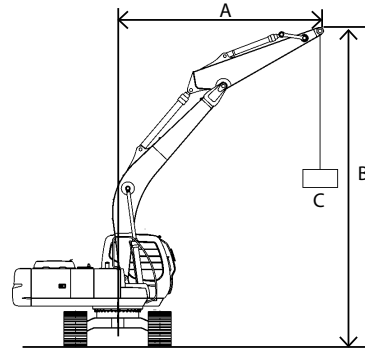
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
9.0													5020*	5020*	2.80
7.5					4870*	4870*							3670*	3670*	5.29
6.0					5200*	5200*	4640*	4080					3330*	3300*	6.59
4.5			6600*	6600*	6390*	6280	5490*	4120					3250*	2780	7.36
3.0	14090*	14090*	11390*	10950	7650*	6110*	5860	4040	4110	2650			3330*	2470	7.77
1.5	12000*	12000*	12150*	10740	8490*	6040	5790	3860	4030	2570			3570*	2350	7.88
0	11550*	11550*	13210*	10720	8590	5740	5700	3610	3930	2480			3780	2380	7.69
-1.5	14890*	14890*	13480*	10100	8700	5360	5480	3410					4150	2600	7.18
-3.0	17230*	17230*	13310*	9840	8240*	5110	4820*	3360					3970*	3170	6.28
-4.5			8240*	8240*									6480*	6480*	3.56

-  NOTE: When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX180LCN-3 Mono block boom, Arm 2.26 m, G 500 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0							4470*	3580					4480*	3340	6.25
4.5			6960*	6960*	5320*	5320*	4710*	3500					4390*	2690	7.06
3.0					6800*	5010	5330*	3340					4040	2390	7.49
1.5					8140*	4660	5500	3170	3960	2320			3890	2280	7.60
0					8340	4490	5370	3060					3990	2320	7.40
-1.5			8970*	8300	8310	4470	5340	3030					4420	2550	6.87
-3.0			11120*	8460	7950*	4550							5530	3160	5.93
-4.5			8300*	8300*									5950*	5160	4.28

ZX180LCN-3 Mono block boom, Arm 2.71 m, G 500 mm

Unit; kg

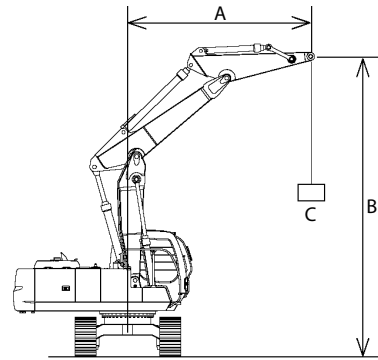
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0							4000*	3640					3410*	3020	6.69
4.5					4780*	4780*	4340*	3540					3370*	2480	7.45
3.0					6270*	5090	5010*	3360	4040	2390			3480*	2220	7.86
1.5					7740*	4700	5510	3170	3950	2310			3620	2110	7.96
0			4890*	4890*	8340	4480	5360	3040	3880	2240			3690	2140	7.77
-1.5	5200*	5200*	8820*	8160*	8260	4410	5290	2980					4040	2320	7.27
-3.0	9340*	9340*	11800*	8300	8230*	4460	5340	3020					4900	2800	6.38
-4.5			9450*	8610	6580*	4660							5900	4160	4.90

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX180LCN-3 2-piece boom, Arm 2.26 m, G 500 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5					5620*	5620*							4980*	4980*	4.72
6.0			5930*	5930*	6350*	5880	5020*	3610					4400*	3440	6.14
4.5			9660*	9660*	7010*	5760	5770*	3670					4260*	2730	6.96
3.0	11630*	11630*	11020*	9910	8010*	5640*	5860	3950					4150	2400	7.40
1.5			12360*	9830*	8660*	5500	5830	3410	3990	2280			3980	2280	7.51
0	11840*	11840*	13430*	9230	8650*	5080	5620	3200					4090	2320	7.31
-1.5	17060*	17060*	13640*	8790	8780	4740	5460	3050					4530*	2570	6.77
-3.0	20820*	20820*	12610*	8620	7570*	4590							3850*	3230	5.81

ZX180LCN-3 2-piece boom, Arm 2.71 m, G 500 mm

Unit; kg

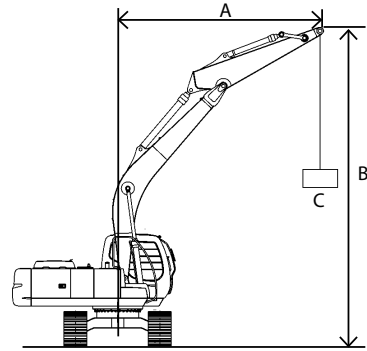
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													5020*	5020*	2.80
7.5					4870*	4870*							3670*	3670*	5.29
6.0					5200*	5200*	4640*	3730					3330*	3100	6.59
4.5			6600*	6600*	6390*	5780	5490*	3770					3250*	2510	7.36
3.0	14090*	14090*	11390*	9960	7650*	5630	5840*	3690	4110	2390			3330*	2220	7.77
1.5	12000*	12000*	12150*	9780*	8490*	5570	5780	3490	4020	2310			3570*	2110	7.88
0	11550*	11550*	13210*	9420	8580*	5160	5690	3250	3920	2220			3770	2130	7.69
-1.5	14890*	14890*	13480*	8840	8690	4790	5470	3060					4140	2330	7.18
-3.0	17230*	17230*	13310*	8590	8240*	4550	4820*	3010					3970*	2840	6.28
-4.5			8240*										6480*	6480*	3.56

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210-3 Mono block boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							4954*	4817					4047*	3456	7.32
4.5					6274*	6274*	5437*	4658	4881	3281			3993*	2937	8.01
3.0					8079*	6700	6294*	4426	4771	3180			4023	2677	8.37
1.5					9717*	6218	6455	4193	4648	3067			3903	2579	8.45
0			4848*	4848*	9736	5957	6272	4030	4556	2982			3988	2621	8.25
-1.5	5484*	5484*	9103*	9103*	9651	5885	6194	3960	4527	2956			4331	2836	7.76
-3.0	9973*	9973*	13611*	11285	9670*	5944	6231	3993					5137	3347	6.90
-4.5			10626*	10626*	7669*	6148							5899*	4666	5.52

ZX210-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

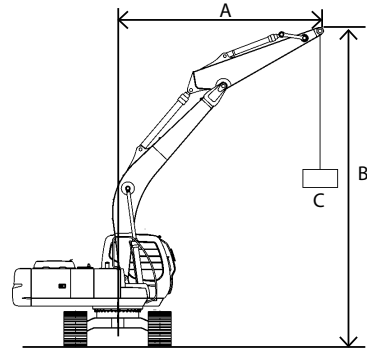
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5451*	4744					5478*	3910	6.74
4.5					6955*	6955*	5901*	4597					4850	3252	7.48
3.0					8722*	6555	6654	4375	4747	3161			4410	2936	7.87
1.5					9929	6126	6418	4164	4644	3066			4268	2823	7.95
0					9710	5940	6268	4030	4576	3003			4382	2882	7.74
-1.5			9909*	9909*	9687	5921	6227	3993					4828	3159	7.21
-3.0			12496*	11444	9195*	6023	6316	4073					5930	3849	6.28
-4.5					6488*	6310							6077	5924	4.71

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210-3 Mono block boom, Arm 2.03 m, G 600 mm

Unit; kg

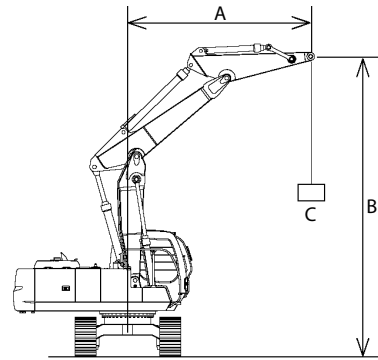
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0					6251 *	6251 *	5880 *	4701					5955 *	4102	6.50
4.5					7491 *	7005	6246 *	4575					5059	3392	7.27
3.0					9244 *	6491	6640	4370	4752	3170			4593	3065	7.67
1.5							6431	4183	4670	3095			4456	2958	7.75
0					9770	6001	6311	4075	4628	3056			4600	3039	7.54
-1.5					9788	6016	6298	4063					5116	3365	6.99
-3.0			11571 *	11571 *	8787 *	6144	6205 *	4197					6138 *	4177	6.03

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX210-3 2-piece boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													5426*	5426*	4.30
7.5					6088*	6088	5066*	4822					4432*	4432*	6.20
6.0					6219*	6219	5431*	4990					4096*	3410	7.32
4.5			8240*	8240	7319*	7319	5417*	4935	4789*	3303			4010*	2883	8.01
3.0	10980*	10980	13613*	12843	9102*	7176	6341*	4793	4876	3248			4000	2618	8.37
1.5	8834*	8834	14176*	12664	10113*	6963	6698*	4622	4759	3127			3876	2518	8.45
0	11176*	11176	15792*	12329	10083	6674	6593	4347	4614	2993			3963	2560	8.25
-1.5	15159*	15159	16399*	11724	10257	6319	6397	4086	4523	2909			4311	2777	7.76
-3.0	19211*	19211	16471*	11581	9965	6071	6273	3975					4411*	3295	6.91
-4.5	20979*	20979	12128*	11611	6770*	6107							6594*	5976	4.57

ZX210-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

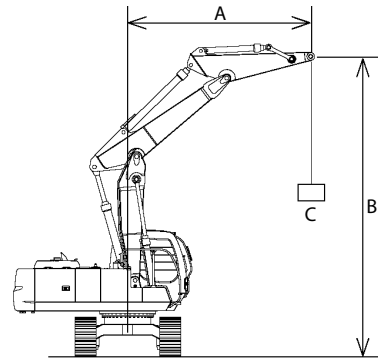
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			9084*	9084*									8694*	8694*	3.19
7.5					6865*	6865*							5893*	5436	5.50
6.0					6982*	6982*	5803*	4850					4970*	3866	6.74
4.5			11542*	11542*	7922*	7333	6059*	4865					4590*	3197	7.49
3.0			12969*	12762*	9737*	7173	6716*	4738	4785	3153			4387	2875	7.87
1.5			14641*	12681*	10113	7054	6700	4504	4681	3057			4242	2759	7.95
0	12345*	12345*	16257*	12065	10149*	6567	6562	4238	4572	2957			4357	2819	7.74
-1.5	18413*	18413*	16548*	11648	10191	6268	6342	4040					4810	3099	7.21
-3.0	24611*	24611*	15840*	11586	9788*	6063	5589*	4021					4640*	3821	6.25

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX210-3 2-piece boom, Arm 2.03 m, G 600 mm

Unit; kg

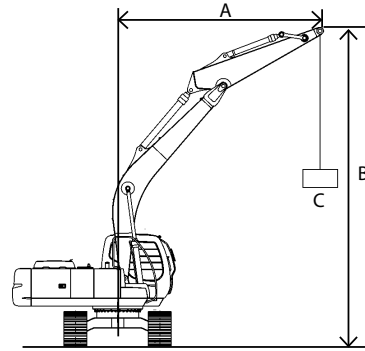
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													11812*	11812*	2.56
7.5					7398*	7398							6657*	5898	5.17
6.0			7947*	7947	7395*	7395	6206*	4744					5472*	4075	6.48
4.5			10924*	10924	8461*	7331	6369*	4789					4994*	3347	7.25
3.0			12514*	12514	10091*	7167	6827	4678	4748	3124			4586	3012	7.65
1.5			14734*	12818	10176	6967	6729	4474	4673	3055			4446	2903	7.73
0	11097*	11097	16471*	11978	10258*	6534	6559	4242	4607	2994			4595	2987	7.52
-1.5	19564*	19564	16723*	11691	10215	6298	6386	4087					5018*	3322	6.97
-3.0	29453*	29453	15218*	11751	9217*	6167							5136*	4353	5.77

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210LC-3 Mono block boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							4954*	4954*					4047*	3848	7.32
4.5					6274*	6274*	5437*	5185	5107*	3660			3993*	3282	8.01
3.0					8079*	7532	6294*	4948	5435	3557			4103*	3001	8.37
1.5					9717*	7036	7119*	4711	5310	3443			4381*	2898	8.45
0			4848*	4848*	10525*	6767	7228	4544	5215	3356			4558	2950	8.25
-1.5	5484*	5484*	9103*	9103*	10490*	6693	7147	4473	5185	3329			4956	3193	7.76
-3.0	9973*	9973*	13611*	13094	9670*	6753	7176*	4506					5890	3767	6.90
-4.5			10626*	10626*	7669*	6964							8396	5253	5.52

ZX210LC-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

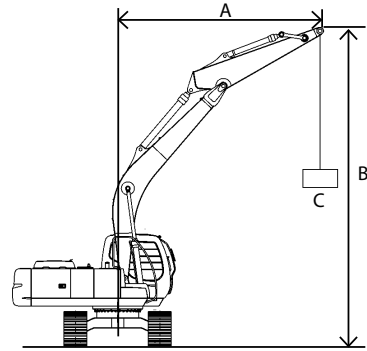
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5451*	5272					5478*	4351	6.74
4.5					6955*	6955*	5901*	5122					5500*	3630	7.48
3.0					8722*	7381	6660*	4895	5410	3537			5024	3288	7.87
1.5					10148*	6940	7378	4680	5304	3441			4870	3168	7.95
0					10637*	6748	7223	4543	5234	3377			5009	3240	7.74
-1.5			9909*	9909*	10318*	6729	7180	4506					5528	3554	7.21
-3.0			12496*	12496*	9195*	6834	6765	4587					6302*	4330	6.28
-4.5					6488*	6488							6077*	6077*	4.71

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210LC-3 Mono block boom, Arm 2.03 m, G 600 mm

Unit; kg

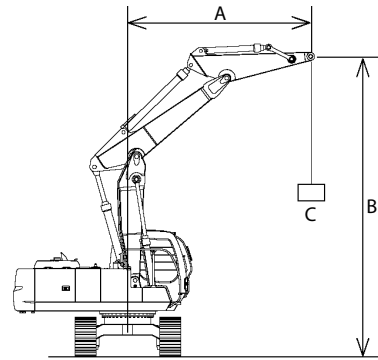
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0					6251 *	6251 *	5880 *	5226					5955 *	4566	6.50
4.5					7491 *	7491 *	6246 *	5098					5756	3786	7.27
3.0					9244 *	7313	6955 *	4889	5413	3546			5232	3429	7.67
1.5							7389	4698	5329	3469			5082	3315	7.75
0					10705 *	6810	7264	4588	5286	3430			5253	3411	7.54
-1.5					10168 *	6825	7251	4576					5853	3777	6.99
-3.0			11571 *	11571 *	8787 *	6957	6205 *	4712					6138 *	4689	6.03

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX210LC-3 2-piece boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													5428 *	5428 *	4.30
7.5					6091 *	6091 *	5068 *	5068 *					4435 *	4435 *	6.20
6.0					6222 *	6222 *	5435 *	5435 *					4098 *	3814	7.32
4.5			8244 *	8244 *	7323 *	7323 *	5719 *	5396	4794 *	3694			4012 *	3239	8.01
3.0	10981 *	10981 *	13624 *	13624 *	9110 *	7874	6347 *	5267 *	5045 *	3639			4009 *	2953	8.37
1.5	8835 *	8835 *	14189 *	14061	10304 *	7725	7266 *	5106	5401 *	3516			4085 *	2848	8.45
0	11177 *	11177 *	15794 *	14165	10454 *	7527	7448	4883	5293	3381			4340 *	2901	8.25
-1.5	15160 *	15160 *	16413 *	13600	10526 *	7162	7382	4618	5200	3296			4856 *	3146	7.76
-3.0	19212 *	19212 *	16483 *	13448	10428 *	6908	6910 *	4505					4418 *	3728	6.91
-4.5	20980 *	20980 *	12140 *	12140 *	6779 *	6779 *							6603 *	6603 *	4.57

ZX210LC-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

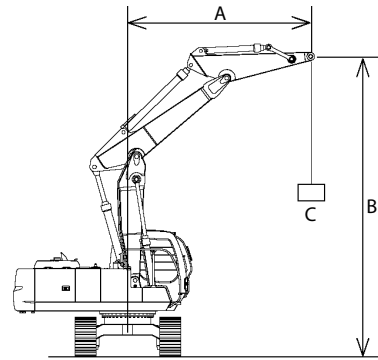
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			9085 *	9085 *									8696 *	8696 *	3.19
7.5					6869 *	6869 *							5896 *	5896 *	5.50
6.0					6985 *	6985 *	5807 *	5394					4974 *	4320	6.74
4.5			11550 *	11550 *	7927 *	7927 *	6064 *	5373					4594 *	3587	7.49
3.0			12980 *	12980 *	9745 *	7858	6722 *	5240	5328 *	3542			4484 *	3239	7.87
1.5			14654 *	14106 *	10479 *	7678	7484	5042	5360	3445			4581 *	3117	7.94
0	12347 *	12347 *	16271 *	13957	10497 *	7416	7500	4772	5249	3344			4904 *	3189	7.74
-1.5	18415 *	18415 *	16562 *	13518	10644 *	7109	7324	4571					5194 *	3507	7.21
-3.0	24612 *	24612 *	15852 *	13452	9798 *	6898	5597 *	4552					4647 *	4321	6.25

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX210LC-3 2-piece boom, Arm 2.03 m, G 600 mm

Unit; kg

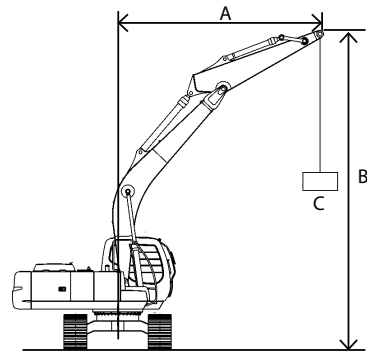
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													11814*	11814*	2.56
7.5					7401*	7401*							6660*	6581	5.17
6.0			7949*	7949*	7399*	7399*	6210*	5284					5476*	4554	6.48
4.5			10932*	10932*	8467*	8043	6374*	5330					4998*	3754	7.25
3.0			12526*	12526*	10101*	7895	7051*	5218	5414*	3512			4844*	3389	7.65
1.5			14747*	14223	10581*	7825	7541*	5010	5351	3442			4925*	3274	7.73
0	11098*	11098*	16485*	13863	10599*	7381	7546	4775	5283	3381			5255*	3372	7.52
-1.5	19565*	19565*	16737*	13560	10823*	7138	7367	4617					5025*	3750	6.97
-3.0	29452*	29452*	15230*	13621	9227*	7004							5144*	4916	5.77

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210LCN-3 Mono block boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							4956*	4808					4047*	3417	7.39
4.5					6328*	6328*	5499*	4649	5115*	3297			3993*	2915	8.08
3.0					8207*	6612	6349*	4416	5476*	3194			4103*	2662	8.44
1.5					9900*	6136	7201*	4184	5566	3080			4381*	2566	8.52
0			4514*	4514*	10713*	5885	7571	4022	5469	2994			4726	2608	8.32
-1.5	5426*	5426*	8804*	8804*	10659*	5819	7490	3954	5437	2966			5134	2815	7.83
-3.0	9865*	9865*	13855*	10893	9813*	5878	7275*	3985					5903*	3309	6.97
-4.5			10797*	10797*	7788*	6075							5899*	4566	5.59

ZX210LCN-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

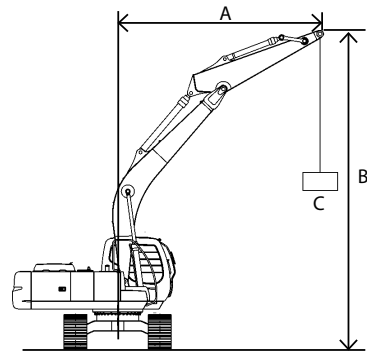
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5456*	4738					5478*	3855	6.81
4.5					7028*	7001	5933*	4589	5501*	3258			5500*	3221	7.55
3.0					8874*	6468	6722*	4366	5670	3176			5197	2914	7.94
1.5					10343*	6047	7473*	4155	5560	3079			5043	2804	8.02
0					10819*	5870	7566	4023	5487	3014			5186	2861	7.81
-1.5			9559*	9559*	10473*	5856	7523	3986					5716	3129	7.28
-3.0			12683*	11049	9325*	5956	6874*	4062					6302*	3791	6.35
-4.5					6614*	6230							6077*	5746	4.78

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX210LCN-3 Mono block boom, Arm 2.03 m, G 600 mm

Unit; kg

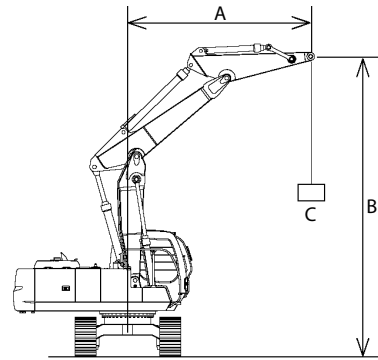
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0					6281 *	6281 *	5883 *	4698					5955 *	4041	6.57
4.5					7581 *	6917	6283 *	4568					5892 *	3358	7.34
3.0					9418 *	6405	7023 *	4362	5674	3187			5410	3041	7.74
1.5							7695 *	4175	5585	3109			5259	2937	7.82
0					10877 *	5934	7608	4068	5537	3066			5435	3016	7.61
-1.5					10311 *	5952	7594	4056					6046	3330	7.06
-3.0			11710 *	11271	8907 *	6076	6363 *	4179					6138 *	4107	6.10

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX210LCN-3 2-piece boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													5428*	5428*	4.37
7.5					6090*	6090*	5176*	4817					4435*	4431	6.27
6.0					6214*	6214*	5475*	4971					4098*	3363	7.39
4.5			8245*	8245*	7424*	7292	5775*	4916	4844*	3321			4012*	2854	8.08
3.0	9230*	9230*	13741*	12509	9311*	7093	6432*	4775	5087*	3261			4009*	2597	8.44
1.5	8030*	8030*	14414*	12338	10486*	6877*	7395*	4636	5475*	3141			4085*	2500	8.52
0	10863*	10863*	16122*	11816	10632*	6567	7690*	4337	5551	3005			4340*	2541	8.32
-1.5	14854*	14854*	16848*	11255	10707*	6221	7729	4076	5449	2915			4856*	2750	7.83
-3.0	18816*	18816*	16901*	11126	10636*	5992	7072*	3962					4418*	3249	6.98
-4.5	20439*	20439*	12466*	11166	7000*	6018							6603*	5768	4.64

ZX210LCN-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

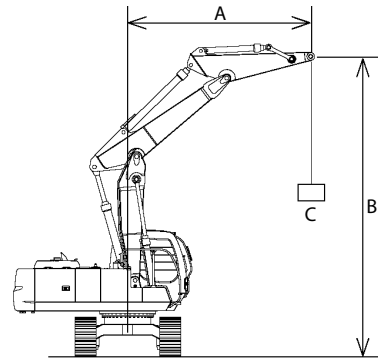
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			9200*	9200*									8696*	8696*	3.26
7.5					6927*	6927*							5896*	5290	5.57
6.0					7056*	7056*	5845*	4841					4974*	3801	6.81
4.5			11644*	11644*	8052*	7254	6126*	4853	4751*	3203			4594*	3158	7.56
3.0			13131*	12439*	9911*	7094	6818*	4727	5389*	3170			4484*	2847	7.94
1.5			14901*	12382	10661*	6941	7693*	4495	5620	3070			4581*	2735	8.02
0	12100*	12100*	16653*	11569	10676*	6463	7745*	4228	5504	2968			4904*	2792	7.81
-1.5	18078*	18078*	17000*	11187	10823*	6182	7667	4028					5194*	3062	7.28
-3.0	24096*	24096*	16274*	11146	9990*	5978	5816*	4002					4647*	3753	6.32

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX210LCN-3 2-piece boom, Arm 2.03 m, G 600 mm

Unit; kg

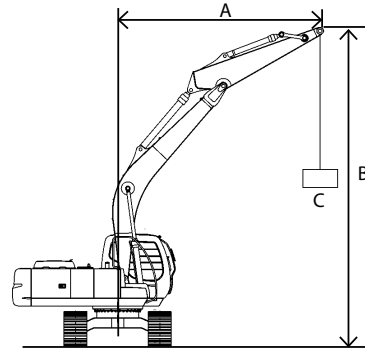
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													11814*	11814*	2.63
7.5					7451*	7451*							6660*	5725	5.24
6.0			7766*	7766*	7482*	7408	6232*	4741					5476*	4002	6.55
4.5			11008*	11008*	8612*	7255	6439*	4779					4998*	3304	7.32
3.0			12750*	12457*	10253*	7078	7155*	4669	5571*	3143			4844*	2981	7.72
1.5			14966*	12273	10753*	6858	7797	4465	5610	3069			4925*	2875	7.80
0	10934*	10934*	16900*	11494	10780*	6434	7854*	4232	5534	3002			5255*	2957	7.59
-1.5	19212*	19212*	17170*	11235	11008*	6212	7712	4077					5025*	3279	7.04
-3.0	28531*	28531*	15632*	11306	9445*	6085							5144*	4261	5.84

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX240N-3 Mono block boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							4956*	4956*					4047*	3550	7.39
4.5					6328*	6328*	5499*	4819	5115*	3428			3993*	3035	8.08
3.0					8207*	6857	6349*	4586	5476*	3325			4103*	2776	8.44
1.5					9900*	6382	7201*	4355	5438	3211			4381*	2679	8.52
0			4514*	4514*	10713*	6131	7353	4193	5342	3125			4626	2723	8.32
-1.5	5426*	5426*	8804*	8804*	10659*	6064	7274	4124	5311	3096			5019	2940	7.83
-3.0	9865*	9865*	13855*	11330	9813*	6123	775*	4156					5903*	3452	6.97
-4.5			10797*	10797*	7788*	6320							5899*	4752	5.59

ZX240N-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

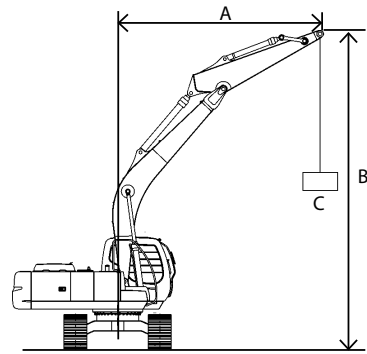
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5456*	4908					5478*	4001	6.81
4.5					7028*	7028*	5933*	4759	5501*	3389			5500*	3350	7.55
3.0					8874*	6713	6722*	4536	5541	3306			5085	3037	7.94
1.5					10343*	6292	7473*	4326	5433	3210			4935	2925	8.02
0					10819*	6116	7348	4193	5361	3145			5072	2986	7.81
-1.5			9559*	9559*	10473*	6101	7306	4157					5581	3264	7.28
-3.0			12683*	11486	9325*	6201	6874*	4232					6302*	3950	6.35
-4.5					6614*	6475							6077*	5972	4.78

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX240N-3 Mono block boom, Arm 2.03 m, G 600 mm

Unit; kg

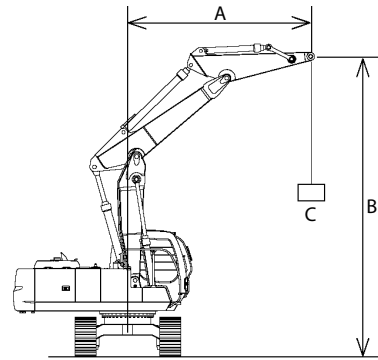
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0					6281 *	6281 *	5883 *	4869					5955 *	4194	6.57
4.5					7581 *	7163	6283 *	4738					5804	3492	7.34
3.0					9418 *	6650	7023 *	4532	5546	3318			5291	3167	7.74
1.5							7514	4345	5459	3239			5144	3061	7.82
0					10877 *	6180	7391	4239	5412	3197			5313	3144	7.61
-1.5					10311 *	6198	7377	4227					5900	3470	7.60
-3.0			11710 *	11708	8907 *	6322	6363 *	4350					6138 *	4274	6.10

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX240N-3 2-piece boom, Arm 2.91 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													5426*	5426*	4.37
7.5					6088*	6088*	5173*	4977					4432*	4432*	6.27
6.0					6211*	6211*	5471*	5117					4096*	3492	7.39
4.5			8241*	8241*	7420*	7420*	5771*	5055	4840*	3448			4010*	2970	8.08
3.0	9229*	9229*	13730*	12849*	9303*	7289	6426*	4924	5082*	3387			4004*	2707	8.44
1.5	8028*	8028*	14401*	12654	10476*	7088	7388*	4802	5470*	3267			4080*	2608	8.52
0	10862*	10862*	16108*	12242	10621*	6806	7540	4502	5410	3131			4335*	2652	8.32
-1.5	14852*	14852*	16834*	11680	10696*	6459	7489	4240	5309	3040			4851*	2869	7.83
-3.0	18815*	18815*	16888*	11551	10626*	6230	7064*	4126					4411*	3385	6.98
-4.5	20439*	20439*	12454*	11592	6991*	6256							6594*	5996	4.64

ZX240N-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

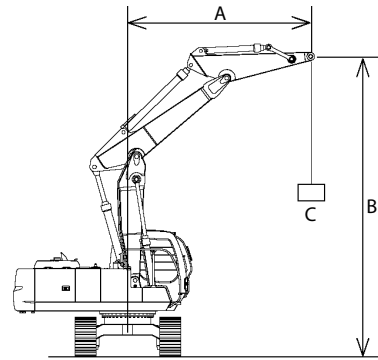
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			9199*	9199*									8694*	8694*	3.26
7.5					6924*	6924*							5893*	5474	5.57
6.0					7051*	7051*	5841*	5009*					4970*	3866	6.81
4.5			11636*	11636*	8046*	7451	6121*	5020	4747*	3329			4590*	3283	7.56
3.0			13119*	12769	9902*	7286	6812*	4884	5385*	3296			4480*	2965	7.94
1.5			14888*	12722*	10651*	7180	7577	4660	5478	3196			4576*	2850	8.02
0	12098*	12098*	16638*	11994	10665*	6702	7598	4393	5364	3093			4899*	2911	7.81
-1.5	18077*	18077*	16987*	11612	10814*	6420	7429	4192					5186*	3192	7.28
-3.0	24095*	24095*	16261*	11571	9981*	6215	5808*	4166					4640*	3907	6.32

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX240N-3 2-piece boom, Arm 2.03 m, G 600 mm

Unit; kg

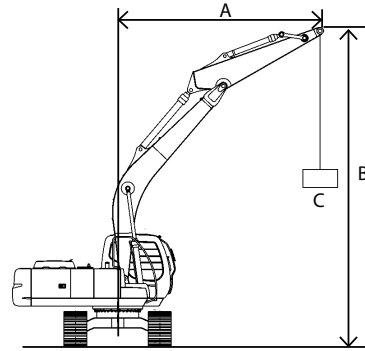
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													11812*	11812*	2.63
7.5					7447*	7447*							6657*	5923	5.24
6.0			7763*	7763*	7478*	7478*	6228*	4908					5472*	4152	6.55
4.5			11000*	11000*	8607*	7451	6434*	4946					4994*	3434	7.32
3.0			12738*	12738*	10244*	7294	7149*	4835	5553	3269			4840*	3102	7.72
1.5			14952*	12699	10742*	7097	7633	4631	5470	3195			4920*	2995	7.80
0	10932*	10932*	16886*	11918	10769*	6672	7650	4397	5394	3127			5250*	3080	7.59
-1.5	19211*	19211*	17156*	11659	10999*	6450	7475	4241					5018*	3414	7.04
-3.0	28532*	28532*	15619*	11732	9436*	6322							5136*	4431	5.84

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 8 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX250LC-3 Mono block boom, Arm 2.19 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0					7300*	7300*	6780*	6780*					6800*	5640	6.87
4.5					9030*	9030*	7420*	6670	6840*	4730			6840*	4720	7.61
3.0					11360*	9570	8410*	6380	6840	4620			6330	4280	7.99
1.5							9310*	6120	6710	4500			6140	4140	8.07
0					13360*	8920	9160	5960	6630	4430			5330	4240	7.85
-1.5					12870*	8940	9130	5940					7010	4670	7.31
-3.0			15320*	15320*	11520*	9090	8560*	6050					7990*	5710	6.36
-4.5					8260*	8260*							7770*	7770*	4.76

ZX250LC-3 Mono block boom, Arm 2.50 m, G 600 mm

Unit; kg

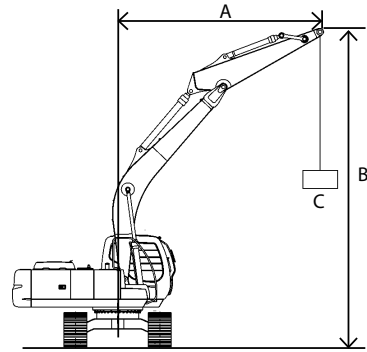
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							6410*	6410*					6250*	5260	7.20
4.5					8650*	8650*	7160*	6830	6520*	4840			6270*	4460	7.88
3.0					11050*	9820	8220*	6500	6970*	4700			6030	4080	8.24
1.5					12860*	9250	9210*	6200	6820	4550			5860	3940	8.31
0					13460*	9030	9310	6020	6710	4450			6020	4020	8.10
-1.5			9560*	9560*	13150*	9010	9250	5960	6690	4440			6600	4380	7.58
-3.0			16370*	16370*	12030*	9140	9040*	6040					7840*	5250	6.69
-4.5			12810*	12810*	9490*	9460							7970*	7620	5.23

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX250LC-3 Mono block boom, Arm 2.96 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
6.0							5870*	5870*	4940*	4940*			4400*	4400*	7.67
4.5					7840*	7840*	6670*	6670*	6120*	4880			4410*	4120	8.32
3.0					10260*	10020	7790*	6570	6650*	4720			4600*	3790	8.65
1.5					12330*	9360	8880*	6240	6830	4560			4970*	3660	8.72
0					13310*	9040	9320	6020	6690	4430			5570	3720	8.52
-1.5			9380*	9380*	13310*	8970	9220	5930	6640	4380			6040	4010	8.03
-3.0	10890*	10890*	15570*	15570*	12490*	9050	9250	5960					7100	4690	7.20
-4.5			14460*	14460*	10490*	9290							7750*	6360	5.87

ZX250LC-3 Mono block boom, Arm 3.61 m, G 600 mm

Unit; kg

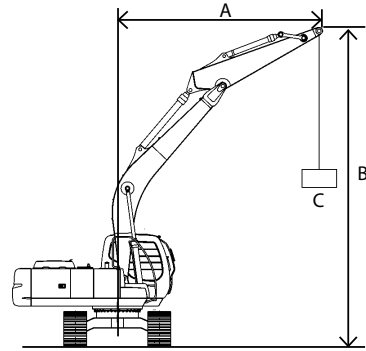
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5													3570*	3570*	7.43
6.0							5070*	5070*	4740*	4740*			3420*	3420*	8.38
4.5							5940*	5940*	5540*	4950			3420*	3420*	8.97
3.0					9090*	9090*	7130*	6670	6170*	4760	4450*	3580	3540*	3400	9.28
1.5					11440*	9540	8350*	6310	6840*	4570	5090*	3490	3780*	3290	9.35
0			5400*	5400*	12880*	9080	9280*	6030	6680	4420	5010*	3410	4200*	3330	9.16
-1.5	5270*	5270*	8620*	8620*	13330*	8900	9170	5880	6580	4330			4900*	3540	8.71
-3.0	8950*	8950*	13090*	13090*	12910*	8910	9150	5860	6580	4330			6080	4020	7.95
-4.5	13560*	13560*	16350*	16350*	11510*	9080	8510*	5980					7180*	5100	6.77
-6.0					8170*	8170*							7370*	7370*	4.88

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX250LCN-3 Mono block boom, Arm 2.19 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0					7300*	7300*	6780*	6360					6800*	5210	6.87
4.5					9030*	9030*	7420*	6150	6840*	4360			6840*	4350	7.61
3.0					11360*	8720	8410*	5860	6820	4260			6310	3950	7.99
1.5							9310	5610	6690	4140			6130	3810	8.07
0					13360*	8090	9140	5460	6610	4070			6310	3900	7.85
-1.5					12870*	8110	9110	5430					6990	4290	7.31
-3.0			15320*	15320*	11520*	8250	8560*	5540					7990*	5240	6.36
-4.5					8260*	8260*							7770*	7770*	4.76

ZX250LCN-3 Mono block boom, Arm 2.50 m, G 600 mm

Unit; kg

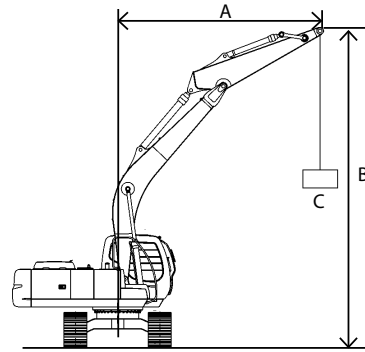
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							6410*	6410*					6250*	4860	7.20
4.5					8650*	8650*	7160*	6290	6520*	4460			6270*	4120	7.88
3.0					11050*	8940	8220*	5970	6960	4320			6020	3750	8.24
1.5					12860*	8380	9210*	5680	6800	4180			5850	3620	8.31
0					13460*	8170	9290	5500	6690	4080			6010	3690	8.10
-1.5			9560*	9560*	13150*	8160	9230	5450	6680	4070			6580	4020	7.58
-3.0			16370*	16180	12030*	8280	9040*	5520					7840*	4810	6.69
-4.5			12810*	12810*	9490*	8590							7970*	6960	5.23

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX250LCN-3 Mono block boom, Arm 2.96 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5870*	5870*	4940*	4590			4400*	4400*	7.67
4.5					7840*	7840*	6670*	6370	6120*	4500			4410*	3800	8.32
3.0					10260*	9130	7790*	6030	6650*	4350			4600*	3480	8.65
1.5					12330*	8500	8880*	5720	6810	4190			4970*	3360	8.72
0					13310*	8190	9300	5500	6670	4060			5560	3410	8.52
-1.5			9380*	9380*	13310*	8110	9190	5410	6620	4010			6020	3680	8.03
-3.0	10890*	10890*	15570*	15570*	12490*	8190	9230	5440					7080	4290	7.20
-4.5			14460*	14460*	10490*	8430							7750*	5820	5.87

ZX250LCN-3 Mono block boom, Arm 3.61 m, G 600 mm

Unit; kg

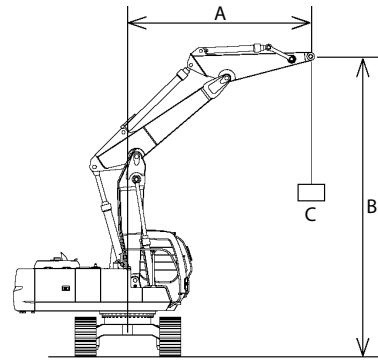
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
7.5													3570*	3570*	7.43
6.0							5070*	5070*	4740*	4690			3420*	3420*	8.38
4.5							5940*	5940*	5540*	4570			3420*	3380	8.97
3.0					9090*	9090*	7130*	6140	6170*	4390	4450*	3290	3540*	3120	9.28
1.5					11440*	8660	8350*	5780	6830	4200	5090*	3200	3780*	3020	9.35
0			5400*	5400*	12880*	8220	9280*	5510	6660	4050	5010*	3130	4200*	3050	9.16
-1.5	5270*	5270*	8620*	8620*	13330*	8040	9150	5360	6560	3960			4900*	3240	8.71
-3.0	8950*	8950*	13090*	13090*	12910*	8050	9120	5340	6270	3960			6070	3680	7.95
-4.5	13560*	13560*	16350*	16010	11510*	8220	8510*	5460					7180*	4660	6.77
-6.0					8170*	8170*							7370*	7370*	4.88

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX250LC-3 2-piece boom, Arm 2.19 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			10750*	10750*									9360*	9360*	3.89
7.5			8050*	8050*	7980*	7980*							6510*	6510*	5.91
6.0			8670*	8670*	8380*	8380*	6700*	6700*					5550*	5540	7.07
4.5			13360*	13360*	10050*	10050*	7170*	7150	5860*	5030			5140*	4700	7.77
3.0			16040*	16040*	12730*	10670	8120*	7050	6160*	4970			5010*	4300	8.13
1.5			18610*	18610*	13460*	10720	9360*	7010	6610*	4840			5090*	4180	8.20
0			20970*	19570	13520*	10180	9910*	6690	7060	4710			5420*	4300	7.99
-1.5	19000*	19000*	21210*	19340	13740*	9930	9900	6450					5960*	4720	7.46
-3.0	28810*	28810*	19660*	19510	12420*	9810	7440*	6420					5590*	5590*	6.43

ZX250LC-3 2-piece boom, Arm 2.50 m, G 600 mm

Unit; kg

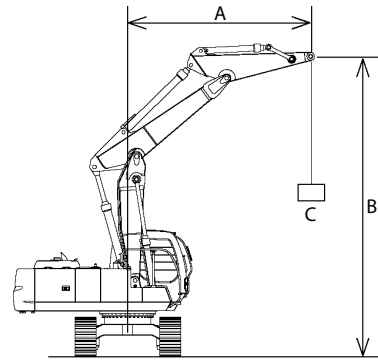
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			8930*	8930*									8030*	8030*	4.38
7.5					7590*	7590*	6420*	6420*					5920*	5920*	6.24
6.0			7150*	7150*	7960*	7960*	6400*	6400*					5120*	5120*	7.35
4.5			13800*	13800*	9400*	9400*	6860*	6860*	5610*	5070			4760*	4460	8.02
3.0			16240*	16240*	12730*	10620	7760*	7000	5910*	4980			4650*	4090	8.37
1.5			18220*	18220*	13360*	10380	8980*	7010	6370*	4830			4740*	3960	8.44
0	11200*	11200*	20570*	19570	13370*	10170	9800*	6680	6880*	4670			5040*	4060	8.23
-1.5	17670*	17670*	21120*	19210	13560*	9860	9850	6400	6730*	4600			5650*	4420	7.72
-3.0	25180*	25180*	20130*	19290	12860*	9710	8240*	6300					5110*	5110*	6.84
-4.5			13250*	13250*									10820*	10820*	3.56

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



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

METRIC MEASURE

ZX250LC-3 2-piece boom, Arm 2.96 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					6360*	6360*							5430*	5430*	5.17
7.5					6110*	6110*	5840*	5840*					4680*	4680*	6.81
6.0			5010*	5010*	6500*	6500*	6050*	6050*	5020*	5020*			4400*	4400*	7.84
4.5			13800*	13800*	8650*	8650*	6500*	6500*	5300*	5160			4300*	4110	8.47
3.0	13670*	13670*	16390*	16390*	11450*	10640	7340*	7000*	5630*	5080			4210*	3790	8.80
1.5			17600*	17600*	13300*	10410	8530*	7100	6100*	4910			4280*	3670	8.87
0	10390*	10390*	19860*	19650*	13310*	10290	9740	6760	6630*	4720			4530*	3750	8.67
-1.5	15040*	15040*	20980*	19260	13420*	9890	9780	6450	6930	4580			5030*	4040	8.19
-3.0	20080*	20080*	20690*	19180	13400*	9720	9170*	6280					5060*	4710	7.37
-4.5	23600*	23600*	16330*	16330*	9730*	9700							6670*	6670	5.39

ZX250LC-3 2-piece boom, Arm 3.61 m, G 600 mm

Unit; kg

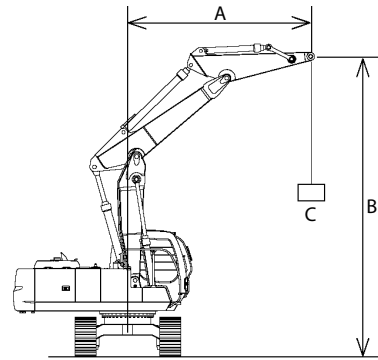
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													5540*	5540*	3.75
9.0					5160*	5160*	4490*	4490*					4100*	4100*	6.21
7.5					4590*	4590*	4840*	4840*	3950*	3950*			3620*	3620*	7.63
6.0					4650*	4650*	5070*	5070*	4720*	4720*			3430*	3430*	8.55
4.5			5230*	5230*	6100*	6100*	5980*	5980*	4940*	4940*	3810*	3760	3380*	3380*	9.14
3.0	15480*	15480*	16850*	16850*	9870*	9870*	6770*	6770*	5270*	5080	4280*	3730	3450*	3400	9.44
1.5	8750*	8750*	17010*	17010*	12940*	10440	7880*	6850	5740*	4970	4560*	3640	3630*	3300	9.50
0	9780*	9780*	18860*	18860*	13230*	10480	9170*	6850	6280*	4820	4660*	3540	3920*	3350	9.32
-1.5	13060*	13060*	20600*	19380	13260*	9950	9690*	6550	6800*	4610			4290*	3570	8.88
-3.0	16960*	16960*	20970*	19070	13510*	9710	9730	6280	6760*	4510			4900*	4050	8.13
-4.5	20670*	20670*	19250*	19240	11970*	9590	7450*	6240					5100*	5100*	6.73

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX250LCN-3 2-piece boom, Arm 2.19 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			10750*	10750*									9360*	9360*	3.89
7.5			8050*	8050*	7980*	7980*	6700*	6700*					6510*	6510*	5.91
6.0			8670*	8670*	8380*	8380*	7170*	6710					5550*	5110	7.07
4.5			13350*	13350*	10040*	10030*	8120*	6560	5860*	4640			5140*	4330	7.77
3.0			16040*	16040*	12730*	9860	9360*	6450	6160*	4580			5000*	3960	8.13
1.5			18610*	18100	13460*	9790	9880	6130	6610*	4450			5090*	3840	8.20
0			20970*	17320	13520*	9270	9870	5900	7040	4330			5420*	3940	7.99
-1.5	19000*	19000*	21210*	17100	13740*	9020	7430*	5870					5950*	4330	7.46
-3.0	28810*	28810*	19660*	17260	12410*	8910	12410*	8910					5590*	5370	6.43

ZX250LCN-3 2-piece boom, Arm 2.50 m, G 600 mm

Unit; kg

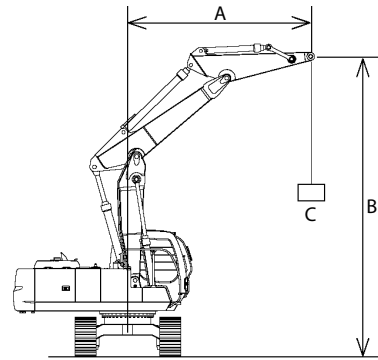
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0			8930*	8930*									8030*	8030*	4.38
7.5					7590*	7590*	6420*	6420*					5920*	5920*	6.24
6.0			7150*	7150*	7960*	7960*	6400*	6400*					5120*	4810	7.35
4.5			13800*	13800*	9400*	9400*	6860*	6670	5610*	4680			4760*	4100	8.02
3.0			16240*	16240*	12730	9820	7760*	6790	5910*	4590			4650*	3760	8.37
1.5			18220*	17970	13360	9840	8980*	6460	6370*	4440			4740*	3640	8.44
0	11200*	11200*	20570*	17310	13370	9260	9790	6130	6880*	4290			5040*	3720	8.23
-1.5	17670*	17670*	21120*	16970	13560	8950	9820	5850	6730*	4210			5650*	4050	7.72
-3.0	25180*	25180*	20130*	17050	12860	8800	8240*	5760					5110*	4850	6.84
-4.5			13250*	13250*									10820*	10820	3.56

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX250LCN-3 2-piece boom, Arm 2.96 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					6360*	6360*							5430*	5430*	5.17
7.5					6110*	6110*	5840*	5840*					4680*	4680*	6.81
6.0			5010*	5010*	6500*	6500*	6050*	6050*	5020*	4770			4400*	4370	7.84
4.5			13800*	13800*	8650*	8650*	6500*	6500*	5300*	4780			4300*	3780	8.47
3.0	13670*	13670*	16390*	16390*	11450*	9870	7340*	6530	5630*	4690			4210*	3480	8.80
1.5			17600*	17600*	13300*	9600	8530*	6540	6100*	4520			4280*	3370	8.87
0	10390*	10390*	19860*	17570*	13310*	9370	9730	6200	6630*	4330			4530*	3430	8.67
-1.5	15040*	15040*	20980*	17020*	13420*	8980	9760	5900	6910	4200			5030*	3700	8.19
-3.0	20080*	20080*	20690*	16950*	13400*	8820	9170	5730					5060*	4320	7.37
-4.5	23600*	23600*	16330*	16330*	9730*	8800							6670*	6670	5.39

ZX250LCN-3 2-piece boom, Arm 3.61 m, G 600 mm

Unit; kg

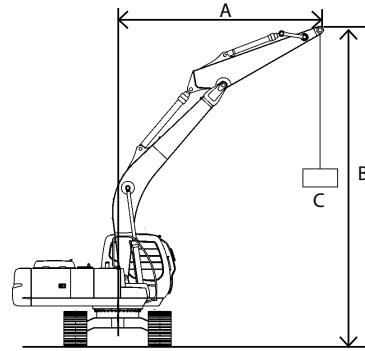
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													5540*	5540*	3.75
9.0					5160*	5160*	4490*	4490*					4100*	4100*	6.21
7.5					4590*	4590*	4840*	4840*	3950*	3950*			3620*	3620*	7.63
6.0					4650*	4650*	5070*	5070*	4720*	4720*			3430*	3430*	8.55
4.5			5230*	5230*	6100*	6100*	5980*	5980*	4940*	4850*	3810*	3470	3380*	3360	9.14
3.0	15480*	15480*	16850*	16850*	9870*	9820*	6770*	6540	5270*	4750	4280*	3430	3450*	3120	9.44
1.5	8750*	8750*	17010*	17010*	12940*	9630	7880*	6680	5740*	4630	4560*	3340	3630*	3020	9.50
0	9780*	9780*	18860*	17880	13230*	9550	9170*	6290	6280*	4430	4660*	3240	3920*	3060	9.32
-1.5	13060*	13060*	20600*	17130	13260*	9040	9680*	5990	6800*	4230			4290*	3260	8.88
-3.0	16960*	16960*	20970*	16840	13510*	8800	9710	5740	6760*	4130			4900*	3710	8.13
-4.5	20670*	20670*	19250*	16990	11970*	8690	7450*	5690					5100*	4870	6.73

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX280LC-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0													6740*	5440	7.46
4.5					9590*	9590*							6870*	4670	8.11
3.0					12340*	10580	8950*	7060					6860	4290	8.44
1.5							10050*	6730	8050	4950			6700	4160	8.49
0					14720*	9810	10690*	6530	7920	4840			6900	4250	8.27
-1.5			10360*	10360*	14390*	9830	10750*	6480	7900	4820			7560	4640	7.75
-3.0			18020*	18020*	13290*	9980	10040*	6580					8470*	5530	6.86
-4.5			14540*	14540*	10790*	10340							8710*	7920	5.42

ZX280LC-3 Mono block boom, Arm 3.11 m, G 600 mm

Unit; kg

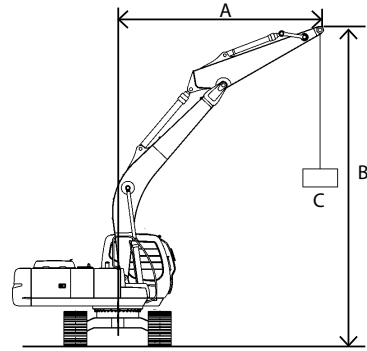
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5960*	5960*	5910*	5520			4730*	4730	8.19
4.5					8240*	8240*	6940*	6940*	6330*	5370			4730*	4140	8.78
3.0					11000*	10940	8240*	7180	6990*	5170	5560*	3900	4890*	3830	9.09
1.5					13310*	10180	9500*	6800	7690*	4970	6130	3800	5220*	3720	9.14
0					14450*	9820	10380*	6540	7900	4810			5800*	3780	8.93
-1.5	6820*	6820*	10250*	10250*	14590*	9730	10730*	6420	7820	4740			6610	4060	8.45
-3.0	11900*	11900*	16480*	16480*	13930*	9820	10410*	6450	7870	4790			7670	4680	7.65
-4.5			16970*	16970*	12190*	10070	8980*	6640					8170*	6120	6.39

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX280LC-3 Mono block boom, Arm 3.76 m, G 600 mm

Unit; kg

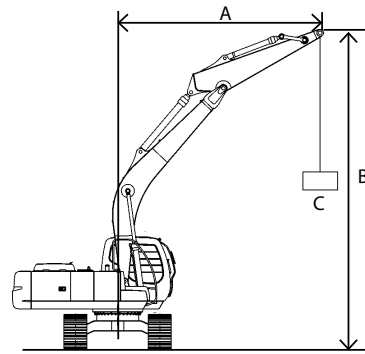
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5									5160*	5160*			3950*	3950*	7.94
6.0									5250*	5250*			3810*	3810*	8.82
4.5							6160*	6160*	5750*	5460	5250*	4040	3820*	3760	9.37
3.0					9700*	9700*	7520*	7330	6480*	5240	5950*	3930	3950*	3500	9.66
1.5					12320*	10410	8910*	6890	7270*	5000	6150	3810	4210*	3390	9.70
0			6510*	6510*	13940*	9890	9990*	6570	7900	4810	6040	3710	4640*	3430	9.51
-1.5	6490*	6490*	9930*	9930*	14540*	9680	10570*	6390	7780	4700	5880*	3670	5360*	3640	9.06
-3.0	10280*	10280*	14500*	14500*	14280*	9680	10570*	6360	7760	4680			6650*	4100	8.32
-4.5	14880*	14880*	18780*	18780*	13080*	9860	9740*	6470					7700*	5090	7.18
-6.0			14480*	14480*	10220*	10220*							8160*	7850	5.41

 **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  NOTE: • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX280LCN-3 Mono block boom, Arm 2.42 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0													6740*	4990	7.46
4.5					9590*	9590*							6870*	4270	8.11
3.0					12340*	9550	8950*	6430					6820	3920	8.44
1.5							10050*	6110	7990	4510			6660	3790	8.49
0					14720*	8810	10690*	5920	7870	4400			6850	3870	8.27
-1.5			10360*	10360*	14390*	8820	10750*	5870	7850	4390			7510	4220	7.75
-3.0			18020*	17680	13290*	8970	10040*	5960					8470*	5030	6.86
-4.5			14540*	14540*	10790*	9320							8710*	7190	5.42

ZX280LCN-3 Mono block boom, Arm 3.11 m, G 600 mm

Unit; kg

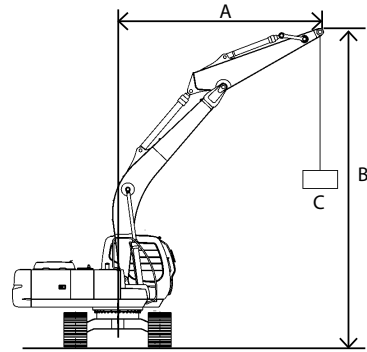
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							5960*	5960*	5910*	5070			4730*	4340	8.19
4.5					8240*	8240*	6940*	6940*	6330*	4930			4730*	3790	8.78
3.0					11000*	9900	8240*	6550	6990*	4730	5560*	3550	4890*	3500	9.09
1.5					13310*	9160	9500*	6180	7690*	4520	6090	3460	5220*	3390	9.14
0					14450*	8820	10380*	5920	7850	4370			5800*	3440	8.93
-1.5	6820*	6820*	10250*	10250*	14590*	8730	10730*	5810	7770	4300			6570	3690	8.45
-3.0	11900*	11900*	16480*	16480*	13930*	8810	10410*	5830	7820	4350			7620	4250	7.65
-4.5			16970*	16970*	12190*	9060	8980*	6030					8170*	5560	6.39

-  NOTE: When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX280LCN-3 Mono block boom, Arm 3.76 m, G 600 mm

Unit; kg

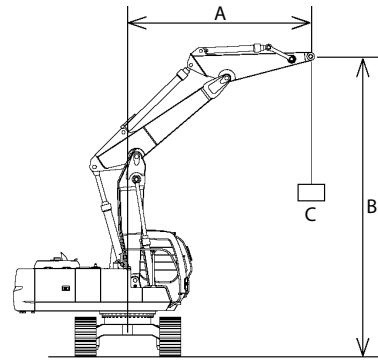
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
7.5									5160*	5160*			3950*	3950*	7.94
6.0									5250*	5180			3810*	3810*	8.82
4.5							6160*	6160*	5750*	5010	5250*	3700	3820*	3440	9.37
3.0					9700*	9700*	7520*	6690	6480*	4790	5950*	3590	3950*	3190	9.66
1.5					12320*	9830	8910*	6270	7270	4560	6110	3470	4210*	3080	9.70
0			6510*	6510*	13940*	8870	9990*	5950	7850	4370	6000	3370	4640*	3120	9.51
-1.5	6490*	6490*	9930*	9930*	14540*	8680	10570*	5780	7730	4260	5880*	3330	5360*	3300	9.06
-3.0	10280*	10280*	14500*	14500*	14280*	8680	10570*	5740	7710	4250			6650*	3720	8.32
-4.5	14880*	14880*	18780*	17350	13080*	8850	9740*	5850					7700*	4620	7.18
-6.0			14480*	14480*	10220*	9250							8160*	7120	5.41

 **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX280LC-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													7600*	7600*	4.65
7.5													5680*	5680*	6.41
6.0			10270*	10270*									4930*	4930*	7.47
4.5			14010*	14010*	9660*	9660*							4590*	4590*	8.12
3.0			17660*	17660*	13700*	11560	7850*	7580					4490*	4450	8.45
1.5			20300*	20300*	14720*	11480*	9150*	7710	6100*	5190			4580*	4330	8.50
0	14100*	14100*	22820*	21610	14760*	11180	10450*	7350	6900*	5120			4870*	4450	8.28
-1.5	21280*	21280*	23320*	21300	14970*	10870	10860*	7070	6490*	5070			5470*	4860	7.76
-3.0	28680*	28680*	22250*	21450	14250*	10750	9260*	8980					5970*	5870	6.83

ZX280LC-3 2-piece boom, Arm 3.11 m, G 600 mm

Unit; kg

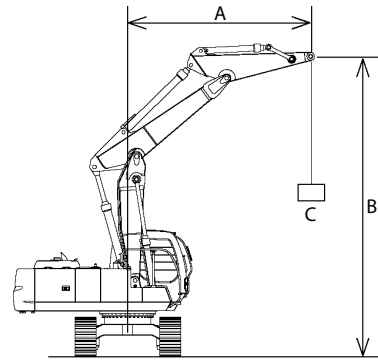
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5			8490*	8490*									8410*	8410*	3.03
9.0					7040*	7040*							5800*	5800*	5.79
7.5					6740*	6740*	5730*	5730*					4690*	4690*	7.27
6.0					7220*	7220*	5840*	5840*	4980*	4980*			4170*	4170*	8.22
4.5			13710*	13710*	8460*	8460*	6320*	6320*	5130*	5130*			3920*	3920*	8.81
3.0	14810*	14810*	17730*	17730*	11390*	11390*	7200*	7200*	5480*	5480	4230*	4060	3840*	3840*	9.12
1.5			19260*	19260*	14570*	11380	8440*	7850	5980*	5410	4500*	3980	3910*	3860	9.16
0	12260*	12260*	21690*	21650	14650*	11370	9800*	7460	6530*	5250			4130*	3940	8.96
-1.5	16950*	16950*	23070*	21370	14750*	10910	10760*	7160	7060*	5070			4570*	4250	8.48
-3.0	21690*	21690*	23030*	21260	14960*	10770	10500*	6940	6460*	5060			5390*	4910	7.68
-4.5	24450*	24450*	19470*	19470*	11960*	10710							7070*	7070*	5.87

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX280LC-3 2-piece boom, Arm 3.76 m, G 600 mm

Unit; kg

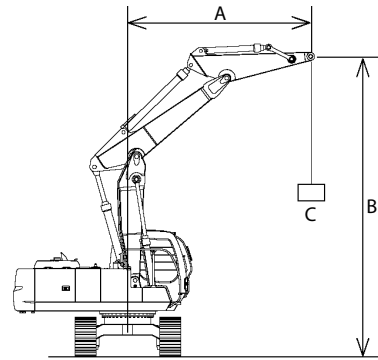
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5					5820*	5820*							5710*	5710*	4.54
9.0							5420*	5420*					4490*	4490*	6.69
7.5							5300*	5300*	4580*	4580*			4010*	4010*	8.00
6.0					6120*	6120*	5420*	5420*	4610*	4610*			3620*	3620*	8.87
4.5			7700*	7700*	7550*	7550*	5850*	5850*	4790*	4790*	4100*	4100*	3430*	3430*	9.42
3.0	15390*	15390*	18590*	18590*	9750*	9750*	6630*	6630*	5130*	5130*	4280*	4170	3370*	3370*	9.71
1.5	11420*	11420*	18660*	18660*	13930*	11400	7780*	7430	5620*	5400	4520*	4060	3420*	3420*	9.75
0	11990*	11990*	20660*	20660*	14580*	11590	9140*	7570	6180*	5300	4790*	3930	3600*	3570	9.56
-1.5	15210*	15210*	22620*	21530	14600*	11000	10430*	7230	6740*	5120	4400*	3860	3950*	3790	9.11
-3.0	18770*	18770*	23160*	21170	14870*	10730	10700*	6960	7180*	4990			4570*	4290	8.38
-4.5	21110*	21110*	21920*	21360	13750*	10600	9030*	6880					5580*	5490	7.08

 **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX280LCN-3 2-piece boom, Arm 2.42 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0													7600*	7600*	4.65
7.5													5680*	5680*	6.41
6.0			10270*	10270*									4930*	4930*	7.47
4.5			14010*	14010*	9660*	9660*							4590*	4420	8.12
3.0			17660*	17660*	13700*	10640	7850*	7050*					4490*	4070	8.45
1.5			20300*	19810	14720*	10730	9150*	7060	6100*	4740			4580*	3960	8.50
0	14100*	14100*	22820*	19020	14760*	10130	10450*	6730	6900*	4680			4870*	4060	8.28
-1.5	21280*	21280*	23320*	18730	14970*	9830	10860*	6440	6490*	4630			5470*	4440	7.76
-3.0	28680*	28680*	22250*	18870	14250*	9710	9260*	6350					5970*	5350	6.83

ZX280LCN-3 2-piece boom, Arm 3.11 m, G 600 mm

Unit; kg

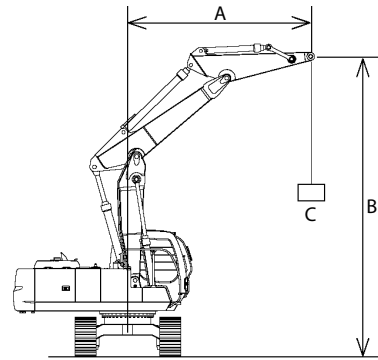
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5			8490*	8490*									8410*	8410*	3.03
9.0					7040*	7040*							5800*	5800*	5.79
7.5					6740*	6740*	5730*	5730*					4690*	4690*	7.27
6.0					7220*	7220*	5840*	5840*	4980*	4980*			4170*	4170*	8.22
4.5			13710*	13710*	8460*	8460*	6320*	6320*	5130*	5130*			3920*	3910	8.81
3.0	14810*	14810*	17730*	17730*	11390*	10670*	7200*	7040	5480*	5130	4230*	3710	3840*	3620	9.12
1.5			19260*	19260*	14570*	10440	8440*	7200	5980*	5010	4500*	3640	3910*	3530	9.16
0	12260*	12260*	21690*	19410	14650*	10310	9800*	6820	6530*	4800			4130*	3600	8.96
-1.5	16950*	16950*	23070*	18790	14750*	9870	10760*	6530	7060*	4630			4570*	3870	8.48
-3.0	21690*	21690*	23030*	18690	14960*	9730	10500*	6310	6460*	4610			5390*	4480	7.68
-4.5	24450*	24450*	19470*	18950	11960*	9670							7070*	6590	5.87

-  **NOTE:** When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  NOTE: • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX280LCN-3 2-piece boom, Arm 3.76 m, G 600 mm

Unit; kg

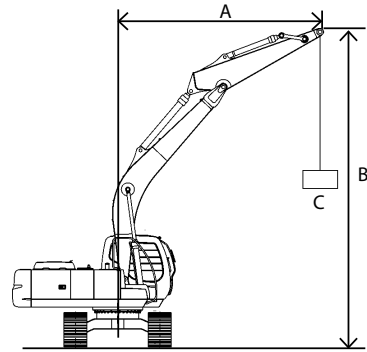
B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5					5820*	5820*							5710*	5710*	4.54
9.0							5420*	5420*					4490*	4490*	6.69
7.5							5300*	5300*	4580*	4580*			4010*	4010*	8.00
6.0					6210*	6210*	5420*	5420*	4610*	4610*			3620*	3620*	8.87
4.5			7700*	7700*	7550*	7550*	5850*	5850*	4790*	4790*	4100*	3890	3430*	3430*	9.42
3.0	15390*	15390*	18590*	18590*	9750*	9750*	6630*	6630*	5130*	5110	4280*	3830	3370*	3290	9.71
1.5	11420*	11420*	18660*	18660*	13930*	10480	7780*	7140*	5620*	5020	4520*	3710	3420*	3200	9.75
0	11990*	11990*	20660*	19640	14580*	10520	9140*	6930	6180*	4900	4790*	3590	3600*	3250	9.56
-1.5	15210*	15210*	22620*	18940	14600*	9950	10430*	6600	6740*	4670	4400*	3510	3950*	3460	9.11
-3.0	18770*	18770*	23160*	18600	14870*	9690	10700*	6330	7180*	4540			4570*	3910	8.38
-4.5	21110*	21110*	21920*	18780	13750*	9560	9030*	6250					5580*	5000	7.08

-  NOTE: When the lifting hook is used, the maximum allowable lifting load is 10 tons.

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX350LC-3 Mono block boom, Arm 2.33m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							10400*	9500	9650*	6640			9640*	6350	7.70
4.5					15120*	13830	11640*	9050	10030*	6480			8610	5510	8.30
3.0							13060*	8540	9880	6250			8020	5100	8.60
1.5							13450	8140	9640	6030			7870	4980	8.62
0							13220	7940	9500	5900			8130	5110	8.38
-1.5					18040*	12010	13190	7910	9500	5900			8950	5600	7.84
-3.0			19520*	19520*	15800*	12240	12270*	8060					10080*	6710	6.93
-4.5					11560*	11560*							9190*	9190*	5.47

ZX350LC-3 Mono block boom, Arm 2.67 m, G 600 mm

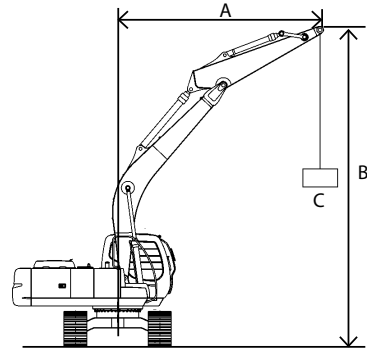
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							9890*	9580	9180*	6690			9120*	6000	8.00
4.5					14260*	14040	11160*	9110	9670*	6500			8190	5240	8.58
3.0					17540*	12790	12660*	8570	9890	6240			7640	4860	8.87
1.5							13460	8140	9620	6000			7490	4730	8.89
0					19400*	11840	13170	7890	9450	5850			7720	4840	8.65
-1.5			13890*	13890*	18430*	11870	13090	7820	9400	5810			8420	5250	8.13
-3.0			21190*	21190*	16450*	12060	12700*	7930					9930*	6190	7.26
-4.5			16110*	16110*	12770*	12480							9480*	8520	5.88

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX350LC-3 Mono block boom, Arm 3.20 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0									8530*	6790			6300*	5380	8.58
4.5							10430*	9260	9130*	6570	7470*	4880	6330*	4760	9.12
3.0					16340*	13160	12030*	8700	9940	6290	7490	4760	6550*	4440	9.39
1.5					18730*	12240	13410*	8210	9640	6020	7340	4620	6860	4320	9.42
0					19450*	11840	13190	7890	9430	5820	7240	4530	7030	4400	9.19
-1.5			13320*	13320*	18940*	11770	13040	7760	9330	5740			7580	4730	8.70
-3.0	15640*	15640*	21080*	21080*	17380*	11900	13090	7810	9390	5790			8760	5440	7.90
-4.5			18960*	18960*	14380*	12230	10830*	8050					9210*	7030	6.66

ZX350LC-3 Mono block boom, Arm 4.00 m, G 600 mm

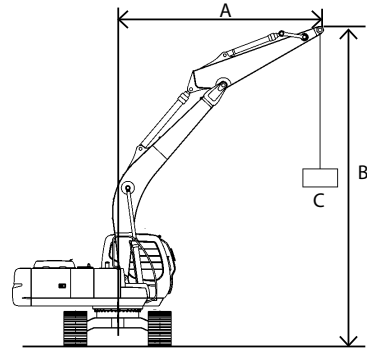
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
7.5													5030*	5030	8.63
6.0									7590*	6950	6810*	5080	4880*	4660	9.42
4.5									8300*	6700	7730	4970	4890*	4190	9.91
3.0					14430*	13730	10970*	8920	9230*	6390	7550	4810	5030*	3920	10.16
1.5					17460*	12580	12610*	8350	9710	6070	7360	4630	5320*	3820	10.18
0			8070*	8070*	19040*	11930	13250	7930	9430	5820	7210	4490	5810*	3870	9.98
-1.5	8110*	8110*	12220*	12220*	19260*	11670	12990	7710	9260	5670	7130	4420	6590	4100	9.53
-3.0	12710*	12710*	17660*	17660*	18360*	11680	12930	7660	9230	5640			7400	4590	8.80
-4.5	18220*	18220*	22520*	22520*	16220*	11900	12270*	7790	9150*	5780			8680*	5590	7.71
-6.0			16250*	16250*	12050*	12050*	8450*	8190					8280*	8080	6.06

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
- * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX350LCN-3 Mono block boom, Arm 2.33 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							10400*	8780	9650*	6140			9640*	5870	7.70
4.5					15120*	12630	11640*	8340	10030*	5980			8600	5090	8.30
3.0							13060*	7830	9860	5750			8000	4700	8.60
1.5							13430	7450	9620	5540			7850	4570	8.62
0							13190	7250	9480	5410			8120	4700	8.38
-1.5					18040*	10870	13160	7220	9480	5410			8930	5140	7.84
-3.0			19520*	19520*	15800*	11090	12270*	7370					10080*	6150	6.93
-4.5					11560*	11550							9190*	8820	5.47

ZX350LCN-3 Mono block boom, Arm 2.67 m, G 600 mm

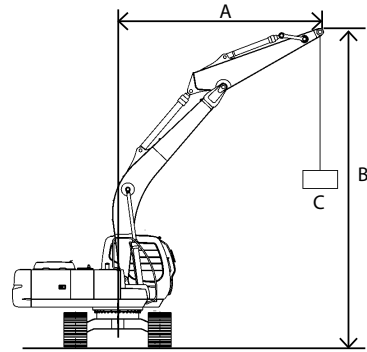
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0							9890*	8850	9180*	6190			9120*	5540	8.00
4.5					14260*	12830	11160*	8400	9670*	6000			8170	4830	8.58
3.0					17540*	11620	12660*	7870	9870	5750			7630	4470	8.87
1.5							13430	7440	9600	5510			7480	4340	8.89
0					19400*	10710	13140	7200	9430	5360			7700	4440	8.65
-1.5			13890*	13890*	18430*	10730	13070	7130	9380	5320			8400	4820	8.13
-3.0			21190*	21190*	16450*	10920	12700*	7240					9930*	5680	7.26
-4.5			16110*	16110*	12770*	11320							9480*	7800	5.88

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  NOTE: • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-013

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

METRIC MEASURE

ZX350LCN-3 Mono block boom, Arm 3.20 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
6.0									8530*	6280			6300*	4960	8.58
4.5							10430*	8540	9130*	6060	7470*	4490	6330*	4380	9.12
3.0					16340*	11980	12030*	7990	9920	5790	7470	4370	6550*	4080	9.39
1.5					18730*	11080	13410*	7510	9620	5520	7330	4240	6850	3970	9.42
0					19450*	10700	13160	7200	9410	5330	7230	4150	7020	4040	9.19
-1.5			13320*	13320*	18940*	10630	13010	7080	9310	5250			7560	4330	8.70
-3.0	15640*	15640*	21080*	21080*	17380*	10760	13060	7120	9370	5300			8740	4980	7.90
-4.5			18960*	18960*	14380*	11080	10830*	7360					9210*	6440	6.66

ZX350LCN-3 Mono block boom, Arm 4.00 m, G 600 mm

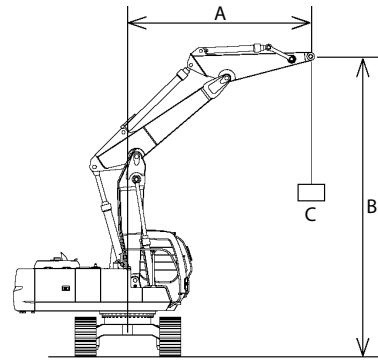
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				
															REACH m
7.5													5030*	5030*	8.63
6.0									7590*	6440	6810*	4690	4880*	4300	9.42
4.5									8300*	6200	7720	4590	4890*	3850	9.91
3.0					14430*	12530	10970*	8210	9230*	5890	7540	4420	5030*	3600	10.16
1.5					17460*	11410	12610*	7650	9690	5570	7350	4250	5320*	3500	10.18
0			8070*	8070*	19040*	10780	13220	7240	9410	5330	7190	4110	5810*	3540	9.98
-1.5	8110*	8110*	12220*	12220*	19260*	10540	12960	7020	9240	5180	7110	4040	6580	3750	9.53
-3.0	12710*	12710*	17660*	17660*	18360*	10550	12900	6970	9210	5150			7380	4200	8.80
-4.5	18220*	18220*	22520*	21120	16220*	10750	12270*	7090	9150	5290			8680*	5120	7.71
-6.0			16250*	16250*	12050*	11220	8450*	7490					8280*	7400	6.06

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX350LC-3 2-piece boom, Arm 2.33 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					12460*	12460*							11240*	11240*	5.25
7.5					12130*	12130*	10060*	9860					8830*	7680	6.83
6.0					13500*	13500*	10360*	9760	8760*	6610			7810*	6080	7.80
4.5			19220*	19220*	17510*	14470	11510*	9510	8990*	6600			7330*	5290	8.40
3.0			24740*	24740*	18460*	13950	13430*	9450	9620*	6430			7180*	4910	8.69
1.5			24470*	24470*	19410*	13530	13820	8910	9830	6180			7300*	4800	8.72
0			30490*	24540	19510*	12760	13960	8470	9640	5940			7720*	4950	8.47
-1.5	29070*	29070*	29950*	24330	19730*	12420	13540	8110	9510	5830			7220*	5440	7.94
-3.0	38130*	38130*	27030*	24630	17660*	12350	11230*	8020					6540*	6540*	6.91

ZX350LC-3 2-piece boom, Arm 2.67 m, G 600 mm

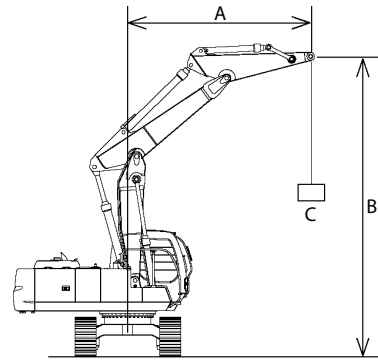
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					11670*	11670*							9960*	9960*	5.73
7.5					11540*	11540*	9570*	9570*					8070*	7100	7.19
6.0			14880*	14880*	12750*	12750*	9930*	9760	8330*	6750			7210*	5720	8.12
4.5			21730*	21730*	16330*	14530*	11030*	9540*	8650*	6710			6810*	5010	8.70
3.0			24570*	24570*	18880*	14030	12870*	9560	9310*	6520			6680*	4650	8.98
1.5			27680*	26030	19360*	13730	13810	8990	9800	6240	6800*	4550	6800*	4550	9.00
0	18560*	18560*	30210*	24720	19410*	12860	13890*	8510	9670	5970			7180*	4670	8.77
-1.5	25980*	25980*	30270*	24320	19690*	12420	13580	8130	9470	5790			7240*	5090	8.25
-3.0	33740*	33740*	28090*	24470	18500*	12310	12340*	7960					6030*	6030*	7.36
-4.5			18970*	18970*	11270*	11270*							9930*	9930*	4.80

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX350LC-3 2-piece boom, Arm 3.20 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													9340*	9340*	4.38
9.0							9110*	9110*					7290*	7290*	6.55
7.5							8930*	8930*	7690*	6840			6540*	6180	7.86
6.0					11680*	11680*	9310*	9310*	7800*	6970			6220*	5120	8.72
4.5			23490*	23490*	14430*	14430*	10300*	9580*	8180*	6870	6820*	4820	6060*	4540	9.25
3.0	19720*	19720*	24350*	24350*	18690*	14100	11990*	9670*	8830*	6670	7240*	4740	5960*	4240	9.52
1.5			26540*	26180	19300*	14040	13750*	9130	9670*	6390	7380	4600	6050*	4150	9.54
0			29250*	25050	19260*	13020	13620	8580	9650	6060	7240	4470	6350*	4240	9.32
-1.5			30340*	24300	19450*	12440	13690	8220	9490	5800			6930*	4570	8.84
-3.0			29230*	24220	19270*	12260	13350	7920	8650*	5730			5700*	5270	8.05
-4.5	29960*	29960*	23730*	23730*	14790*	12240	8440*	8000					7230*	7230*	6.26

ZX350LC-3 2-piece boom, Arm 4.00 m, G 600 mm

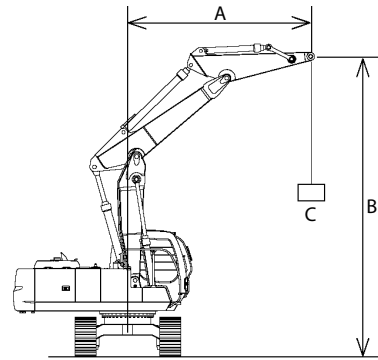
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													6570*	6570*	5.91
9.0							8220*	8220*	6320*	6320*			5500*	5500*	7.65
7.5							8140*	8140*	7060*	7060*			5030*	5030*	8.80
6.0							8500*	8500*	7170*	7090	6240*	5090	4810*	4420	9.57
4.5			11450*	11450*	12100*	12100*	9340*	9340*	7560*	6960	6410*	5070	4750*	3980	10.06
3.0	15070*	15070*	24830*	24830*	16760*	14310*	10810*	9380	8200*	6760	6700*	4940	4820*	3740	10.30
1.5	13290*	13290*	25400*	25400*	19120*	13800	12890*	9430	9030*	6650	7100*	4750	5030*	3650	10.32
0	14890*	14890*	27760*	26030	19170*	13440	13620	8790	9610	6280	7320	4550	5390*	3720	10.12
-1.5	18720*	18720*	29890*	24650	19220*	12630	13760*	8310	9530	5910	7170	4390	5820*	3950	9.68
-3.0	22880*	22880*	30130*	24150	19500*	12240	13460	8010	9380	5690			5670*	4440	8.96
-4.5	25900*	25900*	27710*	24330	17920*	12150	12050*	7840	6570*	5730			5630*	5570	7.69
-6.0			16970*	16970*									12010*	12010*	4.02

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX350LCN-3 2-piece boom, Arm 2.33 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					12460*	12460*							11240*	10910	5.25
7.5					12130*	12130*	10060*	9140					8830*	7080	6.83
6.0					13500*	13500*	10360*	9120	8760*	6100			7810*	5600	7.80
4.5			19220*	19220*	17510*	13410	11510*	8870	8990*	6090			7330*	4860	8.40
3.0			24740*	24220	18460*	13460	13430*	8710	9620*	5920			7180*	4500	8.69
1.5			24470*	22420	19410*	12320	13800	8180	9820	5680			7300*	4390	8.72
0			30490*	21620	19510*	11570	13930	7760	9620	5440			7720*	4530	8.47
-1.5	29070*	29070*	29950*	21420	19730*	11240	13510	7400	9490	5330			7220*	4970	7.94
-3.0	38130*	38130*	27030*	21700	17660*	11180	11230*	7320					6540*	6090	6.91

ZX350LCN-3 2-piece boom, Arm 2.67 m, G 600 mm

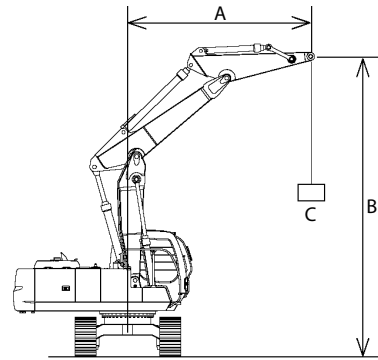
Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
9.0					11670*	11670*							9960*	9590	5.73
7.5					11540*	11540*	9570*	9280					8070*	6550	7.20
6.0			14880*	14880*	12750*	12750*	9930*	9160	8330*	6240			7210*	5260	8.12
4.5			21730*	21730*	16330*	13500*	11030*	8900	8650*	6200			6810*	4600	8.70
3.0			24570*	24240	18880*	12950	12870*	8820	9310*	6000			6680*	4260	8.98
1.5			27680*	23020	19360*	12510	13790	8260	9780*	5730	6800*	4160	6800*	4160	9.00
0	18560*	18560*	30210*	21790	19410*	11670	13890*	7790	9650	5460			7180*	4270	8.77
-1.5	25980*	25980*	30270*	21410	19690*	11250	13550	7420	9460	5290			7240*	4650	8.25
-3.0	33740*	33740*	28090*	21560	18500*	11140	12340*	7250					6030*	5530	7.36
-4.5			18970*	18970*	11270*	11270*							9930*	9930*	4.80

OPTIONAL ATTACHMENTS AND DEVICES

LIFTING CAPACITIES

-  **NOTE:** • Lifting capacity of the ZX series does not exceed 75% of tipping load with the machine on firm, level ground or 87 % of full hydraulic capacity. (ISO 10567)
• * Indicates load limited by hydraulic capacity.



M1G6-13-018

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

METRIC MEASURE

ZX350LCN-3 2-piece boom, Arm 3.20 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													9340*	9340*	4.38
9.0							9110*	9110*					7290*	7290*	6.55
7.5							8930*	8930*	7690*	6320			6540*	5700	7.86
6.0					11680*	11680*	9310*	9170*	7800*	6460			6220*	4710	8.72
4.5			23490*	23490*	14430*	13550	10300*	8960	8180*	6400	6820*	4430	6060*	4160	9.25
3.0	19720*	19720*	24350*	24220	18690*	13050	11990*	9010	8830*	6190	7240*	4350	5960*	3880	9.52
1.5			26540*	23970	19300*	12810	13730	8400	9670*	5880	7370	4210	6050*	3790	9.54
0			29250*	22100	19260*	11820	13600	7860	9630	5550	7230	4080	6350*	3870	9.32
-1.5			30340*	21390	19450*	11260	13660	7500	9470	5300			6930*	4170	8.84
-3.0			29230*	21310	19270*	11090	13320	7220	8650	5230			5700*	4810	8.05
-4.5	29960*	29960*	23730*	21740	14790*	11070	8440*	7290					7230*	6890	6.26

ZX350LCN-3 2-piece boom, Arm 4.00 m, G 600 mm

Unit; kg

B: Load point height m	A: Load radius												Max.		
	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m				REACH m
															
10.5													6570*	6570*	5.91
9.0							8220*	8220*	6320*	6320*			5500*	5500*	7.65
7.5							8140*	8140*	7060*	6690			5030*	4780	8.80
6.0							8500*	8500*	7170*	6670	6240*	4690	4810*	4060	9.57
4.5			11450*	11450*	12100*	12100*	9340*	9040	7560*	6510	6410*	4670	4750*	3640	10.06
3.0	15070*	15070*	24830*	24560*	16760*	13260	10810*	8750	8200*	6480	6700*	4550	4820*	3410	10.30
1.5	13290*	13290*	25400*	24040	19120*	12830*	12890*	8690	9030*	6130	7100*	4360	5030*	3330	10.32
0	14890*	14890*	27760*	23010	19170*	12230	13600	8060	9590	5770	7310	4160	5390*	3380	10.12
-1.5	18720*	18720*	29890*	21710	19220*	11440	13760*	7590	9510	5410	7150	4000	5820*	3600	9.68
-3.0	22880*	22880*	30130*	21240	19500*	11060	13430	7300	9360	5190			5670*	4050	8.96
-4.5	25900*	25900*	27710*	21410	17920*	10970	12050*	7130	6570*	5230			5630*	5080	7.69
-6.0			16970*	16970*									12010*	12010*	4.02

OPTIONAL ATTACHMENTS AND DEVICES

MEMO

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