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BD00J050

240BSIDE

NOTES

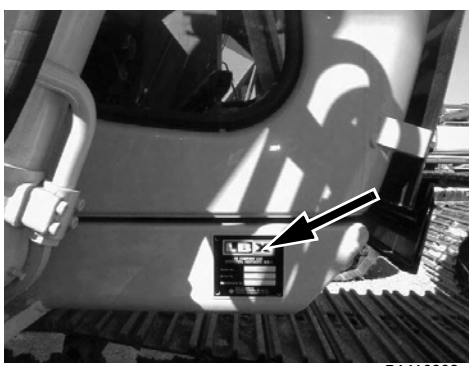
IDENTIFICATION NUMBERS

TYPE, SERIAL NUMBER AND YEAR OF MANUFACTURE

When ordering parts, obtaining information or assistance, always supply your authorized LBX Link-Belt distributor with the type and serial number of your machine or accessories.

Write the following in the spaces below: The model number, serial number and manufacture number of your machine, accessories and the serial numbers of the various hydraulic and mechanical components.

Machine



PA110003

PA110004

Excavator Identification

1. Model number.....
2. Serial number .....
3. Manufacturer number .....

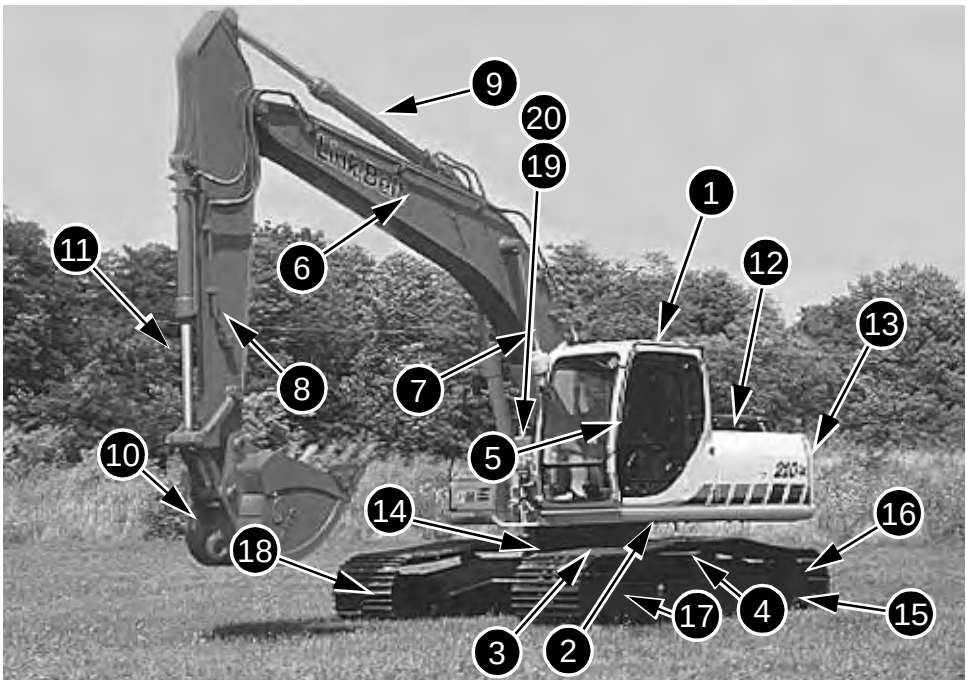
Engine Identification

Make and type.....
Serial number.....

Component serial numbers

Hydraulic pump .....
Swing motor .....
Travel motor .....
Main control valve .....
Swing gearcase.....
Travel gearcase.....

MACHINE COMPONENTS



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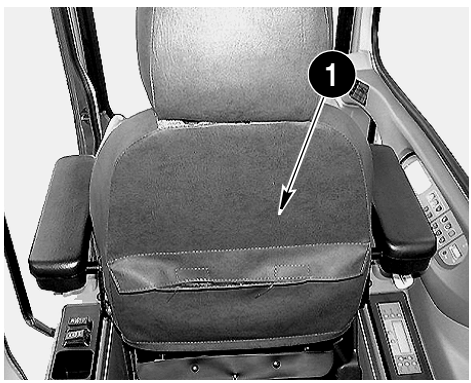
Key to main components

1 Cab/Operator's compartment
2 Upperstructure
3 Undercarriage
4 Steps
5 Access handles
6 Boom
7 Boom cylinders
8 Arm
9 Arm Cylinder
10 Bucket
11 Bucket cylinder
12 Engine compartment
13 Counterweight
14 Upper Rollers
15 Lower Rollers
16 Travel reduction gears
17 Idler wheels
18 Tracks
19 Hydraulic reservoir
20 Fuel Tank

⚠ SAFETY RULES ⚠

Most accidents involving machine operation and maintenance can be avoided by following basic rules and precautions. Read and understand all the safety messages in this manual, the Safety Manual, and the safety decals on the machine before you operate or service the machine. See your Authorized LBX Link-Belt dealer if you have questions.



CD00E001

1. OPERATOR'S MANUAL STORAGE

Safety messages in this section point out situations which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.

Additional safety messages appear in the manual to indicate specific safety hazards.

READ THIS MANUAL COMPLETELY and make sure you understand the characteristics of speed, stability, steering, and operation of this machine.

Do not remove this manual or the safety manual from this machine. See your LBX Link-Belt dealer for additional manuals. Also see the inside of the rear cover of this manual for detailed information for ordering manuals.

The safety information given in this manual does not replace safety codes, insurance regulations, or federal, state/provincial, or local laws. Make sure your machine has the correct equipment according to these rules or laws.

IMPORTANT: *The safety messages in this section point out situations which can happen during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.*

⚠ **WARNING:** *This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.*

M171B

⚠ UTILITY SAFETY ⚠

Safety precaution MUST be followed when working near buried Utility Lines.

During operation it is likely that you will be working around or near buried utility lines which may include, but are not limited to:

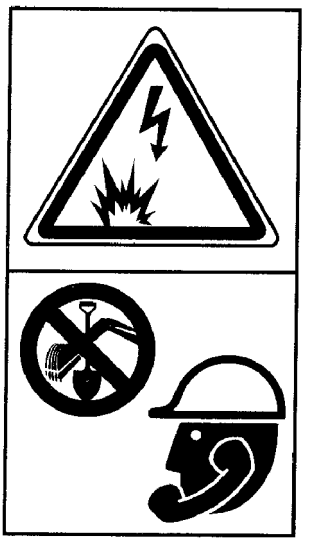
- Electrical Power Line
- Gas Line
- Water Line
- Communication Line - Telephone or Cable Television

Before beginning any trenching, or other construction work it is your responsibility to be aware of all such utility lines buried in the area of your project and to avoid them.

ALWAYS have all local utility companies mark the location of their lines.

In U.S.A. and Canada call one of many “One Call System Director” services. If you do not know the local number, call the national number (U.S.A. and Canada only): 1-888-258-0808.

Check with local authorities for laws, regulations and/or strict penalties requiring you to locate and avoid existing utilities.



RH99G001

CALL ALL LOCAL UTILITY COMPANIES BEFORE YOU DO ANY TRENCHING

Know the utility color code (U.S.A. and Canada):

Electric ..... Red
Gas, Oil, or Petroleum..... Yellow
Communication, Telephone, Television ..... Orange
Water..... Blue
Sewer ..... Green/Brown
Proposed Excavation ..... White
Surveying ..... Pink
Reclaimed Water and Slurry ..... Purple

After locating the utility lines, carefully dig a hole by hand and/or automatic vacuum equipment to the utility line to verify the location and depth of the line.

⚠ PERSONAL SAFETY ⚠

Safety Decals on this machine use the words **Danger, Warning or Caution,** which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which, if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates a potentially hazardous situation which, if not avoided will result in serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

⚠ BEFORE OPERATION ⚠

- Avoid loose fitting clothing, loose or uncovered long hair, and jewelry.
- Different jobs will require different protective equipment. Items such as hard hats, protective shoes, heavy gloves, reflector type vests, respirators, ear protection, and eye protection can be required. Before you start the job, determine what protective equipment is required. Use this equipment at all times.
- Be prepared for emergencies. Always have a first aid kit and a working fire extinguisher with you and know how to use each.
- Know the hand signals used on your job. Follow the instructions of the flagman, signs, etc.
- Check that all doors, guards, and covers are installed correctly or closed.
- Foreign material or grease on the steps and hand rails can cause an accident. Keep the steps and hand rails clean.
- To avoid falling, always face the machine and maintain three point support while using the steps and grab handles when getting on or getting off. Do not rush.
- Remove all loose objects from the cab. Loose objects can jam controls and cause accidents.
- Before you start each day, walk around the machine and check for oil or fluid leaks. Replace all broken or missing parts and do the required lubrication and maintenance as shown in this manual. Clean all trash and debris from the machine, especially from the engine area.

- Make sure all persons are away from the machine before you start the engine.
- Before you start the engine, always fasten the seat belt.
- Before you operate at night, check that all lamps illuminate.
- Make sure that all windows are clean and that the windshield wipers work correctly.

⚠ MACHINE OPERATION ⚠

- Check all controls in a clear area and make sure the machine is operating correctly.
- Do not allow other persons to ride on the machine. Other persons can fall or can cause an accident. This is a one person machine with one operator's seat.
- Dust, fog, smoke, etc., can decrease your vision and cause an accident. Stop the machine or decrease the speed until you can see everything around you in the work area. Make sure the machine lamps are ON.
- Contact with high voltage power lines, underground cables, etc., can cause serious injury or death from electrocution.
- Before you drive or operate in an area with high voltage lines, cables, or a power station, tell the power or utility company what you are going to do. You MUST HAVE THE POWER DISCONNECTED OR KEEP A SAFE WORKING DISTANCE from the lines, cables, or powerstation. Keep all parts of the machine at least 4.6 m (15 feet) away from the power source. You must also know any federal, state/provincial, or local safety codes or regulations that apply to the job site.
- If a part of the machine touches high voltage power:

1. Warn other workers NOT TO TOUCH THE MACHINE and to stay away from the machine.
2. If you can break contact, reverse the operation that caused contact with the high voltage power, and move the machine away from the danger area. If you cannot break contact, stay in the machine until the utility company de-energizes the line and tells you that the power is off.
3. If you have extreme conditions, such as a fire, etc., and you are forced to leave the machine, do not step off the machine. Jump as far from the machine as possible with your feet together and do not touch the ground with your hands.
4. Then, hop away with your feet together until you are a safe distance from the machine and the electrical current. Do not take large steps. Because of the voltage differential across the ground, one foot can be in a higher voltage area than the other foot. This difference can kill you.

- Do not operate the machine if you do not feel well. This can be dangerous for you and for the people around you.

- You must make a judgment if weather, road, or earth conditions will permit safe operation on a hill, ramp, or rough ground.
- Stay away from hazardous areas such as ditches, overhangs, etc. Walk around the work area before you start and look for hazards.
- Be alert and always know the location of all workers in your area. Keep all other persons completely away from your machine. Injury or death can result if you do not follow these instructions.
- Operate the machine within the specified capacities and limits. Lifting capacities, digging depths, etc, are shown in the Specifications section of this manual.
- Operate the machine controls from the operators seat only.
- Digging through underground cables, pipes, lines, etc., can cause injury or death. Learn the location of all underground hazards before you operate your machine in any area.
- When working in areas where traffic is heavy always have a person direct the traffic and direct other persons for you. Have guard rails, warning signs, etc., as required for your job.
- Stop operating the machine if a malfunction occurs. Watch the indicator and warning lamps in the machine. Listen and smell for things that are not normal on your machine.
- Drive around large objects such as large rocks or trees.

⚠ BURN PREVENTION ⚠

- Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes, or clothing. Antidote - EXTERNAL - Flush with water. INTERNAL - Drink large quantities of water or milk. DO NOT induce vomiting. Seek medical attention immediately. EYES - Flush with water for 15 minutes and seek medical attention immediately. Keep sparks, flame, cigars and cigarettes away. BATTERIES PRODUCE EXPLOSIVE GASES. Ventilate when charging or using in enclosed area. Always wear eye protection when working with new batteries. Wash hands after handling. KEEP OUT OF REACH OF CHILDREN.
- When the battery electrolyte is frozen, the battery can explode if, (1) you try to charge the battery, or (2) you try to jump start and run the engine. To prevent the battery electrolyte from freezing, keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.
- Hot coolant can spray out if the radiator cap is removed too quickly. To remove the radiator cap, let the cooling system cool, turn the cap to the first notch, wait until the pressure is released, then remove the cap.

⚠ FIRE EXTINGUISHER ⚠

It is recommended that you have a fire extinguisher on your machine. Check with your LBX Link-Belt dealer for availability.

A dry chemical fire extinguisher is approved for Class A, B, and C type fires.

⚠ FIRE OR EXPLOSION PREVENTION ⚠

- Sparks or flame can cause the hydrogen gas in a battery to explode. To prevent an explosion, do the following:
  1. When disconnecting the battery cables, disconnect the negative (–) cable first; when connecting the battery cables, connect the negative (–) cable last.
  2. Do not short circuit the battery posts with metal items.
  3. Do not weld, grind, or smoke near a battery. Keep open flame away from the battery.
- Sparks from the electrical system or engine exhaust can cause an explosion or fire. Before you operate this machine in an area with flammable dust or vapors, use good ventilation to remove the flammable dust or vapors before you start.
- Engine fuel can cause an explosion or fire. Do not fill the fuel tank while the engine is running.
- DO NOT smoke while refueling the machine.
- Use nonflammable cleaning solvent to clean parts.
- A fire can cause injury or death. Always have a fire extinguisher near or on the machine. Make sure the fire extinguisher is serviced according to the manufacturer's instructions.
- If a fire extinguisher has been used, always recharge or replace the fire extinguisher before operating the machine.
- Remove all trash or debris from the machine as required. Especially check the engine area and exhaust system.
- If the machine has an oil, fuel, or hydraulic leak, always repair the leak and clean the area before operating.
- Keep the cooling system clean and maintain the correct coolant level.
- Make sure that you do not store oily rags or other flammable materials on the machine.
- Starting fluid (ether) can explode and can cause injury or death. Do not breathe starting fluid vapors. Wear face protection when you remove or install a starting fluid container or when you use an aerosol spray starting fluid.
- If you weld, grind, or use a cutting torch on the machine, always remove the starting fluid container from the machine. Use compressed air to remove any ether fumes from the area.
- Before welding or using a torch on the machine, clean the area to be repaired.
- Check the electrical system for loose connections or frayed insulation. Repair or replace the loose or damaged parts.

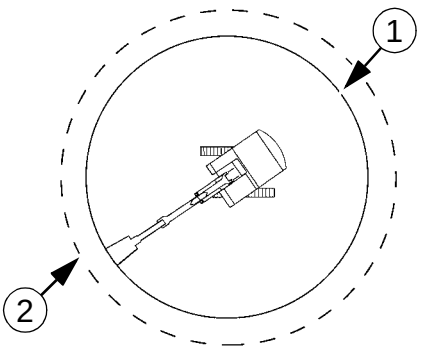
⚠ MAINTENANCE ⚠

- Before you service the machine, put a Do Not Operate tag on either the right or left hand control lever.
- Improper service or repair procedures can cause injury or death. If you do not understand a service or adjustment procedure, see the service manual for this machine or see your LBX Link-Belt authorized dealer. Unauthorized modifications to this machine can cause injury or death. Do not make unauthorized modifications to this machine. Always see your LBX Link Belt authorized dealer before you weld, cut, or drill holes in your machine.
- If you must service this machine with the engine running, have another person help you. Follow the instructions in this manual or the service manual. Do not leave the operator's seat while the engine is running. Engage the gate lock if you must leave the machine with the engine running.
- Disconnect the batteries before working on the electrical system.
- If you are exposed to or come in contact with hazardous chemicals you can be seriously injured. The fluids, lubricants, paints, adhesives, coolants, etc., used with your machine can be hazardous.
- Before you service this machine and before you dispose of the old fluids and lubricants, always remember the environment. Do not put oil or fluids into the ground or into containers that can leak. Check with your local environmental or recycling center or your LBX Link Belt authorized dealer for correct disposal information.
- When you service this machine, always wear face or eye protection, safety shoes, and other protective items as required.
- Metal chips or debris can cause eye injury. Always wear eye or face protection when you use a hammer on this machine. Use a hammer with a soft face, such as brass, to drive hardened pins.
- Lower the bucket or tool to the ground or block up the machine securely before working on the machine. Follow the instructions in this manual when you service the machine.
- Clean the machine regularly. A build-up of grease, dirt, and debris can cause possible injury or machine damage. Keep your work shop clean.
- Before welding on this machine, disconnect the battery ground (–).
- Remove any obstructions which hinder visibility. Keep the windshield, rear view mirror and windows clean at all times.
- Make sure the windshield wiper works correctly.
- Make sure you are perfectly familiar with hand signals in daily use on the worksite so as to be able to obtain help with tight maneuvers or when carrying out operations where visibility is poor.

- Before undertaking any travel or working operations during hours of darkness, make sure the lighting and signalling equipment is fully operative.
- Before undertaking any travel, make sure the door and all lower panels and hoods are properly locked or fastened.
- Check that no tools or other items have been left on the machine (be it on the undercarriage or the upperstructure) or in the operator's compartment.
- The operator must be alone on the machine at all times. Do not allow anyone to stand on or around the machine.
- When climbing down from or getting into the operator's compartment, it is mandatory for the upperstructure to be in line with the undercarriage.
- When exiting from or getting into the operator's compartment, always face the machine and maintain a three point support while using the steps and grab handles.
- Be sure you know the position and function of each control. Using controls wrongly can cause serious injury.
- Check all controls and safety devices in a safe, open area before starting work.
- Keep away from dangerous areas such as ditches, overhangs, unstable ground, etc... Inspect the worksite before starting work and look for any danger areas.
- Before moving the machine to work in a new area, walk around to determine all possible causes of accidents there. Holes, obstacles, piles of rubble and other potential sources of danger on the worksite can cause serious injury.
- Be ready to meet emergencies. Always carry a first aid kit and if possible, fire extinguisher (not supplied) within easy reach on board. Make sure the fire extinguisher is regularly serviced in conformance with the manufacturer's instructions.
- Check the hardware used to mount the main components: counterweight, turntable bearing and operator's compartment. In the event of problems, contact your authorized LBX Link-Belt distributor.

- Make sure you understand the symbols used on the machine safety decals. Keep the decals clean so that they are perfectly legible at all times.
- Work out a means of convenient escape from the machine (emergency exit via the windshield or the rear window glass) in the event of the cab door being jammed or the machine turning over.
- Make sure you are perfectly familiar with traffic regulations and special safety equipment requirements before transporting this machine on a public highway.
- When loading trucks, never swing the load over the truck cab.
- Before undertaking any travel on the job site, make sure the route to be followed is completely safe. If bridges are to be crossed, make sure they are perfectly capable of supporting the weight of the machine.
- Always steer around large obstacles such as boulders, big trees, etc...
- If the machine is equipped with an optional quick coupler, it is mandatory for the switch to be in the locked position when operating the machine.
- Dust, smoke or mist can reduce visibility and cause an accident. Reduce speed or come to a complete halt until visibility has improved.
- Never jump down from the machine. When climbing down from the machine or the upperstructure, always face the machine and maintain a three point support while using the steps and grab handles.
- If the machine is equipped with an optional quick coupler , never tilt the switch to the unlocked position when operating the machine at work.

SAFETY AREA



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- The safety area is the space necessary for the machine to operate at the maximum range of the tool and a 360° swing plus 6 feet (2 metres).

1. Working area.
2. Safety area.

PARKING THE MACHINE

- When parking the machine, proceed as follows :

1. Position the machine on flat, level ground, away from soft ground, excavations or poorly shored cavities.
2. Place the upperstructure in line with the undercarriage, and lower the attachment to the ground.
3. Stop the engine and remove the starter switch key.
4. Be absolutely sure to raise the gate lock lever (gate lock bar in inward position) before leaving the operator's compartment.
5. Lock the cab door.
6. Make sure that all doors, hoods and lower panels are correctly locked.

BEFORE USING THE HYDRAULIC BREAKER (optional)

- Do not attempt to operate the hydraulic breaker unless you have first read and completely understand the safety messages and instructions in this manual and those of the hydraulic breaker manufacturer.
- Operating the hydraulic breaker requires full attention and care on the part of the operator to avoid accidents. Know the hydraulic breaker's capabilities, limitations and the working area required.
- Every day, inspect the hydraulic breaker to detect any signs of oil or hydraulic fluid leakage. Tighten the connections or replace any defective components and grease as necessary.
- Make sure the hydraulic breaker is in good condition. Never use a hydraulic breaker which is in poor condition or if there are components missing, as this could cause serious injury.
- Make sure the maintenance procedures explained in this manual are carried out correctly.

USING THE HYDRAULIC BREAKER (optional)

- Protect yourself and the vicinity from flying chips of rock.
- Wear ear protection when working with the machine door or windows open.
- Move everybody away before operating the hydraulic breaker.
- Never immerse the hydraulic breaker in water as this could cause damage.
- Never use the hydraulic breaker to sweep the ground to spread rubble, to push objects or carry out lifting operations.
- Do not operate the hydraulic breaker with the attachment cylinders at the end of their stroke (extended or retracted).
- Do not operate the hydraulic breaker if the tool is in contact with some part of the machine.
- Place the tool against the object at a 90 degree angle. Avoid small irregularities on the object which will break easily and cause either idle strokes or an incorrect working angle.
- Use a safety screen to protect yourself from flying debris. Keep the cab windows closed during operation.

- Listen to the noise the hydraulic breaker makes while you are using it. If the pitch of the noise rises and, at the same time, the force of impact diminishes, this means that the tool is not properly aligned with the material and/or that there is not enough downward force on the tool. Realign the tool and press it firmly against the material.
- Do not strike in one spot for more than 15 seconds at a time. If the object does not break, or if the tool does not penetrate, stop the breaker and change the position of the tool.
- For the hydraulic breaker to be most effective when breaking boulders work progressively in small steps from the outer edge towards the middle.
- When breaking hard or frozen ground, use the benching method. Start by clearing a small area working from the edge. Then continue by breaking material towards the open area.
- Do not operate the hydraulic breaker in the air, with nothing to hit. Frequent idle strokes have a deteriorating effect on the hydraulic breaker.
- When breaking concrete, hard or frozen ground, never strike and pry with the tool at the same time. The tool may snap off. Bending may be caused by stones inside hard or frozen ground. Be careful and stop striking if you encounter sudden resistance under the tool.
- Keep the tool at a 90 degree angle at all times. If the object moves or if its surface breaks, correct the angle immediately. Keep the hydraulic force and tool aligned.
- The tool shank should be kept well greased during operation. Regular visual checks should be made during operation.

MAINTENANCE AND ADJUSTMENTS

- Do not try to service this machine unless you have first read and completely understand the safety messages and instructions featuring in this manual.
- When carrying out service work always wear suitable dress. Avoid loose-fitting clothing.
- Release pressure completely in the hydraulic system before disconnecting the hydraulic piping. Hydraulic oil escaping under pressure can cause serious injury.
- Before beginning any work on the machine, place a “Do not operate” tag on either the right or left-hand control lever.
- Always wear eye protection when using a tool that might project metal particles. Use a hammer with a soft face, such as copper, for installing pins.
- Poor maintenance or adjustments can cause serious injuries. If you do not understand a servicing or adjustment procedure, contact your authorized LBX Link-Belt distributor.
- If the attachment is raised or if the machine moves without an operator, serious injury can result. Before carrying out maintenance on this machine, proceed as follows :

  1. Park the machine on flat, level ground.
  2. Lower the attachment until it is resting on the ground.
  3. Stop the engine and remove the starter switch key.
  4. Block the tracks to prevent any machine movement.

- Any unauthorized modifications made to this machine can cause serious injury. Do not undertake any modifications without first consulting your LBX Link-Belt dealer. Any modifications made must be in conformity with the technical specifications of the machine and any current safety legislation requirements.
- When replacing machine components always use genuine LBX Link-Belt parts to ensure parts meet specifications and guarantee quality and performance.
- If hydraulic fluid penetrates the skin, call a doctor immediately. Hydraulic fluid escaping under pressure can have sufficient force to enter a person’s body by penetrating the skin and can cause serious injury and possibly death if proper medical treatment by a physician familiar with this type of injury is not received immediately. Keep body and hands away from pin holes or nozzles which eject hydraulic fluid under high pressure and use paper or cardboard and NOT HANDS to search for leaks.
- The pressure in the track tension cylinders is high. Follow the procedure described in this manual carefully for increasing or reducing track tension.

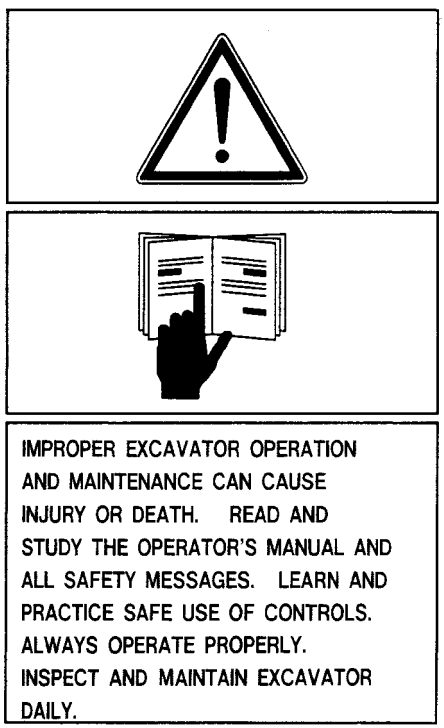
- Whenever carrying out a welding operation on the undercarriage or upperstructure as authorized by the manufacturer and in accordance with his instructions, disconnect the batteries, disconnect the alternator B+ and D+ terminal wires and connect the welding apparatus ground cable to the component on which the welding operation is to be performed. Never connect the welding apparatus to the undercarriage when welding on the upper structure (or vice-versa). Never connect the welding apparatus ground to a component of the hydraulic system.
- When using compressed air, take the necessary precautions to protect your face.
- Clean the machine regularly. Accumulations of grease, dirt and debris can cause injuries or damage the machine.
- Follow the maintenance intervals and check the hardware used to mount the main components: counterweight, turntable bearing and operator's compartment. In the event of problems, contact your authorized LBX Link-Belt distributor.

Hydraulic breaker (optional)

- The hydraulic breaker incorporates one accumulator. This accumulator remains constantly under pressure. when the hydraulic breaker is removed from the machine. Do not try to service the accumulator. All service work on the accumulator must be carried out by your Link-Belt Dealer.
- Before carrying out any service work on the hydraulic breaker, make sure all pressure has been correctly released, in order to avoid any uncontrolled movement. See "Releasing pressure in the hydraulic system" in the "Lubrication/Filters/ Fluids" Section.
- If the accumulator is not functioning correctly, see your authorized LBX Link-Belt distributor. Never try to carry out any servicing operation on the accumulator. If this instruction is not followed serious injury can result.
- The accumulator is charged with nitrogen under high pressure. Do not weld or allow flames to come near to the accumulator.

DECALS

WARNING: *Make sure that the decals are perfectly legible, clean them regularly and replace decals that are destroyed, lost, painted over or no longer legible. When parts bearing decals are replaced, be sure to put new decals on each new part.*

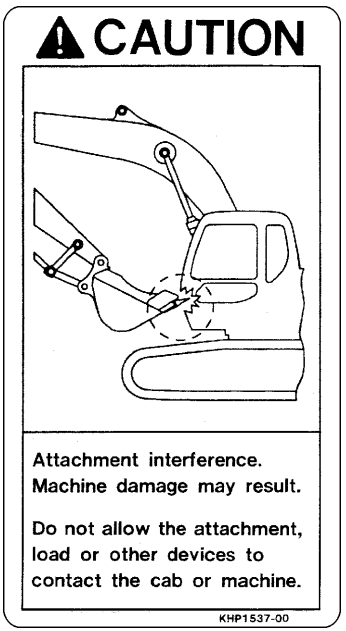


KHP1525-02

When you clean the decals, use only a cloth, water and soap. Do not use solvents, gasoline, etc.

This chapter only covers decals relating to safety and machine operation and servicing. For information on all decals on the machine, consult your LBX Link-Belt Parts Manual.

New decals can be obtained from your authorized LBX Link-Belt distributor. The part numbers are shown at the bottom of each decal.

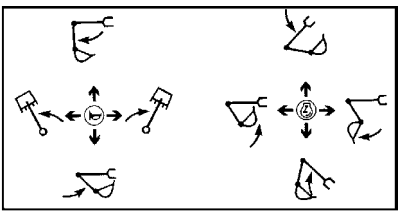


KHP1537-00

This decal draws attention to the fact that, in certain positions, there can be interference between the attachment tool and the operator's compartment.

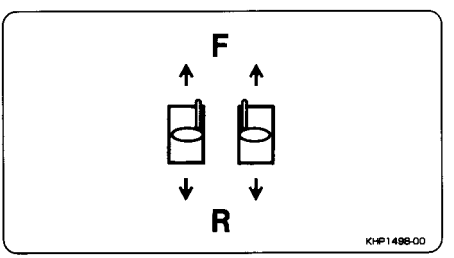
CS96D164

This decal advises to engage the gate lock when leaving the cab for any reason.

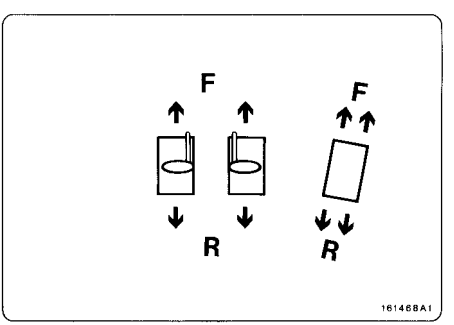


CS00F530

This decal shows the function of the left-hand and right-hand control levers. See "Left-hand control lever" and "Right-hand control lever" in the "Controls/ Instruments/Accessories" Section.



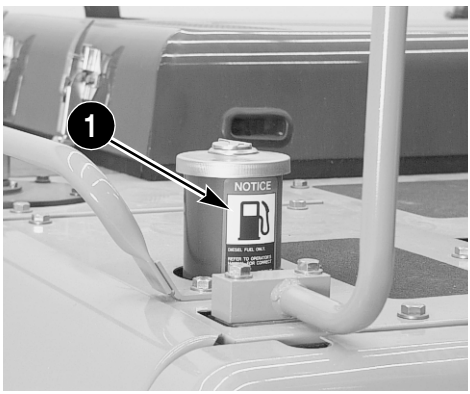
STANDARD PEDALS



STANDARD AND SINGLE PEDAL TRAVEL

KHP1498-00 161468A1

These decals show the function of the travel control levers and pedals.

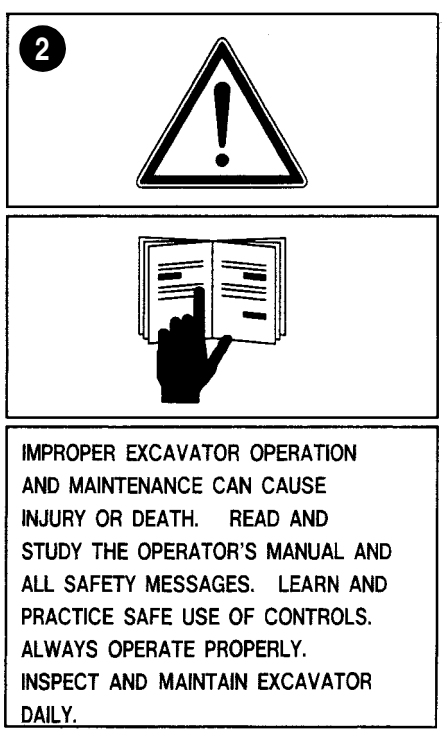


BD00M216

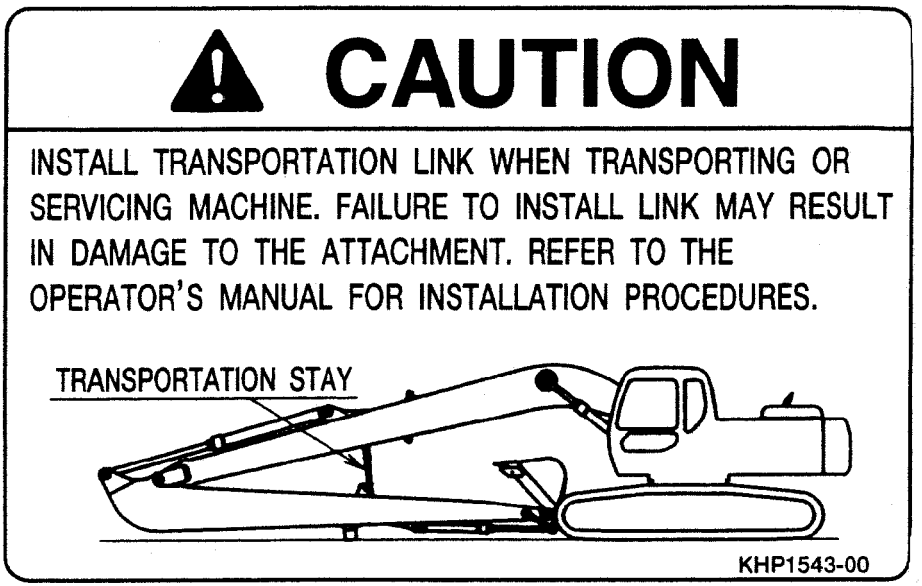
This decal instructs you to use diesel fuel only.

P9290026

This decal reminds the operator to read the manual and is located inside the cab on the right rear window.



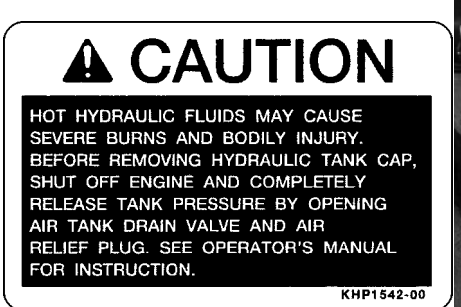
KHP1525-02

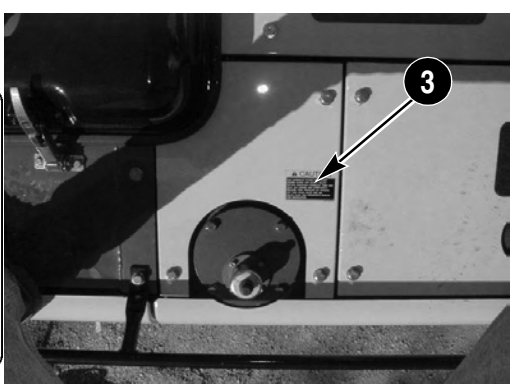


KHP1543-00

This decal advises the operator to use the transportation link (stay) when transporting or servicing the machine.

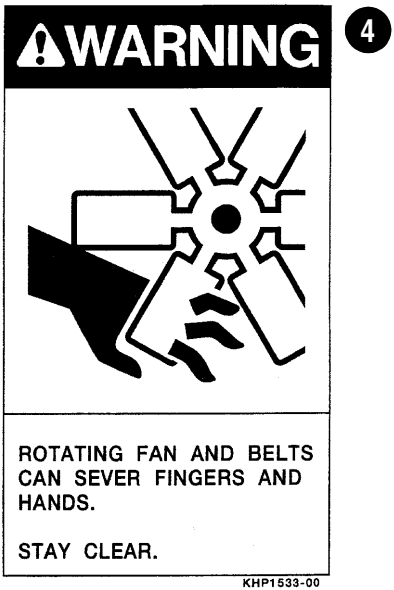
3

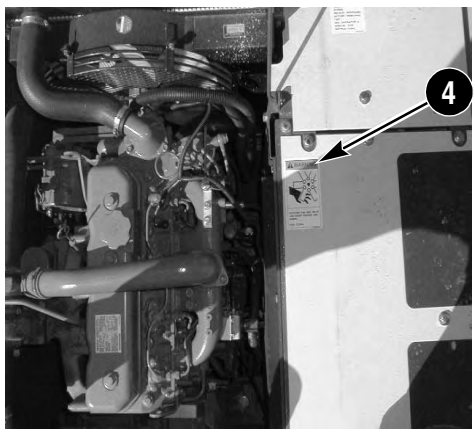




KHP1542-00 / P9290004

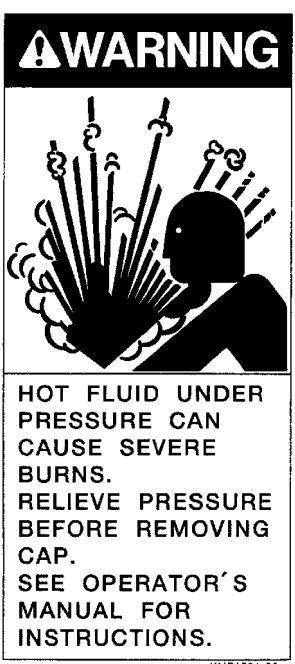
This decal advises that before removing the hydraulic tank cap the pressure should be relieved. See “Releasing Pressure” in the Hydraulic System.

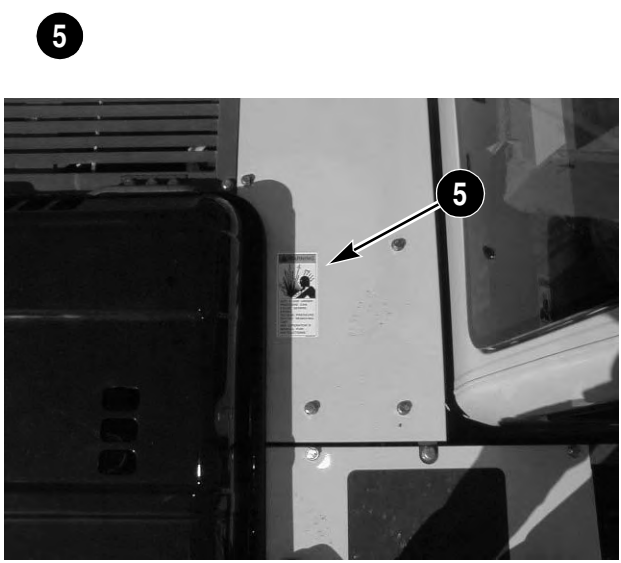




KHP1533-00 / P9290004

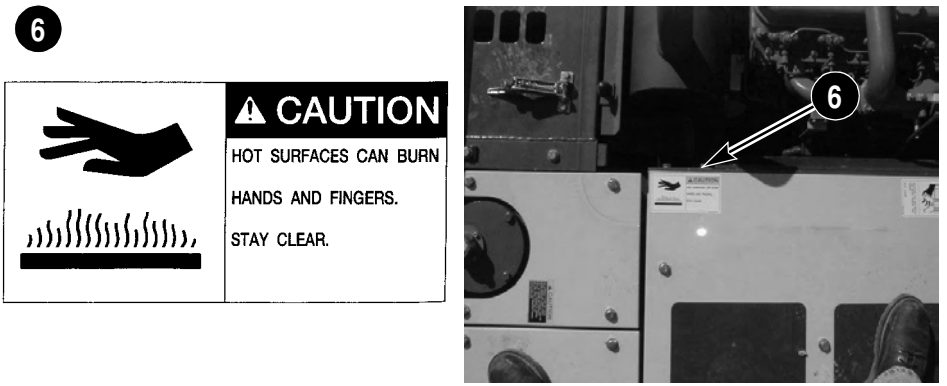
This decal warns of the hazard associated with rotating parts and components





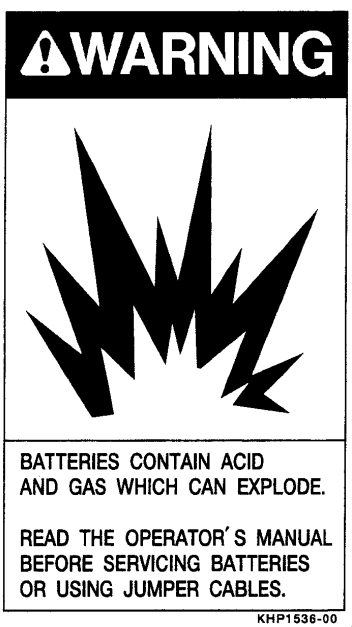
KHP1534-00 / P9290006

This decal warns of the hazards associated with removing the radiator cap before relieving the pressure. See the “Cooling System” section of this manual.



KHP1525-01 / P9290010

This decal warns that some surfaces associated with the engine compartment may be hot to the touch and cause burns.



KHP1536-00 / P9290014

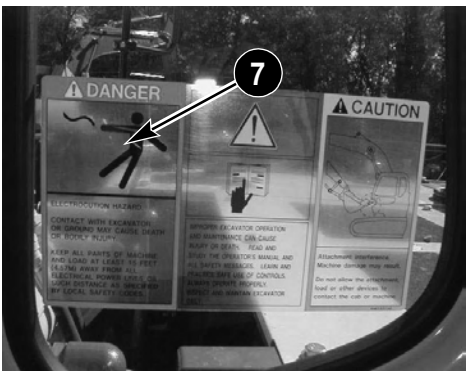
This decal warns of the hazards that may be encountered when servicing the batteries and using jumper cables.

BS00M134

This decal Warns the operator that grease may be under Heavy spring pressure. Pressure should be released before disassembly.

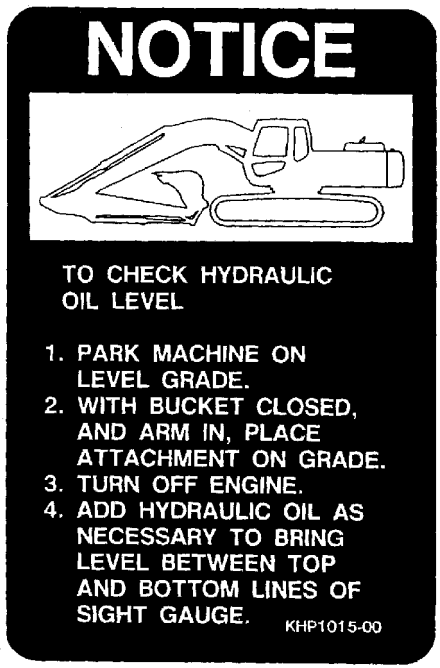
BS00M141

This decal warns of Danger and to keep clear of swinging upperstructure to prevent serious bodily injury.



KHP1525-03 / P9290026

This decal warns of Electrocution Hazard and is located inside the cab on the right rear window.



KHP1015-00

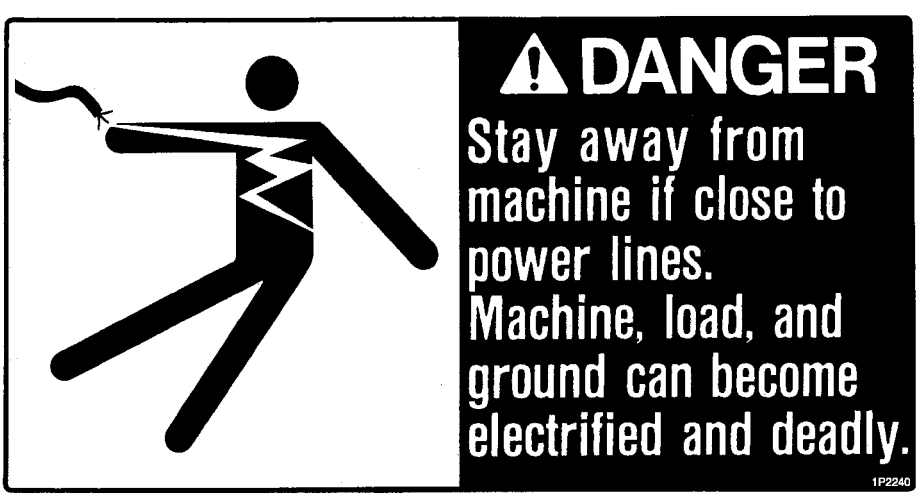
This decal reminds the operator proper procedures for checking the Hydraulic Oil Level.

KHP1010-00

this decal warns the operator to engage the hood lock.

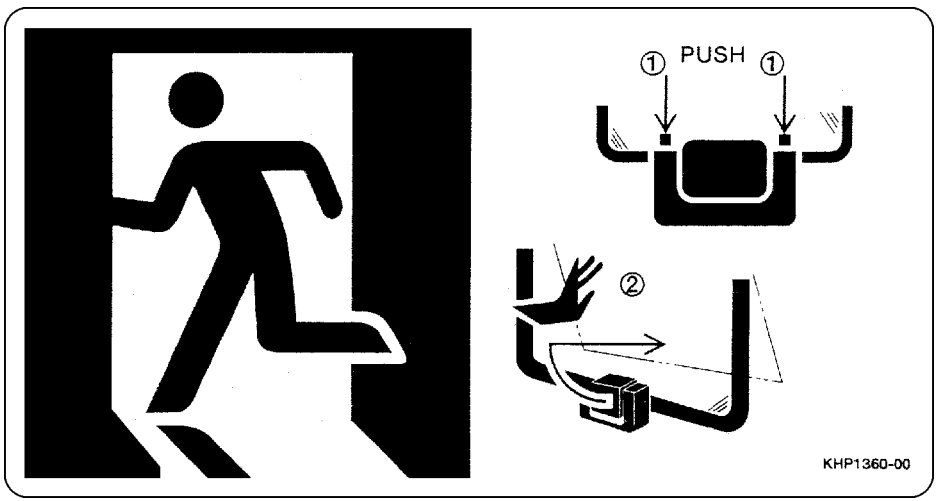
KHP1011-00

This decal warns the operator of slippery surfaces.



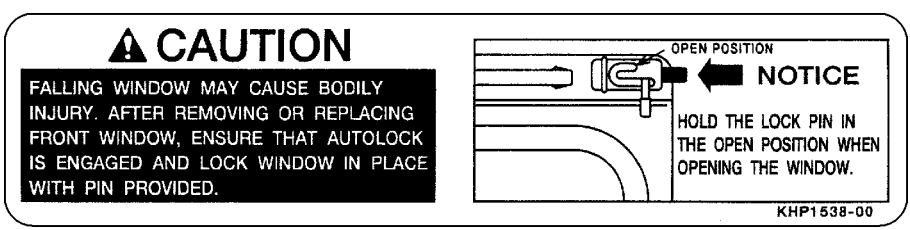
1P2240

This decal warns of the Danger if standing too close to a machine that becomes electrified.



KHP1360-00

This decal is located on the back glass inside the operator's cab. It shows the operator procedures for an emergency exit.



KHP1538-00

This decal cautions the operator to lock the front window after removing or replacing in order to ensure that it will remain in a safe position.

P9290020

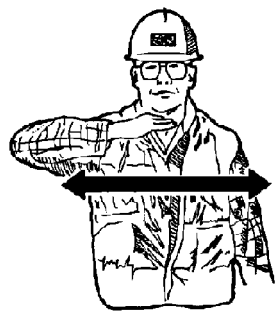
HAND SIGNALS

When operating the machine, never attempt to carry out tasks calling for fine control or to work in areas where visibility is poor or impaired without seeking the assistance of a signalman. Make perfectly sure that you and the signalman understand the signals to be used.

Start the engine

PDE0002A

Shut down the engine



PDE0002

Come to me

Wave hands back and forth (palms inwards).

PDE0003A

Move away from me

Wave hands back and forth (palms outwards).

PDE0003

Go this far

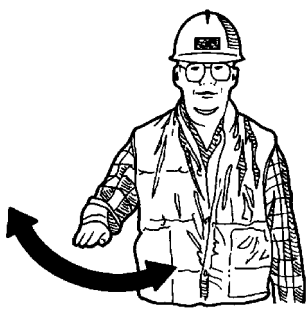
PDE0004A

All stop and hold

PDE0004

Stop

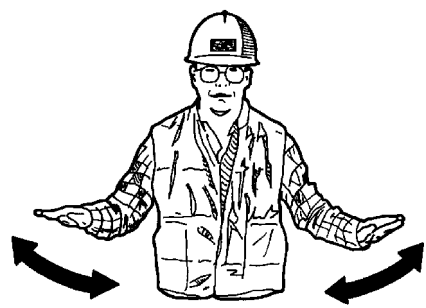
Wave hands back and forth.



PDE0005A

Emergency stop

Wave hands back and forth.



PDE0005

Raise load or tool

PDE0006A

Lower load or tool

PDE0006

Slowly raise the load or tool

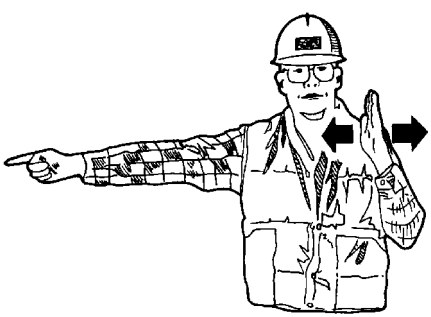
PDE0007A

Slowly lower the load or tool

PDE0007

Turn the machine to the left (swing load left)

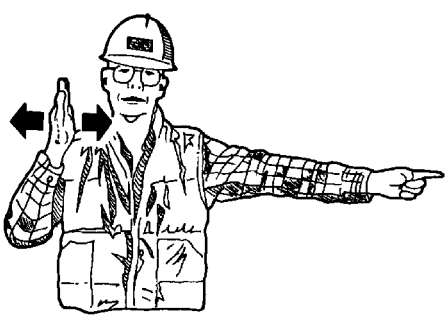
To stop movement, stop moving hand and clench fist.



PDE0008A

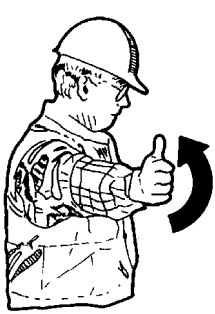
Turn machine right (swing load right)

To stop movement, stop moving hand and clench fist.



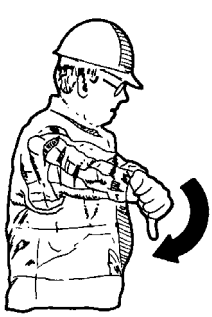
PDE0008

Raise tool



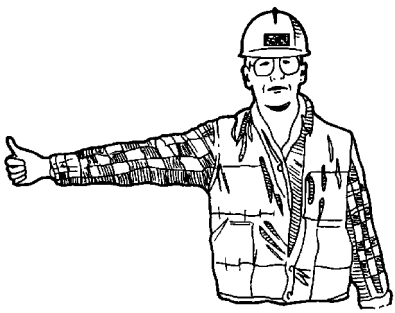
PDE0009A

Lower tool



PDE0009

Raise tool

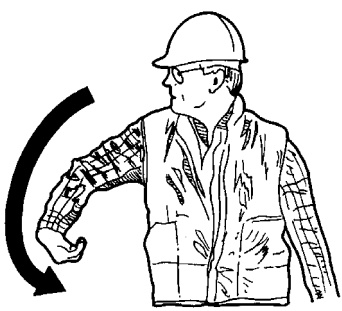


PDE0010A

Lower tool

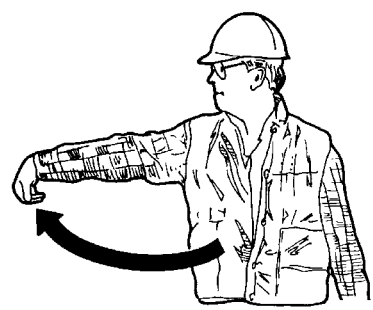
PDE0010

Arm in



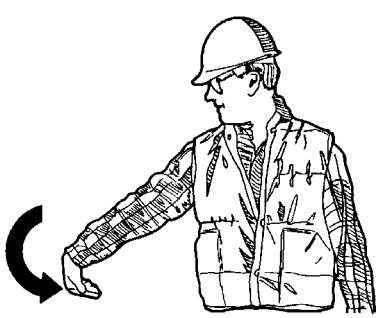
PDE0011A

Arm out



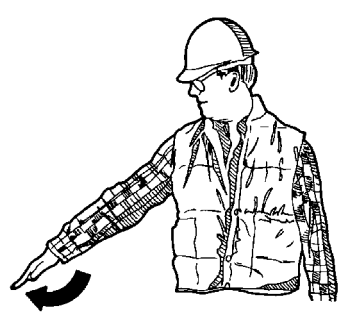
PDE0011

Bucket open



PDE0012A

Bucket close



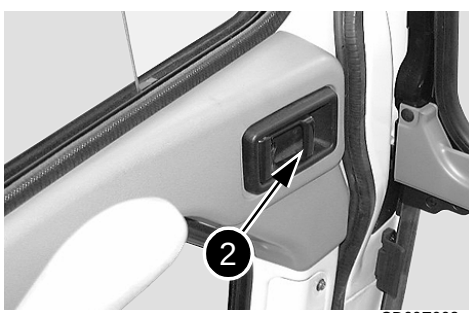
PDE0012

NOTES

INSTRUMENTS/CONTROLS

CAB DOOR

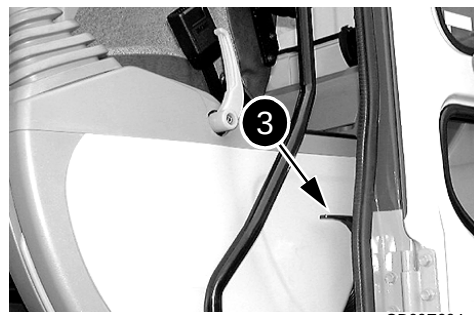
CD00E002



CD00E003

To open the door, use the handle (1) from the outside and use the handle (2) from the inside.

NOTE: Use the starter switch key to lock the door.



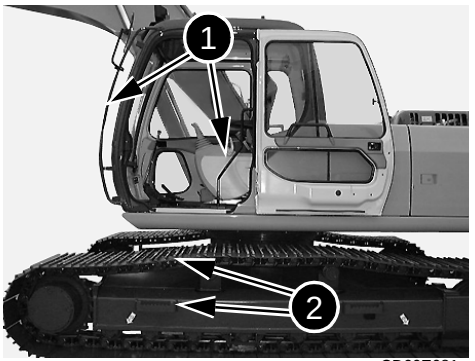
CD00E004

The door can be latched completely open. To unlatch the door, tilt the lever (3) downwards.

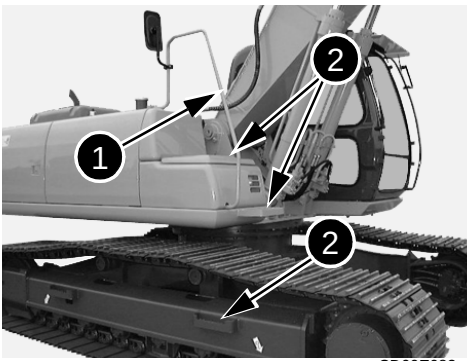
WARNING: *Be careful not to get your hand or anything caught in the door when closing it.*

WARNING: *Do not leave the door ajar. Fix it in a latched position.*

STEPS AND ACCESS HANDLES



CD00E081



CD00E083

To get on or off of the machine use the steps (2) and access handles (1).

WARNING: *Always maintain three point support while getting on and off the machine and entering or exiting the operators cab. A three point support system has been provided that enables a person to us simultaneously two hands and one foot or two feet and one hand while ascending, descending or moving about the machine.*

WARNING: *When getting in or out of the cab, it is imperative that the upper structure frame is in line with the undercarriage.*

WARNING: *Never jump down from the machine. When leaving the machine or the upper structure, always face the machine and use the steps and access handles.*

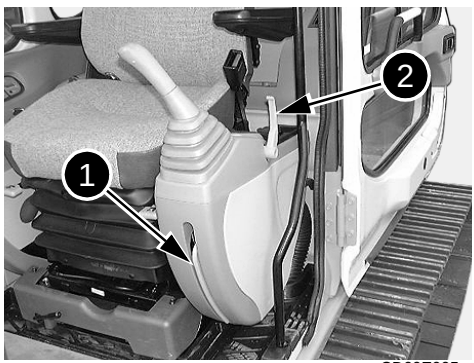
WARNING: *To get in or out of the cab, never use the left-hand control lever, the left-hand control arm or the door handle.*

BD00M479

Always maintain three point support getting on and off the machine.

WARNING: *Clean the steps and access handles and remove all traces of grease, oil, mud, and (in winter) ice.*

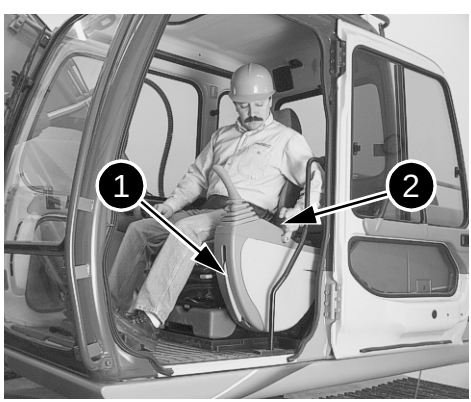
Gate Lock and Gate Lock Lever



CD00E005

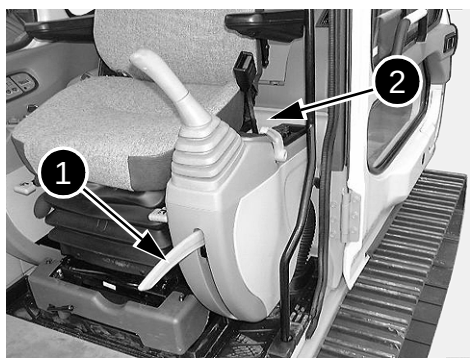
The gate lock (1) is designed to prevent the operator from leaving the operator's compartment without first having lowered this bar.

The gate lock lever (2) operates the safety bar (1) and cancels the functioning of the control levers and pedals. When the lever (2) is in raised position, the gate lock (1) is in retracted position in the control arm and the attachment, travel and swing functions will not operate.



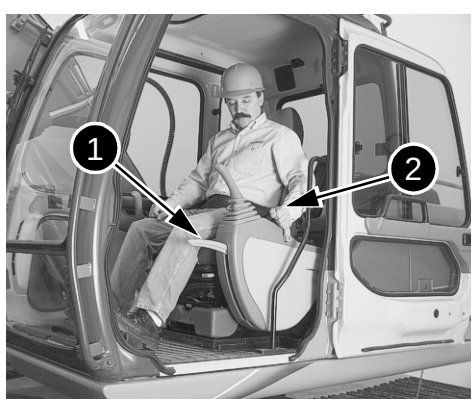
BD00M480

WARNING: *Before leaving the operator's compartment, it is mandatory for the gate lock lever (2) to be raised and the gate lock lever (1) to be in the retracted position.*



CD00E006

To make the attachment, travel and swing functions operational once more, lower the gate lock lever (2) for the gate lock (1) to come out of the control arm.



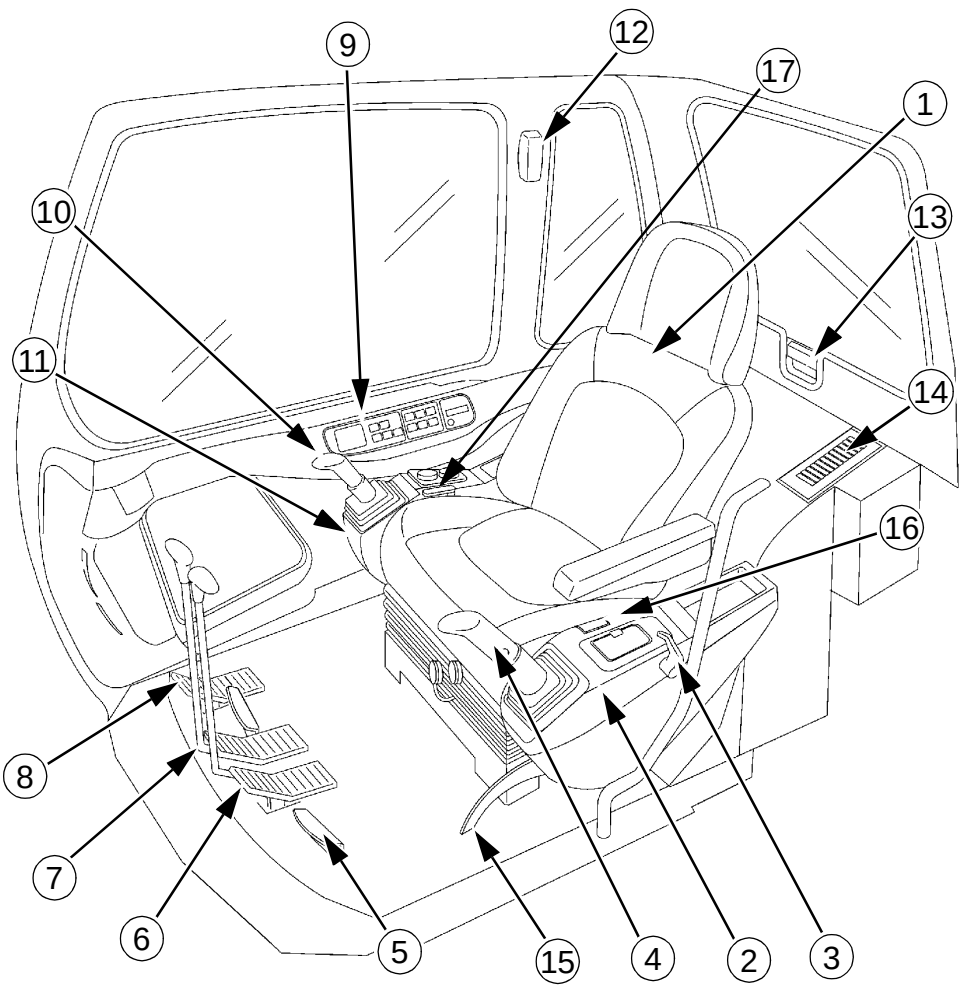
BD00M481

NOTE: It is also possible to cancel all controls by completely raising the left-hand control arm. See "Left-hand control lever".

OPERATOR'S COMPARTMENT CONTROLS

WARNING: *Before starting the engine, make sure that you are fully aware of the location of and the function of each control. Incorrect operation of the controls can cause serious injuries.*

LOCATION OF CONTROLS AND ASSOCIATED COMPONENTS



CS00E501

1. Operator’s seat
2. Left-hand control arm
3. Gate lock lever
4. Left-hand control lever, arm and upper structure swing controls, horn
5. Footrest
6. Left-hand travel control pedal and lever
7. Right-hand travel control pedal and lever
8. Option pedal or on 240 LX, single pedal travel
9. Systems display and control panel
10. Right-hand control lever, boom and bucket controls, engine idle
11. Right-hand control arm
12. Cab interior lighting
13. Rear window opening system
14. Air vents
15. Gate lock
16. Left-hand control arm tilt adjustment and function cancellation lever
17. Right-hand control arm tilt adjustment lever

1. CONTROL ARM TILT ADJUSTMENT LEVER - This lever enables the operator to tilt the angle of the control arm to suit his convenience. Raise the lever and hold it in this position. Tilt the control arm to the required position and then release the lever.

2. STARTER SWITCH - This switch has four positions, “ON” (contact), “START” (engine ignition), “OFF” (engine shut-down) and “ACC” (accessory current supply). See “Starting the engine” in the “Operating Instructions” Section.

IMPORTANT: *When the starter switch key is in “ON” position, if the anti-theft device has been programmed, then it will be necessary to enter the code. The message “Password” will be displayed. See “Anti-theft device” in the “Operating Instructions” Section.*

NOTE: *Turning the starter switch key to the “on” position will pre-heat the engine.*

NOTE: *The starter switch key is also used to lock the cab door, the engine hood, the front storage compartment, the side doors and the fuel tank cap.*

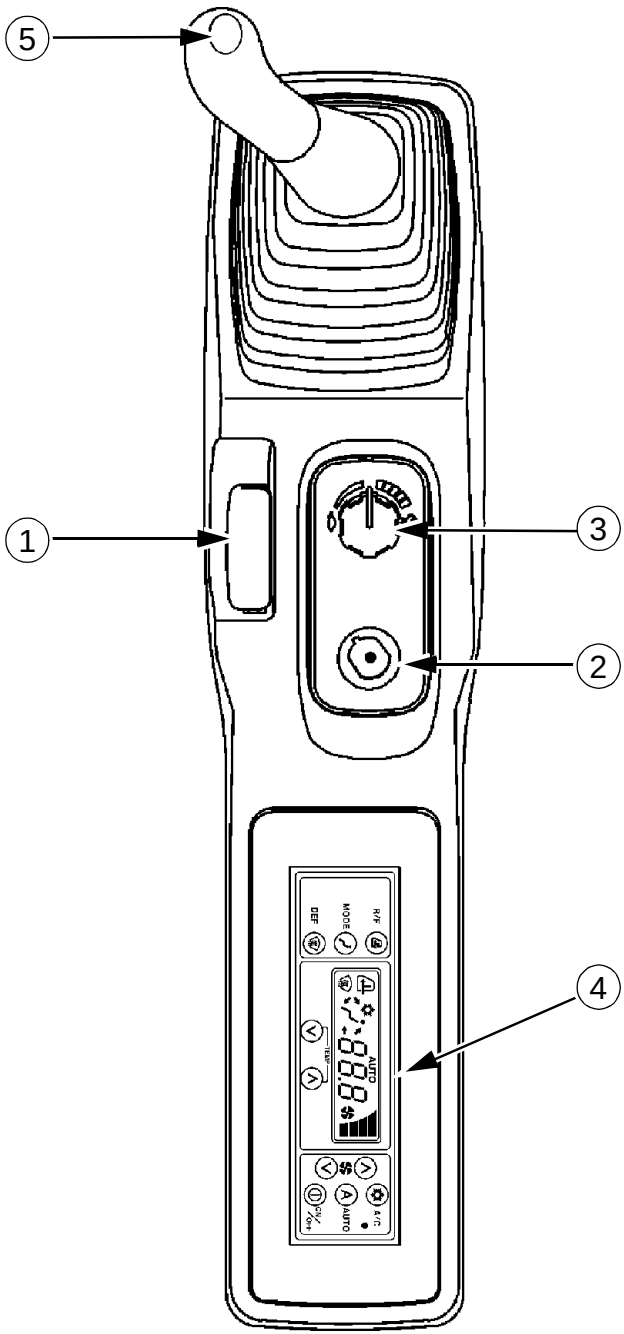
3. ENGINE THROTTLE BUTTON - This button allows engine speed to be increased or lowered. For “low idle” position, turn the button to the left. For “Maximum speed”, turn the button to the right.

NOTE: *If there is no change in engine speed, press and release the engine automatic idle speed selector. (See item 5).*

4. See “Heating and ventilation or air conditioning controls”.

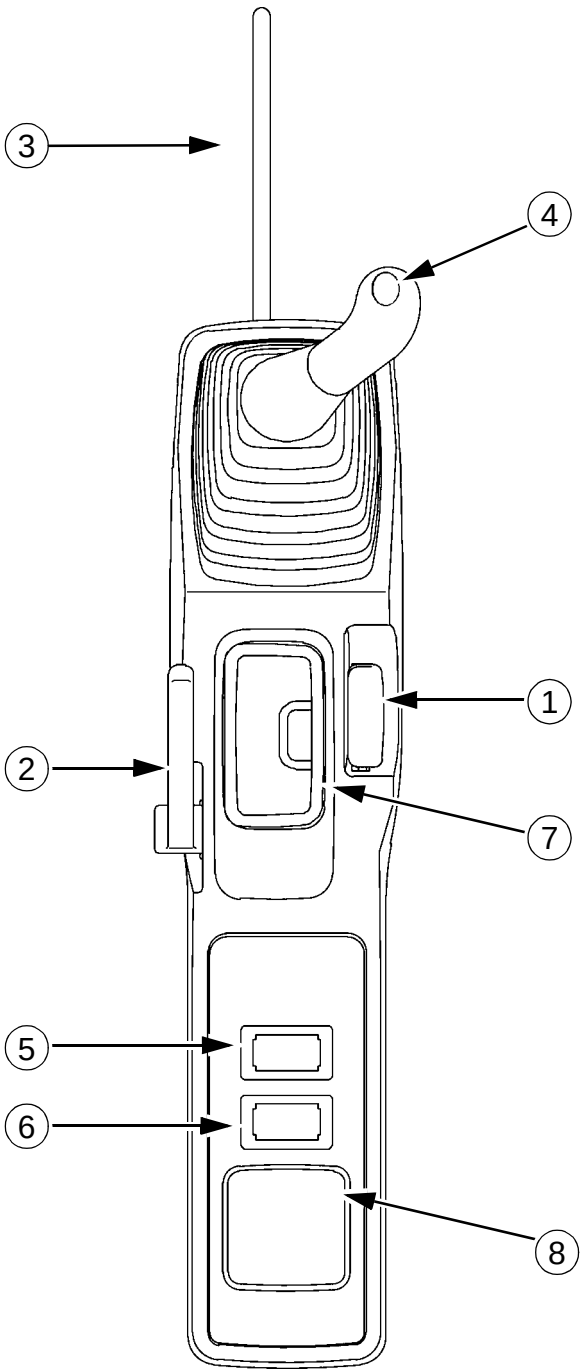
5. ENGINE IDLE SPEED SELECTOR - This control makes it possible to select automatic idle , without having to return to the engine throttle button. To select idle speed manually, press and release the control for the engine automatically to go into idle speed; the message “Eng. idling” will appear on the systems display panel. When the control is pressed and released once more the engine will revert to its original speed and the message on the systems display panel will disappear. To select idle speed automatically, press the control for about 3 seconds until the audible alarm device sounds, then release the control. The message “Eng. idling” will appear on the systems display panel. In this position, if no further operations are carried out, the engine will go into idle speed after 5 seconds. (It is possible to change this lapse of time between 1 and 30 seconds. See your authorized LBX Link-Belt distributor). If any controls are then used, (control levers, pedals) the engine will revert to its original speed. To cancel automatic selection, press the control for about 3 seconds. In each of these configurations, a confirmation message appears on the systems display panel. See items 6 and 10 under “Systems display and control panel”.

RIGHT-HAND CONTROL ARM



CS00E502

LEFT-HAND CONTROL ARM



CS00E503

1. CONTROL ARM TILT ADJUSTMENT AND FUNCTION CANCELLATION - This lever makes it possible for the operator to adjust the tilt angle of the control arm to suit his convenience. Raise the lever and hold it in this position. Tilt the control arm to the required position and then release the lever. This lever also makes it possible to raise the control arm completely, so as to cancel all machine functions.
2. GATE LOCK LEVER - This lever makes it possible for the operator to cancel the machine functions without having to raise the control arm. It is also used to operate gate lock.
3. GATE LOCK - The purpose of this bar is to prevent the operator leaving the operator's compartment without first raising the gate lock lever.
4. HORN - To operate the horn, press the tip of the left-hand control lever.

IMPORTANT: *Always sound the horn before operating the machine.*

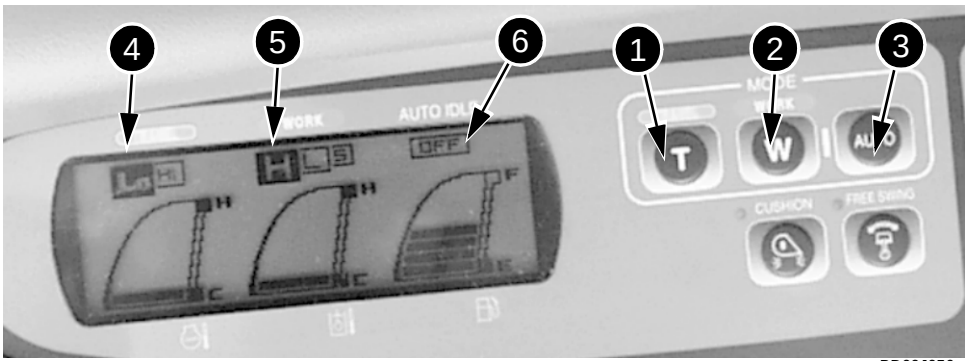
5. OPTION CONTROL (OPTIONAL)- This is a three position control for operating optional accessories such as hydraulic breakers, concrete crushers, shears, etc. Place the control in the position corresponding to accessory to be used. See "Auxiliary hydraulic circuits" in the "Operating Instructions" Section.

6. TRAVEL ALARM ON/OFF SWITCH- In the "ON" position the travel alarm will sound continuously when traveling. In the "OFF" position the travel alarm will discontinue after 10 seconds of travel.

7. ASHTRAY - Pull the ashtray upwards to empty it.

8. STORAGE TRAY

SYSTEMS DISPLAY AND CONTROL PANEL



BD00J056

WARNING: *The display panel indicates the machine's condition and alerts the operator quickly of any abnormalities by means of lamps indicators or buzzers.*

NOTE: *Clean the display panel with a soft, dry cloth. Do not use solvents.*

1. TRAVEL SPEED SELECTOR - This is a push button for changing from high speed to low speed . A confirmation message appears on the indicator (4).

WARNING: *All changes in travel speed should be made while the machine is stopped. Always stop the machine to make a shift change.*

Low speed : Select this speed to travel on slopes, rough ground or soft terrain.
210 LX and 240 LX , 0 to 2.1 mph (3.3 km/h)
High speed : Select this speed to travel on hard, flat ground in good terrain conditions.
210 LX and 240 LX , 0 to 3.4 mph (5.5 km/hr)

NOTE: *When starting the engine, low speed is automatically selected.*

NOTE: *When the hydraulic system is overloaded and the machine is in High speed, the machine automatically shifts down to Low speed. The system automatically returns to High speed as soon as the hydraulic system is no longer overloaded.*

2. WORK MODE SELECTOR - This push button allows one of three working modes to be selected. "S" (standard) mode for ordinary duties; "H" (heavy) mode for hard work or when there is an increase in work load and "L" (lift) mode for precision work requiring lower operating speed. Confirmation of the mode selected is displayed on the indicator (5).

NOTE: *The selector will not function when "Auto" mode (3) is selected.*

NOTE: *When starting the engine, "H" (Heavy) mode is automatically selected.*

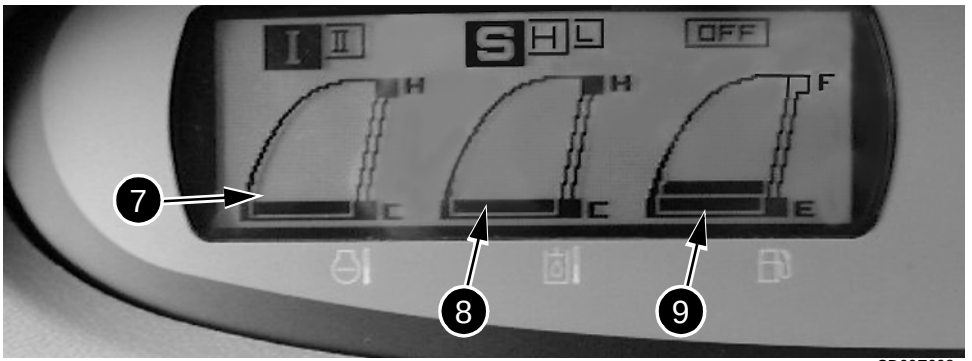
3. AUTO MODE SELECTOR - Select Auto-Mode to obtain the optimum operating mode , between “S” and “H” modes, for reduced fuel consumption. The confirmation (Auto) will be displayed on the indicator (5). Press the button again to come out of “Auto” mode, “H” (heavy) mode will then automatically be selected.

4. TRAVEL SPEED INDICATOR - This indicator displays a sign showing the travel speed selected with button (1).

5. WORK MODE INDICATOR - This indicator displays the initial of the working mode selected by the Button 1.
   The letter “S” appears to indicate selection of “S” (standard) mode.
   The letter “H” appears to indicate selection of “H” (heavy) mode.
   The letter “L” appears to indicate selection of “L” (lift) mode.
   “Auto” will be displayed to confirm that “Auto” has been selected with button.

6. ENGINE IDLE SPEED INDICATOR - This indicator displays the type of engine idle speed selected with the control on the right-hand control lever. See “Right-hand control lever” (item 5).
   “ON”: Auto Idle
   “OFF”: One Touch Idle

SYSTEMS DISPLAY AND CONTROL PANEL

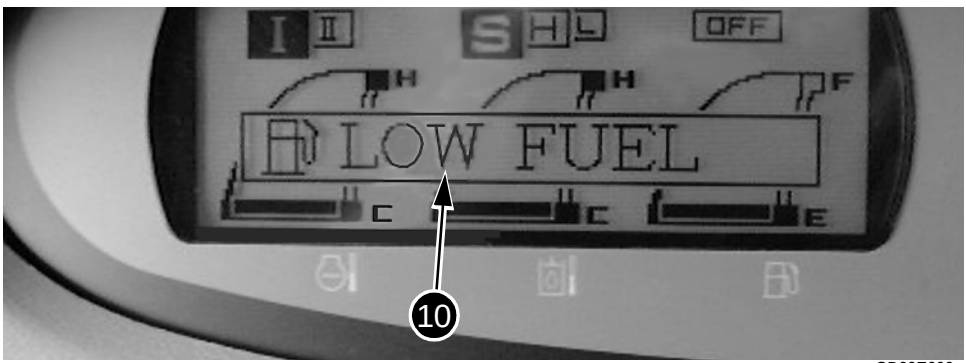


CD00E008

7. ENGINE COOLANT TEMPERATURE INDICATOR - Temperature changes are reflected by an increase or decrease in the number of luminous horizontal bars. Zone “C” indicates that the engine coolant temperature is low. If the luminous horizontal bars reach zone “H”, the audible alarm device sounds and the message “Over Heat” is displayed (see item 10). If the temperature does not drop, shut down the engine, remove the starter switch key and find the cause of the problem.
8. HYDRAULIC FLUID TEMPERATURE INDICATOR - Temperature changes are reflected by an increase or decrease in the number of luminous horizontal bars. Zone “C” indicates that the hydraulic fluid temperature is low. If the luminous horizontal bars reach zone “H”, the audible alarm device sounds and the message “Over Heat” is displayed (see item 10). Stop the engine, remove the starter switch key and find the cause of the problem.
9. FUEL LEVEL INDICATOR - The quantity of fuel is represented by the number of luminous horizontal bars. Zone “F” shows that the fuel tank is full. If the horizontal bars reach zone “E” the audible alarm device sounds and the message “Low Fuel” is displayed (see item 10).

IMPORTANT: *Do not wait until the fuel tank is completely empty before refilling or it will be necessary to bleed the fuel circuit.*

SYSTEMS DISPLAY AND CONTROL PANEL



CD00E009

10. MESSAGE DISPLAY SCREEN - As you operate the machine, this screen will display symbols and messages which change to keep you informed of the machine's condition. The symbols and messages are listed below along with brief explanations.

NOTE: *It is possible to change the language configuration for the messages displayed. See your authorized LBX Link-Belt distributor.*

ENG. PRE HEAT - This message shows that the engine needs pre-heating. As soon as the engine reaches working temperature, the audible alarm device will sound.

AUTO WARM UP - This message shows that engine temperature is automatically rising to operating temperature. It disappears once the engine has reached operating temperature or when the engine idle speed selector, the throttle control button or a control lever is operated. See item 3 under "Right-hand control arm".

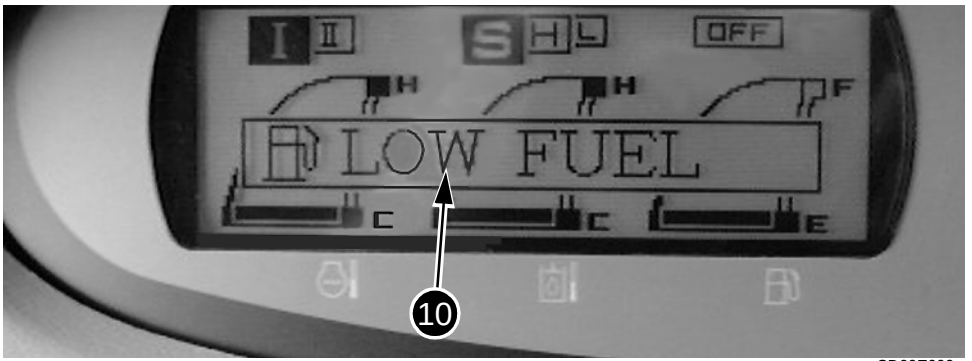
ENG. IDLING - This message shows that the engine idle speed selector has been operated and that the engine is running at idle speed. See item 5 under "Right-hand control arm".

POWER UP - This message shows that maximum attachment power has been automatically requested.

SERVICE DUE - This message shows that 500 hours servicing is due. The message will appear five times for a minute upon starting the engine. See the "Servicing Intervals" Section.

LOW FUEL - This message shows that the level of fuel in the fuel tank is low and that fuel must be added. The audible alarm device also sounds.

SYSTEMS DISPLAY AND CONTROL PANEL



CD00E009

LOW COOLANT - This message shows that the engine coolant level is low. The audible alarm device also sounds. Shut down the engine, remove the starter switch key, allow the system to cool down and then check the coolant level in the expansion reservoir and the radiator. See “Cooling System” in the “Lubrication/Filters/Fluids” Section.

LOW OIL PRESS - This message shows that the engine oil level is low. The audible alarm device also sounds. Shut down the engine, remove the starter switch key and check the level. See “Engine” in the “Lubrication/Filters/Fluids” Section.

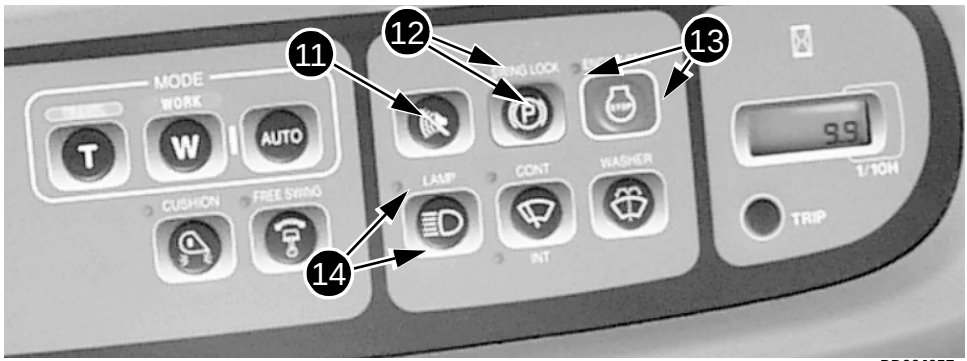
OVER HEAT - This message shows that the temperature of the engine coolant or the hydraulic fluid is too high. The audible alarm device also sounds. Reduce engine speed. If the temperature does not drop, shut down the engine, remove the starter switch key and find the cause of the problem.

ALTERNATOR - This message shows that the alternator is defective. The audible alarm device also sounds. Shut down the engine, remove the starter switch key and check the alternator. See your authorized LBX Link-Belt distributor.

ELEC. PROBLEM - This message shows that there is a fault in the electrical system. The audible alarm device also sounds. Shut down the engine, remove the starter switch key and find the cause of the problem, or see your authorized LBX Link-Belt distributor. See the “Electrical System” Section.

NOTE: *To stop the audible alarm device, press the control (item 11).*

SYSTEMS DISPLAY AND CONTROL PANEL



BD00J057

11. AUDIBLE ALARM CONTROL - Press this control to turn off the audible alarm device. If the audible alarm device sounds, immediately read the message appearing on the systems display panel screen (10). Press this control to also test the lamps and indicators on the systems display panel for correct operation.

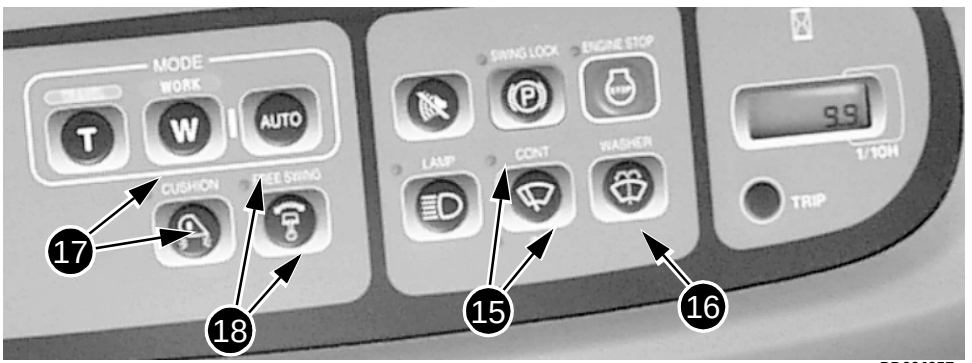
12. SWING BRAKE SWITCH - This switch is used to lock the swing function. When the switch is pressed, the upper structure swing function will be locked and the “Upper structure swing lock” lamp comes on. Press the switch once more to unlock the swing function. The swing function becomes operational and the lamp goes out.

13. EMERGENCY SHUT DOWN SWITCH - This switch is used to shut down the engine in a case of emergency or if it is not possible to stop the engine using the starter switch key. When this switch is pressed, the engine stops, the audible alarm device sounds and the indicator lamp in the switch comes on. To start the engine again, press the switch once more and then turn the starter switch key to start the engine.

IMPORTANT: *This switch should only be used in case of an emergency. Do not use it on a day-to-day basis.*

14. WORKING LIGHTS - This switch is used to operate the working lights. Press the switch for the indicator lamp and the working lights to come on. Press the switch once more to turn them off.

SYSTEMS DISPLAY AND CONTROL PANEL



BD00J057

15. WINDSHIELD WIPER SWITCH - This switch has three positions : “Off”, “Intermittent” and “Continuous”. Press the switch for intermittent operation, the lower lamp comes on. Press the switch again to obtain continuous operation, the upper lamp comes on. Press the switch once more for the function to cease.

IMPORTANT: *Do not operate the windshield wiper if the windshield is dry, as this may damage the windshield wiper.*

16. WINDSHIELD WASHER SWITCH - Press and hold down the switch to operate the windshield wiper and windshield washer. Release the switch for the function to cease.

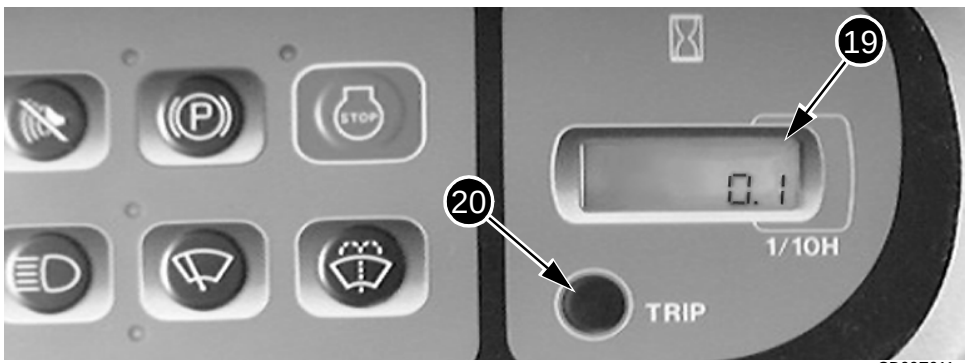
IMPORTANT: *Never operate the windshield washer when the reservoir is empty, as this may damage the electric pump.*

17. ATTACHMENT CUSHION CONTROL SWITCH (boom and arm) - This switch makes it possible to select one of two different types of attachment operation. When the lamp in the switch is off, attachment functions will be cushioned and come to a smooth halt. If the lamp is on, attachment functions will come to a sharp halt.

NOTE: *When starting the engine, the cushion type of attachment operation (with the lamp off) is automatically selected.*

18. FREE SWING BUTTON - This button has two positions, ON and OFF. When the engine is started, Free Swing is OFF. Push and release the button for the ON position (indicator lamp illuminates). Free Swing allows the upper structure to coast to a stop. This feature is useful when lifting loads to allow the upper structure to center over the load and prevent the load from swinging when raised.

SYSTEMS DISPLAY AND CONTROL PANEL



CD00E011

19. HOURMETER -The hourmeter displays the total time that the engine has been operated, in hours and tenths of an hour. It also enables service operations to be scheduled (see the “Servicing Intervals” Section).

NOTE: *The hourmeter can be read even when the engine is switched off.*

20. TRIP METER (specific number of hours) - This control enables the operator to record a specific number of operating hours. Press the control for the hour meter to read zero and for the message “Trip” to be displayed. Then release the control. After approximately one minute the message “Trip” disappears and the normal hour meter reading is restored. To consult the specific number of hours reading, press the control and release it immediately. To cancel the specific number of hour reading, press the control for about 2 seconds and the specific number of hours reading will return to zero.

Auto Power-Up

Your Link-Belt excavator is equipped with a power up function that will work automatically on demand. During work operations if normal pressure and load settings are “exceeded” a signal is sent to “boost” pressure for a period of 8 seconds. The display monitor will show “Power Up” during boost to inform the operator that normal operating conditions have been “exceeded”.

ANTI-THEFT SYSTEM

To prevent the machine from being stolen it is possible to use the anti-theft system, which makes it necessary for a special code to be entered before the machine can be operated.

Your Link- Belt Dealer has to activate the system for it to be operational.

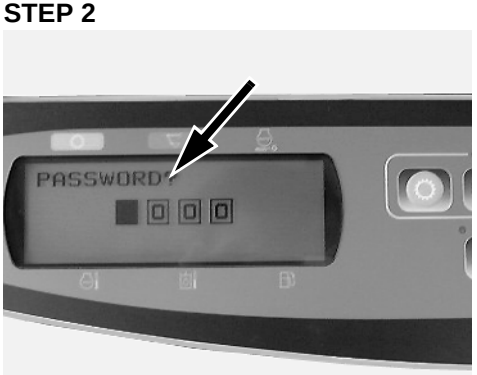
IMPORTANT: *Once the code has been entered, do not forget it, as it can not be changed without consulting your Link-Belt Dealer.*

Setting the code initially

STEP 1

Place the starter switch key in “ON” position.

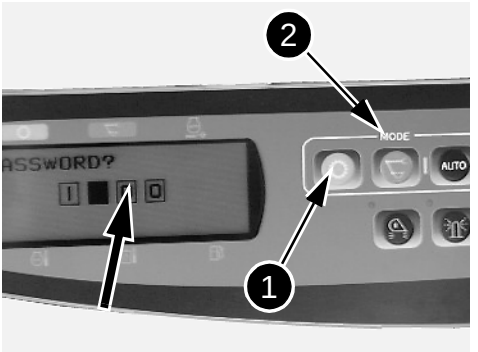
STEP 2



CD00E077

The message “Password” and four boxes will appear on the display screen.

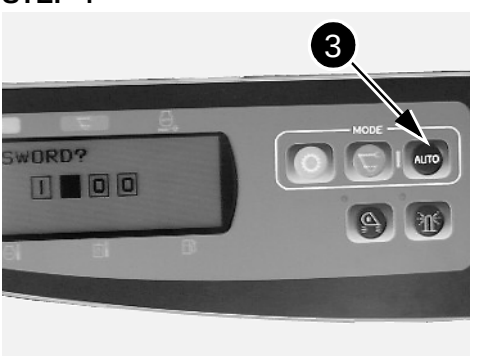
STEP 3



CD00E078

To enter the code (e.g. 1234) press button (1) the same number of times as the digit selected (e.g. once), then press button (2) to proceed to the second digit. Press the button (1) same number of times as the second digit (e.g. twice) and then press button (2) to proceed to the third digit. Repeat the procedure for the third and fourth digits.

STEP 4



CD00E078

Once all four digits have been entered, press button (3) for the code to be entered in the system. The audible alarm device will sound.

STEP 5

To finish entering the code, place the starter switch key in “OFF” position.

IMPORTANT: *Remember to keep careful note of the code number, because if you forget it, it will not be possible to enter a new one without consulting your Link-Belt Dealer.*

Using the anti-theft device

The anti-theft device has to be actuated when you are shutting down the engine. Turn the starter switch from “ON” to “OFF”, “ON” to “OFF” for about 2 seconds at a time until the audible alarm device sounds. The anti-theft device is now operational and before being able to start the engine you will have to enter the access code.

You are not obliged to activate the anti-theft device. If you so wish, when shutting down the engine, simply place the starter switch key in the “OFF” position and it will not be necessary to enter the access code to start the engine.

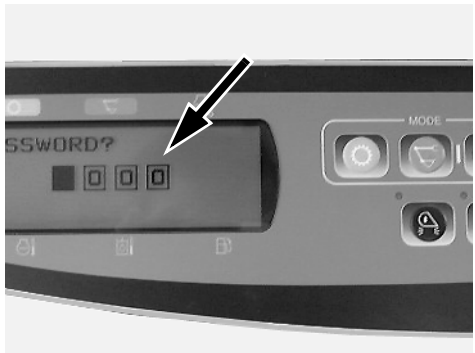
Entering the access code

If the anti-theft device was activated the last time the engine was shut down, then it will be necessary to enter the access code before being able start it again.

STEP 1

Place the starter switch key in the “ON” position.

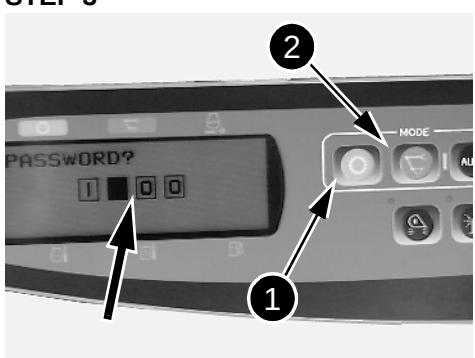
STEP 2



CD00E077

The message “Password” and four boxes will appear on the display screen.

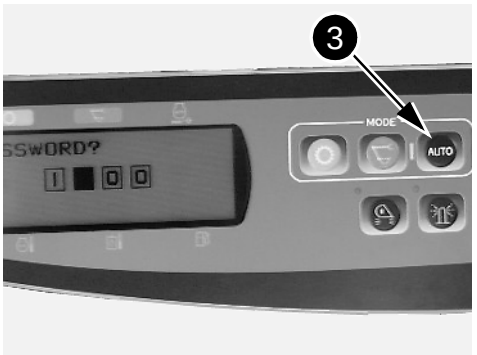
STEP 3



CD00E078

To enter the code (e.g. 1234), press button (1) the same number of times as the digit selected (e.g once) then press button (2) to proceed to the second digit. Press the button (1) same number of times as the second digit (e.g. twice) and then press button (2) to proceed to the third digit. Repeat the procedure for the third and fourth digits.

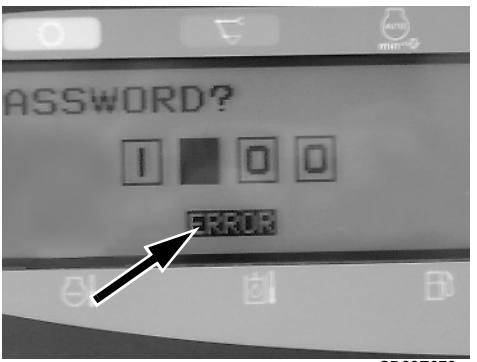
STEP 4



CD00E078

Once all four digits have been entered, press button (3). The audible alarm device will sound.

If the access code has been entered correctly, the message “Password” will disappear from the display screen and it will be possible to start the engine.



CD00E079

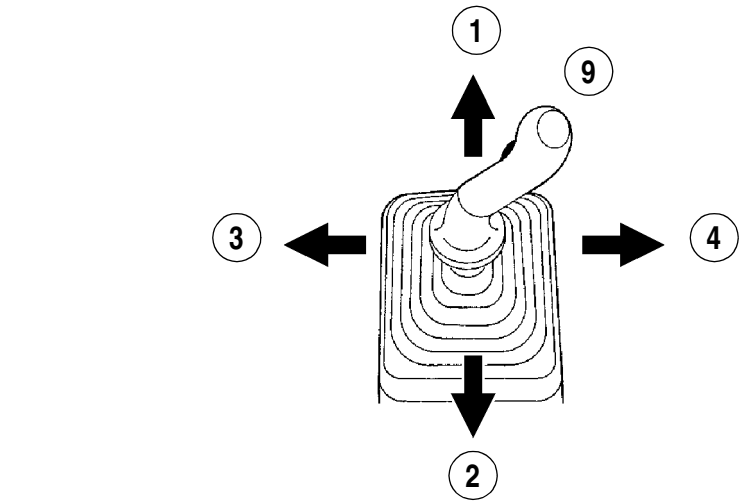
If the code entered was incorrect or different from that recorded in the machine, the message “ERROR” will appear, the audible alarm device will sound and it will be necessary start all over again.

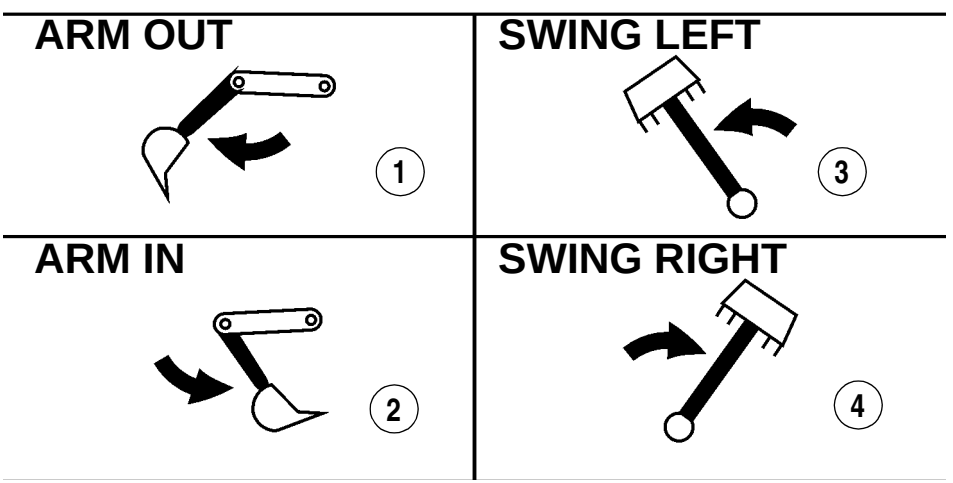
Place the starter switch key in the “OFF” position and repeat Steps 1 to 4.

NOTE: If the anti-theft device was activated the last time the engine was turned off, it will still be possible to start the machine without the access code, or with the wrong code, but the engine will run at idle speed and will stop if an attempt is made to move the machine.

ARM AND UPPERSTRUCTURE SWING

LEFT-HAND CONTROL LEVER





BC00J123

1.Arm out

2.Arm in

9.NEUTRAL (HOLD) When the control levers are returned to NEUTRAL (HOLD), all movement stops. When released, both control levers return to NEUTRAL (HOLD) automatically.

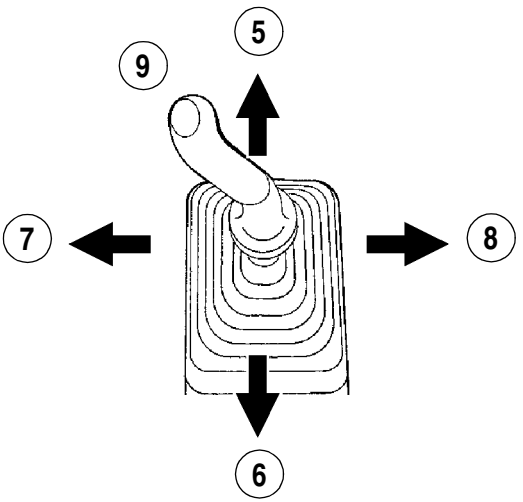
3.Swing left

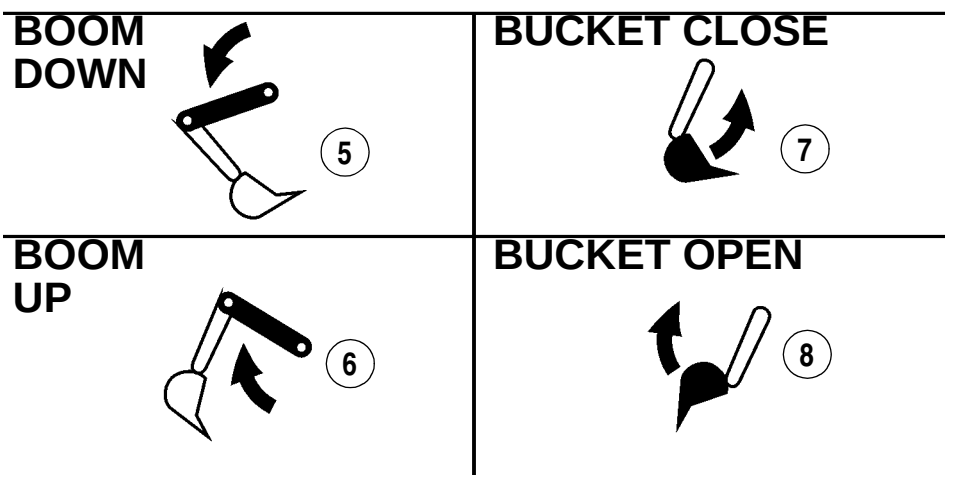
4.Swing right

IMPORTANT: *When the upperstructure swing control is released it may continue to rotate due to the force of inertia. Make allowance for the extra movement by releasing the control slightly earlier.*

BOOM AND BUCKET

RIGHT-HAND CONTROL LEVER





BC00J122

5.Boom down

6.Boom up

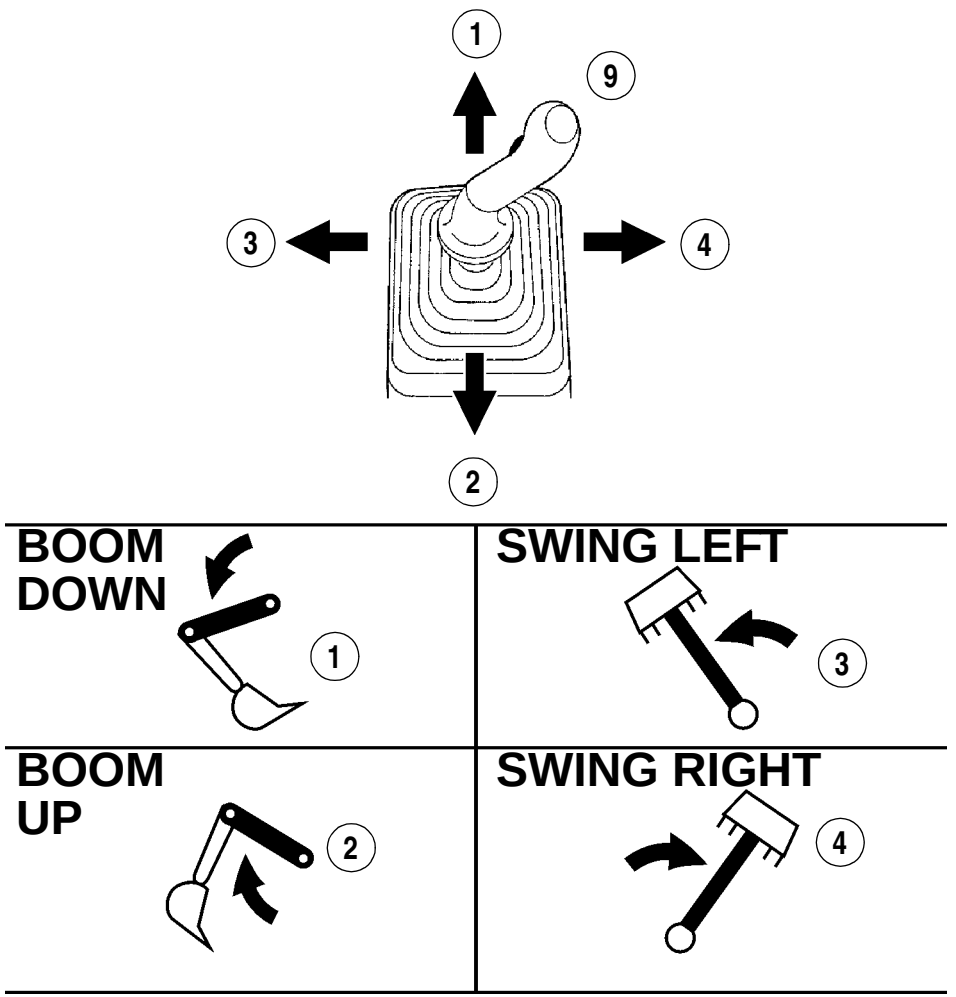
9. NEUTRAL (HOLD) When the control levers are returned to NEUTRAL (HOLD), all movement stops. When released, both control levers return to NEUTRAL (HOLD) automatically.

7.Bucket close

8.Bucket open

OPTIONAL CONTROL PATTERN

BOOM AND UPPERSTRUCTURE SWING LEFT-HAND CONTROL LEVER



BC00J125

1.Boom down

2.Boom up

9. NEUTRAL (HOLD) When the control levers are returned to NEUTRAL (HOLD), all movement stops. When released, both control levers return to NEUTRAL (HOLD) automatically.

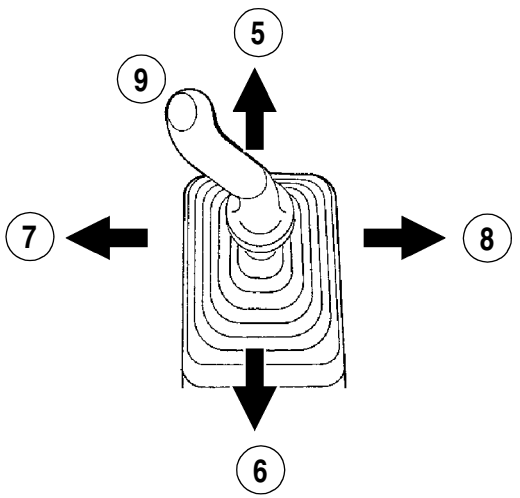
3.Swing left

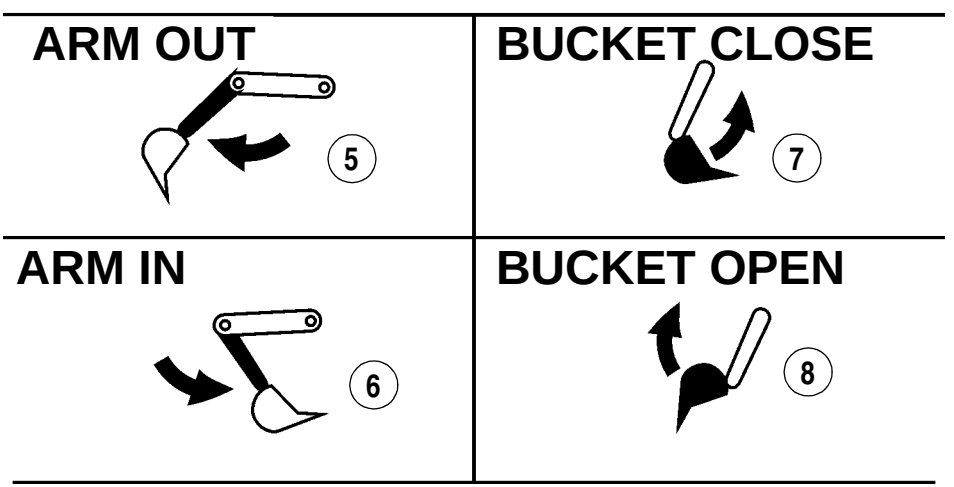
4.Swing right

IMPORTANT: *When the upperstructure swing control is released it may continue to rotate due to the force of inertia. Make allowance for the extra movement by releasing the control slightly earlier.*

OPTIONAL CONTROL PATTERN

ARM AND BUCKET RIGHT-HAND CONTROL LEVER





BC00J124

5.Arm out

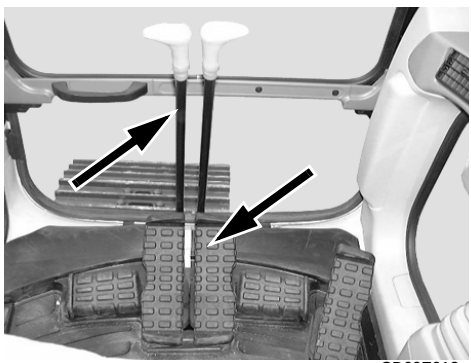
6.Arm in

9. NEUTRAL (HOLD) When the control levers are returned to NEUTRAL (HOLD), all movement stops. When released, both control levers return to NEUTRAL (HOLD) automatically.

7.Bucket close

8.Bucket open

Travel control levers and pedals

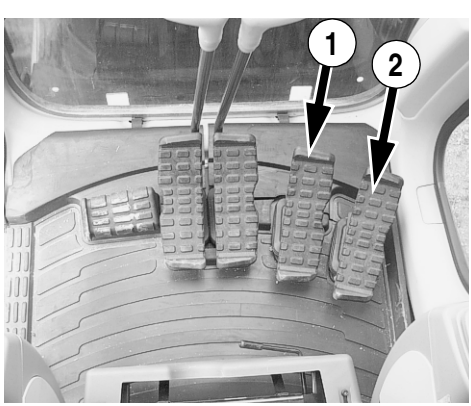


CD00E012

For machine travel, see “Machine travel” in the “Operating Instructions” Section.

NOTE: Travel speed either forwards or in reverse depends on the position of the travel speed selector. See “Systems display panel” (item 1).

NOTE: The movements of the machine are shown in the “Control functions” decal. See “Decals” in the “Safety/ Decals/Hand signal” Section.

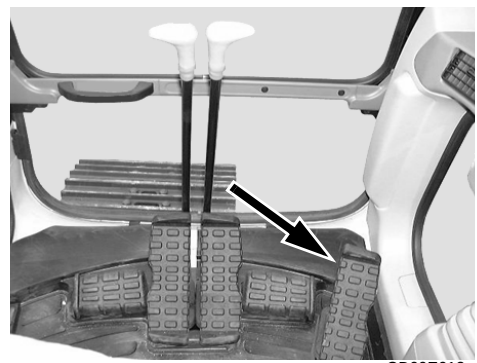


BD00M485

Single pedal travel, 240 LX.

This pedal, (1) is used for travel forward and reverse. Equal power is delivered to both left and right tracks. In this configuration pedal (2) will be used for optional tools.

Optional auxiliary hydraulic control pedal

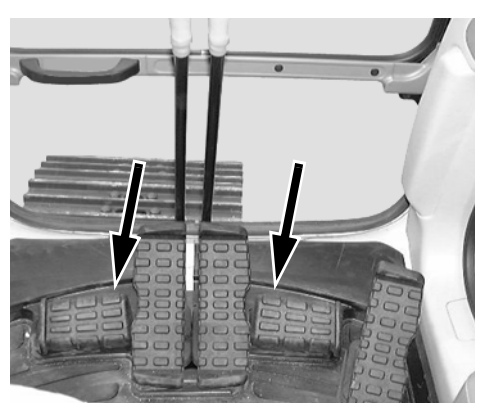


CD00E012

This pedal is used for optional tools such as hydraulic breakers, etc. See “Auxiliary hydraulic circuits” in the “Operating Instructions” Section.

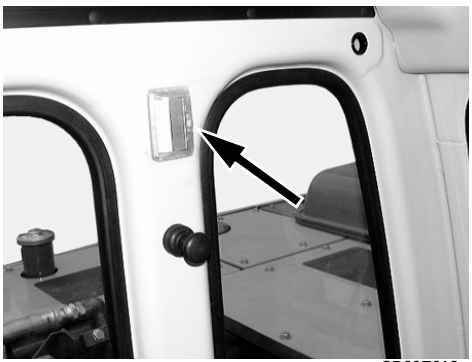
IMPORTANT: *Ask your authorized LBX Link-Belt distributor for advice on optional tools.*

Footrest



CD00E012

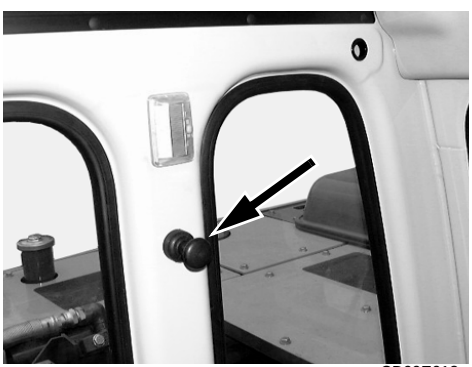
Cab light



CD00E013

The light is located on the right-hand cab upright and is controlled by a switch set in the lamp base.

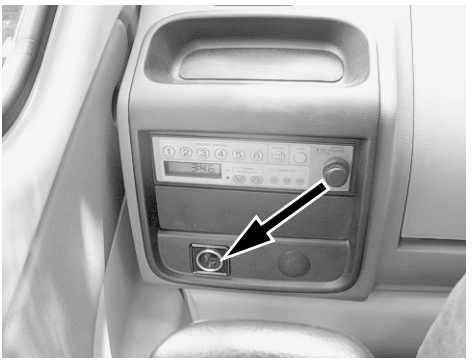
Coat hanger hook



CD00E013

This hook is on the right-hand cab upright.

Cigarette lighter



BD00JO48

The cigarette lighter (24 volt) is to the right at the rear of the cab.

IMPORTANT: *Do not keep the cigarette lighter pushed in, to avoid damage.*

Fuse box

CD00E059

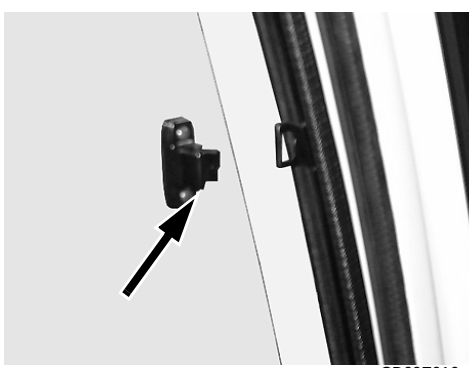
To gain access to the fuses, open the hatch to the left behind the operator's seat and then remove the fuse box cover. To replace a fuse, see "Fuses" in the "Electrical system" Section.

Roof hatch

CD00E015

To open the roof hatch, turn the handle and push the hatch upwards. To close the roof hatch, pull the handle.

Cab door sliding windows



CD00E016

When the locks are released, the windows can be opened and closed to the left/right as required.

Storage tray

BD00J048

CD00E032

Storage compartment

CD00E017

Located behind the operator's seat, this compartment is used, among other things, for storing the machine's technical documentation and conformity certificates.

Cab radio compartment

BD00E048

The 24 volt automotive type radio is located on the rear right-hand side of the operator's seat. A CD player, or similar electronic device, can be mounted below the radio in the pre-cut space provided.

HEATING AND VENTILATION OR AIR CONDITIONING CONTROLS

These controls are located on the right-hand control arm.

CD00E033

1. On/Off
2. Automatic
3. Air conditioning
4. Fan Speed
5. Temperature
6. Recycle / Fresh Air
7. Air flow direction control
8. Windshield defroster
9. Display screen

On/Off

CD00E048

This push button (1) is for turning the system on or off.

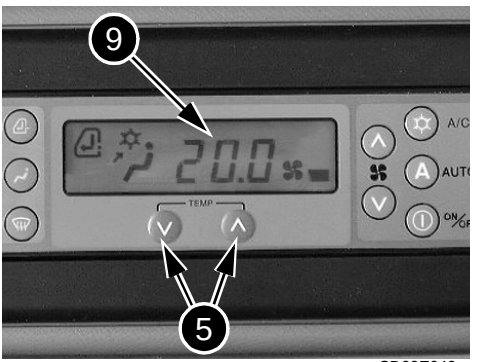
NOTE: When the system is turned on it will operate at the same setting as selected for previous use.

Fan Speed

CD00E048

These push buttons (4) allow the air flow to be increased or reduced. To increase the flow of air, press the top button. To decrease the flow of air, press the lower button. The bars on the display screen (9) will increase or diminish, depending on the flow selected. By changing the fan speed automatic climate control is turned off and the fan speed will remain at the manual setting.

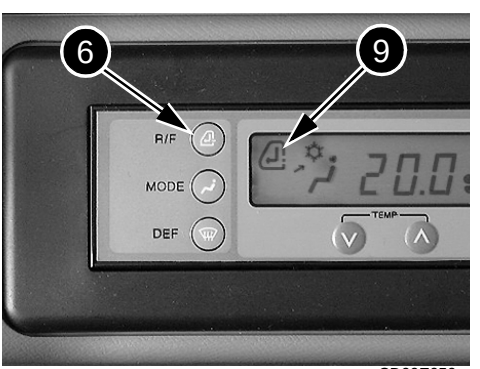
Temperature



CD00E049

These push buttons (5) allow the temperature to be raised or lowered within an 18° to 32°C (64° to 90 °F) range for automatic climate control. To increase the temperature, press the right-hand button. To lower the temperature, press the left-hand button. The temperature reading will appear on the display screen (9).

Air recycling



CD00E050

This button (6) allows two different types of air circulation to be selected. Fresh air from the outside or recycled air from within. Each time the button is pressed, the type of circulation will be changed. Indication of the type of circulation selected will appear on the display screen (9).

Air flow direction

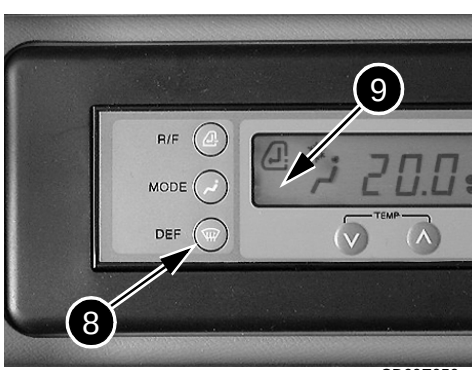
CD00E050

This button (7) allows four different types of air flow direction to be selected.

- Via the top front air vent.
- Via the top front and rear air vents.
- Via the top and lower rear air vents.
- Via the lower rear air vents.

To select the type of air flow direction, press the button (7) successively until the type of flow direction required is obtained. Indication of the type of flow direction selected will appear on the display screen (9).

Windshield defroster



CD00E050

This button (8) allows the windshield to be defrosted. Press the button to defrost the windshield. Indication that the defroster is working will appear on the display screen (9).

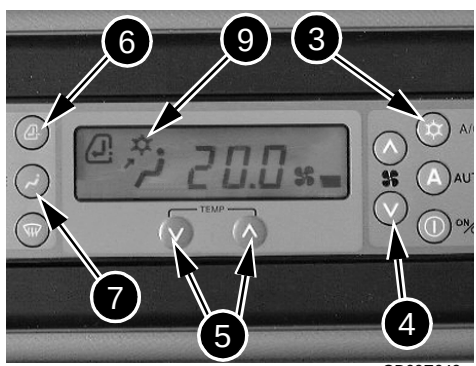
To turn the defroster off, press the button once more and the indication on the display screen will disappear.

Air conditioning

IMPORTANT: *When using the air conditioning, it is essential for all the operator's compartment windows, the windshield and the cab door to be kept closed. The air vents must be kept in open position.*

The air conditioning can function in two modes, manual and automatic.

Manual

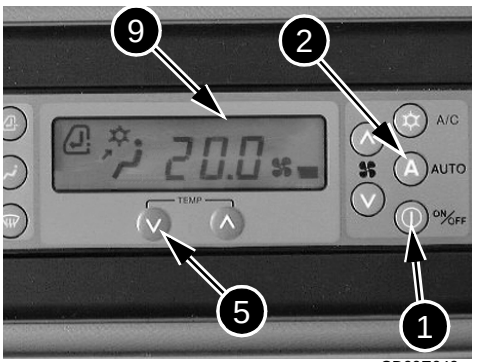


CD00E049

This button (3) is used to turn the air conditioning on and off. When the air conditioning is running, confirmation is given on the display screen (9). Manual adjustments can be made using controls (4), (5), (6) and (7).

By pressing the temperature control buttons (5) simultaneously and holding for 5 seconds the display will change from celsius to fahrenheit or fahrenheit to celsius.

Automatic

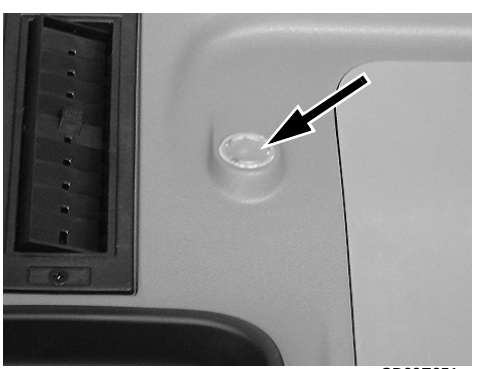


CD00E049

This button (2) is used to obtain automatic adjustment of the temperature, the volume and the direction of flow of the air. In this case, “Auto” will appear on the display screen (9). In automatic mode, the only possible manual adjustment is to the temperature (5). All other adjustments are made automatically.

If any adjustment other than to temperature is made, the automatic mode is cancelled and “Auto” disappears from the display screen (9), To shut down the system, press buttons (1) or (2).

Temperature sensor



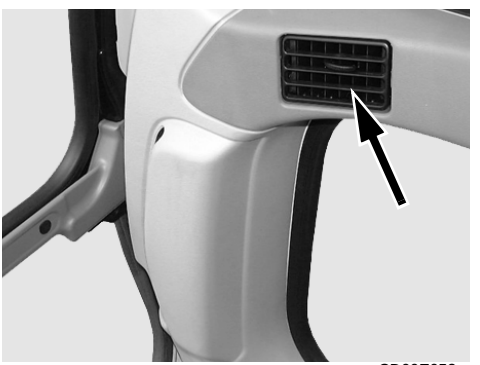
CD00E051

The temperature sensor is behind the operator’s seat and should never be obstructed or covered.

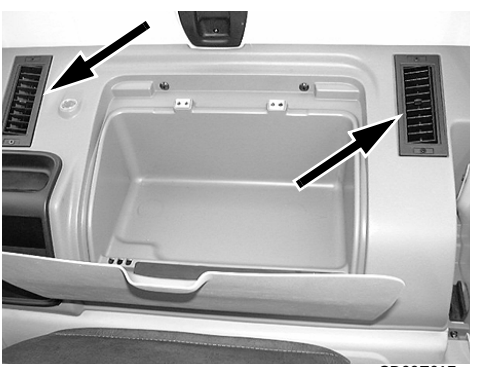
NOTE: *To ensure correct functioning and full effectiveness of the air conditioning system, it must be run at least once a week, even if only for a short time.*

When servicing the air conditioning system, see “Air conditioning” in the “Maintenance/Adjustments” Section.

Air vents



CD00E052



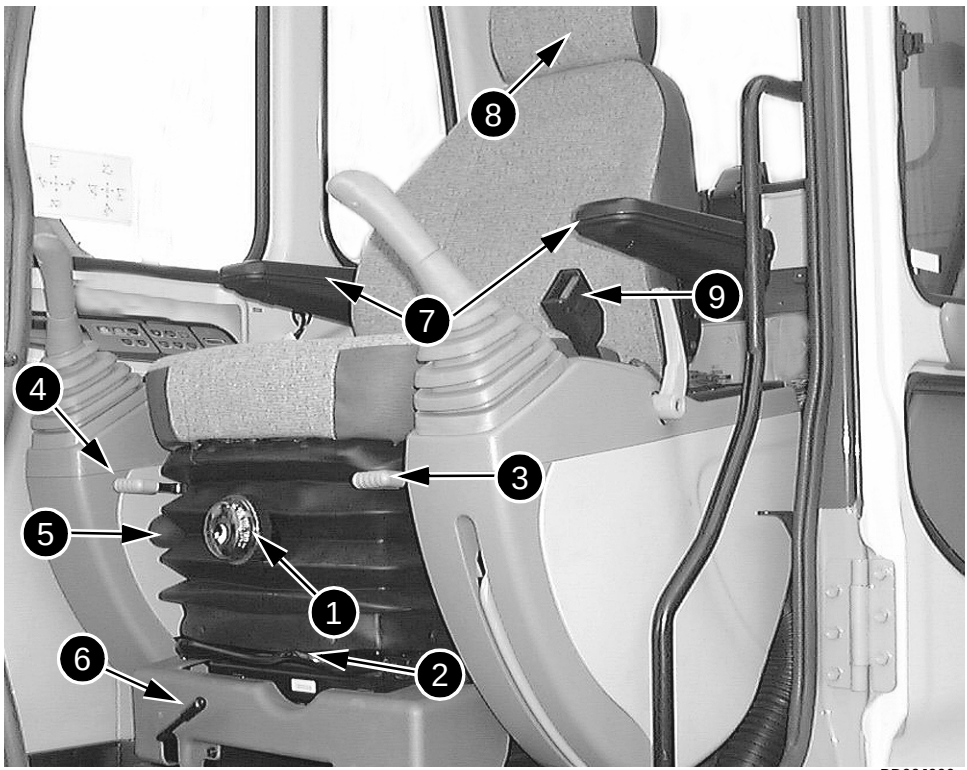
CD00E017

The air vents are located to the front and rear of the operator’s compartment, as well as under the operator’s seat and allow the circulation and direction of air to be controlled. The air vents are opened and controlled manually.

NOTE: The air vents must always be open when the air conditioning is in use.

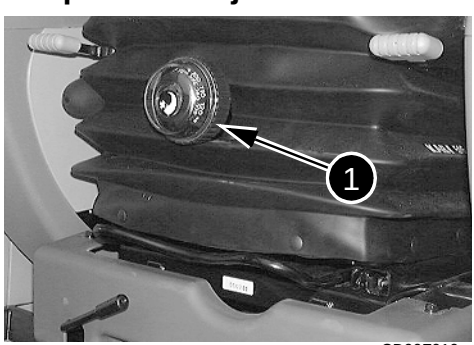
OPERATOR'S SEAT

In order to operate the machine correctly and with maximum efficiency and comfort, adjust the seat to suit the weight and size of the operator.



BD00J066

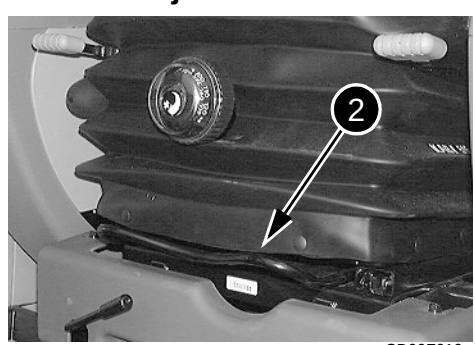
Suspension adjustment



CD00F010

Turn the dial, (1) counter clockwise forward to obtain softer suspension. Turn the dial, (1) clockwise to obtain harder suspension.

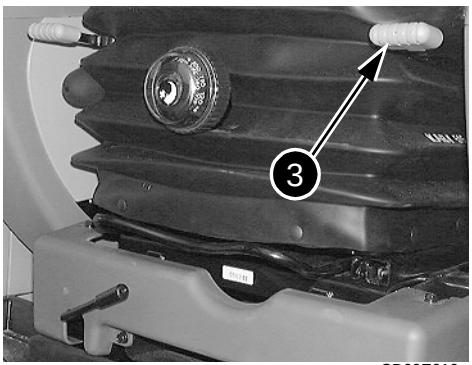
Fore/aft adjustment



CD00F010

Hold the control (2) in raised position, slide the seat to the required position and then release the control.

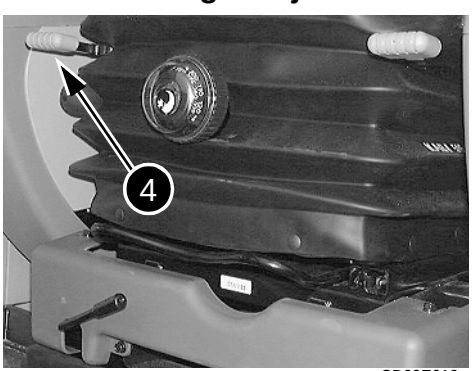
Seat position adjustment



CD00E010

To raise or lower the front of the seat, hold the lever (3) in raised position. Move with the seat to the desired position and then release the lever.
To raise or lower the rear of the seat, hold the lever (3) in lowered position. Move with the seat to the desired position and then release the lever.

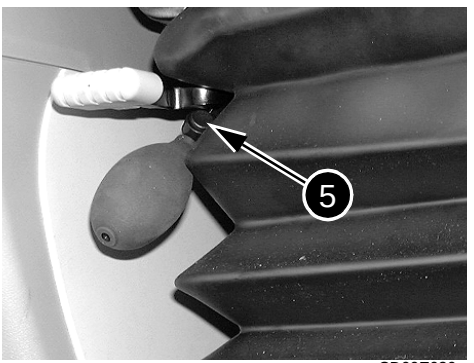
Seat back angle adjustment



CD00E010

To adjust the seat back angle, hold the lever (4) in raised position. Move with the seat back to the desired position and then release the lever.

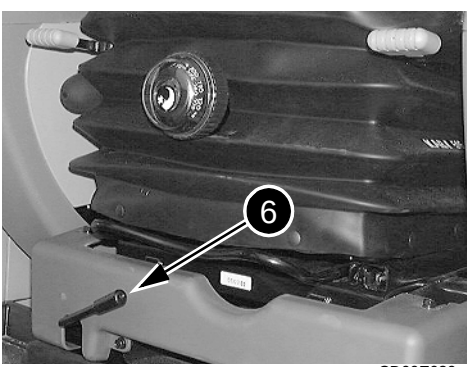
Lumbar support adjustment



CD00E030

Use the inflation bulb (5) to inflate the lumbar support. Press the button on the tip of the inflation bulb (5) to deflate the lumbar support.

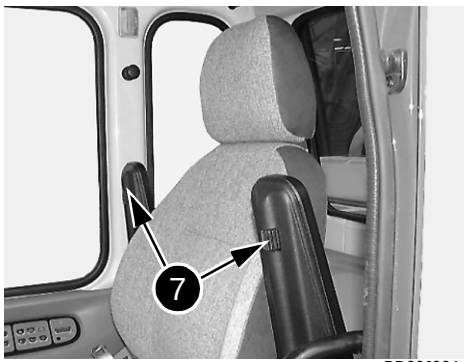
Seat and control arm assembly fore and aft adjustment



CD00E029

Pull the lever (6) upwards, and slide the seat and control arm assembly to the desired position, then release the lever.

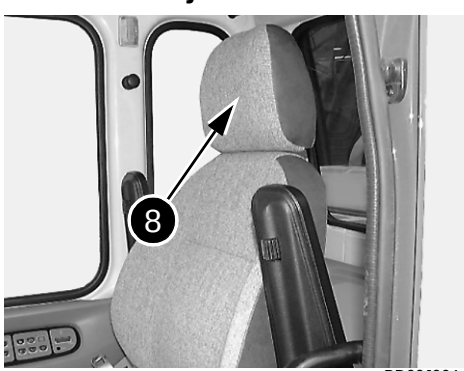
Armrest angle adjustment



BD00J064

Raise the front part of the armrest and adjust to the desired angle using the knob (7), then lower the armrest.

Headrest adjustment



BD00J064

The headrest (8) can be adjusted upwards and downwards and backwards and forwards.

NOTE: To make the headrest return to its initial position (to the rear), tilt it completely forwards and then release it.

Seat belt

CD00E032

Sit comfortably in the seat, pull out a long section of belt and engage it in the fastening system (9).

NOTE: If the section of belt pulled out is not long enough, release it, so it rolls up and then pull it out again.

To release the seat belt, press down on the releasing lever (9).

IMPORTANT: *Inspect the seat belt. Make sure that it is not damaged, that the mounting screws are correctly tightened and replace any defective parts.*

The seat belt must be kept clean. Use only soap and water to clean the belt, do not use bleach or dies.

WINDSHIELD

WARNING: *Make sure you follow the instructions below properly. If the windshield is not handled correctly it could slip and injure your fingers or hand.*

Opening

STEP 1

CD00E019

Release the right-hand latch.

STEP 2

CD00E047

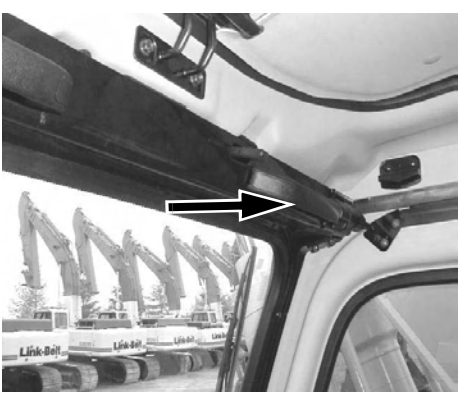
Hold the lower and upper handles and carefully raise the windshield. Push to the rear until it engages.

STEP 3

CD00E019

Engage the right-hand latch in the cab upright.

STEP 4

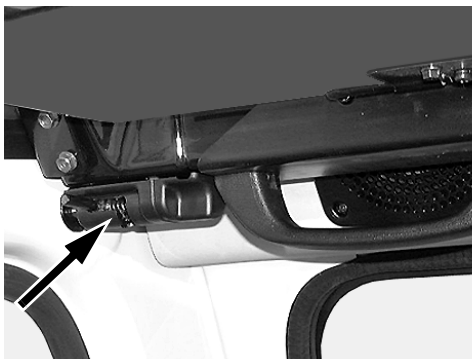


PC060047

Make sure the top of the windshield is correctly latched.

Closing

STEP 1



CD00E019

Release the right-hand latch.

STEP 2

CD00E047

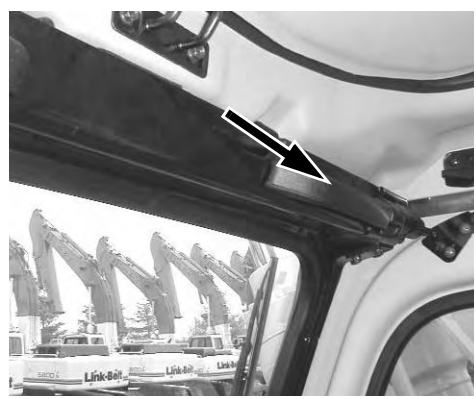
Hold the lower and upper handles and carefully lower the windshield. Make sure the window is completely down.

STEP 3

CD00E019

Hold both handles and carefully lower the windshield. Make sure the window is completely down.

STEP 4



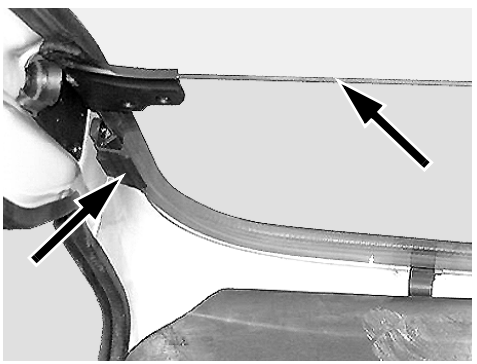
PC060047

Make sure the top of the windshield is correctly latched.

LOWER FRONT WINDOW

The lower front window may only be removed when the windshield is open.

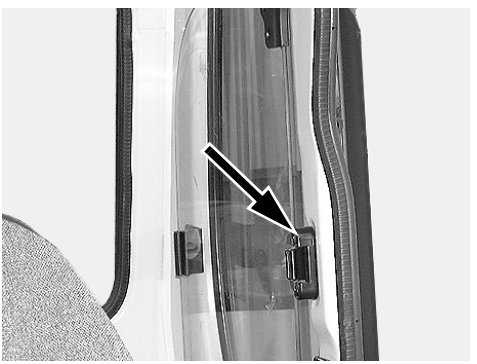
STEP 1



CD00E021

Push the right-hand and left-hand latches and remove the window.

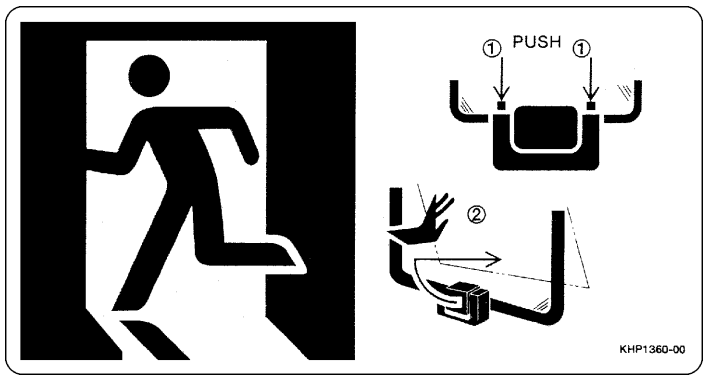
STEP 2



CD00E022

Place the window in the storage position provided to the left of the operator's seat and then engage it correctly.

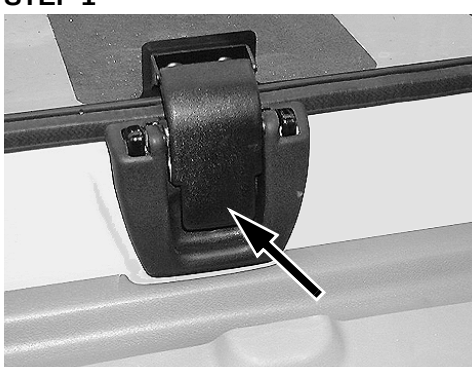
REAR WINDOW AND EMERGENCY EXIT



KHP1360-00

Opening

STEP 1



CD00E024

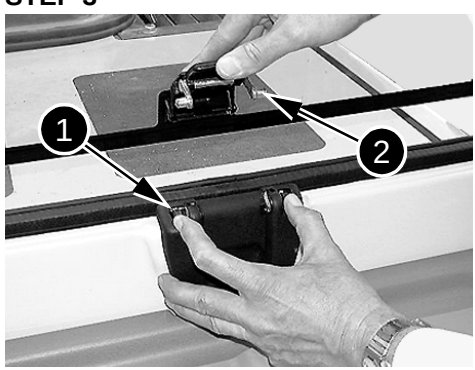
Pull the handle upwards.

STEP 2

CD00E025

Push back the handle to open the window partially.

STEP 3



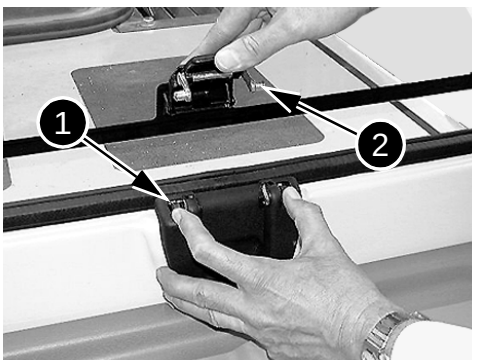
CD00E026

To open the window completely, release the pin (2) from the locking studs (1).

NOTE: The window can not be fastened in this position.

Closing

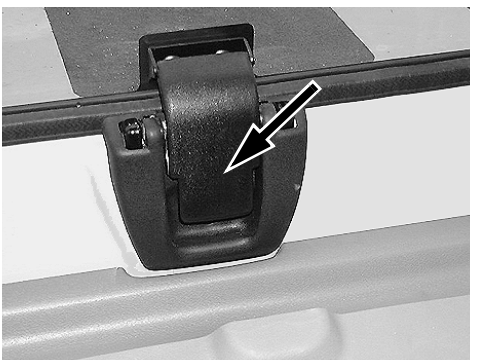
STEP 1



CD00E026

Press the locking studs (1), bring the pin (2) into its housing and then release the studs.

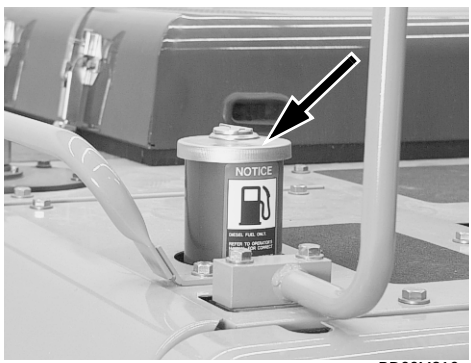
STEP 2



CD00E024

Fold the handle back into position.

FUEL TANK



BD00M216

The fuel tank capacity is 340 litres (90 U.S. gal).

NOTE: Clean around the fuel cap before refuelling and do not remove the filter located in the filler orifice. See “Fuel tank filter” in the “Maintenance/ Adjustments” Section.

NOTE: *In cold weather, use fuel corresponding to the ambient temperature. See “Fluids and lubricants” in the “Lubrication/Filters/ Fluids” Section.*

IMPORTANT: *In cold weather, fill the fuel tank after each working day to prevent the formation of condensation.*

When installing the fuel cap, make sure that it is correctly placed in the notches and then lock it by turning it up against the stop.

WARNING: *Never refill the fuel tank when the engine is running. Never smoke during refuelling.*

NOTE: Use the starter switch key to lock the fuel cap.

REAR VIEW MIRROR

CD00E036

Before undertaking any operation, make sure the rear view mirror is clean and properly adjusted.

TOOL BOX

CD00E053

This is to the right, in front of the upper structure frame. It is used for storing tools and parts.

The tool box also gives access to the windshield washer reservoir, and the upper structure work light.

Use the handle to open the tool box and tilt the cover completely upwards.

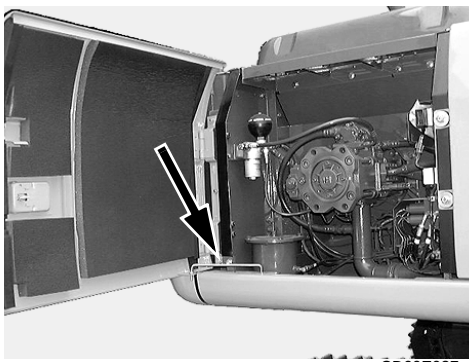
To close, move the support strut back slightly and tilt the cover downwards.

NOTE: Use the starter switch key to lock the storage box cover.

WARNING: *Before undertaking any travel, make sure the tool box cover is properly closed.*

SIDE DOORS

Right-hand door



CD00E037

The right-hand door gives access to a number of hydraulic components (filters, etc...).

Left-hand doors

CD00E038

The left-hand doors are for obtaining access to the batteries, air filter, radiator, oil cooler, etc...

Use the outside handle to open the doors. To hold the doors, open, remove the struts from their storage position and install them in the holes provided. When closing, put the struts back into storage position.

WARNING: *Always install the struts when the doors are open.*

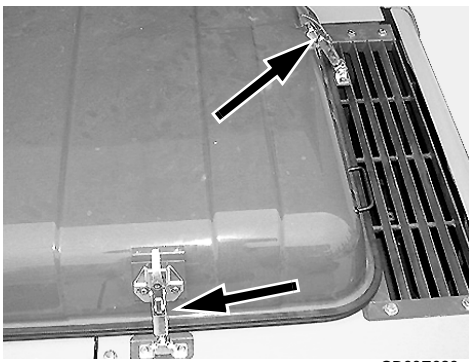
Use the starter switch key to lock the side doors.

WARNING: *Never leave tools or other objects behind the side doors.*

WARNING: *Before undertaking any travel, make sure the side doors are properly closed.*

ENGINE HOOD

Opening

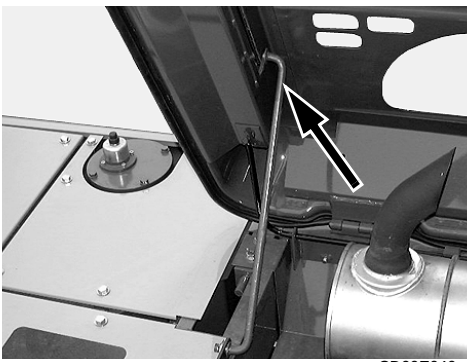


CD00E039

Unlatch the fasteners and then raise the hood completely until the strut locks automatically in position.

WARNING: *Once the hood is completely opened, make sure the locking system is correctly engaged.*

Closing

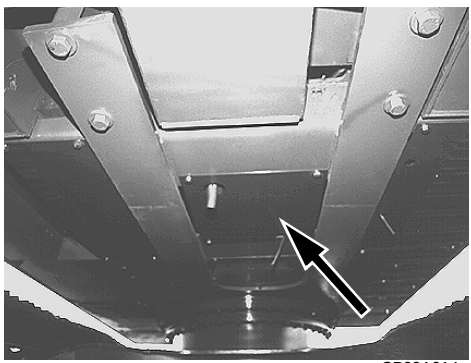


CD00E040

Raise the hood slightly, pull the strut back and then lower the hood and close it with the fasteners.

WARNING: *Before undertaking any travel, make sure the hood is properly closed.*

LOWER PANELS



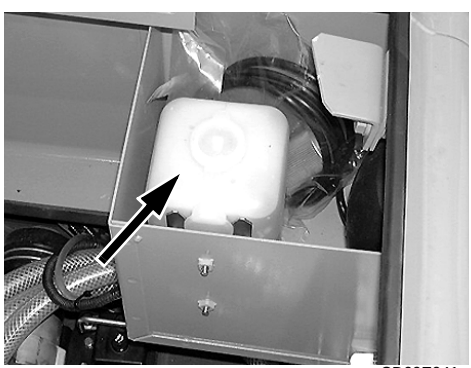
CP99A014

These panels are located under the upper structure frame and gives access to certain machine components.

IMPORTANT: *Do not operate the machine with the panels removed.*

WARNING: *Before undertaking any travel, make sure the panels are correctly secured.*

WINDSHIELD WASHER RESERVOIR



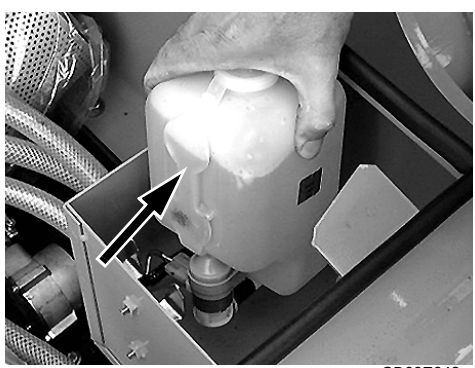
CD00E041

This reservoir, located on the front box, is equipped with an electric pump which is operated from the control panel. See item 16 under “Systems display and control panel”.

IMPORTANT: *Never operate the windshield washer control when the reservoir is empty. This could cause damage to the electric pump.*

Remove the cap to fill the reservoir.

IMPORTANT: *In cold weather, add anti-freeze to the windshield washer water.*

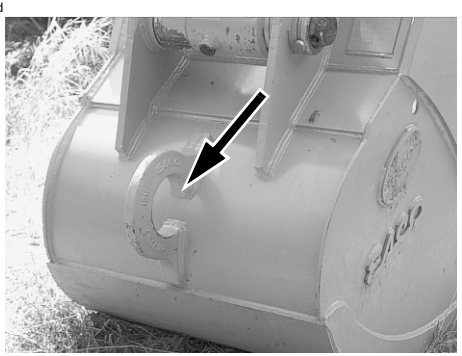


CD00E042

The reservoir can be lifted out of its support.

LIFTING EYE

bd



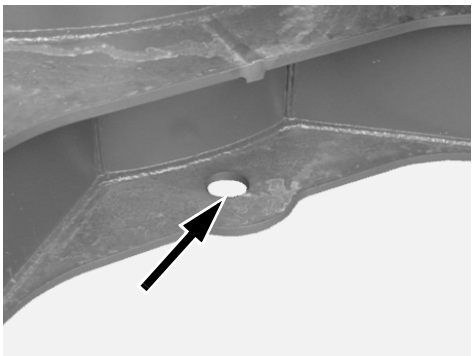
BD00E046

To handle a load, it is imperative for all slings and chains to be attached to the bucket lifting eye. See “Load Handling” in the “Operating Instructions” Section.

IMPORTANT: *The lifting eye will only carry the load indicated in the maximum lift capacities table. See “Maximum lift capacities tables” in the “Operating Instructions” Section.*

WARNING: *Never weld hooks or lugs on the bottom plate of the bucket for handling operations. The only attachment point which may be used is the lifting eye.*

TOWING EYES



CD00E069

The towing eyes, located at the front and the rear of the undercarriage, are intended for moving heavy objects up to 9000 kgs (20 000 lbs) maximum.

WARNING: *Towing is always carried out at the risk of the user. The manufacturer's warranty does not apply to any incidents or accidents which may occur during towing.*

WARNING: *This operation must be carried out very slowly, over a short distance and only if it is unavoidable.*

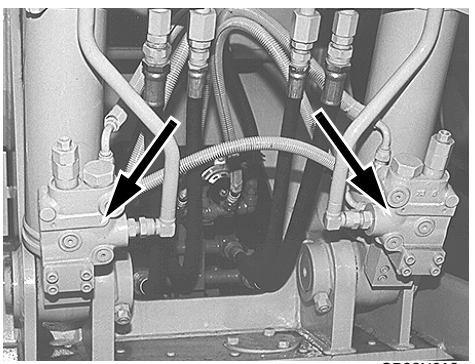
Make sure that the shackles, chains and slings are in perfect condition and strong enough to move the load.

IMPORTANT: *The load should always be kept in line with the undercarriage.*

HOSE BURST CHECK VALVES (OPTIONAL)

Service specifications

Check by your authorized LBX Link-Belt distributor..... Every 6 months

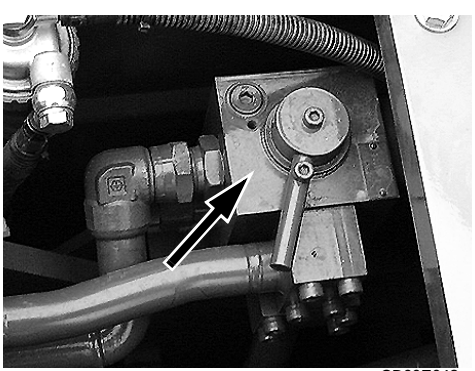


CP98N018

The role of the hose burst check valve is to stop the attachment from dropping due to valve spool leakage in the neutral position or in the event of a line or hose accidentally breaking. In the latter event, they also ensure that the attachment may be lowered gently to the ground. See “Load handling” in the “Operating Instructions” Section.

WARNING: *Hose burst check valves are pilot operated devices. The operator **must** return the control lever to the neutral position to prevent the attachment and load from falling in the event that a hydraulic hose or line fails.*

OPTIONAL TOOL FLOW SELECTOR VALVE (OPTIONAL))

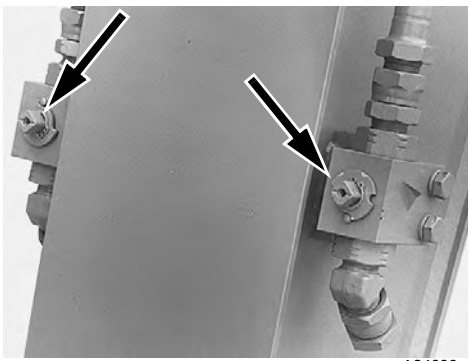


CD00E043

This valve is located on the inner wall of the fuel tank and is used to select the correct oil flow for the tool mounted on the machine. See “Auxiliary hydraulic circuits” in the “Operating Instructions” Section.

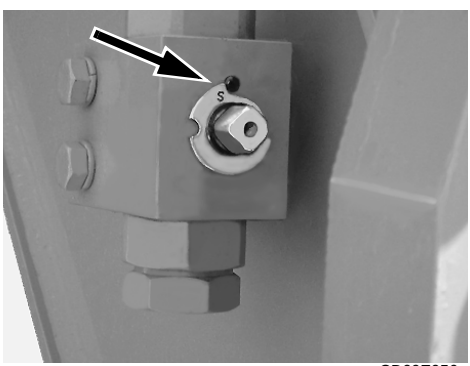
IMPORTANT: *Consult your authorized LBX Link-Belt distributor before mounting optional tools.*

TOOL SUPPLY VALVES (OPTIONAL)



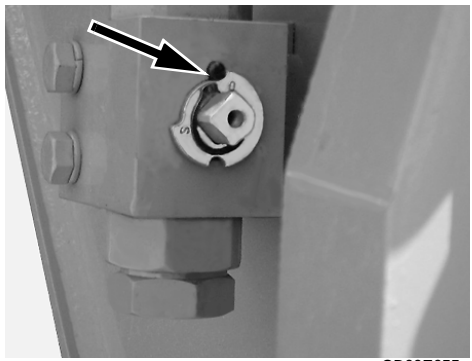
A24690

Located on the end of the arm, these two valves are used to ensure oil supply to optional tools, for example, hydraulic breakers, etc... These valves have two positions.



CD00E056

Position “S” (closed) :
In this position, there is no supply of oil to the tool.

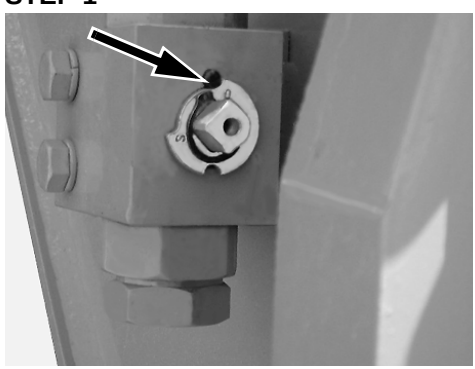


CD00E055

Position “O” (open) :
In this position, oil is supplied to the tool.

The valves can be locked in open position “O”.

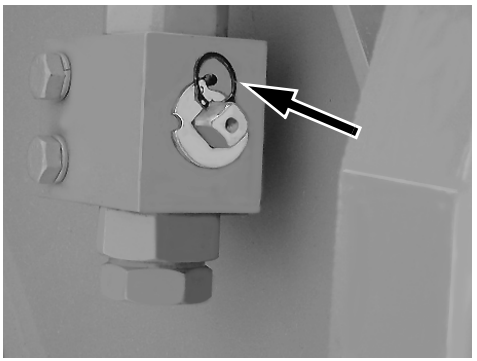
STEP 1



CD00E055

Using a hexagonal wrench, place the supply valves in “O” position (open).

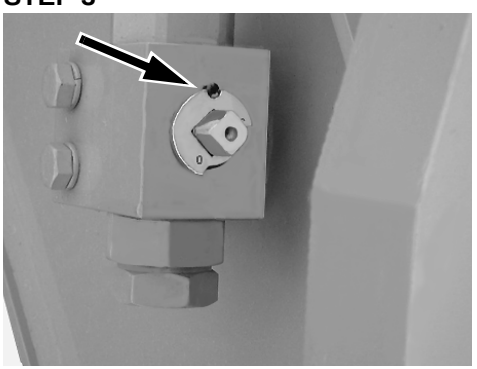
STEP 2



CD00E057

Remove the snap ring.

STEP 3



CD00E058

Remove the locking plate and then reinstall it, turning it a quarter of a turn so that the notch is over the locking pin. Install the snap ring.

OPERATING INSTRUCTIONS

BEFORE OPERATING THE MACHINE

WARNING: *Do not attempt to operate this machine unless you have first read and perfectly understand the safety messages and instructions appearing in this manual.*

Before operating this machine, be sure to do the following :

- Check the level of all fluids (engine oil, hydraulic fluid and coolant) and make sure that the fluids and lubricants are suitable for operating conditions. See “Fluids and Lubricants” in the “Lubrication/Filters/Fluids” Section and “Operating the machine in cold weather”.
- Carry out the daily maintenance operations. See the “Servicing Intervals” Section.
- Inspect the machine, look for any signs of leakage and check the hoses. Tighten or replace as necessary. See the “Maintenance/Adjustments” Section.
- Check the track assemblies. See “Tracks” in the “Maintenance/Adjustments” Section.
- Before undertaking any travel or working operations during hours of darkness, make sure the lighting and signalling equipment is fully operational.
- Clean the steps and access handles. Grease, oil, mud or (in winter) ice on the steps and access handles can cause accidents. Make sure they are kept clean at all times.
- Clean or replace any decals which are illegible. See “Decals” in the “Safety/ Decals/Hand Signals” Section.
- Make sure all hoods, side doors and lower panels are properly closed.
- Secure the cab door in either fully closed or fully opened position.
- Remove any obstructions which hinder visibility. Clean the windshield, the rear view mirror and the windows.
- Check that no tools or other items have been left on the machine (be it on the undercarriage or the upper structure) or in the operator’s compartment.
- Work out a convenient means of escape from the machine (emergency exit via the windshield, the rear window glass) in the event of the cab door being jammed or the machine turning over.
- Make sure nobody is on or under the machine. The operator must be alone on the machine.
- Make sure nobody is standing in the machine working area.
- Find out about current safety measures in use on the work site.

MACHINE OPERATION

WARNING: *Check all controls and safety devices in a safe, open area before starting work.*

When operating the machine, be sure to do the following :

- Sound the horn before starting the engine and traveling the machine.
- When starting the engine, be sure to use the correct procedure for the prevailing weather conditions. See “Starting the engine”.
- Regularly consult the hourmeter to ensure that all servicing operations are carried out punctually. See “Service intervals”.
- If you use your machine in particularly harsh conditions (dusty or corrosive atmosphere), the servicing intervals should be reduced accordingly.
- See “Break-in period” if the machine is new or if the engine has been reconditioned.
- Locate the position of any underground pipes or conduits before starting work.
- Do not work near overhead high-voltage electric lines without checking beforehand that all necessary measures have been taken to respect the minimum distances :
- Keep all parts of the machine at least 4.6 m (15 feet) away from the power source
- When working on a public highway, use standard traffic signs and take into consideration the working range of the upper structure and its attachments.
- Never operate the working or travel controls unless you are properly seated in the operator’s seat with the seat belt correctly fastened.
- Modify your travel speed to suit the type of work and working conditions. See “Operating Instructions”.
- Do not allow anyone to stand in the machine working area. Stop all operations until everyone has moved away.
- Operate all controls gradually to ensure smooth machine operation.
- See “Operating in water” if the machine will be standing in water during use.
- See “Transporting the machine” when driving the machine onto a trailer.

- See “Handling the machine” when it is necessary to lift the machine.
- See “Towing the machine” when it is necessary to tow the machine.
- Whenever load handling operations are to be carried out, it is imperative to adhere strictly to the instructions given in this manual and local legislation. See “Load handling”.
- Never use the attachment for sweeping the ground to level out rubble or push objects.
- Avoid running the engine in a confined space. If there is no alternative, proper ventilation must be provided at all times.
- Dust, smoke or mist can reduce visibility and cause an accident. Reduce speed or come to a complete halt until visibility has improved.
- In the event of an operating problem or failure, move the machine to a safe place, lower the attachment to the ground, stop the engine and remove the starter switch key. Locate the problem, report it if necessary and take the necessary steps to warn others not to attempt to operate the machine.
- Do not stop the engine without taking prevailing weather conditions into consideration. See “Stopping the engine”.
- See “Parking the machine” when you have to park the machine.
- When travelling with the hydraulic breaker (optional), make sure it is not too close and not pointing in the direction of the cab window.

BREAK-IN PERIOD

Your machine will last longer and will give better and more economical performance if you pay particular attention to the engine during the first twenty hours of operation.

During this period :

- Warm up the engine before using it under load.
- Do not run the engine for a long period at idle speed.
- Check all instruments frequently.
- Check the oil levels and coolant solution level frequently.
- During the run-in period, the following checks and servicing operations should be carried out in addition to those specified in the service schedule :

AFTER THE FIRST 50 HOURS

- Replace the hydraulic pilot circuit filter and the return filter. See “Hydraulic system” in the “Lubrication/Filters/Fluids” Section.
- Check that the track shoe bolts are tightened to the correct torque. See “Tracks” in the “Maintenance/Adjustments” Section.
- Check all nuts and screws are tightened to the correct torque. See “Hardware torque inspection” in the “Maintenance/Adjustments” Section.

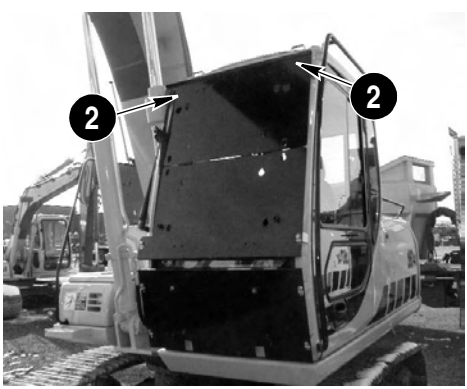
AFTER THE FIRST 250 HOURS

- Change the oil in the travel reduction gears. See “Travel reduction gears” in the “Lubrication/Filters/Fluids” Section.
- Change the oil in the swing reduction gear. See “Swing reduction gear” in the “Lubrication/Filters/Fluids” Section.

VANDAL COVER

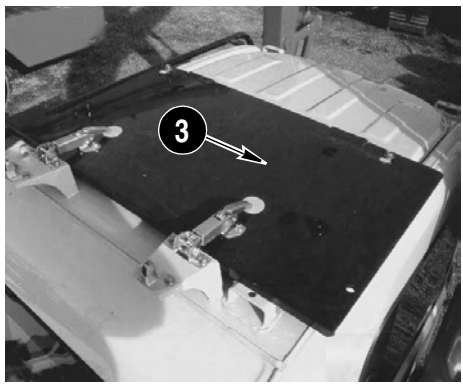
PC050001

1. Release the two storage clamps and remove the guard from the top of the cab.



PC050014

2. Place the vandal cover over the studs and tighten the nuts.



PC050012

3. Vandal covers in the storage position on top of cab.

STARTING THE ENGINE

NOTE: *If the machine has been out of use for some time, see "Starting up after storage" in the "Storage" Section.*

NOTE: *See "Connecting booster batteries" in the "Electrical System" Section, if you have to start the engine using booster batteries.*

STEP 1

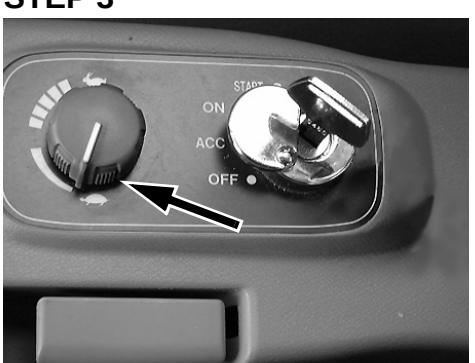
Take up position correctly in the operator's seat with the seat belt correctly fastened. See "Operator's seat" in the "Controls/Instruments/ Accessories" Section.

STEP 2

CD00E005

Make sure the gate lock lever is raised and the gate lock bar is in the inward position.

STEP 3



CD00E060

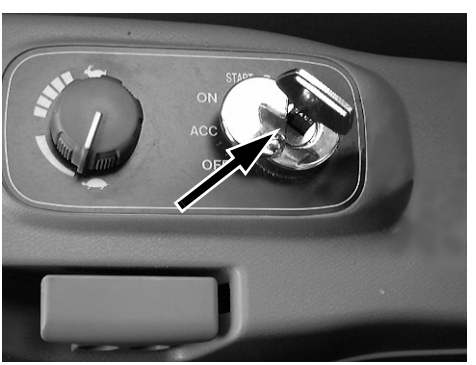
Make sure the engine throttle button is in low idle position.

STEP 4

CD00E005

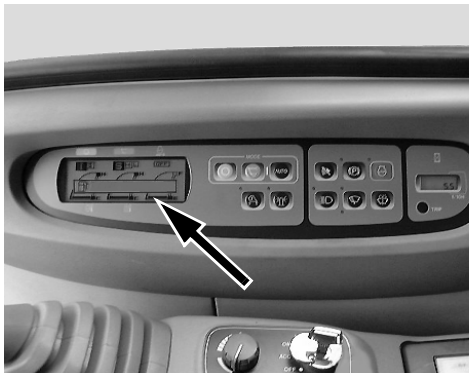
Sound the horn on the left-hand control lever to give warning of your intention to start the machine.

STEP 5



CD00E060

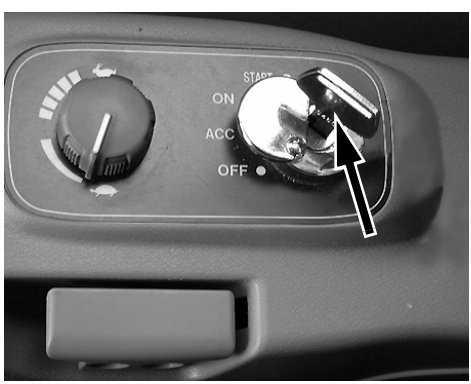
Turn the starter switch key to "ON" position.



CD00E061

In cold weather, the message “Eng. pre heat” appears on the systems display panel. See item 10 under “Systems display and control panel” in the “Controls/Instruments/Accessories” auto warm-up Section.

STEP 6

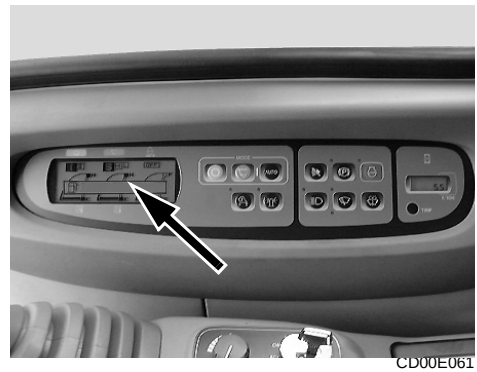


CD00E061

As soon as the audible alarm device sounds, the message will disappear, turn the key to the “START” position. Release the key as soon as the engine starts to turn. If the engine stops, wait about a minute and recommence the operation.

IMPORTANT: *Do not operate the starter motor for more than ten seconds at one time. Do not operate the starter motor when the engine is running.*

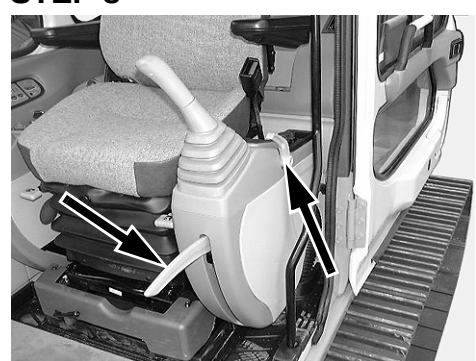
STEP 7



CD00E061

Run the engine until the “Auto warm up” message disappears from the systems display panel. See “Systems display and control panel” in the “Controls/Instruments” section.

STEP 8



CD00E006

Lower the gate lock lever to extend the gate lock and to activate the control

BRINGING THE MACHINE UP TO OPERATING TEMPERATURE

IMPORTANT: *Normal operating temperature of the hydraulic fluid is between 50°C and 80°C (122-176F), in the middle of the temperature indicator. If the machine is used with the hydraulic fluid at a temperature below 20°C (68F), then damage can be caused.*

After starting the engine and before using the machine, allow the hydraulic fluid to reach a temperature of 20°C(68F), as indicated by the appearance of the first bar segment on the hydraulic fluid temperature indicator. See item 8 under “Systems display and control panel” in the “Controls/Instruments/Accessories” Section.

Idle - Start

At start-up the engine speed defaults to low idle regardless of throttle position. This prevents over speeding a cold engine and extends its service life.

Auto engine warm-up

Once the engine has started, the warming-up process begins automatically. At first, engine speed is held at a pre-determined, low level. As the temperature increases, engine speed increases in proportion. It is possible to interrupt the warming-up process at any time, simply by manually changing engine speed or by operating one of the control levers. Warming-up takes approximately 5 to 10 minutes.

Engine manual warm-up

With the engine throttle button a quarter open, start the engine and allow it to run approximately for 5 to 10 minutes. When the coolant temperature increases, carry out the hydraulic fluid warm-up procedure.

Hydraulic oil warm-up

Turn the engine throttle button to half-open position. Operate the bucket control slowly until the bucket is completely closed. Operate the arm retracting control slowly until the arm is completely retracted and hold the control in this position for 30 seconds. During this time the temperature of the hydraulic fluid will increase.

After 30 seconds, extend the arm completely and hold the control in this position a further 30 seconds.

Continue the extending and retracting procedure until the temperature rises. See item 8 under “Systems display and control panel” in the “Controls/Instruments/Accessories” Section.

Operate the travel and attachment controls three or four times to activate hydraulic fluid circulation.

Low Idle-Up

When battery voltage or anti-freeze temperature drops the engine will automatically raise rpm’s from 900 to 1100 to help recharge the battery or keep engine fluids warm.

ENGINE OPERATION

When the engine has started and before beginning work, the following procedure must be observed :

- Let the engine run at idle speed until the engine reaches normal operating temperature.
- Move the engine throttle button to the maximum speed position.

Once normal operating temperature has been reached, check the following :

- The exhaust smoke is normal.
- There is no abnormal noise or vibration.
- There are no oil, fuel or water leaks.

The engine should be run at full speed when operating conditions permit.

The operating speed of the machine and of the attachment should be controlled by means of the control levers.

Check the systems display and control panel regularly.

STOP THE ENGINE IMMEDIATELY IF ONE OF THE FOLLOWING SITUATIONS OCCUR:

- Sudden increase or decrease in engine speed.
- Abnormal noise.
- Black smoke at the exhaust.
- A message appears on the display screen and the audible alarm device sounds.

OPERATING THE MACHINE IN COLD WEATHER

Follow the recommendations made below :

Batteries

They should be fully charged.

Fuel

a) To prevent condensation forming and water getting into the fuel system, fill the fuel tank after each day's work and drain off any water before starting the next day's work.

b) To prevent the fuel from gelling, use fuel which is rated for the ambient temperature or add an appropriate anti-freeze to the fuel. See "Fluids and lubricants", in the "Lubrication/Filters/Fluids" Section.

Engine oil

It should be of the right viscosity for the ambient temperature. See "Fluids and lubricants" in the "Lubrication/Filters/Fluids" Section.

Hydraulic fluid

The viscosity must correspond to the ambient temperature conditions. See "Fluids and lubricants" in the "Lubrication/Filters/Fluids" Section.

Coolant solution

It should be suitable for the ambient temperature and contain a minimum of 50% ethylene glycol solution. See "Fluids and lubricants" in the "Lubrication/Filters/Fluids" Section.

Operating the machine in hot weather

Follow the recommendations made below :

1. Keep the coolant at the correct level in the coolant reservoir and in the radiator.

2. Use the correct solution of ethylene glycol and water in the cooling system.

3. Test the radiator cap before hot weather starts. Replace the cap as required.

4. Clean all dirt and debris from the radiator, cooler and engine area.

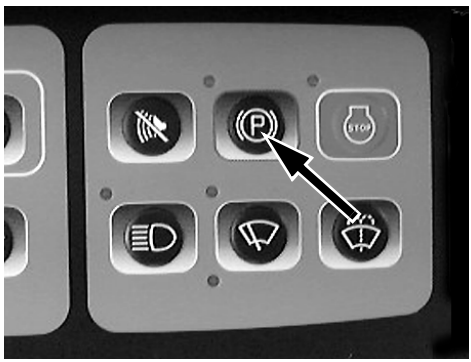
5. Check the condition of the fan drive belt.

6. Check the dust valve in the air cleaner frequently during extreme dust conditions.

7. Use lubricants of the correct viscosity. See "Fluids and lubricants" in the "Lubrication/Filters/Fluids" Section.

STOPPING THE ENGINE

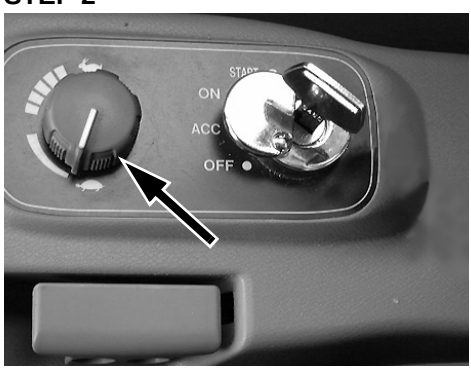
STEP 1



CD00E010

Press the upper structure swing locking switch on the control panel.

STEP 2



CD00E060

Turn the engine throttle button to low idle position and let the engine run for a minute or so.

IMPORTANT: *In cold weather, let the engine run for about five minutes at idle speed.*

IMPORTANT: *Always let the engine run at idle before switching off completely, except in emergency situations.*

STEP 3

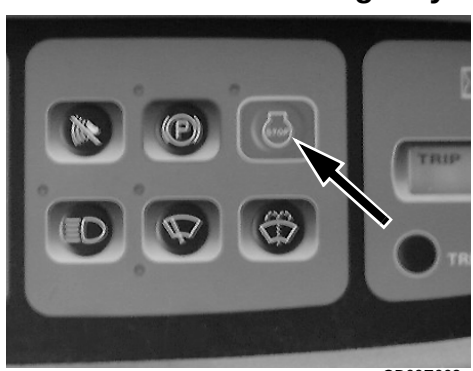
CD00E080

Turn the starter switch key to the “OFF” position.

NOTE: To activate the anti-theft device when stopping the engine, see “Anti-theft device”.

IMPORTANT: *When the engine is to be shut down for a considerable length of time, see “Parking the machine”.*

In the event of an emergency



CD00E062

In the event of an emergency, or if it is not possible to stop the engine using the contact switch key, press the emergency shut-down switch on the control panel. To re-start the engine after emergency shut-down - press the switch once again.

MACHINE OPERATION

Operating instructions

WARNING: *Follow the operating instructions listed in this chapter. Any other practice which has not received the prior approval of the manufacturer is considered to be strictly forbidden.*

- Watch carefully and make sure you are aware of places where other people are working in your work area. Keep all other people away from the machine. Serious injury can result if these instructions are not followed.
- Take note of the locations of pipes/ cables before starting work. Electrical cables, gas and water pipes and other underground installations can cause serious injury.
- Modify your travel to suit working conditions (sloping or rough ground), the nature of the ground and weather conditions.
- On steep slopes keep the engine speed at a maximum and travel in Low.
- When traveling at right angles to the slope, move on to the slope at low speed. Never reduce engine speed when traveling down slopes.
- Holes, obstacles, debris and other danger risks in the working area can cause serious injury. Inspect and note all possible risks before driving the machine in a new working area.
- Do not work close to a live overhead electric cable without first making sure that the following minimum distances are respected :
- Keep all parts of the machine at least 4.6 m (15 feet) away from the power source.
- Never hit or push material with the sides of the bucket.
- Never sweep the ground with the bucket to level rubble.
- When operating the control levers, a whistling sound will be heard if the control lever is held in position while the corresponding cylinder is at the end of its stroke. In this case release the control lever.
- The following operations are likely to damage the machine. You are therefore advised to avoid them.
  1. Excavation using the weight of the machine as a force of impact.
  2. Excavation using the machine's travel force.
- If earth or mud stays stuck inside the bucket, open and close the bucket several times so as to loosen the earth or the mud.
- After work, remove any mud and clean the machine.
- When using the upper structure swing, never change the direction of swing too suddenly.
- When traveling up or down a slope, place the bucket about 250 mm (10 inches) above the ground.
- Avoid turning the machine on steep slopes.

- Never swing the upper structure on slopes of 15° in the direction of travel or 10° at right angles to the direction of travel.
- Before changing travel speed bring the machine to a complete halt.

Operation

1. Take up position in the operator's seat and adjust it so that all the controls are readily accessible. See "Operator's seat" in the "Controls/Instruments/ Accessories" Section. Then fasten your safety belt.

2. Make sure the cab door is firmly latched in open or closed position.

3. Start the engine, taking into consideration the prevailing weather conditions. See "Starting the engine". Sound the horn before starting the engine.

4. Check all instruments are operating correctly.

5. Lower the gate lock lever and extend the gate lock.

6. Unlock the upper structure swing function.

7. Sound the horn.

8. Try out all the controls in a safe, open area.

MACHINE TRAVEL

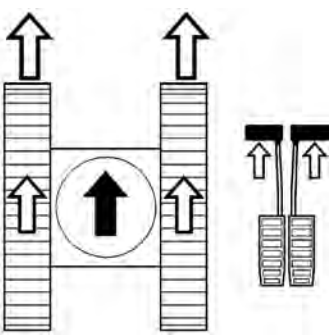
WARNING: *In the normal travel position, the operator's compartment is above the idler wheels and the travel reduction gears are to the rear of the upper structure. If the upper structure is turned 180° in relation to the undercarriage, lever functions are reversed.*

IMPORTANT: *Before undertaking any travel, raise the attachment.*

NOTE: *Travel speed depends on the tilting angle of the travel control levers and pedals and the speed travel mode selected.*

NOTE: *The different travel configurations described hereafter are with the travel reduction gears to the rear of the upper structure.*

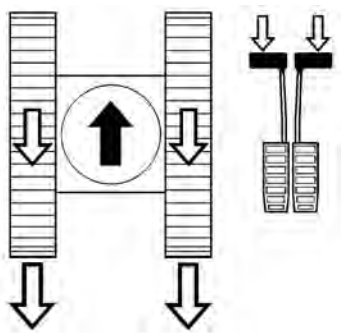
Traveling in a straight line (forward)



CS98M546

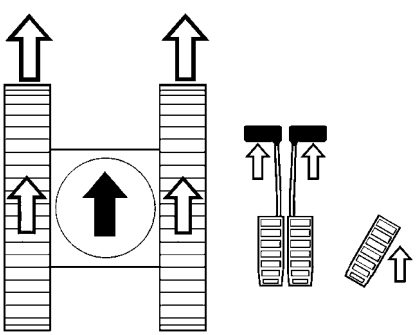
Press the two pedals (or push the two levers) forwards at the same time.

Traveling in a straight line (in reverse)



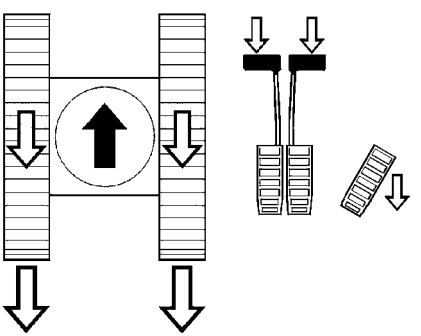
CS98M547

Press the two pedals (or push the two levers) rearwards at the same time.



BS00M167

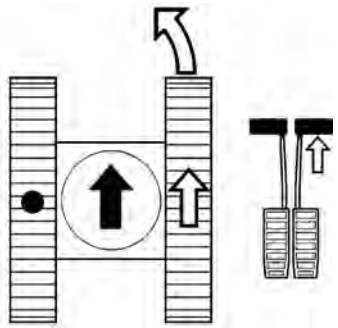
Press the single travel pedal forward.



BS00M168

Press the single travel pedal rearward.

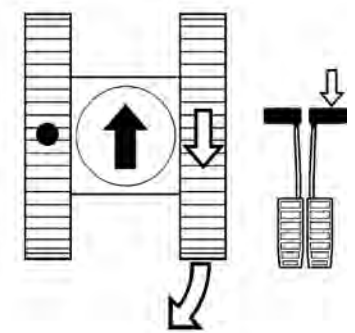
Turning to the left (forward)



CS98M548

Simply press the right-hand pedal (or push the right-hand lever) forwards.

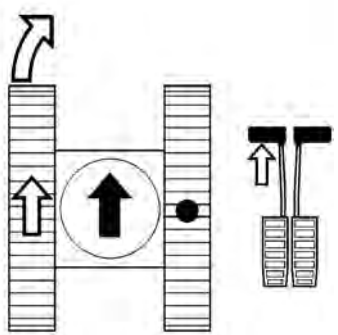
Turning to the left (in reverse)



CS98M549

Simply press the right-hand pedal (or push the right-hand lever) rearwards.

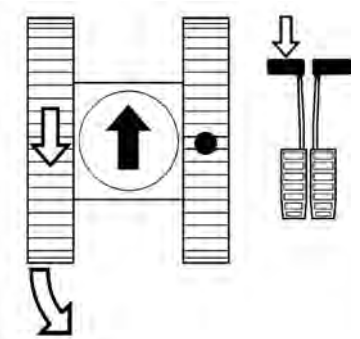
Turning to the right (forward)



CS98M551

Simply press the left-hand pedal (or push the left-hand lever) forwards.

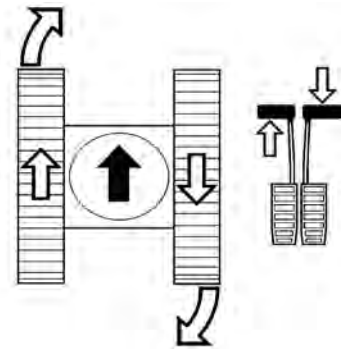
Turning to the right (in reverse)



CS98M550

Simply press the left-hand pedal (or push the left-hand lever) rearwards.

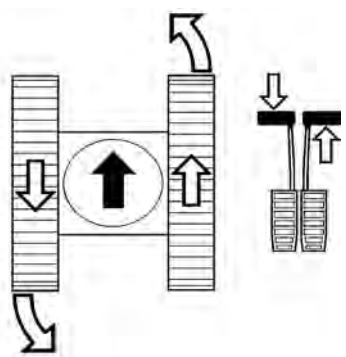
Turning on the spot, to the right



CS98M552

Press the left-hand pedal (or push the left-hand lever) forwards and at the same time press the right-hand pedal (or push the right-hand lever) rearwards.

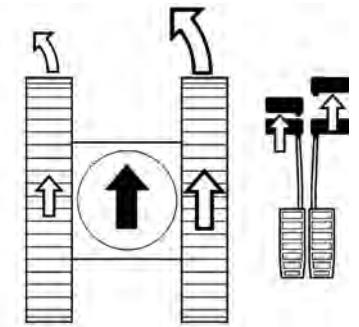
Turning on the spot, to the left



CS98M553

Press the right-hand pedal (or push the right-hand lever) forwards and at the same time press the left-hand pedal (or push the left-hand lever) rearwards.

Gradual turn on the move



CS98M545

Press one of the pedals (or push one of the levers) and, at the same time, press the other pedal (or push the other lever) in the same direction, but slightly harder.

Coming to a halt

To come to a complete halt, simply release the levers or pedals and they will return to neutral.

HANDLING THE MACHINE

Never handle the machine without contacting your authorized LBX Link-Belt distributor before hand. Your authorized LBX Link-Belt distributor will provide you with the correct procedure to be followed to ensure the operation is performed safely.

IMPORTANT: *Before handling the machine, make sure the slings are in perfect condition and that they are capable of supporting the weight of the machine. See "Weights" in the "Specifications" Section.*

WARNING: *The machine must be handled very slowly and horizontally.*

WARNING: *Make sure that there is nobody under or near the machine while it is being handled.*

LOAD HANDLING

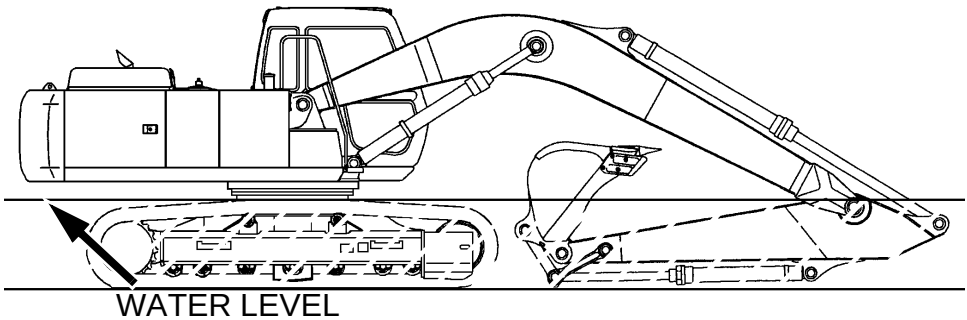
WARNING: *Whenever load handling operations are to be carried out, it is imperative to adhere strictly to the instructions given in this manual and local legislation.*

When handling loads, make sure you do the following :

- Park the machine on flat, firm, level ground.
- Use the lifting eye on the bucket. Do not use hooks or lugs welded to the bottom of the bucket.
- Use slings and chains in perfect condition, suitable for lifting the load to be handled and fitted with a safety device to prevent accidental opening.
- Select the "L" (lift) work mode. See "Systems display and control panel" (item 2), in the "Controls/Instruments/Accessories" Section.
- Select free swing to allow the upper structure to center over the load to prevent the load from swinging.
- Do not exceed, in any circumstances, the limits shown on the lift capacity chart. The lift capacity chart is located on the front right-hand operator's cab window and in the "Specifications" section of this manual.
- Do not allow anyone within the machine's operating radius.
- Operate the controls smoothly to ensure precise movement of the attachment and the machine.
- Stabilize the load a few inches above the ground to make sure it is perfectly balanced before trying to move it.

- All movements must be sure and smooth. Moving quickly does not mean moving roughly.
- When traveling with a load, make sure you do the following :
  1. Place the upper structure in line with the undercarriage.
  2. Bring the load as close as possible to the undercarriage and the ground.
  3. Be sure all travel is undertaken in slow speed only.
- Factors that adversely alter the machines lift capacity are:
  1. Operating on slopes or soft uneven surfaces.
  2. Swinging loads.
  3. Added weight to be lifted due to slings, thumbs, and other lifting accessories.
  4. Buckets larger than those shown on the lift capacity chart.

OPERATING THE MACHINE IN WATER



CS99A825

1. Make sure that the bottom of the stream, or stretch of water in which you will work, can support the weight of the machine.

2. Only the undercarriage must be below water level. The water may come up to the top of the tracks but no higher.

IMPORTANT: *Never work in water if the water level is higher than the tracks.*

3. Before working in water, grease the attachment linkage, turntable bearing and turntable bearing teeth generously.

IMPORTANT: *Do not operate in a fast flowing stream.*

OPERATING ON SLOPING GROUND

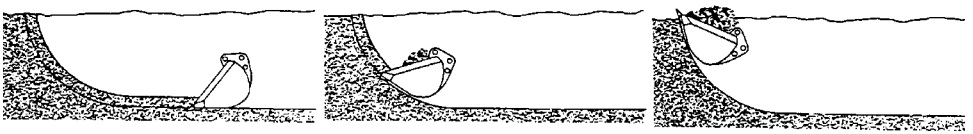
WARNING: *Hillside operations can be dangerous. Rain, snow, ice, loose gravel, soft ground, etc... modify terrain conditions. It is up to you to decide if the machine can be used in perfect safety.*

- During hillside operations, be extra careful.
- Make sure the upper structure swing is in locked position and that low travel speed is selected.
- When digging on a slope, avoid swinging the upper structure towards the bottom of the slope with the bucket full. Always keep the travel reduction gears pointing down towards the bottom of the slope.
- Always travel in the same direction as the slope, to prevent the machine from turning over.

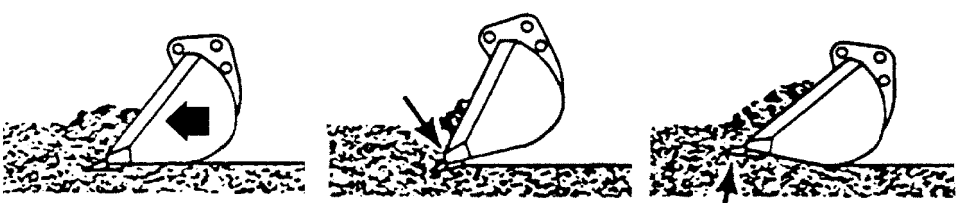
FILLING THE BUCKET

Fill the bucket by maneuvering the arm. Keep the bottom of the bucket parallel to the cut. The bucket teeth and blade must cut the ground like the blade of a knife. The depth of dig varies depending on the type of material.

Excavating method



PDH0493M



PDH0494M

CORRECT	WRONG	WRONG
	The bucket will dig in and cause a stall.	The bucket is pushed upwards. This will also increase the cycle time.

PARKING THE MACHINE

STEP 1

Place the machine on flat, level ground, away from soft ground excavations and badly shored cavities.

STEP 2

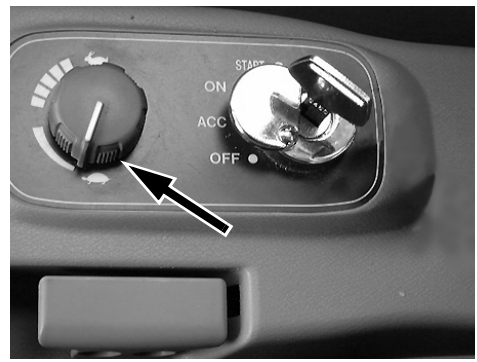
Place the upper structure frame in line with the undercarriage, retract the attachment and dig the bucket into the ground to anchor it.

STEP 3

CD00E010

Use the upper structure swing locking switch on the systems display and control panel and make sure the locking indicator lamp lights up on the display panel.

STEP 4



CD00E060

Turn the engine throttle button to low idle position and let the engine run for approximately five minutes.

STEP 5

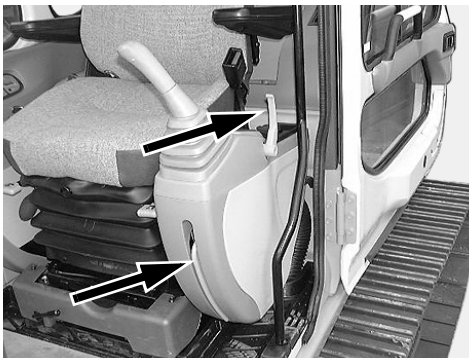
If necessary, activate the anti-theft system. See “Anti-theft system”.

STEP 6

CD00E080

Stop the engine and remove the starter switch key.

STEP 7



CD00E005

Raise the gate lock lever.

WARNING: *Never jump down from the machine. When leaving the operator's compartment, or the upper structure, always face the machine and use the steps and access handles.*

STEP 8

CD00E002

Lock the operator's compartment door and make sure that the hoods, lower panels and side doors are properly fastened.

IMPORTANT: *Check that the no part of the machine is encroaching on the highway. If this cannot be avoided, set up approved traffic signs.*

TOWING THE MACHINE

Before attempting to tow the machine, consult your authorized LBX Link-Belt distributor.

Wherever possible, carry out any repairs at the site.

WARNING: *Towing is always carried out at the risk of the user. The manufacturer's warranty does not apply to incidents or accidents which occur during towing.*

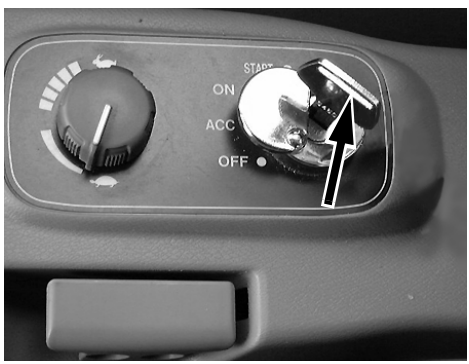
WARNING: *The machine must be towed very slowly, over a short distance and only if it is really unavoidable.*

WARNING: *The operator must be the only person on the machine when towing. Make sure that nobody else is on the machine or within its working range.*

LOWERING THE ATTACHMENT IN THE EVENT OF MACHINE FAILURE

If the engine breaks down, use the following procedure to lower the attachment.

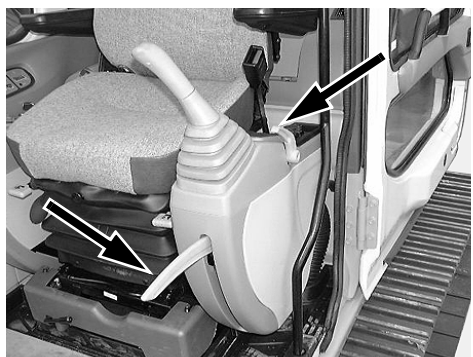
STEP 1



CD00E060

Turn the starter switch key to the “ON” position.

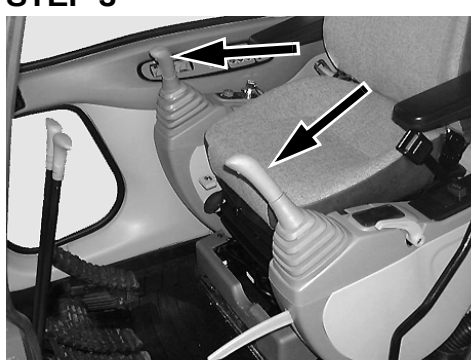
STEP 2



CD00E006

Lower the gate lock lever (gate lock in outward position).

STEP 3



CD00E111

Place the control lever (s) in the position corresponding to the downward movement required.

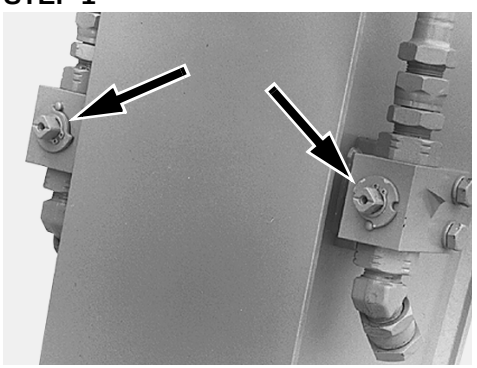
WARNING: *The capability to lower the attachment in the event of machine failure is dependent upon a fully charged pilot circuit accumulator. Repeated use of the controls after a machine failure will deplete the accumulator charge.*

AUXILIARY HYDRAULIC (optional)

Your machine has two types of auxiliary hydraulic circuits. One circuit is for single flow equipment, such as hydraulic breakers. The second circuit is for single flow or double flow continuous flow equipment, or double flow equipment such as crushers. Consult your authorized LBX Link-Belt distributor for instructions on how to select the correct pressure for the optional tool.

Hydraulic breaker configuration

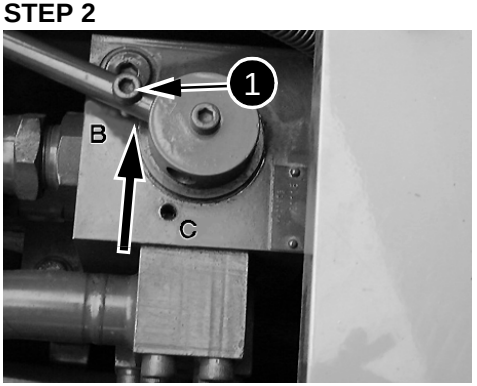
STEP 1



A24690

Using a hexagonal wrench, place the supply valves in “O” (open) position. See “Optional tool supply valves” in the “Controls/Instruments/Accessories” Section.

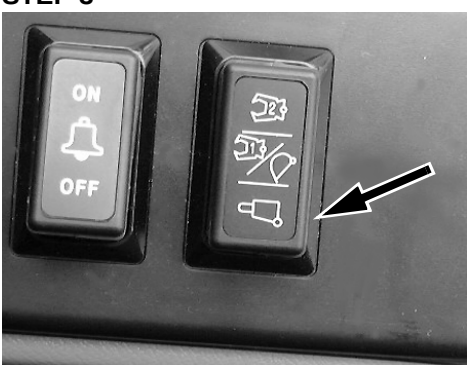
STEP 2



CD00E070

Remove the screw (1), place the flow selector valve in position (B) and then install the screw (1).

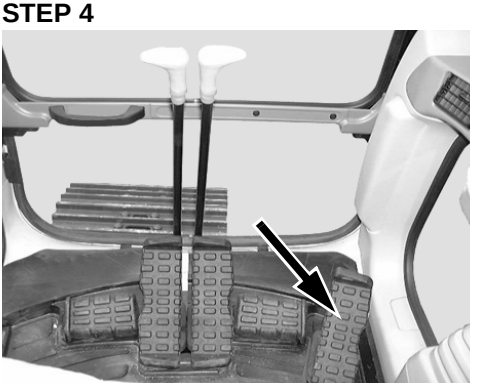
STEP 3



CD00E072

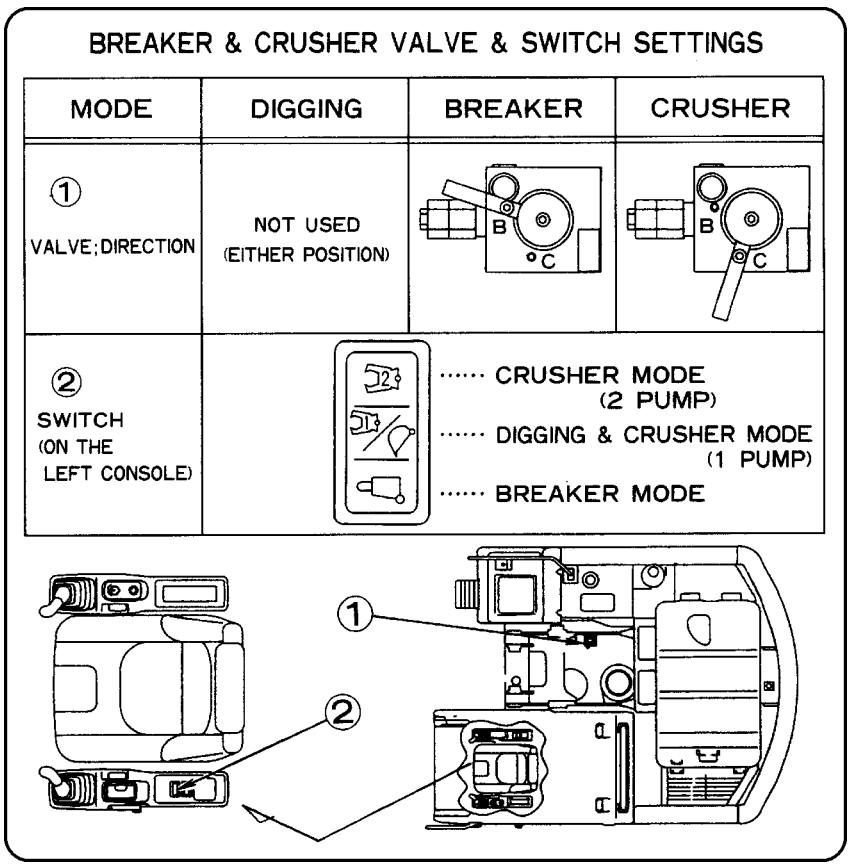
Tilt the control on the left-hand arm to the right for hydraulic breaker operation.

STEP 4



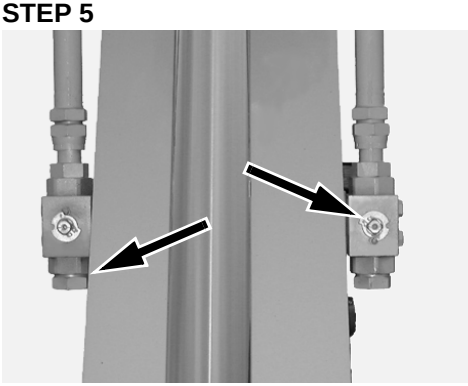
CD00E012

Use the control pedal to operate the hydraulic breaker.



BS00M135

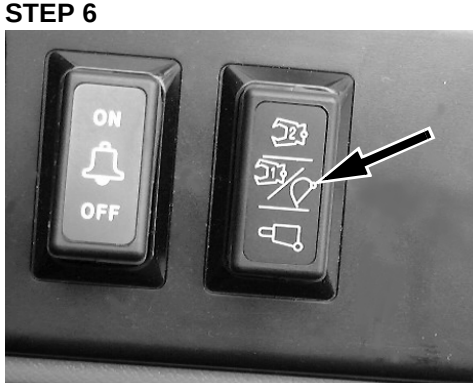
STEP 5



CD00E082

When removing the hydraulic breaker, place the supply valves in “S” position (closed) and plug the orifices.

STEP 6

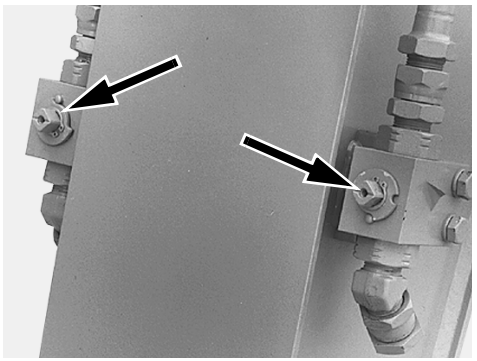


CD00E072

Tilt the control to the central position.

Double flow crusher configuration

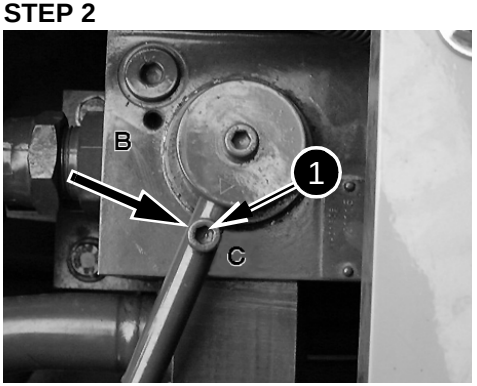
STEP 1



A24690

Using a hexagonal wrench, place the supply valves in “O” (open) position. See “Optional tool supply valves” in the “Controls/Instruments/Accessories” Section.

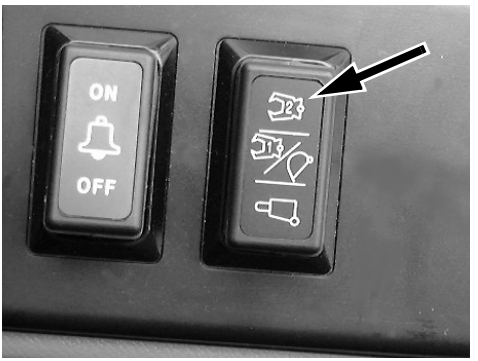
STEP 2



CD00E071

Remove the screw (1), place the flow selector valve in position (C) and then install the screw (1).

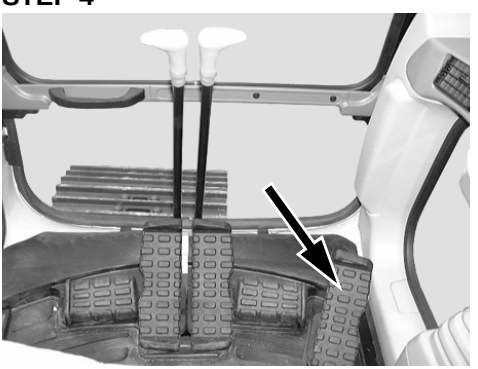
STEP 3



CD00E072

Tilt the control on the left-hand arm to the left for crusher operation.

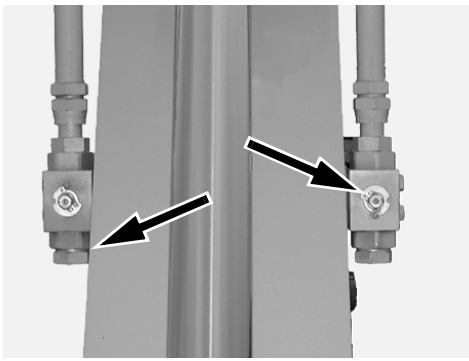
STEP 4



CD00E012

Use the control pedal to operate the crusher.

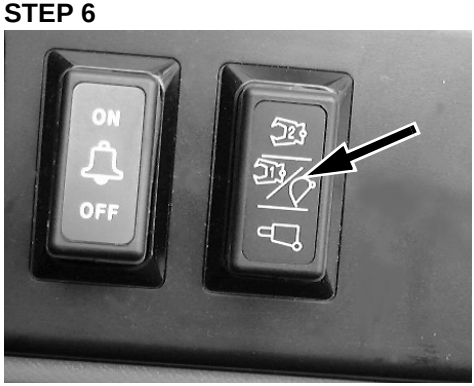
STEP 5



CD00E082

When removing the crusher, place the supply valves in “S” position (closed) and plug the orifices.

STEP 6

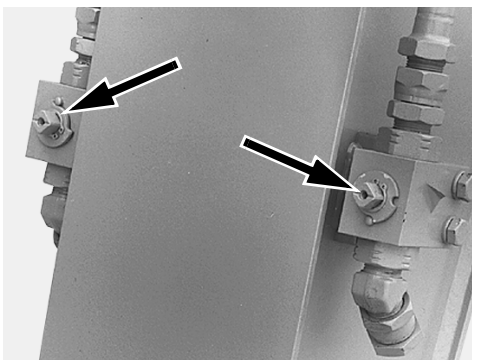


CD00E072

Tilt the control to the central position.

SINGLE FLOW CRUSHER CONFIGURATION

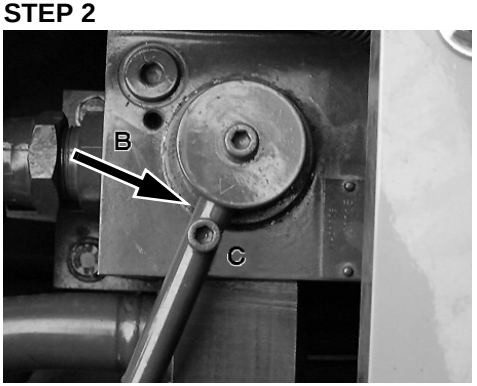
STEP 1



A24690

For the crusher, use a hexagonal wrench to place the supply valves in “O” (open) position. See “Optional tool supply valves” in the “Controls/Instruments/Accessories” Section.

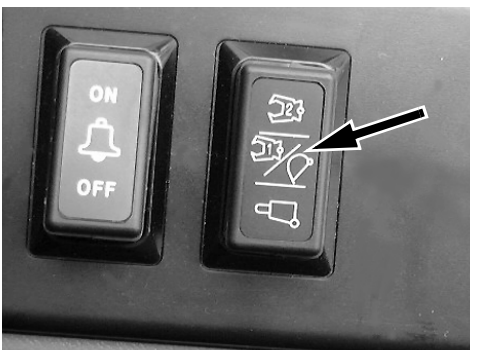
STEP 2



CD00E071

The flow selector valve does not require adjustment.

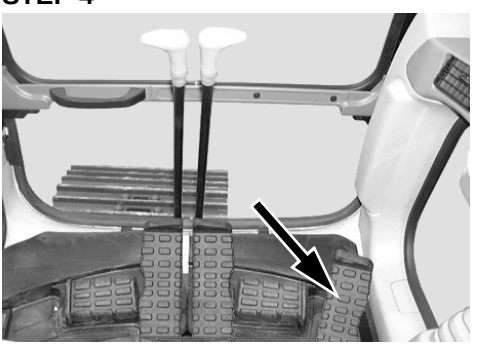
STEP 3



CD00E072

Make sure the control on the left-hand arm is in central position.

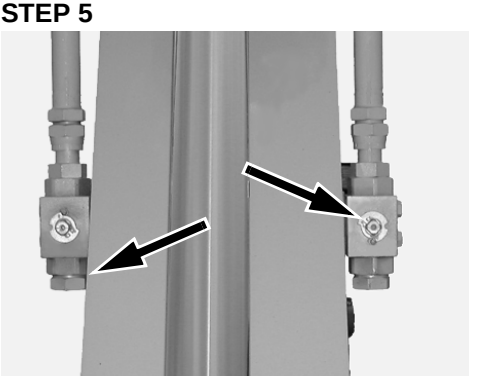
STEP 4



CD00E012

Use the control pedal to operate the crusher.

STEP 5



CD00E082

When removing the crusher, place the supply valves in “S” position (closed) and plug the orifices.

TRANSPORTING THE MACHINE

By rail

Since transport by rail is subject to special regulations, consult an approved organization.

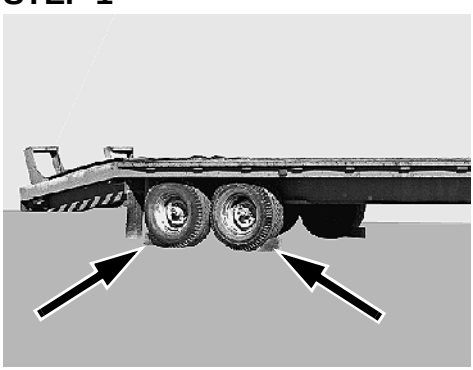
On a trailer

> **WARNING:** *This machine could slip and fall from a trailer or ramp and cause serious injury. Make sure the trailer and ramps are clean. The machine should be in line with the trailer before being loaded.*

Make sure you know the safety rules and regulations before transporting the machine. Make sure both trailer and machine are fitted with the right safety equipment.

Loading

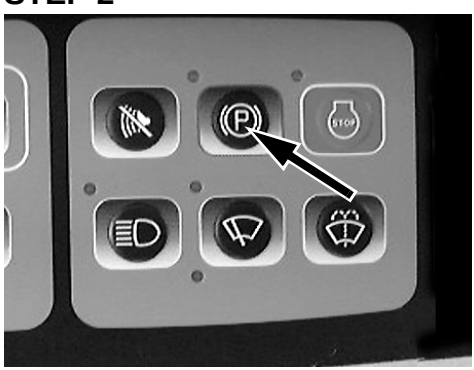
STEP 1



CD95M248

Place a block behind the trailer wheels. Install the trailer side extensions (if fitted).

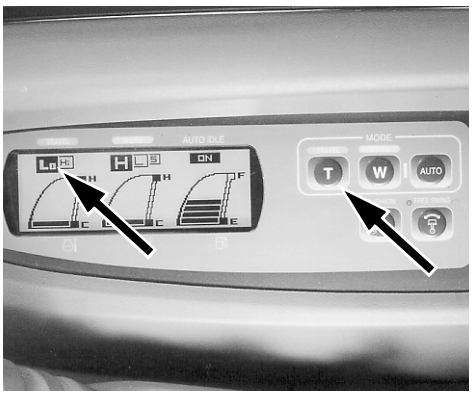
STEP 2



CD00E010

Make sure the upper structure swing lock has **not** been applied.

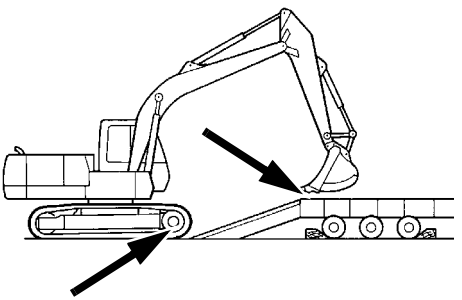
STEP 3



BD00K073

Select slow travel speed.

STEP 4
(Machine with attachment)

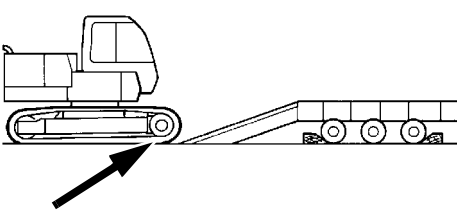


PDH0248

Place the machine in line with the trailer, with the travel reduction gears towards the access ramps. Raise the attachment and bring it to about 6 inches (150 mm) above the bed of the trailer.

IMPORTANT: *In this position, the travel and steering controls are reversed.*

STEP 5
(Machine without attachment)

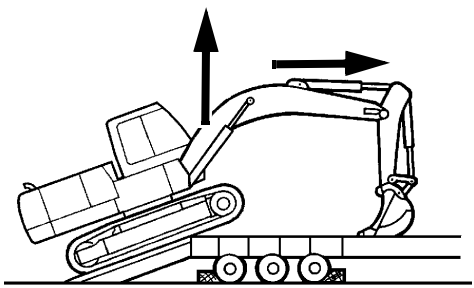


CS99B518

Place the machine in line with the trailer, with the travel reduction gears towards the access ramps.

IMPORTANT: *In this position, the travel and steering controls are reversed.*

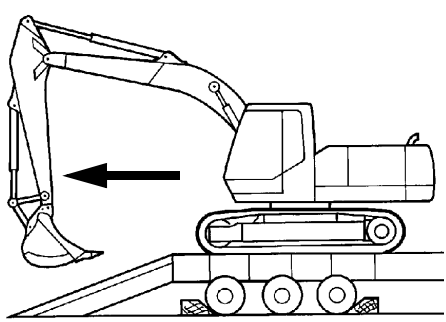
STEP 5
(Machine with attachment)



PDH0249

When moving from the ramps onto the trailer bed, raise the boom slightly as soon as the attachment touches the trailer so as to bring the machine level and then move forward until the machine is resting entirely on the trailer.

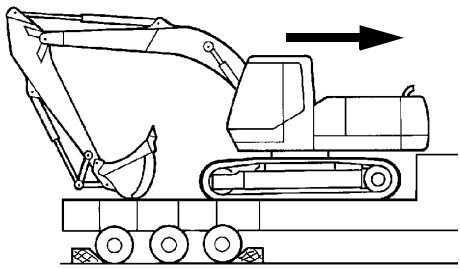
STEP 6
(Machine with attachment)



PDH0250

When the machine is completely on the trailer, raise the attachment slightly and swing the upper structure so as to bring the attachment around to the access ramp side.

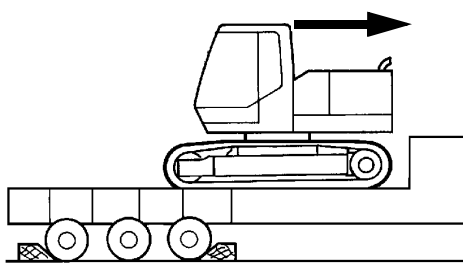
STEP 7
(Machine with attachment)



PDH0251

Bring the machine right to the front of the trailer and lower the attachment onto the trailer bed.

STEP 8
(Machine without attachment)



CS99B519

Bring the machine right to the front of the trailer and swing the upper structure 180°.

STEP 8

Lock the upper structure swing function.

STEP 9

Stop the engine, remove the starter switch key, raise the gate lock lever (with the gate lock inward).

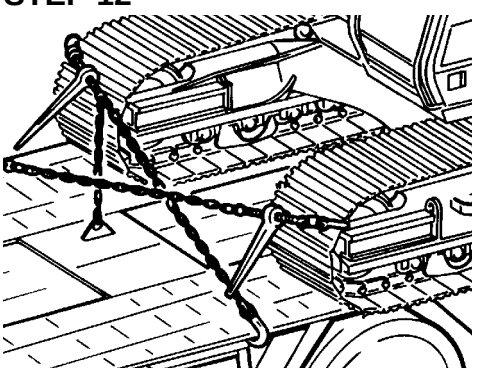
STEP 10

Make sure that all doors, hoods and access panels are correctly locked.

STEP 11

Fold the rear view mirror inwards.

STEP 12



PDF0360

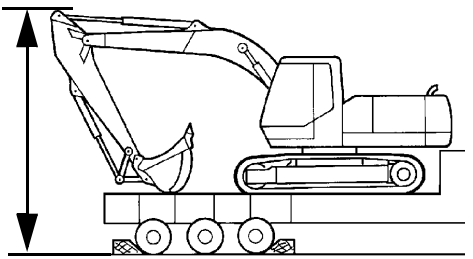
(Machine with attachment)

Use blocks and chains to fasten the machine and the attachment to the trailer.

(Machine without attachment)

Use blocks and chains to fasten the machine to the trailer.

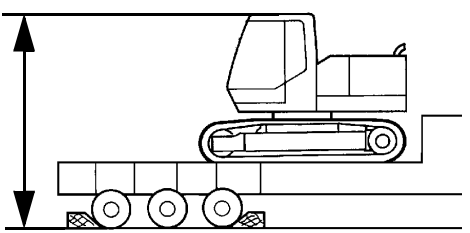
STEP 13
(Machine with attachment)



PDH0251

MACHINE READY FOR TRANSPORT

STEP 14
(Machine without attachment)



CS99B519

MACHINE READY FOR TRANSPORT

Measure the distance between the ground and the highest point of the machine. You must know the overall height. See “Machine overall dimensions” in the “Specifications” Section.

Unloading

1. Remove the blocks and fastening chains.
2. Start the engine.
3. Unlock the upper structure swing function.
4. Lower the gate lock lever (with the gate lock in the outward position).
5. **(Machine with attachment)** Raise the attachment to bring it a few centimeters (inches) above the trailer bed.
6. Select low travel speed.
7. **(Machine with attachment)** Move forward slowly, raising the attachment so as to keep it a few centimeters (inches) off the ground.
8. **(Machine without attachment)** Move the machine slowly forward.
9. Turn the rear view mirror back to the correct position.

NOTES

LUBRICATION

BEFORE OPERATING THE MACHINE

WARNING: *Do not attempt to operate this machine unless you have first read and perfectly understood the safety messages and instructions appearing in this manual.*

FLUIDS AND LUBRICANTS

Lubricants must have the correct properties for each application.

WARNING: *The conditions of use for individual fluids and lubricants must be respected.*

Respect the maintenance intervals by checking the hourmeter every day. Before starting maintenance, park the machine on flat, firm ground, away from any obstacles, with the arm retracted and the bucket on the ground. Unless otherwise specified, all maintenance operations must be carried out with the engine stopped, and the key removed from the starter switch. It is preferable to wait for all circuits to cool down before starting work. Wear suitable clothing and remember to use the necessary safety equipment.

Clean the grease fittings before lubrication. Clean around plugs and filler holes before adding fluid. No dust or dirt must enter the components or the circuits.

WARNING: *Be sure all the service operations in this section are carried out punctually at the intervals given, in order to ensure optimum performance levels and maximum safety when using the machine.*

WARNING: *There is a risk of serious injury if maintenance or repairs are not performed correctly. If you do not understand the maintenance procedures, consult your authorized LBX Link-Belt distributor.*

WARNING: *If the attachment is raised or if the machine moves without an operator, serious injury can result. Before performing any maintenance, the following steps must be carried out :*

1. Park the machine on flat, horizontal ground.
2. Lower the attachment until it is resting on the ground.
3. Stop the engine and remove the starter switch key.
4. Lock the tracks to prevent any machine movement.

When carrying out service work on the machine, place a “Do not operate” tag on either the right-hand, or left-hand control arm. Never climb down from the operator’s compartment leaving the engine running. Always raise the gate lock lever when leaving the operator’s cab to neutralize the controls.

Any modification to this machine without prior authorization could cause serious injury. Do not make any modifications without authorization. Consult your authorized LBX Link-Belt distributor.

IMPORTANT: *If you use your machine in particularly harsh conditions (dusty or corrosive atmosphere, etc.), the servicing intervals should be reduced accordingly.*

IMPORTANT: *Take particular care to replace all filters regularly. Clean filters mean longer engine running life.*

IMPORTANT: *Oil and fluid should not be thrown on the ground. They must be stored and removed by a company which is responsible for their recycling or their disposal.*

HOURMETER

CD00E073

The hourmeter enables service operations to be scheduled. It displays the total time that the engine has been operated, in hours and tenths of an hour.

Servicing intervals are carefully calculated to guarantee safe and efficient machine operation.

Be sure to carry out all the servicing operations properly as defined in this manual.

DAILY INSPECTION

Every day, before starting work, it is necessary to inspect the machine and service certain of its components.

General

- Check signs of leaking oil or water.
- Check that all screws and nuts are correctly tightened.
- Wipe off any dust (engine, operator's compartment).
- Check for any signs of deterioration.

Engine

- Check the oil level and change the oil if necessary.
- Check the coolant level.
- Check the radiator for signs of clogging or deterioration.
- Check the radiator fan belt tension.
- Check the air filter is clean and not restricted.
- Check the components for signs of leaking oil or water.
- Check the condition of all lines.

Upperstructure

- Check the fuel tank level.
- Check the hydraulic reservoir level.
- Check that the hydraulic oil is clean.
- Check the components for signs of leaking oil or water.
- Check the condition of all lines.
- Make sure there are no electrical short circuits.
- Check the battery connections are properly tightened.
- Adjust the rear view mirrors.

Undercarriage

- Check the track shoe hardware.
- Check the condition of the tracks.
- Check that the upper and lower track rollers and the idler wheels are not leaking oil.

Attachment

- Check the cylinders are not leaking oil.
- Check the condition of all lines.
- Check the condition of the bucket teeth.

After starting the engine

- Did the engine start correctly? Are the exhaust fumes normal? Any strange noises ?
- Check the hydraulic components are not making strange noises.
- Check the components for signs of leaking oil or water.
- Check the audible alarm devices, working lights and windshield wipers.
- Check that all circuits (travel, swing and tool) are functioning correctly.
- Check that the upperstructure swing brake functions correctly.

IMPORTANT: *If the slightest defect is found, repair it immediately before using the machine or see your authorized LBX Link-Belt distributor.*

SERVICE INTERVALS

PAGE	SERVICE POINTS	NB OF POINTS	INTERVALS IN HOURS				
			CLEAN	REPLACE	CHECK	GREASE	DRAIN
112/156	Hydraulic breaker (optional)	1			2/10/50 (A)		
135	Engine oil level	1			10		
135	Coolant level	1			10		
135	Hydraulic reservoir level	1			10		
172	Radiator and oil cooler	1	250		10		
173	Fan/alternator belt tension	1			10/250		
177	Attachment	18				50	
143	Drain fuel tank sediment	1			50		
143	Drain water separator	1			50		
157	Hydraulic system lines	-			50		
156	Return filter hydraulic breaker	1		100			
149	Drain hydraulic reservoir sediment	1			250		
158	Primary air filter element	1	250 (B)	1000 (C)	250 (B)		
162	Swing reduction gear oil level	1			250		
164	Travel reduction gears oil level	2			250		
171	Track shoe bolt torque	-			250(D)		
181	Air conditioning	-	250		250 (E)		
187	Bolt and nut torque	-			250 (D)		
191	Batteries electrolyte level	2			250		
132	Turntable bearing	1				1000	
133	Turntable bearing teeth	1				500	
137	Engine oil	1					500
138	Engine oil filters	2		500			
144	Fuel filter	1		500			
147	Hydraulic fluid condition	1			1000		
150	Pilot filter	1		2000(F)			
153	Breather filter	1		1000			
159	Secondary air filter element	1		1000 (G)			
162	Swing reduction gear	1				5000	1000 (H)
164	Travel reduction gears	2					1000 (H)
150	Suction filter	1	2000	5000			
151	Return filter	1		2000 (F)			
152	Nephron filter	1		2000			
147	Hydraulic fluid	1		5000			
86	Hose burst check valves (opt)	2				(I)	
181	Cooling circuit	1					(J)
167	Tracks	2	(K)		(K)		

PAGE	SERVICE POINTS	NB OF POINTS	INTERVALS IN HOURS				
			CLEAN	REPLACE	CHECK	GREASE	DRAIN
175	Fuel tank filter	1			(K)		
175	Machine inspection	-	(K)		(K)		
180	Fire extinguisher	1			(L)		

(A) Have this checked by your authorized LBX Link-Belt distributor every 600 hours or once a year.

(B) Or when the central zone of the restriction indicator is red.

(C) Or after cleaning 6 times.

(D) Check after the first 50 hours during the run-in period.

(E) Have this checked by a specialist every 6 months.

(F) Replace after the first 50 hours during the run-in period.

(G) Or after cleaning the primary air filter element 3 times.

(H) Drain after the first 250 hours during the run-in period.

(I) Have this checked by your authorized LBX Link-Belt distributor every 6 months.

(J) Every two years or twice a year (autumn/spring) if antifreeze is used.

(K) Periodically.

(L) Check once a month and have it checked every 6 months by a specialist.

NOTE: *Once the machine has completed 500 hours (then 1000 hours, 1500 hours, etc...) the message "Service due" will appear on the screen by way of a reminder that service work is due. See "Systems display and control panel" (item 10), in the "Controls/Instruments/Accessories" Section.*

ENGINE OIL

Refer to the engine manufactures manual for engine oil recommendations.

Fuel

Use fuel which is to ASTM (American Society for Testing and Materials) D975 standard.

Use fuel which is suitable for the ambient temperature in which you are working. The use of other types of fuel can result in a loss of power and may cause high fuel consumption.

See your fuel distributor for winter fuel requirements in your area.

IMPORTANT: *In cold weather, fill the fuel tank at the end of the day's work, in order to prevent the formation of condensation.*

Fuel storage

Long storage can lead to the accumulation of impurities and condensation in the fuel. Engine trouble can often be traced to the presence of water in the fuel.

The storage tank must be placed outside and the temperature of the fuel should be kept as low as possible. Drain off water and impurities regularly.

Anti-freeze/Anti-corrosion

Use anti-freeze in all seasons to protect the cooling system from corrosion and all risk of freezing.

For areas where ambient temperature is over -33° F (-36°C), use a blend of 50% ethylene-glycol based anti-freeze.

For areas where the temperature is below -33° F (-36°C), it is advisable to use a blend of 40% water and 60% anti-freeze.

Environment

Before carrying out any maintenance operation on this machine and before disposing of used fluids or lubricants, always think of the environment. Never throw oil or fluid on the ground and never place it in leaking receptacles.

Contact your local ecological recycling centre or your authorized LBX Link-Belt distributor to obtain information on the correct method of disposing of these materials.

FLUID AND LUBRICANT CAPACITIES AND SPECIFICATIONS

ENGINE
Type of oil ..... No. 1 engine oil
Capacity ..... 24 litres (6.3 gal)

COOLING SYSTEM

210 LX
Cooling system capacity ..... 27.0 litres (7.1 gal)

240 LX
Cooling system capacity ..... 27.0 litres (7.1 gal)

FUEL SYSTEM

210 LX
Fuel tank capacity ..... 340 litres (90 gal)

240 LX
Fuel tank capacity ..... 340 litres (90 gal)

HYDRAULIC SYSTEM
Type of fluid ..... ISO VG 46

210 LX
Total system capacity ..... 206 litres (54 gal)
Reservoir capacity ..... 120 litres (32 gal)

240 LX
Total system capacity ..... 225 litres (59 gal)
Reservoir capacity ..... 120 litres (32 gal)

TRAVEL REDUCTION GEARS
Type of oil ..... API GL-4 90

210 LX
Capacity (per reduction gear) ..... 4.7 litres (1.2 gal)

240 LX
Capacity (per reduction gear) ..... 4.7 litres (1.2 gal)

SWING REDUCTION GEAR
Type of oil ..... API GL-4 90

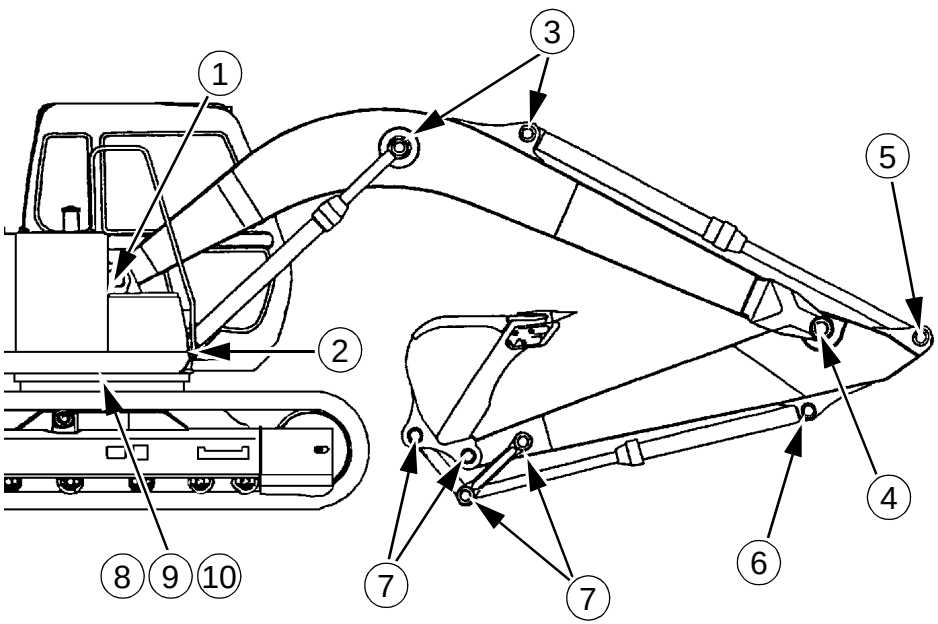
210 LX
Capacity ..... 4.5 litres (1.2 gal)

240 LX
Capacity ..... 6.0 litres (1.6 gal)

GREASE POINTS

Machine

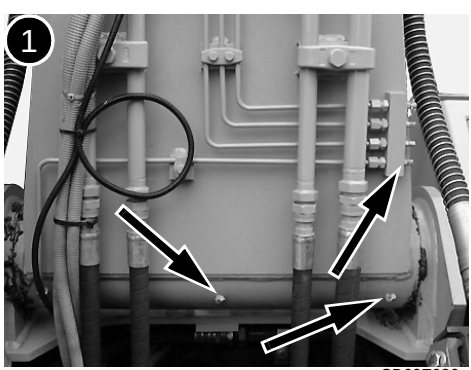
Use the following grease :
EP NLGI grade 2 (for temperate and hot climates) 0° F (-20°C) to + 140° F (+60°C)
EP NLGI grade 0 (for cold climates) -40° F (-40°C) to + 68°F (+20°C)



CS98N551

Note: The figures mentioned in brackets show the number of grease points.

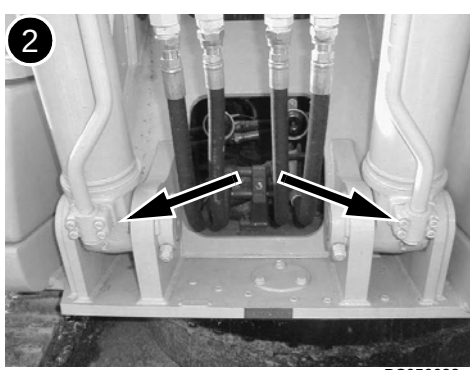
Every 50 hours



CD00E086

Boom foot pin(3)

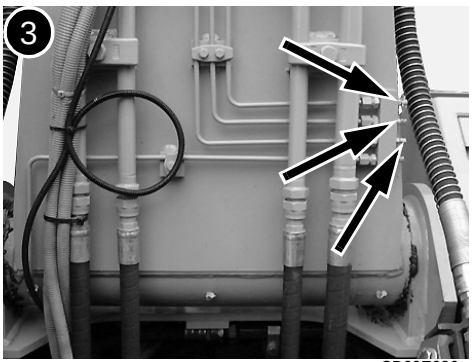
Every 50 hours



PC050022

Boom cylinder bottom pin(2)

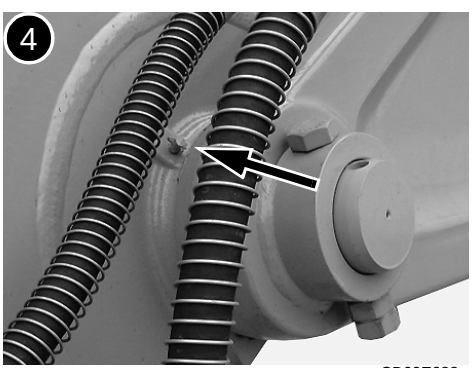
Every 50 hours



CD00E086

Boom cylinder top pin(2)
Arm cylinder bottom pin(1)

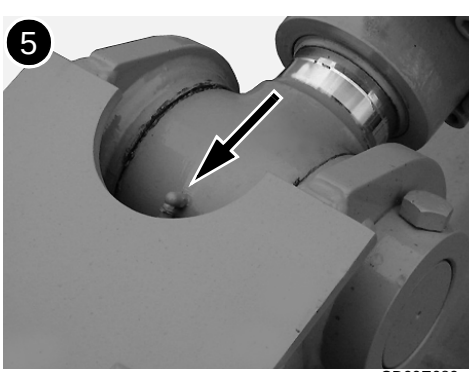
Every 50 hours



CD00E088

Boom/dipper linkage(2)

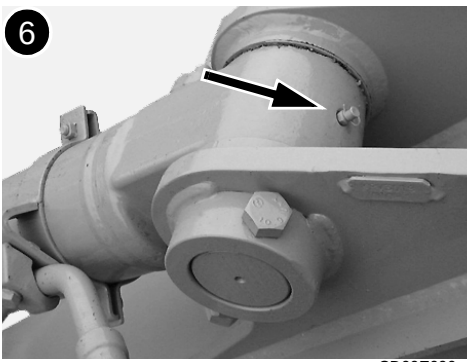
Every 50 hours



CD00E089

Arm cylinder top pin(1)

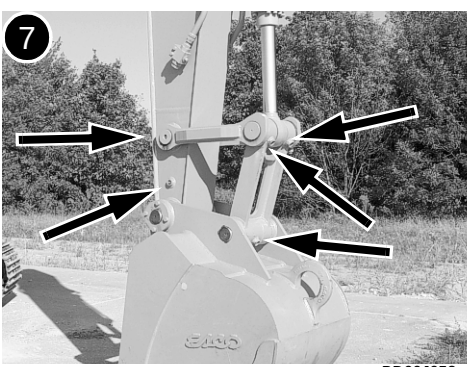
Every 50 hours



CD00E090

Bucket cylinder bottom pin(1)

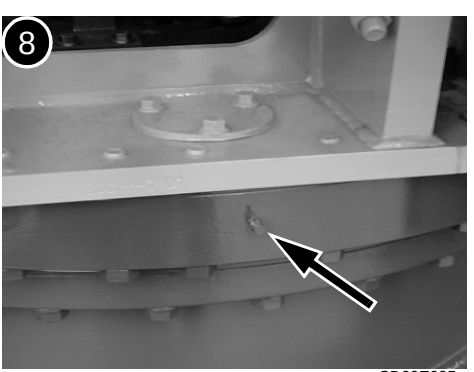
Every 50 hours



BD00J052

Bucket linkage pins(6)

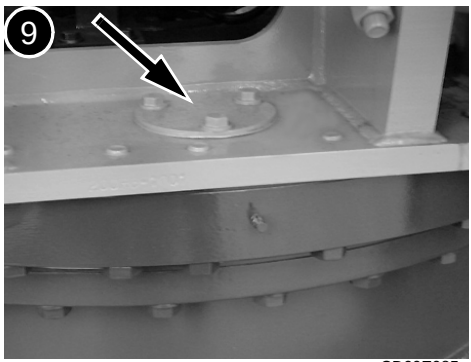
Every 1000 hours



CD00E085

Turntable bearing(2)

Every 500 hours

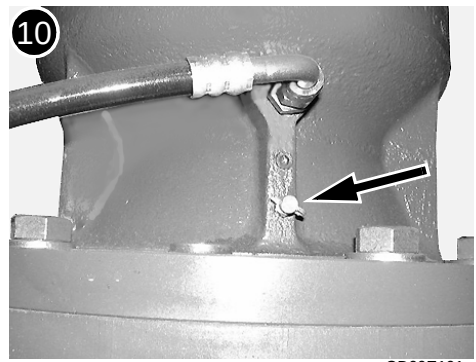


CD00E085

Turntable teeth(1)

See “Greasing the turntable teeth”.

Every 5000 hours

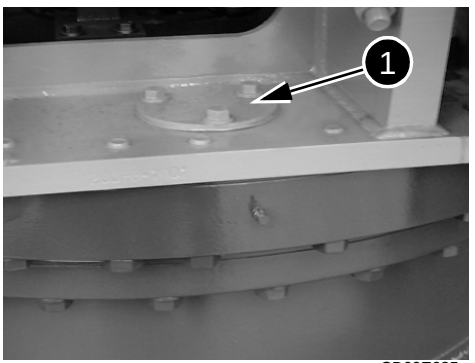


CD00E101

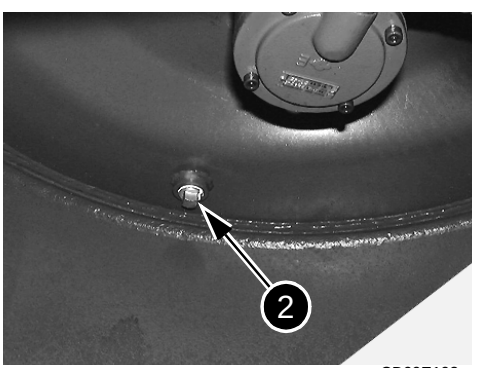
Swing reduction gear(1)

See “Greasing the swing reduction gear”.

GREASING THE TURNTABLE TEETH



CD00E085

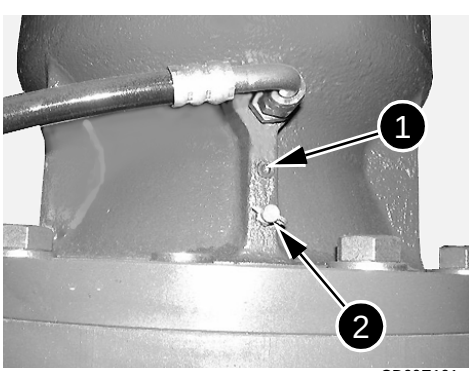


CD00E102

1. Every 500 hours, remove the inspection cover (1) and visually check the condition of the gear surface and for any damage.
2. If the gear surface is not well greased, add grease.
3. If the grease is white due to moisture content, etc. replace it with new grease.
4. If the presence of water is detected, remove the plug (2) and drain off the water.

- Remove the protective panel from the lower, central area.
- Remove plug (2).
- Discharge the water or cloudy grease.
- Install the plug (2).
- Insert new grease through the port and install the inspection cover (1).

GREASING THE SWING REDUCTION GEAR



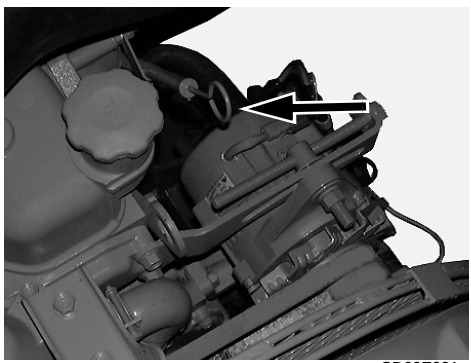
CD00E101

Every 5000 hours, remove the lower panel, remove the air bleed plug (1) and refill with grease through the grease point (2). A certain amount of grease should run out from the air bleed plug (1).

IMPORTANT: *When greasing, if the air bleed plug (1) is not removed, the inner seal will be damaged.*

FLUID LEVELS

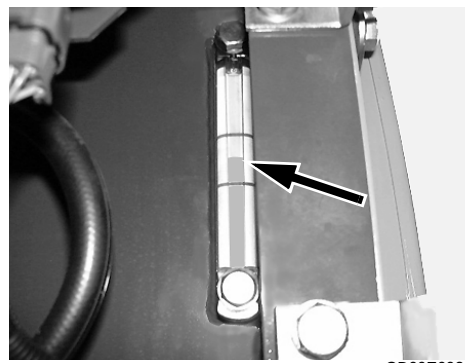
Every 10 hours



CD00E091

Engine oil(1)

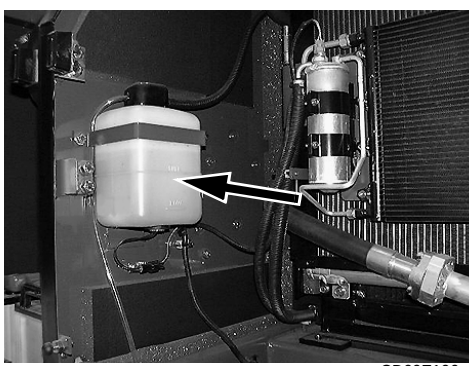
Every 10 hours



CD00E092

Hydraulic reservoir(1)

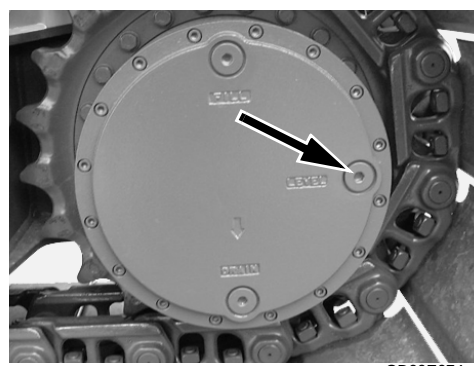
Every 10 hours



CD00E106

Coolant solution expansion reservoir(1)
ETHYLENE GLYCOL and WATER

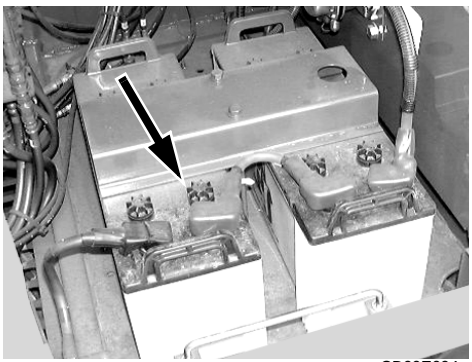
Every 250 hours



CD00E074

Travel reduction gears(2)
Type API GL-4 90

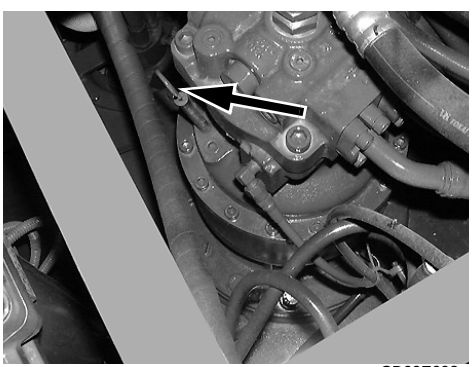
Every 250 hours



CD00E094

Batteries(2)

Every 250 hours



CD00E093

Swing reduction gear(1)
Type API GL-4 90

NOTE: The figures mentioned in brackets show the number of level points.

ENGINE

Service specifications

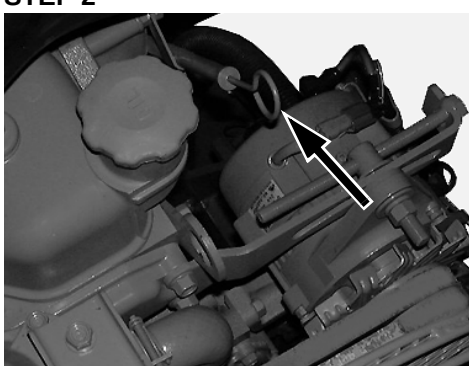
Engine oil level check..... Every 10 hours or every day
Oil change ..... Every 500 hours
Oil filters replacement ..... Every 500 hours
Oil type .....See “Fluids and lubricants”
Oil capacity.....24 litres (6.3 gal)

Level

STEP 1

Park the machine on flat, horizontal ground. Stop the engine and remove the starter switch key.

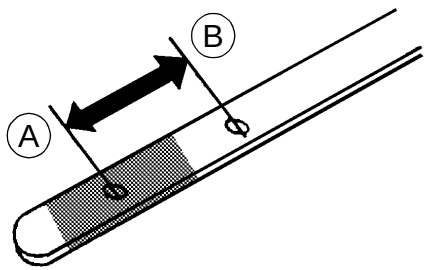
STEP 2



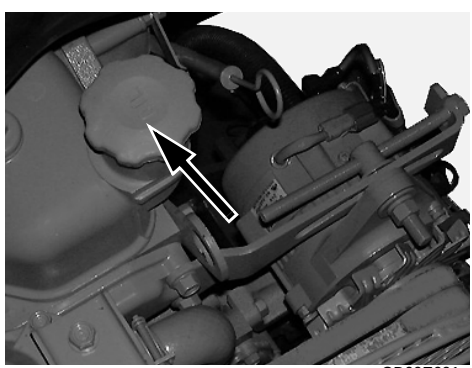
CD00E091

When the engine has been stopped for fifteen minutes, remove the dipstick, wipe it with a clean cloth and replace it in the guide tube as far as it will go. Then take it out again.

STEP 3



CS98M579



CD00E091

If the oil level is below the mark (A) (minimum), remove the oil filler cap, add oil up to the mark (B) (maximum) on the dipstick and then replace the oil filler cap.

NOTE: The level should not be higher than the mark (B) (maximum) on the dipstick.

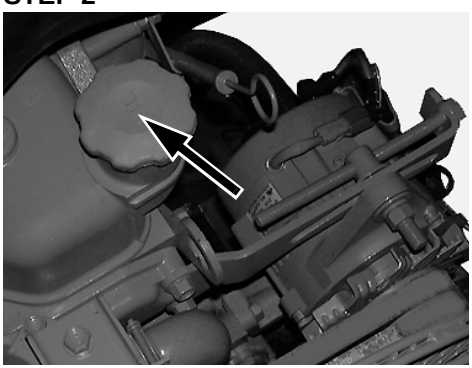
Engine oil change and oil filters replacement

NOTE: Change the oil while the engine is still warm. The oil will flow more easily.

STEP 1

Park the machine on flat, horizontal ground, stop the engine and remove the starter switch key.

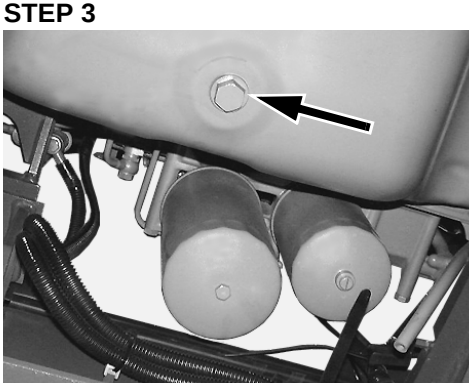
STEP 2



CD00E091

Remove the oil filler cap.

STEP 3



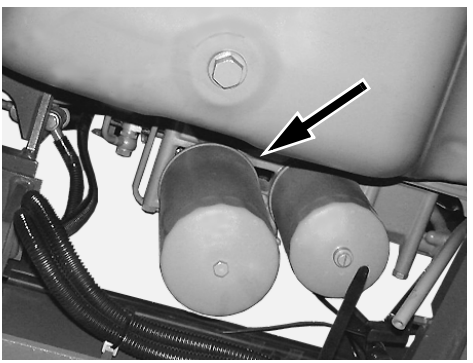
CD00E095

Remove upper undercover to access the oil pan.
Place a receptacle of a suitable capacity under the engine sump drain plug, remove the plug and allow the oil to flow out.

STEP 4

Install a new seal on the drain plug and install and tighten the plug.

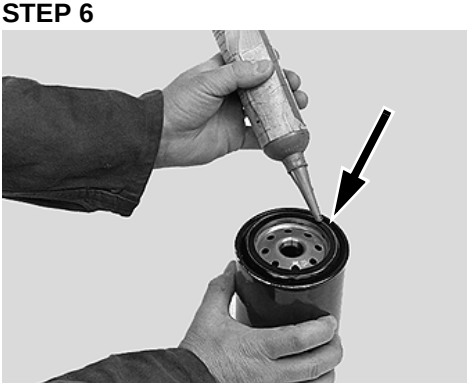
STEP 5



CD00E095

Clean the area around the oil filters and remove them, using a filter wrench.

STEP 6



PH08325

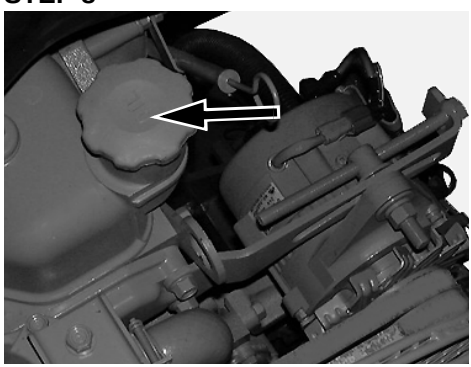
Coat the seal of each new filter with a fine film of oil.

STEP 7

Install the new filters, tightening until the seals come into contact with the filter heads, then tighten a further half-turn by hand.

IMPORTANT: *Do not use a filter wrench to tighten the filters. Excessive tightening can damage the filters and their seals.*

STEP 8



CD00E091

Fill the engine with new engine oil . Install the oil filler cap.
Replace upper undercover.

STEP 9

Run the engine for a few minutes and check that there are no leaks. Check the oil level again and add more oil if necessary.

IMPORTANT: *Always wait fifteen minutes to allow the oil to return to the sump before checking the oil level.*

COOLING SYSTEM

Service specifications

Coolant reservoir level check ..... Every 10 hours or every day
Coolant solution change ..... Every two years or twice a year (autumn or spring) if antifreeze is used
System capacity 210 LX and 240 LX .....27.0 litres (7.1 gal)

WARNING: *Boiling coolant solution can spray out if the radiator cap is removed while the system is still hot. To remove the cap, allow the system to cool down, turn the cap to the first notch and wait until there is no more pressure. Then remove the cap.*

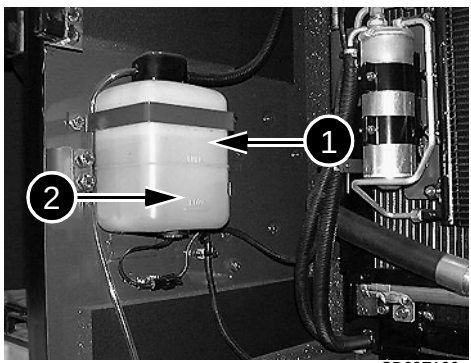
WARNING: *Check and service the cooling system according to the instructions given in this manual.*

Coolant solution

Put only ethylene-glycol coolant solution in the cooling system. Use good quality ethylene-glycol that has a high boiling point, with no additives to prevent leakage. Do not use non-approved anti-rust additives. Anti-rust additives and ethylene-glycol can mix and work against each other, thereby reducing anti-corrosion protection, forming deposits in the cooling system and causing damage to the cooling system and radiator.
Consult your authorized LBX Link-Belt distributor for suitable coolant solution.

Level

The level of coolant solution should be checked when the engine is cold.

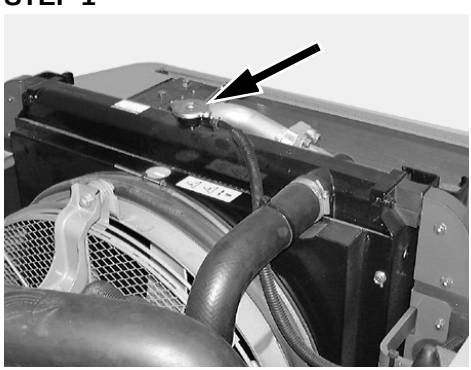


CD00E106

On flat, level ground, before using the machine, (while the engine is still cold), the level in the coolant reservoir should be between the “FULL” (1) and “LOW” (2) marks. If not, see “Filling”.

Draining

STEP 1



CD00E104

Remove the radiator cap.

WARNING: *Do not remove the radiator cap when the engine is hot. The system is still under pressure and you could be scalded.*

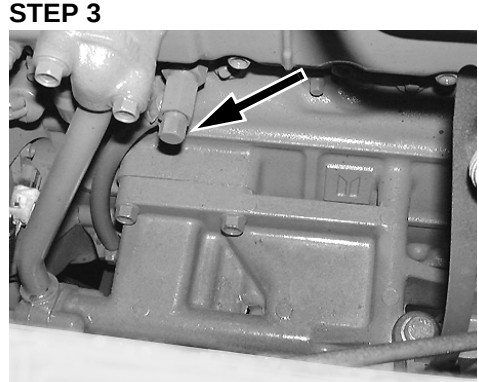
STEP 2

CD00E103

Open the radiator drain valve.

NOTE: Have a receptacle of a suitable capacity ready.

STEP 3



CD00E105

Open the drain plug located on the engine block.

NOTE: Have a receptacle of a suitable capacity ready.

Rinsing

STEP 1

Close the drain valve once the radiator is completely empty. Close the plug on the engine block. Fill the system with clean water. Install the radiator cap.

STEP 2

Start and run the engine at a speed slightly higher than low idle for ten minutes to bring the engine temperature to approximately 176° F (80°C).

STEP 3

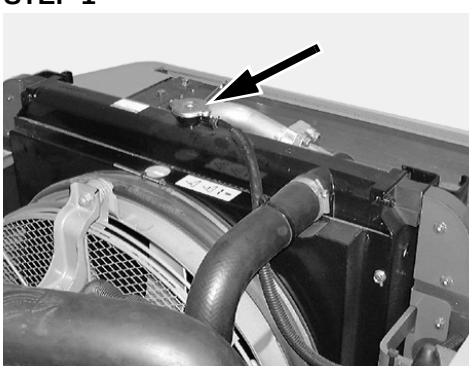
Drain the system once more.

STEP 4

Repeat Steps 1 to 3 until the water drained is clear.

Filling

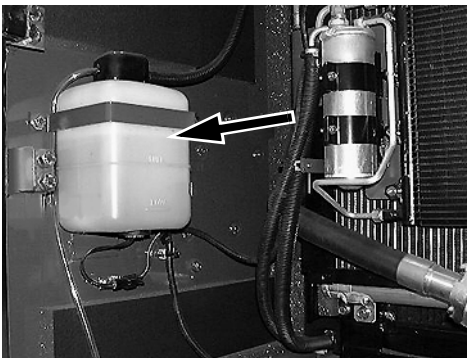
STEP 1



CD00E104

Fill with coolant solution via the radiator until overflowing and install the radiator cap.

STEP 2



CD00E106

Fill the expansion reservoir to the “FULL” mark and install the cap.

IMPORTANT: *Use the correct coolant solution.*

STEP 3

Run the engine at idle speed for about five minutes. Add coolant solution if the level in the expansion reservoir drops.

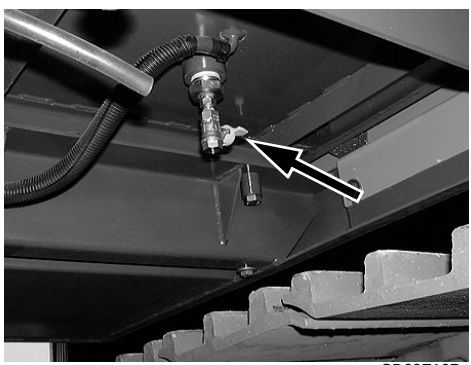
IMPORTANT: *Do not fill the expansion reservoir above the “FULL” mark.*

FUEL SYSTEM

Service specifications

Draining water and sediment from the fuel tank..... Every 50 hours
Draining water from the water separator..... Every 50 hours
Fuel filter replacement..... Every 500 hours
Fuel tank capacity 210 LX and 240 LX .....340 litres (90 gal)
Type of fuel..... Diesel

Draining water and sediment from the fuel tank



CD00E107

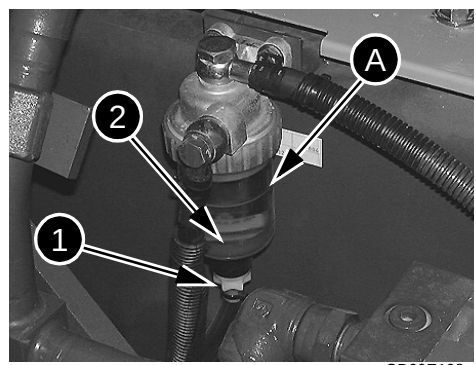
Remove upper undercover.
Have a container ready to collect the drained contaminants.

Open the drain valve located at the bottom of the tank and drain the accumulated sediment and water into a suitable container.

After draining, close the drain valve.

Replace upper undercover.

Draining water from the water separator



CD00E108

When the float reaches the level line (A)

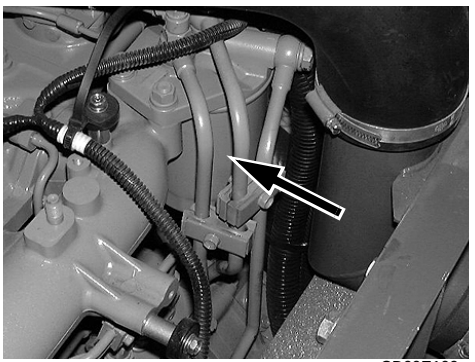
Loosen the drain plug (1) and drain the water and sediment. into a suitable container.

When the float (2) settles on the bottom, tighten the drain plug (1).

Verify that there are no fuel leaks.

WARNING: *Completely wipe off any spilled fuel. It may cause a fire.*

Replacing the fuel filter



CD00E109

Clean the area around the filter head.

Place a receptacle of a suitable capacity under the filter and remove the filter, using a filter wrench.

Apply a thin coat of oil or grease on the new filter seal.

NOTE: Do not fill the new filter with fuel before installing.

Install the new filter. Turn the filter until the seal comes into contact with the filter head and turn an extra half turn by hand.

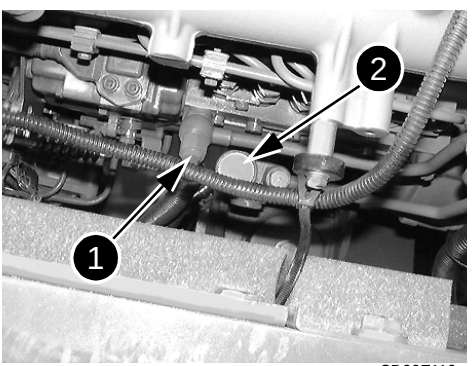
IMPORTANT: *Do not use a filter wrench to install the filter. Over tightening the filter can damage the seal and filter.*

NOTE: If the engine does not regain full power after replacing the filter, bleed the system.

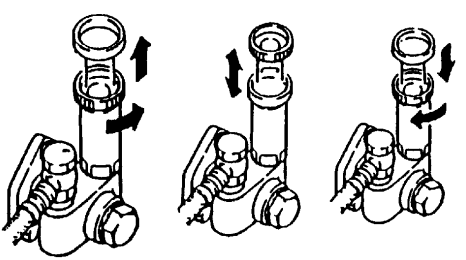
Bleeding the system

It is necessary to bleed the fuel system when :

- The tank has been completely emptied.
- The fuel filter has been replaced.
- Parts of the fuel system have been removed for servicing or repair work.
- The machine has been in storage for a fairly long period.



CD00E110



CS98M578

Loosen the knob of the priming pump (2). Loosen the air bleed screw (1). Move the handle of the priming pump (2) up and down until no bubbles come out of the air bleed screw (1).

When bubbles no longer come out, tighten the air bleed screw (1) and tighten the knob of the priming pump (2). Completely wipe off any spilt fuel. Start the engine and check for fuel leakage.

WARNING: *Completely wipe off any spilled fuel after replacing a filter element or bleeding the system.*

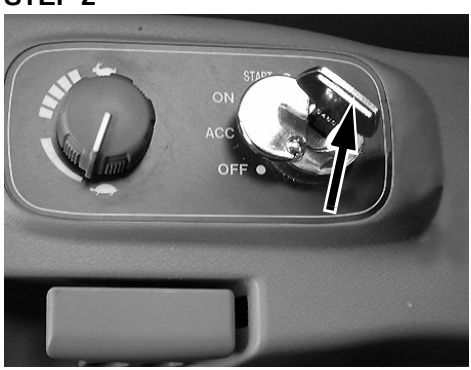
RELEASING PRESSURE IN THE HYDRAULIC SYSTEM

IMPORTANT: *Before carrying out any work on the hydraulic system, there should be no pressure in any of the circuits.*

STEP 1

Place the machine on flat, level ground, lower the attachment to the ground and stop the engine.

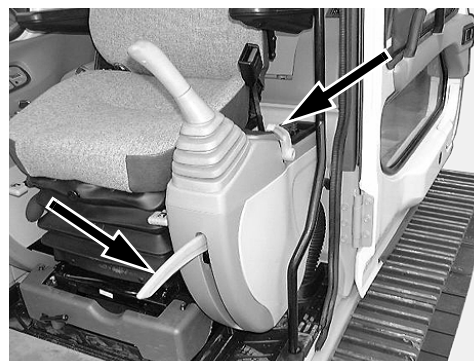
STEP 2



CD00E060

Turn the starter switch key to the “ON” position.

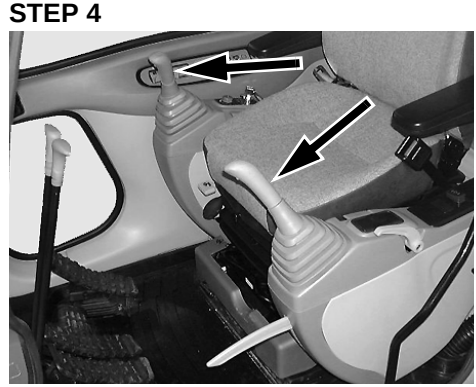
STEP 3



CD00E006

Lower the gate lock lever (gate lock bar in outward position).

STEP 4



CD00E111

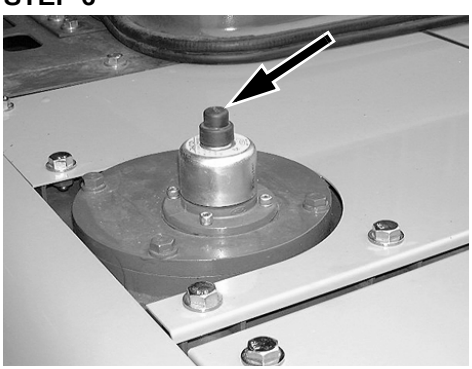
Operate the control levers from right to left and front to rear a dozen times approximately.

STEP 5

CD00E080

Turn the starter switch key to “OFF” position.

STEP 6



CD00E112

Press the button on top of the breather to release any residual pressure.

HYDRAULIC SYSTEM

Service specifications

Check the hydraulic reservoir fluid level..... Every 10 hours or each day
Check the lines..... Every 50 hours
Replace the hydraulic breaker return circuit filter..... Every 100 hours
Draining water and sediment
from the hydraulic reservoir ..... Every 250 hours
Check the condition of the hydraulic fluid..... Every 1000 hours
Replace the pilot filter..... Every 2000 hours
(after the first 50 hours during the run-in period)
Replace the reservoir breather element..... Every 1000 hours
Clean the suction filter..... Every 2000 hours
Replace the return filter..... Every 2000 hours
(after the first 50 hours during the run-in period)
Replace the Nephron filter ..... Every 2000 hours
Replace the suction filter..... Every 5000 hours
Change the hydraulic fluid..... Every 5000 hours
Reservoir capacity 210 LX and 240 LX.....120 litres (32 gal)
Total system capacity 210 LX.....206 litres (54 gal)
Total system capacity 240 LX.....225 litres (59 gal)
Type of oil.....ISO VG 46

NOTE: *If the machine is new or if a major part has been overhauled or replaced in the hydraulic system, replace the pilot filter and return filter after 50 hours of operation. After that, replace these filters at the stipulated interval.*

IMPORTANT: *Every 1000 operating hours, it is recommended to have the hydraulic fluid analyzed. See your authorized LBX Link-Belt distributor.*

IMPORTANT: *After replacing the hydraulic fluid, it is necessary to bleed all air from the hydraulic components. See "Bleeding air from the hydraulic components".*

IMPORTANT: *If metal filings are discovered in the replaced filters, see your authorized LBX Link-Belt distributor.*

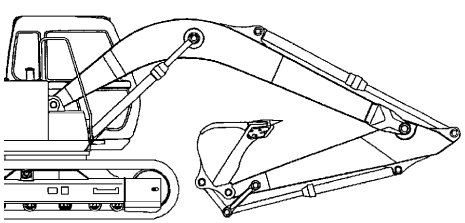
WARNING: *Before carrying out any service work on the hydraulic system it is necessary to allow it to cool down (the temperature should not be more than 40°C (104F).*

WARNING: *Hydraulic fluid or grease injected into your skin can cause severe injury or death. Keep your hands and body away from any pressurized leak. Use cardboard or paper to check for a leak. If fluid is injected into your skin, see a doctor immediately and have the fluid removed.*

WARNING: *Before carrying out any service work on hydraulic filters or the hydraulic system, remove the hydraulic reservoir breather cap and press the button on the breather to release all pressure in the system. Failure to observe these instructions can cause injury. See "Releasing pressure in the hydraulic system".*

Level in reservoir

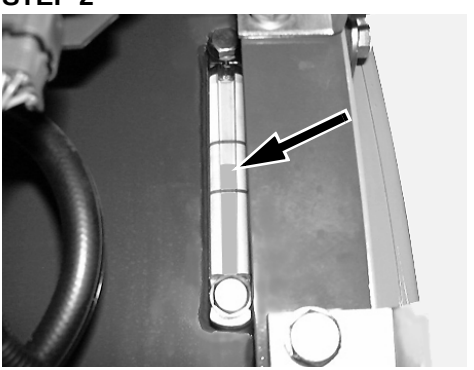
STEP 1



CS98N547

Place the machine on flat, level ground and place the attachment in the position shown. Stop the engine and remove the starter switch key.

STEP 2

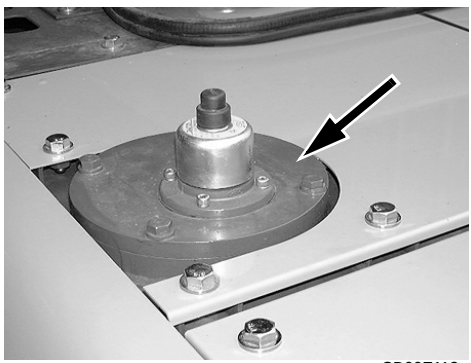


CD00E092

The oil should be in the middle of the indicator. Add more oil if necessary. See "Filling the reservoir".

Filling the reservoir

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E112

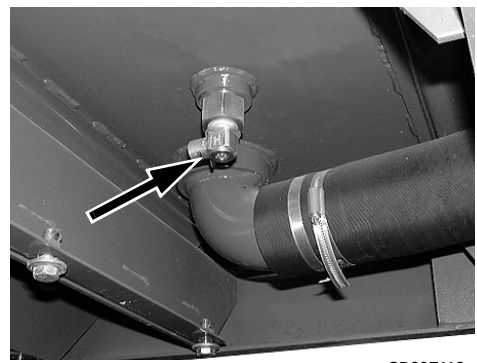
Clean the cover plate and the area around the plate.

Remove the cover plate and add hydraulic fluid to the reservoir as required.

Replace the cover plate seal if required and install the cover plate.

Draining water and sediment from the hydraulic reservoir

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E113

Remove upper undercover.

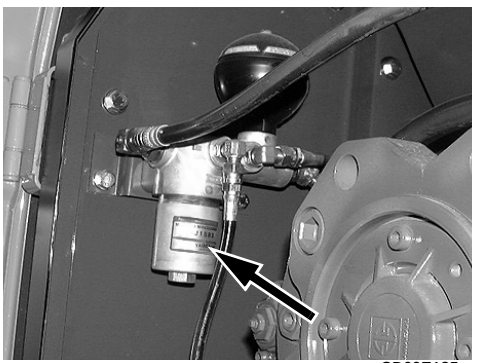
Position a drain pan under the drain plug.

Loosen the drain plug on the bottom of the reservoir and drain the sediment and water accumulated at the bottom of the reservoir. After draining, tighten the drain plug. Add hydraulic oil if necessary. See “Filling the reservoir”.

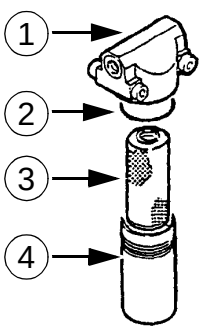
Replace upper undercover.

Pilot filter replacement

Release all pressure in the hydraulic system. See “Releasing pressure in the hydraulic system”.



CD00E135



CS98M619

Use a wrench on the bottom of the filter body (4) to unscrew and remove it.

Remove the old filter (3) and the “O” ring (2).

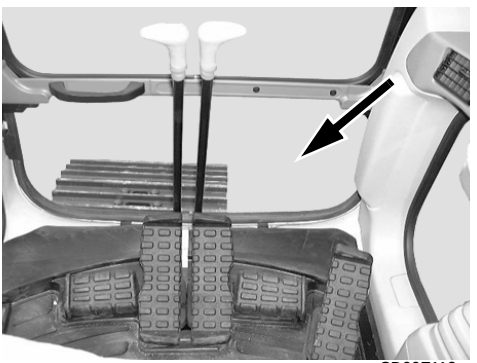
Clean the filter body (4) in solvent and wipe dry with a cloth.

Coat the new filter (3) and the new “O” ring (2) with clean hydraulic fluid, the new filter and install the filter on the head (1).

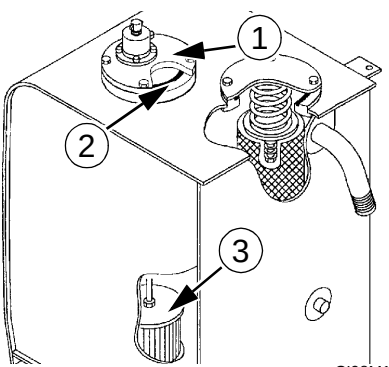
Install the filter body (4) and tighten with a wrench. Do not overtighten.

Cleaning and replacement of the suction filter

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E112



CI98M156

Clean the top of the hydraulic reservoir and clean the suction filter cover.

Remove the cover (1) and O-ring (2) and spring on the top of the suction filter rod assembly.

Remove the suction filter (3) and clean with solvent. Dry it completely and check it for any damage. If there is any damage on the surface, replace it with a new one.

Install a new O-ring (2) and install the suction filter (3), spring and rod assembly.

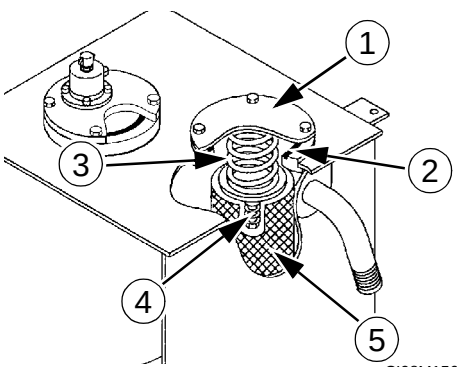
Install the cover (1).

Check the level of the hydraulic fluid and add more if necessary. See “Filling the reservoir”.

NOTE: Install a new suction filter every 5000 hours of operation or when the hydraulic oil is replaced.

Return filter replacement

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CI98M156

Remove the upper plate on the hydraulic reservoir.

Clean the top of the hydraulic reservoir and clean the return filter cover.

Remove the cover (1) and O-ring (2).

Take out the spring (3), valve (4) and return filter (5).

Install a new filter. Clean the spring (3) and valve (4) and assemble them.

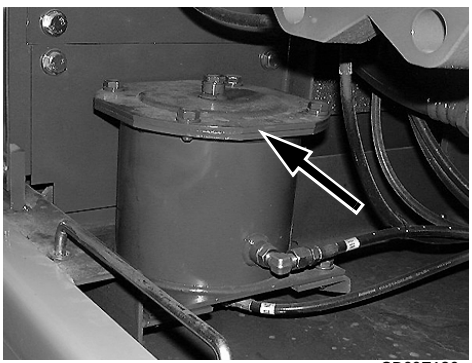
Check O-ring (2) and replace it if worn or damaged.

Install the cover (1).

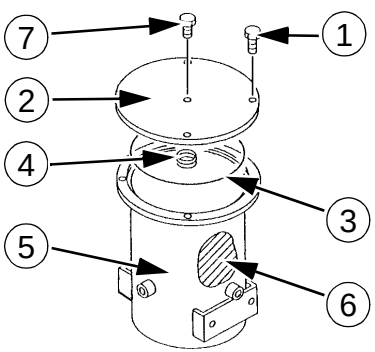
Check the level of the hydraulic fluid and add more if necessary. See “Filling the reservoir”.

Nephron Filter replacement

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E136



CI98M236

Clean the top of the filter with solvent.

Remove the four cover bolts (1) and remove the cover (2), O-ring (3) and spring (4).

Carefully lift the old filter element (6) out of the body (5).

Use a clean cloth and clean out the filter body (5).

Carefully install a new filter element (6) in the body (5).

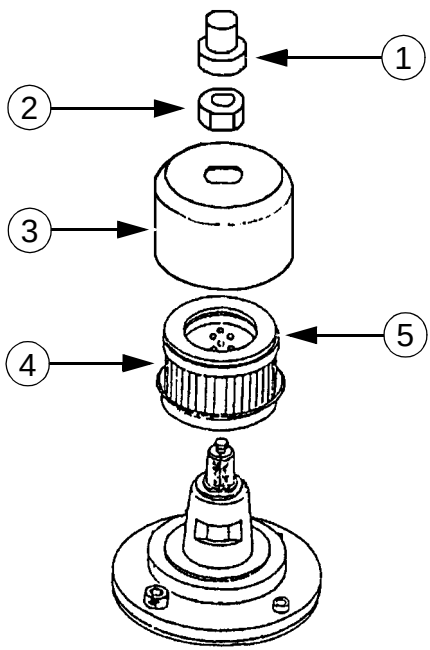
Install the spring (4), new O-ring (3) and cover (2).

Start the engine and run at idle speed.

Loosen the vent plug (7) on top of the cover. When air free hydraulic fluid comes out of the vent hole, tighten the vent plug (7). Clean all fluid from the filter body.

Check the level of the hydraulic fluid and add more if necessary. See “Filling the reservoir”.

Reservoir breather replacement



CS00E528

Press the button (1) to release all pressure in the hydraulic reservoir.

Remove the nut (2) and the cover (3) from the breather.

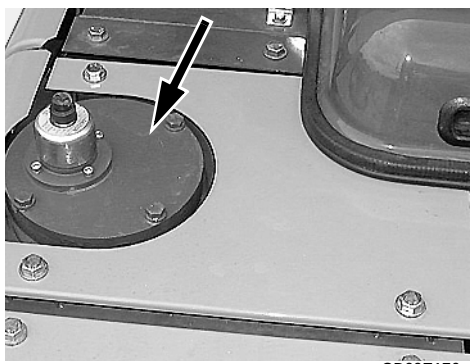
Remove and discard the used filter (4).

Install a new element, making sure the seal (5) is facing upwards.

Install the cover (3) and the nut (2) correctly.

Replacing the hydraulic fluid

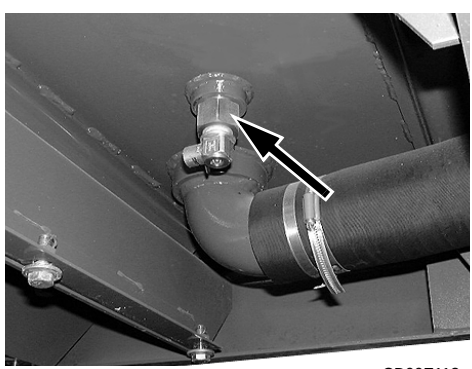
Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E176

Remove the reservoir cover plate.

Using a pump, remove the fluid from the hydraulic reservoir. Have a container with a suitable capacity ready.



CD00E113

Remove the drain plug to remove the remaining fluid from the reservoir.

Replace the suction filter and the return filter. See “Cleaning and replacement of the suction filter” and “Return filter replacement”.

Install the reservoir drain plug.

Put new hydraulic fluid into the reservoir. See “Filling the reservoir”.

Install the reservoir cover plate and seal.

IMPORTANT: *Before you start the engine, it is very important that you bleed air from all the hydraulic components. See “Bleeding air from the hydraulic components”.*

Start and run the engine with no load for approximately five minutes.

Move each control slowly several times to remove any air in the system.

Swing the upperstructure evenly left to right two turns or more.

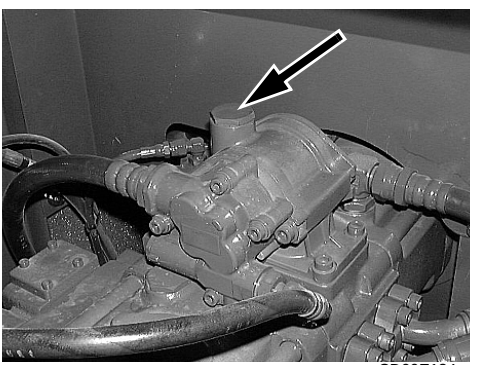
Place the machine in position and then stop the engine.

Check the oil level in the hydraulic reservoir and add oil as required and check that there are no air bubbles in the hydraulic reservoir.

Bleeding air from the hydraulic components

IMPORTANT: *After bleeding air from the components, stop the engine for five minutes and check there are no bubbles at the surface of the hydraulic fluid in the reservoir.*

Hydraulic pump



CD00E134

Clean the top of the pump and the air bleed plug with solvent and remove the air bleed plug.

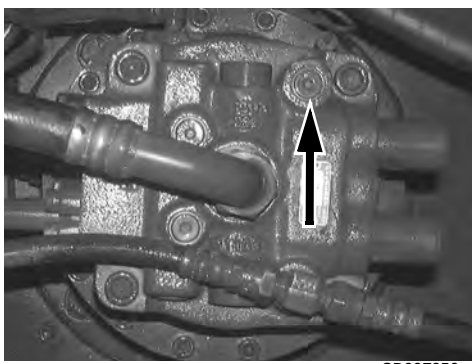
Fill the pump with new clean hydraulic fluid. Install and tighten the air bleed plug.

Start the engine and run at idle speed. Loosen the air bleed plug on the pump. Tighten the plug when air free fluid comes out of the bleed plug hole. Clean the area completely.

Attachment cylinders

Start and run the engine at low idle speed. Extend and retract the attachment cylinder rods four or five times without bringing them to end of stroke. Then repeat the operation three or four times, this time bringing the cylinder rods to end of stroke.

Hydraulic swing motor



CD00F056

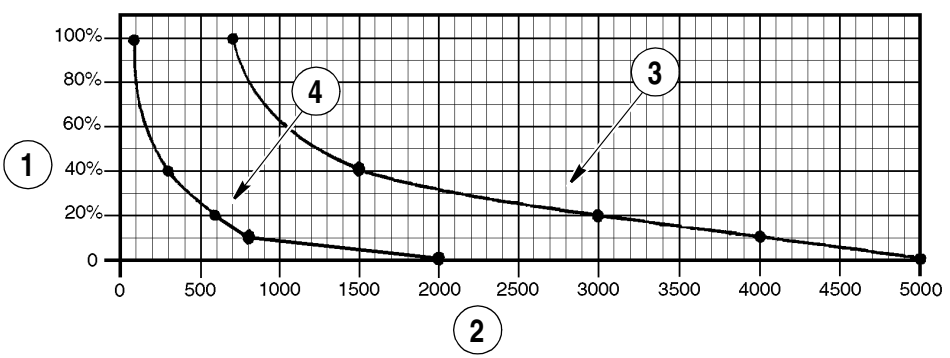
Start and run the engine at low idle speed. Loosen the air bleed plug and make sure hydraulic fluid runs out. If necessary, stop the engine and add oil via this orifice. Install the plug without tightening, then start and run the engine at low idle, leaving it to run until oil begins to run from the orifice. Tighten the air bleed plug completely. Swing the upperstructure three times completely to the right and three times completely to the left.

Replacing the hydraulic fluid and filters when a hydraulic breaker is used (optional)

Hydraulic fluid

When using the hydraulic breaker, hydraulic fluid deteriorates more quickly than during ordinary digging. Check the hydraulic fluid level more frequently. In addition, when replacing the filters, also check the condition of the hydraulic fluid.

- Replace the hydraulic fluid and filter element using the following graph as a reference, depending on the operation frequency of the hydraulic breaker.
- If the hydraulic breaker work continues for 100 hours or more, replace the element every 100 hours.
- Replace the return filter for the hydraulic breaker at the same interval as the element.



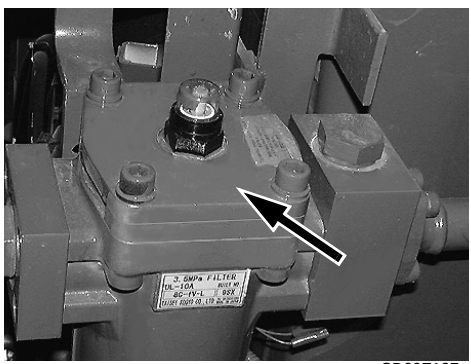
BS00M142
BS00M142

1. (1) Percentage of use
2. (2) Intervals in hours
3. (3) Hydraulic fluid replacement
4. (4) Hydraulic filter replacement

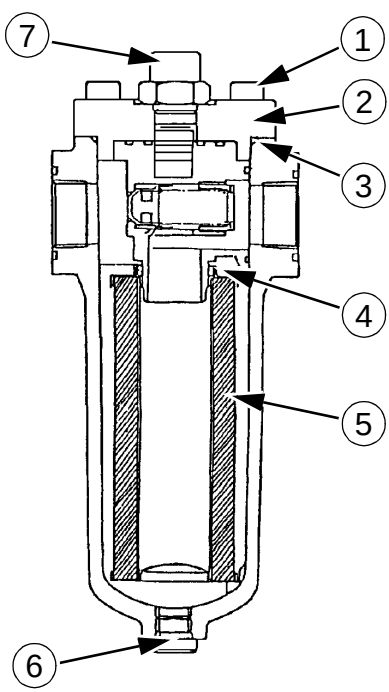
Return filter

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.

NOTE: *It is mandatory to use the option control pedal to release all pressure in the hydraulic breaker circuit.*



CD00E137



CS98M622

This filter is equipped with an indicator (7). When the filter is restricted, the filter must be changed.

Remove the drain plug (6) and drain the hydraulic oil.

Remove the four screws (1) on top of the case and remove the cover (2), indicator and O-ring (3) assembly.

Replace the filter (5) with a new filter.

Discard the damaged O-ring.

Insert a new O-rings (3) and (4) and install the assembly.

Tighten the retaining screws (1) for the cover (2).

Install the drain plug (6).

Start the engine and run it at low speed. Operate the hydraulic breaker and check that there are no leaks.

Checking the hydraulic system lines

Make sure there are no leaks from the hydraulic system hoses, pipes, plugs, connections and fittings and check that all nuts and screws are correctly tightened before applying pressure to the system. In the event of problems, repair, replace or tighten the component concerned.

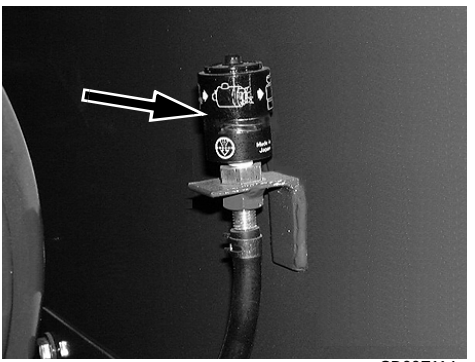
AIR FILTER

Inspection

Be sure to carry out regular checks on the air filter, intake manifold, seals and hoses. At the same time, check the intake manifold screws and hose clamps for tightness.

The hoses should be replaced before they are worn.

Air filter restriction indicator



CD00E114

Located next to the air filter, this indicator shows the state of the air filter elements. When the central zone of the indicator becomes red then the elements must be serviced, irrespective of the next scheduled service interval.

Once the elements have been serviced, press the button on top of the indicator to start a new indication cycle.

Service specifications

Inspect and clean the primary element ..... Every 250 hours
or when central zone of the indicator turns red

Replace the primary element ..... Every 1000 hours
or after cleaning six times

Replace the secondary element ..... Every 1000 hours
or after cleaning the primary element three times

IMPORTANT: *The primary element can be cleaned. The secondary element can not be cleaned and must be replaced.*

IMPORTANT: *Observe the air filter service intervals shown above. Clean filters mean longer engine life.*

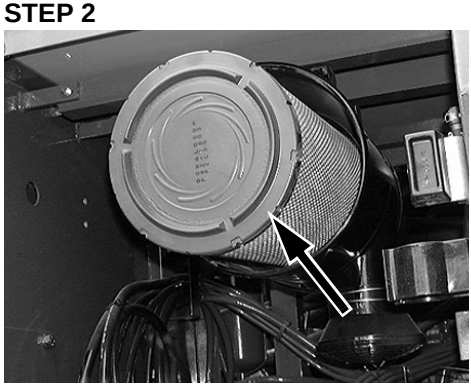
Removing the elements

STEP 1

CD00E115

Release the fasteners and remove the cover.

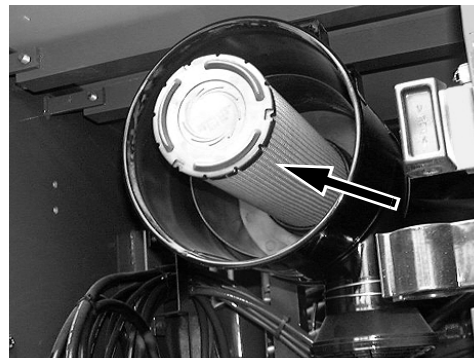
STEP 2



CD00116

Remove the primary element.

STEP 3



CD00E117

Remove the secondary element if it needs replacing.

IMPORTANT: *The secondary element must be replaced, not cleaned.*

Cleaning the primary element

IMPORTANT: *Make sure your face is protected before using compressed air.*

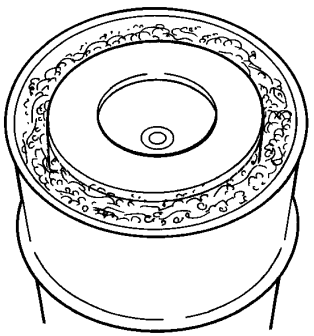
PE08311

If the primary element is dry :

Blow compressed air from the inside towards the outside at very low pressure. The compressed air nozzle should be held at least 1 inch (25 mm) from the inside wall of the element. Cleaning is completed once no more dust comes out of the primary element.

IMPORTANT: *Compressed air pressure should not exceed 100 psi (7 kg/cm)*

NOTE: Do not use compressed air if there is oil or soot on the primary element.



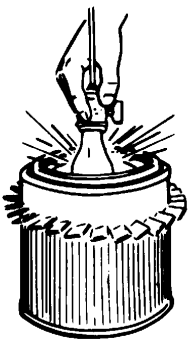
PDE0088

If the primary element is oily :

Clean it in water with a suitable detergent (consult your authorized LBX Link-Belt distributor). Instructions for using the detergent are printed on the packaging.

IMPORTANT: *Allow the primary element to dry completely before installing. It is advisable to keep a spare, clean primary element ready for installation while the other primary element is drying.*

Inspecting the primary element



PDE0378

Check the primary element for damage by placing an inspection lamp inside the element.

IMPORTANT: *Replace the primary element if light can be seen through a hole, however small.*

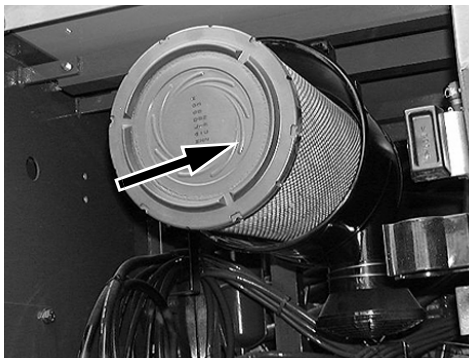
Installing the elements

STEP 1

CD00E117

Install the secondary element.

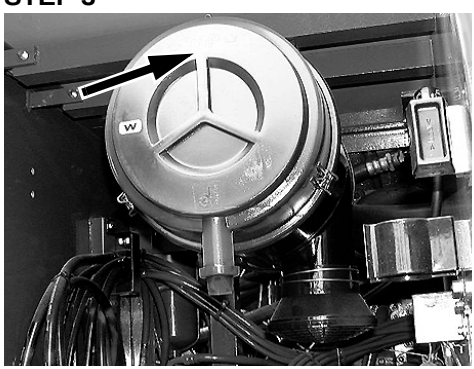
STEP 2



CD00E116

Install the primary element.

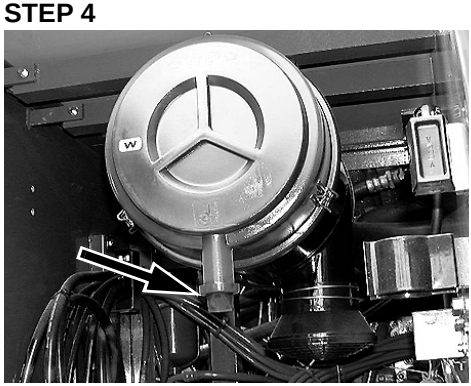
STEP 3



CD00E115

Install the cover (with the word “Top” at the top) and close the fasteners.

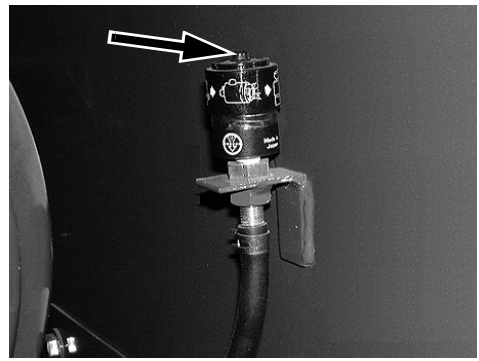
STEP 4



CD00E115

Check that the dust ejector under the filter is working correctly.

STEP 5



CD00E114

Press the red button on the indicator.

IMPORTANT: *If exhaust smoke is abnormal after cleaning, the air filter primary element must be replaced.*

SWING REDUCTION GEAR

Service specifications

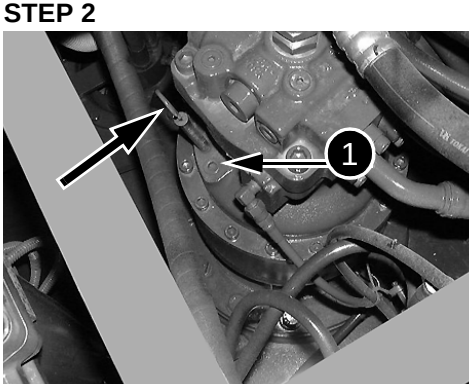
Oil level check ..... Every 250 hours
Oil change ..... Every 1000 hours
(after the first 250 hours of operation)
Grease ..... Every 5000 hours
Oil capacity 210 LX ..... 1.2 gal (4.5 L)
Oil capacity 240 LX ..... 1.6 gal (6.0 L)
Oil type .....API GL-4 90

Level

STEP 1

Park the machine on flat, horizontal ground. Stop the engine and remove the starter switch key.

STEP 2



CD00E093

CP98N043

Remove the dipstick. The oil should come up to the hatched area. Add oil if necessary through the filler hole (1).

STEP 3

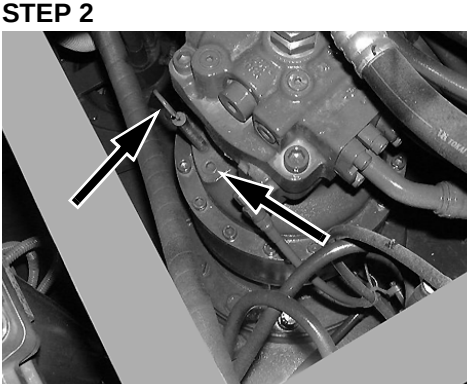
Install the dipstick

Draining and refilling

STEP 1

Park the machine on flat, horizontal ground. Stop the engine and remove the starter switch key.

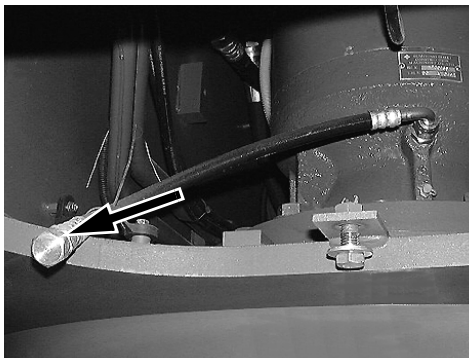
STEP 2



CD00E093

Remove the dipstick and the filler plug.

STEP 3



CD00E118

Place a receptacle of a suitable capacity under the upperstructure and remove the drain plug.

STEP 4

Allow the oil to drain.

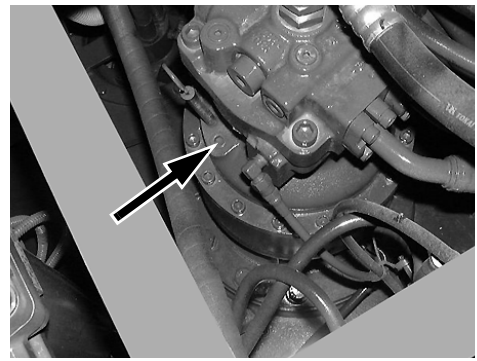
NOTE: The oil takes a relatively long time to drain.

IMPORTANT: *Check the condition of the drained oil. If it contains metal filings or foreign matter, see your authorized LBX Link-Belt distributor.*

STEP 5

Install the drain plug.

STEP 6



CD00E093

Add oil through the filler hole until the level is correct.

STEP 7

Install the dipstick and the filler plug.

STEP 8

Wait ten minutes and then use the dipstick to check the oil level again. If necessary, add more oil through the filler hole.

NOTE: When greasing the swing reduction gear, see “Greasing the swing reduction gear”.

TRAVEL REDUCTION GEARS

Service specifications

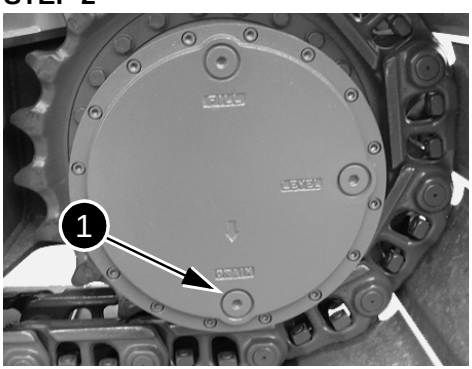
Oil level check ..... Every 250 hours
Oil change ..... Every 1000 hours
(after the first 250 hours of operation)
Oil capacity (per reduction gear) 210 LX and 240 LX ..... 1.2 gal (4.7 L)
Oil type ..... API GL-4 90

Level

STEP 1

Park the machine on flat, horizontal ground.

STEP 2



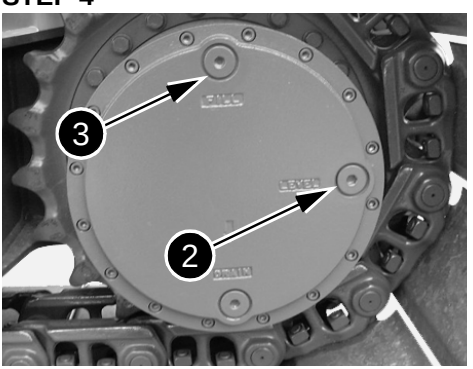
CD00E074

Move the machine so that plug (1) is in the lowest possible position.

STEP 3

Stop the engine and remove the starter switch key.

STEP 4



CD00E074

Remove the plug (2) and check the oil level. The level must come up to the lower edge of the hole. If necessary, remove plug (3) and add oil through hole until the level comes up to the bottom edge of the hole.

STEP 5

Install plugs (2) and (3).

STEP 6

Repeat Steps 2 to 5 for the other travel reduction gear.

STEP 7

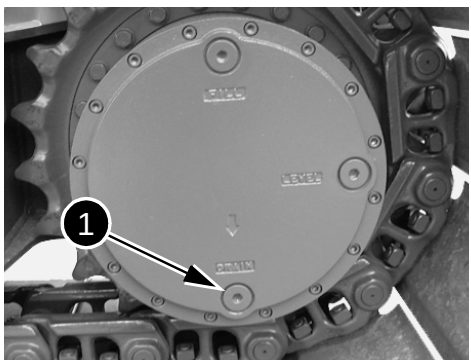
Travel slowly with the machine and make sure there are no leaks.

Draining and refilling

STEP 1

Park the machine on flat, horizontal ground.

STEP 2



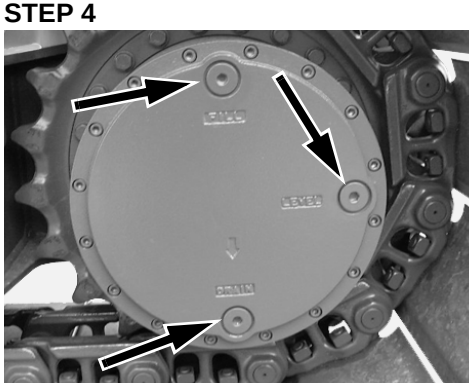
CD00E074

Move the machine so that plug (1) is in the lowest possible position.

STEP 3

Stop the engine and remove the starter switch key.

STEP 4



CD00E074

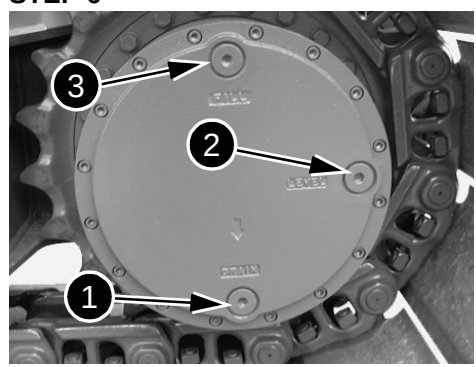
Place a receptacle of a suitable capacity under the travel reduction gear and remove the three plugs.

STEP 5

Allow the oil to drain.

IMPORTANT: *Check the condition of the drained oil. If it contains metal filings or foreign matter, see your authorized LBX Link-Belt distributor.*

STEP 6



CD00E074

Install the plug (1), fill with oil through the hole (3) until oil comes up to the bottom edge of hole (2), then install plugs (2) and (3).

STEP 7

Repeat Steps 2 to 6 for the other travel reduction gear.

STEP 8

Travel slowly with the machine and make sure there are no leaks.

NOTES

ADJUSTMENT/MAINTENANCE

TRACKS

Service specifications

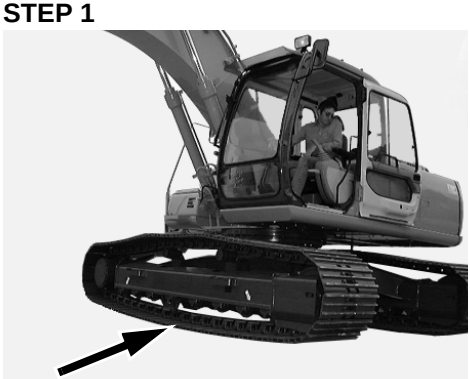
Clean.....Periodically and when the machine has been working in mud
Check tension .....Periodically
Check track shoe bolt torques..... Every 250 hours
(after the first 50 hours during the run-in period)

IMPORTANT: *If tracks are too tight, they wear quickly. If tracks are not tight enough, they wear quickly and the links can catch on the sprocket wheel or slide off the idler wheel or the sprocket wheel. Clean the tracks after work.*

Cleaning

When the machine has been working in mud, a drop in temperature can cause the mud to harden.

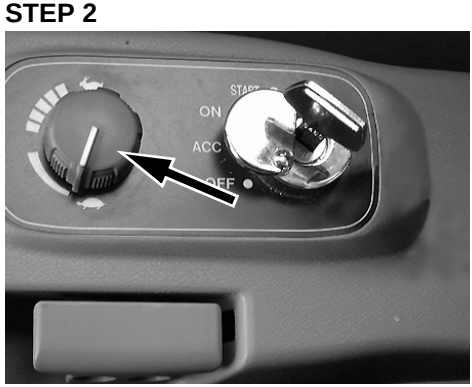
STEP 1



CD00E084

Place upperstructure at right angles to the undercarriage. Use the attachment to press on ground and lower the boom until the track is raised off the ground.

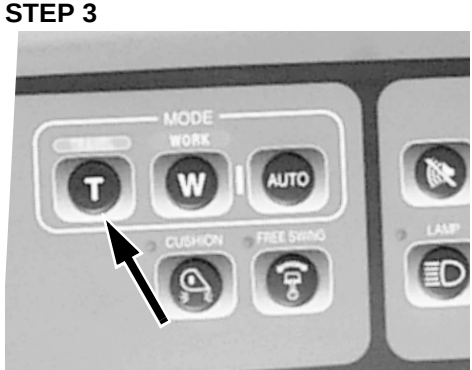
STEP 2



CD00E060

Turn the engine throttle button to maximum speed position.

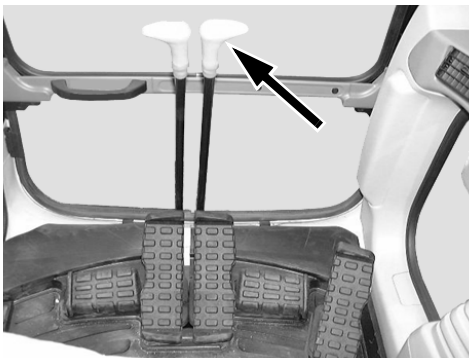
STEP 3



CD00E075

Use the travel speed selector to select high speed.

STEP 4



CD00E147

Operate the travel control lever for the raised track forwards and then in reverse, to remove the mud.

STEP 5

Repeat Steps 1 to 4 for the other track.

Checking tension

STEP 1

Park the machine on flat, horizontal ground.

STEP 2

Clean the tracks.

STEP 3

CD00E084

Place the upperstructure at right angles to the undercarriage. Use the attachment to press on the ground and lower the boom until the track is raised off the ground.

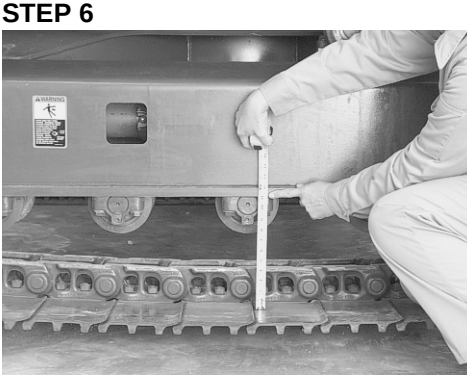
STEP 4

Use the travel control lever to operate the raised track in reverse for a few moments.

STEP 5

Stop the engine and remove the starter switch key.

STEP 6



BD00K016

Measure the sag of the track at the center between the base of the undercarriage and the pad.
The track sag should be between :
280 mm and 300 mm (11 to 12 in.)

STEP 7

Adjust tension if necessary and then lower the raised track to the ground.

STEP 8

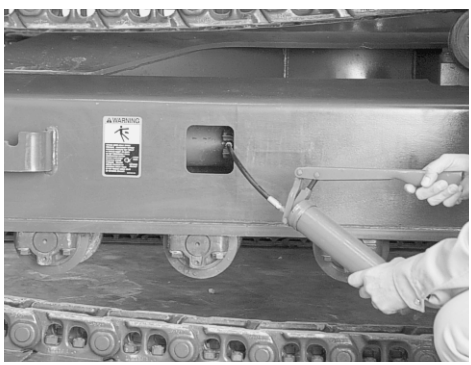
Repeat Steps 3 to 7 for the other track.

Adjusting tension

This operation is to be carried out after the tension has been checked.

To increase tension

STEP 16



BD00K015

With the track in raised position, clean the grease fitting adaptor and connect the grease pump hose to the grease fitting.
Pump grease into the track adjusting cylinder to obtain the right amount of track sag.

STEP 17

BD00K016

The track sag should be between 280-300 mm (11 to 12 in)

STEP 18

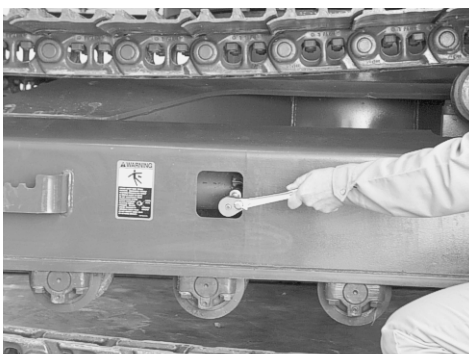
Remove the grease gun, clean the grease fitting. and then lower the raised track to the ground.

STEP 19

Repeat Steps 1 to 3 for the other track.

To reduce tension

STEP 1

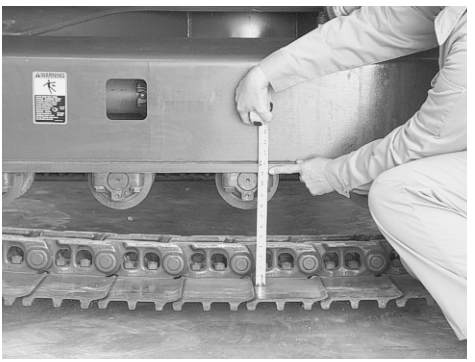


BD00K017

With the track in raised position, loosen the grease fitting adaptor about three turns to allow grease to flow out of the cylinder.

> **WARNING:** *Never unscrew the grease fitting adaptor completely to speed up the flow of grease. The grease in the cylinder is under high pressure.*

STEP 2



BD00K016

As soon as the right track sag is obtained, tighten the adaptor.
The track sag should be between
: 280-300 mm (11 to 12 in)

STEP 3

Clean the grease adaptor and fitting and then lower the raised track to the ground.

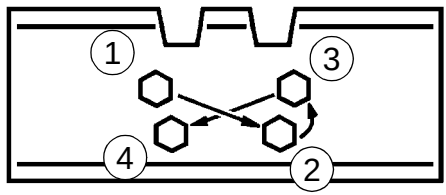
STEP 4

Repeat Steps 1 to 3 for the other track.

IMPORTANT: *If the grease fitting adaptor is damaged, grease may leak out. Check the condition of the grease fitting adaptor regularly and replace it if necessary.*

Track shoe bolt torque

Tighten the track shoe bolts to a torque of 275 to 335 pound-feet (370 to 450 Nm).



CS00E504

Tighten the bolts in the order shown.

TRACK ROLLERS AND IDLER WHEELS

Service specifications

Check ..... Every 250 hours

The upper and lower rollers and idler wheels use a permanent floating seal type sealing mechanism. The service life normally lasts until overhaul, but check visually from time to time before work for oil leakage. If oil leakage is found, component replacement is necessary. See your authorized LBX Link-Belt distributor.

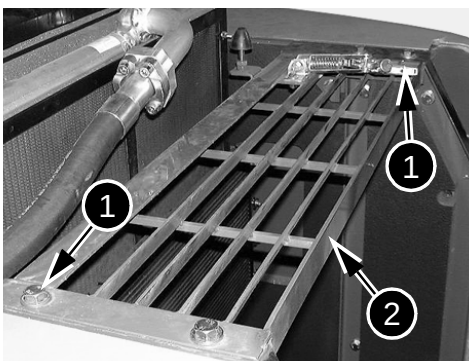
RADIATOR AND OIL COOLER

Service specifications

Check for leakage .....Every 10 hours or every day
Clean..... Every 250 hours

Cleaning

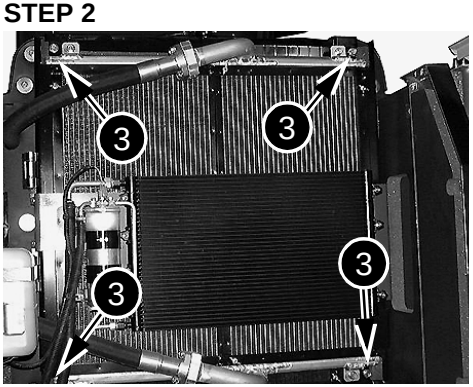
STEP 1



CD00E131

Remove the screws (1) and remove the intake grille (2).

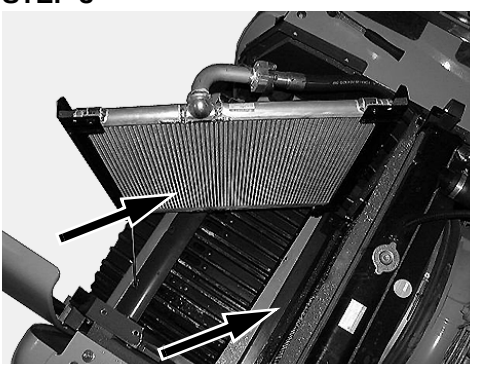
STEP 2



CD00E132

Remove the screws (3) and tilt the oil cooler forward.

STEP 3



CD00E133

Clean the radiator and the oil cooler:

- Dry dust : use compressed air.
- Mud : clean with a hose.
- Greasy deposits : use a pressure washer.

IMPORTANT: *Make sure your face is protected before using compressed air.*

IMPORTANT: *The use of trichlorethylene is strictly forbidden.*

STEP 4

Tilt the oil cooler into position and mount the screws (3).

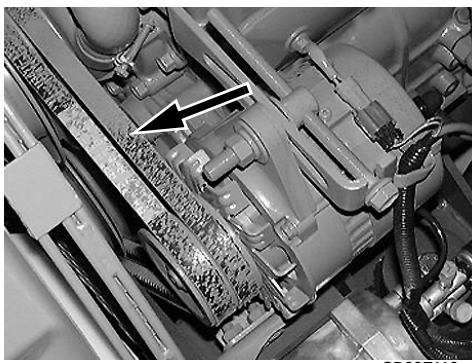
STEP 5

Install the intake grille (2) and mount the screws (1).

FAN AND ALTERNATOR DRIVE BELT

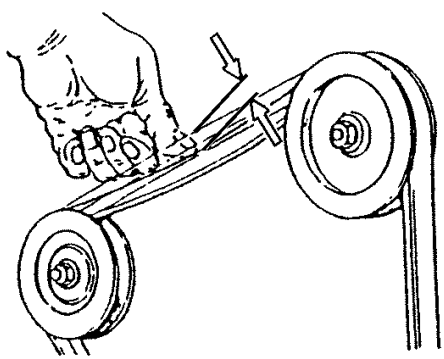
Service specifications

Visual check ..... Every 10 hours or every day
Check belt tension..... Every 250 hours



CD00E119

Tension check



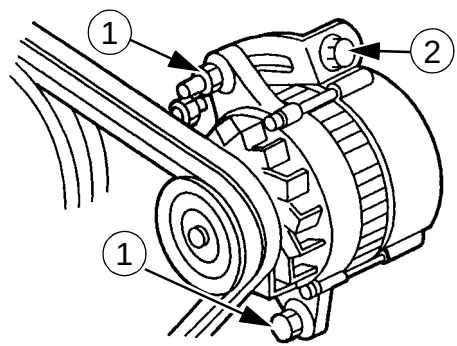
CS98M560

Press the center of the belt, exerting a pressure of about 20 lbs (10 kg). The belt deflection should be about 1/4 to 1/2 inch (8 to 12 mm).

NOTE: Check if there are any signs of wear damage to the pulleys or the belt. Check carefully to ensure that the belt is correctly positioned in the pulley grooves. If the belt is stretched, cracked or frayed, it must be replaced.

IMPORTANT: *If the engine runs with the belt slack, the belt can slip in its housing and cause the engine to overheat or the battery to receive insufficient charge.*

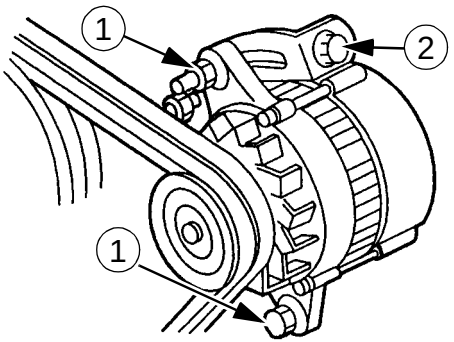
Tension adjustment



CS99A852

Loosen the mounting bolts (1). Use the adjustment screws (2) to move the alternator outwards until belt tension is correct. Tighten the alternator mounting bolts (1).

Replacing the drive belt



CS99A852

Remove the mounting bolts (1). Use the adjustment screws (2) to push the alternator inwards.

Remove the worn belt.

Install a new belt.

Adjust the belt tension.

Tighten the mounting bolts (1).

Run the engine for about an hour and then check the belt tension again.

FUEL TANK FILTER

Service specification

Clean filter ..... Periodically

CD00E120

Remove the filter and clean it in diesel fuel.

NOTE: To refill the fuel tank, see “Fluids and lubricants” in the “Lubrication/Filters/Fluids” Section.

INSPECTING AND CLEANING THE MACHINE

Service specifications

Inspect and clean ..... Periodically

Or whenever oil or grease has been spilt on the machine. Clean off with steam or a high pressure water jet.

Take the opportunity during this operation to make a visual check of all the welded components (in case of appearance of cracks), the attachment linkages and check the teeth and tooth tips for correct retention and for wear. Look for any leaks and check the condition of all pipes and hoses.

CHECKING FOR CYLINDER LEAKAGE

A cylinder rod should be slightly oily. Check that there are no leaks after a period of work, when the whole hydraulic system is at normal operating temperature.

1. Wipe clean the rod and bearing on the cylinder to be cleaned.
2. Operate normally for five or ten minutes.
3. Extend the cylinder rod.
4. Carry out the leak test.

Rod appearance	Test	Conclusion
Dry	Slight traces of oil when a piece of paper is wiped over 8 inches (200 mm) of the rod.	Normal
Slightly oily	Paper remains stuck to rod when run over rod.	Normal
Oily	Paper remains stuck when placed on rod.	Normal
Very oily or weeping	Each time cylinder rod is extended, a ring of oil can be seen on the rod.	*Consult your Link-Belt Dealer*
Leakage	Each time the rod retracts, the excess oil drips from the gland.	

PLASTIC AND RESIN PARTS

When cleaning plastic parts, for example on the instrument console or the control arms, do not use gasoline, kerosene, paint solvents, etc... Use soap and water and a clean cloth only.

The use of gasoline, paraffin, paint solvents, etc. will cause discoloration, cracks or deformation of these parts.

REPLACING A BUCKET

Removal

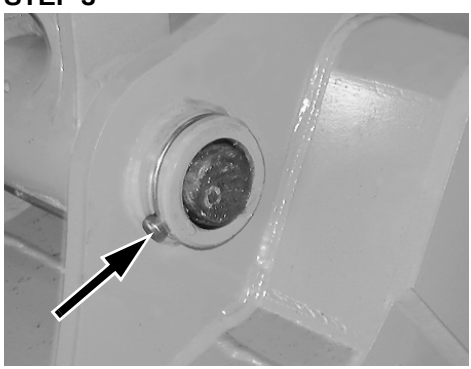
STEP 1

Place the bucket flat on flat, horizontal ground. Operate the attachment controls so that the arm/bucket linkage pin is not gripped by the weight of the dipper.

STEP 2

Stop the engine and remove the starter switch key.

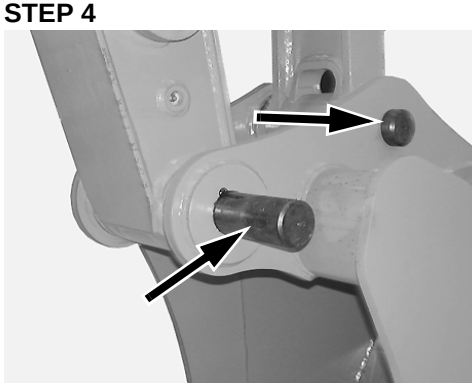
STEP 3



CD00E096

Remove the retaining rings and pins.

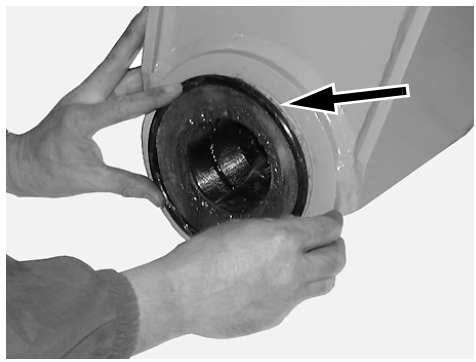
STEP 4



CD00E097

Remove the bucket pins.

STEP 5



CD00E099

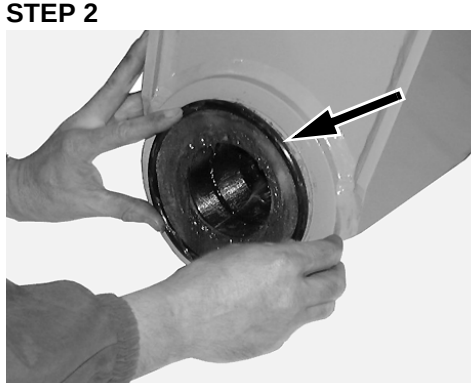
Start the engine, disengage the attachment from the bucket and retain the linkage seals for re-use.

Installation

STEP 1

Make sure the bucket is in a stable position.

STEP 2



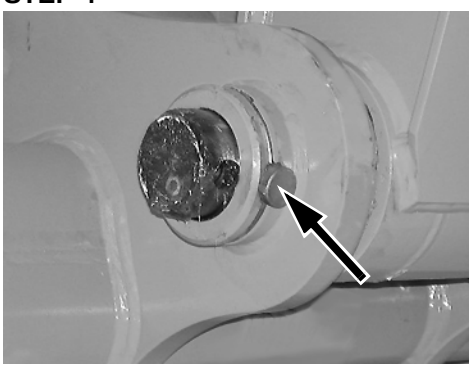
CD00E099

Install the linkage seals on the arm bushing shoulders. Change them if necessary.

STEP 3

Start the engine. Extend the bucket cylinder rod to bring it into its housing. Stop the engine and remove the starter switch key.

STEP 4



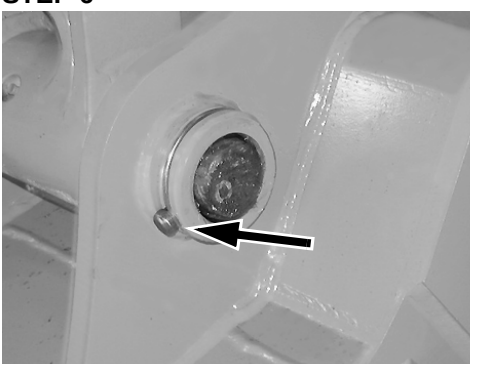
CD00E100

Install the arm/bucket linkage pin and then install the retaining pin and ring.

STEP 5

Start the engine and bring the bucket connecting rod into its housing. Stop the engine and remove the starter switch key.

STEP 6



CD00E096

Install the connecting rod/bucket linkage pin and then install the retaining pin and ring.

STEP 7

Push the seals back into their housings.

STEP 8

Adjust the arm/bucket shimming. See “Shimming the bucket”.

STEP 9

Grease the linkages.

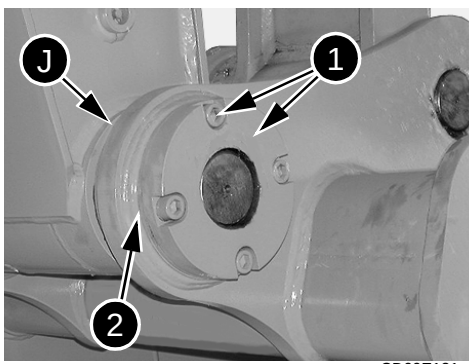
SHIMMING THE BUCKET

The machine is provided with a bucket adjustment mechanism which eliminates the side play in the bucket-to-arm linkage area caused by wear. This delays the effects of wear and thereby increases the service life of the bushings and pins.

NOTE: *If the bucket side play adjustment is not carried out properly, scuffing, unusual noise and side play will occur, causing damage to the O-rings.*

Side play adjustment

Lay the bucket flat on the ground.



CD00E121

Check the play (J) between the arm and the bucket ear.

If there is a lot of play (J), remove the four screws, the cap (1) and the shims (2).

Use the shims (2) as a feeler gauge to determine the number of shims necessary to take up the play (J).

Install the necessary number of shims.

Install the cap (1) and the four screws.

NOTE: *When the screws in the cap (1) are tightened, the inner bushing moves towards the dipper and takes up the play.*

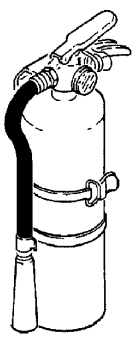
IMPORTANT: *The inner bushing has a lug which prevents it from turning. The cap (1) has an orifice on its inside surface. When installing the cap (1), make sure the lug is inside this orifice.*

WELDING ON THE MACHINE

Whenever carrying out a welding operation on the undercarriage or upperstructure carriage as authorized by the manufacturer and in accordance with his instructions, disconnect the batteries, disconnect the alternator B+ and D+ terminal wires and connect the welding apparatus earth cable to the component on which the welding operation is to be performed. Never connect the welding apparatus to the undercarriage when welding on the upperstructure (or vice-versa). Never connect the welding apparatus earth to a component of the hydraulic system.

WARNING: *Any unauthorized modifications made to this machine can cause serious injury. Do not undertake any modifications without first consulting your authorized LBX Link-Belt distributor.*

FIRE EXTINGUISHER (not supplied)



CS98M573

PC050017

It is strongly recommended to have a fire extinguisher available and to keep it in the tool storage box.

Service specifications

Every month : Inspect the extinguisher and check it is not damaged.

Every six months : Have the chemical removed and have the fire extinguisher refilled by an approved organization.

Every year : Have the fire extinguisher inspected by an approved organization.

AIR CONDITIONING

Service specification

Clean the intake filter ..... Every 250 hours
Clean the air recycling filter..... Every 250 hours
Have checked by a specialist..... Every 6 months

The components of the air conditioning system need servicing at regular intervals. Make sure these intervals are respected, in order to ensure the air conditioning functions correctly and with maximum effectiveness. The air conditioning system contains gas which is subject to strict legislation. Any defect in the system must be fixed rapidly.

WARNING: *Never try to service the air conditioning system yourself. For any service work, consult your authorized LBX Link-Belt distributor.*

NOTE: *Operate the air conditioning system at least once a week, if only for a short time. See "Air conditioning", in the "Controls/Instruments/Accessories" Section.*

Inspection

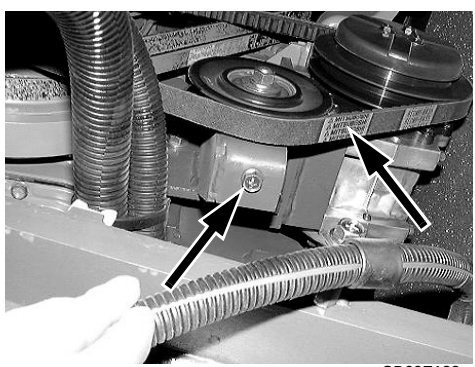
In order to ensure the air conditioning functions correctly, inspect the air conditioner using the procedure outlined below before starting work.

Condensor

If the condensor is dirty it will not dissipate heat properly. Clean the condensor in water.

IMPORTANT: *Never use water under pressure to clean the condensor.*

Drive belt



CD00E122

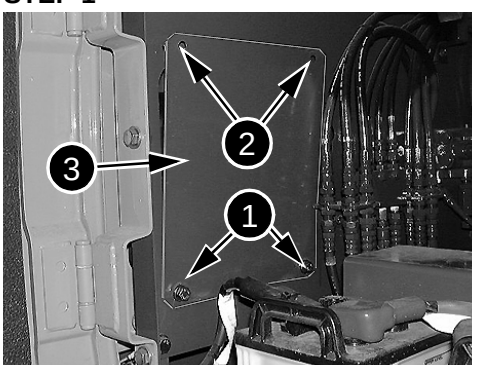
Use your finger to exert pressure of around 20 lbs (10 kg) on the center of the drive belt. The amount of inflection should be between 1/4 to 1/2 inches (8 to 10 mm). Adjust the tension of the drive belt if necessary.

Lines

Make a visual check of the lines and make sure there are no accumulations of dust, grease, etc...

Cleaning the air intake filter

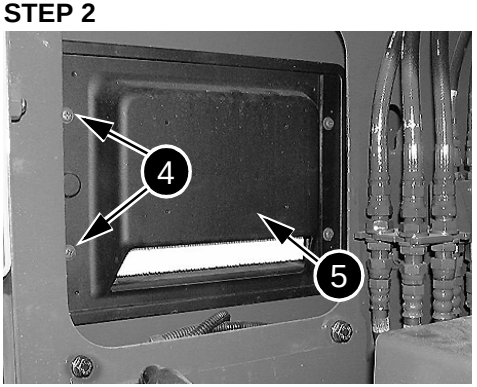
STEP 1



CD00E138

Loosen the screws (1) and remove the screws (2) and sealing cover (3) in the battery compartment.

STEP 2



CD00E139

Remove the screws (4) and open the panel (5).

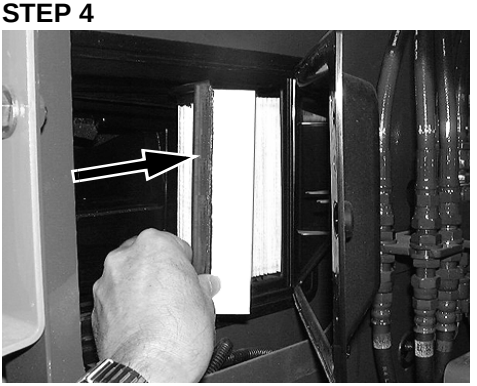
STEP 3

CD00E140

Remove the filter and clean it with compressed air. Replace the filter if it is damaged.

IMPORTANT: *Always protect your face before using compressed air.*

STEP 4



CD00E140

Install the filter in its housing with the seal on the inside.

STEP 5

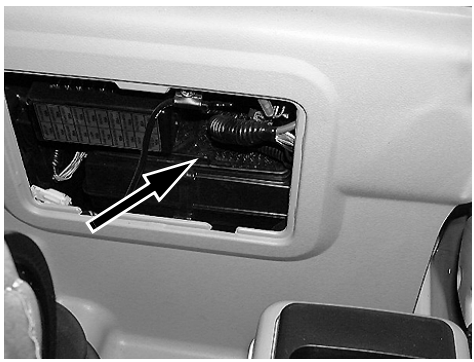
Close the panel (5) and install the screws (4).

STEP 6

Install the sealing cover (3) and the screws (2) and then tighten the screws (1).

Cleaning the air recycling filter

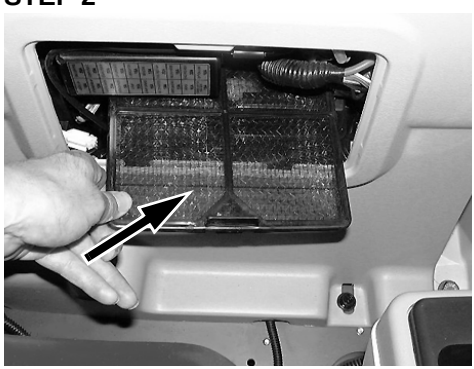
STEP 1



CD00E141

The air recycling filter is located underneath the fuse box. Remove the access panel and take out the filter.

STEP 2



CD00E142

Clean the filter with compressed air. Replace the filter if it is damaged.

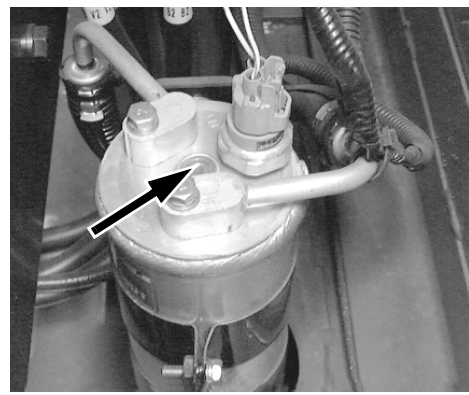
IMPORTANT: *Always protect your face before using compressed air.*

STEP 3

Install the filter and the access panel.

Checking the circuit charge level

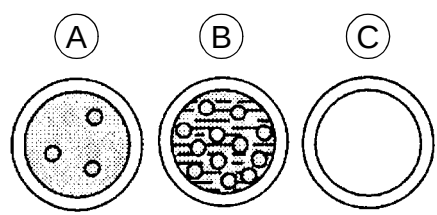
STEP 1



CD00E149

Turn on the air conditioning system, increase engine speed slightly (1400 to 1600 rpm) and look for bubbles through the sight glass.

STEP 2



CS00E555

This check should be made approximately one minute after turning on the air conditioning.

(A) Few bubbles observed. Transparent at first, then whitish. “Normal”.

(B) Many bubbles. Check all connections and see your authorized LBX Link-Belt distributor.

(C) No bubbles visible. Check all connections and see your authorized LBX Link-Belt distributor.

ENGINE TROUBLESHOOTING

Problem	Possible cause	Solution
Engine does not start.	Defective starter switch (starter does not run)	Check switch
	Defective rotation of starter (starter rotates slowly)	Discharged batteries, starter problems, contaminated or loose wiring connectors
	Incorrect viscosity of engine oil	Inspect and replace as necessary
	Incomplete air bleeding of fuel system	Completely bleed air
	Engine too cold (cold weather)	Preheat the intake air or warm up the coolant
	No fuel in fuel tank	Refill
	Poor fuel quality	Inspect and replace as necessary
	Fuel filter clogged	Clean or replace
	Possible seizure in engine	*See your authorized LBX Link-Belt distributor*
	Low compression	
	Defective fuel injection pump	
Engine stops during operation.	No fuel in fuel tank	Refill
	Fuel filter clogged	Clean or replace
	Air in the fuel system	Retighten fuel in line connections
Improper oil pressure.	Low oil	Refill
	Oil filter clogged	Replace oil filter
	Low oil viscosity	Replace with oil of viscosity to match temperature
	Oil leakage from connections	Tighten connections
	Defective oil pressure switch	*See your authorized LBX Link-Belt distributor*
	Incorrect functioning of oil pump	

Engine troubleshooting (continued)

Problem	Possible cause	Solution
Exhaust from engine is white or blue.	Excessive oil	Disassemble and repair, replace parts
	Excessively low oil viscosity	Replace with correct oil viscosity
	Excessive cooling by radiator	Adjust
	Incorrect fuel injection timing	*See your authorized LBX Link-Belt distributor*
	Low compression	
Exhaust from engine is black or dark gray.	Improper fuel	Replace with correct fuel
	Incorrect valve clearance	Adjust
	Insufficient air intake (air cleaner clogged)	Service the air filter
	Defective fuel injection pump	*See your authorized LBX Link-Belt distributor*
	Low compression	
Excessive fuel consumption.	Incorrect fuel	Replace with correct fuel
	Insufficient air intake	Clean or replace element
	Defective fuel injection pump	*See your authorized LBX Link-Belt distributor*
	Incorrect spray from fuel injection nozzle	
	Incorrect fuel injection timing	
	Low compression	
Excessive engine oil consumption.	Excessive oil	Drain oil to proper level
	Low oil viscosity	Replace with oil of viscosity to match temperature
	Oil leakage	Retighten and replace parts if necessary
	Worn cylinder piston ring	*See your authorized LBX Link-Belt distributor*
Unusual noise (fuel or mechanical).	Poor fuel quality	Replace
	Damage inside muffler	Replace
Engine overheating (water temperature is too high).	Low coolant	Refill
	Water leakage	Repair
	Worn or damaged belt	Replace
	Incorrect mixture of anti-freeze solution	Replace
	Defective radiator	*See your authorized LBX Link-Belt distributor*
	Broken fan	
	Defective thermostat	
	Defective water pump	
	Defective water temperature gauge	

Engine troubleshooting (continued)

Problem	Possible cause	Solution
Defective battery charge.	Incorrect belt tension	Adjust
	Electrical wiring problems	Repair
	Defective battery	Replace
	Defective regulator	*See your authorized LBX Link-Belt distributor*
	Defective alternator	

HARDWARE TORQUE INSPECTION

Service specification

Check ..... Every 250 hours
(after the first 50 hours during the run-in period)

At the end of each working day, check all mounting nuts and screws for tightness and tighten if necessary. Make sure no hardware items are missing. Replace them, if necessary.

TORQUE AND SPECIFICATIONS PER COMPONENT

Component	Bolt Size	Torque (Ft.Lbs)	Torque (Nm)
Travel reduction gear (*)	M16	196-230	267-312
Drive sprocket (*)	M16	196-230	267-312
Idler wheel (*)	M16	196-230	267-312
Upper roller (*)	M20	384-448	521-608
Lower roller (*)	M18	273-318	371-432
Chain guide	M18	280-326	380-443
Track shoe	M20	275-335	370-450
Counterweight	M27 M30	780-910 983-1142	1058-1235 1333-1549
Turntable bearing (undercarriage)	M20 M24	345-401 577-673	468-545 783-913
Turntable bearing (upperstructure)	M20 M24	345-401 577-673	468-545 783-913
Swing reduction gear (*)	M20 M24	384-448 577-673	521-608 783-913
Engine (*)	M16	195-230	265-313
Engine mounts (*)	M10	47-53	64-73
Radiator	M16	108-129	147-176
Hydraulic pump (*)	M10 M20	47-54 270-365	64-74 367-496
Hydraulic reservoir (*)	M16	171-203	232-276
Fuel tank (*)	M16	171-203	232-276
Control valve (*)	M16	196-230	267-312
Hydraulic swivel (*)	M12	80-93	109-127
Cab	M16	57-59	78-80

NOTE: *Use Loctite 262, or the equivalent, on bolts marked (*).*

NOTES

ELECTRICAL

FUSES

IMPORTANT: *Before proceeding to replace a fuse, turn the starter switch key to "OFF".*

IMPORTANT: *Never replace a fuse with a fuse of a different amperage.*

CD00E059

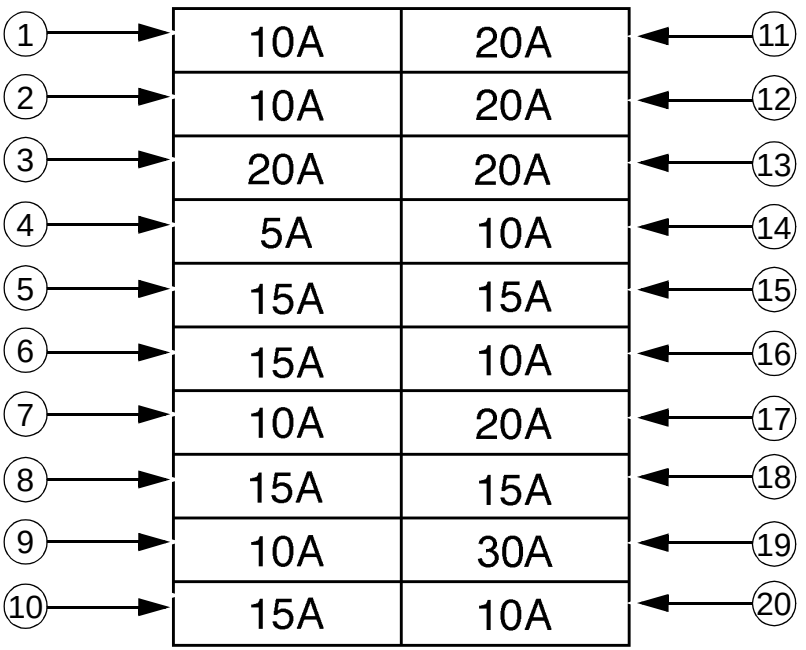
To gain access to the fuses, open the panel at the rear of the operator's compartment and remove the cover.

A23955

A label on the cover gives the function and amperage of each fuse.

NOTE: To remove or install a fuse, use the notch in the upper right-hand corner of the cover.

NOTE: Two spare fuses (10 amp and 20 amp) are to be found on the inside of the cover.



CS00E505

(1) Memory.....10 A
(2) Starter switch, cab lighting, radio.....10 A
(3) Air conditioner / heater.....20 A
(4) Air conditioner compressor.....5 A
(5) Working lights.....15 A
(6) Not used.....15 A
(7) 12 Volt converter.....10 A
(8) Windshield wiper/washer.....15 A
(9) Horn.....10 A
(10) Cigarette lighter.....15 A
(11) Engine electronic box.....20 A
(12) Electronic box control.....20 A
(13) Electronic box power.....20 A
(14) Gate lock / Left console.....10 A
(15) Not used.....15 A
(17) Fuel filler pump.....20 A
(18) Engine emergency shut down.....15 A
(19) Engine pre-heating.....30 A
(20) Option.....10 A

BATTERIES

Service specifications

Check electrolyte level ..... Every 250 hours

NOTE: *When starting the machine with booster batteries, see "Connecting booster batteries".*

> **WARNING:** *Before carrying out any service work on electrical system components, turn the starter switch key to the "OFF" position. When disconnecting batteries, always disconnect the negative (-) cable first. When reconnecting batteries, always connect the negative (-) cable last.*

To gain access to the batteries, open the left-hand side door.

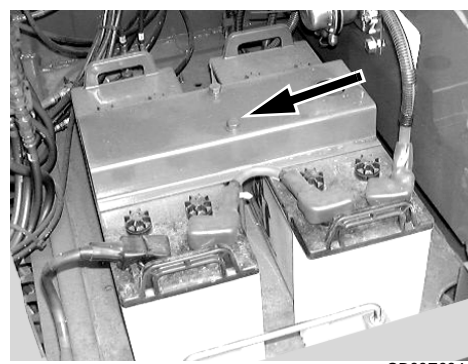
Checking the electrolyte level

Remove the cell caps and check the level in each batteries cell. The level should be between 3/8 to 5/8 inches (10 to15 mm) above the plates. Add distilled water if necessary, then install the cell caps.

IMPORTANT: *When adding distilled water at temperatures below 0°C, the batteries must be charged or the engine run for two hours approximately in order to ensure that the distilled water and the electrolyte are properly mixed.*

NOTE: Make sure the battery terminals are clean and coated with grease and that the cables are properly tightened.

Replacing a battery



CD00E094

Remove the battery cover. Disconnect the (negative) terminals. Disconnect the (positive) terminals.
Remove the batteries.
Reverse the procedure to install the new batteries.

Clean the cables and battery terminals and coat them with grease.

Install new anti-sulphate pellets, reconnect positive cable ends to positive terminals and then negative cable ends to negative terminals. Install the terminal protection caps.

WARNING: *Do not invert battery terminals. Connect positive cable ends to positive (+) terminals and negative cable ends to negative terminals (-).*

WARNING: *Batteries give off explosive gases. Keep all naked flames, sparks and cigarettes away. Ensure adequate ventilation when charging batteries or when using in a confined place. Always protect your eyes when working near batteries.*

WARNING: *The electrolyte in the batteries can cause serious burns. Batteries contain sulphuric acid. Avoid contact with skin, eyes and clothing.*
Antidote :
EXTERNAL : rinse with water.
INTERNAL : drink large amounts of water or milk. Then drink milk of magnesia, a beaten egg or vegetable oil. Call a doctor immediately.
EYES : rinse with water for 15 minutes and consult a doctor immediately.

WARNING: *A spark or a naked flame can cause the hydrogen in a battery to explode. To prevent explosion, proceed as follows :*
- When disconnecting the battery cables, always disconnect the negative (-) cable first.
- When reconnecting the battery cables, always connect the negative (-) cable last.
- Never short-circuit the battery terminals with metal objects.
- Do not weld, grind or smoke near a battery.

CONNECTING BOOSTER BATTERIES

WARNING: *Before carrying out any service work on electrical system components, turn the starter switch key to the "OFF" position. When disconnecting batteries, always disconnect the negative (-) cable first. When reconnecting batteries, always connect the negative (-) cable last.*

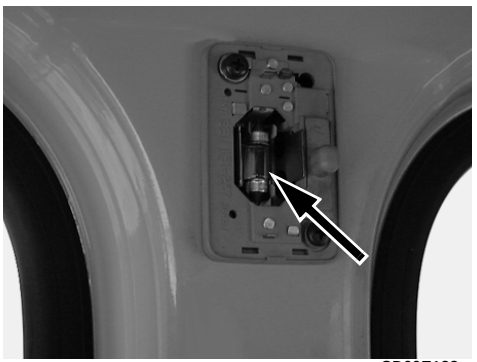
WARNING: *Connecting auxiliary cables incorrectly or short-circuiting batteries terminals can cause an accident. Connect auxiliary starting cables as per the following instructions.*

Make sure that the voltage of the booster batteries is the same as that of the machine system (24 volts).

1. Remove the terminal covers.
2. Connect the positive (+) cable to the positive (+) terminal on the first machine battery.
3. Connect the negative (-) cable to the negative (-) terminal on the second machine battery.
4. Start the engine.
5. Remove the booster battery negative (-) cable and then the positive (+) cable.
6. Install the terminal covers.

REPLACING A BULB

Cab light

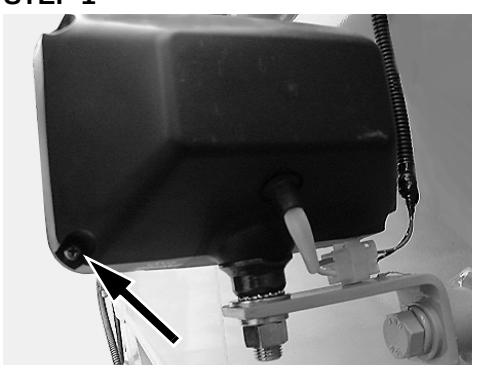


CD00E123

Remove the lens by hand.
Remove the bulb and install a bulb of the same wattage (10 W).
Install the lens.

Boom work light

STEP 1



CD00E124

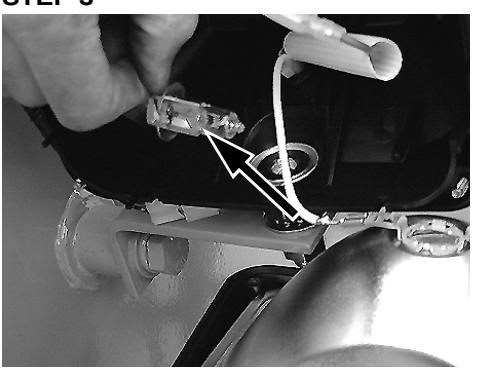
Remove the four mounting screws.

STEP 2

CD00E125

Tilt the work light and disconnect the plug.

STEP 3



CD00E126

Pull the clip outwards, remove the bulb and install a bulb of the same wattage (70 W).

IMPORTANT: *Never put your fingers on a tungsten iodide bulb.*

STEP 4

Install the clip and reconnect the plug.

STEP 5

Put the work light back into position and install the mounting screws.

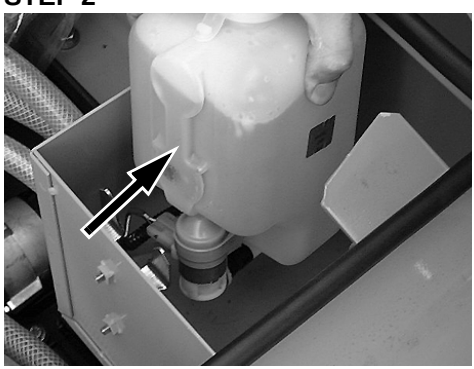
Upperstructure Work Light

STEP 1

PC050017

Open the front box.

STEP 2



CD00E127

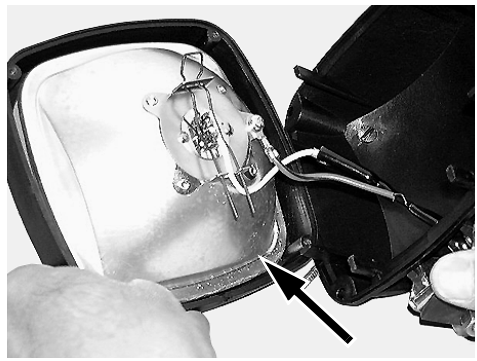
Take out the windshield washer reservoir to gain access to the work light.

STEP 3

CD00E128

Disconnect the plug.

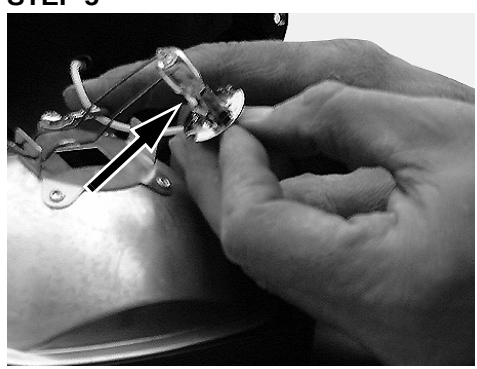
STEP 4



CD00E129

Remove the four screws and tilt the work light.

STEP 5



CD00E130

Pull the clip outwards, remove the bulb and install a bulb of the same wattage (70 W).

IMPORTANT: *Never put your fingers on a tungsten iodide bulb.*

STEP 6

Install the clip, put the work light back in position and install the screws and the plug.

STEP 7

Put the windshield washer reservoir back in place.

NOTES

MACHINE STORAGE

PREPARATION FOR STORAGE

The following procedure applies when the machine is to be stored for a month or more. Store the machine on flat, level ground, inside a building or, if not possible, outside and covered with a tarpaulin. Before storing the machine, carry out the following operations :

1. Clean the machine.
2. Retract the arm cylinder rod as for as possible and lower the boom until the attachment is resting on the ground.
3. Grease the machine thoroughly. The exposed surfaces of the cylinder rods should be greased or covered with a protective film. See your authorized LBX Link-Belt distributor.

NOTE: *When the machine resumes service, the film will disappear automatically.*

4. Drain the fuel tank and fill with a mixture of 90% diesel fuel and 10% anti-corrosive oil. Run the engine at idle speed for five minutes to allow the anti-corrosive oil to reach the lines, filters, pump and injectors.
5. While the engine is still warm, drain the oil sump, fill with anti-corrosive oil and replace the engine oil filter.
6. When the engine is cold, clean the outer parts of the engine with diesel fuel.
7. Clean or replace the air filter element.
8. Drain the cooling system, leave the drain valves open and do not tighten the radiator cap.
9. Remove the batteries, clean the battery housings and make sure not to leave any traces of acid. Store the batteries in a cool, dry place, where temperature is always above freezing.
10. Paint any areas where the paintwork is not good.
11. Plug the air filter inlet and the exhaust pipe.
12. Remove the starter switch key and place a “Do not operate” label on the right-hand control arm and then raise the function cancellation lever (safety bar in inward position).
13. Lock the hoods and the cab door.

Periodic checks

Every month, check :

1. The electrolyte level in the batteries and the battery charge. Recharge the batteries if necessary.
2. The grease on the cylinder rods.
3. The fuel level in the fuel tank and the corrosive oil level in the engine. Add more if necessary.
4. The condition of all lines, connectors and clamps (rust). Grease if necessary.
5. The condition of the paint. Apply a coat of anti-rust treatment where necessary.

Starting up after storage

1. Close the drain valves and fill the cooling system.
2. Drain the fuel tank and fill with clean diesel fuel.
3. Drain the engine sump, fill with clean engine oil and check the oil level.
4. Change the fuel filter.
5. Install the batteries.
6. Grease the machine thoroughly.
7. Check the condition of the fan drive belt and replace it if necessary.
8. Check the hydraulic fluid level and add more fluid if necessary.
9. Check the travel reduction gears oil level and add more oil if necessary.
10. Clean the cylinder rods.
11. Unplug the air filter inlet and the exhaust pipe.
12. Remove the “Do not operate” tag and start the engine, following the starting up procedure.
13. Keep a careful watch on all systems display panel lamps and indicators.

WARNING: *Check the machine for leaks or for any parts that are broken, defective or missing.*

WARNING: *Before starting the engine, make sure that all controls are in neutral position. This prevents the machine from moving unexpectedly or an electrical appliance from starting up.*

WARNING: *Avoid running the engine in a confined place. Make sure there is adequate ventilation at all times.*

SPECIFICATIONS

ENGINE

Make and model..... ISUZU BB-6BG1T
Aif induction.....Turbocharged
Number of cylinders 6
Bore/stroke.....105 mm x 125 mm (4.13 in x 4.92 in)
Displacement .....6 494 cc (396 cu in)
SAE net, horsepower-rated, **210 LX**,103 kW (138 hp) @ 1 950 min/1 (1 950 rpm)
SAE net, horsepower-rated, **240 LX**, 121 kW (162 hp) @ 2150 min/1 (2150 rpm)
Engine speeds
    Full throttle - full load .....
    Idle speed .....
Cooling
    Radiator cap .....
    Thermostat.....
Electrical System
    Batteries..... (2) 12 volt, 000 ampere
    System voltage .....24 volts
Valve clearance - engine cold
    Intake valves.....
    Exhaust valves.....

HYDRAULIC SYSTEM

210 LX

Main pumps
- Variable displacement - axial piston
  - Quantity 2
  - Flow each ..... 201 L/mn (53.1 gpm)

Pilot pump
- Fixed displacement - gear type
  - Quantity 1
  - Flow ..... 20 L/mn (5.3 gpm)

240 LX

Main pumps
- Variable displacement - axial piston
  - Quantity 2
  - Flow each ..... 212 L/min (56 .0 gpm)

Pilot pump
- Fixed displacement - gear type
- Quantity..... 1
- Flow each..... 22 L/mn (5.8 gpm)

Hydraulic System

210 LX

Hydraulic reservoir capacity ..... 120 L (32 gal)
Total hydraulic system capacity ..... 206 L (54 gal)

240 LX

Hydraulic reservoir capacity ..... 120 L (32 gal)
Total hydraulic system capacity ..... 225 L (59 gal)

WEIGHTS

210 LX Operating Weight

Standard Machine

Operating weight of machine with 9 ft 10 in (3.0 m) arm, 1 410 pound (640 kg) bucket, 32 in (800 mm) track shoes, 175 pound (79 kg) operator, full fuel, and standard equipment .....20 300 kg (44 800 lbs)

Long Reach Machine

Operating weight of machine with 21 ft (6.4 m) arm, 1 750 pound (340 kg) bucket, 32 inch (800 mm) track shoes, 175 pound (79 kg) operator, full fuel, and standard equipment .....21 600 kg (47 600 lbs)

240 LX Operating Weight

Standard Machine

Operating weight of machine with 10 ft 2 in (3.10 m) arm, 1 740 pound (790 kg) bucket, 32 in (813 mm) track shoes, 175 pound (79 kg) operator, full fuel, and standard equipment .....23 900 kg (52 700 lbs)

Long Reach Machine

Operating weight of machine with 25 feet 10.8 in (7.9 m) arm, 750 pound (340 kg) bucket, 32 inch (800 mm) track shoes, 175 pound (79 kg) operator, full fuel, and standard equipment .....26 700 kg (58 900 lbs)

Weights of Component Parts

210 LX

Rear counterweight - standard machine .....39 990 kg (8 800 lbs)

240 LX

Rear counterweight - standard machine .....5 090 kg (11 220 lbs)

UNDERCARRIAGE

One-piece frame with welded components.
Lubricated track rollers and idler wheels.
Grease cylinder track tension system.

210 LX

Shoe width ..... 800 mm (31.5 in)
Ground pressure ..... 0.032 MPa (4.64 psi)
No. of carrier rollers per side 2
No. of track rollers per side 8
No, of shoes per side 49

240LX

Shoe width ..... 800 mm (31.5 in)
Ground pressure ..... 0.036 MPa (5.22 psi)
No. of carrier rollers per side 2
No. of track rollers per side 9
No. of shoes per side 51

SAFETY DEVICES

Control for lowering attachments in case of engine failure.
Controls are disabled by lifting the function cancellation lever or the left-hand control arm.
Engine emergency shut-down, anti-theft protection.
Safety glass, horn.
Safety valves with overload indicator ..... optional
Inertia reel type safety belt
Fire extinguisher ..... optional

OPERATOR'S COMPARTMENT

High comfort seat with armrests, inertia reel type safety belt, multiple adjustments and head rest.
Hydraulically assisted controls.
Attachment and swing ..... 2 control levers
Travel ..... 2 foot pedals
240 LX ..... 2 foot pedals and single pedal travel
Speed programmer, also provides automatic speed change.
Single-speed wiper plus intermittent mode, washers, heating, defrost, ventilation/air conditioning, cab lights, cigarette lighter, sun shield.
Working lights:
- On upperstructure ..... 24V, 70 W
- On attachment ..... 24V, 70 W
- On cab ..... 24V, 70 W

CAB

Removable, sound proof, mounted on flexible mountings.
Foldaway windscreen.
Rear window emergency exit.
Sun shield.
Sliding windows on door.
Prefitted for radio installation.
Roof hatch.
Vandal covers

BOOM LENGTH

210 LX..... 5.70 m (18ft 8in)

240 LX..... 5.85 m (19ft 2in)

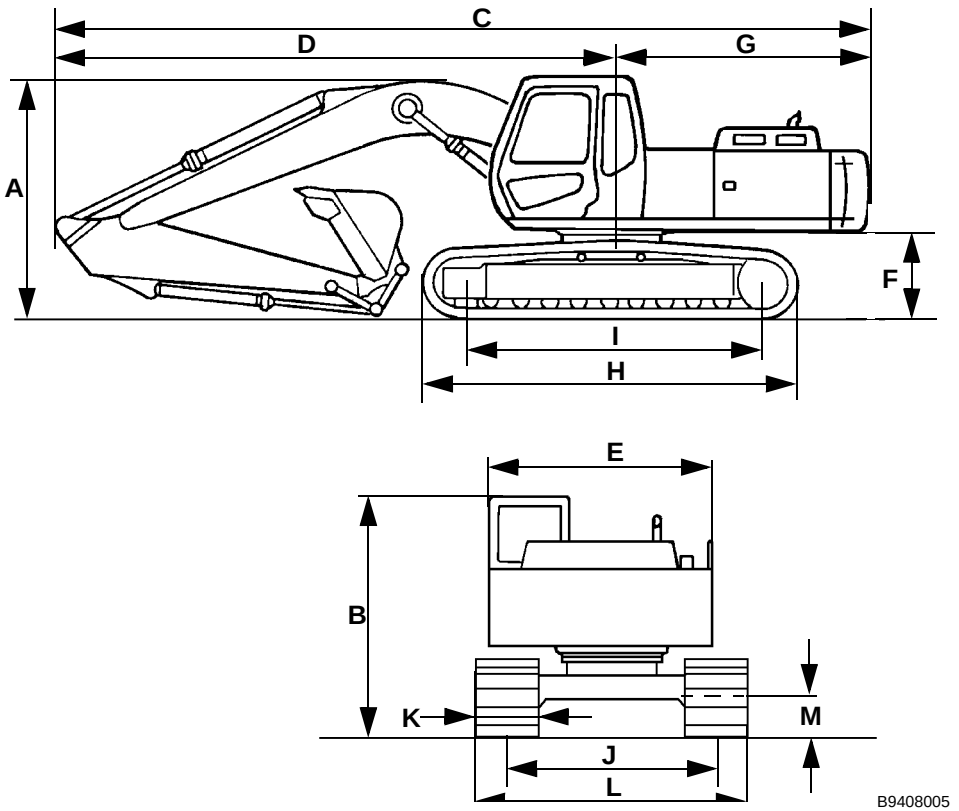
ARM LENGTH

210 LX..... 2.40 m (7ft 10in) and 3.00 m (9ft 10in)

240 LX..... 2.50 m (8ft 2in), 3.09m (10ft 2in) and 3.52m (11ft 7in)

DIMENSIONS

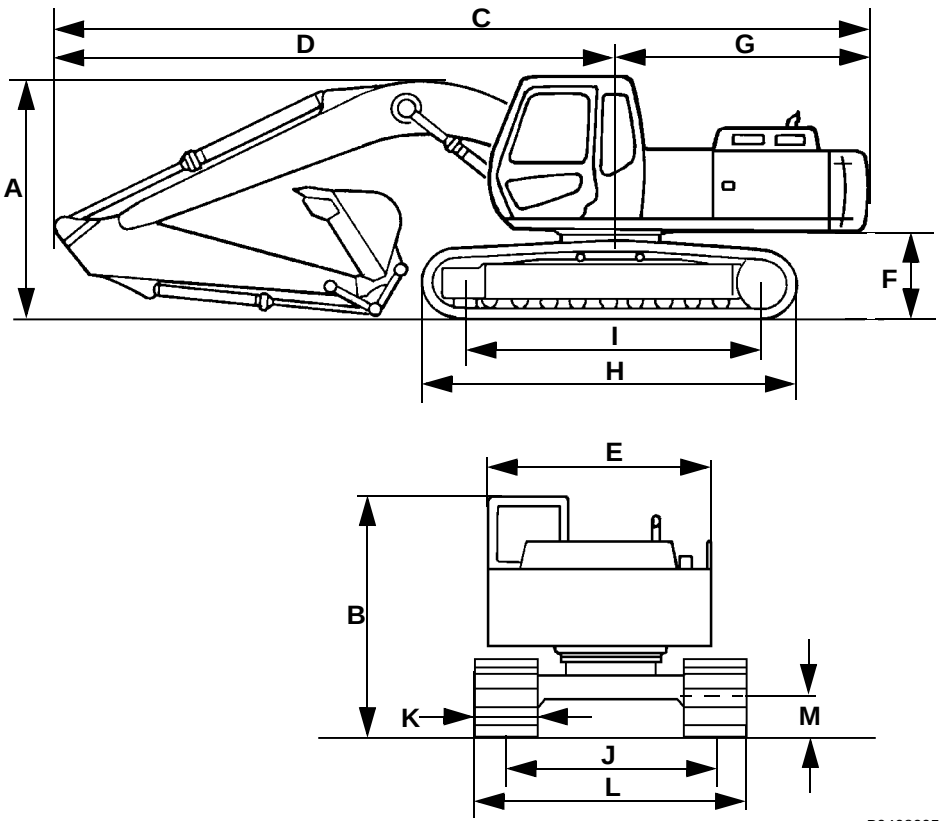
210 LX with 2.40 m (7ft 10 in) arm



A. Overall height - transport ..... 3.07 m (10ft 1in)
B. Cab height with vandal cover ..... 2.96 m (9ft 8in)
C. Overall length ..... 9.47 m (31ft 1in)
D. Length from swing pivot to end of arm in TRANSPORT position .. 6.75 m (22ft 2in)
E. Width of upper structure ..... 2.79 m (9ft 2in)
F. Upper structure ground clearance ..... 1.07 m (3ft 6in)
G. Rear swing radius .....2.72 m (8ft 11in)
H. Track overall length ..... 4.46 m (14ft 8in)
I. Length between centerlines of idler and drive sprocket ..... 3.66 m (12ft 0in)
J. Track guage ..... 2.39 m (7ft 10in)
K. Track plate width - standard ..... 800 mm (31.5 in)
L. Overall undercarriage width - with (800 mm) shoes ..... 3.19 m (10ft 6in)
M. Minimum ground clearance ..... 0.49 m (1ft 7in)

DIMENSIONS

210 LX with 3.00 m (9ft 10in) arm

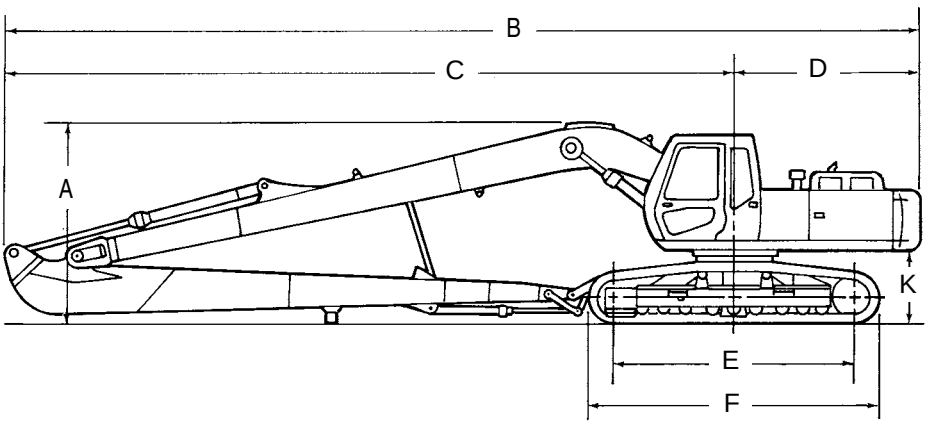


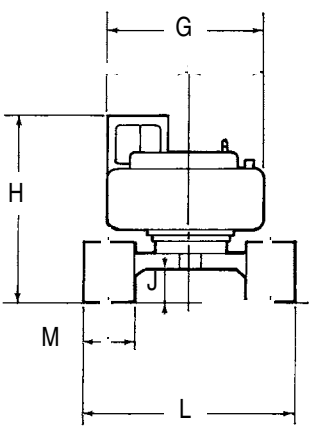
A. Overall height - transport ..... 2.91 m (9ft 7in)
B. Cab height with vandal cover..... 2.96 m (9ft 8in)
C. Overall length..... 9.39 m (30ft10in)
D. Length from swing pivot to end of arm in TRANSPORT position .. 6.67 m (21ft 11in)
E. Width of upper structure ..... 2.79 m (9ft 2in)
F. Upper structure ground clearance ..... 1.07 m (3ft 6in)
G. Rear swing radius..... 2.72 m (8ft 11in)
H. Track overall length ..... 4.46 m (14ft 8in)
I. Length between centerlines of idler and drive sprocket..... 3.66 m (12ft 0in)
J. Track guage..... 2.39 m (7ft 10in)
K. Track plate width - standard ..... 800 mm (31.5 in)
L. Overall undercarriage width - with (800 mm) shoes ..... 3.19 m (10ft 6in)
M. Minimum ground clearance ..... 0.49 m (1ft 7in)

DIMENSIONS

210 LX Long Front with 6.40 m (21ft 0in) arm

NOTE: *All specifications are taken in accordance with PCSA definitions or SAE Standards or Recommended Practices where applicable.*



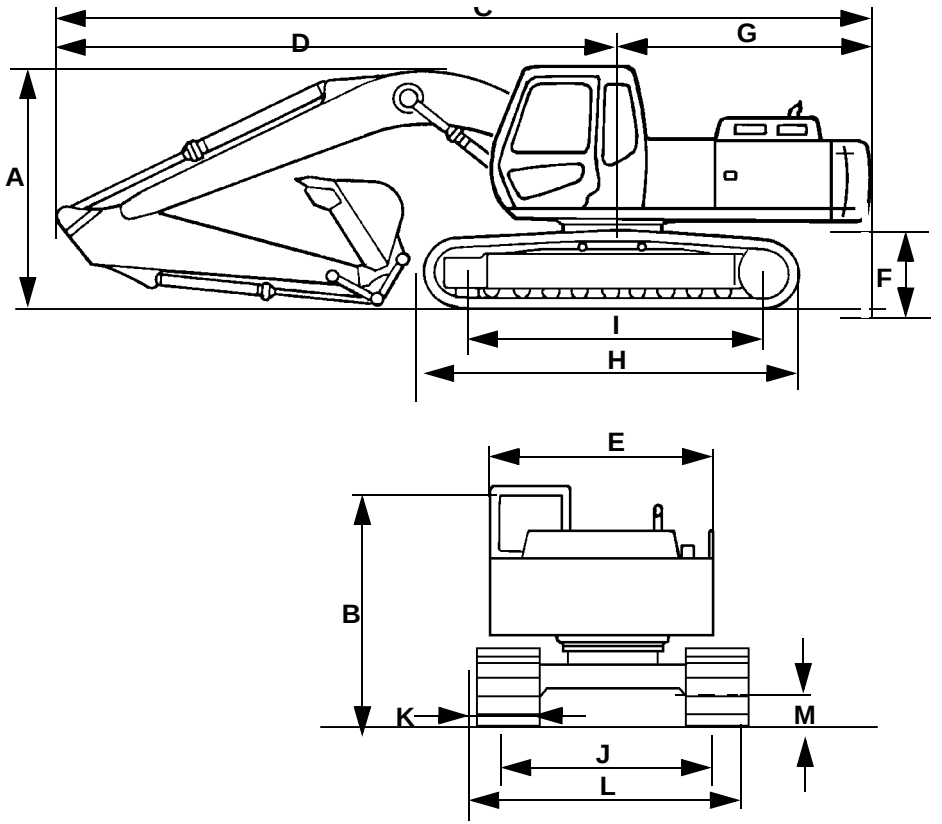


210 LX Long Front with 6.40 m (21ft 0in) arm

A. Overall height - with attachment on the ground ..... 3.00 m (9 ft 10 in)
B. Overall length in TRANSPORT position ..... 12.52 m (41 ft 1 in
Overall length without attachment ..... 5.00 m (16 ft 5 in)
C. Length from swing pivot to end of arm - arm in TRANSPORT POSITION ..... 9.75 m (32 ft 0 in)
D. Length from swing pivot to rear of counterweight ..... 2.80 m (9 ft 2 in)
E. Length between centerlines of idler and drive sprocket..... 3.66 m (12 ft 0 in)
F. Track overall length ..... 4.46 m (14 ft 8 in)
G. Overall width of upper structure ..... 2.50 m (8 ft 2 in)
H. Height to top of cab..... 2.93 m (9 ft 7 in)
J.Minimum ground clearance ..... 0.49 m (1ft 7in)
K.Upper structure ground clearance ..... 1.07 m (3ft 6in)
L.Overall undercarriage width - with 800 mm (31.5 in) shoes..... 3.19 m (10ft 6in)
M.Track plate width ..... 800 mm (31.5in)

DIMENSIONS

240 LX with 2.50 m (8ft 2in) arm

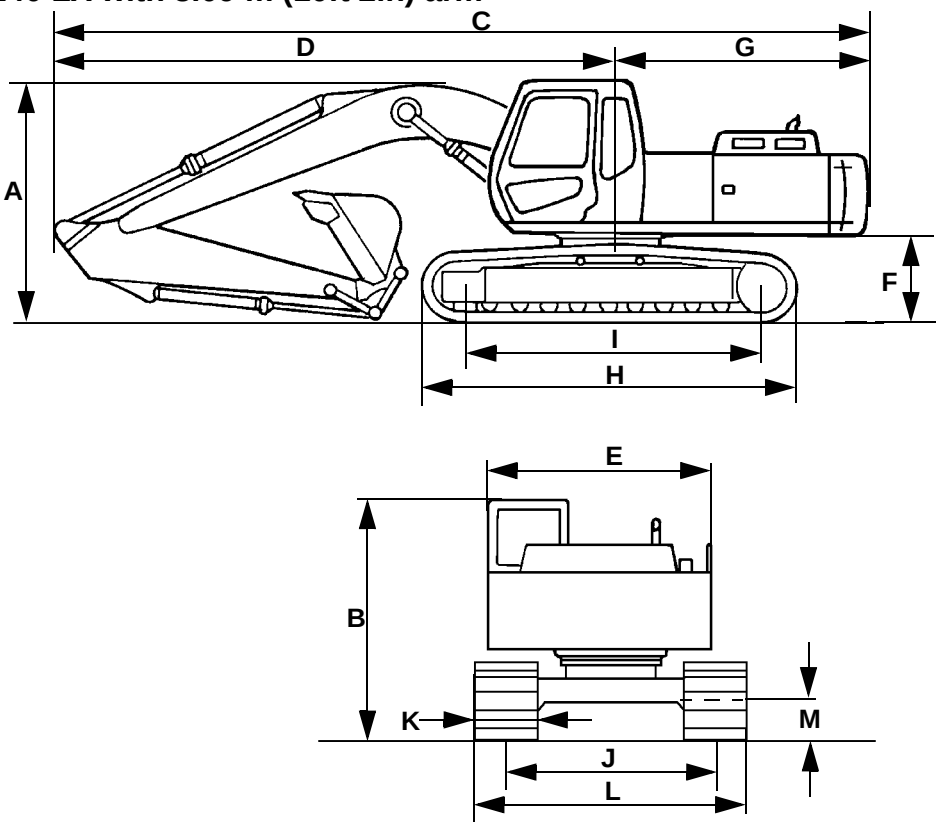


B9408005

A. Overall height - transport ..... 3.31 m (10ft 10in)
B. Cab height with vandal cover .....3.02 m (9ft 11in)
C. Overall length ..... 9.95 m (32ft 8in)
D. Length from swing pivot to end of arm in TRANSPORT position .. 7.05 m (23ft 2in)
E. Width of upper structure ..... 2.79 m (9ft 2in)
F. Upper structure ground clearance ..... 1.13 m (3ft 8n)
G. Rear swing radius..... 2.91 m (9ft 7in)
H. Track overall length ..... 4.64 m (15ft 3in)
I. Length between centerlines of idler and drive sprocket ..... 3.84 m (12ft 7in)
J. Track guage..... 2.59 m (8ft 6in)
K. Track plate width - standard ..... 800 mm (31.5 in)
L. Overall undercarriage width - with (800 mm) shoes .....3.39 m (11ft 1in)
M. Minimum ground clearance ..... 0.49 m (1ft 7in)

DIMENSIONS

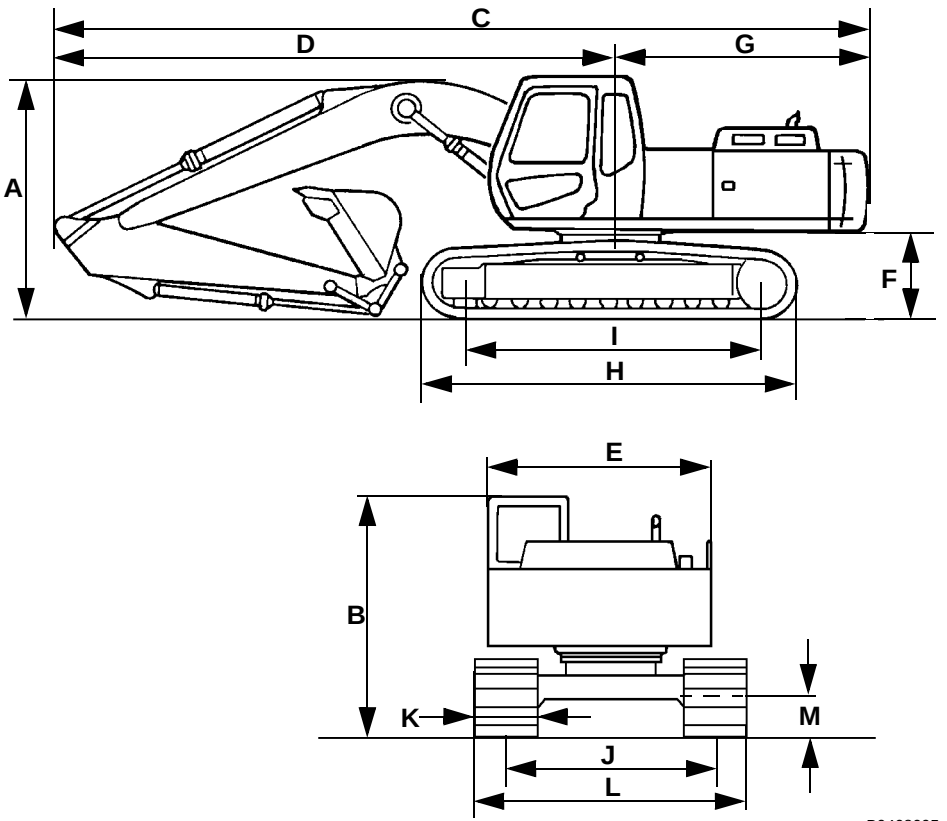
240 LX with 3.09 m (10ft 2in) arm



A. Overall height - transport ..... 3.08 m (10ft 1in)
B. Cab height with vandal cover..... 3.02 m (9ft 11in)
C. Overall length..... 9.88 m (32ft 5in)
D. Length from swing pivot to end of arm in TRANSPORT position .. 6.98 m (22ft 11in)
E. Width of upper structure ..... 2.79 m (9ft 2in)
F. Upper structure ground clearance ..... 1.13 m (3ft 8in)
G. Rear swing radius..... 2.91 m (9ft 7in)
H. Track overall length ..... 4.64 m (15ft 3in)
I. Length between centerlines of idler and drive sprocket..... 3.84 m (12ft 7in)
J. Track guage..... 2.59 m (8ft 6in)
K. Track plate width - standard ..... 800 mm (31.5 in)
L. Overall undercarriage width - with (600 mm) shoes ..... 3.39 m (11ft 1in)
M. Minimum ground clearance ..... 0.49 m (1ft 7in)

DIMENSIONS

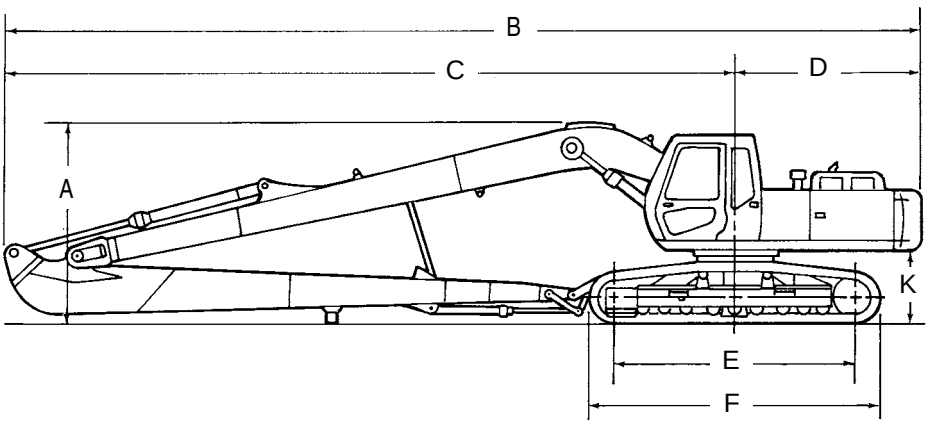
240 LX with 3.52 m (11ft 6in) arm

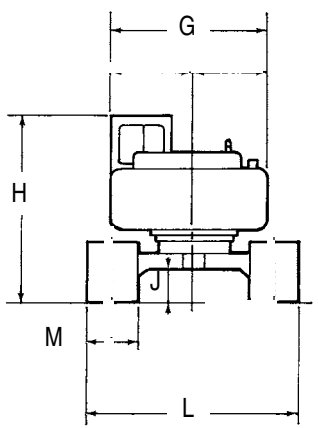


A. Overall height - transport .....3.33 m (10ft 11in)
B. Cab height with vandal cover .....3.02 m (9ft 11in)
C. Overall length ..... 9.91 m (32ft 10in)
D. Length from swing pivot to end of arm in TRANSPORT position .. 7.01 m (23ft 0in)
E. Width of upper structure ..... 2.79 m (9ft 2in)
F. Upper structure ground clearance ..... 1.13 m (3ft 8in)
G. Rear swing radius..... 2.91 m (9ft 7in)
H. Track overall length ..... 4.64 m (15ft 3in)
I. Length between centerlines of idler and drive sprocket ..... 3.84 m (12ft 7in)
J. Track guage..... 2.59 m (8ft 6in)
K. Track plate width - standard ..... 800 mm (31.5 in)
L. Overall undercarriage width - with (800 mm) shoes .....3.39 m (11ft 1in)
M. Minimum ground clearance 0.49m (1ft 7in)

240 LX Long Front with 8.00 m (26ft 3in) arm

NOTE: *All specifications are taken in accordance with PCSA definitions or SAE Standards or Recommended Practices where applicable.*



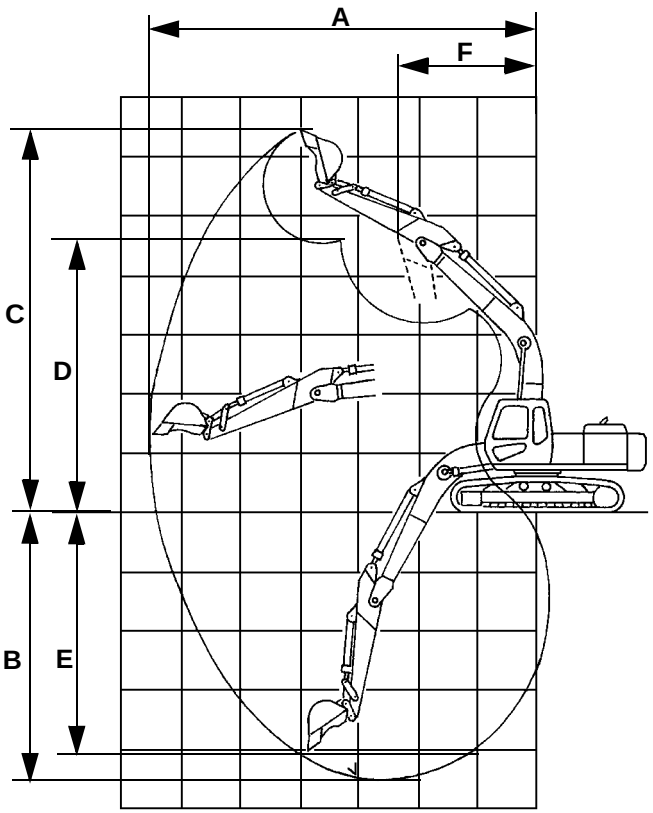


240 LX Long Front with 8.00 m (26ft 3in) arm

A. Overall height - with attachment on the ground ..... 3.00 m (9 ft 10 in)
B. Overall length in TRANSPORT position ..... 12.52 m (41 ft 1 in
Overall length without attachment ..... 5.00 m (16 ft 5 in)
C. Length from swing pivot to end of arm - arm in TRANSPORT POSITION ..... 9.75 m (32 ft 0 in)
D. Length from swing pivot to rear of counterweight ..... 2.80 m (9 ft 2 in)
E. Length between centerlines of idler and drive sprocket ..... 3.66 m (12 ft 0 in)
F. Track overall length ..... 4.46 m (14 ft 8 in)
G. Overall width of upper structure ..... 2.50 m (8 ft 2 in)
H. Height to top of cab ..... 2.93 m (9 ft 7 in)
J.Minimum ground clearance ..... 0.49 m (1ft 7in)
K.Upper structure ground clearance ..... 1.13 m (3ft 8in)
L.Overall undercarriage width - with 800 mm (31.5 in) shoes .....3.39 m (11ft 1in)
M.Track plate width ..... 800 mm (31.5in)

WORKING RANGE

210 LX with 2.40 m (7ft 10in) arm

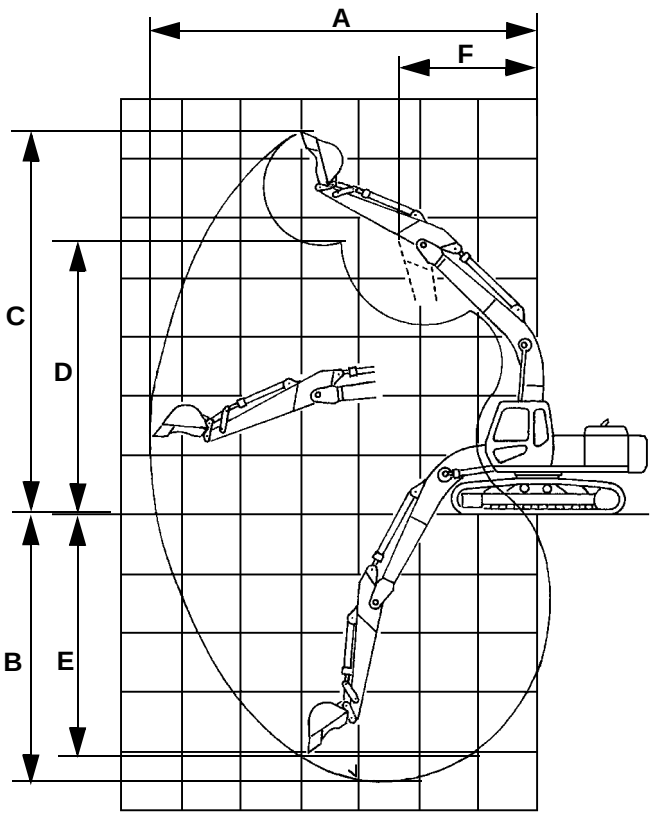


B9409105

A. Maximum dig radius ..... 9.41 m (30ft 10in)
B. Maximum dig depth ..... 6.11 m (20ft 1in)
C. Overall height maximum ..... 9.38 m (30ft 9in)
D. Dump height ..... 6.57 m (21ft 7in)
E. Maximum vertical wall depth ..... 5.48 m (18ft 0in)
F. Minimum swing radius ..... 3.67 m (12ft 0in)

WORKING RANGE

210 LX with 3.00 m (9ft 10in) arm

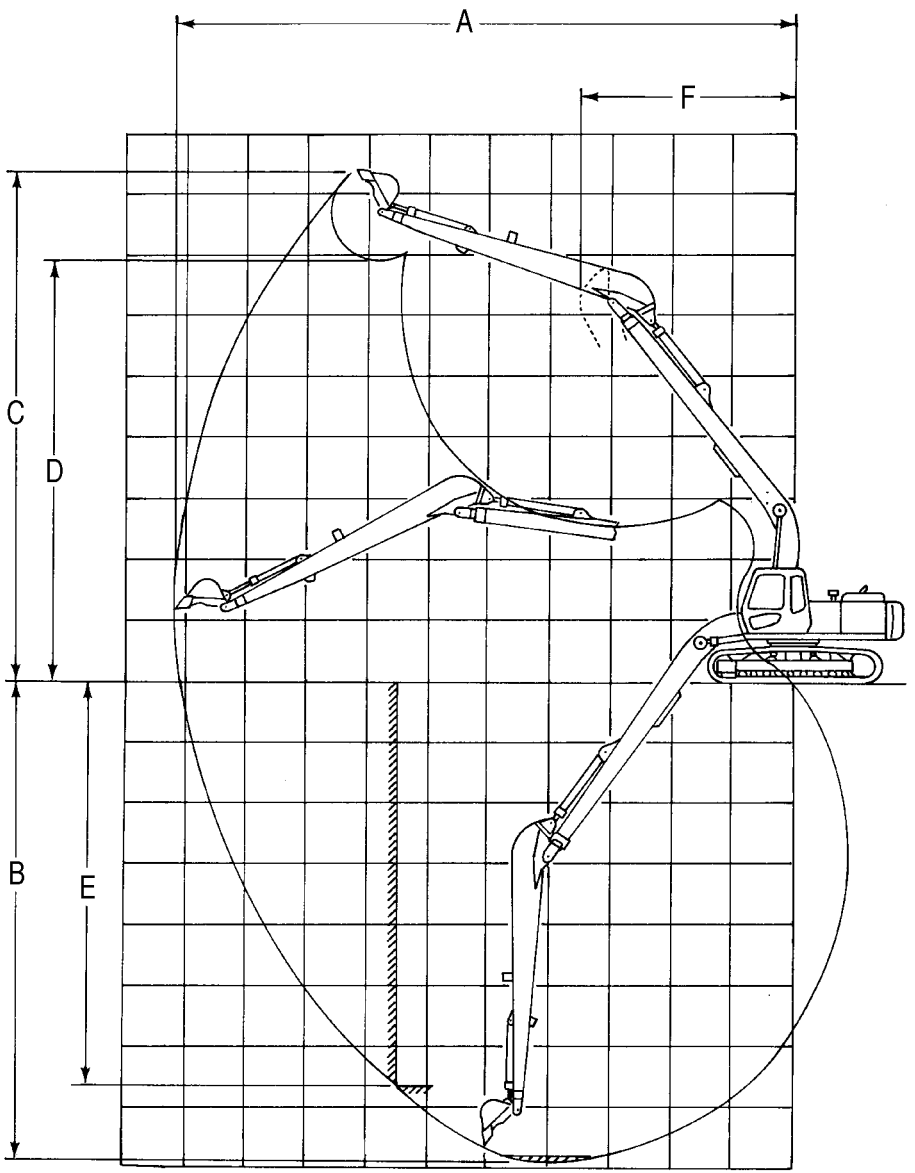


B9409105

A. Maximum dig radius ..... 9.66 m (31ft 8in)
B. Maximum dig depth ..... 6.71 m (22ft 0in)
C. Overall height maximum..... 9.65 m (31ft 8in)
D. Dump height ..... 6.84 m (22ft 5in)
E. Maximum vertical wall depth .....6.08 m (19ft 11in)
F. Minimum swing radius.....3.62 m (11ft 11in)

WORKING RANGE

210 LX Long Front with 6.40 m (21ft 0in) arm



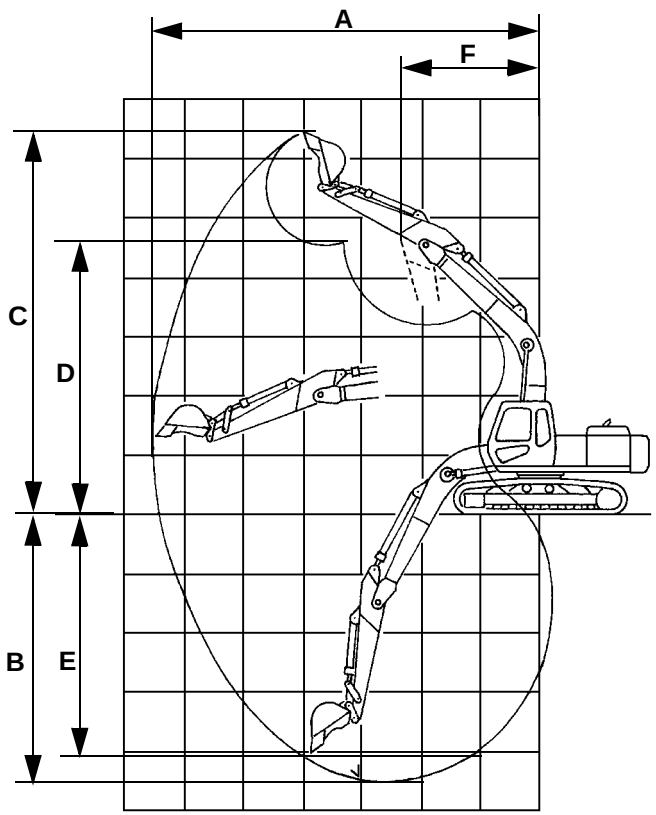
BS01A324

210 LX Long Front with 6.40 m (21ft 0in)

A. Maximum digging radius ..... 15.60 m (51ft 2in)
B. Maximum dig depth ..... 12.0 m (39ft 4in)
C. Overall height maximum ..... 12.97 m (42ft 7in)
D. Dump height ..... 10.73 m (35ft 2in)
E. Maximum vertical wall depth ..... 10.27 m (33ft 8in)
F. Minimum swing radius ..... n/a

WORKING RANGE

240 LX with 2.50 m (8ft 2in) arm

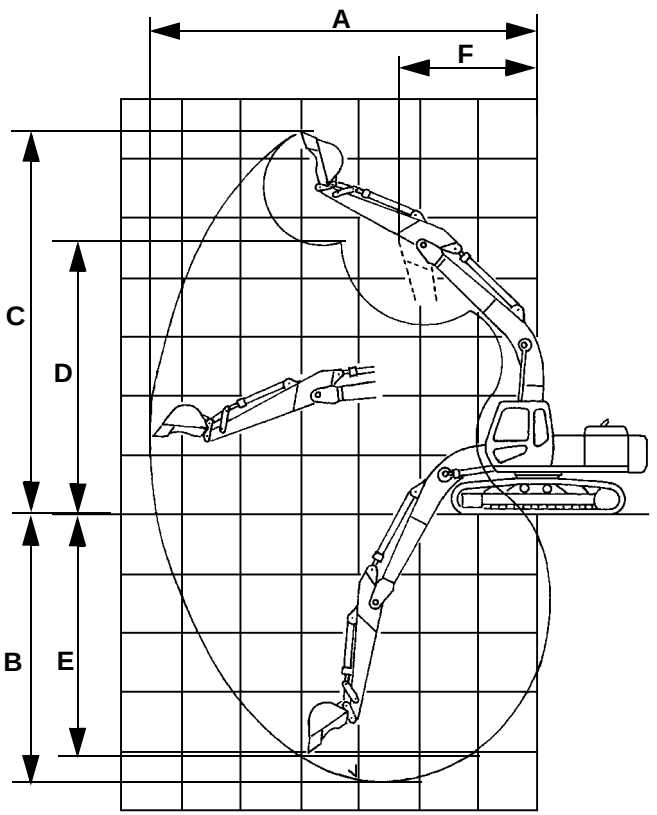


B9409105

A. Maximum dig radius ..... 10.84 m (35ft 7in)
B. Maximum dig depth ..... 7.39 m (24ft 3in)
C. Overall height maximum ..... 10.07 m (33ft 0in)
D. Dump height ..... 7.0 m (23ft 0in)
E. Maximum vertical wall depth ..... 6.66 m (21ft 10in)
F. Minimum swing radius ..... 3.90 m (12ft 10in)

WORKING RANGE

240 LX with 3.09 m (10ft 2in) arm

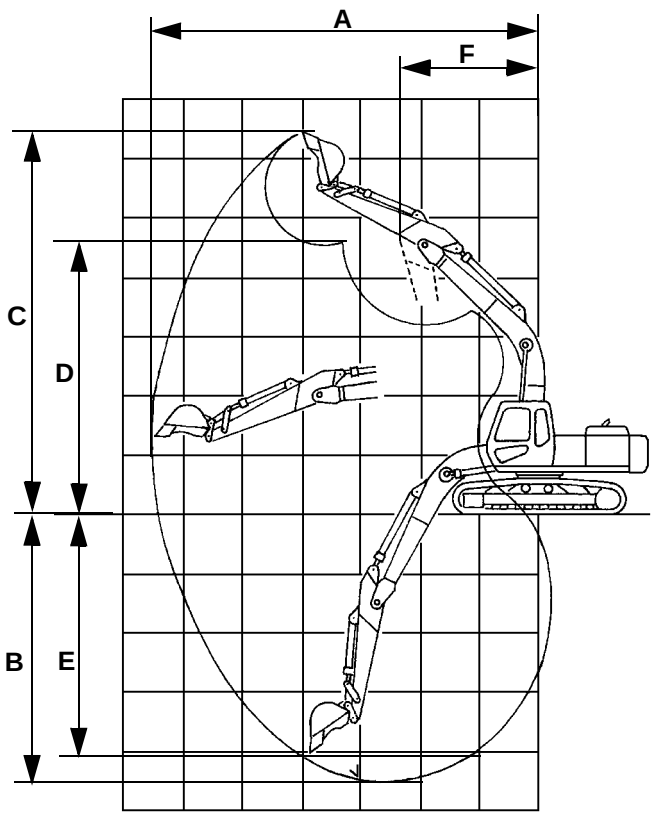


B9409105

A. Maximum dig radius ..... 10.42 m (34ft 2in)
B. Maximum dig depth ..... 6.97 m (22ft 10in)
C. Overall height maximum ..... 9.81 m (32ft 2in)
D. Dump height ..... 6.76 m (22ft 2in)
E. Maximum vertical wall depth ..... 6.21 m (20ft 4in)
F. Minimum swing radius ..... 3.87 m (12ft 8in)

WORKING RANGE

240 LX with 3.52 m (11ft 7in) arm

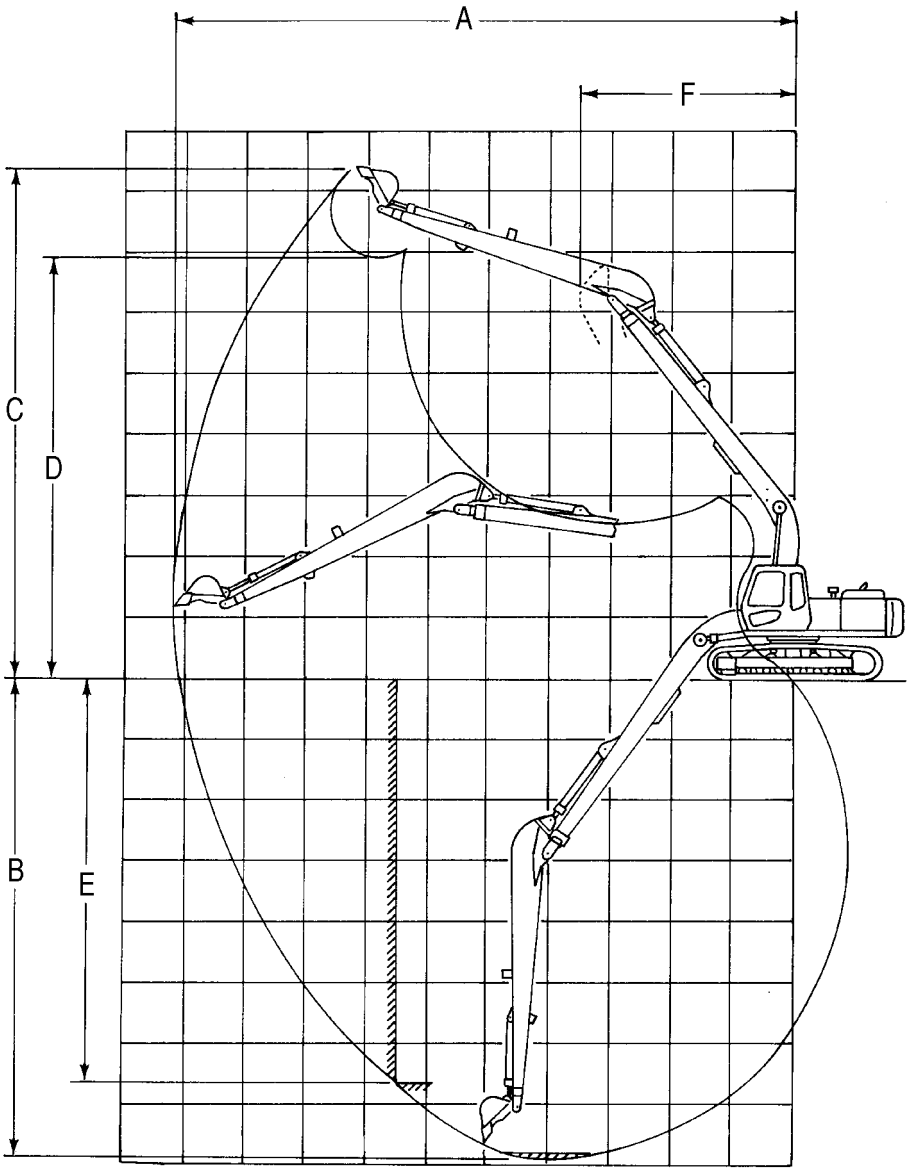


B9409105

A. Maximum dig radius ..... 10.84 m (35ft 7in)
B. Maximum dig depth ..... 7.39 m (24ft 3in)
C. Overall height maximum ..... 10.07 m (33ft 0in)
D. Dump height ..... 7.0 m (23ft 0in)
E. Maximum vertical wall depth ..... 6.66 m (21ft 10in)
F. Minimum swing radius ..... 3.90 m (12ft 10in)

WORKING RANGE

240 LX Long Front with 8.00 m (26ft 3in) arm



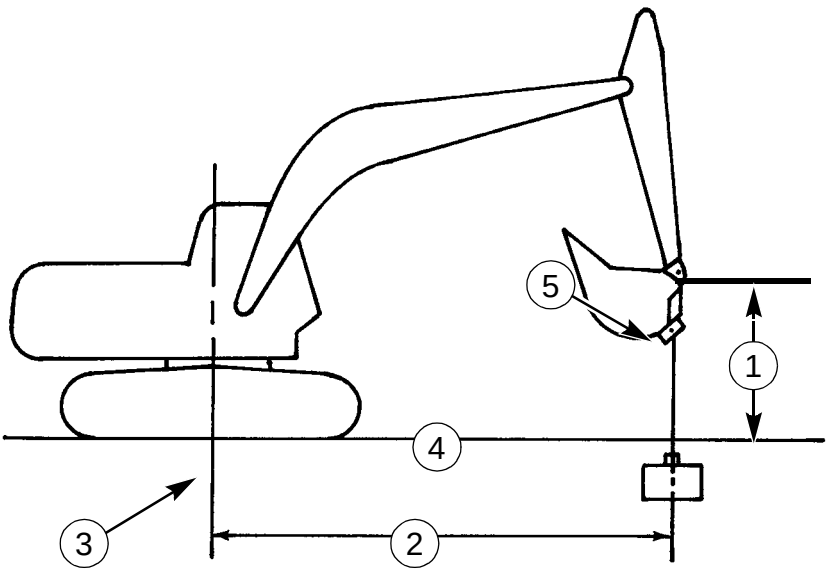
B9409105

240 LX Long Front with 8.00 m (26ft 3in) arm

A. Maximum dig radius ..... 10.84 m (35ft 7in)
B. Maximum dig depth ..... 7.39 m (24ft 3in)
C. Overall height maximum ..... 10.07 m (33ft 0in)
D. Dump height ..... 7.0 m (23ft 0in)
E. Maximum vertical wall depth ..... 6.66 m (21ft 10in)
F. Minimum swing radius ..... 3.90 m (12ft 10in)

LIFTING CAPACITIES

210 LX and 240 LX Excavators



B9408252

1. Load (Lift) Point Height
2. Load (Lift) Point Radius
3. Swing Pivot
4. Ground Line
5. Load (Lift) Point on Bucket

- The lift point is the lifting eye on the back of the bucket.
- The mass of slings and any auxiliary lifting devices shall be deducted from the rated load to determine the net load that may be lifted.
- All rated lift capacities are based on the machine being level and on a firm supporting surface. For safe working loads, the user is expected to make due allowance for the particular job conditions such as soft or uneven ground, non-level conditions, side loads, hazardous conditions, experience of personnel, etc. The operator and other personnel should fully acquaint themselves with the operator's manual furnished by the manufacturer before operating this machine, and rules for safe operation of equipment shall be adhered to at all times.

LIFTING CAPACITIES

210 LX with 2.40 m (7ft 10in) arm

	OVER END				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			10 650*		9 400 * at 22 ft 4 in
15 ft			11 700*		9 400 * at 24 ft 11 in
10 ft	27 850*	17 250*	13 500*	9 950	9 200 at 26 ft 2 in
5 ft		21 000*	13 750	9 650	8 850 at 26 ft 6 in
Ground Level	17 100*	21 400	13 350	9 500	9 050 at 25 ft 10 in
–5 ft	27 800*	21 200	13 200		10 000 at 24 ft 1 in
–10 ft	30 950*	21 400	13 350		12 350 at 21 ft 0 in
–15 ft	24 250*	17 050*			15 850* at 15 ft 11 in

	OVER SIDE				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			9 850		8 050 at 22 ft 4 in
15 ft			9 550		6 500 at 24 ft 11 in
10 ft	26 750	14 100	9 000	6 250	5 800 at 26 ft 2 in
5 ft		13 000	8 500	6 000	5 500 at 26 ft 6 in
Ground Level	17 100*	12 400	8 150	5 850	5 550 at 25 ft 10 in
–5 ft	24 200	12 250	8 000		6 150 at 24 ft 1 in
–10 ft	24 650	12 400	8 100		7 550 at 21 ft 0 in
–15 ft	24 250*	12 950			11 850 at 15 ft 11 in

NOTE: *Excavator lifting capacities.*

1. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
2. Lifting capacities are in compliance with SAE J 1097/ISO 10567.
3. Lifting capacities are based on machine standing level on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground, sudden stopping of loads, or other unfavorable job conditions.
4. Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with asterisk (*) are limited by hydraulic capacities.
5. These capacities apply to machines having 5260psi (36.3MPa) boomhoist cylinder pressure.

6. Least stable position is over the side.
7. Operator should be fully acquainted with the Operator’s Manual furnished by the manufacturer before operating the machine.
8. Capacities apply only to the machine as originally manufactured and normally equipped by LBX COMPANY LLC.

LIFTING CAPACITIES

210 LX with 3.00 m (9ft 10in) arm

	OVER END				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft					6 000 * at 24 ft 7 in
15 ft			10 450*	9 700*	6 050* at 26 ft 10 in
10 ft	23 300*	15 350*	12 350*	10 000	6 350* at 28 ft 1 in
5 ft	18 650*	19 500*	13 850	9 650	6 950* at 28 ft 4 in
Ground Level	18 750*	21 450	13 350	9 400	8 000 at 27 ft 9 in
-5 ft	25 200*	21 050	13 050	9 250	8 700 at 26 ft 1 in
-10 ft	33 000*	21 100	13 100		10 350 at 23 ft 4 in
-15 ft	27 700*	19 250*			14 600* at 18 ft 11 in

	OVER SIDE				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft					6 000* at 24 ft 7 in
15 ft			9 700	6 550	5 700 at 26 ft 10 in
10 ft	23 300*	14 450	9 100	6 300	5 100 at 28 ft 1 in
5 ft	18 650*	13 200	8 550	6 000	4 850 at 28 ft 4 in
Ground Level	18 750*	12 400	8 100	5 750	4 900 at 27 ft 9 in
-5 ft	23 800	12 100	7 850	5 650	5 300 at 26 ft 1 in
-10 ft	24 100	12 150	7 850		6 300 at 23 ft 4 in
-15 ft	24 850	12 500			8 850 at 18 ft 11 in

NOTE: *Excavator lifting capacities.*

1. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
2. Lifting capacities are in compliance with SAE J 1097/ISO 10567.
3. Lifting capacities are based on machine standing level on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground, sudden stopping of loads, or other unfavorable job conditions.
4. Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with asterisk (*) are limited by hydraulic capacities.

5. These capacities apply to machines having 5260psi (36.3MPa) boomhoist cylinder pressure.
6. Least stable position is over the side.
7. Operator should be fully acquainted with the Operator's Manual furnished by the manufacturer before operating the machine.
8. Capacities apply only to the machine as originally manufactured and normally equipped by LBX COMPANY LLC.

210 LX Long Front 6.40 m (21ft 0in) arm LIFTING CAPACITIES

	OVER END					Unit-lb
Load (Lift) Point Height	Load Radius					
	10 ft	15 ft	20 ft	25 ft	30 ft	Maximum
35 ft						see below
30 ft						see below
25 ft						see below
20 ft						see below
15 ft					4 900*	see below
10 ft				6 750*	5 900*	see below
5 ft	11 500*	14 600*	10 250*	8 050*	6 750*	see below
Ground Level	9 500*	17 500*	12 100*	9 250*	7 600*	see below
-5 ft	10 900*	19 150*	13 350	9 600	7 300	see below
-10 ft	13 100*	19 850*	12 900	9 250	7 050	see below
-15 ft	15 800*	19 850*	12 750	9 050	6 900	see below
-20 ft	18 850*	19 250*	12 800	9 050	6 900	see below
-25 ft	22 400*	18 000*	13 300	9 200	7 000	see below
-30 ft	22 450*	15 850*	12 100*	9 500	7 300	see below
-35 ft		12 350*	9 450*			see below

	OVER END					Unit-lb
Load (Lift) Point Height	Load Radius					
	35 ft	40 ft	45 ft			Maximum
30 ft		1 250*				850* at 40 ft 11 in
25 ft		2 200*				800* at 43 ft 6 in
20 ft	3 650*	2 800*	1 000*			800* at 45 ft 5 in
15 ft	4 350*	3 400*	1 750*			800* at 46 ft 8 in
10 ft	5 350*	4 050*	2 200*			900* at 47 ft 4 in
5 ft	5 950*	4 750*	2 550*			950* at 47 ft 6 in
Ground Level	6 050	4 850	2 600*			1 100* at 47 ft 2 in
-5 ft	5 800	4 650	2 300*			1 300* at 46 ft 3 in
-10 ft	5 600	4 550				1 550* at 44 ft 9 in
-15 ft	5 500	4 500				1 900* at 42 ft 7 in
-20 ft	5 500					2 550* at 39 ft 9 in
-25 ft	5 400*					3 650* at 35 ft 11 in
-30 ft						6 200* at 30 ft 10 in
-35 ft						7 700* at 23 ft 9 in

NOTE: Capacities that are marked with an asterisk (*) are limited by hydraulic capacities.

210 LX Long Front

	OVER SIDE					Unit-lb
Load (Lift) Point Height	Load Radius					
	10 ft	15 ft	20 ft	25 ft	30 ft	Maximum
35 ft						see below
30 ft						see below
25 ft						see below
20 ft						see below
15 ft					4 900*	see below
10 ft				6 750*	5 550	see below
5 ft	11 500*	14 250	9 450	6 800	5 050	see below
Ground Level	9 500*	12 500	8 450	6 150	4 650	see below
-5 ft	10 900*	11 600	7 750	5 650	4 300	see below
-10 ft	13 100*	11 250	7 350	5 350	4 050	see below
-15 ft	15 800*	11 200	7 200	5 200	3 950	see below
-20 ft	18 850*	11 350	7 250	5 150	3 900	see below
-25 ft	22 400*	11 700	7 450	5 300	4 050	see below
-30 ft	22 450*	12 250	7 800	5 600	4 300	see below
-35 ft		12 350*	8 400			see below

	OVER SIDE					Unit-lb
Load (Lift) Point Height	Load Radius					
	35 ft	40 ft	45 ft			Maximum
30 ft		1 250*				850* at 40 ft 11 in
25 ft		2 200*				800* at 43 ft 6 in
20 ft	3 650*	2 800*	1 000*			800* at 45 ft 5 in
15 ft	4 350*	3 400*	1 750*			800* at 46 ft 8 in
10 ft	4 200	3 200	2 200*			900* at 47 ft 4 in
5 ft	3 850	3 000	2 300			950* at 47 ft 6 in
Ground Level	3 600	2 800	2 200			1 100* at 47 ft 2 in
-5 ft	3 350	2 650	2 100			1 300* at 46 ft 3 in
-10 ft	3 150	2 500				1 550* at 44 ft 9 in
-15 ft	3 100	2 500				1 900* at 42 ft 7 in
-20 ft	3 100					2 550* at 39 ft 9 in
-25 ft	3 200					3 100 at 35 ft 11 in
-30 ft						4 150 at 30 ft 9 in
-35 ft						6 550 at 23 ft 9 in

NOTE: Capacities that are marked with an asterisk (*) are limited by hydraulic capacities.

LIFTING CAPACITIES

240 LX with 2.50 m (8ft 2in) arm

	OVER END				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			11 750*		10 750* at 23 ft 4 in
15 ft			13 000*	12 000*	10 900* at 25 ft 9 in
10 ft		19 550*	15 000*	11 750	10 300 at 27 ft 0 in
5 ft		23 550*	16 250	11 350	9 850 at 27 ft 3 in
Ground Level	19 300*	25 450	15 700	11 050	10 050 at 26 ft 7 in
–5 ft	32 200*	25 250	15 450		11 050 at 24 ft 11 in
–10 ft	33 300*	23 500*	15 600		13 550 at 21 ft 11 in
–15 ft	25 800*	18 550*			16 000* at 17 ft 1 in

	OVER SIDE				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			11 750*		9 200 at 23 ft 4 in
15 ft			11 700	7 900	7 500 at 25 ft 9 in
10 ft		17 250	10 950	7 550	6 600 at 27 ft 0 in
5 ft		15 750	10 200	7 200	6 250 at 27 ft 3 in
Ground Level	19 300*	15 000	9 700	6 950	6 300 at 26 ft 7 in
–5 ft	30 300	14 800	9 500		6 900 at 24 ft 11 in
–10 ft	30 850	15 000	9 650		8 450 at 21 ft 11 in
–15 ft	25 800*	15 650			12 900 at 17 ft 1 in

NOTE: *Excavator lifting capacities.*

1. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
2. Lifting capacities are in compliance with SAE J 1097/ISO 10567.
3. Lifting capacities are based on machine standing level on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground, sudden stopping of loads, or other unfavorable job conditions.
4. Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with asterisk (*) are limited by hydraulic capacities.
5. These capacities apply to machines having 5260psi (36.3MPa) boomhoist cylinder pressure.

6. Least stable position is over the side.
7. Operator should be fully acquainted with the Operator’s Manual furnished by the manufacturer before operating the machine.
8. Capacities apply only to the machine as originally manufactured and normally equipped by LBX COMPANY LLC.

LIFTING CAPACITIES

240 LX with 3. 09 M (10ft 2in) Arm

	OVER END				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
25 ft					7 400* at 21 ft 10 in
20 ft				8 000*	7 050* at 25 ft 5 in
15 ft			11 650*	10 900*	7 100* at 27 ft 7 in
10 ft	27 650*	17 550*	13 800*	11 800	7 500* at 28 ft 9 in
5 ft	19 950*	22 050*	16 050*	11 350	8 250* at 29 ft 0 in
Ground Level	21 600*	24 850*	15 700	11 000	8 950 at 28 ft 5 in
–5 ft	29 600*	25 150	15 350	10 800	9 700 at 26 ft 10 in
–10 ft	35 900*	24 450*	15 350		11 500 at 24 ft 1 in
–15 ft	29 800*	20 850*			15 050* at 19 ft 9 in

	OVER SIDE				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
25 ft					7 400* at 21 ft 10 in
20 ft				8 000*	7 050* at 25 ft 5 in
15 ft			11 650*	8 000	6 600 at 27 ft 7 in
10 ft	27 650*	17 550*	11 150	7 600	5 900 at 28 ft 9 in
5 ft	19 950*	16 150	10 350	7 200	5 550 at 29 ft 0 in
Ground Level	21 600*	15 100	9 700	6 850	5 600 at 28 ft 5 in
–5 ft	29 600*	14 700	9 400	6 700	6 050 at 26 ft 10 in
–10 ft	30 350	14 750	9 400		7 150 at 24 ft 1 in
–15 ft	29 800*	15 200			9 950 at 19 ft 9 in

NOTE: *Excavator lifting capacities.*

1. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
2. Lifting capacities are in compliance with SAE J 1097/ISO 10567.
3. Lifting capacities are based on machine standing level on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground, sudden stopping of loads, or other unfavorable job conditions.
4. Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with asterisk (*) are limited by hydraulic capacities.

5. These capacities apply to machines having 5260psi (36.3MPa) boomhoist cylinder pressure.
6. Least stable position is over the side.
7. Operator should be fully acquainted with the Operator's Manual furnished by the manufacturer before operating the machine.
8. Capacities apply only to the machine as originally manufactured and normally equipped by LBX COMPANY LLC.

LIFTING CAPACITIES

240 LX with 3.52 M (11ft 7in) Arm

	OVER END				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			10 650*		9 400 * at 22 ft 4 in
15 ft			11 700*		9 400 * at 24 ft 11 in
10 ft	27 850*	17 250*	13 500*	9 950	9 200 at 26 ft 2 in
5 ft		21 000*	13 750	9 650	8 850 at 26 ft 6 in
Ground Level	17 100*	21 400	13 350	9 500	9 050 at 25 ft 10 in
–5 ft	27 800*	21 200	13 200		10 000 at 24 ft 1 in
–10 ft	30 950*	21 400	13 350		12 350 at 21 ft 0 in
–15 ft	24 250*	17 050*			15 850* at 15 ft 11 in

	OVER SIDE				Unit-lb
Load (Lift) Point Height	Load Radius				
	10 ft	15 ft	20 ft	25 ft	Maximum
20 ft			9 850		8 050 at 22 ft 4 in
15 ft			9 550		6 500 at 24 ft 11 in
10 ft	26 750	14 100	9 000	6 250	5 800 at 26 ft 2 in
5 ft		13 000	8 500	6 000	5 500 at 26 ft 6 in
Ground Level	17 100*	12 400	8 150	5 850	5 550 at 25 ft 10 in
–5 ft	24 200	12 250	8 000		6 150 at 24 ft 1 in
–10 ft	24 650	12 400	8 100		7 550 at 21 ft 0 in
–15 ft	24 250*	12 950			11 850 at 15 ft 11 in

NOTE: Capacities that are marked with an asterisk (*) are limited by hydraulic capacities.

NOTE: *Excavator lifting capacities.*

1. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
2. Lifting capacities are in compliance with SAE J 1097/ISO 10567.
3. Lifting capacities are based on machine standing level on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground, sudden stopping of loads, or other unfavorable job conditions.

4. Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with asterisk (*) are limited by hydraulic capacities.
5. These capacities apply to machines having 5260psi (36.3MPa) boomhoist cylinder pressure.
6. Least stable position is over the side.
7. Operator should be fully acquainted with the Operator's Manual furnished by the manufacturer before operating the machine.
8. Capacities apply only to the machine as originally manufactured and normally equipped by LBX COMPANY LLC.

240 LX Long Front with 8.00 m (26ft 3in) arm

	OVER END					Unit-lb
Load (Lift) Point Height	Load Radius					
	10 ft	15 ft	20 ft	25 ft	30 ft	Maximum
35 ft						see below
30 ft						see below
25 ft						see below
20 ft						see below
15 ft						see below
10 ft					5 690*	see below
5 ft		15 100*	10 400*	7 980*	6 530*	see below
Ground Level		15 530*	12 140*	9 130*	7 330*	see below
-5 ft		13 800*	13 390*	10 060*	8 010*	see below
-10 ft		14 390*	14 160*	10 730*	8 540*	see below
-15 ft		15 930*	14 520*	10 880	8 330	see below
-20 ft		18 050*	14 500*	10 730	8 180	see below
-25 ft		18 990*	14 140*	10 740	8 160	see below
-30 ft		15 850*	12 100*	9 500	7 300	see below

	OVER END					Unit-lb
Load (Lift) Point Height	Load Radius					
	35 ft	40 ft	45 ft	50 ft	55 ft	Maximum
30 ft			2 350*	1 400*		1 050*
25 ft			2 730*	1 960*		1 050*
20 ft			3 140*	2 400*		1 070*
15 ft	*	4 090*	3 630*	2 820*	1 450*	1 130*
10 ft	4 990*	4 500*	4 130*	3 240*	1 780*	1 200*
5 ft	5 580*	4 920*	4 440*	3 680*	1 990*	1 310*
Ground Level	6 150*	5 340*	4 750*	4 090*	2 060*	1 450*
-5 ft	6 660*	5 720*	4 840*	4 020*	1 890*	1 640*
-10 ft	6 890	5 620	4 650	3 890		1 890*
-15 ft	6 650	5 430	4 520	3 810		2 240*
-20 ft	6 510	5 330	4 460	2 840*		2 730*
-25 ft	6 490	5 330	4 480			3 480*
-30 ft	6 580	5 420				4 730*

NOTE: Capacities that are marked with an asterisk (*) are limited by hydraulic capacities.

240 LX Long Front with 8.00 m (26ft 3in) arm

	OVER SIDE					Unit-lb
Load (Lift) Point Height	Load Radius					
	10 ft	15 ft	20 ft	25 ft	30 ft	Maximum
35 ft						see below
30 ft						see below
25 ft						see below
20 ft						see below
15 ft						see below
10 ft					5 690*	see below
5 ft		15 100*	10 400*	7 980*	6 530*	see below
Ground Level		15 530*	10 730	7 940	6 090	see below
-5 ft		13 800*	9 620	7 130	5 510	see below
-10 ft		13 560	8 960	6 580	5 080	see below
-15 ft		13 360	8 640	6 260	4 800	see below
-20 ft		13 440	8 550	6 120	4 650	see below
-25 ft		13 720	8 650	6 130	4 630	see below
-30 ft		14 190	8 900	6 280	4 730	see below

	OVER SIDE					Unit-lb
Load (Lift) Point Height	Load Radius					
	35 ft	40 ft	45 ft	50 ft	55 ft	Maximum
30 ft			2 350*	1 400*		1 050*
25 ft			2 730*	1 960*		1 050*
20 ft			3 140*	2 400*		1 070*
15 ft		4 090*	3 630*	2 820*	1 450*	1 130*
10 ft	4 990*	4 500*	3 510	2 730	1 780*	1 200*
5 ft	5 260	4 120	3 240	2 550	1 970	1 310*
Ground Level	4 760	3 770	2 990	2 360	1 850	1 450*
-5 ft	4 340	3 460	2 760	2 210	1 750	1 640*
-10 ft	4 010	3 210	2 580	2 080		1 740
-15 ft	3 790	3 040	2 460	2 010		1 820
-20 ft	3 660	2 940	2 400	1 990		1 980
-25 ft	3 640	2 940	2 420			2 250
-30 ft	3 720	3 030				2 680

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