Mega 400-III PLUS

Shop Manual

4023-7130E

Serial Number 1001 and Up

Daewoo reserves the right to improve our products in a continuing process to provide the best possible product to the market place. These improvements can be implemented at any time with no obligation to change materials on previously sold products. It is recommended that consumers periodically contact their distributors for recent documentation on purchased equipment.

This documentation may include attachments and optional equipment that is not available in your machine's package. Please call your distributor for additional items that you may require.

Illustrations used throughout this manual are used only as a representation of the actual piece of equipment, and may vary from the actual item.

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TO THE OPERATOR OF A DAEWOO WHEEL LOADER

DANGER!

Improper use of wheel loader could cause serious injury or death. Before operating wheel loader, or performing maintenance, operator or technician must read and understand entire Operation and Maintenance Manual.

Any operation, maintenance, traveling or shipping methods that do not follow safety guidelines printed in this Manual could cause serious injury or death.

Please respect the importance of taking responsibility for your own safety, and that other people who may be affected by your actions.

Safety information on the following pages is organized into the following topics.

SAFETY ALERT SYMBOL

Be Prepared – Get to Know All Operating and Safety Instructions

This is the Safety Alert Symbol. Wherever it appears – in this manual or on safety signs on the machine – you should be alert to potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.

LEARN SIGNAL WORDS USED WITH SAFETY ALERT SYMBOL

Words “**CAUTION**,” “**WARNING**,” and “**DANGER**” used throughout this manual and on labels on machine indicate hazards or unsafe practices. All three statements indicate that safety is involved. Observe precautions indicated whenever you see the Safety Alert “Triangle,” no matter which signal word appears next to the “Exclamation Point” symbol.

CAUTION!

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used to alert against a generally unsafe practice.

⚠ WARNING!

Indicates a hazardous situation that, if not avoided, could result in serious injury or death. It may also be used to alert against a highly unsafe practice.

⚠ DANGER!

Indicates a hazardous situation that, if not avoided, is very likely to cause death or extremely serious injury. It may also be used to alert against equipment that may explode or detonate if handled or treated carelessly.

GENERAL SAFETY ESSENTIALS

ACCESSORY APPLICATIONS

Wheel loader has been designed primarily for moving earth with a bucket. For use as a grapple or for other object handling, contact Daewoo. Lifting-work applications are permitted in approved lift configuration, to rated capacity only, with no side-loading (unless prohibited by local regulation). Do not use machine for activities for which it was not intended. Do not use bucket for lifting work, unless lift slings are used in approved configuration.

LOCATION OF SAFETY LABELS

Location of safety labels (decals) can vary from unit to unit. Refer to appropriate Operation and Maintenance Manual, and Parts Manual for your unit.

Always replace damaged or faded decals.

UNAUTHORIZED MODIFICATIONS

IMPORTANT

If you need more information or have any questions or concerns about safe operating procedures or working wheel loader correctly in a particular application or in specific conditions of your individual operating environment, please consult your local Daewoo representative.

Any modification made without authorization or written approval from Daewoo can create a safety hazard, for which machine owner must be held responsible.

For safety's sake, replace all OEM parts with correct authorized or genuine Daewoo part. For example, not taking time to replace fasteners, bolts or nuts with correct replacement parts could lead to a condition in which safety of critical assemblies is dangerously compromised.

WORK-SITE PRECAUTIONS

ATTACHMENT PRECAUTIONS

Options kits are available through your dealer. Contact Daewoo for information on available one-way (single-acting) and two-way (double-acting) piping/valving/ auxiliary control kits. Because Daewoo cannot anticipate, identify or test all attachments that owners may wish to install on their machines, please contact Daewoo for authorization and approval of attachments, and their compatibility with options kits.

AVOID HIGH-VOLTAGE CABLES

Serious injury or death can result from contact or proximity to high-voltage electric lines. The bucket does not have to make physical contact with power lines for current to be transmitted.

Use a spotter and hand signals to stay away from power lines not clearly visible to operator.

VOLTAGE	MINIMUM SAFE DISTANCE
6.6kV	3 m (9' - 10")
33.0kV	4 m (13' - 1")
66.0kV	5 m (16' - 5")
154.0kV	8 m (26' - 3")
275.0kV	10 m (32' - 10")

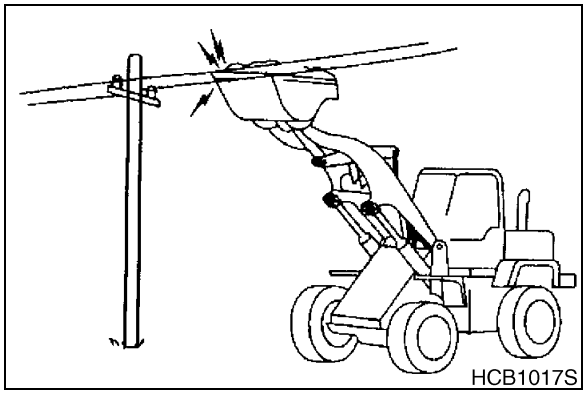

Figure 1

Use these minimum distances as a guideline only. Depending upon voltage in line and atmospheric conditions, strong current shocks can occur with boom or bucket as far away as 4 - 6 m (13 - 20 ft) from power line. Very high voltage and rainy weather could further decrease that safety margin.

NOTE: *Before starting any type of operation near power lines (either above ground or buried cable-type) you should always contact power utility directly and work out a safety plan with them.*

BEFORE STARTING TO DIG, CONTACT AUTHORITIES

Below ground hazards also include natural gas lines, water mains, tunnels and buried foundations. Know what's underneath work site before starting to dig.

BE AWARE OF HEIGHT OBSTACLES

Any type of object in vicinity of boom could represent a potential hazard, or cause operator to react suddenly and cause an accident. Use a spotter or signal person working near bridges, phone lines, work site scaffolds, or other obstructions.

USE CARE ON LOOSE SUPPORT

Working heavy loads over loose, soft ground or uneven, broken terrain can cause dangerous side load conditions and possible tipover and injury. Travel without a load or balanced load may also be hazardous.

If temperatures are changing, be cautious of dark and wet patches when working or traveling over frozen ground. Stay away from ditches, overhangs and all other weak support surfaces. Halt work and install support mats or blocking if work is required in an area of poor support.

USE SOLID SUPPORT BLOCKING

Never rely on lift jacks or other inadequate supports when work is being done. Block wheels fore and aft to prevent any movement.

DIGGING BENEATH OVERHANGS

Digging beneath an overhang is dangerous. Overhand could collapse on top of operator and cause serious injury or death. Go on to another digging area before steep overhangs are formed. Know height and reach limits of wheel loader and plan ahead while working. Park wheel loader away from overhangs before work shutdown.

DIGGING BENEATH WHEEL LOADER

Digging beneath wheel loader is dangerous. Earth beneath could collapse. This could cause wheel loader to tip, which could cause serious injury or death to operator. Working around deep pits, trenching or along high walls may require support blocks, especially after heavy rainfalls or during spring thaws.

SLOPING TERRAIN REQUIRES CAUTION

Dig evenly around work site whenever possible, trying to gradually level any existing slope. If it's not possible to level area or avoid working on a slope, reducing size and cycling rate workload is recommended.

On sloping surfaces, use caution when positioning wheel loader prior to starting a work cycle. Stay alert for instability situations in order to avoid getting into them. For example, you should always avoid working bucket over downhill side of machine when parked perpendicular to slope. Avoid full extensions of bucket in a downhill direction. Lifting bucket too high, too close to machine, while wheel loader is turned uphill can also be hazardous.

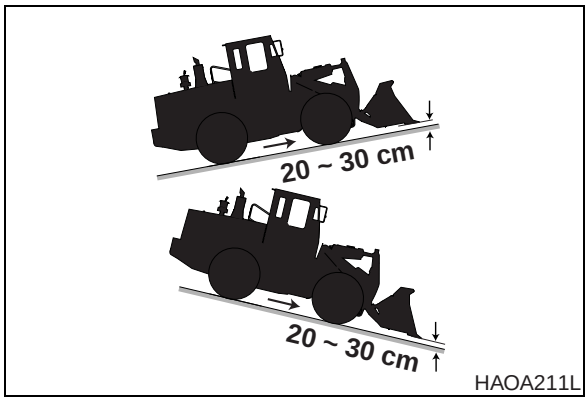

Figure 2

STAY ALERT FOR PEOPLE MOVING THROUGH WORK AREA

When loading a truck you should always know where the driver is.

Avoid loading over the cab of a truck even if the driver is in a safe spot. Someone else could have gone inside, for any number of reasons. Avoid working where unseen passersby might be.

Slow down work cycle and use slower travel speeds in congested or populated areas. Use a commonly understood signal so that other members of work crew can warn operator to slow or halt work in an impending hazardous situation.

Figure 3

BE AWARE OF AND CONFORM TO LOCAL REGULATIONS

Minimum levels of insurance coverage, work permits or certification, physical barriers around work-site or restricted hours of operation may be mandated by governing authorities. There may also be guidelines, standards or restrictions on equipment that may be used to perform certain kinds of work. Check and follow all local requirements, which may also be related to below ground hazards and power lines.

OPERATION

OPERATE WHILE SEATED AT OPERATOR'S STATION ONLY

Never reach in through a window to work a control. Do not try to operate wheel loader unless you're in command position – seated at controls. You should stay alert and focused on your work at all times but Do not twist out of seat if job activity behind you (or to the side) requires your attention.

Use a spotter or signal person if you can't see clearly and something is happening behind you.

Replace damaged safety labels and lost or damaged operator's manuals.

Do not let anyone operate machine unless they've been fully and completely trained, in safety and in operation of the machine.

Figure 4

BEFORE STARTING ENGINE, DO A “PRE-START” SAFETY CHECK:

- Walk around your machine before getting in operator’s cab. Look for evidence of leaking fluid, loose fasteners, misaligned assemblies or any other indications of possible equipment hazard.
- All equipment covers and machinery safety guards must be in place, to protect against injury while machine is being operated.
- Look around work site area for potential hazards, or people or property that could be at risk while operation is in progress.
- Never start engine if there is any indication that maintenance or service work is in progress, or if a warning tag is attached to controls in cab.
- A machine that has not been used recently, or is being operated in extremely cold temperatures, could require a warm-up or maintenance service prior to start up.
- Check gauges and monitor displays for normal operation prior to starting engine. Listen for unusual noises and remain alert for other potentially hazardous conditions at start of work cycle.
- Check tire inflation and check tires for damage or uneven wear. Perform maintenance before operation.

NEVER USE ETHER STARTING AIDS

An electric-grid type manifold heater is used for cold starting. Glowing heater element can cause ether or other starting fluid to detonate, causing injury.

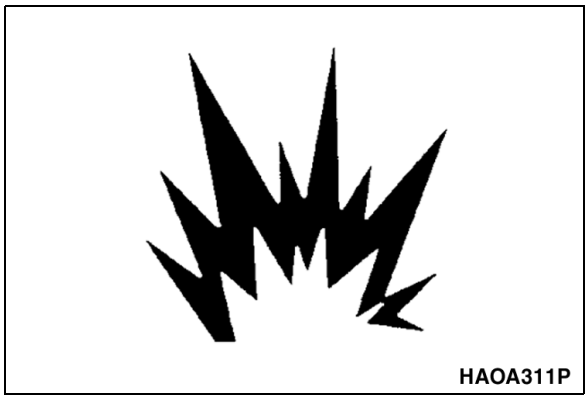

Figure 5

MOUNTING AND DISMOUNTING

Never get on or off a moving machine. Do not jump on/off. Entry/egress path should be clear of mud, oil and spills and mounting hardware must be kept tight and secure.

Always use handholds or steps and maintain at least 3-point contact of hands and feet. Never use controls as handholds.

Never get up from operator’s seat or leave operator’s station and dismount machine if engine is running.

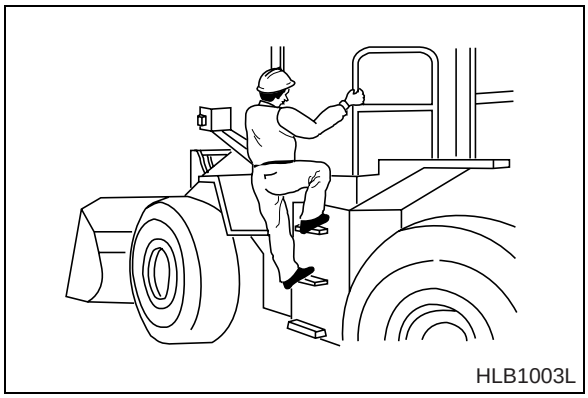

Figure 6

OBSERVE GENERAL SAFETY RULES

Only trained and authorized personnel, with a good knowledge and awareness of safe procedures, may be allowed to operate or perform maintenance or service on wheel loader.

All personnel at work site should be aware of assigned individual responsibilities and tasks. Communication and hand signals used should be understood by everyone.

Terrain and soil conditions at job site, approaching traffic, weather-related hazards and any above or below ground obstacles or hazards should be observed and monitored by all work crew members.

ENGINE VENTILATION

Engine exhaust gases can cause loss of judgment, loss of alertness, and loss of motor control. These gases can also cause unconsciousness, serious injury and fatal accidents.

Make sure of adequate ventilation before starting engine in any enclosed area.

You should also be aware of open windows, doors or ductwork into which exhaust may be carried, or blown by wind, exposing others to danger.

Figure 7

ASBESTOS DUST HAZARD PREVENTION

Asbestos dust can be HAZARDOUS to your health if it is inhaled.

If you handle materials containing asbestos fibers, follow these guidelines as given below:

- Never use compressed air for cleaning
- Use water for cleaning to keep down the dust.
- Work on the machine or component with the wind at your back whenever possible.
- Use an approved respirator.

TAKE TIME TO PROVIDE GOOD VISIBILITY

Halt work if visibility is poor. Strong rains, snow, fog and extremely dusty conditions can all obscure visibility so badly that it is best to wait for weather to change or dust to settle before continuing operation.

Night work in areas of limited visibility should be halted if installation of extra work lights on machine (or work area) is necessary.

Keep dirt and dust off of windows and off lens surfaces of work lights. Stop working if lights, windows or mirrors need cleaning or adjustment.

FUEL, OIL AND HYDRAULIC FLUID FIRE HAZARDS

Add fuel, oil, antifreeze and hydraulic fluid to machine only in a well ventilated area. Machine must be parked with controls, lights and switches turned "OFF." Engine must be "OFF" and any flames, glowing embers, auxiliary heating units or spark-causing equipment must be doused, turned "OFF" and/or kept well clear of machine.

Static electricity can produce dangerous sparks at fuel filling nozzle. In very cold, dry weather or other conditions that could produce static discharge, keep tip of fuel nozzle in constant contact with neck of fuel filling nozzle, to provide a ground.

Keep fuel and other fluid reservoir caps tight and do not start engine until caps have been secured.

Figure 8

BOOST STARTING OR CHARGING ENGINE BATTERIES

Turn "OFF" all electrical equipment before connecting leads to battery. This includes electrical switches on battery charger or boost starting equipment.

When boost-starting from another machine or vehicle do not allow two machines to touch. Wear safety glasses or goggles while required parallel battery connections – positive to positive and negative to negative – are made.

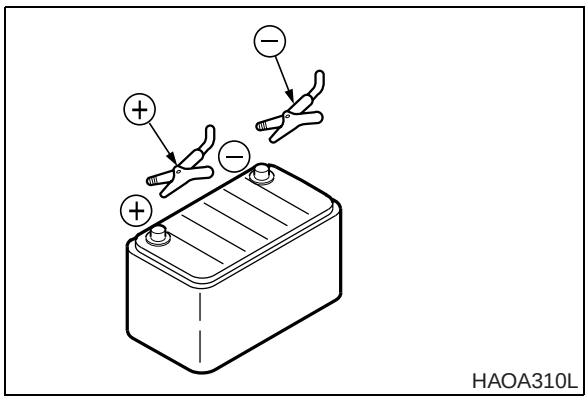

Figure 9

24 volt battery units consisting of two series-connected twelve volt batteries have a cable connecting one positive terminal on one of the 12 volt batteries to a negative terminal on the other battery. Booster or charger cable connections must be made between non-series-connected positive terminals and between negative terminal of booster battery and metal frame of machine being boosted or charged. Refer to procedure and illustration in Operation and Maintenance Manual.

Connect positive cable first when installing cables and disconnect negative cable first when removing them. Final cable connection, at metal frame of machine being charged or boost-started, should be as far away from batteries as possible.

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