

# SAFETY

# TRACK EXCAVATOR SAFETY



## CAUTION!

**Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.**

**Always use tools and equipment that is in good working order.**

**Use lifting and hoisting equipment capable of safely handling load.**

**Remember, that ultimately safety is your own personal responsibility.**

MODEL	SERIAL NUMBER RANGE
Solar 130LC-V	0001 and Up
Solar 170LC-V	1001 and Up
Solar 220LC-V	0001 and Up
Solar 220N-V	1001 and Up
Solar 250LC-V	1001 and Up
Solar 290LC-V	0001 and Up
Solar 300LC-V	1001 and Up
Solar 300LL	1001 and Up
Solar 330LC-V	1001 and Up
Solar 340LC-V	1001 and Up
Solar 400LC-V	1001 and Up
Solar 420LC-V	1001 and Up
Solar 450LC-V	1001 and Up
Solar 470LC-V	1001 and Up

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# TO THE OPERATOR OF A DAEWOO EXCAVATOR



**DANGER!**

**Unsafe use of the excavator could lead to serious injury or death. Operating procedures, maintenance and equipment practices or traveling or shipping methods that do not follow the safety guidelines on the following pages could cause serious, potentially fatal injuries or extensive damage to the machine or nearby property.**

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

The safety information on the following pages is organized into the following sections:

1. "General Safety Essentials" on page 5
2. "Location of Safety Labels" on page 5
3. "Summary of Safety Precautions for Lifting in Digging Mode" on page 6
4. "Work Site Precautions" on page 7
5. "Operation" on page 9
6. "Equipment" on page 14
7. "Maintenance" on page 18
8. "Shipping and Transportation" on page 21



## 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 the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.**

### LEARN THE SIGNAL WORDS USED WITH THE SAFETY ALERT SYMBOL

The words "**CAUTION**," "**WARNING**" and "**DANGER**" used throughout this manual and on decals on the machine indicate degree of risk of hazards or unsafe practices. All three degrees of risk 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 potential of 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 potential of 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 imminent hazard of a 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

The excavator has been primarily designed for moving earth with a bucket. For use as a grapple or for other object handling, contact Daewoo for proper installation and application. Lifting-work applications (unless restricted or prohibited by local regulations) are permitted in approved lift configuration, to rated capacity only, with no side-loading. DO NOT use the machine for activities for which it was not intended. DO NOT use the bucket for lifting work, unless lift slings are used in the approved configuration.

Use of an accessory hydraulic hammer (breaker), work in rough terrain, demolition applications or other hazardous operation may require installation of additional protective structures to safeguard the operator.

## LIFTING CAPACITY RATING CONFIGURATION

Lifting capacity ratings that are printed at the end of this safety section are based on the machine being level, on a firm supporting surface, with hooks and slings attached in approved configuration. Loads must be balanced and supported evenly. Use taglines to keep the load steady if wind conditions and large surface area are a problem. Work crew hand signals, individual tasks and safe procedures should all be universally understood before the lift is made.

## IMPORTANT

**Before using the excavator to make lifts check municipal and regional regulations or statutes that could apply. Governing ordinances may require that all heavy lifting be done with single purpose equipment specifically designed for making lifts, or other local restrictions may apply. Making heavy lifts with a general purpose excavator that can be used for digging, loading, grading or other work may be expressly forbidden by a regional injunction or other legal prohibition. Always follow all of the other instructions, guidelines and restrictions for Safe Lifting in the Operation and Maintenance Manuals.**

## 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.

# SUMMARY OF SAFETY PRECAUTIONS FOR LIFTING IN DIGGING MODE

## **DANGER!**

**Unsafe use of the excavator while making rated lifts could cause serious, potentially fatal injuries or extensive damage to the machine or nearby property. Do not let anyone operate the machine unless they've been properly trained and understand the information in the Operation and Maintenance Manual.**

To lift safely while in Digging Mode, the following items must be evaluated by the operator and the work site crew.

- Condition of ground support.
- Excavator configuration and attachments.
- Weight, lifting height and lifting radius.
- Safe rigging of the load.
- Proper handling of the suspended load.

Taglines on opposite sides of the load can be very helpful in keeping a suspended load secure, if they are anchored safely to control points on the ground.

## **WARNING!**

**NEVER wrap a tagline around your hands or body.**

**NEVER rely on taglines or make rated lifts when wind gusts are more than 48.3 km/hr (30 mi/h). Be prepared for any type of wind gust when working with loads that have a large surface area.**

Always engage the "Digging Mode" control on the Instrument Panel before using the excavator for lifting work.

## **WARNING!**

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

### **UNAUTHORIZED MODIFICATIONS**

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

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

VOLTAGE	MINIMUM SAFE DISTANCE
6.6 kV	3.0 m (9' 10")
33.0 kV	4.0 m (13' 1")
66.0 kV	5.0 m (16' 5")
154.0 kV	8.0 m (26' 3")
275.0 kV	10.0 m (32' 10")

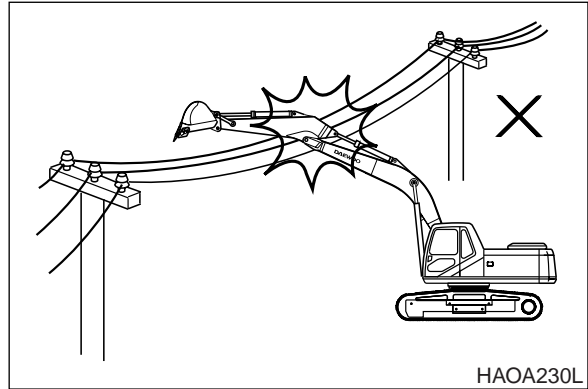


Figure 1

Use these minimum distances as a guideline only. Depending upon the voltage in the line and atmospheric conditions, strong current shocks can occur with the boom or bucket as far away as 4 - 6 m (13 - 20 ft) from the 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 the 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 the work site before starting to dig.

## BE AWARE OF HEIGHT OBSTACLES

Any type of object in the vicinity of the boom could represent a potential hazard, or cause the 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 track support.

## USE SOLID SUPPORT BLOCKING

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

## OVERHANGS ARE DANGEROUS

Digging the workface under an overhang - the work area beneath a cliff or under the edge of a ditch - is dangerous. Know the height and reach limits of the excavator and plan ahead while working. Avoid creating dangerous situations by moving around the work site while making excavations. Go onto another digging area before steep overhangs are formed. Working around deep pits or along high walls or trenching may require support blocks, especially after heavy rainfalls or during spring thaws. Park the excavator away from overhangs before work shut down.

## SLOPING TERRAIN REQUIRES CAUTION

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

On sloping surfaces, use caution when positioning the excavator before starting a work cycle. Stay alert for instability situations to avoid getting into them. For example, you should always avoid working the bucket over downhill crawler tracks when parked perpendicular to the slope. Slow all downhill swing movements and avoid full extensions of the bucket in a downhill direction. Lifting the bucket too high, too close to the machine, while the excavator is turned uphill can also be hazardous.

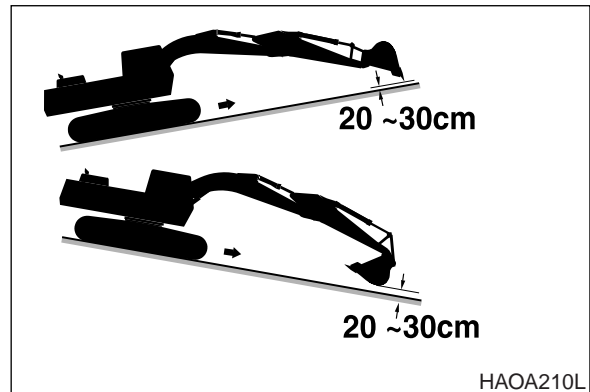


Figure 2

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