

LINCS II 24 Volt DC System Safety

Section 06-04-01

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LINCS II Safety

The software is protected so that changes to the software with the HMI interface can only be performed at certain security levels. The security levels can only be accessed by use of User Access Keys that allow various higher level menus depending on the level of training and knowledge of the person. Personnel making any changes must be qualified and trained by the factory.

NOTICE

Do not loan your User Access Key to anyone. All actions and changes during each higher level access are noted in the log files.

WARNING

ELECTRICAL SHOCK

- **Electrical shock hazards exist inside the electrical converter cabinet. DO NOT ENTER THE electrical converter cabinet if the engine is running. Do not enter the High Voltage Cabinet if the bus voltage indicator LED's on the SR converter assemblies are illuminated. Do not touch any electrical component or assembly inside the electrical converter cabinet if the bus voltage indicator LED's on the SR converter assemblies are illuminated. Check ALL converter panel LED's for voltage before entering. Verify the absence of bus voltage before entering or reaching inside the converter cabinet. Contacting the electrical connections inside the electrical cabinet while they are energized will cause a shock hazard resulting in serious injury or death.**

CRUSH HAZARD

- **Crush hazard exists when performing calibrations. Calibrations can only be completed using the calibration routines in the software. The machine must be positioned in an open area with no one around prior to calibration. Personnel should be trained in use of the specific calibration function, its effect on machine operation and appropriate emergency response action prior to attempting the calibration process. Failure to use appropriate personnel to perform calibrations can cause crush hazards from uncontrolled equipment resulting in serious injury or death.**
- **Crush hazards exist when “forcing” channels. Channels can be “forced” to specific values at certain security levels. Forcing some channels to inappropriate values can be potentially**

dangerous and should only be performed by personnel who have been factory trained and are familiar with the machine. The machine should be positioned in a barricaded open area with non-essential personnel removed prior to forcing channels. Failure to “force” channels in an environment clear of all personnel that could be injured can cause crush hazards resulting in serious injury or death.

- Crush hazards exist from unexpected machine movement if settings are changed during actual loading operation cycle. DO NOT set or change any settings during an actual loading operation or cycle. Before entering any information, or making/changing any settings on any screen in the LINCS system, ensure the machine is in an area clear of ALL hazards and personnel. Failure to do so could result in unexpected machine movement, resulting in serious injury or death to personnel.
- Crush hazards exist if performing normal production with limits bypassed. Bypassing the limits removes protections. Loss of machine control is possible if limits are bypassed during normal production. Failure to remove limit bypasses before using the machine for normal production can cause crush hazards resulting in serious injury or death.
- Crush hazards exist while calibrations are being performed on the machine. This is an automated calibration process that involves steering full right and full left (articulation of the machine). The machine MUST be in an open area that provides adequate clearance on both sides. Keep all personnel clear of the area and in safe positions prior to doing calibration procedure. Place signs to alert personnel to keep a safe distance from the machine. Failure to prevent personnel from entering the area during calibrations can cause crush hazards resulting in serious injury or death.
- Crush hazards exist while calibrations are being performed on the machine. This is an automated calibration process that involves moving the lift arms up and down, rolling the bucket back and forward, and dumping the bucket. The machine MUST be in an open area that provides adequate clearance. Keep all personnel clear of the area and in safe positions prior to doing calibration procedure. Place signs to alert personnel to keep a safe distance from the machine. Failure to prevent personnel from entering the area during calibrations can cause crush hazards resulting in serious injury or death.

MULTIPLE HAZARDS

- Multiple hazards exist if the machine is not operated by a trained operator. Unexpected or unplanned machine movement can cause crush and other hazards. The machine shall only be operated by a trained operator. Failure to operator the machine with a trained operator can cause crush and other hazards resulting in serious injury or death.
- Crush hazards exist from leaving the cab without setting the park brakes, which could result in unplanned and uncontrolled movement of the machine. The operator should never leave the cab with the park brake released. Set the park brake before leaving the cab. Leaving the cab without setting the park brake could cause a crush hazard from unexpected machine movement, resulting in property damage, serious injury or death.

CAUTION

EQUIPMENT DAMAGE

- Warnings and Alarms noted in the LINCS II system should be corrected prior to further operation. Red alarms will shut the machine down. Some warnings may cause changes to allow limited machine operation.
- Uploading all any new software or downloading any files should only be done by factory trained personnel.
- NEVER wet clean the LINCS screen unless it is turned OFF.