

Safety Bulletin

Prevent Serious Injury or Death

CHAIN OR CABLE LIFT MECHANISMS

**MANIPULATORS, ELEVATING HEAD AND TAILSTOCKS,
WELDEVATORS, RAILCAR POSITIONERS, ELEVATING
GANTRIES, AND OTHER EQUIPMENT**

EXERCISE CAUTION WHEN USING EQUIPMENT WITHOUT ANTI-FALL SAFETY MECHANISMS

An Anti-Fall Safety Pawl Mechanism is integral on most Pandjiris lifts built since 1968. Caution should be taken in utilizing equipment that does not incorporate this safety device. [SERIAL NUMBER] If you are aware of the use of a Pandjiris elevating mechanism which does not incorporate an anti-fall safety mechanism, special attention should be given to this situation and acquiring such a device is strongly recommended. We recommend taking equipment which does not have an anti-fall safety mechanism out of service until the device is installed.

FOLLOW GENERAL SAFETY INSTRUCTIONS

You should review Section III and Section 6.6 of an updated Manipulator Instruction Manual, and forward it as required for the safety of all employees in contact with any chain or cable hoist lift application. The updated Manipulator Manual instructs the operator in the safe use of elevating mechanisms. It should be read and understood by all individuals in contact with any Pandjiris chain hoist lift application. Your attention to this may prevent an accident resulting in equipment damage, serious injury or death.

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AVOID BACKDRIVING OR OVERHAULING OF THE HOIST REDUCER

The pawl mechanism safety device was developed and perfected to eliminate crosshead free fall conditions in the case where tension is lost in the hoist system lift chain. This design relies on the self-locking state of a worm gear reducer.

Although free fall conditions can be prevented with the use of properly maintained equipment equipped with the safety pawl device, isolated instances have revealed, under specific conditions, that back driving or overhauling of the hoist reducer is possible. Overhauling of the reducer continues to hold tension against the safety pawl, preventing it from engaging the rack on the face of the column. This condition generally does not represent as dangerous of a potential hazard as a free fall condition. Although loss of lift control occurs, if the crosshead to counterweight cable is intact the speed of the drop is limited by the backdrive of the reducer.

Equipment failure and loss of lift control can occur from the following conditions:

1. Motor chain disconnecting from motor and reducer during operation due to worn or loose components.
2. Motor mount loosening or disconnecting during operation.
3. Key shear on motor or reducer shafts.
4. Motor or reducer shaft failure,
5. Worm reducer failure.
6. Motor brake malfunction.

FOLLOW PROPER MAINTENANCE PROCEDURES

Items 1 and 2 above present the most prevalent possibilities for failure resulting in backdriving the hoist reducer, and are prevented easily with proper scheduled maintenance. Pandjiris recommends, at a minimum, bi-annual routine inspections of the hoist drive components and the safety pawl mechanism in accordance with the Manipulator Instruction Manual.

A proper scheduled maintenance program will help eliminate the possibility of equipment failures. If additional protection is desired to minimize the risk of loss of lift control, a double row sprocket retrofit can be acquired. This modification provides for a double row of chain and sprockets between the hoist motor and reducer. Retrofit kits can be purchased by owners of Pandjiris elevating mechanisms. Please contact Pandjiris' Part Sales Department for more information. (Machine Serial Number will be required for service.)

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