

Subchapter 7. General Industry Safety Orders
Group 13. Cranes and Other Hoisting Equipment
Article 94. Hydraulic Cranes and Excavators

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§4945. Purpose:

The orders in this article shall apply to hydraulic cranes and excavators of the revolving type that use hydraulic power to operate basic functions and/or front-end operating equipment. They may be mounted in a fixed location, crawler mounted or rubber tire carrier mounted, have front-end operating equipment such as lift crane, clamshell, magnet, dragline, pile driver, etc., as herein described, or any adaptations of the same which retain the basic characteristics.

EXCEPTION: Cranes having a capacity of one ton or less.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 4-16-80; effective thirtieth day thereafter (Register 80, No. 16).
2. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4946. Hoist Mechanisms:

The hoist mechanism when properly adjusted shall be capable of developing 110% of permissible line pull and maintaining the load in suspended position.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4947. Load Lowering:

Load lowering may be controlled by brakes acting on drums, other means, or by "Power Controlled Lowering" or other means. The lowering mechanism shall be capable of controlling 110% of permissible line pull as defined in Section 4885.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4949. Boom Hoist and Supporting Mechanism:

(a) The boom hoist shall be capable of elevating and supporting the boom and 110% of rated load without attention from the operator and allow lowering to rated radius only when under operator's control.

(b) A holding device shall be provided.

(1) On rope boom support machines a ratchet and pawl or other positive locking device shall be provided to prevent unintentional lowering of the boom.

(2) For hydraulic cylinder boom support machines, a holding device (such as load checks) shall be provided to prevent unintentional lowering of the boom.

(c) Minimum ratio of boom hoist drum and sheave pitch diameters to nominal rope diameters shall not be less than 15 to 1.

(d) On a telescoping boom, the retract function shall be capable of controlling 110% of rated load. A holding device (such as load check) shall be provided.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4951. Swing Lock and Swing Brake:

Unless swing drive mechanism is of a self-locking type, a swing lock or swing brake capable of preventing rotation under normal working conditions shall be provided.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4952. Controls:

- (a) The operating controls shall be located within convenient reach of the operator and shall be identified by marking or suitable chart to indicate the motion controlled and direction.
- (b) Controls for load hoist, boom hoist, swing and boom telescope shall be provided with means for holding in neutral position without use of positive locks.
- (c) Controls and corresponding controlled elements shall be maintained and adjusted such that the machine is operated within the certified agent's rating.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4953. Brakes:

(a) A travel lock or brake shall be provided on crawler machines capable of holding the machine stationary on any grade the machine is capable of negotiating.

(b) Service brakes shall be provided and maintained on truck or wheel mounted machines as specified by the certified agent and these Orders. Means shall be provided to hold the machine stationary during working cycles and on any grade which it can negotiate.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4954. General Operating Requirements:

- (a) When required by certified agent's instructions, outriggers shall be set so that wheels or crawler tracks within the boundary of the outriggers shall be relieved of all weight by the outrigger jacks or blocking.
- (b) Telescopic booms that have an indicator shall show the boom length from minimum to maximum and be visible to the operator from the operator's position at the controls.
- (c) A boom hoist disconnect shut-off or hydraulic relief shall be provided to automatically stop the boom hoist when the boom reaches a predetermined high angle.
- (d) At least one of the following stops shall be provided to resist the boom falling backwards:
 - (1) A fixed or telescoping bumper.
 - (2) A shock absorbing bumper.
 - (3) Hydraulic boom elevation cylinder(s).
- (e) A load rating chart and/or label(s) shall be located on the crane to be available to the operator from the operator's position at the control stand. It shall include the applicable portions of Section 4923 and the maximum loads permitted during actual boom telescoping operation.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4955. Hydraulic Relief Valves:

Hydraulic relief valves shall have pressure settings of sufficient magnitude to provide the capabilities of operations under 110% of rated loading conditions. Relief valve settings shall be specified and no change in relief valve setting shall be made without the consent of the certified agent. Gauge ports shall be provided in each hydraulic circuit for checking certified agent's specified pressure settings.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).

§4956. Hydraulic Hose, Fittings, and Tubing Inspection: (Repealed)

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Repealer filed 8-29-86; effective thirtieth day thereafter (Register 86, No. 39).