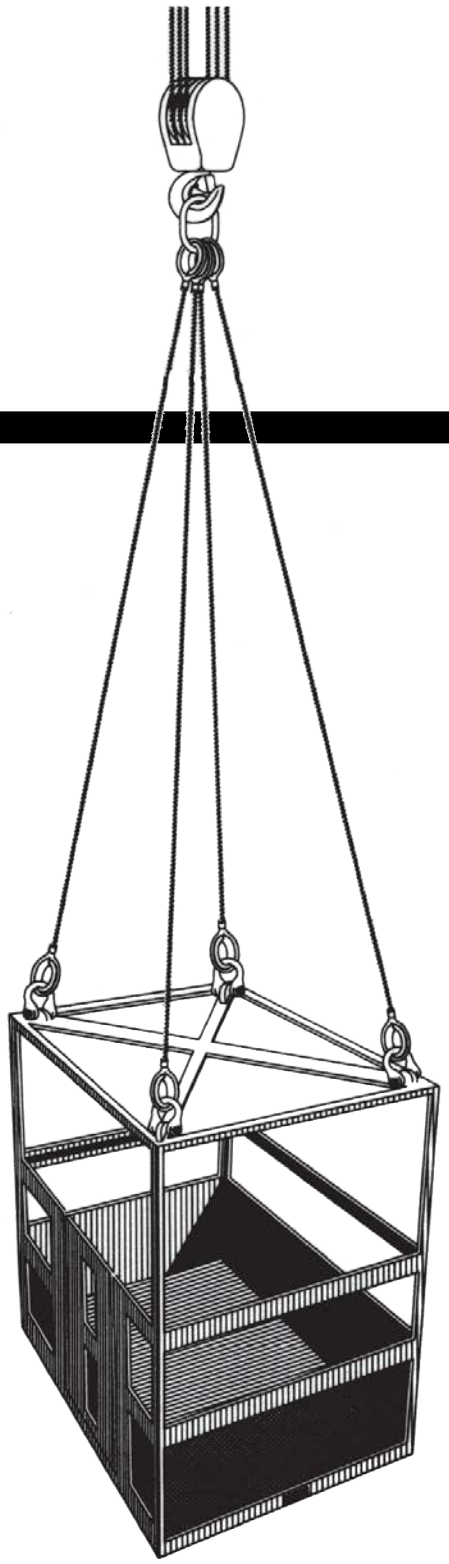
RIGGING REQUIREMENTS FOR PERSONNEL PLATFORMS

CRANES AND DERRICKS USED IN CONSTRUCTION

The Crosby Group Products Reference
Personnel Lifting Systems ASME B30.23-2011
OSHA 1926.1431 Hoisting Personnel

EDITION 3



Crosby®

Dear Crosby Customer,

OSHA implemented revised rules for personnel lifting by use of a platform and a crane in the construction industry with the publishing of the final rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) Hoisting Personnel.

ASME has developed ASME B30.23 under the procedures of ANSI. ASME B30.23 establishes the design criteria, equipment characteristics and operational procedures which are required when material handling equipment, as defined by the ASME B30 Standard, is used to lift personnel.

Based on a review of these documents, Crosby is providing recommendations on the use of our products to meet both the OSHA and ASME requirements. Crosby does not recommend when personnel can be lifted or not. Our recommendations relate to the use of our products when the decision is made.

The Market Leader: Yesterday, Today and Tomorrow

"Crosby: There is No Equal"

Crosby®

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Appendix

For Cranes and Derricks used in Demolition and Underground Construction, refer to OSHA 1926.1501.

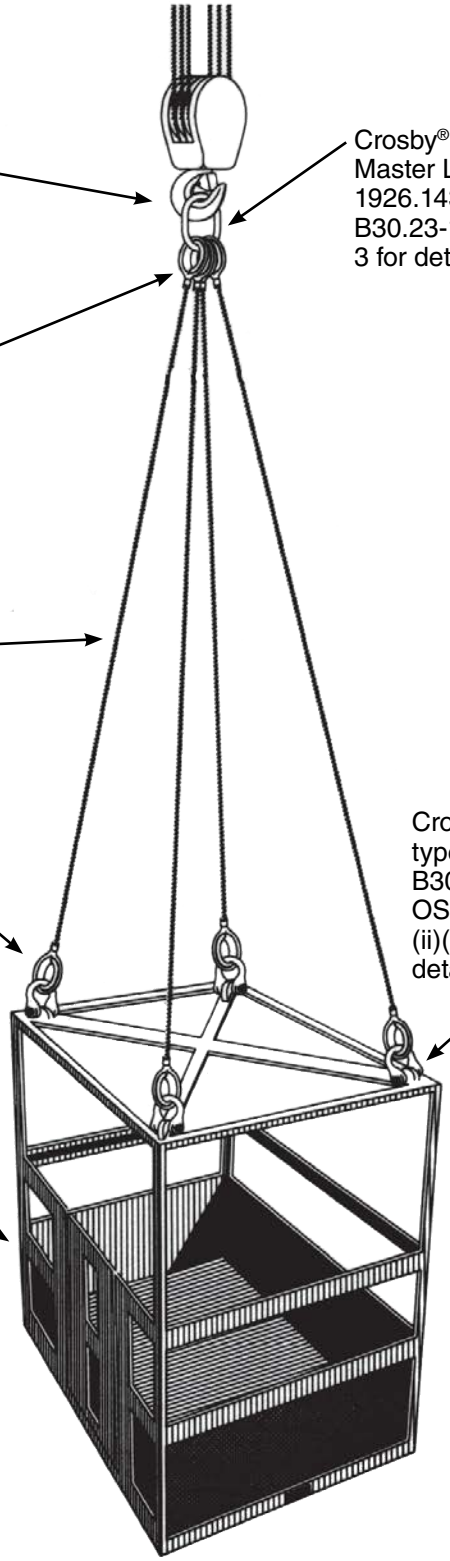
Lower Block Configuration

See page 3 for alternatives and details.

Crosby or McKissick S-319 / S-319N hooks with positive lock Model "PL" Latch with Locking Bolt/Nut Assembly (or S-4320 Latch when properly applied with cotter pin) per OSHA 1926.1431(g)(1)(i)(A) & (B) and ASME B30.23-1.2.2(e).

Crosby® A-342 Alloy Master Links per OSHA 1926.1431(g)(2) and ASME B30.23-1.1.1(10)(d) See page 3 for details.

Flemish eye with Crosby® G-414 extra heavy thimble formed with National® S-505 sleeve per OSHA 1926.1431(g)(4) and ASME B30.23-1.1.1(10)(a). See page 4 for details.



Bridles and associated rigging can only be used for suspending the personnel platform per OSHA 1926.1431(g)(5) and ASME B30.23-1.1.1(10).

Flemish eye with Crosby® G-414 extra heavy thimble formed with National® S-505 sleeve. See page 4 for alternatives and details.

Crosby® G-2140 bolt type shackles per ASME B30.23-1.1.1(10)(i) and OSHA 1926.1431(g)(1)(ii)(A). See page 5 for details.

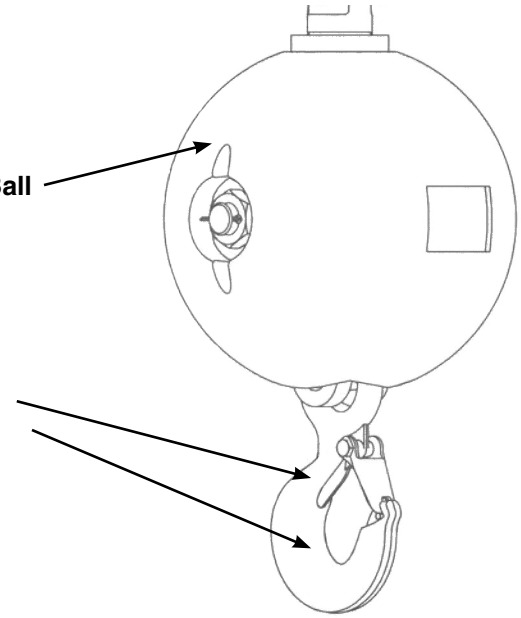
The Personnel Platform per OSHA 1926.1431(e) and ASME B30.23-1.2.

Overhaul Ball Configuration – Alternative to Lower Block

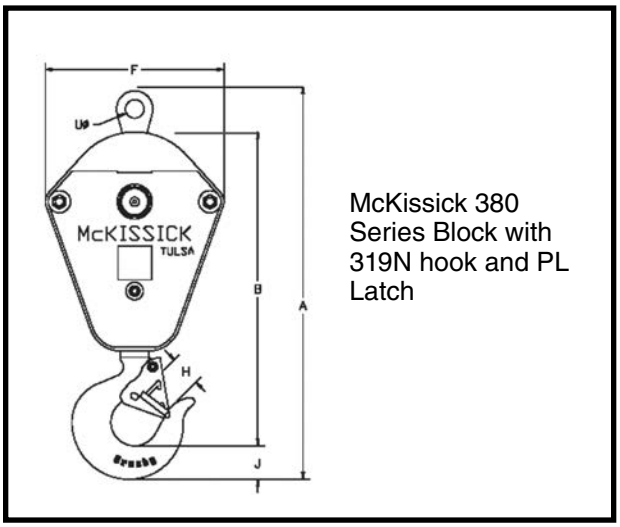
PL Latch

PL-N/O Latch

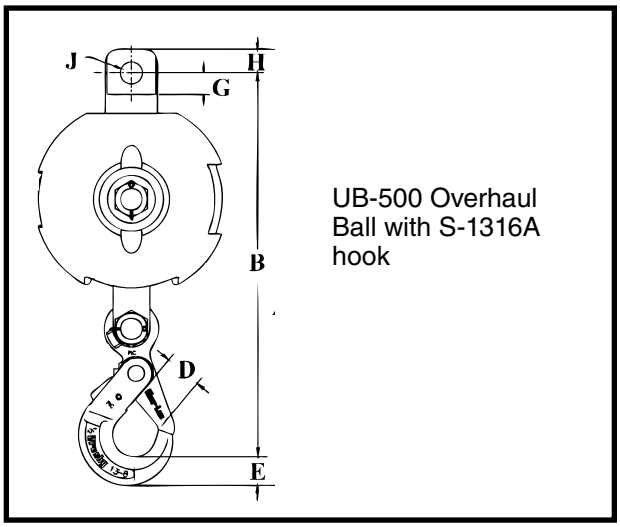
S-4320 Latch with Cotter Pin



Crosby® S-1316A or S-320A / S-320AN hooks with S-4320 Latch (when properly applied with cotter pin) or Positive-Lock Model "PL" Latch with Locking Bolt/Nut Assembly per OSHA 1926.1431(g)(1)(i)(A) & (B) and ASME B30.23-1.2.2(e).

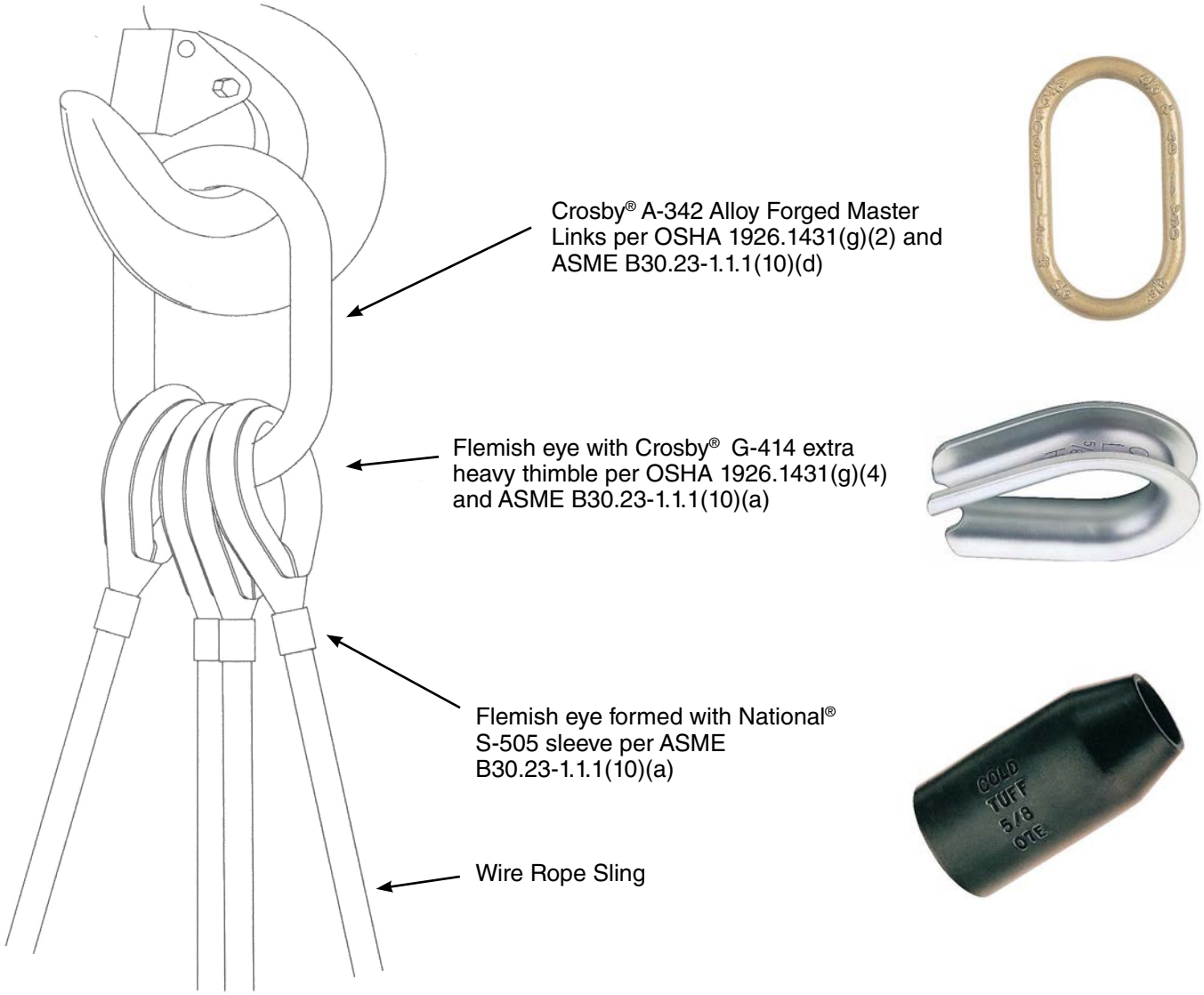


McKissick 380 Series Block with 319N hook and PL Latch



UB-500 Overhaul Ball with S-1316A hook

Details of Master Link and Connections



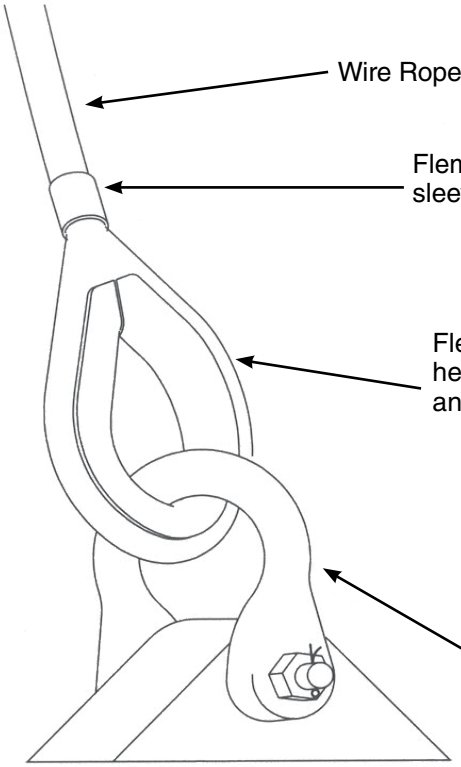
Other notes:

Bridles and associated rigging can only be used for suspending the personnel platform per OSHA 1926.1431(g)(5) and ASME B30.23-1.1.1(10).

Each leg of the system shall be permanently marked with the rated load of the leg per ASME B30.23-1.1.1(10)(h).

The alloy master link shall be marked with the suspension system's rated load and indentification as a personnel lifting system component per ASME B30.23-1.1.1(10)(h).

Details of Connection to Platform



Wire Rope Sling

Flemish eye formed with National® S-505 sleeve per ASME B30.23-1.1.1(10)(a)

Flemish eye with Crosby® G-414 extra heavy thimble per OSHA 1926.1431(g)(4) and ASME B30.23-1.1.1(10)(a)

Crosby® G-2140 bolt type shackles per ASME B30.23-1.1.1(10)(i) and OSHA 1926.1431(g)(1)(ii)(A)

Other notes:

Wire Rope Bridle used only for suspending the personnel platform per OSHA 1926.1431(g)(5) and ASME B30.23-1.1.1(10).

Rope suspension systems with poured socket end connections (in place of shackles) shall be designed in accordance with manufacturer's instructions per ASME B30.23-1.1.1(10)(b). There is no prohibition to use swage sockets.

S-4320 HOOK LATCH KIT

(For Crosby 319N, 320N, and 322N, S-1327, and A-1339 Hooks)

WARNING AND APPLICATION INSTRUCTIONS

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load. (See Figure 1 & 2.)
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch. (See Figure 3 & 4.)
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.
- When using latch for personnel lifting, select proper cotter pin (See Figure 5). See Step 7 below for proper installation instructions.
  - Never reuse a bent cotter pin.
  - Never use a cotter pin with a smaller diameter or different length than recommended in Figure 5.
  - Never use a nail, a welding rod, wire, etc., in place of recommended cotter pin.
  - Always ensure cotter pin is bent so as not to interfere with sling operation.
  - Periodically inspect cotter pin for corrosion and general adequacy.

Figure 5

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for personnel hoisting by crane or Derricks. A Crosby S-319N, S-320N, S-322N, S-1327, and A-1339 Hook with an S-4320 latch attached (When secured with cotter pin) may be used for lifting personnel.**
- **An S-4320 Latch is only to be used with a Crosby S-319N, S-320N, S-322N, S-1327, and A-1339 Hook.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

RIGHT

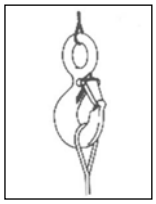


Figure 1

WRONG

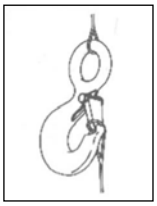


Figure 2

RIGHT

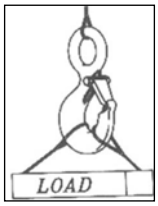


Figure 3

WRONG

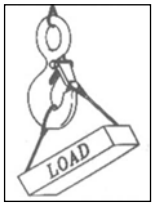
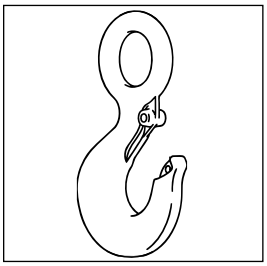


Figure 4

Hook Identification Code	Recommended Cotter Pin Dimensions (mm)	
	Diameter	Length
D	3.19	19.1
F	3.19	19.1
G	3.19	25.4
H	4.76	31.8
I	6.35	38.1
J	23.8	50.8
K	23.8	50.8
L	9.53	76.2
N	9.53	76.2

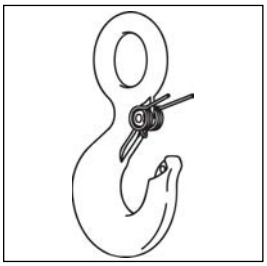
† The current SS-4055 latch kit and the PL latch will not fit new 319N, 320N, or 322N hooks. They will continue to be offered in both styles to service existing hooks. Important – The new S4320 latch kit will not fit the old 319, 320, or 322 hooks.

IMPORTANT – Instructions for Assembling S-4320 Latch on Crosby 320N Hooks



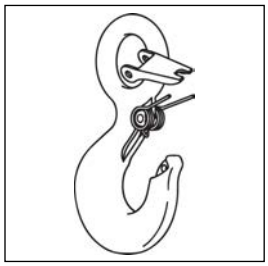
Step 1

1. Place hook at approximately a 45 degree angle with the cam up.



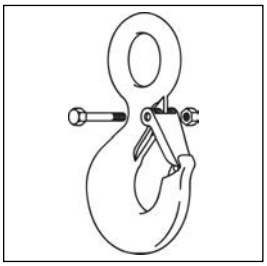
Step 2

2. Position coils of spring over cam with legs of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.



Step 3

3. Position latch to side of hook points. Slide latch onto spring legs between lockplate and latch body until latch is partially over hook cam. Then depress latch and spring until latch clears point of hook.

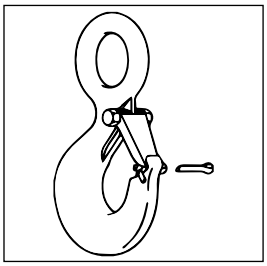


Steps 4, 5, & 6

4. Line up holes in latch with hook cam.

5. Insert bolt through latch, spring, and cam.

6. Tighten self-locking nut on one end of bolt.

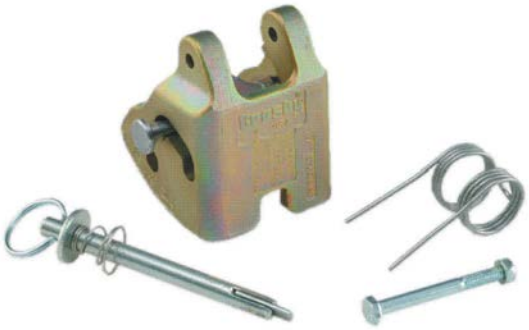


Step 7 – For Personnel Lifting

7. With latch in closed position and rigging resting in bowl of hook, insert cotter pin through hook tip and secure by bending prongs.

CROSBY MODEL PL-N/O HOOK LATCH KIT

WARNINGS AND APPLICATION INSTRUCTIONS



Model PL-N/O

Important Safety Information - Read and Follow

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load. (See Figure 1 & 2.)
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch. (See Figure 3 & 4.)
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for Personnel Hoisting by Crane or Derricks. A Crosby or McKissick Hook with a Positive Locked PL-N/O or S-4320 Latch may be used to Lift Personnel.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

RIGHT

Figure 1

WRONG

Figure 2

RIGHT

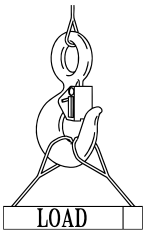


Figure 3

WRONG

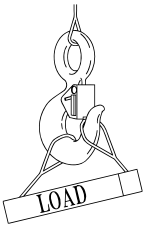
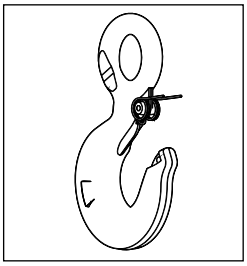


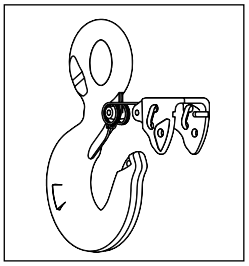
Figure 4

IMPORTANT - Instructions for Assembling Model PL-N/O Latch on Crosby or McKissick Hooks



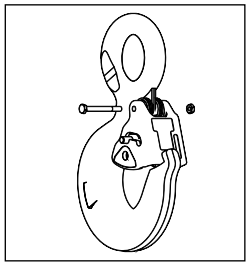
Step 1

1. Place hook in upright position. Position coils of spring over cam with legs of spring pointing toward tip of hook, and loop of spring positioned down and lying against the hook.



Step 2

2. Slip the latch over the spring until the two spring legs are positioned into the grooves located on the inside of the latch housing (legs of spring should fit between the gate and the housing).



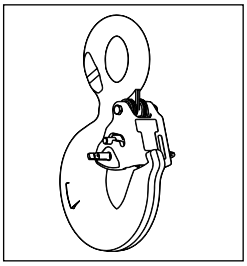
Step 3 4, 5, & 6

3. Slide latch housing up the spring legs until latch clears hook tip.

4. Resting latch on interlocking hook tip, line up holes in latch with hook cam.

5. Insert bolt through latch spring & cam.

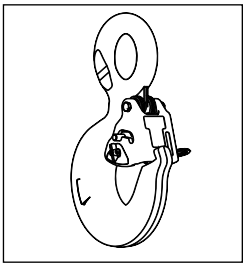
6. Tighten self-locking nut on one end of bolt.



Step 7,8 - For Personnel Lifting

7. Rigging should be resting in bowl of hook, with latch in closed position and gate locked.

8. Insert toggle lock pin through hole and depress spring until toggle clears hole on other side of latch.



Step 9 - For Personnel Lifting

9. Rotate toggle 90 degrees to secure pin (ensure toggle is in closed position as shown).

rev. 3

CROSBY® MODEL PL HOOK LATCH KIT

WARNINGS AND APPLICATION INSTRUCTIONS

Model PL

Important Safety Information - Read & Follow (Pat. USA & Canada)

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load. (See Figure 1 & 2.)
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch. (See Figure 3 & 4.)
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for Personnel Hoisting by Cranes or Derricks. A Crosby or McKissick Hook with a positive Locked PL or S-4320 Latch may be used to Lift Personnel.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

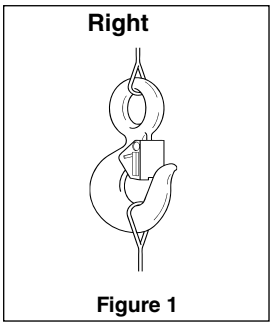


Figure 1

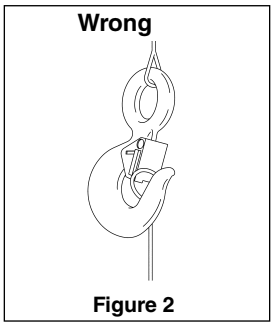


Figure 2

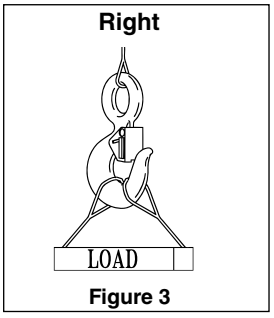


Figure 3

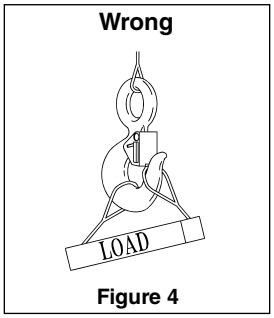
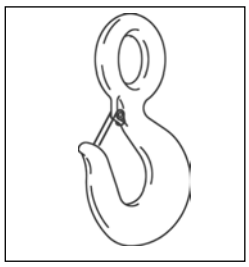


Figure 4

IMPORTANT - Instructions for Assembling Model PL Latch on Crosby or McKissick Hooks

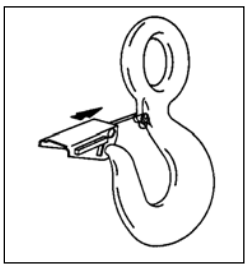
Step 1

1. Place hook at approximately a 45 degree angle with the cam up.



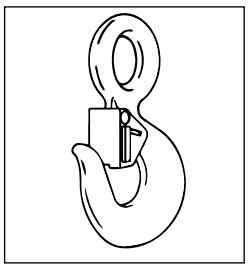
Step 2

2. Position coils of spring over cam with legs of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.



Step 3

3. Position latch to side of hook points. Slide latch onto spring legs between lockplate and latch body until latch is partially over hook cam. Then depress latch and spring until latch clears point of hook.

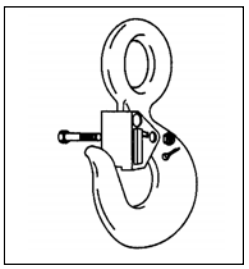


Steps 4, 5, & 6

4. Line up holes in latch with hook cam.

5. Insert bolt through latch, spring, and cam.

6. Tighten self-locking nut on one end of bolt.



Step 7 — For Personnel Lifting

7. With latch in closed position and rigging resting in bowl of hook, insert bolt through latch and secure with nut and cotter pin. When bolt, nut and cotter pin are not being used, store them in a designated place upon the personnel platform.

rev. 3

Part Number: 1926
Part Title: Safety and Health Regulations for Construction
Subpart: CC
Subpart Title: Cranes and Derricks in Construction
Standard Number: 1926.1431
Title: Hoisting Personnel

The requirements of this section are supplemental to the other requirements in this subpart and apply when one or more employees are hoisted.

1926.1431(a)

The use of equipment to hoist employees is prohibited except where the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold, would be more hazardous, or is not possible because of the project's structural design or worksite conditions. This paragraph does not apply to work covered by subpart R (Steel Erection) of this part.

1926.1431(b)

Use of personnel platform.

1926.1431(b)(1)

When using equipment to hoist employees, the employees must be in a personnel platform that meets the requirements of paragraph (e) of this section.

1926.1431(b)(2)

Exceptions: A personnel platform is not required for hoisting employees:

1926.1431(b)(2)(i)

Into and out of drill shafts that are up to and including 8 feet in diameter (see paragraph (o) of this section for requirements for hoisting these employees).

1926.1431(b)(2)(ii)

In pile driving operations (see paragraph (p) of this section for requirements for hoisting these employees).

1926.1431(b)(2)(iii)

Solely for transfer to or from a marine worksite in a marine-hoisted personnel transfer device (see paragraph (r) of this section for requirements for hoisting these employees).

1926.1431(b)(2)(iv)

In storage-tank (steel or concrete), shaft and chimney operations (see paragraph (s) of this section for requirements for hoisting these employees).

1926.1431(c)

Equipment set-up.

1926.1431(c)(1)

The equipment must be uniformly level, within one percent of level grade, and located on footing that a qualified person has determined to be sufficiently firm and stable.

1926.1431(c)(2)

Equipment with outriggers or stabilizers must have them all extended and locked. The amount of extension must be the same for all outriggers and stabilizers and in accordance with manufacturer procedures and load charts.

1926.1431(d)

Equipment criteria.

1926.1431(d)(1)

Capacity: Use of suspended personnel platforms. The total load (with the platform loaded, including the hook, load line and rigging) must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.

1926.1431(d)(2)

Capacity: Use of boom-attached personnel platforms. The total weight of the loaded personnel platform must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment (except during proof testing).

1926.1431(d)(3)

Capacity: Hoisting personnel without a personnel platform. When hoisting personnel without a personnel platform pursuant to paragraph (b)(2) of this section, the total load (including the hook, load line, rigging and any other equipment that imposes a load) must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.

1926.1431(d)(4)

When the occupied personnel platform is in a stationary working position, the load and boom hoist brakes, swing brakes, and operator actuated secondary braking and locking features (such as pawls or dogs) or automatic secondary brakes must be engaged.

1926.1431(d)(5)

Devices.

1926.1431(d)(5)(i)

Equipment (except for derricks and articulating cranes) with a variable angle boom must be equipped with all of the following:

1926.1431(d)(5)(i)(A)

A boom angle indicator, readily visible to the operator, and

1926.1431(d)(5)(i)(B)

A boom hoist limiting device.

1926.1431(d)(5)(ii)

Articulating cranes must be equipped with a properly functioning automatic overload protection device.

1926.1431(d)(5)(iii)

Equipment with a luffing jib must be equipped with:

1926.1431(d)(5)(iii)(A)

A jib angle indicator, readily visible to the operator, and.

1926.1431(d)(5)(iii)(B)

A jib hoist limiting device.

1926.1431(d)(5)(iv)

Equipment with telescoping booms must be equipped with a device to indicate the boom's extended length clearly to the operator, or must have measuring marks on the boom.

1926.1431(d)(5)(v)

Anti two-block. A device which automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component) must be used. The device(s) must prevent such damage/failure at all points where two-blocking could occur. Exception: This device is not required when hoisting personnel in pile driving operations. Instead, paragraph (p)(2) of this section specifies how to prevent two-blocking during such operations.

1926.1431(d)(5)(vi)

Controlled load lowering. The load line hoist drum must have a system, other than the load line hoist brake, which regulates the lowering rate of speed of the hoist mechanism. This system or device must be used when hoisting personnel.

Note: Free fall of the load line hoist is prohibited (see § 1926.1426(d); the use of equipment in which the boom hoist mechanism can free fall is also prohibited (see § 1926.1426(a)(1).

1926.1431(d)(5)(vii)

Proper operation required. Personnel hoisting operations must not begin unless the devices listed in this section are in proper working order. If a device stops working properly during such operations, the operator must safely stop operations. Personnel hoisting operations must not resume until the device is again working properly. Alternative measures are not permitted. (See § 1926.1417 for tag-out and related requirements.)

1926.1431(d)(6)

Direct attachment of a personnel platform to a luffing jib is prohibited.

1926.1431(e)

Personnel platform criteria.

1926.1431(e)(1)

A qualified person familiar with structural design must design the personnel platform and attachment/suspension system used for hoisting personnel.

1926.1431(e)(2)

The system used to connect the personnel platform to the equipment must allow the platform to remain within 10 degrees of level, regardless of boom angle.

1926.1431(e)(3)

The suspension system must be designed to minimize tipping of the platform due to movement of employees occupying the platform.

1926.1431(e)(4)

The personnel platform itself (excluding the guardrail system and personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.

1926.1431(e)(5)

All welding of the personnel platform and its components must be performed by a certified welder familiar with the weld grades, types and material specified in the platform design.

1926.1431(e)(6)

The personnel platform must be equipped with a guardrail system which meets the requirements of subpart M of this part, and must be enclosed at least from the toeboard to mid-rail with either solid construction material or expanded metal having openings no greater than ½ inch (1.27 cm). Points to which personal fall arrest systems are attached must meet the anchorage requirements in subpart M of this part.

1926.1431(e)(7)

A grab rail must be installed inside the entire perimeter of the personnel platform except for access gates/doors.

1926.1431(e)(8)

Access gates/doors. If installed, access gates/doors of all types (including swinging, sliding, folding, or other types) must:

1926.1431(e)(8)(i)

Not swing outward. If due to the size of the personnel platform, such as a 1-person platform, it is infeasible for the door to swing inward and allow safe entry for the platform occupant, then the access gate/door may swing outward.

1926.1431(e)(8)(ii)

Be equipped with a device that prevents accidental opening.

1926.1431(e)(9)

Headroom must be sufficient to allow employees to stand upright in the platform.

1926.1431(e)(10)

In addition to the use of hard hats, employees must be protected by overhead protection on the personnel platform when employees are exposed to falling objects. The platform overhead protection must not obscure the view of the operator or platform occupants (such as wire mesh that has up to ½ inch openings), unless full protection is necessary.

1926.1431(e)(11)

All edges exposed to employee contact must be smooth enough to prevent injury.

1926.1431(e)(12)

The weight of the platform and its rated capacity must be conspicuously posted on the platform with a plate or other permanent marking.

1926.1431(f)

Personnel platform loading.

1926.1431(f)(1)

The personnel platform must not be loaded in excess of its rated capacity.

1926.1431(f)(2)

Use.

1926.1431(f)(2)(i)

Personnel platforms must be used only for employees, their tools, and the materials necessary to do their work. Platforms must not be used to hoist materials or tools when not hoisting personnel.

1926.1431(f)(2)(ii)

Exception: Materials and tools to be used during the lift, if secured and distributed in accordance with paragraph (f)(3) of this section may be in the platform for trial lifts.

1926.1431(f)(3)

Materials and tools must be:

1926.1431(f)(3)(i)

Secured to prevent displacement.

1926.1431(f)(3)(ii)

Evenly distributed within the confines of the platform while it is suspended.

1926.1431(f)(4)

The number of employees occupying the personnel platform must not exceed the maximum number the platform was designed to hold or the number required to perform the work, whichever is less.

1926.1431(g)

Attachment and rigging.

1926.1431(g)(1)

Hooks and other detachable devices.

1926.1431(g)(1)(i)

Hooks used in the connection between the hoist line and the personnel platform (including hooks on overhaul ball assemblies, lower load blocks, bridle legs, or other attachment assemblies or components) must be:

1926.1431(g)(1)(i)(A)

Of a type that can be closed and locked, eliminating the throat opening.

1926.1431(g)(1)(i)(B)

Closed and locked when attached.

1926.1431(g)(1)(ii)

Shackles used in place of hooks must be of the alloy anchor type, with either:

1926.1431(g)(1)(ii)(A)

A bolt, nut and retaining pin, in place; or

1926.1431(g)(1)(ii)(B)

Of the screw type, with the screw pin secured from accidental removal.

1926.1431(g)(1)(iii)

Where other detachable devices are used, they must be of the type that can be closed and locked to the same extent as the devices addressed in paragraphs (g)(1)(i) and (ii) of this section. Such devices must be closed and locked when attached.

1926.1431(g)(2)

Rope bridle. When a rope bridle is used to suspend the personnel platform, each bridle leg must be connected to a master link or shackle (see paragraph (g)(1) of this section) in a manner that ensures that the load is evenly divided among the bridle legs.

1926.1431(g)(3)

Rigging hardware (including wire rope, shackles, rings, master links, and other rigging hardware) and hooks must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant rope is used, the slings must be capable of supporting without failure at least ten times the maximum intended load.

1926.1431(g)(4)

Eyes in wire rope slings must be fabricated with thimbles.

1926.1431(g)(5)

Bridles and associated rigging for suspending the personnel platform must be used only for the platform and the necessary employees, their tools and materials necessary to do their work. The bridles and associated rigging must not have been used for any purpose other than hoisting personnel.

1926.1431(h)

Trial lift and inspection.

1926.1431(h)(1)

A trial lift with the unoccupied personnel platform loaded at least to the anticipated liftweight must be made from ground level, or any other location where employees will enter the platform, to each location at which the platform is to be hoisted and positioned. Where there is more than one location to be reached from a single set-up position, either individual trial lifts for each location, or a single trial lift, in which the platform is moved sequentially to each location, must be performed; the method selected must be the same as the method that will be used to hoist the personnel.

1926.1431(h)(2)

The trial lift must be performed immediately prior to each shift in which personnel will be hoisted. In addition, the trial lift must be repeated prior to hoisting employees in each of the following circumstances:

1926.1431(h)(2)(i)

The equipment is moved and set up in a new location or returned to a previously used location.

1926.1431(h)(2)(ii)

The lift route is changed, unless the competent person determines that the new route presents no new factors affecting safety.

1926.1431(h)(3)

The competent person must determine that:

1926.1431(h)(3)(i)

Safety devices and operational aids required by this section are activated and functioning properly. Other safety devices and operational aids must meet the requirements of § 1926.1415 and § 1926.1416.

1926.1431(h)(3)(ii)

Nothing interferes with the equipment or the personnel platform in the course of the trial lift.

1926.1431(h)(3)(iii)

The lift will not exceed 50 percent of the equipment's rated capacity at any time during the lift.

1926.1431(h)(3)(iv)

The load radius to be used during the lift has been accurately determined.

1926.1431(h)(4)

Immediately after the trial lift, the competent person must:

1926.1431(h)(4)(i)

Conduct a visual inspection of the equipment, base support or ground, and personnel platform, to determine whether the trial lift has exposed any defect or problem or produced any adverse effect.

1926.1431(h)(4)(ii)

Confirm that, upon the completion of the trial lift process, the test weight has been removed.

1926.1431(h)(5)

Immediately prior to each lift:

1926.1431(h)(5)(i)

The platform must be hoisted a few inches with the personnel and materials/tools on board and inspected by a competent person to ensure that it is secure and properly balanced.

1926.1431(h)(5)(ii)

The following conditions must be determined by a competent person to exist before the lift of personnel proceeds:

1926.1431(h)(5)(ii)(A)

Hoist ropes must be free of deficiencies in accordance with § 1926.1413(a).

1926.1431(h)(5)(ii)(B)

Multiple part lines must not be twisted around each other.

1926.1431(h)(5)(ii)(C)

The primary attachment must be centered over the platform.

1926.1431(h)(5)(ii)(D)

If the load rope is slack, the hoisting system must be inspected to ensure that all ropes are properly seated on drums and in sheaves.

1926.1431(h)(6)

Any condition found during the trial lift and subsequent inspection(s) that fails to meet a requirement of this standard or otherwise creates a safety hazard must be corrected before hoisting personnel. (See § 1926.1417 for tag-out and related requirements.)

1926.1431(i)

[Reserved.]

1926.1431(j)

Proof testing.

1926.1431(j)(1)

At each jobsite, prior to hoisting employees on the personnel platform, and after any repair or modification, the platform and rigging must be proof tested to 125 percent of the platform's rated capacity. The proof test may be done concurrently with the trial lift.

1926.1431(j)(2)

The platform must be lowered by controlled load lowering, braked, and held in a suspended position for a minimum of five minutes with the test load evenly distributed on the platform.

1926.1431(j)(3)

After proof testing, a competent person must inspect the platform and rigging to determine if the test has been passed. If any deficiencies are found that pose a safety hazard, the platform and rigging must not be used to hoist personnel unless the deficiencies are corrected, the test is repeated, and a competent person determines that the test has been passed. (See § 1926.1417 for tag-out and related requirements.)

1926.1431(j)(4)

Personnel hoisting must not be conducted until the competent person determines that the platform and rigging have successfully passed the proof test.

1926.1431(k)

Work practices.

1926.1431(k)(1)

Hoisting of the personnel platform must be performed in a slow, controlled, cautious manner, with no sudden movements of the equipment or the platform.

1926.1431(k)(2)

Platform occupants must:

1926.1431(k)(2)(i)

Keep all parts of the body inside the platform during raising, lowering, and horizontal movement. This provision does not apply to an occupant of the platform when necessary to position the platform or while performing the duties of a signal person.

1926.1431(k)(2)(ii)

Not stand, sit on, or work from the top or intermediate rail or toeboard, or use any other means/device to raise their working height.

1926.1431(k)(2)(iii)

Not pull the platform out of plumb in relation to the hoisting equipment.

1926.1431(k)(3)

Before employees exit or enter a hoisted personnel platform that is not landed, the platform must be secured to the structure where the work is to be performed, unless the employer can demonstrate that securing to the structure would create a greater hazard.

1926.1431(k)(4)

If the platform is tied to the structure, the operator must not move the platform until the operator receives confirmation that it is freely suspended.

1926.1431(k)(5)

Tag lines must be used when necessary to control the platform.

1926.1431(k)(6)

Platforms without controls. Where the platform is not equipped with controls, the equipment operator must remain at the equipment controls, on site, and in view of the equipment, at all times while the platform is occupied.

1926.1431(k)(7)

Platforms with controls. Where the platform is equipped with controls, all of the following must be met at all times while the platform is occupied:

1926.1431(k)(7)(i)

The occupant using the controls in the platform must be a qualified person with respect to their use, including the safe limitations of the equipment and hazards associated with its operation.

1926.1431(k)(7)(ii)

The equipment operator must be at a set of equipment controls that include boom and swing functions of the equipment, and must be on site and in view of the equipment.

1926.1431(k)(7)(iii)

The platform operating manual must be in the platform or on the equipment.

1926.1431(k)(8)

Environmental conditions.

1926.1431(k)(8)(i)

Wind. When wind speed (sustained or gusts) exceeds 20 mph at the personnel platform, a qualified person must determine if, in light of the wind conditions, it is not safe to lift personnel. If it is not, the lifting operation must not begin (or, if already in progress, must be terminated).

1926.1431(k)(8)(ii)

Other weather and environmental conditions. A qualified person must determine if, in light of indications of dangerous weather conditions, or other impending or existing danger, it is not safe to lift personnel. If it is not, the lifting operation must not begin (or, if already in progress, must be terminated).

1926.1431(k)(9)

Employees being hoisted must remain in direct communication with the signal person (where used), or the operator.

1926.1431(k)(10)

Fall protection.

1926.1431(k)(10)(i)

Except over water, employees occupying the personnel platform must be provided and use a personal fall arrest system. The system must be attached to a structural member within the personnel platform. When working over or near water, the requirements of § 1926.106 apply.

1926.1431(k)(10)(ii)

The fall arrest system, including the attachment point (anchorage) used to comply with paragraph (i) of this section, must meet the requirements in § 1926.502.

1926.1431(k)(11)

Other load lines.

1926.1431(k)(11)(i)

No lifts must be made on any other of the equipment's load lines while personnel are being hoisted, except in pile driving operations.

1926.1431(k)(11)(ii)

Factory-produced boom-mounted personnel platforms that incorporate a winch as original equipment. Loads are permitted to be hoisted by such a winch while employees occupy the personnel platform only where the load on the winch line does not exceed 500 pounds and does not exceed the rated capacity of the winch and platform.

1926.1431(k)(12)

Traveling--equipment other than derricks.

1926.1431(k)(12)(i)

Hoisting of employees while the equipment is traveling is prohibited, except for:

1926.1431(k)(12)(i)(A)

Equipment that travels on fixed rails; or

1926.1431(k)(12)(i)(B)

Where the employer demonstrates that there is no less hazardous way to perform the work.

1926.1431(k)(12)(i)(C)

This exception does not apply to rubber-tired equipment.

1926.1431(k)(12)(ii)

Where employees are hoisted while the equipment is traveling, all of the following criteria must be met:

1926.1431(k)(12)(ii)(A)

Equipment travel must be restricted to a fixed track or runway.

1926.1431(k)(12)(ii)(B)

Where a runway is used, it must be a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the equipment being used to lift and travel with the personnel platform. An existing surface may be used as long as it meets these criteria.

1926.1431(k)(12)(ii)(C)

Equipment travel must be limited to boom length.

1926.1431(k)(12)(ii)(D)

The boom must be parallel to the direction of travel, except where it is safer to do otherwise.

1926.1431(k)(12)(ii)(E)

A complete trial run must be performed to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by paragraph (h) of this section which tests the lift route.

1926.1431(k)(13)

Traveling--derricks. Derricks are prohibited from traveling while personnel are hoisted.

1926.1431(l)

[Reserved.]

1926.1431(m)

Pre-lift meeting. A pre-lift meeting must be:

1926.1431(m)(1)

Held to review the applicable requirements of this section and the procedures that will be followed.

1926.1431(m)(2)

Attended by the equipment operator, signal person (if used for the lift), employees to be hoisted, and the person responsible for the task to be performed.

1926.1431(m)(3)

Held prior to the trial lift at each new work location, and must be repeated for any employees newly assigned to the operation.

1926.1431(n)

Hoisting personnel near power lines. Hoisting personnel within 20 feet of a power line that is up to 350 kV, and hoisting personnel within 50 feet of a power line that is over 350 kV, is prohibited, except for work covered by subpart V of this part (Power Transmission and Distribution).

1926.1431(o)

Hoisting personnel in drill shafts. When hoisting employees into and out of drill shafts that are up to and including 8 feet in diameter, all of the following requirements must be met:

1926.1431(o)(1)

The employee must be in either a personnel platform or on a boatswain's chair.

1926.1431(o)(2)

If using a personnel platform, paragraphs (a) through (n) of this section apply.

1926.1431(o)(3)

If using a boatswain's chair:

1926.1431(o)(3)(i)

The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), (n). Where the terms "personnel platform" or "platform" are used in these paragraphs, substitute them with "boatswain's chair."

1926.1431(o)(3)(ii)

A signal person must be stationed at the shaft opening.

1926.1431(o)(3)(iii)

The employee must be hoisted in a slow, controlled descent and ascent.

1926.1431(o)(3)(iv)

The employee must use personal fall protection equipment, including a full body harness, attached independent of the crane/derrick.

1926.1431(o)(3)(v)

The fall protection equipment must meet the applicable requirements in § 1926.502.

1926.1431(o)(3)(vi)

The boatswain's chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.

1926.1431(o)(3)(vii)

No more than one person must be hoisted at a time.

1926.1431(p)

Hoisting personnel for pile driving operations. When hoisting an employee in pile driving operations, the following requirements must be met:

1926.1431(p)(1)

The employee must be in a personnel platform or boatswain's chair.

1926.1431(p)(2)

For lattice boom cranes: Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter who is in direct communication with the operator to inform the operator when this point is reached. For telescopic boom cranes: Clearly mark the cable (so that it can be easily seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter who is in direct communication with the operator to inform the operator when this point is reached.

1926.1431(p)(3)

If using a personnel platform, paragraphs (b) through (n) of this section apply.

1926.1431(p)(4)

If using a boatswain's chair:

1926.1431(p)(4)(i)

The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (j), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), and (n). Where the terms "personnel platform" or "platform" are used in these paragraphs, substitute them with "boatswains chair."

1926.1431(p)(4)(ii)

The employee must be hoisted in a slow, controlled descent and ascent.

1926.1431(p)(4)(iii)

The employee must use personal fall protection equipment, including a full body harness, independently attached to the lower load block or overhaul ball.

1926.1431(p)(4)(iv)

The fall protection equipment must meet the applicable requirements in § 1926.502.

1926.1431(p)(4)(v)

The boatswain's chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.

1926.1431(p)(4)(vi)

No more than one person must be hoisted at a time.

1926.1431(q)

[Reserved.]

1926.1431(r)

Hoisting personnel for marine transfer. When hoisting employees solely for transfer to or from a marine worksite, the following requirements must be met:

1926.1431(r)(1)

The employee must be in either a personnel platform or a marine-hoisted personnel transfer device.

1926.1431(r)(2)

If using a personnel platform, paragraphs (a) through (n) of this section apply.

1926.1431(r)(3)

If using a marine-hoisted personnel transfer device:

1926.1431(r)(3)(i)

The following paragraphs of this section apply: (a), (c)(2), (d)(1), (d)(3), (d)(4), (e)(1) through (5), (e)(12), (f)(1), (g), (h), (j), (k)(1), (k)(8), (k)(9), (k)(10)(ii), (k)(11)(i), (k)(12), (m), and (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “marine-hoisted personnel transfer device.”

1926.1431(r)(3)(ii)

The following paragraphs of this section apply: (a), (c)(2), (d)(1), (d)(3), (d)(4), (e)(1) through (5), (e)(12), (f)(1), (g), (h), (j), (k)(1), (k)(8), (k)(9), (k)(10)(ii), (k)(11)(i), (k)(12), (m), and (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “marine-hoisted personnel transfer device.”

1926.1431(r)(3)(ii)

The transfer device must be used only for transferring workers.

1926.1431(r)(3)(iii)

The number of workers occupying the transfer device must not exceed the maximum number it was designed to hold.

1926.1431(r)(3)(iv)

Each employee must wear a U.S. Coast Guard personal flotation device approved for industrial use.

1926.1431(s)

Hoisting personnel for storage-tank (steel or concrete), shaft and chimney operations. When hoisting an employee in storage tank (steel or concrete), shaft and chimney operations, the following requirements must be met:

1926.1431(s)(1)

The employee must be in a personnel platform except when the employer can demonstrate that use of a personnel platform is infeasible; in such a case, a boatswain’s chair must be used.

1926.1431(s)(2)

If using a personnel platform, paragraphs (a) through (n) of this section apply.

1926.1431(s)(3)

If using a boatswain’s chair:

1926.1431(s)(3)(i)

The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “boatswains chair.”

1926.1431(s)(3)(ii)

The employee must be hoisted in a slow, controlled descent and ascent.

1926.1431(s)(3)(iii)

The employee must use personal fall protection equipment, including a full body harness, attached independent of the crane/derrick. When there is no adequate structure for attachment of personal fall arrest equipment as required in § 1926.502(d)(15), the attachment must be to the lower load block or overhaul ball.

1926.1431(s)(3)(iv)

The fall protection equipment must meet the applicable requirements in § 1926.502.

1926.1431(s)(3)(v)

The boatswain’s chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.

1926.1431(s)(3)(vi)

No more than one person must be hoisted at a time.

[75 FR 48159, August 9, 2010]

Notes

Notes

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