

SwapLoader Model SL-412 Hydraulic Hook lift Bid Specifications

Hook lift System:

Minimum 40,000 pounds lifting and dumping capacity with the gross weight evenly distributed on the body.

Hook lift shall be able to handle sub frame mounted bodies with lengths of 12' – 15' with the optimum body length being 12' – 14'.

Minimum lifting and dumping capacity (40,000#) of the hook lift hoist must be achieved for all stated body lengths.

Hook lift hoist shall have a minimum of 60 degree dump angle.

Hook lift hoist (fixed jib 61 ¾" hook height) not to exceed 4,780 pounds.

Hook lift hoist (adjustable jib 53 7/8" or 61 ¾" hook height) not to exceed 4,930 pounds.

Sub frame mounted bodies shall be supported with a pair of 7-1/4" minimum diameter outside flanged rollers at the rear of the hoist, and be adjustable to accommodate bodies with outside sub frame rail widths of 40-1/2" or 41-5/8".

The hook to rear roller dimension to be 143.5" in length.

Hook lift shall be capable of being mounted to a truck chassis with an "effective" cab-to-trunnion of 102" - 114" with 114" being the optimum dimension for weight distribution and stability.

Hook lift Operation:

The hook lift telescopic jib shall be capable of hydraulically sliding the body horizontally on the chassis to adjust for weight distribution while remaining in the body locks of the hoist and without lifting the body rails off the hoist frame. Tilting or articulating jib designs are not acceptable.

Hook lift hoist shall have a dual rear pivot section incorporated into the hoist design to allow for both a true dump truck operation, with the body secured to the hook lift via body locks during the entire dump cycle, and providing increased mounting leverage through the mount cycle.

Hook lift jib to cycle rearward, to the A-frame lifting bar, by means of double articulating hinge points (dual rear pivot) incorporated into the hoist mechanism.

Hook lift body shall lock into a common rigid full-length frame to support the body when in a dump mode. This must be accomplished by mechanical operated latches, which secure the mast lock without relying on gravity or hydraulic operated locks to accomplish.

Must have a jib lockout valve to prevent operation of the jib while in a dump mode.

Hook lift shall be designed to function through all modes (load, unload and dump) without the use of breakaway tabs and/or proximity switches.

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Hydraulic Cylinders:

All hydraulic cylinders shall be double acting with polished nitrided cylinder rods. Unpolished nitrided or chrome cylinder rods are not acceptable. Cylinders must be manufactured in the U.S.A.

Dual dump/lift cylinders to be a minimum 6" diameter bore with 56" stroke and 3" diameter rods.

Dump/lift cylinders must have dual integral counterbalance valves. No external or remote mount (connected by steel lines) counterbalance valve configurations to be accepted.

Dump/lift cylinders must include 3" diameter spherical bearings on both end mounts to ensure flexibility and longevity of the cylinders.

Telescopic jib cylinder shall be a minimum 4" diameter bore with 30" stroke and 2-1/2" diameter rod.

Telescopic jib cylinder must have a single integral counterbalance valve. No external or remote mount (connected by steel lines) counterbalance valve configurations to be accepted.

Hydraulic System:

Direct mount gear type pump, 22.3 GPM at 1500 RPM, with a 3,500 PSI maximum system operating pressure.

30 gallon oil reservoir tank (minimum) is to have a sight gauge to indicate fluid level with integral thermometer. Must have a 100 mesh suction strainer with bypass relief.

Must contain a return filter assembly; with replaceable 10 micron filter cartridge.

Control valve to be stackable type with JIC 37 degree fittings, and contain an integral 3,500 PSI relief valve cartridge.

High-pressure hoses to be SAE 100R2 type AT, or equivalent, rated for 3,500 PSI (minimum) working pressure with JIC 37 degree swivel fittings.

Hydraulic fittings are to be SAE O-ring boss or JIC 37 degree type wherever possible; metric fittings are not acceptable.

Dual control levers, cable or air operated, mounted in the truck cab. Controls are to be spring centering type for safe operation.

Hook lift hydraulic system shall be designed to allow for ease of integration into a Central Hydraulic package through maximum system operating pressures not to exceed 3,500 PSI.

Mainframe Design:

The overall height of the hook lift mainframe assembly to be 11".

The mainframe of the hoist is to be constructed of a "Z" rail configuration. The "Z" rail mainframe is to be a maximum of 10-1/2" in height and constructed of 1/4" thick A572 50 KSI steel.

The hoist "Z" rail mainframe assembly to include a minimum of 6 (3 per side) 11-3/4" x 2-3/4" x 1/2" nylatron wear pads. The nylatron pads allow the bodies to slide back and forth horizontally on the "Z" rail of the hoist with ease. Metal to metal contact (direct contact of the body sub frame rail on the hoist mainframe rail) will not be allowed.

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Jib Hook
Design:

Fixed Jib:

Vertical jib to be constructed of a 9" x 9" x 1/2" wall square tube of A500 50 KSI steel.

The fixed jib hook height shall be 61-3/4", as measured from the bottom of the sub frame long rails to the bottom of the A-frame lift bar. The fixed 61-3/4" jib hook shall be able to pick up a body 22-1/2" below the grade of the A-frame lift bar (presumes a 41" truck frame height as loaded / unloaded on a level surface). Jib hook to be permanently welded to jib. Bolt on jib hooks are not acceptable.

Adjustable Jib:

The adjustable jib hook must be adjustable to either 53-7/8" or 61-3/4" hook height. (1) With the jib hook height set at the 61-3/4" position, the hook lift shall be able to pick up a body 23-1/2" below the grade of the A-frame lift bar. (2) With the jib hook height set at the 53-7/8" position, the hook lift shall be able to pick up a body 8-1/2" below the grade of the A-frame lift bar. Both positions presume a 41" truck frame height as loaded / unloaded on a level surface.

Both the fixed or adjustable jib hook to be designed to secure the body to the hoist without the need for a hook latch assembly.

Pins:

All hook lift pins to be constructed of high-strength CFR steel bar; stainless steel pins are not acceptable. All pinned connections to be greasable to lubricate and flush out all contaminants. Permanently lubed pins are not acceptable.

Hook lift hoist
Body Locks:

Hook lift hoist to have passive integral slide through body locks to secure the body latch plates of the body, to the hook lift hoist, in both the dump and transport positions. The hook lift hoist body locks shall accommodate different length bodies and allow for weight distribution changes while remaining in the body locks of the hoist, when in the transport mode.

The hook lift hoist body lock assembly must be a bolt-on design. Prong style body locks are not acceptable.

Sub frame:

The A-frame of the body shall be designed to allow the hook lift operator to approach and load the body on the truck chassis frame from an angle.

The sub frame mounted body shall have integral slide through latch plates installed on the outside of each long rail to secure the body to the hook lift hoist in both the dump and transport positions.

Slide through latch plates on the sub frame long rails to be a minimum of 24" in length to allow the body to slide forward and back horizontally while remaining fully engaged in the hoist body locks.

Warranty:

The hook lift hoist will be factory warranted free of defects in material and workmanship for a period of forty-eight (48) months on parts, and twelve (12) months on labor from the date of installation.

Origin of
Manufacture:

Hook lift hoist to be engineered, manufactured, and assembled in the U.S.A.
