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Pressman's Toolbox

Moving, lifting heavy equipment

By Frank Bourlon

Moving heavy objects can be done most of the time and most conveniently with forklifts, movable gantries or mobile cranes. However, there are occasions when it is impossible to use this type of equipment because of height restrictions or positioning the object in tight areas.

Leverage tools, such as pinch bars, can be used in tight areas to either lift or shift heavy objects. Pinch bars are very slow but will lift several thousand pounds at least high enough to set spacers or other devices that will assist in moving the equipment.

A Johnson bar, commonly known as a J-bar, is another very effective tool for maneuvering large objects in tight areas. The 5,000-pound-capacity J-bar pivots large objects using a handle, lifting base and other components.

The advantage of the J-bar over a pinch bar is that it has a set of wheels that will allow you to slide heavy objects. Using two J-bars on each end of the object will even make the job even easier. For all its advantages, however, it's not advisable to use a J-bar to move top-heavy objects, since they might be prone to tip over.

Pipe dreams

Standard plumbing pipe is a very effective and inexpensive tool for moving heavy equipment that has a flat bottom.

Rolling objects on such pipe is also safe since the object that is being moved is only one to two inches above the floor (see Figure 1).



Figure 1

A floor jack or a pallet jack is another useful tool if it can be positioned under the objects to be moved.

The moved object has to have about 4 inches of clearance or be elevated to permit the plate jack to be placed underneath. Most of these jacks can handle weights from 1,500 to 5,000 pounds.

Skate party

Skates and dollies make moving heavy objects easier while also allowing the object to rotate or change directions (see Figure 2).



The skates are placed under each corner of the object and then pushed into place. Normally, hydraulic jacks, Porta-powers or other lifting jacks are used to elevate the object high enough to place the skates underneath.

Cable pullers, chain pullers and hoists are used to lift or pull equipment that is too heavy to push by hand. Always verify the puller's or hoist's lifting capacities.

Figure 3 shows a hoist lifting a Goss Community unit into its normal upright position. It is important to remember that the center of gravity changes whenever objects are being set upright. In this case, once the unit is tilted upright enough, it will swiftly swing up on its base. If not properly controlled, the unit could slam against the floor and break the concrete and even damage the press. To eliminate that possibility, you should hook up a second hoist and attach it to the unit's other side. That will let your crew lower the unit slowly while the first hoist finishes tilting the press unit upright.



Figure 3

Portable frames

Portable “A” frames can be used to move or maneuver heavy objects such as plate or blanket cylinders.

Simply moving the legs closer together changes the width of the “A” frame. “A” frames can also be equipped with casters, enabling users to maneuver the objects being carried.

Gantrys are portable “A” frames’ brawnier cousins. They can carry upwards of 7 tons and, with large casters, can be moved easily.

Other handy devices can be used to move press units in a vertical direction, which lets you lift units from one spot rather than requiring a lifting device on each corner.

These devices include spreader bars, beams and lifting brackets. Chains and straps can also be used, with straps offering the additional benefit of having their lifting capacities prominently displayed. In addition, straps won’t mar the equipment and they are often lighter in weight than chains. Still, chains and straps sometimes make it difficult to keep the lifted objects properly balanced.

Moving the big stuff

Want to move the big stuff? Try forklifts. Depending on their capacity, they could lift up to 30,000 pounds.

Figure 4 shows a mobile crane used to set Goss Metroliner units. This particular crane can lift up to 90,000 pounds.



Figure 4

The most important consideration when moving heavy objects or equipment is to know the weight of the object being moved and the capacity of the lifting equipment.

Don't assume. It can be disastrous and even deadly.

Case in point: Once, when at a newspaper trying to move a press unit, I was missing one of my chains.

One of the newspaper's maintenance staff offered me the use of his chains, assuring me that the chain's capacity was adequate for the job.

Needless to say, I should have checked the capacity of the chain myself.

A link on the chain broke, dropping the unit. Fortunately, it was only a few inches above its base and was being held by three other chains that were rated to handle the entire load.

The moral of this story is to make sure that your equipment's lifting capacities far exceed the weight of the objects to be lifted.

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