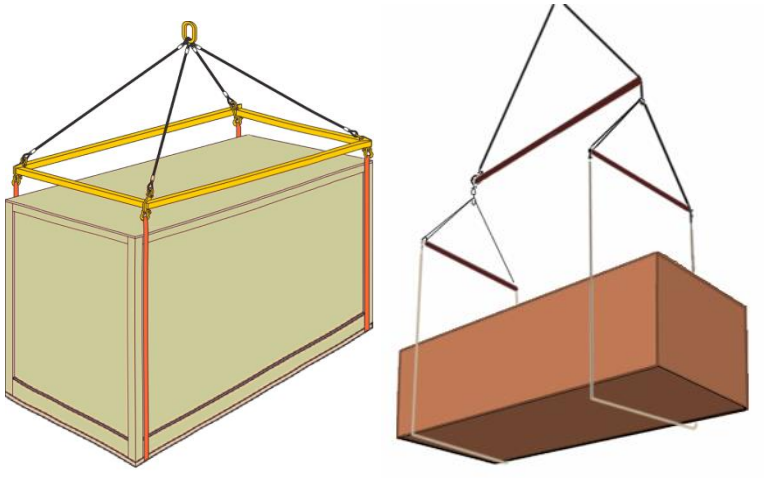
# STINGRAY:
## Parts Washer and Crate Handling Recommendations

*Disclaimer: All of these methods are suggestions by StingRay. No lifting or moving should be done without the services of trained and skilled people familiar with moving and lifting heavy loads. Lifting heavy loads can be dangerous and injury is possible. Be smart, be safe, know what you are doing or get professionals to do the work. StingRay is not responsibility for damages or injuries caused from following these or any other recommendations. It is always the people doing the work that bear the responsibility to perform their task in a safe manner.*

Machines packed in crates generally have a sturdy timber base and 2 x 10 decking. The walls and roof of the crates are only meant to provide cover and are not structurally designed for lifting or large loads.

There are many ways to handle the crate without damage to the machine or the crate.

### Lifting with an Overhead Crane



Spreader beams keep lifting loads off of the crate roof and sides and are usually the best overhead lifting method.

A single spreader beam with sufficiently long straps, chains or cables can be used as the base of the crate can support the transverse lifting loads. Be sure to anchor lift points to the crate to prevent slippage. Using short lifting points increases the transverse loads and at some point this method becomes unsafe.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Single point lifting is never the first recommendation nor should you choose this method if other better options are available. However, under certain conditions it is possible to lift the crate from a single point without damage. Be sure the lift point is many feet above the crate so the lifting lines are as straight as possible. DO NOT USE short lines with the hook point a couple of feet above the crate.

Cons:

- Single lift point puts lifting loads into the crate sides and roof that the crate is not designed to handle.
- Machine center of gravity (CG) is not necessarily in the center of the crate. With a single lift point it is difficult to move the lifting point to the center of gravity.

StingRay SR 12090 lifted with large crane and spreader beams. Beams allows load center of gravity to line up with the crane hook. This machine is shown with lifting connections attached to the machine base. These are NOT a good point to pick up a load as the the machine center of gravity is above the lift points. Any time the CG is above the lifting connections the load could become unstable and flip over. Only attempt a lift of this type if you know exactly what you are doing. All StingRay washers have lifting locations above the center of gravity. These are the safer connection points for overhead lifting. All lifting points are designed for vertical lifting only. Use spreader beams and adjust the lift point to the CG to prevent damage to the machine.

## Fork Lift Moving:

A large fork lift is a good choice for moving the crated machine.

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To load and unload a machine in a crate from a flat bed trailer, two forklifts work well.

Forklifts are a good choice to move or lift a machine. Be sure the forks extend and pick the load from the machine perimeter base. Do NOT lift on the machine floor.

Two forklifts putting a large StingRay on a double drop trailer

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