



You can Redesign a Manual Material-handling Task

FACT SHEET 88-021-0511

A poorly designed material-handling task is one where the strength requirements to complete the task exceed the strength capabilities of most workers. Generally, the task requires workers to lift, lower, push, pull, or carry heavy loads. These tasks may also include excessive bending, reaching, or twisting of the body.

In order to improve the design of a material handling task, consider five options: eliminate, reduce, redesign, educate, and maintain.

Eliminate

Eliminate the human component of the material handling task by adding mechanical assists such as:

- Conveyors
- Lift trucks
- Hand trucks or carts
- Tables
- Overhead cranes
- Vacuum systems



Cart with spring-loaded bottom reduces bending.



Overhead crane and roller.

Reduce

Reduce the weight of the object being handled:

- Reduce the weight of the object itself.
- Reduce the weight of the container.
- Reduce the size of the container.
- Specify quantity per container to suppliers.
- Make more than one trip.
- Share the load—ask for help!



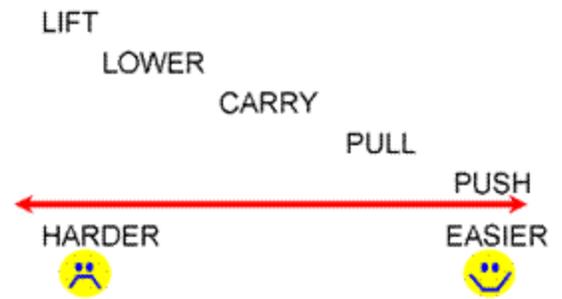
Sharing the load.

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Redesign

If the object must be handled by a person, consider redesigning the task so it is lower on the material handling hierarchy:

- You can redesign a lifting or lowering task to a carrying task by placing items to be moved at waist height.
- You can redesign a carrying task to a pull or push task by adding a cart hand truck.



Educate

Educate workers on the fundamentals of a proper lift such as:

- Keep the object in the strike zone (between the shoulders and knees).
- Keep the object close to your body.
- Avoid twisting your back while lifting.
- Bend at the knees and maintain your spine's natural curve.
- Tighten your stomach muscles while lifting to promote stabilization.
- Know when you should ask for help.

Maintain

Reduce forces necessary to perform the material handling task:

- Properly maintain and lubricate wheels, bearings, etc., for material handling equipment.
- Replace small diameter wheels on carts and hand trucks with larger diameter wheels.
- Ensure the handhold or grips on the handles of boxes and carts allows for a secure grip.

Reduce the occurrence of unsuspected forces:

- Maintain floors to eliminate cracks, holes, and bumps.
- Replace worn shoes, ensure shoe soles are suitable to increase the shoe grip on the floor surface.
- Maintain a clean work area to avoid trip and fall hazards.