

Strategies for Pushing and Pulling

- Provide carts that have vertical or height-adjustable handles to enable different-sized workers to position their hands between waist and shoulder height.
- Use larger wheels on carts and bins as this reduces push and pull forces and they are easier to roll over cracks or holes.
- Ensure that wheels/casters that are suitable for the load being transported and are compatible with the type of flooring.
- Determine the most suitable swivel arrangement of casters – two or four, front or back.
- Ensure there is enough space so the worker does not have to use awkward postures to move cart.
- Design/change the layout of the work area to eliminate the need to push wheeled objects up slopes or over uneven surfaces.
- Ensure the flooring is level, smooth and in good condition.
- Ensure workers can see over the top of the cart.
- Push rather than pull carts.
- Maintain carts, especially wheels and wheel bearings.
- Provide brakes on carts where practical.

Marklin R. General Knowledge Regarding Engineering Controls in *Interventions, controls and Applications in Occupational ergonomics*, Marass and Karwowski (eds), CRC, 2006.