

## Dumbwaiters – A Lifting Solution

By Carol Lamkins, CID, CKMBD

Dumbwaiters are a practical solution for two or more story residential and commercial buildings. They are less involved and less expensive than elevators and are an excellent answer for vertical transport between floors of heavy loads of laundry, bags of groceries, firewood, merchandise stock and other hard-to-carry items in multi-storied environments, especially for the physically impaired.

Larger dumbwaiters can even be custom designed to transport wheeled carts. Dumbwaiters can also be used on the exterior to lift firewood to upper floor fireplaces. If the outdoor BBQ area is off the lower story as in hillside construction, it can convey food, dish, utensil, etc., from the kitchen on the main story.



Courtesy of ThyssenKrupp Access



Courtesy of Waupaca Elevator Company



Courtesy of Matot

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Questions that need to be asked in the planning phase with some brief answers are:

- How much weight needs to be lifted?
  - Rated weights may vary from 50 pounds in the manual operated dumbwaiters and up to 500 pounds in the electric models depending upon the manufacturer
- What size of packages will be moved from floor to floor in the dumbwaiter car?
  - Car sizes usually range from 20"x 16"x 30" to 32"x 28"x 36"
- How much space do you have for a dumbwaiter that enables accessible use?
  - The door or gate may be side swing mounted or roll-up
  - Fire walls are required in the construction of the shaft
- How far do you need a dumbwaiter to travel?
  - The cars vary from 28 feet to 70 feet with several stops and have speeds of 20 to 50 feet per minute
- What are the options in cab finishes?
  - The finish of the walls and doors may be wood panels, durable powder-coated steel or stainless steel

It is a good idea to scout out a location in a home or in a business for a future dumbwaiter at the beginning of a remodel and at the plan stage for a new construction. The owner's needs may change requiring the space to serve them in a less strenuous and more efficient way. This could impact the design but forethought pays dividends down the line and the space can be utilized for storage until such time as the owner elects to install the dumbwaiter.



Courtesy of Panhandle Elevators

Dumbwaiters operate similar to a small elevator. A shaft is required along with an internal lifting platform and must be planned into the construction. Fire rated walls are required as the shaft creates a flue that can easily transfer flames between floors.

Practical residential dumbwaiter units are available in powdered-coated steel or stainless steel cars and are capable of lifting either 100 or 200-pound net loads.

Commercial dumbwaiters are designed for non-passenger vertical transportation applications with net load capacities of 300 to 500 lbs. Commercial units also come in powder-coated steel or optional stainless steel. A hardened steel frame and rail system is recommended. Call buttons may be illuminated for better visibility.

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Residential dumbwaiter models are usually installed between the garage level and the kitchen. Available space, convenience and over all design determine where dumbwaiters can be added in remodel projects.



**Courtesy of Panhandle Elevators**

Bi-parting or slide-up gates are required with commercial hoistway doors to meet safety and code compliance in commercial dumbwaiters. Safety devices may include slack cable, final limit, and trolley brake.

A factory pre-assembled dumbwaiter means there are no pulleys to install, no intricate rail systems to assemble, and no complicated wiring to figure out on the site. Problems are minimized in the installation.

Electrical requirements are usually 110 to 120 volts. However 220 volt units are also available. Manual systems do not require electrical connections. The motors on the electrical versions vary from 1/4 to 1/3 to 1/2 horsepower. In an electrical outage an emergency lowering hand crank is available in several models. Features can also include automatic, low-voltage (24V) control switches. Some companies offer a keyed on/off lock that locks dumbwaiter when use is restricted. An example of this is when the parents are not at home. The UL # SA32120 certification is available from some manufacturers.

The car may be suspended using urethane toothed belt with stainless steel cords or super strong aircraft cable that supports up to 1800 pounds. Some have dual belt & counter weights to keep the car balanced.

The dumbwaiter cost is about half the cost of a small residential elevator. Dumbwaiters still require an enclosed shaft, a lifting device motor and rails to have the cab of the dumb waiter ride on the wall. However there are manual dumbwaiters using a pulley system that are priced more economically.

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Warranties vary from manufacturer to manufacture. It is not unusual to have a 5-year warranty on drive train and 2-year warranty on parts for electric dumbwaiters.

Simple installation usually involves these steps:

1. Connect sections of track.
2. Secure the drive cable to the header.
3. Route the wires to the control buttons and door interlocks.

A temporary plug-in bypass control facilitates installation and routine maintenance.

The time is ripe for including vertical rise solutions in our remodel and new construction plans. The Baby Boomers are currently dealing with their parent's special needs and will soon have requirements of their own. Interior designers must be prepared to address these concerns with a knowledgeable background in the available solutions.

### **Resources:**

[www.ameriglide.com](http://www.ameriglide.com)

[www.dumbwaiters.com](http://www.dumbwaiters.com)

[www.elevatorconcepts.com](http://www.elevatorconcepts.com)

[www.matot.com](http://www.matot.com)

[www.panhandleelevators.com](http://www.panhandleelevators.com)

[www.silvercross.com](http://www.silvercross.com)

[www.waupacaelevator.com](http://www.waupacaelevator.com)