# Choosing the Proper Size Ware-washer

 To determine the correct size and type of machine for your business, you must first calculate the number of racks you will be washing each hour. Using the formula below, you can easily figure out how many racks per hour you use:

 (Pieces Used Per Person) x (Persons Served Per Hour) / 20 = Racks Per Hour

Once you have this number, you can then select from one of the follow types of ware-washing unit:

## Under-counter

Maximum *Racks* per Hour: **35**

Maximum *Meals* per Hour: **100**

* Under-counter dishwashers look like household appliances
* Takes up the least amount of space of any ware-washer
* Can hold one to two racks
* Single door for loading and unloading
* Ideal for small operations, or those looking to supplement their ware-washing by a small amount without taking up additional floor space.

## Door or Pass-Through

Maximum *Racks* per Hour: **125**

Maximum *Meals* per Hour: **100-500**

* Also called a pull-down or stationary rack
* Requires the use of dish tables on both sides, increasing installation cost
* Required dish tables can be set up in various ways, including corner installation
* Racks purchased separately
* Most popular for use in a restaurant kitchen

## Conveyor

Maximum *Racks* per Hour: **450**

Maximum *Meals* per Hour: **500-2000**

* Dish racks are pulled through the wash cycle on a chain conveyor
* Various configurations include one to three tanks and assorted features
* Various conveyor speeds allow load requirements to be adjusted
* More powerful than Pull-Through ware-washers, thereby cutting down on the prep work

## Flight-Type

Maximum *Racks* per Hour: **1000+**

Maximum *Meals* per Hour: **2000+**

* Dishes are placed directly on the conveyor, eliminating the need for racks
* Each stage of the wash cycle has its own dedicated tank
* Are the biggest and most powerful ware-washers in the industry, used for the biggest applications

### Other types of Ware-washers:

There are other, more specialized washers as well. These tend to fit a specific application perfectly, but are not suited for anything else.

### Glass-washers

* Smallest of the specialized ware-washers
* Can be a stand alone conveyor system, or a submergible set of brushes
* Has a more delicate wash cycle to help prevent glass breakage

### Pot and Pan Washers

* Similar to the push-through style of washer, these units tend to have higher internal clearances
* Utilizes more turbulent water jets to break up grease and baked food products

### Circular Conveyor

* An add-on that facilitates scraping, pre-rinse, and removal of clean dishes
* Ideal in large self-serve areas and cafeterias

# Dish and Glass rack Guide

The first decision to make is whether you plan on using Full-size dish racks, or Half-size dish racks. Full-size racks are 20"x20", and fit most ware washers. Half-size racks are generally used in under-counter ware-washers, or with conveyor ware-washers.

### Glass racks

When purchasing glass racks, the size of the glass determines the number of compartments and the size of the rack. There are two dimensions to take into account:

1. Diameter - measure stemmed glasses at their widest point. For most glasses, this will be at the base. For wine glasses, this may be the bubble instead.
2. Height - measure from the top of the glass to the base. This is the second most important dimension for determining which rack you'll use, because a properly heighted rack will allow stacking, and prevent excess glass breakage during the wash cycle

*Note*: When measuring mugs, make sure to measure to the tip of the handle.

Once you have the dimensions of the glass, use this chart to determine how many compartments you should use:

|  |  |
| --- | --- |
| **Glass Diameter** | **Compartments** |
| Smaller than 2.5" | 49 Compartment |
| 2.5" - 2.9" | 36 Compartment |
| 3.0" - 3.5" | 25 Compartment |
| 3.51" - 4.38" | 16 Compartment |
| 4.4" - 5.88" | 9 Compartment |

 For half-size racks, there are only 3 choices:

17 compartment (for use with glasses smaller than 2 15/16" across)

10 compartment (for use with glasses up to 3 1/2" across)

8 compartment (for use with glasses up to 4 1/8" across)

Once the number of compartments is known, you use the height of the glass to narrow down the exact glass rack to use. Find our glass racks here\*LINK\*

## Dish Racks

There are several different types of dish racks, customized to their usage.

**Peg Rack**

* Also known as a dish rack
* Used to hold trays and plates
* Pegs hold items vertically, at an angle, to maximize efficiency and space

Buy peg racks here\*LINK\*

**Base Rack**

* Used for pots, pans, and miscellaneous items that don't fit on the peg rack

Buy base racks here\*LINK\*

**Flatware Rack**

* Has a tighter mesh at the bottom than a base rack, to prevent flatware from falling through

Buy flatware racks here\*LINK\*

**Tray or Open Sided Rack**

* The same as a peg rack, but one side is open, allowing large trays to fit on the rack.
* *Note*: If using this rack with a Push-Through or Door type ware-washer, make sure the rack will fit within the interior of the unit.

Buy tray racks here\*LINK\*

**Dish Crates**

* Same rack as a peg rack, only the sides extend higher, allowing the racks to be stacked for easy storage

Buy dish crates here\*LINK\*

**Flatware Basket**

* Is a half-size rack, and can fit into a peg rack
* Seperate compartments allow for pre-sorting of flatware
* Easy storage and transportation

## Choosing Between High and Low Temperature

The process of cleaning and sanitizing soiled dishes through a ware-washing machine uses both chemical and mechanical action, and varying temperature water. All warewashers use chemical detergents and hot water during this process, but there are two different methods for the final sanitizing stage.

**High Temperature and Low Temperature Debate**

*High Temp:*

Pro's:

* Requires less detergent over the long run than a low-temp machine
* Can handle more racks per hour
* More effective at getting grease and lipstick stains off

Con's:

* Higher price of machine leads to higher installation cost
* Requires the use of a booster
* Uses more high temperature water

*Low Temp:*

Pro's:

* Does not require the use of a booster
* Uses detergent instead of high temperature water, increasing the safety of operation
* Less expensive to purchase initially
* Well suited for applications with low volume

Con's:

* Chemical cost more expensive in the long run, except in areas where the water cost is prohibitive
* Cannot handle the same volume as a high temp machine
* Not as effective at cleaning difficult grease or lipstick stains

## Final Items to Consider

Chemical test strips

* Strips of paper that change color to correspond with chemical/water concentration
* Health codes require that test strips be on hand and used regularly with chemical sanitizing dishwashers

Dish Tables

* Placed in-line with door-type or conveyor machines
* Allow dish rack loading and unloading ease
* NSF approved dish tables have raised-rolled edges, seamless welds and back splash

Ventilation

* Ware-washers release large amounts of steam
* A properly installed and functioning exhaust hood over the dishwasher helps maintain comfortable working condition
* A ventilation system that is too powerful can draw heat from the ware-washer and reduce its effectiveness

How much space do I need?

|  |  |
| --- | --- |
| **Meals/hour** | **Dish room Area/Sq. Ft.** |
| 100 | 100 |
| 400 | 200-300 |
| 800 | 400-500 |
| 1200 | 600-700 |
| 1600 | 800-900 |