

## COMPARING PRODUCTIVITY & COMPLIANCE BETWEEN MANUAL & AUTOMATED DISHWASHING



**If you had the choice of whether to load dishes in a dishwasher and walk away to do other tasks, or stand over a sink scrubbing dishes one at a time by hand, which would you choose?** Most people intuitively know that dishwashers are time-saving equipment that bring multiple benefits to foodservice operations. But just how much time, and water, can an automatic dishmachine save? And are those savings worth the cost of the equipment?

In an effort to quantify the labor savings of automated dish machines, Hobart set up a study that found not only did manual dishwashing use more labor, it also brings opportunity for user error and the possibility of not meeting food code and safety guidelines.

For this study, Hobart engineers monitored two locations from the same restaurant chain to compare labor time and utilization. Each location had similar volume and ware types. One site performed dishwashing duties with a 3-compartment sink, while the other used the Hobart AM15SCB Door-Type Dishmachine.

Three metrics were monitored during this study:

- 1. Labor time and tasks** were tracked at both sites with video monitoring.
- 2. Water consumption** was tracked with in-line water meters.
- 3. Water temperature** was monitored in the 3-compartment sink. This measurement was not needed for the AM15SCB since it will not operate if the minimum wash temperature is not maintained.

### FOOD SAFETY RISKS WITH MANUAL WASHING

When using a 3-compartment sink, the 2017 FDA Food Code requires a minimum of 110 degrees for the wash sink, and a minimum of 30 seconds of submersion in the sanitization sink with a Quaternary Ammonium sanitizer to achieve proper sanitization (the kind used at the sink site).

**Water Temperature:** During our study, 85% of the total washing time in the 3-compartment wash sink was below the 110 degrees requirement. This was due to two factors. First, while the facility's water heater was capable of providing water at 120 degrees, there were times when the initial sink fills didn't reach 110 degrees. Second, the lag time between when the sink was filled and when staff began washing frequently allowed the water to cool below 110 degrees.

**Sanitization:** A significant amount of ware was submerged for less than 30 seconds in the sanitizer sink. Observations from our video monitoring showed that one of two practices occurred: Either an item was left to soak in the sanitizer for a long period of time, anywhere from 5–30 minutes, or the operator briefly dipped the item in and out of the sanitizer, with less than two seconds of submersion.

Full Submersion in the sanitizer was also an issue, especially when items piled up in the sanitizer sink. Only about half of the operators took care to make sure all items were fully submerged. In many cases, operators didn't follow sanitization procedures and only washed and/or rinsed ware items.

Large items had even more sanitization issues. We saw that most sheet pans were never turned around in the sink after the first half was submerged, leaving the item only half sanitized. When working with other large items like cutting boards, carafes, and slicers that are difficult to fit in the sinks, some operators took care and improvised by washing and sanitizing these items directly from the chemical dispensing hose (a process that may be acceptable but takes extra care to ensure full coverage). However, not everyone took these precautions, and some operators were observed splashing water from the sanitizer sink onto the ware, randomly hitting some of the surfaces and missing other surfaces.

Proper drying techniques are just as important in dish-room compliance as washing and sanitizing. In our study we found wet nesting was also an issue at the 3-compartment sink site. Operators frequently stacked ware while it was wet, especially plastic trays and GN pans, whereas ware at the SCB site usually sat in the racks after washing and had time to air dry.

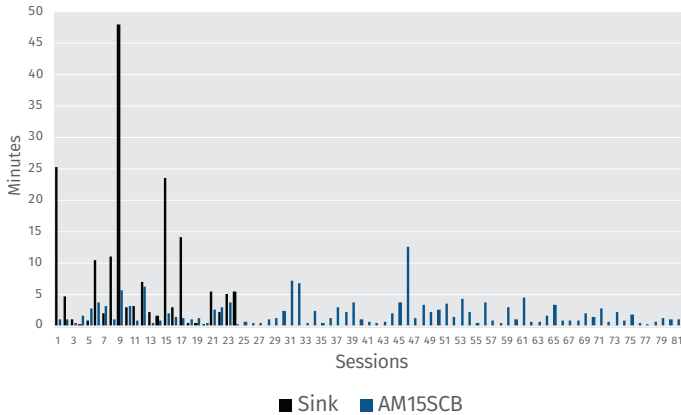


## WASH TIME & LABOR UTILIZATION COMPARISONS

More efficient use of time is an important reason for using automated dishmachines. Staff using the AM15SCB dishmachine were observed spending less time per washing session and showed greater flexibility to perform other tasks.

**Automatic Dishwashing:** During our study, most dishwashing sessions<sup>1</sup> were 1–3 minutes. These sessions could include prescrapping and rinsing ware, loading racks, and loading and unloading the dishmachine. Staff were able to wash ware throughout the day and move on to do something else while the machine was running. Another time-saving factor was the ability to partially load a rack and finish loading it later, so no one person was tied up just washing ware.

One Day Sample: Wash Time Comparison



**Manual Dishwashing:** Wash sessions<sup>1</sup> with the 3-compartment sink often lasted from 15–40 minutes. Most days had one session that lasted around 40 minutes and several other sessions that lasted 15–20 minutes. Dishes tended to pile up at the sink washing site, perhaps forcing staff to wash at inconvenient times. Ware at the AM15SCB site rarely got piled up, and staff could move through it quickly if it did.

The sink site had to dedicate a staff person to washing dishes during these sessions, and they were not able to flex into other tasks during this time.

## ELIMINATING USER ERROR

It is important for food safety to comply with all guidelines required for hand washing with 3-compartment sinks. In our study we observed that while some operators follow the general procedure to scrub and wash, rinse, and submerge and sanitize, other operators go through the process out of order, or even skip steps, contributing to the sanitization risk. Use of the AM15SCB helps ensure that all items entering the dishmachine are fully washed, rinsed, and sanitized. Temperature and chemical lockouts provide an added safety measure to prevent staff from running the machine without the necessary wash temperature or chemical sanitizer.

## BENEFITS OF AN AUTOMATIC DISH MACHINE

In our study, the AM15SCB dishmachine reduced daily washing time 30%.<sup>2</sup> The results could be even greater than this, as the SCB site staff hand washed some items that could easily fit in the dishmachine. When the dishmachine is used at its full potential, the total available AM15SCB time savings are close to 40%.

The AM15SCB also reduced water consumption by 68%, using 150 gallons of water per day less than the hand-washing location. That's 55,000 fewer gallons of water annually, saving money and conserving an important resource.

Finally, procedures were followed more consistently at the AM15SCB site and the dishmachine's temperature and chemical lockouts helped ensure consistent sanitization. While user-error is less of a possibility with automatic dishwashing, it's still important to provide staff with frequent training on proper use and maintenance of the machine. Operators should also encourage staff to use the dishmachine for all ware that will fit, to maximize the labor and food safety advantages.

**Why risk it?** Compare more of the risks and benefits with our warewashing infographic at [warewash.hobartcorp.com/ManualWashingRisk](http://warewash.hobartcorp.com/ManualWashingRisk)

1. Sessions include value-added time washing ware, and non-value-added time, including idle standing, talking, or completion of other non-washing tasks.
2. Daily wash time represents value-added time spent manually scraping, rinsing, washing and loading and unloading dishes for the 3-compartment sink or automated dishmachine. It does not include automated wash and rinse time in the dishmachine.

To learn more about the Hobart AM15SCB Commercial Dishwasher, visit us at [hobartcorp.com/AM15SCB](http://hobartcorp.com/AM15SCB) or call us at 888 4HOBART.