

DECARBONATOR™



SUSTAINABLE WAREWASHING

Getting a Return On your Investment

As food and labor costs climb, operators will rely more on technology to help manage costs and boost productivity.¹



UNDERSTANDING WAREWASHING

What is Ware washing?

Cleaning and sanitizing of equipment that can be achieved by a combination of heat, water and chemicals.

Cleaning requires HOT WATER

CONVENTIONAL WAREWASHING METHODS

1. 3-Compartment Sink
2. Novelty Sinks
3. Dishwashers
4. Soak Tanks

1. THE 3-COMPARTMENT SINK

Commercial kitchens are required by law to have a 3-Compartment Sink, but warewashing can be achieved through a variety of means either in isolation or in combination. The 3-Compartment Sink can be used to wash anything requiring manual labor to remove baked-on soils. The first sink is filled with a detergent, the second with plain water for rinsing, and the third sink with a sanitizer. The missing element is the labor needed to manually scrub the items clean.²

Hand scrubbing pots and pans is inefficient, costly, and right at the top of everyone's list of worst jobs.³

The 3-Compartment Sink can cost about \$32,000 annually excluding chemicals.

Disadvantages of a 3-Compartment Sink

Frequent refills: The water cools off and gets dirty quickly, requiring an average refill every 2-4 hours with 120 Gallons of Hot water per refill.

Labor intensive: Someone needs to stand and hand scrub the wares spending an average of three to five minutes per pot or pan; and how well your pots and pans get cleaned is entirely dependent on the work ethic of the soul doing the scrubbing.³

Ineffective: Regardless of your best efforts, over time those pots and pans will become dirty beyond anyone's power to clean, and you'll have to replace them⁸

Compliance: Sanitizing is an essential step that requires constant testing of the solution's concentration. Every sanitizer has different specifications and instructions need to be followed carefully. In addition to concentration, and water temperature, contact time with the solution determines effectiveness.

Inefficient: Hood filter cleaning is time consuming with inadequate results

Health Hazard: Increased risk of Musculoskeletal Injury due to Ergonomics⁴

2. NOVELTY SINKS

Power Soakers or Continuous Motion Pot Washers are basically 3-Compartment Sinks with an agitating wash compartment.⁵ These ware washing systems do not have a set wash cycle or require an attendant.

Disadvantages of a Novelty Sink

Costs: Expensive to operate since they have water continuously jetted at 300 gallons per minute.³

Most of these systems are being purchased with sink heaters that keep the water hot.

These features add to the cost of operation and do not reduce the time or water it takes to complete the job.⁶

Ineffective: Novelty Sinks do not remove Carbon Build up and clean hood filters superficially

Labor Intensive: Although Continuous motion pot washing systems allow employees to drop any number or type of pots and pans in the system and walk away, items then need to be moved manually to other parts of the system to complete the process.

3. DISHWASHERS

In commercial kitchens, there are two ways in which equipment is sanitized: by using an automated dishwasher, or cleaning by hand in a 3-Compartment Sink.

High Temperature Sanitizing Dishwasher: Dishwashers that are more dependent upon high water temperatures to sanitize

Low Temperature Chemical Sanitizing Dishwasher: Dishwashers that use lower temperatures and more powerful chemical sanitizers to make sure surfaces are microorganism-free.⁷

Many operators believe it is cheaper and faster to use their dishmachine to wash their pots and pans. That leads to facilities using more resources (electricity, water) to get the job done, negating potential saving.⁸

Disadvantages of a Dishwasher

From an operational standpoint, dishwashers are one of the most expensive pieces of equipment in your kitchen. Every rack of dishes you wash can include as many as eleven separate cost items within the three main categories of water, water heating and chemicals.²²

Costs: **The cost of washing one dish rack is 50 cents.**⁹

Ineffective: Dishwashers do not remove Carbon Build up and clean hood filters superficially

3. SOAK TANKS

Heated Soak Tank Systems that are filled with water and a detergent once a month.

- DECARBONIZES
- DEGREASES
- CLEANS
- SANITIZES

All with minimal or no need for scrubbing

The **DECARBONATOR®** is the latest generation of heated soak tanks with unparalleled safety features and practical design upgrades.

Removes Carbon build up and Fats, Oil, Grease & Grime safely and effortlessly while saving money on labor, water and chemicals

UNDERSTANDING YOUR WAREWASHING COSTS

Figure 1



Ware washing uses approximately:
15% of any food establishments operating resources
(labor and general supply costs)¹⁰

The costs of these resources can have a significant impact on foodservice operations and ultimately on profitability. As indicated by the Energy Information Administration (Official Energy Statistics from the US Government), these costs have also been rising over time and more recently, there have been more dramatic increases particularly with electricity, water and natural gas.¹¹

Since the Foodservice Industry is Energy Intensive¹¹, rising energy prices continue to impact restaurant's bottom line.⁷ In addition, the cost of labor has been rising steadily with recent increases in the Federal Minimum Rate of \$1.40 per hour without benefits.

WAREWASHING COSTS

Ware washing and dishwashing costs are made up by

1. LABOR

2. WATER

- 2.1 INITIAL cost of the water
- 2.2 ENERGY costs to heat the water
- 2.3 SEWER costs

3. CHEMICALS

- 3.1 Detergents
- 3.2 Sanitizer
- 3.3 Rinse aids
- 3.4 Degreasers

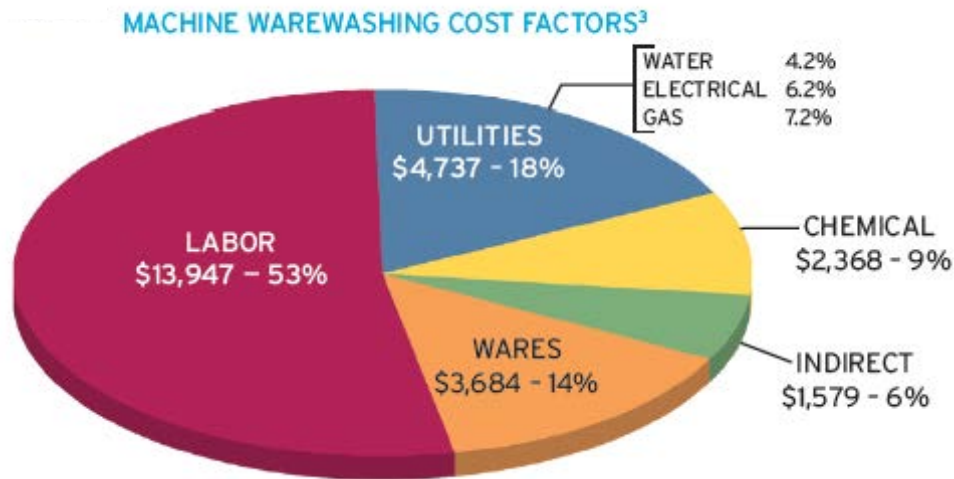
4. CONSUMABLES

5. INDIRECT COSTS

6. WARE REPLACEMENT

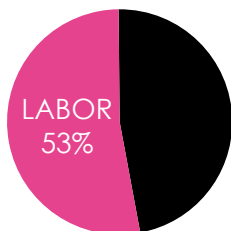
Figure 2: Shows the breakdown of Machine Ware washing Cost Factors by percentage with dollar figures for a \$1 million F&B sales full service restaurant.

Figure 2:



A restaurant with average annual sales of \$1 million per year could have over \$26,000 of ware washing expenses annually. This figure equates to 2.6% of sales.⁹ These calculations, published by Ecolab, are for *machine ware washing* and do not include the costs to use the 3-Compartment Sink which is utilized as a fundamental part of the ware washing process and cannot be eliminated.

LABOR



Labor costs comprise 53% of total ware washing operational costs.⁹

Labor costs are on the rise

In 2007, the Federal Minimum Wage was increased to \$5.85 per hour.

In 2009, the Federal Minimum Wage increased to \$7.25 per hour.

A majority of States now have minimum wages higher than the Federal Minimum.¹²

As of 1 July, 2015 D.C.'s new minimum wage of \$10.50 per hour was the first jurisdiction to cross the \$10 threshold among the states.¹³

In 2024, D.C.'s new minimum wage is \$17.00 per hour which is more than a 60% increase in less than 10 years.

In 2024, many states have passed legislation to reach a \$15 minimum wage with Washington as the highest minimum wage at \$16.28

3-Compartment Sink Labor costs:

Hand washing in the 3-Compartment Sink is notorious for being labor intensive.

On average, it takes three to five minutes to scrub each pot.³

It also takes at least one employee a minimum of two hours to wash, rinse and sanitize dishes and wares for every meal period.

The average labor cost for this position in a restaurant is about \$8 per hour, including wages and benefits.⁶

A typical restaurant spends about \$50 a day in labor costs to complete the three step cleaning process.⁶

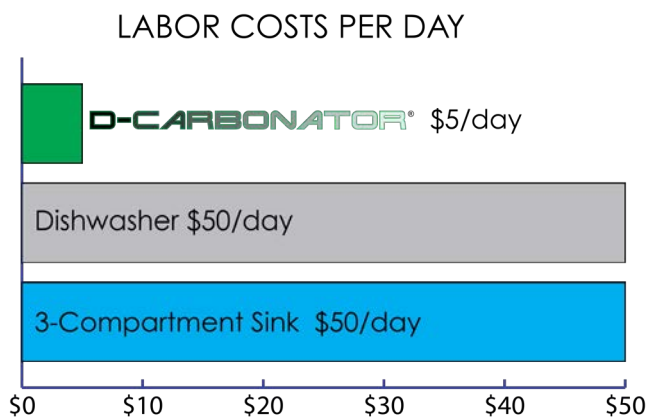
DECARBONATOR Labor costs:

Labor costs to use the DECARBONATOR are significantly reduced because items are left in the appliance to soak and do not need constant attention.

DECARBONATOR® costs less than \$5/day in labor

Figure 3: Labor costs per day:

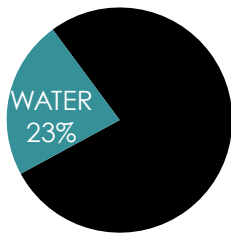
Shows a graphic comparison of labor costs for each of the conventional methods of ware washing compared to the DECARBONATOR®.



DECARBONATOR® Frees up labor

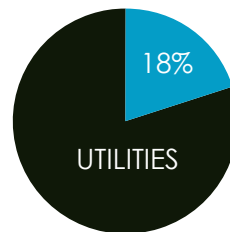
Example of Labor Saving: Le Chef Bakery had three permanent employees in the dish room. Immediately after installing the 85GAL DECARBONATOR®, they freed up two employees permanently and now save more than \$3,500 per month on labor alone! That is saving \$42,000 per year

WATER



Water costs comprise 23% of total ware washing operational cost.⁹

UTILITIES



Utility costs comprise 18% of total ware washing utility costs.⁹

Cleaning requires HOT water

The dish room is where the connection between water and energy use is most dramatic. It is where you may be able to achieve some of your greatest waste and energy savings!¹⁴

Water is fundamental to your operation's success. You usually pay for it in three ways

1. The initial cost of the water
2. Sewer costs
3. Energy costs to heat the water

These costs add up! With the cost of water now rising faster than inflation, your water bill is taking a bigger bite.¹⁵

The national average rate of water per HCF (748 Gallons) is \$7.00.¹⁶

In California and many other States, this rate is closer to \$12.00.

The Food Service Technology Center typically uses a rate of \$0.15 per kWh for average electrical estimates.

National average cost to buy, heat and use water is about \$0.04 per gallon.¹⁷

3-Compartment Sink Water costs:

A typical 3-Compartment Sink has three equal-sized bowls of 40 gallons. Every time the unit is filled, about 120 gallons of hot water is used and typically the sinks need to be refilled every 2-4 hours.

On average, a 3-Compartment Sink can use 840 -1000 gallons of water per day

It will cost the operator \$35-\$40 per day in utilities to operate a 3-Compartment Sink.⁶

Example: 960 Gallons per day at 4 cents per gallon is \$38.50 per day

In a busy environment where the sinks are refilled more often than 2 hourly to keep up with the demand, these utility costs can be increased by 50%.

In total, it costs an operator \$88-\$98 per day in labor and utilities to use the 3-Compartment Sink, or about \$32,000 annually.

This cost does not include the cost of chemicals used in the sinks.⁶

Dishwasher Water costs:

Dish machines consume 30-50% of all water used in restaurants.⁹

The cost of washing one dish rack is 50 cents⁹

Utilities for a dishwasher covers the cost of water, sewage, gas and electric including the dish machine, booster heater (if present) and pre-flush hose.⁶

In a typical 90-second dish machine, the operator will use 70 gallons of water per hour.¹¹ There are added costs for the water heating and water sewage as well as an additional cost to run and maintain the wash motor.

The Dish machine uses about 600 gallons per day serving 300 meals and 1000 gallons for 600 meals.¹⁸

It will cost the operator \$28-\$32 per day in utilities to operate a Dishwasher.⁶

Example: 800 Gallons per day at 4 cents per gallon is \$32.00/day

DECARBONATOR Water costs:

A more sustainable alternative to a 3-Compartment Sink is a DECARBONATOR

DECARBONATOR® uses less than 2 Gallons of water per day

The DECARBONATOR® is filled with water once a month and the significant difference in water usage compared to conventional methods is obvious

Energy: The 40GAL DECARBONATOR® requires 2.2 kWh/day to maintain the water constantly at 185° F. This equates to \$0.31 per day.

Figure 3: Water Costs per Day

Shows a graphic representation of water usage for each of the conventional methods of warewashing compared to the DECARBONATOR®.

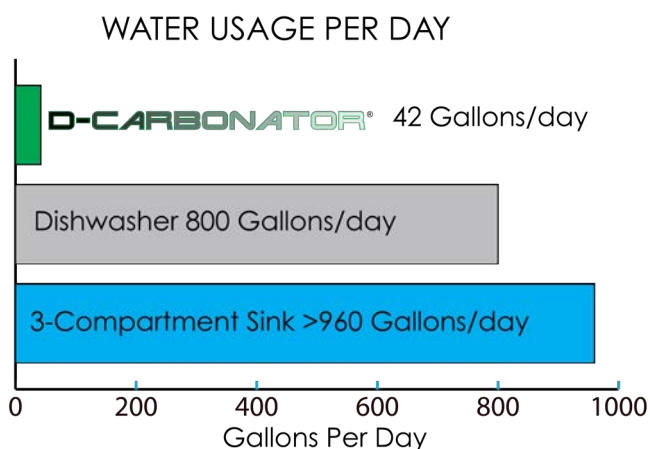
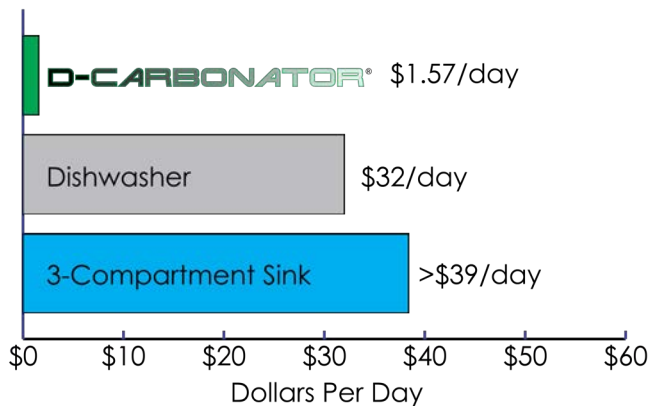


Figure 4: Utility Costs per Day

Shows a graphic representation of water and utility costs for each of the conventional methods of warewashing compared to the DECARBONATOR®.

WATER & UTILITY COSTS PER DAY



FACT: The average OSI concept (Outback) spends approximately \$8,500 in utilities per month. Think in terms of profit margin, this is something every manager can relate to. Let's say you can find a way to save \$37.50 per month in utility costs. That would yield \$450 in annual savings. While \$450 might not sound like much at first, it's huge when you think in terms of profit margin. Consider this: if your facility operates with a profit margin of around 5 percent, you'll need about \$9,000 worth of sales to earn \$450.¹⁹

DECARBONATOR® Utility cost \$1.57/day and works 24/7

Using the right tools for the right job is essential to a successful dish room operation.⁸

There's no question that a *DECARBONATOR®* can reduce water and utility costs compared to a 3-Compartment Sink, but how much can be saved depends on several factors:

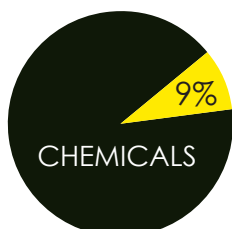
- How much water is used
- How many times the 3-Compartment Sink is filled
- How many employees are tasked with dish duty and how many hours per day

Additionally, the *DECARBONATOR®* can reduce water costs and utility costs compared to a Dishwasher, but how much can be saved depends on several factors:

- How many employees operate the Dishwasher
- How many racks are washed per day
- Type and capacity of Dishwasher
- Number of meals served per day

By transitioning wherever possible from a 3-Compartment Sink and Dishwasher to a *DECARBONATOR®*, the operator could decrease water, sewer and energy costs and cut labor costs between \$18,000 and \$39,840 per store per year.

CHEMICALS



Chemicals comprise 9% of total ware washing operational costs.⁶

Detergents, Rinse additives and Sanitizer

Dishwasher: Chemical costs are approximately 0.2% of total food and beverage sales.

The above percentages relate to machine ware washing and do not take into account the chemicals used to wash and sanitize pots and pans by hand.

3-Compartment Sink: The first sink is filled with a detergent. In busy situations, there is not always time to fill the first sink and detergent is dispensed continually while scrubbing wares. Since the chemicals for the 3-Compartment Sink are dispensed manually, there is less control of the quantities dispensed compared to a Dishwasher.

The third sink is filled with an EPA registered hard surface food contact sanitizer. These chemicals are not reusable.

DECARBONATOR®:

The *DECARBONATOR®* is filled with one dose of CarbonZyme that lasts an entire month

CarbonZyme® is a safe detergent. Safe on the environment, equipment and people friendly.

CarbonZyme® lasts for 4 weeks at a time

SANITIZER

Sanitization removes bacteria that can cause foodborne illness, so extra care is needed to ensure that there are no shortcuts taken when sanitizing any surface that can potentially come into contact with food.⁷

Improperly cleaning and sanitizing of food contact equipment does allow transmission of pathogenic microorganisms to food and ultimately our customer.²⁰

Sanitizer effectiveness is based on three factors:

1. Concentration of the solution in water
2. Water temperature
3. Contact time with the dishes

Factors related to Sanitizing

1. Frequency of refilling
2. Water usage
3. Sanitizer cost
4. Manual rinse
5. Labor & Utility
6. Compliance

Sanitizing is a key step in the ware washing operation taking effort, time and incurring cost. There could be serious consequences for non-compliance and this could have a severe effect on an operation.

According to Allison Buchanan “One foodborne illness outbreak can destroy years of good reputation. The average cost of an outbreak is \$75,000, according to the Natl. Restaurant Assn., and usually results in customer loss, medical bills, legal fees, higher employee turnover and punitive damages, among other things.²¹

The most cited health code violation restaurants face is when their sanitizer is not within health code range during inspections.⁸

DECARBONATOR® sanitizes at 185° F

Since the DECARBONATOR® operates at a constant 185° F, all wares removed from the tank are fully sanitized and completely bacteria free. No additional effort is required to achieve this result.

BAKERY & SUPERMARKETS

The calculations in this article are based on the 40GAL DECARBONATOR® which is typically used in a small restaurant. The costs to operate the 3-Compartment Sink or Dishwasher are significantly magnified in larger establishments such as Hotels, Bakeries and Supermarkets. The savings on Labor, Water and Chemicals when using the DECARBONATOR® are equally magnified.

Carbon Build up can have a significant detrimental effect on your Bakery operation. Carbon is a barrier to heat and continues to build up on all equipment despite the best will and the greatest efforts to clean.

It slows down the bake cycle, alters the integrity of the baking equipment and leaves an unsightly and unwanted layer of Carbon on baked products.

For this reason, larger Bakeries often have numerous employees dedicated to sanitation and ware washing to minimize the impact of carbon build up and Fats, Oils and Grease on equipment.

Pan washers and rack washers use significant volumes of water and chemicals and are very energy intensive but do not remove Carbon Build up.

If this step is handled in the 3-Compartment Sink, the process requires intensive labor and uses excessive amounts of heated water and chemicals. The effectiveness of this method is also operator dependent and not often achieved.

Bakeries can free up a number of employees by using the DECARBONATOR® rather than conventional methods.

Supermarket bakeries additionally expose customers to unsightly Carbon build on equipment. Numerous employees can be freed up by using the DECARBONATOR® on hood filters, grills, pots and pans, wire baskets, floor mats, Rotisserie Grills, oven racks, stove parts and more

SUPERMARKET Chain Saves 4 labor hours per day cleaning rotisserie grills in the DECARBONATOR



HOOD FILTER CLEANING

Clean hood filters are essential in any commercial kitchen. When clean and working efficiently, they remove airborne Fats, Oils & Grease which coats all surfaces of the kitchen including the floor. A slippery floor is a potential hazard as it can cause severe injury.

By removing the airborne grease a constant comfortable temperature is maintained throughout the kitchen.

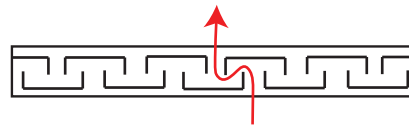
The HVAC motor needs to work harder when the filters are not cleaned, causing unnecessary additional utility expenses

The baffles of the filters trap grease that is not apparent to the eye and cannot be cleaned adequately by using the 3-Compartment Sink or the Dishwasher. The *DECARBONATOR®* cleans hood filters within 20 minutes leaving no Grease that is still hidden inside the baffles.

For a similar amount to the cost of one labor hour, the *DECARBONATOR®* could be working for you and cleaning your equipment

It requires minimal labor and is very low maintenance.

DECARBONATOR is the most efficient and cheapest method of cleaning hood filters



CASE STUDY: Determine how much FOG is left inside a filter after conventional cleaning

A filter from a bank was removed and weighed before cleaning

The filter was then soaked in a hot water solution of degreaser and then manually scrubbed for **15 minutes**

A small amount of FOG was removed by manual cleaning

The filter was then soaked in the *DECARBONATOR*

An additional 1/3 lb was removed by soaking in the *DECARBONATOR*

SAVINGS

LABOR SAVINGS ON HOOD VENTS

Save 15 minutes of labor per hood filter per day

HOOD CLEANING

Reduce the frequency of outside companies to clean the hood system

GREASE TRAP CLEANING

Reduce the frequency of outside companies to clean the grease trap

DECARBONATOR™

NexGen Heated Soak Tank

Ware washing is a significant financial factor in the foodservice industry and an area where savings can be realized providing that current practices are reviewed and changed.

The DECARBONATOR cleans more effectively than the Dishwasher or the 3-Compartment sink and at a fraction of the cost

Is the 3-Compartment Sink redundant?

The DECARBONATOR® does not require an attendant overseeing or performing the cleaning. Rather than cleaning in the 3-Compartment Sink or Dishwasher, wherever and whenever possible, use the DECARBONATOR® and save on labor, chemicals and utilities

Repetitively using the dishwasher for a function best suited to the 3-Compartment Sink and vice versa, can have a significant impact on operating costs.

How to calculate savings

Determine how much manual ware washing and dish washer cleaning is costing you on an operational basis by considering these factors.

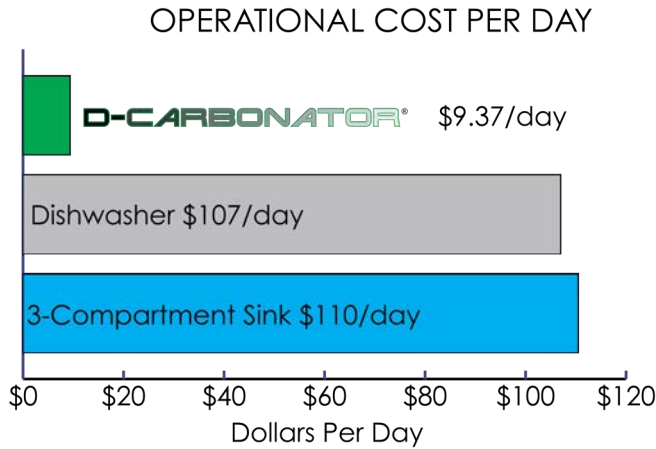
1. How many hours a day your operations spend on pot washing
2. How much your pot washing labor costs per hour
3. How many times your dishwashers have to dump and fill the sink in the course of a day's operation
4. How much detergent they use each time they fill the sink, and how much it costs
5. How much is spent daily on degreaser and sanitizer
6. How many times per year is the hood system cleaned
7. How many times per year is the grease trap cleaned
8. How much you spend on replacing pans each year.³

The 3-Compartment Sink is not necessarily the best method for cleaning all items. Although dishwashers make our lives easier, they are not meant to take the place of the 3-Compartment Sink.

Many operators believe it is cheaper and faster to use their dish machine to wash their pots and pans. That leads to facilities using more resources (electricity, water) to get the job done, negating potential saving.⁸

Figure 5: Operational Costs per Day

Shows a graphic representation of total Operation costs for each of the conventional methods of ware washing compared to the *DECARBONATOR*®.



The *DECARBONATOR*® is a stand alone unit that requires no plumbing and integrates easily into any commercial kitchen. By soaking in a safe, heated solution, it provides a method of cleaning that frees up labor, saves on water and uses a fraction of the chemicals that are used with conventional methods.

It is not meant to take the place of the 3-Compsrtment Sink or the Dishwasher, rather it works in conjunction with both these methods.

The *DECARBONATOR*®

- DECARBONIZES
- DEGREASES
- CLEANS
- SANITIZES

All with minimal or no need for scrubbing

It also degreases better, safer, cleaner, quicker and cheaper than any other conventional method.

DECARBONATOR® No hidden costs

Most importantly, it will clean your equipment, maintain it at an unprecedented level of hygiene and perform these functions at a fraction of the conventional costs.

DECARBONATOR® BENEFITS

- DECARBONIZES
- DEGREASES
- CLEANS
- SANITIZES

SAVES

- Money
- Water
- Energy
- Chemicals
- Labor
- Filter cleaning
- Consumables
- Equipment replacement

SAFE

- On equipment
- For staff
- For the environment
- Food safe
- On Aluminum

REDUCES

- Airborne FOG
- Fire risk
- Carbon footprint
- Cooking time
- Health Department audit failure

INCREASES

- Kitchen Pride
- Employee Morale
- Productivity
- Cooler kitchen

Table 1: TOTAL OPERATIONAL COSTS ALL DECARBONATOR MODELS

INITIAL FILL UNIT WITH HOT WATER						
D-CARBONATOR Model	25GAL	40GAL	85GAL	120GAL	250GAL	500GAL
Water Volume	25	40	85	120	250	500
Top up for water level drop	6.25	10	21.25	30	62.5	125
Total Gallons heated water	1.04	1.67	3.54	5.00	10.42	20.83
Cost of heated water Initial & top up	\$0.04	\$0.07	\$0.14	\$0.20	\$0.42	\$0.83

ELECTRICITY COST FOR INITIAL HEAT UP						
Hours to raise T° (140° F to 185° F)	3	4	5	6	8	10
Heater Wattage (kW)	1	1.5	1.5	3	4.5	6.75
Total Initial Electricity	\$0.41	\$0.83	\$1.04	\$2.48	\$4.97	\$9.32

DAILY ELECTRICITY COST						
Number of hours switched on Per Day	1	1.5	2.5	3	4	4.5
Heater wattage	1	1.5	1.5	3	4.5	6.75
kWh per day	1	2.25	3.75	9	18	30.375
Daily Electricity Cost Per Day	\$0.14	\$0.31	\$0.52	\$1.24	\$2.48	\$4.19

DAILY WATER COST FOR RINSING						
Volume of cold water for rinsing	40	40	40	60	80	60
Cost of cold water including sewage	\$0.36	\$0.36	\$0.36	\$0.54	\$0.72	\$0.54

TOTAL UTILITY COST						
TOTAL WATER & ELECTRICITY COST/day	\$0.95	\$1.57	\$2.05	\$4.47	\$8.59	\$14.88

CarbonZyme						
CarbonZyme Cost per Month	\$55	\$85	\$170	\$240	\$480	\$960
CarbonZyme Cost Per Day	\$1.81	\$2.80	\$5.59	\$7.89	\$15.79	\$31.58

LABOR						
Labor to load/unload & rinse per day	\$5	\$5	\$12	\$15	\$20	\$25
Cost per hour	\$0.32	\$0.39	\$0.82	\$1.14	\$1.85	\$2.98
TOTAL D-CARBONATOR OPERATIONAL COST/Day	\$7.76	\$9.37	\$19.65	\$27.36	\$44.38	\$71.46

Comparison of D-CARBONATOR® vs Dishwasher and 3-Compartment Sink :



An analysis of Cost Saving and R.O.I.

D-CARBONATOR®

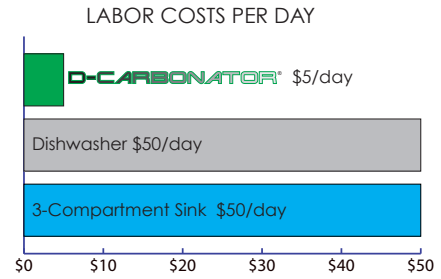
<input checked="" type="checkbox"/> Decarbonizes	<input checked="" type="checkbox"/> Cleans	<input checked="" type="checkbox"/> Save Water	<input checked="" type="checkbox"/> Chemicals Included
<input checked="" type="checkbox"/> Degreases	<input checked="" type="checkbox"/> Sanitizes	<input checked="" type="checkbox"/> Save Utilities	<input checked="" type="checkbox"/> Minimal labor
<input checked="" type="checkbox"/> User friendly	<input checked="" type="checkbox"/> 24/7	<input checked="" type="checkbox"/> Cleans Filters	

D-CARBONATOR® 40GAL

Labor Cost ² - Load/Rinse 40 minutes	Cost/Day	Cost/Month
Utility Cost - Water and Electricity	\$5.00	\$150.00
CarbonZyme® - Detergent & Sanitizer	\$1.57	\$47.72
	\$2.80	\$85.00

Total Cost **\$9.37/Day** **\$284.85/Month**

Total Cost per Hour \$0.43/Hour
Water Usage 42 Gallons/day



DISHWASHER

<input checked="" type="checkbox"/> Decarbonizes	<input checked="" type="checkbox"/> Cleans	<input checked="" type="checkbox"/> Save Water	<input checked="" type="checkbox"/> Chemicals Included
<input checked="" type="checkbox"/> Degreases	<input checked="" type="checkbox"/> Sanitizes	<input checked="" type="checkbox"/> Save Utilities	<input checked="" type="checkbox"/> Minimal labor
<input checked="" type="checkbox"/> User friendly	<input checked="" type="checkbox"/> 24/7	<input checked="" type="checkbox"/> Cleans Filters	

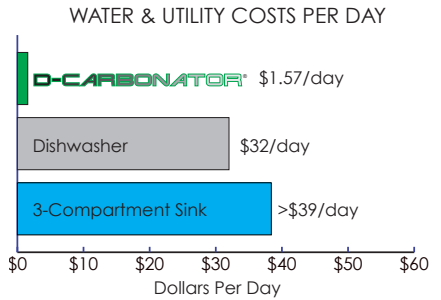
Dishmachines consume 30-50% of all water used in restaurants³
The cost of washing one dish rack is 50 cents⁴
Water is charged for 3 times - 1)Transport in 2)Heating it up 3)Disposal

DISHWASHER

Labor Cost - Load, scrub & rinse	Cost/Day	Cost/Month
Utility Cost - Water and Electricity	\$50.00	\$1500.00
Chemicals - Detergent & Sanitizer	\$32.00	\$973
	\$25.00	\$760.00

Total Cost **\$107/Day** **\$3253/Month**

Total Cost per Hour \$6.68/Hour
Water Usage 800 Gallons/Day



3-COMPARTMENT SINK

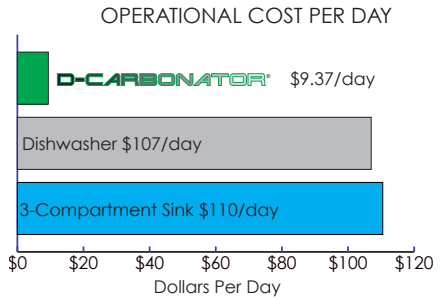
<input checked="" type="checkbox"/> Decarbonizes	<input checked="" type="checkbox"/> Cleans	<input checked="" type="checkbox"/> Save Water	<input checked="" type="checkbox"/> Chemicals Included
<input checked="" type="checkbox"/> Degreases	<input checked="" type="checkbox"/> Sanitizes	<input checked="" type="checkbox"/> Save Utilities	<input checked="" type="checkbox"/> Minimal labor
<input checked="" type="checkbox"/> User friendly	<input checked="" type="checkbox"/> 24/7	<input checked="" type="checkbox"/> Cleans Filters	

3-COMPARTMENT SINK

Labor Cost - Load, scrub & rinse	Cost/Day	Cost/Month
Utility Cost - Water and Electricity	\$50.00	\$1520.00
Chemicals - Detergent & Sanitizer	\$38.5	\$1170.40
	\$22.00	\$668.80

Total Cost **\$110/Day** **\$3359/Month**

Total Cost per Hour \$13.81/Hour
Water Usage 960 Gallons/Day



Savings Summary:

Dishwasher and 3-Compartment Sink costs more than **10x** the cost of the D-CARBONATOR™

Clean equipment in D-CARBONATOR® instead of 3-Compartment sink (2 hours/day)	Save per year \$6431 per year
Clean hood filters in D-CARBONATOR® instead of Dishwasher	\$2,445 per year
Clean sheet pans in D-CARBONATOR® instead of Dishwasher	\$2,737 per year
Clean equipment in D-CARBONATOR® instead of Dishwasher (16 racks per day)	\$2,920 per year
Utilities savings	\$3504 per year
Total Savings	\$18,000+ per year

For every employee saved in the dishroom is an additional

Water savings	\$21,840 per year
Utilities savings	87,600 Gallons per year
Savings calculated for 40GAL D-CARBONATOR- Larger models will save more!	\$3,504/year

REFERENCES

1. 2007-2008 Restaurant Industry Report by NRA & Deloitte
2. Do you understand the Total costs of your dishroom operation? Daydots.com
3. Bubble, bubble- No Toil, No Trouble. Foodservice Equipment Reports April 1999
4. Evaluating the Effect of an Automated Pot Washer on Reducing the risk of Musculoskeletal Injury in a healthcare kitchen. OHSAH Dec 22, 2006.
5. Continuous Motion Pot Washing. Wikipedia. The Free Encyclopedia
6. Warewashing & Dishwashing Information: The WEBstaurant store. webstaurantstore.com/guide/72
7. Sanitize it. Food & Drink. 14 March 2007. Lee Briars
8. Do you understand the Total costs of your dishroom operation? Daydots.com
9. Warewashing Operational Cost Analysis ECOLAB 2007
10. Your Warewashing profit Potential" RSA Review July 2001 Volume 5, Issue 2 by Carolyn Ruck
11. Always use energy wisely. 2006 Southern California Gas Company
12. Huffington Post 01/06/2015
13. [www.ncsl.org/research labor-and-employment](http://www.ncsl.org/research/labor-and-employment)
14. www.energystar.gov
15. Conserve.restaurant.org
16. Food Service Technology Center. Low-Flow Pre-rinse spray valves 2009
17. Fisher Nickel
18. www.energystar.gov
19. www.slideshare
20. Don't Compromise: Clean and Sanitize. Aug 21, 2006. Foodservice.com
21. Warewashing Systems. Food Service Director. Amanda Charter Jan 15, 2000
22. Boosting Restaurant Profits with Energy Efficiency: A guide for restaurant Owners and Managers