



UNLV

University of Nevada, Las Vegas
Science and Engineering Building

Glassware Facility Training



Glass Wash Policy

- Two units in SEB, located off the second and fourth floor service hallway near the autoclaves
- All users of the glass washers must be trained by the SEB Assistant Director before operating.
- Good housekeeping must be maintained around the adjacent wash basin. The counters and all surfaces must be wiped down. The sink must be rinsed and cleaned of garbage and dishware.

Glassware Washer Overview

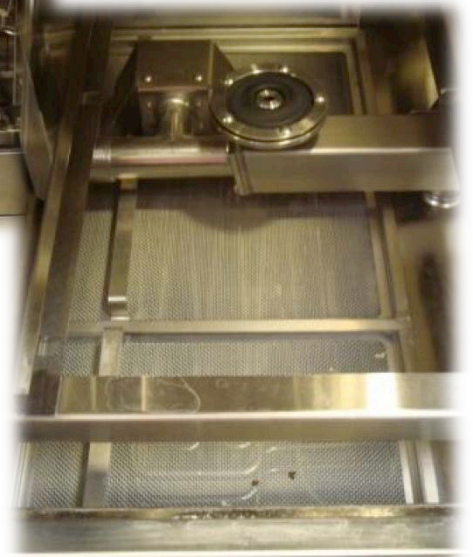
- Main use: Cleaning glassware, plasticware, and metalware used to assist in research experiments
- Expensive piece of equipment (\$70,000)
- Essential for several groups' research
- Malfunctions can occur from misuse
 - Misuse Results:
 - Research slows
 - We have to pay for costly repairs
- Operating the glassware washer requires caution and adherence to operating procedures.
- Any problems should be reported immediately to Eric Knight at 895-2020.
- The Glass washers may only be utilized by SEB occupants.

How to Use the Glassware Washer Overview

- Appropriately prepare your items for glass washing
 - Remove any labels, tags, and heavy soil
- Choose the loading cart most suitable for your items. See page 7 for details.
- Select the appropriate cycle for your items. See pages 8–9 for details.
- Close the glassware washer door securely and start the cycle.
- After the cycle is fully finished, open door to allow load to cool, then remove your items.
- When removing items, wear the proper protective equipment. Heat-resistant gloves and safety glasses are recommended.

Before Operating the Glassware Machine

- Open chamber door and verify wash chamber is empty, rack are properly installed, and tips are present.
- Verify debris screens in chamber are clean and in place.
- Locate chemical supply container and ensure adequate level of detergent. Contact the SEB front desk if low.








Loading Glassware Washer

- Baskets and accessories must be loaded on appropriate loading cart or surface.
 - Test Tube Rack
 - General Purpose Rack and Cover
 - Petri Dish Rack
- Ensure all items are correctly positioned on rack and/or basket
 - When loading a rack or basket, beakers must be placed down over the wash spikes
 - If lightweight plasticware or metalware is being washed, use supplied cover to prevent items from turning over.
- Open load chamber door and slide loader accessory headers fully into wash chamber. Verify each header is positioned directly over a manifold connector.
- Ensure the load chamber door is pulled all the way down.



Types of Glassware Washer Accessories

GLASSWARE PROCESSING CAPACITY					
ACCESSORY	 VOLUMETRIC FLASKS	 ERLERMAYER FLASKS	 GRADUATED CYLINDERS	 BEAKERS	 CARBOYS & BOTTLES
KM-2 Spindle Header Kit	500 mL to 2000 mL	500 mL to 6000 mL	500 mL to 2000 mL	–	4 liter to 20 liter
KM-5 Spindle Header Kit	500 mL to 2000 mL	500 mL to 6000 mL	250 mL to 2000 mL	N/A	500 mL to 20 L
KM-8 Spindle Header Kit	500 mL to 2000 mL	500 mL to 1500 mL	250 mL to 500 mL	–	500 mL to 4 liter
M-18 Spindle Header	50 mL to 250 mL	250 mL to 300 mL	25 mL to 250 mL	–	–
M-32 Spindle Header	50 mL to 200 mL	50 mL to 250 mL	25 mL to 100 mL	–	–
M-34 Spindle Header	25 mL to 250 mL	50 mL to 300 mL	10 mL to 250 mL	N/A	N/A
M-50 Spindle Header	25 mL to 100 mL	50 mL to 125 mL	10 mL to 50 mL	–	–
M-72 Spindle Header	25 mL to 50 mL	10 mL to 50 mL	10 mL to 50 mL	150 mL to 600 mL	–
M-85 Spindle Header	5 mL to 50 mL	10 mL to 50 mL	10 mL to 50 mL	N/A	N/A
M-98 Spindle Header	5 mL to 50 mL	10 mL to 50 mL	10 mL to 25 mL	150 mL to 600 mL	–
General Purpose Basket	–	–	–	Various Sizes	–

Accessories currently available

Choosing the Correct Cycle

The Glassware Washer is programmed for ten operating cycles:

1. LIGHT WASH (LT WASH) – For processing lightly soiled or delicate items
2. MEDIUM WASH (MD WASH) – For processing moderately soiled items
3. HEAVY WASH (HY WASH) – For processing heavily soiled items
4. MEDIUM ACID WASH (MD ACID) – For processing moderately soiled items with alkaline deposits, or pre-wash for acid wash glassware
5. HEAVY ACID WASH (HY ACID) – For processing heavily soiled items with alkaline deposits , or pre-wash for acid wash glassware

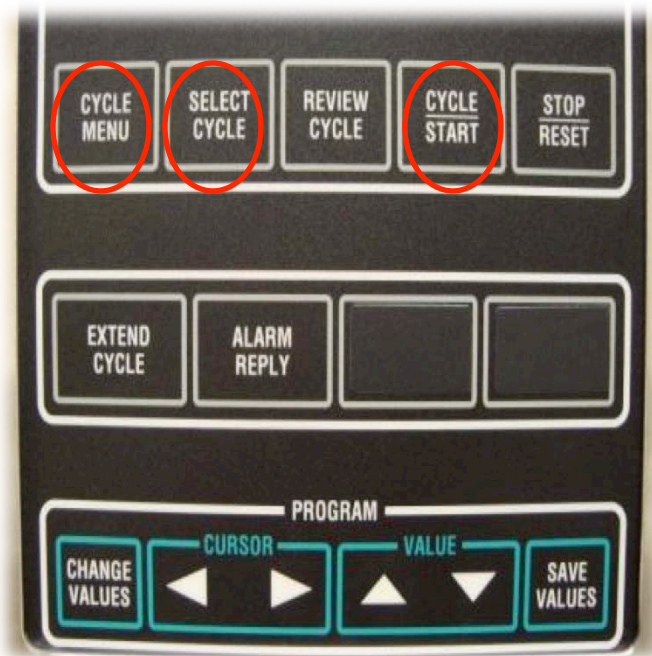
Choosing the Correct Cycle (cont.)

The Glassware Washer programmed operating cycles:

6. FROGS 1 – For processing the Aquatics Facility items
7. MEDIUM PLASTIC (MD PLAS) – For processing moderately soiled plastic items
8. HEAVY PLASTIC (HY PLAS) – For processing heavily soiled plastic items
9. MEDIUM ACID PLASTIC (MD ACD PL) – For processing plastic items with alkaline deposits, or pre-wash for acid wash plasticware
10. HEAVY ACID PLASTIC (HY ACD PL) – For processing heavily soiled plastic items with alkaline deposits, pre-wash for acid wash plasticware

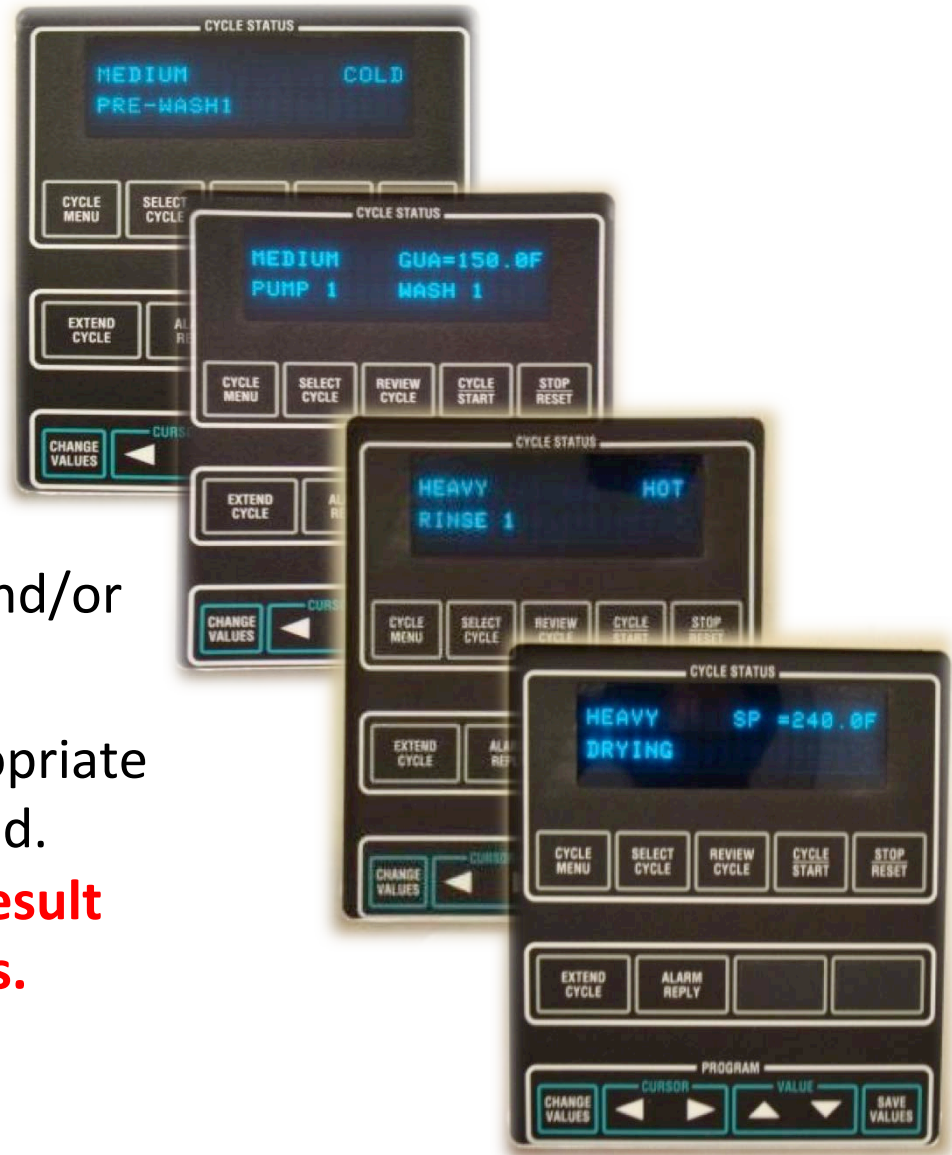
To Select the Correct Cycle

- 1) Press **CYCLE MENU** to scroll between the ten cycles.
- 2) Press **SELECT CYCLE** to select a cycle from the displayed menu. The selected cycle will be flashing.
- 3) Press **CYCLE/START** to select cycle. The name of the selected cycle appears and remains displayed for a few seconds.
- 4) Press **CYCLE/START** a second time while cycle name is displayed.



Cycle Sequences

- Cycles include various sequences of treatments:
 - Pre-wash
 - Wash
 - Rinse
 - Pure Water Rinse
 - Drying
- Each treatment has time and/or temperature values.
- Always select a cycle appropriate for the items being processed.
 - **Failure to do so may result in damage of your items.**



Cycle Breakdown for Wash Cycles

**** DO NOT PUT PLASTICS IN THE CYCLES BELOW ****

**** USE ONLY FOR GLASSWARE AND METALWARE ****

Light Wash Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 1 min at 65°C
 - Standard detergent injection 21 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Medium Wash Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 3 min at 65°C
 - Standard detergent injection 33 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Heavy Wash Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 5 min at 65°C
 - Standard detergent injection 45 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Cycle Breakdown for ACID WASH Cycles

**** DO NOT PUT PLASTICS IN THE CYCLES BELOW ****

**** USE ONLY FOR GLASSWARE AND METALWARE ****

Medium Acid Wash Cycle:

- Pre-wash: 1 min
hot tap water (60 °C)
- Wash 1: 3 min at 65°C
 - Standard detergent
injection 33 sec
- Wash 2: 3 min at 65°C
 - Acid detergent
injection 33 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Heavy Acid Wash Cycle:

- Pre-wash: 1 min
hot tap water (60 °C)
- Wash 1: 5 min at 65°C
 - Standard detergent
injection 45 sec
- Wash 2: 5 min at 65°C
 - Acid detergent
injection 45 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Cycle Breakdown for Plastic Cycles

Frogs 1 Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 3 min at 65°C
 - *** No Detergent
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 115°C
 - Cooling: 1 min (fan only)

Medium Plastic Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 3 min at 65°C
 - Standard detergent injection
33 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 80°C
 - Cooling: 1 min (fan only)

Heavy Plastic Cycle:

- Pre-wash: 1 min hot tap water (60 °C)
- Wash: 5 min at 65°C
 - Standard detergent injection
45 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 80°C
 - Cooling: 1 min (fan only)

Cycle Breakdown for Acid Plastic Cycles

Medium Acid Plastic Cycle:

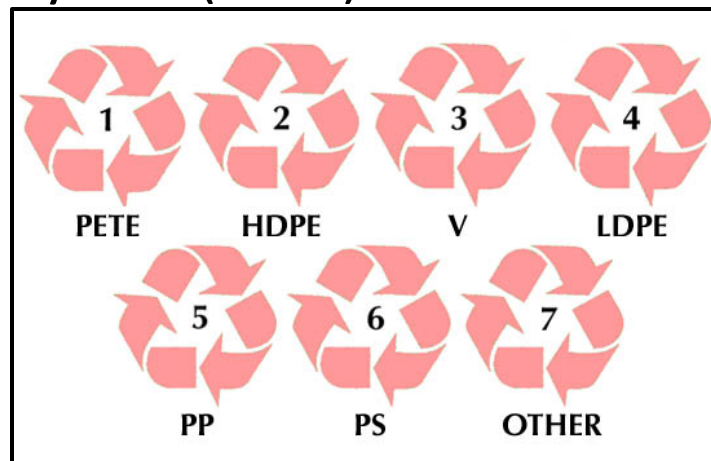
- Pre-wash: 1 min
hot tap water (60°C)
- Wash 1: 2 min at 65°C
 - Standard detergent
injection 33 sec
- Wash 2: 2 min at 65°C
 - Acid detergent
injection 33 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 80°C
 - Cooling: 1 min (fan only)

Heavy Acid Plastic Cycle:

- Pre-wash: 1 min
hot tap water (60°C)
- Wash 1: 3 min at 65°C
 - Standard detergent
injection 45 sec
- Wash 2: 3 mins at 65°C
 - Acid detergent
injection 45 sec
- Rinse 1: 1 min cold tap water
- Rinse 2: 1 min cold tap water
- Pure Water Rinse: 1 min at 82°C
- Dry: 15 min at 80°C
 - Cooling: 1 min (fan only)

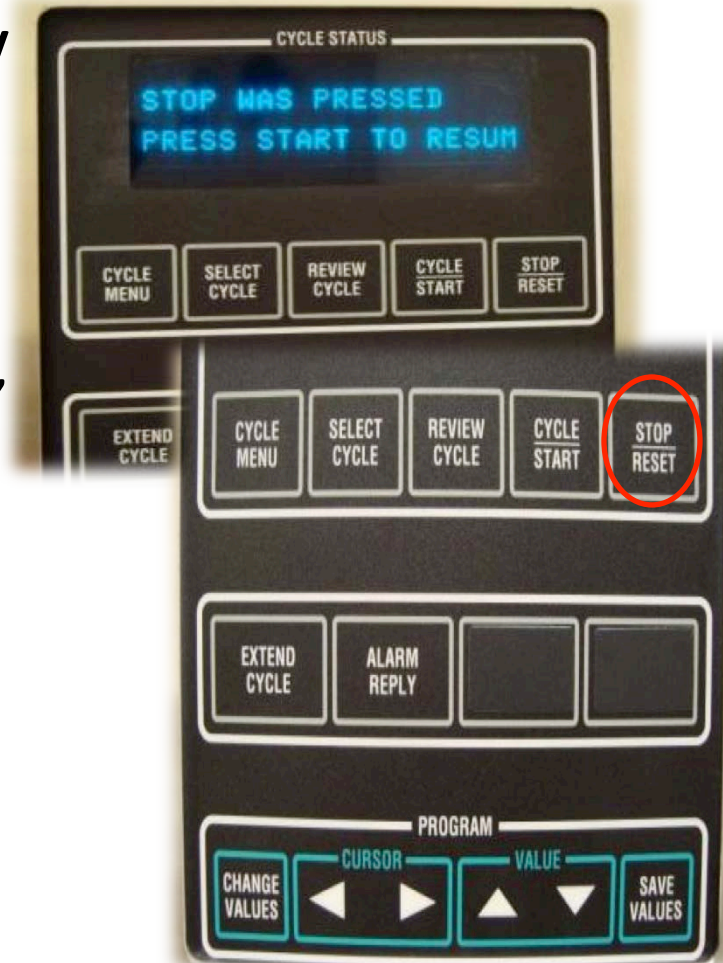
Plastic Types and Melting Points (MP)

- High Density Polyethylene (HDPE) MP: 120-130°C
- Low Density Polyethylene (LDPE) MP: 105-115°C
- Polypropylene (PP) MP: 130-171°C
- Polystyrene (PS) MP: 240°C
- Polycarbonate (PC) MP: 267°C
- Polypropylene Copolymer (PPCo) MP: 160°C
- Perfluoroalkoxy (PFA) MP: 302-310°C
- Polytetrafluoroethylene (PTFE) MP: 327°C



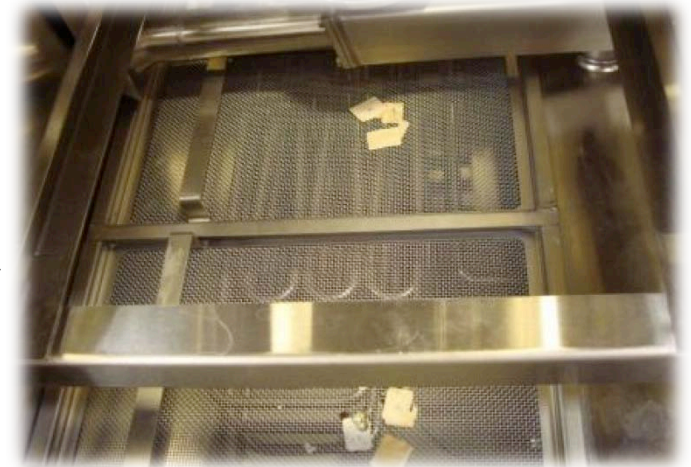
Emergency Stop

- Glassware washer operation can be halted at any time by pressing **STOP/RESET**. Pressing this button once halts cycle.
- Pressing **STOP/RESET** twice aborts cycle and printout message says “CYCLE ABORTED!” To resume cycle, press **CYCLE/START** touch pad.
- In the event of an emergency, use the main power disconnect lever on the wall.



WHEN GLASSWARE WASHER CYCLE IS FINISHED

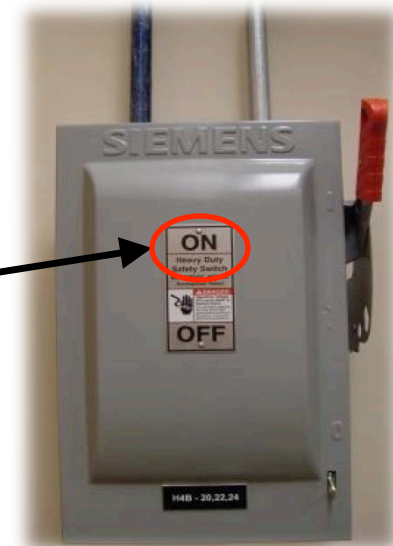
- When cycle is complete and buzzer sounds, pull up door to open and allow load to cool before removing items.
- Once cooled, remove and empty loading carts
- Wear personal protection equipment:
 - Heat-resistant gloves and safety glasses are recommended
 - Also be cautious of broken glass; items may have cracked during wash cycle
- Remove any debris that accumulated on the debris screen
- Clean up any spills or any other mess you created in the utility sink and countertops. It is important to always clean up after yourself to preserve our facility.



Trouble Shooting the Glassware Machine

IF UNIT WILL NOT POWER UP

- Verify building electrical disconnect lever located on the West wall is positioned to **ON**.
- Ensure power switch is in **ON** position by pressing **POWER-OFF/STANDBY** switch to **POWER** position.
 - This switch is to the left printer, under the hinged panel



ENFORCEMENT & PROBLEMS

- **Enforcement:**

- Glassware washer users **MUST** be trained prior to use. Those caught using the washer without having been previously trained, will be unable to use the facility until proper training by Eric Knight is completed.
- Trained individuals caught misusing the glassware washers will be required to demonstrate proper washer use. For any egregious misuse the user may be suspended from washer use in SEB indefinitely.

- **Problems:**

- If you have problems or notice unusual glassware washer behavior please report it immediately to Eric Knight @ 895-2020 and leave a note on the machine describing the fault to other users.