GIRTON TREE, TUB, AND CART WASHER MODEL 80-O

GENERAL

The 80-O is a heavy duty, large capacity hydrospray washer designed for thorough, efficient cleaning of tubs, trees, carts and other miscellaneous items used in the Food Industry.

FEATURES

1. **Automatic Self-Cleaning Screens** - The treatment pump is provided with self-cleaning debris screens having perforations considerably smaller than the machined jet orifices. Screens are interpiped and interwired with the control system to filter all solutions during any treatment and automatically flush debris to sewer whenever any treatment solution is drained.
2. **Oscillating Jet System** - The washer is provided with an oscillating jet system for all treatment solutions. The system consists of machined jets mounted on spray trees suspended from an oscillating carriage.
3. **180° F Wash Solution Temperature Guarantee** - The wash cycle will not begin timing until the recirculating wash solution temperature reaches 180° F (or higher) assuring 180° F temperature during entire treatment cycle.
4. **Safety Features**
   a. An emergency stop button is provided at each door of the washer.
   b. A safety disconnect, provided by the customer, should be mounted on an adjacent wall, and customer will provide wiring from this switch to the washer's main control panel. (See optional Safety Disconnect near end of options.)
   c. Door latches are spring loaded, explosion relief type latches that open rapidly when pushed from inside the cabinet.
   d. The opening of the door will shut off the circulating pump and stop the operation of the machine. Door must then be closed and the start button depressed to continue operation of the washer.
   e. Dual stainless steel safety cables are installed inside the wash compartment, on both sides of the wash area. The cables are installed, approximately 3' above the floor, and run the entire length of the cabinet. If the cable is pulled, the machine will immediately cease all operations. To restart operations, the power must first be turned off, then turned on again and the start button depressed.
5. **Sanitary Design Of Interior Cabinet**
   a. The seam flanges are formed on the exterior of the cabinet, thereby eliminating the protrusion of the flange into the washing chamber, its accompanying bolts, nuts, cover strip, and other associated debris and contamination-accumulating areas.
   This smooth interior cabinet design lends itself to the easy cleaning achieved by the outward spraying jets described under Construction. All welds shall be cleaned in a thorough manner.
   b. In addition to the back flushing screens already described, all Girton Tree, Tub, and Cart Washers feature a sump bottom flush that works in conjunction with the screen back flush to flush to the drain any debris or "scum" that settles out on the tank floor during the draining process.

OPERATION

Operator places items to be cleaned within the compartment, closes the door and presses the automatic cycle push button. Machine proceeds through the treatment schedule and automatically shuts off at the completion of the cycle. Operator then opens door and removes cleaned items.

TREATMENT SCHEDULE: Consists of the following phases:

1. Pre-Rinse: A circulated pre-rinse, circulated by pump pressure at the 90' head pressure by a centrifugal pump driven by a 10 Hp or 15 Hp motor for up to three minutes, uses the final rinse water which has been retained in the machine from the previous cycle. The pre-rinse treatment will remove the heavy soil and improve the circulated detergent wash, and will also reduce the amount of detergent required. As the pre-rinse water is drained, the screens are backflushed; thus screens are cleaned at the end of pre-rinse cycle. The pre-rinse cycle may be by-passed at the discretion of the operator.
2. Circulated Detergent Wash: After the pre-rinse cycle is completed and the machine has been drained, it will refill with hot water from the house supply (140°F minimum) the temperature will be thermostatically controlled up to 180°F (adjustable) and will be circulated by pump pressure at the rate of 340 or 450

gallons per minute at 90' head pressure by a centrifugal pump driven by a 10 Hp or 15 Hp motor. The length of the 0-15 minute wash cycle is controlled by presetting the adjustable wash time control. The detergent wash water is automatically drained to the sewer at the end of the timed wash cycle. As the wash water is drained, the screens are back-flushed, thus screens are cleaned at the end of wash cycle.

If the pre-rinse cycle is not used, the final rinse water will have been retained to be used for circulating wash, after the addition of the required amount of detergent or cleaner. At the beginning of the day's work, if there is no water in the machine it will be filled with hot water from the house supply (140°F minimum) and the temperature will be thermostatically controlled up to 180°F (adjustable).

3. First Circulated Rinse: The tank is automatically refilled with fresh, hot water from the house supply (140°F minimum) and will be thermostatically controlled up to 180°F (adjustable). The rinse water is circulated at the rate of 340 or 450 gallons per minute at 90' head pressure, for a pre-selected time up to 15 minutes. When the rinse water is drained, the screens are back-flushed; thus screens are cleaned at the end of the first rinse cycle,
4. Second Circulated Rinse: Same as first rinse except at the end of the treatment, the water is retained in the recirculating sump to be used as the pre-wash water for the subsequent load. (This is a standard rinse water conservation provision.) 0-15 minute duration.
5. Non-Recirculated Final Rinse System – The final rinse treatment consists of hot water from house supply sprayed through a separate set of jets. Water is not recirculated and drains to sump.
6. Exhaust: Unit stands idle for a sufficient length of time to remove the residual vapor from the air within the compartment. 0-3 minute duration.

CONSTRUCTION

1. The base, washing chamber, and recirculating sump are of welded stainless steel construction. The base contains integral door gutters, recirculating sump and supports to accommodate the floor grating.
2. Doors are of double walled, 14 gauge, T-304 stainless steel with #4 or 35Ra finish outside and 2B finish, 18 gauge inside, and insulated with 2" non-hygroscopic, non-toxic rigid foam insulation. Doors shall be baffled and fitted against water leakage from the wash chamber, complete with heavy duty plated hinges and breakaway latches. Door latches shall allow emergency exit from the wash chamber without the use of panic hardware.
3. A stainless steel floor grid shall span the full length and width of the load area, be free draining, and accommodate widths of the castered units up to the width of the washer door.
4. The recirculating sump is equipped with an automatic solution level control, and stainless steel steam coil heating for the recirculating treatment solutions. An automatic digital temperature readout mounted in the operator's panel will display and monitor recirculating solution temperature.
5. The washer is equipped with a stainless steel steam heating coil for maintaining the recirculating sump temperature, complete with condensate return and steam trap. Steam coil is easily removable for cleaning or maintenance. Only weld burn marks shall be removed from coils, weld shall not be ground or polished.
6. All treatments are under pressure from a Gusher or equal, 10 Hp or 15 Hp, close coupled, "Monobloc" type pump. The 10 Hp recirculating wash pump shall be a vertical motor mounted pump with head immersed, eliminating the need for the suction connections, packing glands, seals and other troublesome components typically found on horizontally mounted pumps. This gives the greatest efficiency with the least possible maintenance from centrifugal pumps, at the minimum rate of 340 or 450 gallons per minute at 90' head pressure.

   The standard Girton pump features a cast iron head with stainless steel shaft and impeller.

   The Girton vertical pump is self-draining. This feature, along with the back-flushing screens is described under Treatment Schedule. The Girton's exclusive sump bottom flushing system, and gravity drain, through a 3" fully ported ball valve; makes the Girton tree, tub and cart washer the industry leader in sanitary equipment design and affords the user the greatest reduction in cross-contamination available in today's market.
7. Oscillating Jet System consists of the following:
   a. The Girton Model 80-0 Washer is unique in having an electrically powered traveling header system that reciprocates the entire length of the cabinet at a minimum of five cycles per minute. The system consists of three or four stainless steel spray trees, which encircle the top and sides and are arranged

to wash the bottom of items in the machine. These headers contain a minimum of 52 'V' Jets. The header suspension and drive systems require no lubrication within the wash compartment. The headers will provide direct impingement to all exposed surfaces of any soiled items within the wash compartment.

b. The reversible header drive motor and gearbox is equipped with a safety clutch and is governed by oil tight micro switches and an overriding timer to provide a smooth drive when reversing the direction of the carriage. A capstan on the gearbox pulls the header within the wash chamber by stainless steel stranded wire cable.

8. The control system shall incorporate an Allen Bradley 1500 PLC processor. The PLC has 12 Kb of user memory. The 1500 LRP processor has (2) communication ports (both RS 232C). The processor shall be aware of and control all devices on the washer. Discrete inputs will be 24VDC. Discrete outputs will be relay contacts. Analog inputs will be 4-20 mA unless otherwise noted in the design specifications. Compact 1/0 modules may be added as necessary. The Micrologix 1500 PLC uses the same application software as the SLC series.

9. The operator-machine interface shall consist of an Allen Bradley Monochrome Panelview 550**,** which shall incorporate a touch screen for operator control. This shall allow the user with proper password level to access all parameters of a wash recipe. All alarms shall be shown on the display as well as announced audibly.

10. Girton's control system provides the ability to alarm on abnormal conditions. The washer has alarms based on each I/O point failure. This provides a comprehensive way of determining a device failure or process deviation. In general, all analog inputs to the system will have low and high alarm points settable by the customer. Also, all safety devices such as door switches or emergency stop buttons shall have alarms associated with them.

11. A 115-volt control transformer shall be supplied. The transformer shall be mounted with the motor starters, or in a separate Nema 12 box.

12. Permanent silicone door gaskets, for precise vapor control.

13. A manual vent damper shall be provided for trimming the exhaust emissions.

14. All drain components and piping shall be stainless steel.

OPTIONS

1. Right Or Left Hand Unit **-** Washer is designed to meet customer specifications by placing all serviceable components on either the right or left hand side of the washer.

2. Pass-Through Unit **-** Machine is provided with a door on the discharge end for pass-through operation, complete with safety switch and lights indicating washer is in operation or the cycle is complete. Door meets all requirements stated in CONSTRUCTION section. The washer shall be fitted with a double walled 14 gauge, T-304 stainless steel door at each end with #4 finish outside and 2B finish inside, and insulated with 2" non-hygroscopic, non-toxic rigid foam insulation. Doors shall be baffled and fitted against water leakage from the wash chamber, complete with heavy duty plated hinges and breakaway latches. Door latches shall allow emergency exit from the wash chamber without the use of panic hardware.

3. Insulated Exterior – Machine is provided entirely insulated with 2" thick non-hygroscopic, non-toxic rigid foam insulation covered by a protective stainless steel jacket.

4. Washer is provided with an automatic motorized damper mounted in the exhaust line and interwired with the automatic cycle. Damper is open during exhaust cycle and closed during the machine operation.

5. Washer is provided with an exhaust fan interwired with the automatic control system to exhaust residual vapors from within the compartment. Fan is supplied complete with 3 phase, 60-cycle motor and magnetic starter for overload protection.

6. Floor mounted machines are provided with an all stainless steel ramp with nonskid surface for each doorway.

7. A 10 Hp or 15 Hp all stainless steel pump shall be supplied in lieu of cast iron head.

8. Non-Recirculated Final Rinse System – The final rinse treatment consists of hot water from house supply sprayed through a separate set of jets. Water is not recirculated and drains to lower sump.

9. The washer is equipped with an instantaneous pass-through heat exchanger to raise the house 120°F water supply temperature to 180°F. Heat exchanger is interpiped and interwired for automatic operation.
10. Cart tilt ramp - A stainless steel ramp is installed inside the wash compartment to incline the racks for better draining.
11. Chemical dispenser-ready **-** Detergent dispenser preparation kit for use with dispensers provided by others. This dispenser will be under the control of the washer's microprocessor.
12. The washer is equipped with a water hammer arrester to protect customer's incoming water line from possible damage due to water hammer.
13. Pump pressure gauge shall be mounted in view of operator. The gauge shall indicate recirculating pump pressure.
14. Wash down duty motor – For added protection in lieu of T.E.F.C.
15. Bottom spray jets mounted underneath the floor grid provide extra coverage to the bottom of items in wash chamber, or may perform specialized washing functions.
16. Stainless steel braided distributor hose in lieu of rubber hose.
17. Emergency mushroom stop buttons. Located on both infeed and discharge ends of the cabinet.
18. Safety Disconnect – Shall be mounted in the control panel for added safety while working on the washer.
19. High-pressure steam controls shall be provided, for steam pressure of 50 lbs. or higher.
20. Low-pressure steam controls for steam pressure of 15 lbs. or lower. (Specify steam pressure available at washer location.)
21. Door Interlocks – To prevent opening of entry and exit doors at the same time, thus preventing cross-contamination between clean/dirty rooms.
22. Acid/neutralizer/detergent dispensers shall be supplied by the washer manufacturer.
23. A steam separator shall be interpiped into the machine to remove suspended water droplets and minute particles of debris from the incoming steam line and automatically flush to condensate return.
24. The conductivity of any wash solution where a reagent is added shall be monitored, recorded and, if needed, alarmed by the control. A sensor shall be attached either in the wash pump discharge or directly in to the sump. Both are inserted into a sanitary tri-clamp connection. Girton's standard range for measuring wash solution conductivity is 0 to 20 millisiemen. Girton preferred vendor is Thornton for the cell analyzer.
25. Epson Dot Matrix Printer – Shall be provided for hard copy record keeping. The printer may be located remotely in a supervisor's office. (Up to a maximum of 50' distance)
26. A stainless steel safety cable is installed inside the wash compartment, approximately 3'0" above the floor, and run the entire length. If the cable is pulled, the machine will immediately cease all operations. To resume operation, the power must first be turned off, and then turned on again and the start button depressed.
27. Drying – The tank is automatically drained prior to the start of the drying cycle. The dryer consists of a recirculated hot air system utilizing steam coils and a high volume blower to circulate hot air over the items to be dried. A small amount of room air is drawn into the system to aid in maintaining proper humidity levels for efficient drying. The drying cycle and temperature are controller by the PLC. This option adds 27" to the height of the unit.
28. Girton Service Personnel shall supervise the installation of equipment to the owner/contractor.
29. Girton Service Personnel shall return to the jobsite after all utility connections have been made and demonstrate the washer to all operating and maintenance personnel.

MATERIALS (All stainless steel is T-304 unless otherwise specified.)

	Standard Item	Material
1.	Base & Recirculating Sump	12 Gauge S/S #2B Finish
2.	Door Frame	12 Gauge S/S #2B Finish
3.	Door Panels (outside)	14 Gauge S/S #4 Finish

4.	Side and Top Panels (inside)	12 Gauge S/S #2B Finish
5.	Recirculating Pump	Cast Iron head, stainless steel shaft and impeller
6.	Recirculating Pump Piping	Stainless Steel
7.	Water and Steam Piping - Internal	Stainless Steel
8.	Steam Piping - External	Stainless Steel
9.	Water Piping - External	Stainless Steel
10.	Spray Jets	Stainless Steel
11.	Floor Grating	12 Gauge S/S #2B Finish
12.	Steam Coil	S/S Schedule 40 Pipe Manifold
13.	Barrier Flange	14-16 Gauge S/S #4 Finish
14.	Insulation Jacket	18 Gauge S/S #4 Finish

SERVICE REQUIREMENTS

Electrical – Washer is available with motors rated for 3/60/230 volts or 3/60/460 volts, meeting NEMA standards. Other specifications are available.

Hot Water - 120ºF minimum. Recommended minimum flow rate of 25 gallons per minute. 1 ½" IPS connection to machine 40 PSI minimum pressure.

Steam – 40 – 80 PSI, 1030 pounds per hour required 1 ½" IPS connection.

Drain – 3" IPS from the machine, drains by gravity.

Ventilation – One 12" round flanged vent collar is provided for bolted connection to ventilation system. 800 CFM minimum exhaust.

Air - 3/8" NPT, 60 PSI minimum, 5 CFM

Condensate Return – ¾" NPT

Tree, Tub & Cart
Cabinet Washer Model 80-O