

# GIRTON MODEL 80-0 RACK & CAGE WASHER

## APPLICATION

The 80-0 is a heavy duty, large capacity hydrospray washer designed for thorough, efficient cleaning of cages, racks, debris pans and miscellaneous items used in the care of laboratory animals.

## COMPARTMENT SIZE (Length is inside door to door dimension.)

42" wide x 88" high x 100" long.

42" wide x 88" high x 154" long.

42" wide x 88" high x 190" long.

48" wide x 88" high x 100" long

48" wide x 88" high x 154" long

48" wide x 88" high x 190" long

54" wide x 88" high x 100" long.

54" wide x 88" high x 154" long.

54" wide x 88" high x 190" long.

60" wide x 88" high x 100" long.

60" wide x 88" high x 154" long.

60" wide x 88" high x 190" long.

30" and 36" door widths available.

Inside door-to-door length may be as short as 72", if desired. Consult factory.

For door widths greater than 60", a variety of double-door widths are available, as well as special compartment heights and lengths. Please consult factory for further details.

## FEATURES

- A. **Automatic Self-Cleaning Primary Screens:** The elimination of cross-contamination being of extreme importance, the treatment pump shall be provided with self-cleaning primary debris screens having perforations considerably smaller than the machined jet orifices. Screens filter all solutions (on the suction side of the re-circulating pump) during any treatment and automatically flush debris to sewer whenever any treatment solution is drained.

Screens that are located in the sump or circulatory pipelines that require manual cleaning shall not be employed, nor shall screens that do not self-clean during each drain sequence.

- B. **Take Apart Construction:** Unit is designed for disassembly into sections for entry into existing building, through standard door opening. Compartment sections are flanged for bolted construction, utilizing silicone sealant and seam covers to eliminate any possibility of leakage.
- C. **Oscillating Jet System:** The rack and cage 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.

Rotary spray arms, stationary spray jets or other systems that do not provide 100% coverage of the wash load shall not be employed.

- D. **Re-circulating Solution Temperature Guarantee:** The re-circulating cycles will not begin timing until the recirculating solution reaches the set point temperature, assuring proper temperature during entire treatment cycle.

E. **Safety Features:**

1. The opening of the door will stop the operation of the machine. Door must then be closed and the start button depressed to continue operation.
2. Door is equipped with spring loaded, explosion relief type latches that open readily when pushed from inside the cabinet. The use of emergency exit hardware from within the wash chamber shall not be employed.

F. **Sanitary Design Of Interior Cabinet:**

1. 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 easy cleaning, a must for minimizing cross-contamination.

2. In addition to the back flushing screens already described, all Girton Cage and Rack 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.

Following is a typical treatment schedule. Additional phases, such as acid wash, extra rinses, etc. are easily accomplished by programming the microprocessor controller. (Please consult factory with your special needs.)

**TREATMENT SCHEDULE:** Consists of the following phases:

1. Pre-Wash: A circulated pre-wash, circulated by pump pressure at 90 ft. head pressure by a centrifugal pump driven by a 10 Hp motor, uses the final rinse water which has been retained in the machine from the previous cycle. The pre-wash treatment will remove the heavy soil and improve the circulated detergent wash, and will also reduce the amount of detergent required. As the pre-wash water is drained, the screens are back flushed, thus screens are cleaned at the end of the pre-wash cycle. The pre-wash cycle may be by-passed at the discretion of the operator.
2. Circulated Detergent Wash: After the pre-wash cycle is completed and the machine has been drained, it will refill with hot water from the house supply and the temperature will be thermostatically controlled up to 180° F. (adjustable) and will be circulated by pump pressure at the rate of 350 gallons per minute at 90 ft. head pressure by a centrifugal pump driven by a 10 Hp motor. The length of 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 the wash cycle. If the pre-wash cycle is not used, the final rinse water will have been retained to be used for the circulated 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 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 and will be thermostatically controlled up to 180° F. (adjustable). The rinse water is circulated at the rate of 350 gallons per minute at 90 ft. head pressure, for a preselected time. 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.)
5. Exhaust: Unit stands idle for a sufficient length of time to remove the residual vapor from the air within the compartment.

## 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, type 304 stainless steel 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 stainless steel hinges and stainless steel fitted 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 rack and cage washer door. The grids shall be oriented with the length of the wash chamber, so that the cage and rack wheels do not "bump" over separations in the grids, nor suffer castor damage due to the constant abuse of an alternately designed chamber floor.
4. The recirculating sump is equipped with an automatic solution level control, and stainless steel steam coil heating for the re-circulating treatment solutions. A temperature readout mounted in the operator's panel will display and monitor recirculating solution temperature.
5. The rack and cage washer is equipped with stainless steel steam coil heating for maintaining the recirculating sump temperature, complete with condensate return and steam trap. Steam coil is easily removable for cleaning or maintenance.
6. All treatments are under pressure from an all stainless steel Gusher, or equal, 10 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 350 gallons per minute at 90 ft. head pressure.

The Girton vertical pump is completely self-draining. This feature, along with the back-flushing screens described under operation - treatment schedule, Girton's exclusive sump bottom flushing system, and gravity draining through a 3" fully ported ball valve, makes the Girton Rack and Cage 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 has an electrically powered traveling header system that reciprocates the entire length of the cabinet at a minimum of five (5) cycles per minute. The system consists of four (4) 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 48 '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.

Jets shall be wide-angle stainless steel fanjets and shall direct water from the top, sides, and bottom. The spray jets are arranged to keep the cabinet interior in a constant state of cleanliness.
  - b. The non-reversible header drive motor and gearbox shall be equipped with a safety clutch. The header is pulled within the wash chamber by stainless steel wire cable.
8. The electrical control system consists of the following:
  - a. Control shall be by commercial, non-proprietary Allen Bradley microprocessor, which shall control all sequences and operations. The microprocessor is capable of infinite variation in treatment schedules, times, etc., and will be programmed to meet the customer's specific needs. The cycles are adjustable in both time and function. The controller is housed in a stainless steel enclosure.
  - b. Within the control box is the microprocessor controller, magnetic starters with overload protection for all motors, and all other electrical components required for the machine operation.
  - c. A built-in service diagnostic program, accessible by service code, will be provided and displayed to permit system calibration and verification of satisfactory component operation.
  - d. A step-down control transformer shall be provided for the 115-volt control voltage to prevent having to run a separate control line.
  - e. A printer shall be provided, for hard copy record keeping. (Printer may be remote mounted. Consult Factory)
9. The following safety feature is provided:

An electrically operated safety switch shall be provided on the wash compartment entry door, which shall shut off the circulating pump when the door is open. To start, the door must be closed and the start button pressed.

## **OPTIONS**

1. Right or Left Hand Unit: The rack and cage washer is designed to meet customer specifications by placing all serviceable components on either the right or left side of the rack and cage washer.
2. Pass-through Unit: The rack and cage washer is provided with a door on the discharge (clean) end for pass-thru operation, complete with safety switch and lights indicating rack and cage washer is in operation or the cycle is complete. Door meets all requirements stated in construction section.
3. Insulated Exterior: The rack and cage washer is entirely insulated with primarily 2-inch thick non-hygroscopic, non-toxic rigid foam insulation covered by a protective stainless steel jacket.
4. Knocked Down Shipment: The rack and cage washer is shipped disassembled into sections that will pass through existing doorways, halls, elevators, etc.
5. Wall Trim Flange: The rack and cage washer is provided with a stainless steel trim flange as required to seal the opening between the machine and the masonry wall opening.

6. Automatic Damper: The rack and cage washer is provided with a stainless steel automatic motorized damper mounted in the exhaust line and interwired with the automatic cycle. Damper is open during exhaust cycle and closed during machine operation.
7. Exhaust Fan: The rack and cage washer is provided with a stainless steel 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.
8. Ramps: Floor mounted rack and cage washers are provided with an all stainless steel ramp with nonskid surface for each doorway.
9. Vapor Proof Light: An explosion/vapor proof light is installed outside the cabinet to illuminate the interior of the wash compartment.
10. Pan Washing: The rack and cage washer is provided with additional jets mounted on spray headers spraying outward, and brackets mounted on the side wall for simultaneous washing of debris pans, cage floors, etc. Cabinet is 6" wider when this option is selected.
11. Stainless Steel Pump: A 10 Hp all stainless steel pump shall be supplied, which includes head, shaft and impeller.
12. 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.
13. Security Access Code: The microprocessor is equipped with a supervisory access code, to provide security for the program parameters.
14. Drain Discharge Cooler: The rack and cage washer is provided with a cool down cycle integral with the washer to accept all sump drain discharges. By mixing with cold water, discharges are cooled to a minimum of 140°F before gravity draining to building drain system.

*Please Note:* This option describes a cooler for the re-circulating sump drain discharges. It is designed to operate when the drain valve is open. It is not a cooler for the sporadic emissions from the sump's steam heating coil or optional pass-through heat exchanger. These fluids ideally are returned to the steam boiler. If discharging to the drain or sewer is required, and cooling of these fluids is required, we recommend that the cooling device be installed as part of the utility installation.

15. Heat Exchanger: The rack and cage washer is equipped with an instantaneous pass-through heat exchanger to raise the house water supply temperature to 180°F. Heat exchanger is interpiped and interwired for automatic operation. (Please state house water supply temperature.) This feature is desirable or necessary if fast cycles are required, since it instantaneously heats up the house water supply, enabling the rack and cage washers fill cycles (wash, first rinse, second rinse) at 180°F.
16. Feeder Bottle Washing System: A valving system capable of diverting recirculating solutions to a bottle washing cart system is installed in the machine with a quick disconnect fitting. System is interpiped and interwired for automatic operation.
17. Feeder Bottle Washing Cart: A stainless steel bottle-washing cart with a quick disconnect fitting. Cart can be designed to process 2, 4, 6, 8, or 10 baskets of bottles per load.
18. Chemical Dispenser Ready: Chemical dispenser preparation kits, for use with dispensers provided by others. These dispensers will be under the control of the rack and cage washer's microprocessor.
19. Chemical Dispensers: Acid/neutralizer/detergent dispensers shall be supplied by the washer manufacturer.
20. Water Hammer Arrester: The rack and cage washer is equipped with a water hammer arrester to protect customer's incoming water line from possible damage due to water hammer.
21. Window: A 16" x 18" safety glass viewing window shall be supplied in each door for visual inspection.
22. Pump pressure gauge shall be mounted in view of operator. The gauge shall indicate recirculating pump pressure.
23. Control Transformer: A 115-volt control transformer shall be supplied. The transformer shall be mounted with the motor starters, or in a separate Nema 12 box.
24. Bottom Spray Jets mounted underneath the floor grid provide extra coverage to the bottom of items in the wash chamber, or may perform specialized washing functions.
25. Mushroom Switches: Emergency mushroom stop buttons. Located on both infeed and discharge ends of the cabinet.

26. Door Gaskets: Permanent silicone door gaskets, for precise vapor control.
27. Steam Controls: Low pressure steam controls for steam pressure of 15 lbs. or lower. (Specify steam pressure available at washer location.)
28. Steam Controls: High-pressure steam controls shall be provided, for steam pressure of 40lbs. or higher.
29. Auto Water Flush: Caging with automatic watering systems receive flush-out treatment with house hot water.
30. Condenser Vent Exhaust shall be supplied to remove steam vapor from the exhaust when a conventional exhaust hook-up cannot be accommodated.
31. Door Interlocks: To prevent opening of entry and exit doors at the same time, thus preventing cross-contamination between clean/dirty rooms.
32. 'R' Body Design: 350 (nominal) gallon storage sump beneath the floor grid, for retaining wash solution for reuse during each wash cycle. Used in conjunction with fresh rinse header. A divert chute is available for discharging rinse solution to drain, in lieu of diluting the strength of the wash solution.
33. Service Side Enclosure: Service side stainless steel aesthetic enclosure, with removable panels for rack and cage washer maintenance.
34. A Steam Separator shall be interpiped into the machine to remove suspended water droplets from the incoming steam line and automatically flush to condensate return. This also prevents the accumulation of steam condensation, or water "slugging" of the steam supply line.
35. A Manual Vent Damper shall be provided for trimming the exhaust emissions.
36. All Drain Components and piping shall be stainless steel.
37. 80-0 RCP Universal Cage/Pan Wash Racks(s) will be supplied. (Quantity) Please see picture on back of 80-0 brochure for description.
38. Two stainless steel safety cables are installed inside the wash compartment, approximately 3'0" above the floor, and run the entire length. If either cable is pulled, the machine will immediately cease all operations. To resume operation, the power must first be turned off, then turned on again and the start button depressed.
39. Audible – visible alarms.
40. In-sump neutralization of acid solutions prior to draining.
41. Reusable-Throwaway Detergent System: The machine is provided with the capability to automatically return the detergent solution to the detergent reservoir or to dump to drain. A toggle switch on the control panel allows the operator to select either operation.

Insulated by Stainless Steel Detergent Reservoir is approximately 100-gallon capacity, and is heated by a removable stainless steel coil. Reservoir is equipped with a visible liquid level gauge, automatic digital temperature controller, automatic water fill and level control, manual drain valve, and overflow piping.

42. Reusable-Throwaway Acid System: The rack and cage washer is provided with the capability to automatically return the acid solution to an acid reservoir or dump to drain. A toggle switch on the control panel allows the operator to select either operation. (Reservoir is same as described above.)
43. Girton Service Personnel shall supervise the installation of the rack and cage washer to the owner/contractor.
44. Girton Service Personnel shall return to the jobsite after all utility connections have been made and demonstrate the rack and cage washer to all operating and maintenance personnel.
45. Complete Installations are available, which may include:
  - Disconnect and removal of old washer.
  - Set-in-place and assembly of new rack and cage washer, by Girton Non-Union Personnel.
  - Hook-up to existing utilities by Girton Non-Union Personnel (All utilities are to be provided within 5' of the rack and cage washer's utility connections, and with proper disconnects.)
  - Start-up, test and demonstration of the new rack and cage washer.
  - Operator and maintenance personnel training.
46. One full year defective parts and replacement labor warranty.

**MATERIALS** (All stainless steel is minimum type 304 unless otherwise specified.)

<u>Standard Item</u>	<u>Material</u>
1. Base & Recirculating Sump	12 Gauge stainless steel #2B Finish
2. Door Frame	12 Gauge stainless steel #2B Finish
3. Door Panels (outside)	14 Gauge stainless steel #4 Finish
4. Side and Top Panels (inside)	12 Gauge stainless steel #2B Finish
5. Recirculating Pump	Stainless steel
6. Recirculating Pump Piping	Stainless steel
7. Water and Steam Piping (internal)	Stainless steel
8. Steam Piping – (External)	Stainless Steel
9. Condensate Return Piping	Stainless Steel
10. Water Piping – (External)	Stainless Steel
11. Spray Jets	Stainless steel
12. Floor Grating	12 Gauge stainless steel #2B Finish
13. Steam Coil	Stainless steel pipe coils
14. Insulation Jacket	18 Gauge stainless steel #4 Finish
15. Wall Trim Flange	16-20 Gauge stainless steel #4 Finish

**RECOMMENDED SERVICES**

Electrical – 3/60/460 Volts

Hot Water – 1" NPT, 25 GPM, 120°F to 180°F

Steam – 1 1/2" NPT, 40-80 PSI, 870 # Hr.

Condensate – 3/4" NPT

Drain – 3" NPT

Exhaust – 12" I.D. Vent, 800 CFM Exhaust

Compressed Air – (OPTIONAL – For air-operated valves) 1/4" NPT, 90 PSI, 3 CFM

**OTHER OPTIONS ARE AVAILABLE. PLEASE CONSULT FACTORY WITH YOUR SPECIAL NEEDS.**

\* Please note that all sub components of Girton Rack and Cage Washers are non-proprietary and commercially available from various sources, for flexibility and economy of maintenance throughout the life of the rack and cage washer.

This specification may refer to one or more of the following items to be washed. It is assumed that the items are generally as described below. If your items vary significantly from those described, please contact our factory for further discussion regarding custom design, fabrication, etc.

- Industry standard bottle baskets are approximately 12 1/2" x 18 1/2" x 13" high and hold 24 bottles.

Please provide dimensions and capacity of your bottle baskets.

- Industry standard small rodent cages are about 7 1/2" wide x 11 1/2" long x 5" high.

Please provide dimensions of your small rodent cages.

- Industry standard large rodent cages are about 10 1/2" wide x 19" long x 8" high.

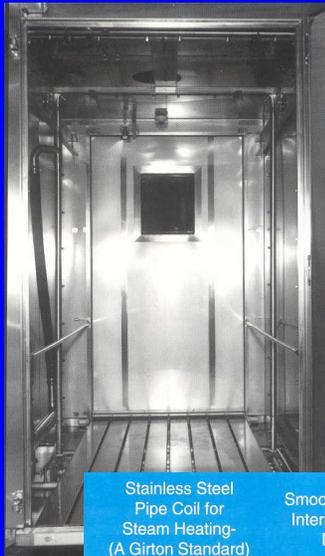
Please provide dimensions of your large rodent cages.

- Industry standard cage debris pans are up to 4" high x 28" wide x 35" long.

Please verify the dimensions of your debris pans. Quantity of pans washed per load varies with the pan size.

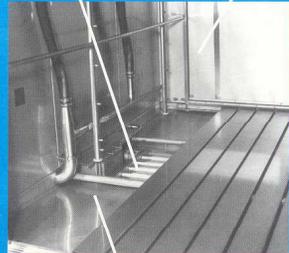
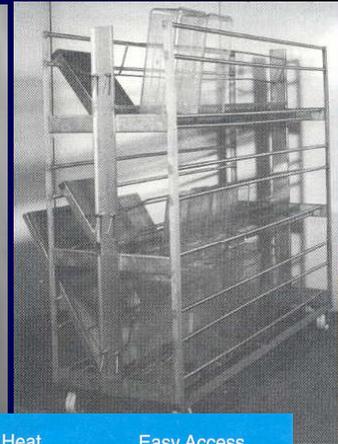
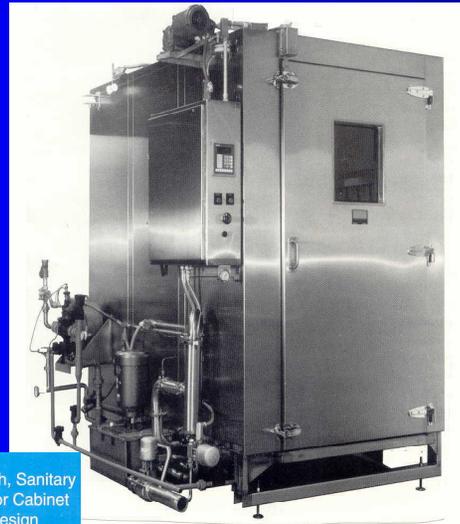
- Please check the overall dimensions of your caging, wash racks or other items to verify that they can be accommodated in this rack and cage washer.

# Girton Model 80-0 Cage and Rack Washer

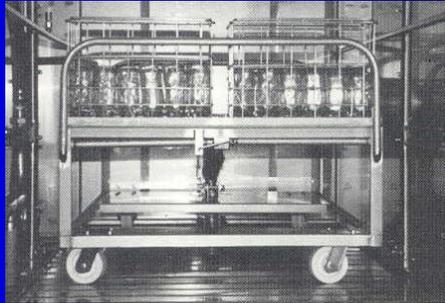


Stainless Steel  
Pipe Coil for  
Steam Heating -  
(A Girton Standard)

Smooth, Sanitary  
Interior Cabinet  
Design

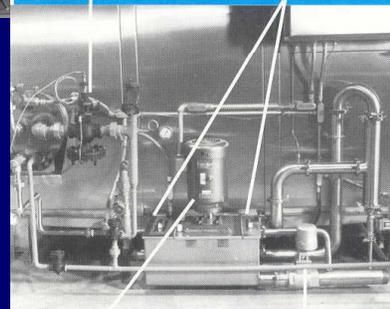


Bottom Flush-Down -  
A Girton Exclusive



Optional Heat  
Exchanger

Easy Access,  
Self-Cleaning Screens



Vertical Pump for  
Complete Drainage

3" Fully Ported  
Gravity Drain Valve