

# GIRTON CLEAN OUT-OF-PLACE WASHER MODEL 794AH

## **DESCRIPTION**

The washer will be a Girton Model 794AH Clean Out-of-Place Pressure Washer constructed of stainless steel, utilizing a reciprocating header spray system. The spray header is suspended from a carriage riding on an overhead track. The operating cycle is entirely automatic with each stage of operation under micro-processor control at all times.

## **PURPOSE OF SYSTEM**

To ensure the adequate cleaning and rinsing of product contact surfaces.

The following items can be washed, rinsed and sanitized in the washer:

- Scale Hoppers and Troughs
- Small Drums Or Totes
- Buckets, Tubs Or Trays
- Other Various Items

## **TREATMENTS**

Pre-wash - (Time selected on panel). Pre-wash time can be adjusted from 0 to 150 seconds and it can be set to heat up to the wash cycle temperature or automatically pre-wash at the temperature of the solution left in the tank from the preceding cycle. If the pre-wash cycle option is not selected then the unit will automatically start in the wash cycle when the start button is activated.

Circulated Detergent Wash - (Time selected on panel). Detergent wash (temperature adjustable from 120°F) will be circulated by pump pressure at the rate of 185 gallons per minute at 100ft. head pressure by centrifugal pump driven by a 7-1/2 hp electric motor. The length of the wash cycle will be controlled by presetting the adjustable wash timer in a range of 0 to 15 minutes. The elapsed time of the cycle will be indicated by an L.E.D. readout on the control panel. The wash solution will be automatically drained at the end of the timed wash cycle. Maximum water temperature not to exceed 190°F.

Circulated First Rinse - (Time selected on panel). The tank automatically refills with fresh water from the plant supply, and supplementary heat is added to maintain the rinse temperature. The rinse water will be circulated at the rate of 185 gallons per minute at 100 ft. head pressure for the length of time pre-set on the rinse timer. At the end of the timed rinse cycle, the rinse solution will be automatically drained. Maximum water temperature not to exceed 190°F.

Circulated Second Rinse - (Same time as first rinse). The tank automatically refills with fresh water from the plant supply and supplementary heat is added to raise and maintain the water at the set parameters. The final rinse water is circulated at the same rate as the first rinse. At the end of the final rinse cycle the water in the tank is retained for use as the next detergent or pre-wash solution, or automatically drained at the discretion of the operator. Maximum water temperature not to exceed 190°F.

Non-circulated Fresh Final Rinse - A fresh final rinse header will be provided. A separate double loop header mounted on and traveling with the main recirculation header, will utilize fresh water from the facility supply to accomplish a non-recirculated final rinse treatment. This water falls into the tank and is retained for use as the next detergent or pre-wash solution, or automatically drained at the discretion of the operator.

## **CONSTRUCTION AND OPERATION**

1. The washer cabinet and tank will be constructed of 14 gauge, 2B finish, type 304 stainless steel. All exterior and interior piping and headers will be of type 304 stainless steel or other suitable corrosion resistant material.
2. All four (4) sides and top will be insulated with 1" rigid foam and covered with a full jacket fabricated of 20 gauge, #4 finish stainless steel. The insulation package greatly reduces heat loss from the washer making it more economical to operate and affords more comfort for the operators.
3. The washer will be provided with a self-supporting drop down door that, when open, works as a load table with roll out racks. The door is balanced for easy operation by gas assisted cylinders.  
  
The door will be doubled walled, #4 finish outside, 2B finish inside, type 304 stainless and insulated with rigid foam insulation. The door will be baffled and gasketed against water leakage from the wash chamber.
4. A door safety switch will be provided on the door, which will stop the cycle and shut off the circulation pump in the event the door is opened.

5. All visible welds on the washer exterior and washing compartment will be cleaned in a thorough manner.
6. The cabinet interior will be constructed to permit free draining and designed not to retain any of the process solutions.
7. The wash compartment will be sloped to drain into the pump reservoir through a large area basket type stainless steel debris screen, which will be easily removable without the use of tools. The surface of the debris screen will be a minimum of 4.58 square feet.
8. The wash/rinse tank will hold and utilize a maximum of 22 gallons of water, assuring effective cleaning and economy of operation.
9. The wash/rinse tank will be provided with a steam heating coil thermostatically controlled (adjustable) to maintain the wash/rinse solutions at a pre-set temperature. Weld burn marks only will be removed from the coil, welds will not be ground or polished.
10. The temperature of the wash and rinse solutions will be indicated by an L.E.D. readout located on the PLC control panel at a convenient height at the load end of the washer and clearly visible to the operator.
11. The washer header system will also be provided with an effective filter located in the piping from the pump to the headers to catch any foreign materials that may have bypassed the basket debris screen. This filter will be back-washed each time that the tank is drained during the wash and rinse cycles.
12. Two (2) stainless steel reciprocating loop headers, employing properly spaced, wide angle stainless steel machined fan jets, will direct the process solutions from the top, bottom, and both sides assuring 360 degree continuous coverage of the items being processed. The header will be electrically driven, with power from the plant supply. The header assembly will be suspended on an overhead carriage. The header suspension system will not require lubrication. Center vertical headers will also be furnished to wash between the two racks.
13. Fresh Final Rinse Header will be a 360° loop mounted on and traveling with the recirculating loop headers. The spray headers and all piping will be of type 304 stainless steel. Center vertical headers will also be furnished to rinse between the two racks
14. The washer will be piped and wired for single service connection for each utility requirement.
15. Recirculating wash/rinse pump will be a stainless steel horizontal centrifugal type unit, powered by a 7-1/2 hp motor, capable of delivering 185 gallons per minute at 100 ft. head pressure.
16. The washer will be drained by an air activated two-way ball valve. The washer drain will be by gravity. An air activated two-way ball valve will direct the discharge to the drain, resulting in a quick drain time. The drain time will be adjustable and controlled by the controller. Drain piping will be stainless steel.
17. The control system will be based on the Allen Bradley Micrologix 1500 PLC. The 1500 PLC has 12 Kb of user memory. The 1500 LRP processor has (2) communication ports (both RS232C). The processor will be aware of and control all devices of the washer. Discrete inputs will be 24 VDC. Discrete outputs will be relay contact. Analog inputs will be 4-20mA unless otherwise noted in the design specifications. Compact I/O modules may be added as necessary. The Micrologix 1500 PLC uses the same application software as the SLC500 series.
18. The operator-machine interface will consist of an Allen Bradley Monochrome Panelview 550, which will incorporate a touch screen for operator control. This will allow the user with proper password level to access all parameters of a wash recipe. All alarms will be shown on the display as well as announced audibly.
19. 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 will have alarms associated with them.
20. A general purpose rack will be included for washing various items without using the custom rack.

## **SERVICE REQUIREMENTS**

Electrical - 3 phase, 60 cycle, 230/460 volt.

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 at end of specification.)

Hot Water - 120° F., Recommended minimum rate of flow of 22 gallons per minute. 1"IPS connection to the machine. 103-gallon consumption/cycle, Fresh Final Rinse flow rate is 30 GPM at 30 PSI.

Drain - 2" IPS from the machine to the drain.

Ventilation - A 6" diameter vent collar is provided for connection to ventilating system. 300 CFM minimum removal required. Connection must be installed inside of vent collar to prevent leakage.

Steam - 1-1/2 NPT - 200 lbs./hr. (Note: See steam consumption for heat exchanger listed under options.)

Condensate - 3/4"IPS.

Compressed Air - 1/4" NPT connection, 60-PSI minimum, 3 CFM.

## **OPTIONS**

1. Transfer Table - A table will be provided to allow the various racks to be removed from the washer for transportation, loading/unloading, or storage. The table will be fabricated of stainless steel with a centering device to line up with the washer door and a device to lock the rack to the table. The table will run on two (2) swivel casters and to (2) rigid casters.
2. Special, narrow transfer table for 1/2 weigher capacity.
3. One-piece wash rack to hold scale parts. The rack will be custom fabricated to match the make and model of the customer's scales. The rack will be fabricated completely of stainless steel to hold the bucket doors open for proper cleaning.
4. Special, narrow wash rack for 1/2 weigher capacity.
5. Pass-through Heat Exchanger – A heat exchanger will be provided to raise the incoming water temperature from 120°F to 180°F for the final rinse treatment. (100-lbs./hour additional steam consumption.)
6. Exhaust Fan – A fan will be provided and interwired with the automatic control system to exhaust residual vapors from within the compartment. The fan is supplied complete with 3 phase, 60-cycle motor and starters for overload protection. It will exhaust 300 CFM to a ventilating system or to the outside. A 6" diameter collar will be provided on the washer. The exhaust piping should be installed inside of the vent collar to prevent leakage. The fan adds 12" to the overall height of the machine.
7. Pump Pressure Gauge – To monitor performance of pump. The gauge will indicate recirculating water pressure.
8. Disconnect Switch – will be mounted in the control panel for added safety while working on the washer. A disconnect switch should either be in the control box or within easy reach of the washer.
9. Detergent Port – The washer will be provided with a coupling only. An automatic dispensing system can be connected to this port by others.
10. Sanitizer Port – The washer will be provided with a 3/8" FPT coupling welded into the fresh rinse piping.
11. Automatic Detergent Dispenser - A pump will be supplied to automatically add detergent at pre-determined amounts. The pump will be under the control of the washer's PLC.
12. Electric Heat - In lieu of steam heat, for the recirculation treatments. A 54 KW heating system consisting of 3-18 KW, 3/60/480 volt heating elements will be supplied. Other voltages are available. The elements will heat up and maintain the wash solution at the present temperature.
13. Supervision of Installation by one Girton Manufacturing Co., Inc. technician to supervise the installation of the washer.
14. Training of customer's personnel in accordance to Girton Manufacturing Co., Inc. standard testing and demonstration policy. Equipment will be demonstrated to all customer's operators and maintenance personnel. Training period will be limited to a maximum of two days on site.

# ***Cabinet Washer Model 794A***

