

# **GIRTON CONTAINER WASHER**

## **GENERAL**

The Girton Container Washer, designed to wash Plastic or Metal Containers and Lids at the nominal rate of 2-3 per minute.

## **CONSTRUCTION**

The container washer will be fabricated of all-welded stainless steel, including tank, hood, structural members, all internal piping, spray deflectors, track and conveyor returns. All corners shall be rounded, no sharp edges. All equipment and components shall be cleaned of shavings and debris before shipping. A food grade Never-Seeey shall be used on all threaded fasteners.

The inside of the container washer shall have all surfaces readily accessible or removable for cleaning. All surface shall be non-toxic, non-absorbent and corrosion resistant materials. Permanently joined metal surfaces shall be ground flush and equal to the surrounding area. All surfaces or cavities where contaminants can collect shall be avoided.

The pumps are close-coupled, motor-mounted type. This gives greatest efficiency with the minimum maintenance possible from centrifugal pumps of the horizontal type.

The container washer is composed of a pressure wash treatment section, and a pressure rinse treatment section, plus a 30" long conveyor section on each end.

## **HEADERS**

The headers are provided to give most effective coverage of all internal and external surfaces of the containers. They are provided with straight through jets and stainless steel deflectors. The straight through jet greatly reduces the tendency of the jets to plug as there is no protrusion of the jet into the headers. The stainless steel deflector insures a high intensity, properly spread stream for most effective cleaning.

The headers are arranged above, on both sides and below the containers. The headers are installed so that one end of each header pipe protrudes from the container washer, making it easy to brush the inside of the pipes and then by starting the pumps to flush them clean. This is the simplest and most effective header system on any container washer.

## **SCREENS**

Screens are tray type units located under the bottom area of the spray compartment. The tray screens are removable from either side of the container washer. The screens are supported above the solution level so all water must fall through the screens to get into the solution tank. Openings in the screens are 1/16" to trap all debris. The superior screening in conjunction with the Girton jet design virtually eliminates clogging.

## **VENTS**

The container washer is supplied with a 10" diameter vent opening in the hood or top of the unit, to be connected by the customer to the outside, or to his ventilation system. A ventilating fan may need to be incorporated in the stack to insure proper ventilation 1040 CFM required.

## **WASH DOWN DUTY MOTORS**

3/60/208-230-460 or 3/60/430, meeting NEMA standards. Other specification available.  
Motor shall be Wash Down Duty or Chemduty.

## **WIRING**

The container washer will include two position selector manual switches and contactors to separately control individual pumps, and motors. All systems come pre-wired. The stainless steel control box, shall include the following: control transformer, solid state overload relays, time delay fuses, emergency stop switch and illuminated status beacon with audible alarm.

In addition to the above, the following control system shall be included:

Allen Bradley MicroLogic 1200 Series PLC, and Microview operator interface.

PLC control – The heart of the control system will be an Allen Bradley Micrologix 1200 series PLC. The PLC shall be able to meet various voltage needs as well as I/O capabilities. As a standard, the input modules will be based on the 120 VAC-control voltage. The output modules will be isolated relays.

PLC control adds many features that standard relay logic cannot provide (or cannot provide without a large expense). These features include low level pump protection; low level heating protection; staggered start up of large motors; diagnostic ability of heating, pump overloads, and instruments, advanced conveyor control; as well as other features involving time delays and complex functions.

Equipment diagnostics and alarms help prevent down time by finding equipment failures quickly rather than waiting for operating personnel to recognize a failure.

The PLC software shall insure the highest level of safety for personnel, as well as the machinery, by providing alarms and control features that prevent potentially dangerous situations.

Operator interface – A Microview two-line LCD data display shall be provided as an operator interface. This display shall be equipped with a keypad for input of critical parameters that the PLC controls. The display shall show status or alarm messages when required, informing the operator of any abnormal situations.

### PLUMBING

One water connection, one steam connection, one overflow connection and one drain connection are provided.

### SELF-CONTAINED CONVEYOR DRIVE SYSTEM

Includes stainless steel conveyor chains, 1/2 Hp. drive motor, take-up, shafts, sprockets, etc. A separate dedicated lane for lids will be included. The stainless steel belting will be 18" and 6" wide with 1" x 1" openings in place of two drag chains will be supplied. This will allow washing of plastic containers and other various items. Lids should be placed on the 6" wide belt with the soiled surface facing the outside spray jets.

### HEATING

The wash tank shall be heated by direct steam injection. (See Optional Steam Coil at end of specification.)

### AUTOMATIC TEMPERATURE CONTROL

The tank temperature is controlled by an automatic controller, which is adjustable to the most efficient temperature for the job. The controller operates a solenoid valve, which permits steam to enter the tank to heat the wash solution. The temperature in the tank is maintained by direct steam injection.

### GUIDE RAILS

Adjustable guide rails shall be supplied to hold containers in proper position for washing.

### EMERGENCY STOP BUTTON

To enable operator on the unload end of the container washer to stop the conveyor in the event of an emergency.

### TREATMENTS

1. LOAD - The containers are delivered to the container washer by customer's conveyor, in an upside-down position.
2. DRAIN POSITION - To prevent wash solution from discharging at the infeed opening of the container washer.
3. PUMP WASH - Detergent wash solution is recirculated and sprayed through strategically placed, properly designed jets at high velocity and volume under pump pressure. Circulation is at the proper gallons per minute and heated to properly clean the items to be washed. Soaking action of the recirculated hot detergent solution chemically softens the soil and contamination, which is continually scrubbed and flushed away by mechanical force of the spray.
4. DRAIN POSITION – Prevent wash solution from being lost to the rinse section.
5. PUMP RINSE - Rinse solution is recirculated and sprayed through strategically placed, properly designed jets at high velocity and volume under pump pressure. Circulation is at the proper gallons per minute and heated to properly rinse the items. The rinse water shall flush away the detergent solution and remaining soil.
6. FRESH FINAL RINSE/SANITIZING LOOP - Utilizes fresh water from the house supply, at house pressure and temperature. (4 GPM consumption at 40 PSI.) A sanitizing agent may be introduced into the final rinse water supply.
7. DRAIN POSITION - To prevent wash solution from being discharged from the machine.
8. DISCHARGE - The containers continue on customer's conveyor.

## **SERVICE REQUIREMENTS**

3/60/230-460 volts (state voltage available when ordering.)

1 - 1" steam connection, 40 PSI minimum.

1 - 3/4" hot water connection.

1 - 2" drain connection, gravity.

1 - 10" dia. vent connection, 1400 CFM required.

## **OPTIONS**

1. **Stainless Steel Pumps**, in lieu of cast iron pumps.
2. **Closed-System Steam Coil Heating** of wash tank, in lieu of direct steam injection. Includes steam condensate trap.
3. **Variable Speed Drive Control** to increase or decrease the conveyor speed 2 to 4 feet per minute.
4. **Safety Disconnect Switch** – The disconnect will be mounted in the control panel for added safety while working on the container washer.
5. **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.
6. **Pump Pressure Gauge** to monitor performance of pump. The pump shall indicate recirculation water pressure.
7. **Air Knife** – An air knife across top only, using compressed air, will be supplied. The system includes the air knife, valve, and piping. Compressed air to come from plant air supply.
8. **Ambient Blow-Off Treatment** – This will remove the bulk of excess water from the surface of the cases. Blow-off system shall utilize a blower distributing air through stainless steel plena onto all surfaces of the cases. Adds to overall length of the container washer.

# ***Container Washer***

