

GIRTON MODEL GCWHX INDEXING TOTE BIN WASHER

GENERAL

Girton Model GCWHX Tote Bin Washer to prewash and rinse metal bins, as large as 41" diameter x 69" high, at the variable rate of 28 bins per hour. (Note: Lids to be hung on side of bin with removable hook.)

CONSTRUCTION

The tank, hull, in-feed and discharge sections are fabricated of 12 gauge, type 304 stainless steel with 2B finish. All seams are welded and cleaned. Guide rails, conveyor channels, piping, and headers with jet sprays are stainless steel.

CONVEYOR

The conveyor consists of two conveyor chains and is designed to convey the bins through the washer for proper cleaning action.

An automatic conveyor stop switch, activated by the bins, shuts off the drive motor in case the operator is not present to remove the bin as it discharges from the washer.

VARIABLE SPEED DRIVE

2 Hp Wash Down Duty gearmotor, arranged to carry the conveyor through the washer at an advancing speed of 24 FPM.

Heavy duty stainless steel guide rails will support and guide the bins through the washer.

SCREENS

Drawer type stainless steel tray screens shall be used, with perforations smaller than the jet openings, to trap debris and protect the pump and spray orifices.

SELF-FLUSHING INLINE CANISTER FILTERS

An inline filter shall be on the discharge of each pump, complete with an automatic flushing valve. The PLC control shall be programmed to open each valve at a set time interval. The filter shall be a 30 mesh stainless steel screen. The soil collected by the filter shall be flushed to the drain at pre-determined time intervals.

VENT

Interconnecting stainless steel duct work complete with stainless steel manual balancing dampers. Duct shall be welded water tight and pitched to drain back to the washer.

Stainless steel exhaust fan, complete with motor starter and control, 6,250 CFM @ 1" SP, 2 Hp, 3/60/460 volt, a companion flange shall be supplied for connection to discharge duct work.

1. INTERNAL PRESOAK

This treatment shall utilize approximately 15 gallons of rinse water to presoak and loosen heavy soil and divert it directly to the drain. This treatment shall operate for approximately 60 seconds, over the 120 second presoak time. The internal lowering sprayball shall pulse for maximum treatment.

2. INTERNAL PRE WASH

This treatment shall utilize approximately 10 gallons of rinse water to prewash and loosen heavy soil and divert it directly to the drain. This treatment shall operate for approximately 60 seconds, over the 120 second prewash time. The internal lowering sprayball shall pulse for maximum treatment.

3. INTERNAL DETERGENT WASH

The interior of the bin shall receive a high capacity detergent wash from an automatically lowering spray ball. Water shall be recirculated and filtered both on the suction side of the pump by means of the drawer type screens as well as the inline, self cleaning screen on the pump discharge.

4. INTERNAL & EXTERNAL DETERGENT WASH

The interior of the bin shall be internally washed as described above, as well as be exposed to a continuous washing on the exterior from fixed spray jets. All water shall be filtered as described above.

5. INTERNAL DETERGENT WASH

The interior of the bin shall receive a high capacity detergent wash from an automatically lowering spray ball. Water shall be recirculated and filtered both on the suction side of the pump by means of the drawer type screens as well as the inline, self cleaning screen on the pump discharge.

6. RECIRCULATED RINSE

The interior and exterior of the bin shall receive a thorough rinse recirculated by the 5 HP rinse pump for a period of one minute. The interior of the bin shall be rinsed by an automatically lowering sprayball, water shall be filtered on both the suction side of the pump by means of a drawer type screen as well as a self-flushing inline screen on the pump discharge.

7. FRESH RINSE

Fresh rinse consists of a single outside loop and an internal spray ball, spraying water at 180°F and 40 PSI pressure, controlled by an automatic valve. Minimum pressure to be 40 PSI. Flow rate is 25 Gpm. Water shall drain into recirculated rinse tank to keep it freshened. Fresh rinse shall operate for one minute.

8. COOL DOWN CYCLE

Bins are allowed to drain and cool down for 2 minutes prior to being discharged from the tunnel.

HEATING

Temperature of the recirculated wash solution and rinse solution, are controlled by an automatic temperature controller, and stainless steel steam coils. All steam piping shall be stainless steel. The fresh final rinse shall include a cast iron shell heat exchanger with copper coils, to maintain final rinse water at 180°F.

WASH PUMP

Ampco, 10 Hp, stainless steel wash pump. One 10 Hp wash pump is stainless steel, horizontal type, with a close-coupled motor, Wash Down Duty, and is rated at 300 gallons per minute at 115 ft. hd. Pump brand shall be Ampco.

SPRAY BALLS

Treatment section shall include one automatically lowering spray ball device designed to pass 9.9 gpm of water at 40 PSI. Each spray ball shall include an inline tamper resistant needle valve and pressure gauge for optimum water conservation. Spray balls shall have a controlled speed and rotate 40 RPM @ 40 PSI.

RINSE PUMP

Ampco, 7 1/2 Hp, stainless steel rinse pump, horizontal type, with a close-coupled motor, Wash Down Duty, and shall be rated at 100 Gpm @ 125 Ft hd., pump shall provide water to the internal presoak, internal prewash, and recirculated rinse treatments.

AUTOMATIC DETERGENT DISPENSER

A pump shall be supplied to automatically add detergent. Pump shall be peristaltic, squeeze tube type, manufactured by Knight equipment Co. Detergent concentration shall be maintained by conductivity.

AUTOMATIC RINSE ADDITIVE DISPENSER

A pump shall be supplied to automatically add a rinse additive at a pre-determined rate. Pump shall be peristaltic, squeeze tube type, manufactured by Knight equipment Co.

SAMPLE PORTS

Sample ports shall consist of 1/2" sanitary clamp ferrules complete with clamps, gaskets and Tri-Clover sample port. Sample ports shall be provided for both wash and rinse tanks.

STANDARD FEATURES

WIRING

The Girton Model GCWHX 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 1500 Series PLC, and Microview operator interface.

PLC control – The heart of the control system will be an Allen Bradley Micrologix 1500 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 Panelview 600 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.

All water and steam valves shall be air operated.

Interior lights, shall be incandescent, non-metallic, corrosion resistant, complete with polycarbonate globes. A total of five lights shall be installed to illuminate the interior of the washer for servicing and maintenance. Temperature for wash, rinse and fresh rinse shall be displayed on the operator interface. Pump pressure gauges shall be supplied for the wash and rinse pumps, flushing filters and fresh rinse.

A hand operated ball valve shall be used on the drain line.

Supervision of installation: a Girton Manufacturing Co., Inc Supervisor shall be present during the installation of the washer to instruct the owners maintenance and installation crew.

Testing and Demonstration – Training of owner's personnel in accordance to Girton Manufacturing Co., Inc. standard testing and demonstration policy. Equipment shall be demonstrated to all operators and maintenance personnel.

SERVICE REQUIREMENTS

3/60/460 volts – 115 volt control transformer by Girton.

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.

1 – 1 1/2" water line, 40 PSI, 50 gpm flow rate available for supply.

2 - 2" gravity drain connection's, total water rejection to drain 700 gallons per hour, or 25 gallons per bin.

1 – 24" vent connection, 6,250 total CFM required.

2 1/2" NPT steam, 1850 lbs./HR.

1" Condensate.

Compressed Air – 3/8" NPT, 90 PSI, 5 CFM

Conveyorized Tote Bin Washer Infeed

