DOUGLAS MACHINES CORP.

Effective: April 5, 2011

"DOUGLAS" MODEL BW-2000-E
DUAL ECONOMY BIN WASHER
WASH, AND SANITIZING SYSTEM

DESIGN AND OPERATION

Designed for batch type operation where two (2) bins are loaded into support brackets mounted on the door. The door, activated by holding the open/close switch, is lifted and closed by two (2) hydraulic cylinders. The cycle start button is then pushed which initiates a 150° F. recirculating detergent wash and then a 180° F. hot water sanitizing rinse. The sanitizing rinse water is directed back into the the recirculated wash tank to freshen it. The excess water then overflows to drain. Booster heaters maintain proper operating temperatures.

OPTIONAL SAFETY CAGE

The safety cage prevents machine door operation when the cage doors are not in the closed position. Also with this feature, after the bin has been loaded and the cage doors have been closed, the start button is pushed which activates the complete cycle. This includes the machine door closing, wash, sanitizing rinse and the door returning to the open position for unloading. A separate open/close machine door switch is also provided for manual override, operational only when the cage doors are in the closed position.

GENERAL CONSTRUCTION

Upper housing will be constructed of #12 gauge, type #304 STAINLESS STEEL with a #3 finish. Wash tank to be constructed of #12 gauge, type #304 STAINLESS STEEL also with a #3 finish. Door is doubled skinned constructed of #14 and #12 gauge, type #304 STAINLESS STEEL with internal and external bracing for maximum strength. Manually opened and closed with a switch and protected from any cycle operating when not in the closed position. Base frame constructed of 3" x 3" x 1/4" structural STAINLESS STEEL angle. All seams are mig or tig welded. Seams, where needed for watertight construction, and door are continuously welded. All other seams are stitch welded for strength. All welds are cleaned inside, cleaned and buffed outside. Optional continuous welds in lieu of stitch welds available.

RECIRCULATING WASH TANK

Recirculating wash tank is heated by electric, live steam or steam coil, thermostatically controlled, low water protected, complete with 1" NPT automatic fill system, 1 1/2" NPT overflow connection, 3" gate drain valve, thermometer and liquid filled pressure gauge. 660 gallon wash tank capacity, sloped to drain.

WASH PUMP

Closed coupled centrifugal wash pump with STAINLESS STEEL casing and impeller. Complete with 60 H.P. TEFC or optional wash down duty motor, 208/230/460 or optional 575 volt, 3 phase, 60 cycle. Rated for 630 gallons per minute at 80 PSI.

FINAL SANITIZING RINSE

Fresh sanitizing rinse delivers 24 gallons per 22 second cycle at 20 PSI flow. 180° F. sanitizing rinse water supplied to unit by customer or optional 60 gallon pumped rinse tank heated by electric or steam coil with 1 1/2 H.P. TEFC or optional wash down duty motor, 208/240/480 or optional 575 volt, 3 phase, 60 cycle. If booster heater is required, the water supply temperature is 120° F. minimum.

SPRAY PIPING SYSTEM

Two (2) rotating hubs with extended arms to wash the inside of the bin driven by a 1/2 H.P. TENV gear motor and five (5) compressed air piston driven oscillating spray arms for coverage on the outside. Wash and final rinse constructed of STAINLESS STEEL piping, fittings, high velocity brass "V" wash jets and full cone rinse jets. Optional STAINLESS STEEL fittings and nozzles available.

FILTRATION Soil filter diverter is located above the water line and is sloped to direct solids to outside filter tanks, accessed through a removable lid on the side of the machine.

STEAM EXHAUST VENT Steam exhaust vent collar, 12 7/8" inside diameter, constructed of #14 gauge STAINLESS STEEL. Bolted to the top of the machine pre wired with a control timer for the addition of a fan.

OPTIONAL EXHAUST FAN 12" diameter exhaust fan mounted on washer to extract steam after rinse cycle. 1/4 H.P. TEFC or optional wash down duty motor, 120 volt, 1 phase, 60 cycle, 1725 RPM, rated 500 CFM @ 3/4" static pressure. Optional all STAINLESS STEEL fan available with 1/2 H.P. 3 phase motor.

ELECTRICAL PANEL AND CONTROLS Electrical control panel is UL listed, NEMA 4X STAINLESS STEEL with Square "D" components. Optional panel disconnect switch with lockout feature also available. 120 volt control circuit with lighted "POWER ON" switch, "START" and " STOP" buttons, "RUN" indicator light, "OPEN/CLOSE" door switch, and short, medium and long "WASH CYCLE SELECTOR" switch. Complete recirculating wash, final sanitizing rinse and dwell/fan cycles initiated by pushing the "START" button. Wash and final rinse cycle times are adjustable.

OTHER FEATURES Adjustable STAINLESS STEEL legs for leveling machine.
Complete hydraulic system with 20 gallon tank reservoir and 20 H.P. TEFC or optional wash down duty motor, 208/230/460, or optional 575 volt, 3 phase, 60 cycle.

CONTAINER SPECIFICATIONS Designed for bins or similar size containers measuring 48" x 48" x 45" high. Other design variations available for different container sizes.

DIMENSIONS Washer Cabinet Dimensions: 144" wide x 60" deep x 125" high
Overall Dimensions: 177" wide x 114 1/2" deep x 132 1/2" high

CONNECTIONS Electrical: Single-point connection
Wash tank water inlet: (1) 1" NPT, 120° F.
Final rinse water inlet: (1) 1" NPT, 180° F. or 120° F. with optional booster heater
Drain: (1) 3" NPT
Overflow: (1) 1 1/2" NPT
Steam Option: (1) 3/4" NPT or (2) 3/4" NPT with optional final rinse booster heater
Steam Condensate: (1) 3/4" NPT or (2) 3/4" NPT with optional final rinse booster heater
Compressed Air: (1) 1/4" NPT, 20 CFM @ 80 PSI

SERVICES Electric Heated:
480 Volt, 3 Phase, 184 Running Amps, 250 Amp Service Breaker
575 Volt, 3 Phase, 153 Running Amps, 200 Amp Service Breaker

Steam Heated:
208 Volt, 3 Phase, 60 Cycle, 199 Running Amps, 250 Amp Service Breaker
240 Volt, 3 Phase, 60 Cycle, 185 Running Amps, 250 Amp Service Breaker
480 Volt, 3 Phase, 60 Cycle, 94 Running Amps, 125 Amp Service Breaker
575 Volt, 3 Phase, 60 Cycle, 81 Running Amps, 110 Amp Service Breaker

Steam Consumption:
385 lbs. per hour for recirculating wash tank
215 lbs. per hour for optional final rinse booster

Please add the following amps to those above for optional STAINLESS STEEL exhaust fan (2.1 at 208 volt, 1.8 at 240 volt, .8 at 480 volt, or .5 at 575 volt) and/or pumped rinse. steam heated (4.9 at 208 volt, 4.2 at 240 volt, 2.1 at 480 volt, or 1.5 at 575 volt) or pumped rinse tank, electric heated (56.1 at 480 volt, or 44.7 at 575 volt) and recalculate service breaker size, which should be at least 125% of total running amps.