

18-22 weeks upon receipt of order, signed drawings and 50% Down
ULTRASONIC POWER CORPORATION
FREEPORT, ILLINOIS

Celestica Precision
135 Gallon Five Stage Automated Console
Specification 19-230-B
Date: 1/17/19

GENERAL:

This ultrasonic cleaning system is designed as a precision ultrasonic cleaning system. The five station ultrasonic cleaning system consists of a 135 GALLON CONSOLE spray pre-wash, an advanced model 135 GALLON CONSOLE 40kHz ultrasonic wash system, an advanced model 135 GALLON CONSOLE 68KHz ultrasonic immersion rinse system, a 135 GALLON CONSOLE 170kHz ultrasonic spray over rinse and a 135 GALLON CONSOLE hot air dryer system with blow-off. Custom baskets/transporters are passed through the cleaning stages by an automated system that utilizes an overhead carrier system. The system includes a load and unload. **No conveyor system included**

System Summary:

Tank dimensions: 24" left to right, 54" front to back, 24" deep (22" working depth)

System dimensions: **Approximately 280" left to right, 80" front to back, 88" high (including robot arm)

Process: Spray rinse, Ultrasonic Wash, Rinse with ultrasonic immersion, spray over Ultrasonic immersion rinse, air blow-off /oven dry

Chemistry: Wash- Brulin Customer specified, Rinse- DIW – Closed loop heated (110° F) D/I system feeding rinse tanks

Automation: A/B Dual Axis

Facilities: 2-4 GPM, (8-10 GPM on demand) DIW @ 1-2 Mohm, 30-35 psi and process temperature, 110-115 CFM Clean Dry Air (CDA) @ 30psi for blow-off, unrestricted floor drain

Power Requirements: 208V/60Hz/ 3 phase (other voltages available upon request)

Work Flow: Left to Right

System Detail:

Station 1

Spray Pre-Wash:

Stationary spray rinse package with:

- Opposed spray rinse headers
- Located near the top of the tank
- Solenoid valve on incoming water line (facility supplied water)
- Solenoid controlled via PLC

Station 2

Ultrasonic Immersion Wash

Station 5

Recirculating Hot Air Dryer

Heat:	8000 watts of heat
Temperature Control:	Digital temperature controller with RTD-type temperature probe
Blower:	1200 CFM
Blow off:	A stationary blow-off package with: <ul style="list-style-type: none">- One set of parallel-opposed air blow-off headers located near top of tank (factory supplied compressed air)- A solenoid valve on the incoming air line- Valve is controlled by PLC
Standard Features:	Automatic sliding lid- electric actuated, controlled by PLC

Closed Loop D/I Package for Station 4 & 5. Heated (110° F) reservoir, system capable of providing 6 GPM of ultrapure water

AUTOMATION PACKAGE

Dual Axis Servo Solution

Capacity:

- 100 pounds

Travel Speed:

- Horizontal - 6.4 in/sec
- Vertical – 2.5 in/sec

Positioning Accuracy:

- Horizontal: +/- .008"
- Vertical: +/- .002"

Horizontal:

- Belt driven transfer slide
- Position via optical encoders
- Over travel protection via travel limit sensors

Vertical:

- Ball screw driven actuator
- Position via optical encoders
- Provides safety and high lift capacity
- Over travel protection via travel limit sensors

Automation Control:

- Sonic Touch®II- B&R Automation C70 7" HMI & PLC
- Sonic Touch®II mounted in convenient heavy duty movable stand
- Maintenance-free, real time clock with 1,000 hour buffer gold foil capacitor
- Analog resistive touch screen for use with gloves in industrial environments
- IP65 Front Screen Protection with multipoint sealing solution provides long lasting protection
- High resolution (800 x 480px), TFT screen, 262,000 colors with LED backlight
- CE, UL & cUL certified
- USB ports -allow upgrades, program changes, recording and downloading data
- Ultrasonic Power function On/Off control

- Pump and filter system On/Off control
- Countdown Timer for Ultrasonic operation
- 7-day programmable Timer for Pump and filter system
- Switching between Celsius and Fahrenheit
- Ultrasonic intensity display slider and indicator
- Sweep Control for the Generator
- Clock and Date Indicator
- Elapsed Time Meter for ultrasonic Power monitoring
- Elapsed Time Meter for pump and filter system monitoring
- Patented LCS (Liquid Condition Sensor) display- monitors cavitation activity levels for validation functions
- Frequency Display- displays frequency output for individual generators
- Power Output Display- displays accumulative output relative to number of generators
- System Setting Monitor- Auto saves system settings every 5 minutes*
- Heating system temperature offset adjustment
- Ultrasonic generator power output indicator alarm
- Ultrasonic generator power output indicator alarm log
- Data Recorder- continuous recording of system status in real time. Records while machine is on. Data can be stored on flash drives.
- System Diagnostics
- Password protected control for Level of User (Operator/Supervisor)
- Preventative Maintenance Timer/Schedule function
- SOVI ® (Sonic Output Validation Indicator) diagnostic system- validates operating condition of the system. Error code indicates fault.
- Monitors basket location from start to finish

Automation PLC will control:

Transporting baskets through process (multiple basket capability)

Wash time

Wash agitation option

Rinse time

Immersion rinse DI replenishment time

Rinse agitation option

Rinse spray time

Rinse spray agitation option

Dryer lid open/close

Dryer blow-off time

Dryer blow-off agitation option

Dryer time

Load and unload table sensors

Robot arm basket sensor

Wash tank basket sensor

Rinse tank basket sensor

Dryer tank basket sensor

Unload alarm if basket is not removed

Multiple programmable recipes

Manual Controls-

- Main Power mounted on NEMA box
- E-stop mounted on NEMA box- E-stop stops automation functions

- Wash temperature On/Off on wash tank
- Wash temperature setting on wash tank
- Rinse temperature On/Off on rinse tank
- Wash temperature setting on rinse tank
- Dryer temperature On/Off on Dryer
- Dryer temperature setting on Dryer

GENERAL CONSTRUCTION

Tank Material: 316L stainless steel with a #4 finish

Skirt Material: 304 stainless steel

INSTRUCTION MANUAL:

The equipment is furnished with an operator's manual containing a description of the ultrasonic generator and the transducers, general care, safety precautions and a list and description of the operation system controls and indicators along with an electric schematic.

TEST:

The machine is given a full operational test prior to shipping. If the customer wants to witness this test he must advise Ultrasonic Power Corporation in writing of any specific criteria he will want to test in addition to the normal operational test. This notification of witnessing of the test must accompany the purchase order.

GUARANTEE:

The equipment is warranted in accordance with the standard Ultrasonic Power Corporation warranty certificate.

signed off before production starts.