Balco Engineering Ltd Automatic Electropolish Line

Stock No	TE368
Manufacturer	Balco Engineering Ltd
Model	Automatic Electropolish
Year of Manufacture	2016
Serial	MS-0054
Condition	From a working environment, Seen working by RSW, Good Condition
Work Envelope (WxDxH mm)	260/360 x 500 x 650
Process Stages	6
Other Info	Fume Exhaust System (4,386 CFM)
Location	Our Central Warehouse, Aldridge, UK
External Dimensions (WxDxH mm)	1100 x 2550 x 2530mm

Description

An ideal opportunity to acquire an automatic electropolishing line, installed by Balco Engineering Limited in 2016 utilised in the production of medical implants. The plant is fully operational and can currently be viewed working by prospective buyers.

The plant comprises a series of tanks in an enclosed extracted canopy as detailed on the process schedule attached, arranged in a straight line with the work is carried from tank to tank automatically by the transporter. Fitted with an overhead transporter controlled via a Mitsubishi plc.

There is a full fume extraction system to atmosphere.

Approximate plant dimensions 2550mm long x 1100mm wide x 2530mm high to top of canopy.

Additional Ancillary Equipment

- Fan Stand (footprint) - 1800mm x 600mm
- Rectifier - 500mm long x 500mm wide x 13800mm
- Control Panel - 800mm long x 270mm wide x 1000mm

The line is fully consoled in polypropylene sheet and the tanks are located inside an integral PP bund with support stand to working height from factory floor level.

Specification of Equipment

Tank No. 1 Process Electropolish

- Temperature: 60°C
- 1 Off single compartment tank of internal size (complete with top flange) - 360mm x 500mm x 650mm
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume extraction canopy
- Lift off tank lid
- 1 Set electric heating equipment complete with protection and control
- 1 Set process temperature control
- 1 Set solution circulation pump complete with suction and delivery pipework
- 1 Set Anodic Vee location block
- 2 Off cathode Bars fitted with stainless steel cathode plates
- 1 Off Kraft rectifier 1000 amps X 15 VDC

Tank No. 2 Process Rinse 1

- Temperature: AMB
- 1 Off single compartment tank of internal size (complete with top flange) - 260mm x 500mm x 650mm
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume extraction canopy
- Lift off tank lid
- 1 Set PP Vee location blocks
- 1 Off bottom water inlet
- 1 Off rear overflow to drain
- 1 Set air agitation
- 1 Set pH monitoring
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1 Set conductivity monitoring

Tank No. 3 Process Rinse 2

- Temperature: AMB
- 1 Off single compartment tank of internal size (complete with top flange) - 260mm x 500mm x 650mm
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume Extraction Canopy
- Lift off Tank Lid
- 1 Set PP Vee Location Block
- 1 Off Bottom Water Inlet
- 1 Off Rear Overflow to drain
- 1 Set Air Agitation
- 1 Set pH Monitoring
- 1 Set Conductivity Monitoring

Tank No. 4 Process Nitric Acid

- Temperature: TBC
- 1 Off Single compartment tank of internal size 260mm x 500mm x 650mm deep, complete with top flange
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume extraction canopy
- Lift off tank lid
- 1 Set electric heating equipment complete with protection and control
- 1 Set process temperature control
- 1 Set PP Vee location blocks

Tank No. 5 Process Rinse 3

- Temperature: AMB
- 1 Off single compartment tank of internal size (complete with top flange) - 260mm x 500mm x 650mm
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume extraction canopy
- Lift off tank lid
- 1 Set PP Vee location block
- 1 Off bottom water inlet
- 1 Off rear overflow to drain
- 1 Set air agitation
- 1 Set pH monitoring
- 1 Set conductivity monitoring

Tank No. 6 Process Hot Rinse

- Temperature: 60°C
- 1 Off single compartment tank of internal size (complete with top flange) - 260mm x 500mm x 650mm
- The body of the tank is manufactured from polypropylene material

Tank is supplied with:

- Fume extraction canopy
- Lift off tank lid
- 1 Set electric heating equipment complete with protection and control
- 1 Set process temperature control
- 1 Set PP Vee location blocks
- 1 Set pH monitoring

Control Console

Central control cabinet containing Mitsubishi PLC and HMI with three off electronic temperature controllers, four off pH meters and three off conductivity meters. Start stop buttons for extraction fan, pumps etc. Selector switches for manual or automatic transporter operation. Complete with contactors, circuit breakers and rail mounted terminal blocks.

Transporter

One off twin track overhead transporter with two modes of operation: automatic under the control of the Mitsubishi PLC and manually under operator control via push buttons mounted on the front of the unit.

Running inside the canopy with motorised raise lower and traverse with necessary interlocks.

SWL estimated at 50kg.

Electrical Wiring

All electrical wiring between the central control console and field electrical items is installed in corrosion resistant PVC or galvanised-steel cable tray suitably supported.

Fume Exhaust System

Scope of supply - A single fume exhaust system is installed for the in-line processes as indicated below and on the tank schedule.

The extraction system includes the following major items of equipment:

- Fume exhaust canopy
- Interconnecting trunking
- Exhaust fan
- Outlet stack

Specification of the Equipment

Item 1 - Canopy Extract Hood - 1 Off

- Rear lip extraction hoods fitted above tank rim with full width slots inside an enclosed canopy.
- Material of construction: - Polypropylene

Item 2 - Ductwork

- Connection duct running into the extraction fan.
- Material of construction: Grey PVC.

Item 3 - Extraction Fan

- Centrifugal fume exhaust fan, direct drive from three phase 4kW motor complete with support frame and drain socket.
- Duty: Total air flow 2.07 cubic metres per second (4,386 CFM).

Item 4 - Discharge Stack

- Fume discharge stack rising vertically through the building roof from the fan discharge terminating with a high velocity efflux cone.

Photographs taken prior refurbishment. Our refurbishment service is not available on all machines.