

CEDIT HORIZONTAL TYPE BOBBIN DYEING MACHINE



Technical Specifications:

- Type : Cedit Bobbin Dyeing Machine (Horizontal Type)
- Purpose of Use : Dyeing of bobbin yarns
- Dyed Yarn Types : Mercerized Cotton, Wool, Viscose, Acrylic, Polyester, Cashmere, Angora
- Working Pressure : 3,8 Bar
- Test Pressure : 6 Bar
- Operating Temperature: 130 ° C at sea level
- Capacity : Optional
- Construction : All stainless steel
- Heating Type : Indirect Heating
- Control : Fully Automatic PLC System





Machine Description:

Cedit Bobbin Dyeing Machine is used for dyeing synthetic and cellulosic fiber yarns. (Such as polyester, nylon, silk, mercerized cotton, viscose, angora, cashmere, etc.) the machine works at 3.8 bar and 130 ° C.

The machine paints with the circulation provided by the pump under the air cushion. Compressed air creates a static pressure effect on the liquid fluid. Air cushion provides less liquor ratio and chemical usage. In addition, it prevents heat losses thanks to the insulation of the air. It reduces energy and water consumption.



Thanks to the air cushion, the machine can work at half capacity with suitable carriers. The machine has a stainless steel heating coil.

Circulation is provided by a specially designed centrifugal pump mounted on the machine. The inner-outer working mechanism of the machine is provided by a specially designed pneumatic driven diverter mounted on the pump body. This router allows the fluid to be directed precisely and without impact.

The covers are closed with automatic pistons, ensuring perfect sealing. Thanks to these pistons, the opening, closing and clamping of the cover is completed in a short time.

Carriers made of stainless steel are suitable for painting at full capacity and half capacity.

All painting operations are automatically controlled by plc panels. Temperature, dyeing time, flow direction, pressure and other control parameters are controlled by automatic valves.

Main Boiler:

The main boiler consists of the following materials and equipment:

Single Block Cabin:

The cabin is designed to contain 1 removable carrier. Endless arch type will be made of endless stainless steel plates.



Inner Bath Spread Zone



- Heat coil for fast indirect bath heating / cooling
- Axial circulation pump installed outside the painting chamber to prevent bath turbulence on the material, equipped with mechanical seals that do not require cooling or maintenance.
- During painting, the inverter system will control the pump operation. These detected values will be monitored on the program panel.
- The pump is driven by the same AC electric motor. This electric motor is externally mounted and ventilated.

AISI 316 pneumatically controlled valves are used for the following functions:

- Quality safety valve for high pressure protection.
- Machine water intake
- Main boiler water discharge.
- Main boiler HT discharge.
- Continuous rinsing with overflow, with bath carrier pipes
- Applying pressure and setting static pressure at constant value.

The following equipment are mounted on the main boiler;

Pneumatic Operated Automatic Door Closing and Locking System:

This system automatically performs the following operations:

1. Closing and locking the cover of the main boiler.
2. Door safety lock activation and deactivation by internal pressure.
3. Doors and unlocking.
4. Checking the temperature, static pressure and level security conditions before opening the lock. At the beginning and end of the process, the manual control lever activation of the cover will be controlled by the sensor.





5. The operator only has to move the door closer to the assembly and press a button. The system replaces traditional hand threaded levers and operates two pre-set pneumatic cylinders.

The equipment consists of the following units:

- Robust pneumatic cylinder for door opening and closing, including crossbar and door linkage and mounted at the rear of the assembly.
- Robust pneumatic cylinder mounted on the top of the assembly with inclined-plane type vertical crossbar for locking and unlocking security doors.
- Bath level opening and closing operations are carried out automatically by activating the pneumatic cylinder in a preset sequence. The automatic door locking system includes an operator safety device to prevent possible opening as required by the Occupational Safety regulation.

The system allows the following:

- *Reduce the number of openings / closings and operator workload*
- *Quick and easy loading of bulky materials.*
- *Cover gasket can be used at constant pressure for a long time.*
- *Construction material: stainless steel.*

External connection of heater partition-coils

This assembly is useful for the external connection of flange-mounted section-coils.

Material used: stainless steel is used for the manifold pipe. Connection flange is made of stainless steel.

Air Cushioning System

With the help of this device, it is possible to pressurize the equipment even at low temperatures. It was constructed as follows:

- Pressure application valve with pneumatically controlled and compressed air.
- Pneumatically controlled pressure reducing valve. Material used: stainless steel





Inverter System

For stepless control of 3-phase AC motor speed by variable power frequency converter mounted on the bath circulation pump. The system allows the following:

- Pump bath flow rate / pressure column diagram arrangement for unidirectional flow (inside to outside - outside to inside) according to technological conditions.
- Reducing electricity consumption in textile material processing
- Gradual and controlled pumping with speed and decrease
- An electronic device that is part of the equipment protects the electric motor. Trigger and adjustment systems are located in an independent control panel.
- The inverter is designed for power voltage 380V.

Water Inlet Valve For Assembly

- Soft water inlet for filling the machine.
- Hot water inlet for filling the machine.

Pneumatically controlled valve including casing, connecting pipe assembly and flanges for connecting to the water network. Construction material: stainless steel.

Valve For Main Boiler Bathroom Heating

To control the heating rate and temperature.

Construction material: Cast body insulator cover and sealed base stainless steel.

Main Boiler Bath Valve For Cooling

To control the cooling rate and temperature.

Construction material: Cast body insulator cover and sealed base stainless steel.

Main Boiler Level Probe Group

It includes the following:

- Stainless level probe for the bottom of the boiler.
- Level sensor for the boiler upper level





Thermometric Control Element

Boiler temperature is controlled by PT100 made of stainless material.

Auxiliary Tank for Paint and Chemical Products Hardware (1 Piece)

The tank is separate from the equipment so that it can be mounted in the most convenient position.

Material used: Stainless steel.

Inlet pump: High distance pumping type includes;

- Tank equipped with wash ring with bottom and top holes for standing on the floor and bath filter on suction pipe.
- Centrifugal pump with mechanical seals and externally ventilated electric motor for entries in the equipment, requiring no cooling or maintenance.
- Pneumatically operated valve for tank filling.
- Pneumatically controlled valve for emptying the tank.
- Chemical boiler level measurement will be followed. Desired amounts of water can be taken.
- Pneumatically controlled valve for entry into equipment.
- Check valve mounted on the equipment inlet pipe to prevent the bath from leaking out of the assembly.

Dye Tank Mixer

- With the help of this apparatus, the material in the tank is mixed in order to resolve liquid and powder products. It includes a palette against vortex formation.
- Material used: stainless steel (316L).

Indirect Heating Serpentine for Dye Tank

Spiral-shaped indirect coil installed at the bottom of the tank, required for remote control by means of a thermostat and for use with heating fluid (high temperature water).

Material used: stainless steel.





On-Off Valve for Heating the Paint Tank

- Pneumatically controlled on-off valve.
Material used: Stainless steel for the valve and seal housing, cast iron for the body.

Level Probe Group for Paint Tank

It includes the following:

- Tank bottom - top level liquid level sensor.
- Chemical boiler level measurement will be followed. Desired amounts of water can be taken.

Control Board

- Preset for Activation of Process Control
- Made of Stainless Steel

Electro pneumatic control panel consists of:

- Power control equipment with motor protection by magneto-thermal switches.
- Low-power auxiliary circuits.
- Electro valves and pneumatic control apparatus.
- The construction is made of stainless steel.
- Internal ventilation (cooling and heating) for control and keeping electronic devices in good condition under constant temperature and humidity conditions.
- Process control and buttons, signaling lamps and summary display.
- Touch P LC Based "Cedit" Process Control for Fully Automatic Operation of Dyeing Machine

The touch screen computer is based on standard equipment and controls the machine for fully automatic operation of all functions such as thermal cycling and pre-set sequence filling, discharging, dye and chemical injection.

Equipment:

- Touch PLC
- Serial connection for parallel connection with other dyeing machines.
- Push buttons and signaling lamps to be mounted on the dyeing machine control panel.
- Waterproof operator panel with push buttons and signaling lights to be mounted close to the color kitchen for operation in manual or automatic modes.





Software:

- "CEDIT" software package for automatic painting machine operation completely realized by CEDIT Makine .
- Easy programming of dyeing cycles by the "Menu" user with the help of image viewing.
- Dyeing programs and storage of sub-programs.
- Graphical display of scheduled time-temperature and other analogical diagrams.
- Graphic display of actual measured values of analogical parameters (temperature, pressure, flow rate, etc.).
- Automatic activation of color tone correction sub-programs after color sampling when necessary.
- Paint machine configuration parameters

Manual transitions:

Direct operation of computer outputs and projection of maintenance inputs on the screen.

Direct operation of each machine functions (eg water filling, bath emptying, dyes / chemicals injection, etc.) for fully automatic operation, if requested by the operator.

Dyeing Accessories 2 Pieces T Carrier

- Frame structure with side walls shaped to contain the tie rods in special grooves and supported from the back and sides with six faces parallel to each other. Complete with upper guide wheels and mounted on stainless steel housings to ensure maximum smooth movement, including wheels to connect to and exit the carrier.
- Material used: stainless steel
- Rods will be perforated at the height to be determined and the remaining distance will be gear shaft.
- Carrier locks.
- There will be a stainless lock for each bar (including spare coat rack).

