



PACKAGE DYEING MACHINES



www.dalalengineering.com

Package Dyeing Machines

Dalal is a leading manufacturer of Package Dyeing Machines offering complete dyeing and drying solutions for capacities ranging from 1 kg to 2000 kg or more. Our machines are universal – capable of dyeing natural or man-made fibre in a variety of forms.

Our current range of machines is now more eco-friendly, with features like Air Pad system for reduced water consumption and Variable Frequency Drive for greater energy efficiency.

The MLR is as low as 1:5 thereby reducing cost of dyeing and effluent treatment.

We constantly upgrade our technology in close cooperation with dyers of repute, and today supply dyeing machines that use the latest technology achieved through incorporation of a variety of accessories. Our experience in the field has enabled us to develop various user-friendly machines.

Our current range of machines are now more green and eco-friendly, with features like Air Pad system for reduced water consumption and Variable Frequency Drive for greater energy efficiency. The MLR is as low as 1:5 thereby reducing cost of dyeing and effluent treatment.

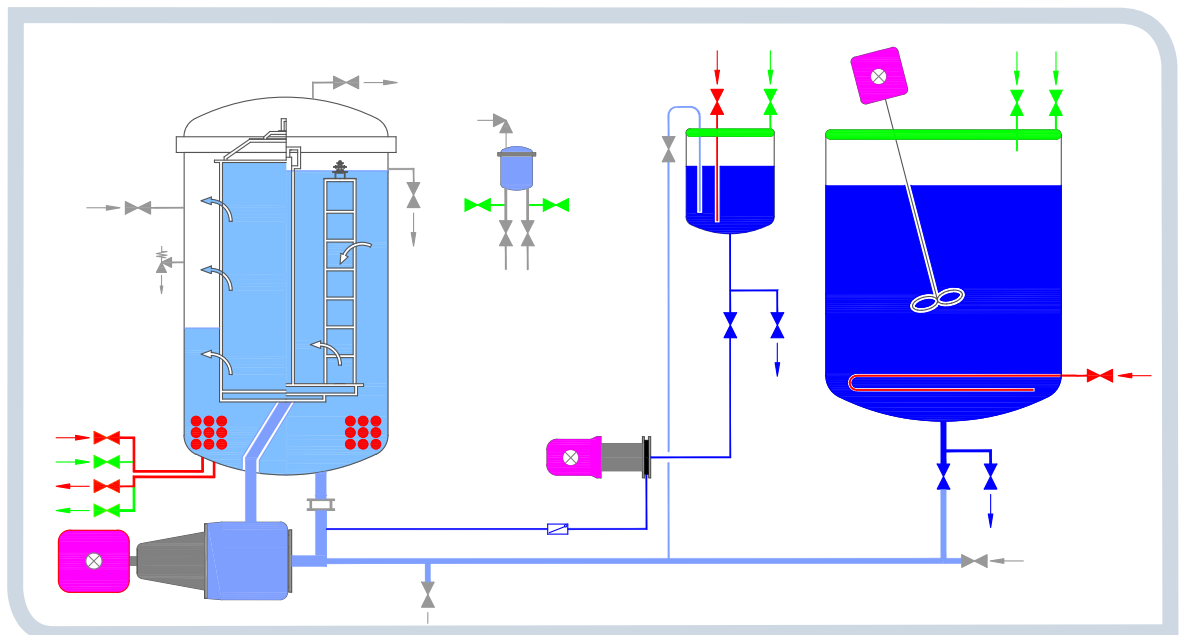


Package Dyeing Machine



Twin Vat Package Dyeing Machine

Dalal Package Dyeing Machines are manufactured from in SS 316/ SS 316 L /SS 316 Ti as per German manufacturing standards – pressure kier for static pressure of 4.5 bar and temperature up to 140° C, subjected to a pressure test at 5.85 bar.



Standard Features

Air Pad System: This feature makes it a most cost effective & environmentally friendly application. Its advantages are:

- * Reduced water quantity to bring down steam, electricity and chemical requirements
- * Uniform temperature in kier volume and excellent exhaustion of dyestuff
- * In vat dyeing of cotton, the dye liquor is not subject to continuous oxidation by external air
- * Reduced air pollution as dissolved chemicals do not escape to air

Variable Frequency Drive: Inverter controlled turbo pump motor helps achieve automatic step less speed control in both directions of flow. VFD reduces power consumption during start up, flow reversal and partial load dyeing.

Adjustable Liquor Ratios: Best liquor ratio can be selected depending on various process parameters with Analog Level Controller for complete dyeing process.

- * Low liquor ratio during dyeing phase. Minimum MLR can be selected for Full Load or Partial Load dyeing phase
- * Ultra low liquor ratio can be selected, whenever possible, for dyeing and subsequent washing cycles

Safety and Interlock Systems: The main lid of the machine is in 3-piece OSV type lid, operating with a pneumatic lifting and lowering cylinder and all required safety locks such that it cannot be opened unless the machine is fully depressurised and temperature is below 80° C.

- * Auto pressure control valve set at 4 kg/cm². Releases built-up pressure
- * Mechanical pressure safety valve set at 4.5 kg/cm²
- * Main pump protection to safeguard against dry run
- * Interlocking of "Heating On" and main pump motor

Additional Features

Pressure Extraction: The machine is pressurised by compressed air to remove excess heavily coloured water reducing water consumption and rinsing time. The process is repeated at the end of the dye cycle to remove excess water making handling of the carrier easy and keeping the area of operation clean.

Differential Pressure Controller: Continuously monitors differential pressure of packages and automatically adjusts pump speed to achieve pre-set values reducing power consumption considerably.

Conductivity Meter: Measures TDS of dye-bath continuously. This application results in saving of time, quantity of water and electrical power.

pH Meter: Helps in monitoring of pH of dye bath throughout dye cycle.

Shock Rinse: Reduces fresh water consumption due to efficient washing and improves rubbing fastness. Selection of this application however, depends on the class of dyestuffs and its suitability for such a treatment.

Dye Kitchen Equipment: Automated dye-kitchen equipment interfaced with microprocessor of main machine also available.

Operating System: Air pad is the standard production machine. However, for specific needs we can manufacture machines having Fully Flooded or Dual mode system.

Heating System: Apart from steam as heating media, we can also deliver machines suitable for Hot Oil or Pressurised Hot Water system.

Coupling: Coupling of two or more machines of identical capacity with automation can be supplied for dyeing larger capacity lots.



Coupled Package Dyeing Machines



Turbo Pump

The high performance liquor circulating axial flow Turbo pump is produced in-house to ensure greater quality control. It is a low head, high flow pump most suitable for package dyeing applications.



Laboratory Machine

Dalal Engineering's Laboratory Dyeing Machines for sampling have various useful features. The capacity ranges from 1 kg to 5 kg.

Automation

Dalal Package Dyeing Machines have an imported micro controller and PLC. They can also be linked to a central host computer station for dye-house management.

The machines have an industrial PC with graphic touch screen interface. Some of the automated functions are:

- ★ Filling – several types of water to a number of levels.
- ★ Filling to a programmed quantity.
- ★ Ratio fill – allowing quantity filling in relation to the material weight.
- ★ Filling with analog level sensor to any programmed percentage.
- ★ Flow reversal programme – allowing the selection of the duration of flow in each direction.
- ★ Circulation pump speed setting.
- ★ Machine pressurisation/ depressurisation.
- ★ Controlling the rate of heating & cooling, final temperatures and holding time.
- ★ Signals for preparation and control of the transferring of the contents of a side chemicals tank, followed by automatic rinsing.
- ★ Programmed Dosing.
- ★ Parallel preparation of Stock Tank, including: filling, heating, signal for addition of dyes/chemicals and transferring to the main dyeing vessel.
- ★ Combined rinsing and cooling.
- ★ Draining facility for Normal drain, High Temperature drain and Pressure drain.
- ★ Signals for operator intervention, including: load, unload, sample, check, etc.
- ★ Automatic fault finding system.



Material Carriers

Interchangeable Material Carriers of a wide range for substrates in different forms are available with Dalal. For tall machines, specially designed double decker carriers and warp beam carriers are also available.

Cheese Carrier

Cheese carriers feature spindles that are tailor-made to suit various types of dye centers and package dimensions. Cheese carriers supplied with self lowering locking devices.



Variable Load Cheese Carrier

Suitable for dyeing reduced batch sizes up to 50% of the rated capacity.



Fibre / Muff Carrier

Packing Cylinders suitable for dyeing loose stock and muffs are robustly designed. They are supplied with lifting plates for easy unloading of material. Heavy duty packing cylinders are designed for hydraulic pressing. Special types can go into a centrifugal hydro extractor along with the material.



Top Carrier

These carriers are designed for easy loading and unloading of tops and are constructed specially to ensure years of trouble free service. Gravity lowering caps help to take care of shrinkage during the process.



Unloading Basket

Recommended for large dia/ higher capacity machines. Helps reduces time taken to unload the yarn packages from carrier. Most importantly it reduces man power required.



Zipper Tape Carrier

Suitable to receive various sizes of spools (bobbins)



Special Features

Various types of locking devices and plates are supplied to suit individual requirements of different packages.



**Spring Loaded
Gravity Lock
Nuts**



**Rigid Lock
Nut**



**Self lowering
Lock Nut**

Presses

Pneumatic Press:

To press down dye-spring packages on to the cheese carrier spindles including movable turntable trolley.



Hydraulic Press

To press down loose stock and helenca muffs into packing cylinder with suitable adopters and movable turntable trolley.



Dalal Engineering traces its roots back more than 60 years, when it set up a unit strategically located at Thane on the outskirts of Mumbai, India, for manufacture of stainless steel equipment. Today, six decades later, the scope of activities of Dalal Engineering has expanded to include operations that cover a diverse range of industrial applications.

Our highly qualified team of trained engineers, our facilities for designing, manufacturing and testing equipment and our partnerships with global leaders in different fields enable us to provide cutting edge solutions to various industry segments. Continuous innovation and upgradation is our hallmark.

At Dalal, we don't sell machines, we provide solutions.



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