TWO COLOR CONTINUOUS RIBBON DYEING & FINISHING RANGE

TYPE MTF-MINI-2-COLORS-B

GENERAL DESCRIPTION

Continuous ribbon dyeing & finishing machine for two different elastic ribbons in two different colors. Produces up to 4,800 meters of dyed / finished ribbons (polyester or polyamide) per hour, with Thermosol and Pad-Steam process. (In case of Thermosol process there are some color restrictions.)

Two individual transport drives, one for each color, with automatic ribbon tension control.

Transport speed: 2 - 45 m/min. Ribbon width: from 8 mm to 35 mm.

Hot air cabin drying and thermofixation heating is electric (or with thermal oil). Washing unit heated by steam.

Machines are made of stainless steel modules with: control panel, feeding unit, impregnation padder, feeding tank, steaming and/or thermofixation cabins, washing unit with several wash troughs, finishing padder, hot air drying cabin and/or drying drum, ribbon take-up unit.

The modules can be bought individually to be attached to an existing machine, or as a complete new range.

PRODUCTION MACHINE

Mathis
Production machine for elastic ribbons in two colors made all in stainless steel. The machine is set up of several modules, all controlled by one panel, which is kept separate from the rest of the range to avoid contact with water, steam or chemicals. The modules are combined due to requested dyeing and/or finishing process, as well as ribbon fibers (polyester, polyamide, cotton, etc.). Individual transport for each of the two colors with automatic ribbon tension control by means of compensator arms, potentiometers and frequency controllers. Big double glass doors for easy access and view into cabins. Number of ribbons: 2 (with maximum width of 35mm) or 2 up to 4 (with maximum width of 15mm).

Available modules:

J-Box
with two reels and security sensor as well as alarm with safety stop switches for missing ribbon or knots.

Positive ribbon feeding unit
with individual ribbon tension control for each tape and alarm with safety stop switches for missing ribbon or knots, or excessive ribbon tension, beside reel to keep ribbons loose (recommended for elastic ribbons).

Simple feeding unit
with reel to keep ribbons loose.

Vertical control panel made of carbon steel with electrostatic paint, containing all electro-electronic commands, controllers as well as frequency controllers for transport speed and ribbon tension control of the machine.

Pair of Impregnation Padders to dye two separate colors on two (or four) different ribbons:
Two independent padders on one structure. Each padder for one or two ribbons. (The two ribbons on one padder have to be the same kind.) Each padder for one color. Padder with 2 (or 3) 110mm diameter rollers covered with 50-55 shore A nitrilic rubber. Roller pressure by means of pneumatic pistons controlled by manometer and pressure regulator. Impregnation through with removable immersion rollers for easy cleaning. (Optional: volume reduction device). Gearmotor drives padder roller axis. 3-roll-padder used for more intense impregnation in case of darker colors.

Feeding Tanks
for impregnation trough of padder, with level control on trough and solenoid valve. Tanks can be made of plastic or stainless steel, with or without stirrer.

Additional (optional) modules:

Infrared Pre-Heater (IR)
with electric infrared heaters, which are automatically switched off in case machine transport stops, to avoid ribbons from burning. Can be used with half of full power.
Double Steamer and/or Thermosol Hot Air Dyer
made with one cabin for two different colors on two (or 4) ribbons with up to 120m ribbon content each (total: 240m). Two individual transport drives, one for each roller (each color) by means of one gearmotor for each upper roller, while two lower rollers run free. Large double glass door for easy access and process observation.
Cabin available as Kombi-Steamer & Thermosol Dryer, Steamer only or Thermosol Dryer only.

a) Steamer: Ribbon entrance, ceiling and walls are heated by steam coils with individual steam pressure control, to avoid condensation and water drops. Direct steam injection on cabin, and warm water bath heated up by indirect steam coils with steam pressure control to generate steam. Overheating of steam through electric heaters, light fan circulation for uniform steam distribution with temperature controller. Two water seals at steamer exit avoids air from entering.

b) Hot Air Thermosol Dyer: Cabin heated up to 210ºC by 22 kW electric heaters (or thermal oil). Strong air circulation fan provides quick and uniform drying and thermofixation. Exhaust fan removes humidity and smokes from the chamber, helping dyestuff drying and thermofixation.

Double washing unit with 6 wash trough for each color (12 wash troughs total)
Two gearmotors drive the two main upper rollers (one for each color). 80mm diameter rollers covered by 70º shore A nitrilic rubber. Small 60mm diameter paddler rollers pneumatically driven, also covered with 70º shore A nitrilic rubber, make the ribbon transport.
Each of the 12 wash troughs (6 for each color) with 15 liter capacity are heated by steam coil with individual temperature controller for each wash trough. Additional direct steam injection.
Wash troughs with counter-flow overflow system to save water, energy and products. Individual water entrance and drain on each trough, beside the overflow.
Compensator at exit controls ribbon tension.

Double Hot Air Dryer with up to 90m ribbon content for each color (180m total)
The two upper rollers are driven by one gearmotor each, while the two lower rollers run free. Large double glass door for easy access and process observation.
Cabin heated up to 210ºC by 22 kW electric heaters. Air circulation fan provides quick and uniform drying. Exhaust fan removes humidity and smokes from the cabin.

Double Ribbon Take-up unit
attached to the dryer, with rollers driven through transmission belt of dryer motors. One ribbon take-up unit for each color

Modular construction
Special customized designs on request
TECHNICAL DATA - TYPE MTF-MINI-2-COLORS-B

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Number of ribbons</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Elastic ribbon width</td>
<td>8 - 35 mm</td>
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<tr>
<td>Transport speed</td>
<td>2 - 45 m/min</td>
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<tr>
<td>Thermosol cabin temperature</td>
<td>up to 210 ºC</td>
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<tr>
<td>Steamer cabin temperature</td>
<td>up to 110 ºC</td>
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<tr>
<td>Washing unit temperature (steam heated)</td>
<td>up to boiling temperature (100 ºC)</td>
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<tr>
<td>Electric feeding</td>
<td>3 x 220 V or 3 x 380 V (50 / 60 Hz)</td>
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<tr>
<td>Kind of cabin heating</td>
<td>electric / thermal oil</td>
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Example
1- double dyeing padder
2- double steamer & thermosol hot air dryer
3- double washing unit
   6 wash troughs / each color
4- double hot air dryer
   with double ribbon tape-up
5- control panel for two individual transport drives

machine Layout
(modular construction)