

# M.A.S.



## LOW LIQUOR RATIO BEAM DYEING MACHINE



# 1 Large diameter beams

Thinner wrapping thicknesses are involved and this provides appreciable advantages for the dimensional stability of the load, for the resulting quality of the dye and for the effectiveness of the washes carried out.

When the fabric is beamed on large diameters, there is a reduction in the number of overlapping layers, as result there is scant variation in the sizing of the innermost layers and the outer ones.

This means that dyeing conditions can be better checked: all layers are treated in the same way and so there is no change of head and tail occurring. The reduced thickness which the dye liquor has to cross leads to a reduction in the necessary pressure difference, thus allowing more compact items to be dyed without any problems of centre-selvage.

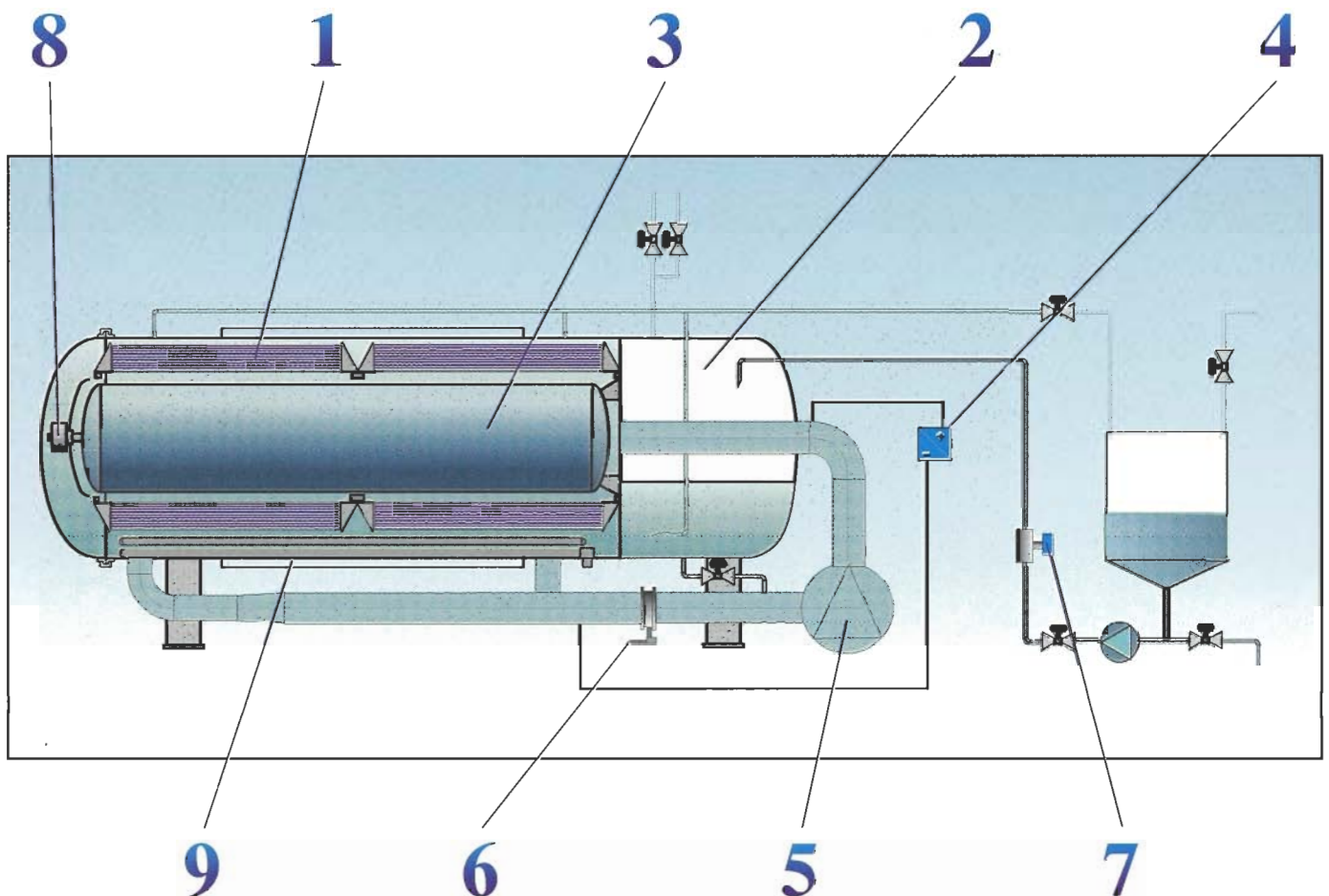
# 2 Compressed air pressurization

No wastage: the immersed volumes decrease and it is even possible to dye with little dye liquor even in an autoclave: ratios lower than 1:5 may be easily obtained with many articles. Compared with a traditional machine, consumption of vapour and the like is reduced accordingly. Compressed air pressurization also allows the elimination of the static pump and also the relative consumption: the electric power absorbed by the motor, steam and water needed in heating and cooling dye liquor recycle.

# 3 Dye liquor space reducer

Small dye liquor ratios are obtained only by eliminating dead volumes: the inside of the beam occupied by a dye liquor reduction unit fixed to the bottom of the dyeing boiler which causes a sharp reduction in the dye liquor content without in any way jeopardizing the smooth running of the machine.

## M.A.S. revolution in beam dyeing



## 4 *Adjustment of pressure differential*

This device allows the circulation pump's capacity to be adjusted automatically to the type and quantity of fabric to be treated, the pump's inverter control always allows the latter to run as efficiently as possible with a subsequent saving of power consumption.

The device also allows the pump to be started up gradually when the machine is being filled, thus providing advantages for the stability of the winding and avoiding the creation of air bubbles.

The possibility of monitoring the capacity parameters even when the batch is being changed allows you to work with greater consistency, thus ensuring a sound end result when loads and type of fabric being treated are changed.

## 5 *Pump's inverter control*

Being able to change pump rotation speed at will allows very high differential pressures to be obtained while motor consumption is kept within the rated power level.

Pressures obtained exceed 3 bar allowing the dyeing of articles which have up to now been considered impossible in autoclave.

## 6 *Counterpressure valve*

The special counter pressure valve and the totally controlled flow of dye liquor allow a better initial de-aeration of the fabric.

As a result: less risk of stains and greater winding stability.

## 7 *Metering additions*

Dyestuffs and the like are introduced into the dye bath according to a programme so as to avoid chemical shock and to improve the machine's repeatability.

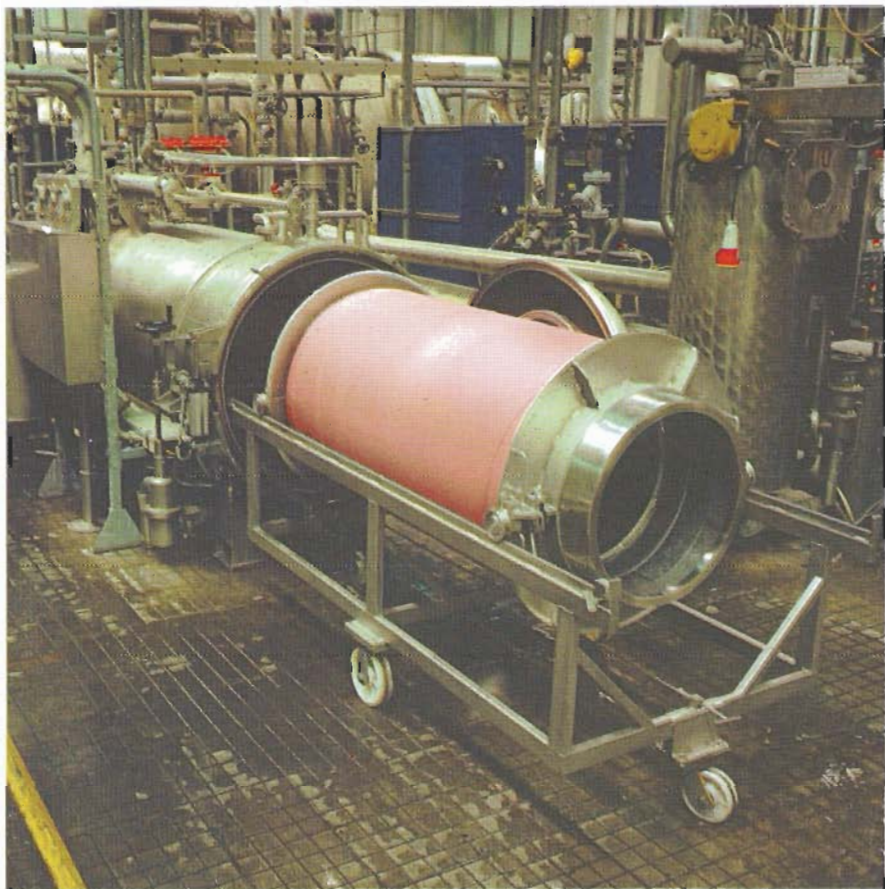
The metering system allows the products which are introduced to be measured and their feed time controlled by a magnetic meter.

## 8 *Automatic lid*

Totally automatic lid opening and closing on diameters greater than 800 mm. Closing the lid automatically seals off the inside of the beam without the need of manual operations and with the guarantee of a perfect seals.

## 9 *Cooling jacket*

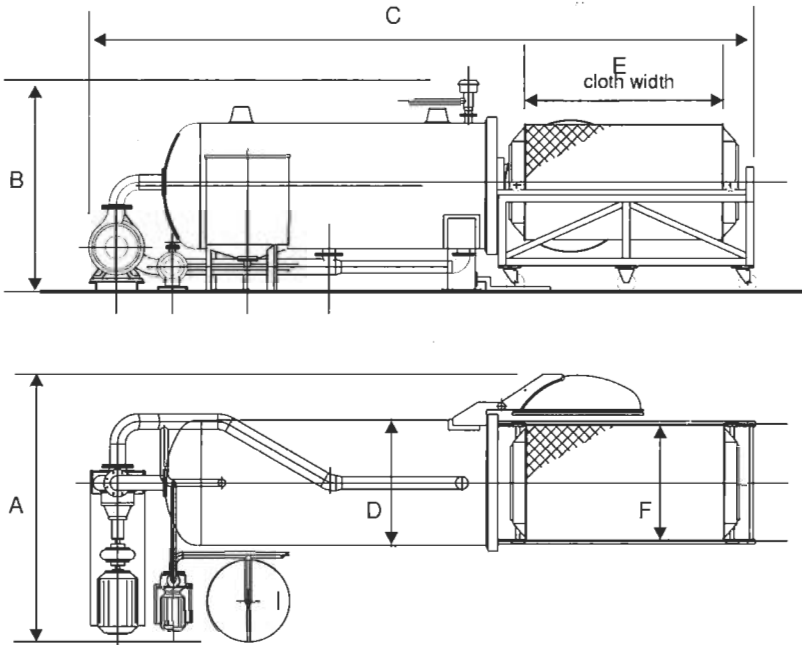
The dye liquor may be cooled by means of an externally-fitted cooling jacket. In addition to reducing cooling times, this option also creates an insulation chamber, cuts down heat leaks and thus provides a better working environment.



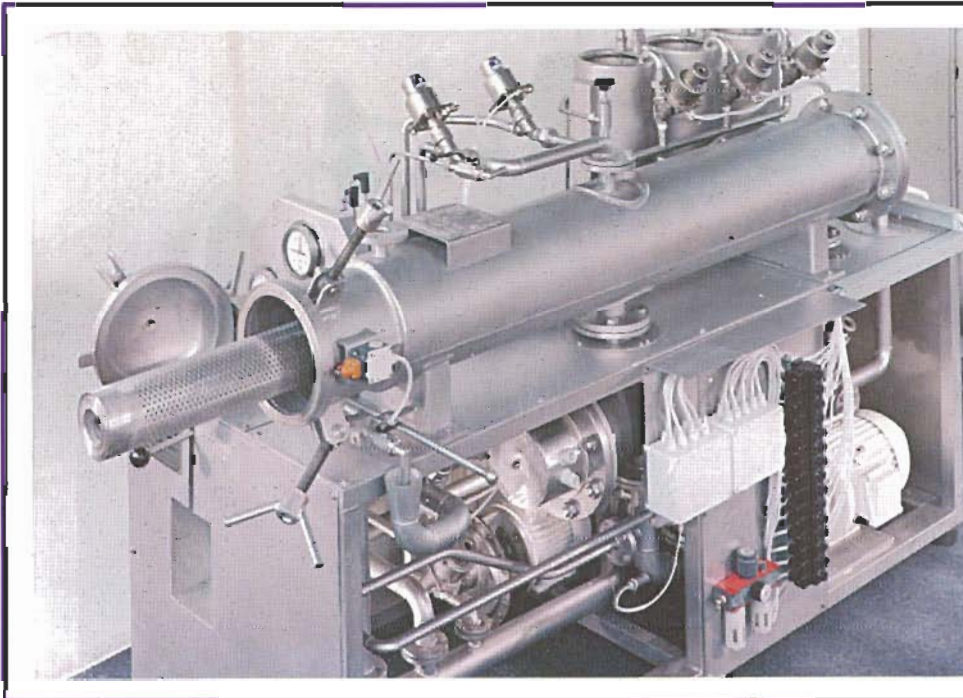
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# Optional devices

- Half capacity reducer
- Cooling outer casing
- Automatic carrier for beam introduction / extraction
- High temperature discharging device
- Sampling device
- Coupling device
- Bath preparation / stockage tank
- Dye kitchen



<b>D</b> Ø autoclave	800	1.000	1.120	1.250	1.400	1.600	1.750
<b>F</b> Ø beam	720	920	1.040	1.150	1.290	1.490	1.600
<b>A</b>	2.300	2.500	2.600	2.700	3.000	3.300	3.500
<b>B</b>	1.500	1.750	1.900	2.000	2.150	2.400	2.600
<b>C = E +</b>	3.500	3.800	4.000	4.100	4.200	4.500	5.000



The **M.A.S.** model cover also the laboratory needs with machines designed for small lots with the same characteristics as the production unit.



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