Technical Specification

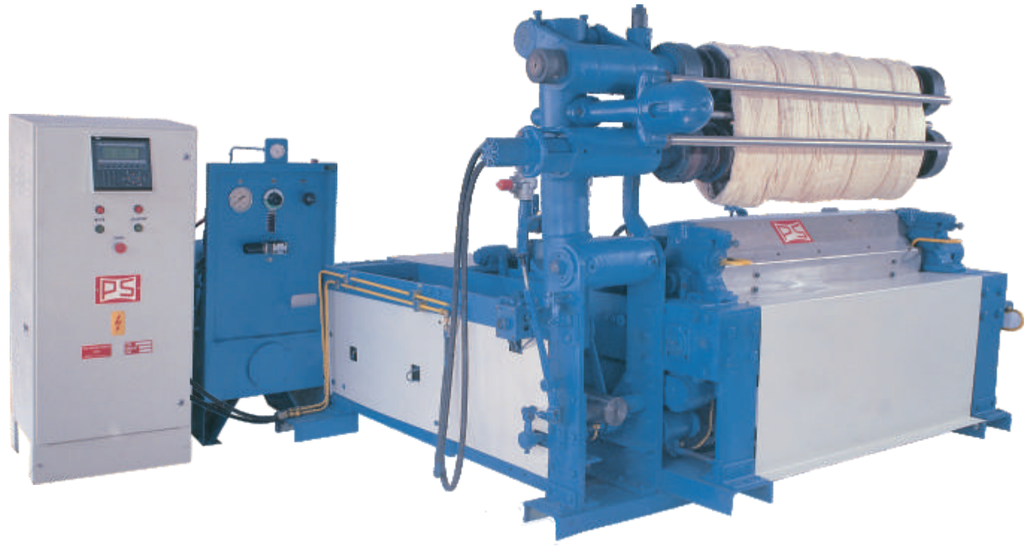
Machine type:		MM3-OH
Weight of yarn per charge	Kg	3
Duration of each working operation	Sec	270
Production per hour	Kg	40
No. of attendants		1
Normal hank length	cm	137.1
Maximum stretched length	cm	146
Minimum shrunk length	cm	120
Minimum distance apart of hank rollers while charging	cm	25.4
Maximum stretching force	Kg	18000
Maximum squeezing pressure	Kg	3200
Charging length of rollers	cm	110
Linear pressing	Kg/cm	29
Consumption of lye (Na OH 100%/Kg)	Grams	Ca.330
Consumption of hot water	L/h	1500
Consumption of cold water	L/h	700
Power required	kw	2.2
Net weight	Kg	4350
Gross weight		5200
Volume	m^3	10.7

Control Panel

Peass Industrial Engineers Ltd.

MM3-OH

HYDRAULIC HANK YARN MERCERIZING MACHINE



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*** The technical details of the above machines are subject to change with constant upgradation.**

DESIGNED BY FORECAST ADVERTISING

Hydraulic Hank Yarn Mercerizing Machine

PEASS-YARN MERCERIZING MACHINE MODEL: MM3-OH

The latest version of Peass automatic hank mercerizing machine contains a number of interesting features and is a single-ended machine. The stretching devices consist of a pair of solid rollers running in special ball bearing, the hydraulic cylinders and pistons, the squeezing rollers and the operating values. The troughs for the alkali and the wash-waters are situated inside the cast-iron frame. The bed-plate at the left end carries the pump for the alkali.

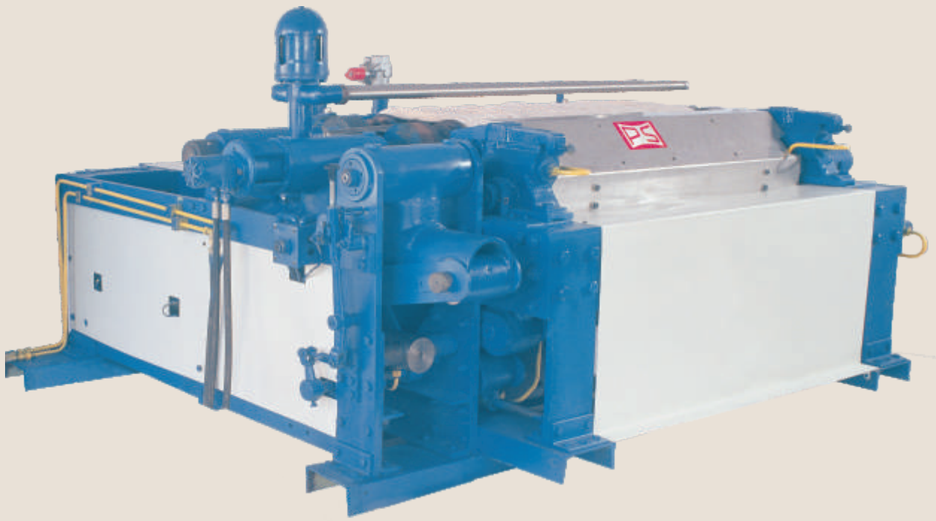
A special type of hydraulic motor coupled with yarn roller imparts forward-reverse rotations to the hank with two adjustable speeds.

A minor refinement is provided by three separate channels for the wash waters; the first is for the hot wash-water from the first rinse, which is relatively concentrated in NaOH and may be recovered, whereas the second hot rinsing water in more dilute in alkali, but, nevertheless, may be used in scouring or dyeing. The separation of the wash-waters is automatic.

The adjustment of the machine to suit the yarn is achieved quite simply by means of a display unit on the panel box. All three stages of tension can be set from the control panel in terms of percentage of total set pressure, which could be maximum 140 bars. The effect of tension on hank elongation can be observed from display unit in terms of cms., which facilitate required changes in tension value. The final elongation can be set with the help of hand wheel, which restricts stretching beyond desired extent. All the parameters like tension value, tension time, shrinkage time, squeezing time, lye pump time, lye tray-water tray-time, roller cycle, hot water-cold water time, waste lye drainage cycle, dosing pump cycle, etc. can be set from display unit. Different recipes can be set and stored for different mercerizing parameters and can be recalled for the use. The different positions of various components are interlocked with the help of proximity switches ensures safe operation and maintenance of the machine.

One of the characteristic features of the machine is the disposition of the two pairs of rollers. They are permanently supported in the middle frame and are also held in sliding supports with heavy ball bearings at both ends when in the horizontal working position; this enables high stretching pressures to be employed uniformly along the whole length of the rollers.

The pairs of rollers oscillate from the charging position (vertical and above the body) to the working position (horizontal and below the body). The useful length of the rollers is 108 cms. and the thickness of some three kgs. of yarn is distributed along this length, and by stretching and squeezing is so reduced as to minimize to a great extent the difference between external and internal circumferences of the hanks. The stretching force is 18000 kgf per machine and the squeezing force is 3200 kgs. Stretching and squeezing are effected hydraulically, and the raising and lowering of the oscillating body with the pairs of rollers is carried out automatically.



The cycle of operations may best be followed from the first preliminary stretching, when the yarn is dipped in the alkali and impregnated on the whole circumference with the rollers running at high speed. The yarn is then allowed to shrink and the speed of the roller changes to slow; the hanks are then stretched to the predetermined desired extent.

The alkali is continuously renewed in the basins or troughs during these three operations. The next step is to squeeze out the alkali with the rollers running at high-speed and to lead the alkali back to the tank in the floor. The troughs for the alkali are then lowered and those for the rinsing water are brought into position.

The hot rinsing water is applied from spurt pipes and the first rinsing water is separated from the rest. After washing with cold water, the hanks are squeezed with the rollers running at high speed; they are then raised to the charging position and the distance between them is reduced. The machine then stops and the yarn is removed. The attendant, who slides the hanks from the swiveled arms of the hank pins at each side of the machine with the assistance of a special shovel, places a fresh charge of yarn on the rollers.

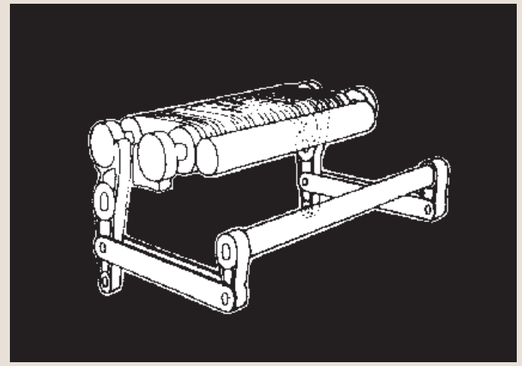
In the meantime, the rinsing trough is lowered and the alkali trough raised and filled with fresh liquor. The rollers are then lowered into the working position and the preliminary stretching starts.

The yarn is in contact with the alkali for about two minutes, and during the high speed rotation of the hanks during the first minute there are two changes in direction of rotation; this assists evenness of mercerizing.

The mercerizing cycle takes 270 seconds for three kgs. of yarn. The consumption of alkali is about 2 to 3 kgs. of NaOH per 10 kgs. of yarn.

Salient Features

- Entire machine is controlled by PLC controller
- With the help of user friendly MMI, mercerizing parameters can be kept as per requirement for different qualities of yarn
- Different recipes can be stored and retrieved at finger tips
- Oil based hydraulic system for smooth operation and no corrosion
- Automatic caustic lye concentration regulation + Auto Dosing System



Diagrammatic representation of the hankroller bearings. Each end of the rollers has its stretching device, which are connected to each other by a torsion shaft. Strict parallelism of the hank rollers is therefore ensured.