BRAZZOLI

HT POLYESTER DYEING MACHINE

Brazolli high temperature polyester dyeing machine operates at 140°C. The filling time of the machine is 1.5 minutes, so is the draining time. Cooling time is 3°C to 4°C per minute. Both single and double nozzle machines are manufactured by Brazolli with possibility of either overflow or soft flow. Magnetic speed control arrangement is available for each window. Liquor ratio is 1:5 or 1:7 instead of 1:10 in old machines. Fabric speeds are from 150 MPM to 450 MPM. In case of sulphur dyes nitrogen gas is used to clean the dyeing machine for removal of oxygen and reduction of browning effect. Activated sledge is used to treat the effluent. For colour service of the machines dosing system with dosing tanks is used along with salt and soda storage tanks.

Brazolli employs a high degree of automation in the machinery manufacture. The machines are completely assembled and tested thoroughly before shipment to the customers.

Popular models of Brazzoli machines are as follows:

- **PEGASUS** for preparation of fabrics for dyeing and printing, neutralisation and washing of mercerised fabrics.
- **SATURNO LUX HTF 300** for dyeing of fabrics.
- **ANTARES** is a high temperature dyeing machine with single compartment fabric speed of 450 m/min, liquor ratio of 1:5 or 1:7, production up to 12 tonnes/day.
- **MBC, MBCS, MBCHT, MBCHTS** are machines used for finishing of delicate fabrics.
- **CAMEL DYEING MACHINE** which is used for dyeing of fabrics, liquor ratio is very low ie 1:3 or 1:5.

COMEZ

CROCHET KNITTING & WEAVING MACHINES

COMEZ started manufacture of crochet (pure knitting) machines and needle looms about 50 years ago. These machines are used for the manufacture of a very wide range of products ie from very narrow tapes and labels to very wide fabrics. The output of COMEZ is about 1000 machines per annum, 90% of which are exported. COMEZ maintains liaison offices in U.S.A., Mexico, Hong Kong and China. The annual turnover of COMEZ is US$ 30 million

COMEZ has started marketing a new range of electronic crochet machines salient features of which are reported as under.

- **Comeztronic** is designed for the production of an immense range of very complex lace and flounces. Operating width of the machine is either 400 m.m. or 600 m.m. It is supplied with 8, 10 or 14 electronically driven and 2 mechanically driven bars. The gauge varies from 15 to 20. This machine is capable of knitting narrow fabrics with a wide variety of patterns and employs bearded needles.
- **Acotronic** is a crochet machine similar to Comeztronic machine, except that it employs compound needles for the production of ribbons, laces and industrial fabrics. It is supplied in gauges of 10, 15 and 20 and in two widths i.e. 400 m.m. and 600 m.m. Maximum of 16 weft bars can be fitted on the machine depending upon the type of fabric being knitted out of which 14 are electronically driven and 2 are driven by a weft device. On this machine interlacing of the warp with open lock-stitch, closed lock stitch or double lock-stitch is also possible by using an electronically controlled supplementary warp heddle bar.
- **Decortronic** is a special type of crochet machine on which sev-
eral devices can be fitted to create many types of special fringes and passementric effects.

- The width of this machine is 800 m.m. gauge is 10 and it is fitted with 8 electronically driven weft bars. Both bearded and latch needles are used and many types of warp and weft yarns can be knitted to produce a wide variety of fabrics on this machine. Some of the other brands and models of machines marketed by COMEZ are:
  - FUTUR5A and 609/B-B with 8 weft bars and link chain control for the production of a wide range of narrow fabrics.
  - COMEZ 408/B3 with 3 weft bars and without link chain, operating with 400 m.m.
  - Cmoez 609/B3, also with 3 weft bars and without link chains operating with 600 m.m. are high speed machines for production of rigid and elastic bands. Both these machines are supplied in gauges of 12 to 24 and are fitted with bearded needles.
  - COMEZ IRONPRINT is an ironing and transfer printing machine designed for printing, finishing and ironing of laces, bands, ribbons, both rigid and elastic types.
  - COMEZ SPIR 6S is a fast covering machine with 6 working heads for covering many types of threads to produce fancy yarns. The finished fancy yarn is used on COMEZ crochet machines for creation of elaborate passementric ribbons.

Like other crochet machine manufacturers COMEZ is also doing roaring business as is evident from the annual turnover. Crochet machines are used for production of narrow fabrics which are now penetrating in the fields of garments, curtains, trimmings etc. These machines produce elastic bands for underwear, belts for outerwear, pantyhose, laces and ribbons, labels etc. The product range of crochet machines also includes high energy tapes, labels, bullet proof jackets, aircraft, covers, artificial kidney filters. Special belts made on crochet machines can withstand a temperature of 2500°C.

**FADIS**

**PRECISION WINDING MACHINES**

FADIS is manufacturing all types of preparatory winding machine before and after yarn dyeing in hanks or on bobbins since 1960.

The product range includes winding and assembly winding machines, reeling machines, hank to cone winding machines and covering machines. The package dyeing and hank dyeing machines are manufactured by BELLINI which is a sister company of FADIS.

The winding machines of FADIS are offered with auto-doffing arrangement.

Reeling machines are manufactured in section of one meter each. When an end-break occurs, one metre section of one metre each. When an end-break occurs one meter section of the machine in which end-break has occurred will stop, the rest of the machine will remain in operation and therefore production will not suffer.

The hank to cone-winding machines are capable of producing cones from 300 gms to 1000 gms. Wide range machines are also manufactured by FADIS to process upto 2.0 KGM Packages. Precision winding machines can also be used for covering of elastomer yarns e.g. Lycra at a speed of 700 MPM. Lycra covered with nylon filament yarn is utilised for the manufacture of socks and ladies stockings.

FADIS Exhibited a fully electronic automatic Assembly Winder at ITMA’99 in Paris last June, the sale of which is at present restricted to the European market only. By introducing automation in its manufacturing and assembly lines involving the use of ROBOT machines. FADIS has reduced number of employees from 300 to 100.

FADIS has at present a production capacity of approximately 600 spindles per annum at estimated cost of US$ 4000 to 5000/- spindle. After manufacture, completely assembled machines are tested thoroughly for 24 to 48 hours before despatch to the customers.

Very large number of FADIS winding machines and other equipment is operating in Pakistan.

For example Ammar Textiles and King Embroidery are operating FADIS machines for soft winding of yarn dye packages. FADIS is represented in Pakistan by MUBARAK IMPEX Lahore.

Preparatory winding machines of FADIS can be installed and operated with the twisting machines manufactured by PRP, a famous Italian manufacturer of twisting machines.
GAVAZZI

WASTE COLLECTION & LINT REMOVAL SYSTEMS FOR SPINNING

Gavazzi has been designing and constructing industrial systems for the textile sector since 1978.

Gavazzi holds a particularly important role in the construction of systems for fibre mixing in carded, semi-combed, combed spinning, for nonwoven fabrics, pile fabric, tops, carpeting, etc. Gavazzi makes systems for collection and automatic packing of lint and small waste from production lines, hydraulic and semi-hydraulic rammers to fill containers for dye plants.

Gavazzi is, therefore, in a position to make available its know-how and offer the most advanced technology applied to machinery for the creation of so-called "turnkey" systems, according to the wishes and requirements of the customers.

The production programme of Gavazzi includes the following machines:

- Package cutter
- Bale opener
- Beater
- Openers of all kinds
- Batching oilers and control units
- Blending chambers with movable or fixed cutters on intake
- Automatic storage bins
- Volumetric storage bins
- Automatic and volumetric loading platforms for carding and other machines
- Weighting lines and systems with loading cells
- Pipelines and accessories for pneumatic transportation (fans, switches and metal detectors).

JAEGGLI

YARN MERCERIZING PAR EXCELLENCE

The new "Continuous Mercerizing System" MC-2000 by Jaeggli-Meccanotessile represents a great step forward both in technology and in economics of cotton yarn mercerizing. For the first time ever, the entire process is carried out under full control and survey of mercerization. Continuous process means higher and constant quality results, better process economics for a quick pay-back, reduction of manual handling and easy process management.

With the beam to cone winder the system gives the possibility also in the mercerizing process to use the cone dyeing.

Technical data
No. of feeding ends: 960
Count range: up to Ne 120/2
Max mechanical speed: 80 m/min
Production per Ne 60/2: 75 Kg./h
No. of take-up: 24
No of ends per take-up: 40
Net weight per beam: 48 kg.
Power consumption: 12 kW
Soda consumption 380 gr of 100% NaOH per each kg of yarn 32º Be and at 20º C.
Water consumption at 60º C: 30 litre per kg of yarn
Compressed air consumption at 6 bar: 420 Nlitre per each threading up.
Acetic acid consumption: 6,6 litre/h
Metan gas consumption: 16 Nm³/h.

HANKS MERCERIZING MACHINE

Jaeggli meccanotessile also offer a Hank mercerizing machine HL-2000.

Using an electronic control system, HL 2000 brings into the mercerizing process new concepts of operational flexibility and repetitiveness improving simultaneously the final yarn quality.
Technical data
Nominal reeling size: 54" 60"
Minimum reeling size: 116 cm.
Maximum reeling size: 167 cm.
Loading capacity/cycle (Ne 60/2):
12, 5 Kg (5 hanks x max 1.25 Kg/each side).
Hour production per hour with the automatic loading system: 130 Kg/h.
Hank weight: 250 ÷ 1250 gr.
Count range: up to Ne 140/2
Stretching force: up to 70 T
Squeezing pressure:
2.1 Kg / (cm x bar)
(= 19 kg/cm at 9 bar)
Hank roller length: 1600 mm.
Hank roller diameter: 210 mm.
Lye consumption: 380 gr. Of 100% NaOH per each Kg of yarn at 30º Be and at 20ºC.
Hot water consumption per cycle: 200 l.
Cold water consumption per cycle: 100 l.
Compressed air consumption per cycle: 580 NI. At 9 bar for 5 sec.
Power: 14 kW

LORIS BELLINI
HORIZONTAL DYEING MACHINE

The RBNO high-temperature high-pressure dyeing apparatus with horizontal autoclave and modular yarn carriers is fitted with vertical spindles. RBNO processes all kind of yarns dyed in conventional machines.
Over 75 complete industrial plants in operation, covering all processing fields, confirms the success of the original Bellini design.
Operation at 5.0 kg/cm² pressure, 140°C temperature. Internal liquor expansion and pressurization by compressed air cushion.

Loading capacities: from 65 to 1500 kgs with construction completely in AISI 316 stainless steel.

Flexibility and variable loading
RBNO operates with interchangeable modular carriers for flexible response. Carriers are interchangeable between machines of different sizes. RBNO can be loaded between 30% and 100% at almost constant liquor ratio by load reducers. Modular carriers permit extreme flexibility for dyeing:
• Compressed and rigid yarn packages of different diameters and traverses
• Worsted tops and bumps.
Automatic coupling systems with total liquor exchange for dyeing of large batches.

Ground floor installation
RBNO can be installed on a normal flat floor.
Elimination of overhead traveling crane, mezzanine or underground pits, special foundations and sewage systems determines large savings in terms of building and utilities investment costs. Rapid plant installation and easy maintenance of all components due to compact design.

Easy robotisation by shuttle on rails and gantry robot for package handling.

Low liquor ratio
Dyeing liquor ratio varies from 1:4 to 1:7 according to package density. Only the carrier and pump are flooded. Low liquor ratio saves process water, energy, dyeing chemicals and reduces waste waters pollution. Liquor ratio can be increased by 30% to speed-up the wash-off phases.
Patented “Pulse Rinsing” device to reduce water consumption and cycle duration.

High dyeing quality
Liquor circulation by helicocentrifugal pump with high flow rate/high head pressure diagram, equipped with built-in flow direction reversal system and flow rate regulation device.
Intensive liquor exchange allows perfect dyeing uniformity on high-density large diameter packages. Liquor flow reversal with motor in operation in same direction.
Liquor suction through internal lateral walls.

THE RBNV VERTICAL DYEING SYSTEM

Internal liquor expansion and pressurization by compressed air cushion. Operation up to 5.0 kg/cm² pressure, 140°C temperature. For bleaching and dyeing all types of textile materials in form of yarns on compressed or rigid packages, cheeses, muffs, warp beams, bumps, tops, tow, loose stock, ribbon beams, fabric beams, tapes and zippers. Nominal loading capacities from 25 to 1500 kgs. Construction entirely in AISI 316 stainless steel.

Flexibility by air cushion pressurization
The RBNV apparatus operates with material fully immersed in dyeing liquor and bidirectional liquor...
flow. Automatic pressurization by compressed air pad.

Variable loading (30 to 100%) at constant liquor ratio.

**Flexible loading capacity**

Continuous liquor level controls combined with automatic air cushion pressurization allow optimization of conditions: Low liquor ratio in dyeing, phase (according to package density) to save water, steam, auxiliaries and salt. Higher liquor ratio during wash-off phases to reduce number and duration of washing cycles. Patented is "Pulse Rinsing" device to reduce water consumption and cycle time.

Smaller dyelots are dyed at constant liquor ratio.

Automatic coupling system with total exchange for large batches.

**Helycocentrifugal liquor circulation pump**

Pump is of special helycocentrifugal design, with high flow rate and head pressure diagram.

Automatic flow direction reversal by rotating curve device embodied into the pump, acted by combined pneumatic-oleodynamic system for a smooth and progressive reversal with motor in operation.

Elimination of hydraulic hammering effects on yarn packages, which determine liquor channeling.

**MARZOLLI COMPLETE SPINNING SYSTEMS**

Marzolli company was set up in 1851 by two brothers, Cristofer Marzolli and Francesco Marzolli. The company started manufacture of machinery for spinning plants and passed through many development stages. At present MARZOLLI offer a short process blow room line comprising of an automatic bale plucker, an automixer, a two beater opener, a horizontal opener, a dust separator and a chute feeding system which ensures constant feeding of stock from the last machine in the blow room line to the cards.

MARZOLLI card C501 is a high production card offered with an autolevellers and 2 over 2 type drafting unit. It is capable of delivering an excellent quality sliver with a possibility of reduction in the nep content of the feed stock from 80 to 90%. Manufacturing of card cylinders, doffers, lickering, shaft and parts of other machines is automatic involving use of Robot Machines. Accuracy achieved in machining of card cylinders, doffers is up to 0.0015 m.m. These are left in the open after casting for a period of six months for relaxation stresses and stabilisation. The carding wires installed on these functional parts and flats (both stationery and revolving) are of famous European brands such as Crosrol, Graf, Hollingsworth, etc.).

**VOUK DRAWFRAME**

Marzolli offers VOUK Draw Frame with 8 ends up and 3 over 4 drafting system. It is fitted with an "Open Loop" USC autoleveller with a mechanical tongue and groove type measuring unit situated on the input side. A maximum mechanical production speed of 1000 MPM is claimed for this machine.

Lap winder LWI prepare laps for combers from card slivers which have been passed through a pre-comber draw frame. The drafting system on the lap winder is 2 over 3 type with adjustable pneumatic pressure on each roller. A tension regulator keeps the tension on the lap constant. Thickness of the lap and its correct winding is controlled by three pressing calenders and two formation calenders. Compressed air is used to lift and doff the lap automatically.

**COMBERS**

Two models of combers viz MCI & MCI - A are offered by Marzolli with a maximum speed of 350 nips per minute. The combed fringes are united into a perfectly uniform web which passes through conveying rollers, funnels and calender rollers and is covered into sliver. After 8 sliver doublings, the sliver passes through a 4 over 5 type drafting system with adjustable pneumatic pressure on each drafting roller. The top combs of the machines are continuously cleaned by a jet of compressed air automatically and an automatic Can Changer is an integral part of the machine.
Roving frame is manufactured in two models:
- With automatic doffing - model FTI-D
- Without automatic doffing - model FTI

The roving frame products 7 x 16 inches roving packages, is fitted with ultra light flyers and a 3 over 3 drafting system. The flyers and spindles are driven by timing belts and the speed is controlled by a static inverter. The drive arrangement for drafting rollers is separate. Drip-feed centralised lubrication system is included in the head stock. A speed of 1200 RPM for flyers and a machine down time of 4 minutes is claimed by the manufacturers.

Like the comber and the roving frame, Marzolli RSTI ring spinning frame is also manufactured in two versions:
- With automatic built-in doffing system
- Without automatic built-in doffing system

Maximum number of spindles per machine for 70 m.m. gauge is 1296 and for 75 m.m. gauge is 1200. A 6 tier creel is provided with brushless motor for 3rd roller drive, servo motors for stop motions, inverter speed control for spindle RPM. A 3 over 3 drafting system with pendulum weighting arm is fitted on the machine. A wide range of counts of yarn can be produced on this machine from natural, man-made fibres and blends thereof for which range of ring diameters from 36 to 48 m.m. can be used on 70 m.m. gauge and 50,52 m.m. also on 75 m.m. gauge machine. Similarly bobbin height range is from 180 to 260 m.m.

Marzolli is one of the few machinery manufacturers is the world which supply complete spinning plants.

MESDAN
LABORATORY SHOW ROOM

Mesdan - lab offers laboratory equipment for testing of fibres, yarns and fabrics. Having the laboratory instrument certification, Mesdan Lab showroom can make practical demonstrations at any time and effect sample tests for the customer.

JOINTAIR and AQUASPLICER are also supplied directly to the end user for retrofitting on existing installations in place of traditional knotters. Manually operated jointairs and Aquasplicers are offered for conventional winders, assembly machines, embroidery machines, section and fraction warping creels, etc. These splicers are recommended to be used with the exclusive A.T.S. (Air Track Supply) system, utilising Jointair and Aquaspliper, designed to be accommodated on all kinds of textile machinery where joining is necessary. It can easily be attached in the optimum working position, leaving both hands free for yarn manipulation and thus increasing productivity.

SAVIO
FRS ROTOR SPINNING FRAMES

The technological characteristics and appearance of yarn produced on the FRS spinning frame are of the very highest quality and its regular structure is, more than any other open-end yarn, very similar to that of ring-spun yarn.

High precision yarn positioning permits modelling of cylindrical and tapered packages ideal for weaving, knitwear, direct twisting and dyeing.

The two completely independent fronts are equipped with one, two, three or four trolleys with an intelligent control system, able to carry out both end-piecing and doffing.

The computerised control system besides diagnostics, controls production automatically, monitors the spinning and winding units, trolley functions and the reserve take-up tube magazines.

Being able to produce low-twist yarns and to successfully process polyester, acrylic and viscose microfibres as well as a wide range of interchangeable components for the spinning frame, make the machine extremely flexible and able to meet the demands of various markets.

SPEROTTO RIMAR
CONTINUOUS DECATISING MACHINE

With a total area of 49,000 sqm in Malo (Vicenza) and the head office in Milan, by its merger with the Swiss Santex, Sperotto Rimar and Santex have a formidable presence all over the world.

Decofast
Continuous decatising machine working under steam pressure, designed to reach very good dimensional stability values, handle of worsted and woollen fabrics also blended with synthetic fibres and elastomeric fibres. The machine finds it application as a finish decatising after kier decatising and as preparation to the kier decatising treatment.

Flexa
Shrinking plant for cotton and cotton blended woven fabrics for a perfect dimensional stability and softer handle prior to the garment making up operation. The plant is totally controlled by a PLC unit with recipes storage and fabric tension control.
control by means of a loading cell system.

**Plurima**

Dry and wet sueding machine for woven and warp knitted fabrics with synthetic diamond paper for different handle, appearance and sueding effects on the treated fabrics. The result is a softening of the fabric handle and a fabric surface showing a very short and dense pile.

**STALAM**

"RF" SERIES DRYERS

More than 800 "RF" (Radio Frequency) model dryers, the well known conveyerised STALAM dryer have been sold all over the world since 1981 and are presently in operation for the drying of textile fibres and yarns.

Almost all combinations of natural, artificial and synthetic fibres, as loose stock or combed and spun, or as filament fibres, pure or blended in every count and form can be dried perfectly, down to the desired residual moisture level, with outstanding efficiency and quality results. Such outstanding results cannot be achieved with any conventional hot air drying system.

The RF drying of loose stock after carbonising or dyeing and batch or continuous centrifugal hydroextraction, has many advantages. The reduced losses of product, the uniformity of drying, the improved physical-mechanical characteristics of the fibres and consequently the more efficient carding - combing spinning operations, results in a higher yarn metric yield of up to 2%.

The slivers after dyeing and hydroextraction in the form of pressed cakes and tops slivers, dyed and hydroextracted in "big forms" or dyed in bobbins/bumps, back-washed and squeezed, can be dried folded up on the conveyor belt of the "RF" series dryers. A perfect residual moisture distribution is obtained within the sliver, and the lamination effects, typical of drum dryers, are eliminated.

Hanks, after dyeing and centrifugal hydroextraction or in-line squeezing can be perfectly dried without any movement or passing strong air flow, thus avoiding yarn entanglement -- which is typical in hot air dryers - and making the winding operation much more efficient.

Tops in bump and bobbin form can be dyed and centrifugally hydroextracted using movable stainless steel basket-type carriers or directly on centrifugable spindles. Yarn packages. After dyeing, can be centrifugally hydroextracted or may be simply pre-dried in a pressure (rapid) dryer.

**SALVADE S.P.A**

**AIR VIBRATION DRYERS**

These are the most versatile machines to dry the most varied kinds of fabrics. They can be used to dry knitted tubular fabrics, even more than one tubular at a time; Open knitted fabrics and woven fabrics, including delicate fabrics, where dimensional stability and softness are a must.

The APD and AIL range of dryers have a special crossover air-distribution system to guarantee perfect fabric drying, shrinkage, dimensional stability and selvage unrolling even if more than 10 cm of the selvage is rolled up.