

## **MACHINES FOR DYEING PROCESS**

### **FABRIC -DYEING OPENWIDTH BATCH DYEING**

- **ATMOSPHERIC JIGGER**

**INDIAN**

AUTOMATIC HYDRAULIC JIGGER OF YAMUNA, INDIA

250 kgs - Rs.10 - 12 lakh, 500 kgs - Rs.14 - 16 lakh, 900 kgs - Rs.18 - 20 lakh

MAXI ELECTRONIC JIGGER OF SWASTIK

250 kgs - Rs.16 - 17 lakh, 450 kgs - Rs.22 - 25 lakh, 900 kgs - Rs.32 - 35 lakh

**INDIAN - FOREIGN**

MAXI JIGGER -PACIFIC - HARISH

300 kgs - Rs.13 - 14 lakh, 600 kgs - Rs.15 - 18 lakh

**FOREIGN**

HIGH TEMPERATURE JIGGER

COMBY H.T. JIGGER OF MCS, ITALY

250 kgs - Rs.70 Lakh - 1 cr. 400 kgs- Rs.80L - 1.2 cr. 600 kgs - Rs.80L - 1.5 cr.

(HT Jiggers - Not Popular in India)

### **BEAM DYEING MACHINE**

**INDIAN**

NAVYUG, DALAL, KUMAR, BALTEX - Rs.15 - 20 lakh

**FOREIGN**

HST HIGH TEMPERATURE BEAM DYEING MACHINE OF THEN, GERMANY

(Rs.70 - 80 lakh)

**(Beam Dyeing Is An Outdated Technology)**

### **ADVANTAGES OF ELECTRONIC JIGGER OVER HYRAULIC JIGGER**

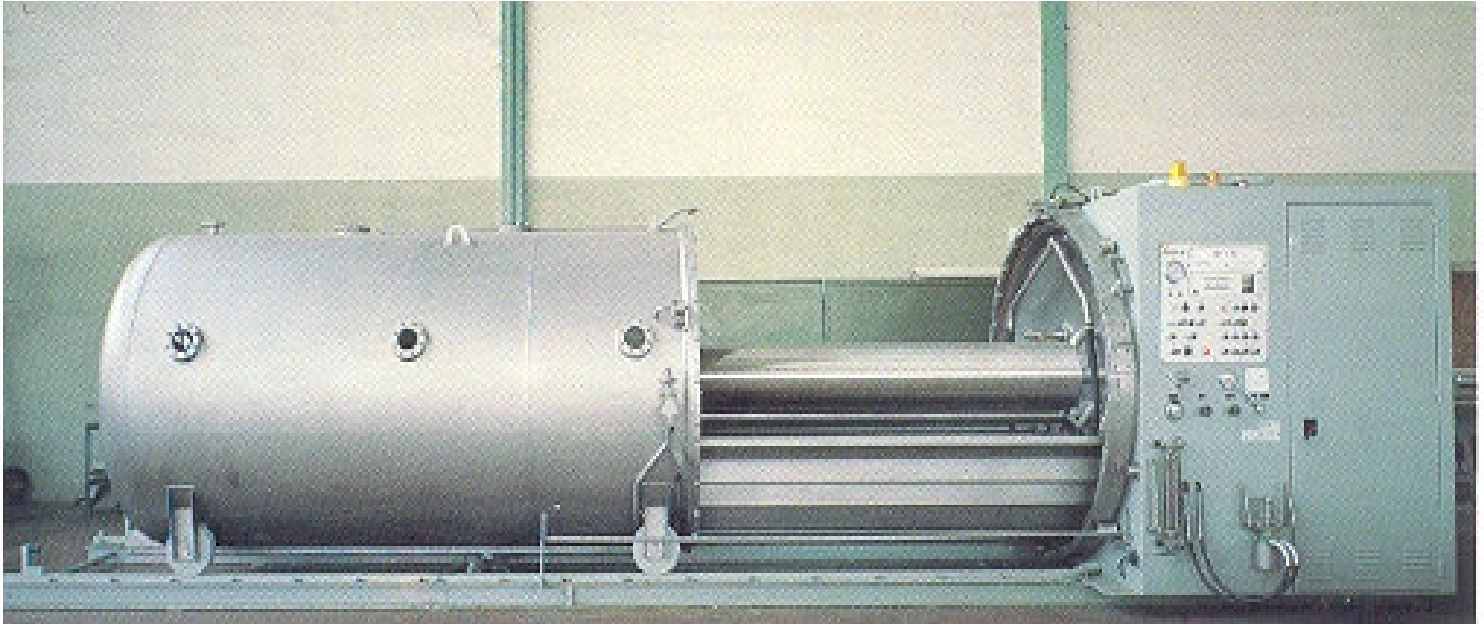
- Maxi electronic jigger contains no hydraulic system
- In hydraulic system machine is to be stopped for some time for cooling with hydraulic device
- With electronic system machine can be run continuously  
Power consumption very low in electronic
- Installation of Photo cell possible in electronic system to correct any disalignment  
- Photo cell cost - 0.6 - 1 L. Electronic system - low maintenance
- No tension on the fabric
- PLC (Programmable Light Display controls) Based
- Continuous running, no downtime

## AUTOMATIC HYDRAULIC JIGGER OF YAMUNA, INDIA



- Totally enclosed hydraulic jigger with pneumatic door closing/ opening; large glass windows
- Hydraulic drive with jerkless cushion start/stop
- Batch balancing by pendulum device & batching system for feeding/delivery direct/indirect liquor heating; steam coil roof heating to prevent condensation
- Liquor circulation by pump & filtering device
- Provided with level sensor, digital tension controller & plc
- Autocontrol of speed, temperature, turns, batch reversal, process stops/sampling, filling/draining
- Standard roller width of 2000 mm; speeds up to 140 mtr/min; versions with 250-960 kg capacities; batch dia from 800-1400 mm

## COMBY H.T. JIGGER OF MCS, ITALY



- Closed jigger (autoclave) under ht/hp for dyeing of polyester, its blends etc. With movement of both liquor & fabric as in jet & in open width as in beam
- Devices for liquor circulation & high efficiency rinsing
- Hydraulic/electronic drive with high reliability with slow start/stop
- High efficiency heating up to 143° c & cooling with external heat exchanger
- Fully automatic with programming of complete operational cycle
- Programmable & constant fabric speeds from 15-150 mtr/min & constant tension on fabric
- Liquor ratio as low as 1:2 versions with working widths 1600-3200 mm & roll dia up to 1100 mm

## HST HIGH TEMPERATURE BEAM DYEING MACHINE OF THEN, GERMANY



- Compact & versatile machine for economic dyeing in open width; can have coupled dye beams
- Dyebath circulation by axial-reversible flow pump with reversible liquor flow by heavy duty centrifugal pump
- Optimized bath distribution
- Semi-automatic model has automatic valves & temperature controller
- Fully automatic model has automatic process controller connectable to host computer

**HST high temperature beam dyeing machine of THEN, Germany is equipped with :-**

- pressure & injection pump with pressure regulation valve
- preparation & expansion tanks
- flow rate controller
- overflow rinse device
- sampling device
- mobile dye beam carrier
- complete switch installation in watertight plastic switch cabinet

**ROPE DYEING MACHINES**

**INDIAN**

**JET DYEING MACHINES (HT/HP HYDRAULIC)**

MULTINOZZLE SOFTFLOW JET OF DEVREKHA, JAYBHARAT

VIKRAM, SEM ITRONIK,NAVYUG INDIA - Rs.6 - 10 lakh

HI-TECH LONG TUBE TURBO DYEING MACHINE OF ANJANI - Rs.20 - 30 lakh

**FOREIGN**

MULTIFLOW OF MCS, ITALY - Rs.50 - 70 lakh

**HT AIRFLOW MACHINE (HT/HP AERODYNAMIC) ROPE DYEING**

**FOREIGN**

AIRFLOW AFS OF THEN, GERMANY -Rs.1 - 1.2 crore

**HT OVERFLOW MACHINE (HT SOFTFLOW) – ROPE DYEING**

**INDIAN**

HT SOFT / OVERFLOW K-2002 RH OF KRSNA INDIA, COLORSOFT,  
PUNE

(30 kgs - Rs.5 - 6 lakh, 50 kgs - Rs.7 - 8 lakh, 100 kgs - Rs.9 - 10 lakh, 200 kgs - Rs.14 - 15 lakh, 400 kgs - Rs.22 - 25 lakh, 600 kgs - Rs.28 - 30 lakh, 800 kgs - Rs.32 - 35 lakh, 1000 kgs - Rs.36 - 40 lakh, 1200 kgs - Rs.45 - 50 lakh)

**ATMOSPHERIC OVERFLOW MACHINE (SOFTFLOW) – ROPE DYEING**

**(Atm. Softflow machines generally 20 - 25% cheaper than HT machines)**

**FOREIGN**

ECO-38 ATMOSPHERIC DYEING MACHINE OF FONG'S, HONG KONG

**(Upto 1.5 Times The Cost Of Indian Atmospheric Machines)**

THEN - Germany - 2.5 - 3 times the cost of indian atmospheric machines

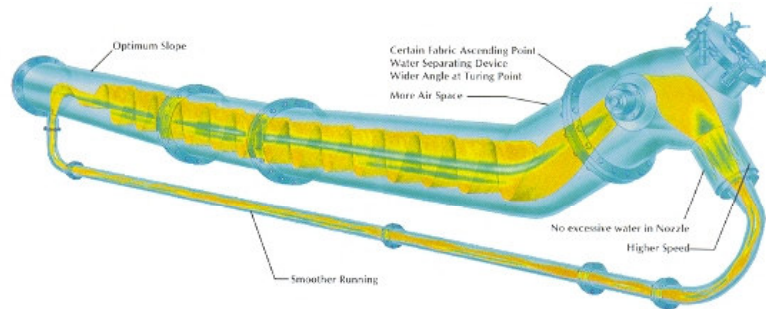
SCHLAVOS (GREECE - Germany) about 2.5 - 3 times the cost of indian atmospheric machines

## MULTI-NOZZLE SOFT FLOW JET DYEING OF DEVREKHA, INDIA



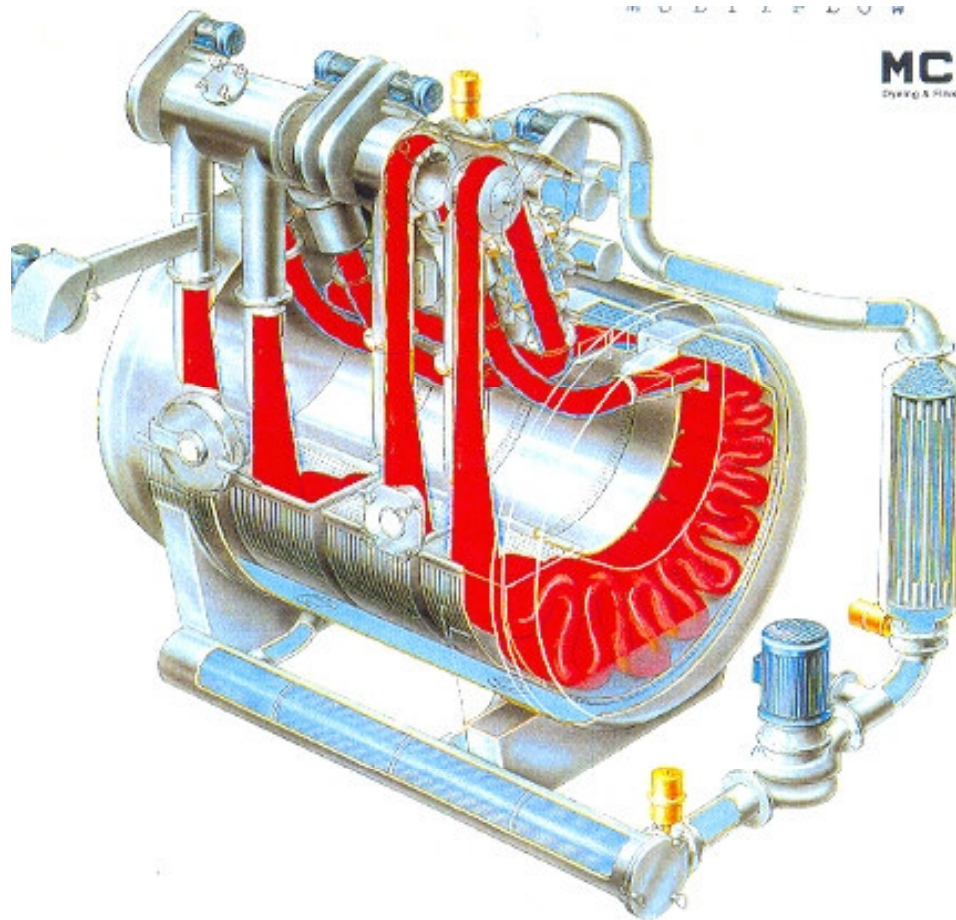
- Can dye all types of fabric sorts made of cotton – woven and knitted, silk and very light weight materials of as low as 30 gm/sq mtr
  - Can work as jet dyeing machine for polyester and its blends
  - A number of very soft flow nozzles
  - Very low liquor ratio of 1:1 (wet fabric)
  - Can work with both counterflow and reverse flow
- Savings in energy, colors and chemicals – payback within one year

## HIGH-TECH LONG TUBE TURBO FABRIC DYEING MACHINE OF ANJANI, INDIA



- Unique innovative design of big angle delivery tube to prevent interference of turbulent liquor & rope speed loss to give 40 to 45% higher output
- Single/double tube versions with capacities 200 to 300 and 400 to 600 kg; ss316 for body and wetted parts
- Heavy duty ss centrifugal pump giving high flow rate for high fabric speeds of 600 to 800 mtr/min
- Efficient heat exchanger for fast heating/cooling
- Suitable for various fabrics including crease sensitive & lycra

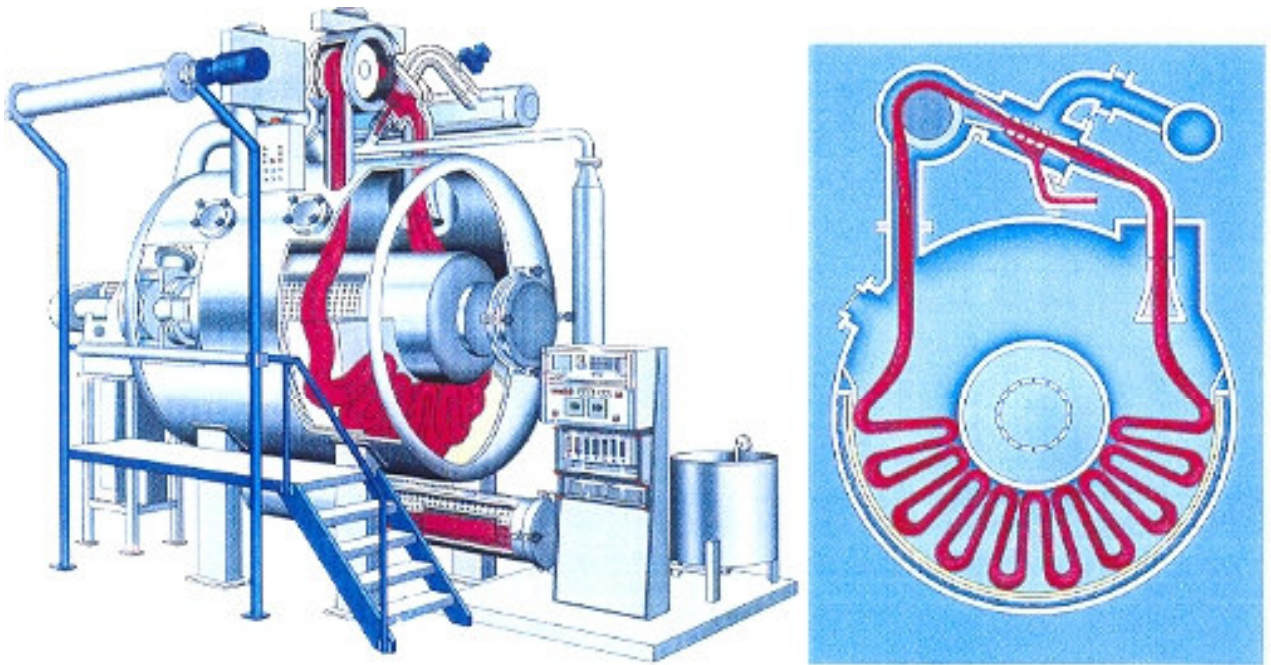
## MULTIFLOW OF MCS, ITALY



- “Multiflow” machine: single rope with repeat runs through fabric chambers
- Faster level dyeing due to more liquor exchanges with fabric: shorter dyeing cycles by 40-60%
- Up to 143°C at 3 bar; rope speed: 450 m/min; liquor ratios: 1:3 for dyeing, 1:8-1:10 for rinsing
- No rope tension & abrasion due to: properly sized inner reels, proper flow jet nozzles transport tube design & fabric deposit troughs
- Fabric & liquor flow control systems in each section  
‘charge-tank’ attachment for quick dyebath additions, overflow rinse & liquid recovery



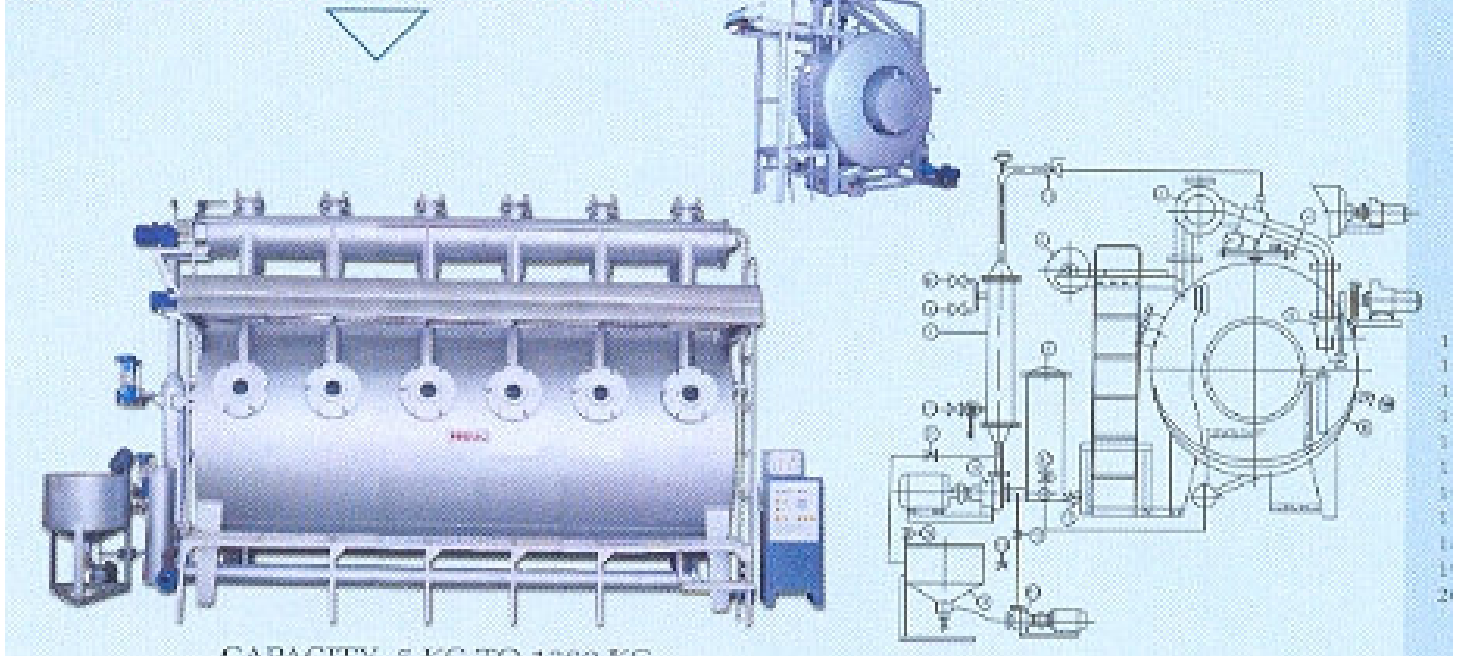
## AIRFLOW AFS OF THEN, GERMANY



- “Airflow”: ‘aerodynamic’ dyeing system vs. Hydraulic of conventional jet & overflow machines
- Liquor with dyes & chemicals injected directly on textiles in an air stream
- Low m:l ratio (less by 50%); less water, chemicals & dyes: ecological & economical
- Draining at high temperature
- Various loads at same m:l ratio: sample runs give bulk-reproducible data
- Unique rinsing with atomized fresh water
- Less cycle time
- DQC (Dynamic Quality Control) principle for control of operations based on continuous dyebath monitoring & uniform bath exhaustion for quality results

HT SOFT/OVERFLOW K-2002 RH OF KRSNA, INDIA

**KRSNA HIGH TEMP. SOFT FLOW**



- KRS flow nozzle designed to work at zero/near zero water pressure on fabric to prevent pilling
- Soft/overflow section (KRS flow) flooded with nearly 10 times fabric weight of liquor to carry it to teflon-coated rear end & get plaited in its j-box
- Liquor ratio of 1:6; rapid heating/cooling at 5° c/min; speeds up to 300 mtr/min; temperature up to 140° c; capacities of 150/200 kg with coupling arrangement
- Can have water tank & salt addition tank to reduce cycle time; dye-alkali dosing system & microprocessor-linked automation
- Ideal machine for tensionless dyeing of even surface- sensitive fabrics

## ECO-38 ATMOSPHERIC DYEING MACHINE OF FONG'S, HONG KONG



- Ecologically friendly
- Extra low liquor ratio of 1:4.5
- Higher savings in water, steam, dyes, chemicals & electric power
- Heavy-duty ss centrifugal pump with frequency inverter-controlled motor
- Lifter reel driven by frequency inverter-controlled gear reduction motor
- Pneumatically controlled valves for heating, cooling, filling, draining and rinsing
- Motorized spray cleaning device
- High efficiency tubular heat exchanger
- Main control cabinet with fc 28 microprocessor