

The Synthetic & Art Silk Mills' Research Association, Mumbai

Facility Available for Product Development/ Incubation

1. Name: Airjet Weaving Machine

Make: Dornier, Germany

Model: Aws 4/Jc

Technical Specifications:

- Nominal Width: 190 cm
- Maximum usable reed space: 188cm
- Minimum usable reed space: 110cm
- Speed: 900 RPM (Max.)
- Weft Feeding with accumulator: 4 colors
- Filling Insertion: with main & relay nozzles and profiled reed with Permanent Insertion Control and servo control
- Electronic let-off motion, electronic take-up motion
- Electronic Warp Stop Motion, Auto-pick finding, Auto Shed leveling
- Selvedge - leno
- Shedding: Bonus Electronic Jacquard (ZJS2) with 2688 Hooks & Harness Frame for 10800 ends
 - Reed working: 84/4

Features: The extremely wide range covers spun and filament yarns made of natural and man-made fibers as well as mixture of both. The fineness for spun yarns ranges from Nm 4 to 160 and from 10 to 2200 dtex for filament yarns. Suitable for curtains, automotive & furnishing fabrics



2. Name: Rigid Rapier weaving Machine

Make: Dornier, Germany

Germany Model: PTS 2/16

Technical Specification:

- Nominal width of machine – 190 cm
- Weft feeding with accumulator: 2 colors
- Yarn count range- 7 denier to 4500 tex
- Speed: 400 rpm
- Electronic let-off system
- Electronic take-up system
- Auto Pick finding & Auto shed leveling
- Shedding: Electronic STAUBLI dobby type 2670
- No. of shafts: 16
- Facility for leno weaving

Suitable for weaving Technical/Standard textiles



3. Name: Single Jersey Circular Knitting Machine
Make: Wellmade Enterprises Co. Ltd., Taiwan
Model: Ed Type Anti Clockwise (W/S-3.0f) E-(Ed)

Technical Specifications:

- Diameter: 26"
- Gauge: 24
- No. of Tracks (Knitting): 4
- No. of feeders : 78
- Creel: Tube Creel
- Type of feeder: positive IRO type with 4 tracks
- 3 tracks of knit cams, 2 tracks of Tuck cams & 2 tracks of miss cams.
- Individual Chrome coated (Anti Corrosive) cam box
- Automatic Lubricator System
- Yarn Feed storage Systems
- GROZ-Beckert Needles
- Kern- Lieber Sinkers

Material: pure cotton, chemical fiber, real silk, blended yarn



4. Name: Interlock Circular Knitting

Make: Wellmade Enterprises Co. Ltd., Taiwan

Model: Sk Type Interlock

Technical Specifications:

- Diameter: 26"
- Gauge: 16
- No. of Tracks (Knitting): Cylinder-4, Dial-2
- No. of feeders: 52
- Creel: Tube Creel
- Type of feeder: positive IRO type with 4 tracks
- 3 tracks of knit cams, 2 tracks of Tuck cams & 2 tracks of miss cams.
- Individual Chrome coated (Anti Corrosive) cam box
- Automatic Lubricator System
- Yarn Feed storage Systems
- GROZ-Beckert Needles
- Kern- Lieber Sinkers

Material: pure cotton, chemical fiber, real silk, blended yarns



5. Name: Spinning Line (Mixing Bale opener to Ring Frame) Make: Laxmi Machine Works (LMW), Coimbatore

Sr. No.	Description of the m/c	Specifications
1.	Mixing Bale OpenerLB3/2	1600mm working width, Upright Lattice with staggered steel spikes, with transport apron 4.5 m, with inverter drive for speed roller, with beater Production: 250 Kgs/Hour
2.	Carding Machine LC361	With single licker-in arrangement, 1000mm working width, built in Multi-level sensing, with rotary Auto Can changer for 40"x 48" Production: 20 Kgs/Hour
3.	Draw frame LD2	With 40"x48" delivery can, two Deliveries with sliver compression Unit, Delivery Speed: 250 mts/min
4.	Draw frame LRSB851	With single delivery system, power creel, automatic can changer, digital short-term auto-leveling system, with sliver Cutting device, Delivery speed: 450 mts/min
5.	Speed Frame LF1400A	36 spindles each with medium cradle, PK1500 3RDS cotton exhaust air into the department Spindle Speed: 650 RPM
6.	Ring Frame LR60/A	144 spindles per machine,6 rows creel,43mm cage, Emperor plus rings, with HS spindles inserts. Spindle Speed: 10000 RPM
** Average Production with 30 cc from the spinning line: 25-30 Kgs/Hour		



6. Warp Knitting Set Up

6.1. Name: RASCHEL Warp Knitting Machine

Make: Karl Mayer, Germany

Model: RS 4N F

Technical Specifications:

- Gauge: E6 (Original was E12 gauge, converted to E6 gauge for shade nets)
- Width: 170 inches (4318 mm)
- Speed: 750 R.P.M (Max.)
- Patterning capacity: 4 bar Max. (Only 2 available for operation)
- Presently 2 guide bars in operation
 - GB1: 1-0/0-1//
 - GB2: 1-0/3-4//
- Design: Pattern disc
- Available Pattern disc:

E 6	E12
1. 0-0/4-4//	1.0-1/1-0//
2. 1-0/2-3//	2.1-0/4-5//
3. 1-0/0-1//	3.0-0/1-1/0-0/3-3/2-2/3-3//
4. 1-0/2-3//	4.0-0/5-5//
	5.2-2/1-1/2-2/0-0/1-1/0-0//

- KAMCOS® (Karl Mayer Command System)
- Nominal voltage: 400 volts (+/- 10%), 3 phases / neutral conductor / grounding.

Suitable for: Raschel warp knitting for the production of Shade nets made of HDPE tapes and/or monofilaments.



6.2. Name: Direct Warping Machine for Warp Knitting
Make: Karl Mayer, Germany
Model: DS 21/30 DNC

Technical Specifications:

- Working width: 21 inches
- Flange Diameter: 30 inches
- Computer controlled functions
- Warping Speed: Steplessly from 100 up to 1000 m/min
- Back Winding Speed: 20 m/min approx.
- Maximum total yarn tension: 200 N
- Electro-pneumatically Beam Clamping as well as Beam loading & Doffing, Electrical Equipment: Asynchronous motor-8.2 Kw with frequency converter 3 phase, ground connected load 22 Kva, frequency – 50Hz
- Creel Type: GN-1-F
- Standard Creel for filament yarns
- Creel Capacity: 264, Steel frame construction with clamps, two manually movable frames for taking up the yarn guiding elements, the yarn tensioners and the yarn monitoring units. •
Maximum package diameter: 360mm

Suitable for processing filament/mono yarns for (Raschel) RS4N, E6/E12 Warp knitting machine.



6.3. Name: Tape Yarn Manufacturing Set Up

- Basic Features: Slitting of blown film into tape yarn to feed Raschel Warp Knitting Machine (integrated with warp knitting machine)
- Slitting Width: 1200mm per zone Feed rolls:2
- Spacer: 3mm
- Tape width: 2.3 mm
- No. of slitting units: 3(x2 sides with slitter, heater & stretching zone)
* (the slitters are locally fabricated by M/s Rishi Techtex Ltd., Mumbai)



6.4. Name: Blown Film Manufacturing

Make: KABRA Extrusion Technik Ltd., Daman Model:
KET 33040 /01

Technical Specifications:

- Basic features: Blown film manufacturing for HDPE/LDPE/PP.
- Film thickness: 10 to 100 μ .
- Output: Up to 60 Kgs/hr.
- Film width: Max 650mm.
- Extrusion Details: Screw diameter – 40mm
L/D: 26:1
Heating zones: 2
Cooling zones: 1
- Film Die head details Type: bottom feed spiral
Die size: 90mm max.
Heating zones: 3
- Cooling system: Aerodynamic cooling.
- Type: Single lip low pressure and high air velocity.
- Vertical takeoff: Chrome plated Nip roller: 140mm dia x 710mm length
Tower unit Rubber roller: 155mm dia x 700mm length
- Speed: up to 100m/min
- Bubble guides:2
- Winder: Surface winder with wrinkle removing arrangement consisting Of one winding shaft driven by one drum
- Speed: up to 100 mts/min
- Width of the roll:650 mm
- Roll diameter:1000mm per 100 Kg



7. Name: **Circular Weaving Machine**

Make: Lohia Corp Limited Model:

Nova 8 HF

Technical Specifications:

- Working width (double flat): 100-160 cm.
- No. of shuttles: 08.
- Weft Insertion Rate: 600-700 picks/minute.
- Weft density: 30-52 tapes per 10 cm.
- No. of creel pegs: 1920.
- Warp Bobbin:
 - Internal diameter –35mm, Length of core – 218 mm.
 - Length of Traverse – 200mm, Max. Bobbin diameter – 130mm.
- Weft Bobbin:
 - Internal diameter – 35mm, Length of core – 218 mm.
 - Length of Traverse – 200mm, Max. Bobbin diameter – 115mm.
- Warp in-feed system: Positive/Electronically Controlled.
- Warp break detecting system: Electronically Controlled.
- Weft break detecting system: Electronically Controlled.
- Weft pre-exhaust stop system: Electronically Controlled.
- Fabric Haul-off: Electronically Controlled.
- Grams/Square Meter of fabric required:100-250
- Circular reed, eight shuttle assembly.
- Three manual control systems (stop, inching, start).
- Fabric Winder: Surface winder with facility to adjust fabric tension.
- Reinforcement fabric: Facility to reinforce the fabric across the circumference in warp way.



8. Name: Circular Weaving Machine

Make: Lohia Starlinger

Model: LENO- 4

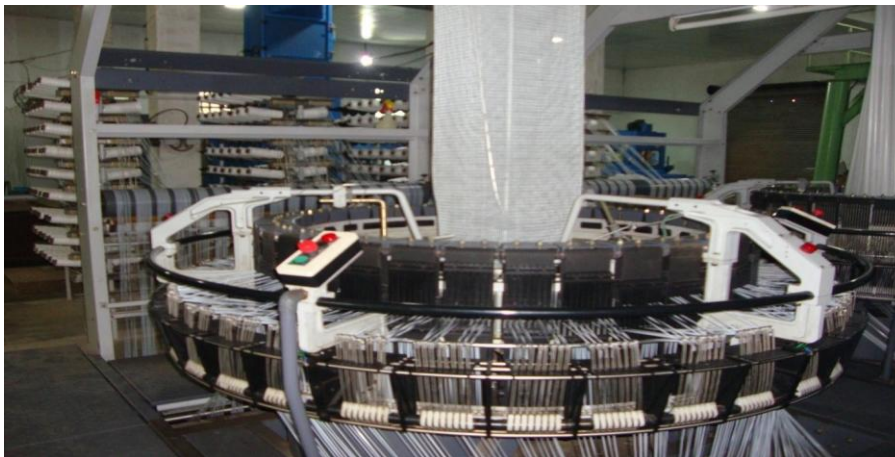
Technical Specifications:

- Working width (double flat): 48 – 75 cm
- No. of shuttles: 4
- Weft Insertion Rate: 360 picks/minute
- Weft density: 10 – 37.5 per 10 cm
- No. of creel pegs: 576
- Warp Bobbin-
Internal diameter – 35mm, Length of core – 218 mm,
Length of Traverse – 200mm, Max. Bobbin diameter – 130mm •

Weft Bobbin:

- Internal diameter – 35mm, Length of core – 218 mm
- Length of Traverse – 200mm, Max. Bobbin diameter – 115mm
- Warp in feed system, Central drive system
- Circular reed, Four shuttle assembly
- Warp break detecting system, Weft break detecting system
- Weft pre-exhaust stop system, Three manual control systems (stop, inching, start)
- One standard width surface fabric winder, Variable speed drive for main drive • Micro Processor based control

Use: Packaging for vegetables (leno sacks)



9. Name: Circular Weaving Machine

Make: Lohia Starlinger

Model: LSL-6

Technical Specifications:

- Working width (double flat): 48 – 75 cms
- No. of shuttles: 6
- Weft Insertion Rate: 900 picks/minute
- Weft density: 20 – 75 per 10 cms
- No. of creel pegs: 720
- Warp Bobbin-
 - Internal diameter – 35mm, Length of core – 218 mm
 - Length of Traverse – 200mm, Max. Bobbin diameter – 130mm
- Weft Bobbin:
 - Internal diameter – 35mm, Length of core – 218 mm
 - Length of Traverse – 200mm, Max. Bobbin diameter – 115mm
- Warp in-feed system, Central drive system
- Circular reed, Six shuttle assembly
- Warp break detecting system, Weft break detecting system
- Weft pre-exhaust stop system, Three manual control systems (stop, inching, start). One standard width surface fabric winder, Variable speed drive for main drive. Micro Processor based control

Uses: Packaging – Grains/cereals/sugar etc.



**10. Two for one Twister [TFO] for High Tenacity Technical / Industrial Yarns.
M/s Weavetech Engineers Ltd., Surat, Gujarat. UT-2i.**

Specifications:

- No. of Heads: 4
- Spindle Gauge: 830mm
- Spindle Size: 300mm
- Yarn Range: 300-12000 Denier
- Twist Range: 50-300 TPM
- No. of ply: Up to 6
- Spindle Speed: 5000-9000 R.P.M
- Feed Package type: Cheese
- Spindle Covers: For separating inner and outer yarn balloons • Take up Speed: 300-400 mts/min



- 11.** Assembly winder for High Tenacity multiplies Technical / Industrial Yarns.
Make- M/s Weavetech Engineers Ltd., Surat, Gujarat.
Model: Unwind, UW-1

Technical Specifications:

- No. of Heads: 1.
- No. of ply: Up to 6.
- Yarn Range: 300 - 12000 Denier Filament Yarn.
- Type of winding: Precision Winding.
- Positive yarn feed: Yes, uniform tension all plies.
- Yarn Break Stop System: Yes, For each ply.
- Doff length: Predetermined Auto Stop.
- Package Dimension: Max. OD- 320mm & Min. OD-94mm.
- Top Beam: 800/1000/1200mm.
- Anti-patterning: Yes.
- Traverse stroke: 250/200mm.
- Crossing angle: Programmable.
- Take up delivery: Up to 600 mts/min.
- Head Control: Separately Individual.



12. Ring Twister for High Tenacity Synthetic Multifilament Yarns.
Meera Industries, Surat, Gujarat.
Customized.

Specifications:

- Yarn Type: Twisting of High Tenacity Synthetic Multifilament Flat (zero twist) Yarns like Polyester, Polypropylene Nylon etc.
- No. of ply: 1to20.
- Total No. of Heads: 8.
- Ring Size Height: 9.5mm (4 heads)
- Ring Size Height: 38.1/38 4mm (heads)
- Ring Diameter: 250mm
- Denier Range: 500-50000
- Creel: 20 ply/head
- Spindle Pitch: 375mm
- Twist Range (TPM): 10-1000
- Twist Type: S&Z
- Single Yarn twisting: Yes
- Central Lubrication System: Yes
- Individual motor/head control: Yes
- Pneumatic Yarn Feeding: Yes
- Ply Sensor: Yes
- Automatic Spindle Stop Motion (Yarn break & bobbin complete): Yes
- Take up package type: Cop/bobbin/ Bottle-Flexibility
- Take up package winding type: Compound, Combination, Wrap, Wandering Bobbin, Bottle Winding-Flexibility



13. Single Step S/Z Twisting Machines (TPRS Twister - Twisting Plying and Reverse Twisting System for High Tenacity Synthetic Multifilament Yarns.)
Make- Meera Industries, Surat, Gujarat.
Model: Customized.

Technical Specifications:

- Denier/Count range: 500-50000
- TPM Range: 10-1000
- Frame: Single Deck Single Side
- No of Pos / Section / Pitch: 2 Pos/ 1 Sec
- Voltage: 440 V 3 Phase |50 Hz
- Supply Tube Type:
- Supply Tube Size (id x od x Length + Full Bobbin OD): 94 x110 x300 x 280 mm
- Take-up Tube Type Cylindrical/ Taper/ Both/ Flanged: Cylindrical
- Take-up Tube Size: Metallic Parallel Tube (ID- 35mm x L- 218mm) Check Sample
- TPRS Ply 3/4 Ply Only For TPRS-50: 3 Ply & 4 Ply
- Take-up Drum Driving Individual Motor Driving(Y/N): Yes | Individual Spindle Motor
- Spindle Drive Tangential Tape Drive / Individual Motor: Individual Spindle Motor Drive
- Winding Type Random or Precision Winding: Precision
- Traverse Length: 8" (200 MM)
- Oil Device: Yes
- Flyer Assembly: Yes
- Air Threading: Yes



**14. Precision Winder for High Tenacity Synthetic Multifilament Yarns Meera Industries, Surat, Gujarat.
Customized**

Specifications:

- Rewinding of Multiply High Tenacity Synthetic Multifilament Yarns like Polyester, Polypropylene, Nylon etc. prepared/twisted on the Ring Twister
- Denier/ Count Range: 500-50000
- Frame: Single Deck Single Side
- No of Pos / Section /Pitch: 9 Pos (6 Pos Metallic Tube + 3 Pos Double Flange Bobbin)
- Supply Tube Type Supply: From Ring Twister Flange Bobbin
- Supply Tube Size ID x OD x Length + Full Bobbin OD: Flange 227 x 450 L 34.6 ID
- Take up package -1: Metallic Parallel Tube (ID-35mm x L-218mm)
- Take up package-2: Flange-115mm, ID-30mm, L-218mm.
- Flexible Traversing (6"8"10"): Yes
- Traverse Length: 200mm/8 inches (facility of changing)
- Individual motor/head control: Yes
- Yarn Break Detection: Yes
- Yarn Oiling System: Yes



15. Single End Sample Warping Machine
Rabatex, Ahmadabad, Gujarat
Model: RI M 601

Specifications:

- Suitable for Spun and filament yarns (Natural, blends and Synthetic yarns).
- Drum Circumference: 2200-2500 mm.
- Warping width: 500 mm (20 inches).
- Yarn Range: 40-1000 Deniers.
- Warping length: 5 to 7.5 meters.
- Warping Speed: 200-300 meters per minute.
- Beaming Speed: 8-10 meters per minute.
- Number of feeders: 8
- Maximum Beam Pipe Flange Diameter: 120 mm.
- Maximum Beam Barrel Diameter: 60 mm.
- Pattern Selection: Automatic.
- Beam Tensioning: Pneumatic Type.
- Creel Type: Stationary with stop motion.
- Belt Traverse: Servo Type
- Yarn Selector: Pneumatic Controlled
- Leasing Facility: Pneumatic controlled
- Easy operation with HM (Human Machine Interface): Yes
- Beaming Device: Integrated with main machine



16. Sample Weaving Machine
Rabatex, Ahmadabad, Gujarat.
RI 9001

Specifications:

- Yam Type: Weaving of warp yams prepared on single end warping machine
- Working width: 500 mm (20 inches)
- Machine Speed: 40-45 PPM
- Beat Up: Servo Motor controlled
- Number of shafts: 20
- Shedding System: Electronically Controlled pneumatic system
- Let off: Electronically controlled
- Take up: Electronically Controlled
- Weft Selector: 8 number with electronic control (Motor Driven)
- Weft Insertion: Rapier Type
- Weft Break Sensor: Yes
- Weft Creel: Stationary type integrated with the main machine
- Weft Tension Assembly: Yes
- Catch Cord Assembly: Yes
- Yarn Cutter: Yes
- Auxiliary selvedge cutter: Yes
- Facility of full width Temples: Yes
- Warp tension control: Electronically controlled
- Weft Density: Electronically controlled
- Variable Density Minimum 4 No's: Yes • Pick Density: 10- 300 PPI
- Electronic Fault Diagnosis Display: Yes
- Grams per Square meter: 300-350



17. Name: Single End Coating/Sizing Machine

Model: RI 8001

Make- Rabatex, Ahmadabad, Gujarat.

Technical Specifications:

- Yarn Type: Suitable for Spun and filament yarns (Natural, blends and Synthetic yarns).
- No. of Drums: Total 2.
- Machine Speed: 200-250 Meters per minute.
- Temperature: Up to 70C.
- Drying Type: Electric.
- Size Squeezing System: Sponge Type.
- Winding Type: Suitable for both spun and filament yarns.
- Size Tank with circulating pump (For Common sizes): Yes.
- Separate Size Tray for each winding position: Yes.
- Size Tank Temperature control: Up to 65° C.



- 18. Name:** Needle Punch Non-woven machine with lap drafter & pre- needling
Model: Laboratory Model
Make- Dilo, Germany

Technical Specifications:

- Maximum working Width: 600 mm
- Width of the needle board: 200mm
- Number of needles: 2 x 45/1 cm of working width (pre-needler)
: 4 x 45/ 1 cm of working width (Finisher Needler)
- Needle bar stroke: 60mm
- Maximum stroke frequency: 1200 rpm.
- GSM: 150 to 800
- Fiber Length: 60 mm to 80mm
- Fiber Denier: 3 den to 15 den

Suitable for processing both Synthetic fiber & blends



19. Name: Multi Head Computerized Embroidery Machine

Make: Tajima, Japan

Model: T C 604

Technical Specifications:

- No. of Heads: 4
- No. of Needles: 9
- Tajima Standard Frame (TFA 2:475x310-16pcs)
- Working Area: 450 X 360 mm
- BFE Border Frame with clips
- Speed: Max. 1200 RPM
- Motor: AC Motor

Suitable for all types of embroidery work



20. Name: Continuous Dryer & coating machine.

Make: Mathis, Switzerland.

Model: KTF-S-18811

Technical Specifications:

- Coating Method: Doctor-knife coating (doctor blade) + subsequent drying.
- Roller width: 500 mm
- Working Width: 450 mm
- Material Speed (Web Speed) 0.1 – 2 m/min.
- Dwell Time (Residence Time)- Roll-to-roll: 20 – 420 s
- Circulation Air Speed: Up to ~6 m/s.
- Circulation Air Capacity: Up to ~1,000 m³/h.
- Exhaust Air Capacity: Up to ~400 m³/h.
- Temperature Range: Up to ~250 °C.
- Nozzle Field / Drying Length: Nozzle field length (dryer) is ~800 mm.
- Heating Capacity: 9 kW
- Winding / Roll Diameter (Max): Max winding (re-wound roll) diameter ~ 500 mm.
- Applications: Textile industry, pharmaceutical industry, foil and paper, R&D labs, etc.
- Modular Options / Add-ons: Infrared (IR) pre-dryer, Double-field (two-zone) hot-air dryer for different temperature zones, Laminating device: - Hot-melt coating
- Control / Data Monitoring: -Parameters like temperature, web speed, fan speed, etc., can be monitored and documented.

