

Open-End Recycled-Cotton Yarn Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real open-end recycled-cotton yarn line equipment.

120-168 rotors screened starter machine	Ne 6-16 trial yarn-count window	0.3-0.8 t/day indicative starter output	25-40 three-shift workforce
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Prepared for investment planning in Afghanistan and regional export markets. Final specifications, pricing, civil works, and utility loads require supplier quotation and site survey.

Executive Summary

A medium-industrial rotor-spinning mill converting tested recovered cotton fibre, cotton waste and approved blending fibre into low- or medium-count yarn through blend preparation, opening and cleaning, carding, two drawing passages, sliver can transport, rotor spinning, cone inspection, conditioning and packing. It is a complete spinning process, not a single rotor-machine purchase.

Why this project fits Afghanistan

- Local cotton and textile waste can enter higher-value yarn after controlled recycling.
- Open-end spinning is suitable for selected shorter fibres and lower-count yarns.
- Domestic knitting, weaving and rope buyers can reduce imported-yarn dependence.
- A single validated yarn count keeps launch settings, spares and working capital focused.

Sanaatchi delivery scope

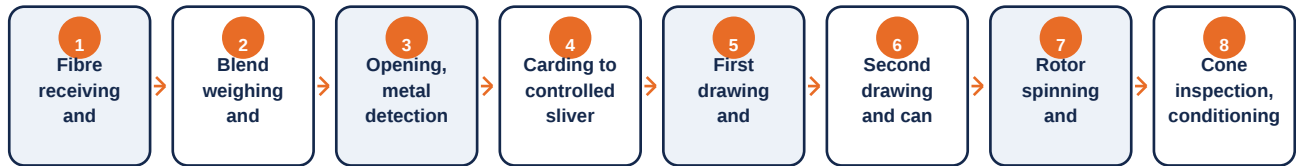
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning
- International logistics, customs documentation, operator training, spare parts, and after-sales support

Recommended configuration

Before equipment selection, secure one repeat recycled-fibre blend and one buyer-approved yarn count, then run spinning trials. Screen one compact blow-room/blending line, two cards, two drawing passages and one 120-168 rotor machine with waste extraction, humidification, laboratory and transformer sized from the supplier power list. Used inspected cards or draw frames may lower entry risk; the rotor head must have verified service support.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Recycled-cotton open-end yarn	One buyer-approved count, twist, strength, evenness, contamination and package	Knitting, weaving, denim weft, towels or rope after trials
Recoverable spinning waste	Segregated by stage and contamination	Controlled reprocessing where quality permits

A rotor machine cannot spin loose recovered fibre directly at reliable commercial quality. Carding and usually two drawing passages are required to produce even sliver. Supplier claims such as broad count ranges or high output must be verified with the exact Afghan/recycled blend. Humidity, dust, fire protection, power quality, rotor service and laboratory control are essential.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Blend preparation and opening line	Meters, mixes and gently opens fibre lots	One validated recycled blend
2	Metal/spark detection and cleaner	Protects machinery and yarn from contamination	Before fine opening and cards
3	Two carding machines	Cleans, individualises and forms sliver	Matched to recovered-fibre length
4	First drawing frame	Doubles and levels card sliver	Autoleveller preferred after trial
5	Second drawing frame	Prepares consistent rotor-feed sliver	Can size matched to rotor machine
6	120-168 position rotor spinner	Forms and winds open-end yarn	Verified count, rotor speed and service
7	Waste suction and central filter	Collects fly and segregates process waste	Fire-safe pressure-balanced layout
8	Yarn laboratory and conditioning room	Controls count, twist, strength, evenness and moisture	Buyer test methods

Equipment models are indicative and will be matched to the selected capacity, local raw-material tests, available utilities, and preferred automation level.

Reference Equipment Gallery



Made-in-China supplier reference: real open-end recycled-cotton yarn line equipment.



Made-in-China supplier reference: second real industrial configuration for open-end recycled-cotton yarn line.

Images are supplier references for configuration discussion; final equipment appearance and model may differ.

Plant, Raw Materials & Utility Requirements

Raw materials

- Tested recovered cotton fibre by source, colour, length and trash
- Virgin cotton or approved blending fibre where trials require it
- Yarn cones, bags, cartons, labels and pallet materials
- Card clothing, opening wire, rotors, navels and critical spinning spares

Utilities & infrastructure

- Stable three-phase electricity matched to the confirmed motor and starting loads
- High-volume dust extraction with fire-safe ducting, collection and housekeeping
- Dry covered raw-material and finished-product storage with lot separation
- Fire detection, suitable extinguishing equipment and controlled ignition sources
- Safe access, guarding, lifting aids and preventive-maintenance workspace

Quality, safety and environmental controls

- Approve blend composition, moisture, fibre length, trash and contamination
- Test card sliver count, neps and evenness
- Control both drawing deliveries and sliver CV
- Measure yarn count, twist, strength, elongation, Uster evenness and faults
- Run knitting or weaving trial before buyer release
- Monitor humidity, dust, fire controls, rotor condition and end-break rate

A final factory layout must reserve safe forklift routes, maintenance clearances, raw-material segregation, finished-goods storage, fire protection, ventilation, and future expansion space.

Indicative Investment & Implementation Plan

LOW-ENTRY CONFIGURATION

Lowest credible mill starts with one buyer-approved low-count yarn and combines inspected used preparation machinery with a supported rotor spinner where practical. Building, land and fibre working capital are excluded.

Component	Indicative range	Notes
Opening, blending and two cards	US\$90k-230k	New economy or inspected mixed scope
Two drawing passages and can handling	US\$45k-120k	Sliver quality is mandatory
120-168 rotor spinning machine	US\$70k-180k	Supplier examples start near US\$70k
Air, humidity, lab and electrical systems	US\$55k-150k	Include transformer and fire controls
Freight, installation, training and spares	US\$65k-170k	Technical commissioning required
Indicative installed project total	US\$325k-850k	Building and fibre working capital excluded

Implementation sequence

Phase 1	2-4 weeks	Confirm feedstock, buyer specification, capacity, site utilities and test protocol
Phase 2	2-5 weeks	Run representative material trials and approve the exact machine configuration
Phase 3	5-12 weeks	Manufacture, inspect and ship the approved equipment and critical spares
Phase 4	2-6 weeks	Install, commission, train operators and validate saleable output

Ranges are planning targets for a low-cost entry configuration, exclude land, and remain subject to confirmed capacity, supplier quotation, freight, duties, exchange rates and site conditions.

Next Steps & Contact Information

Recommended next steps

- Confirm target products, hourly output, and packaging formats
- Test representative raw materials and document quality requirements
- Complete site survey covering electricity, water, fuel, drainage, roads, and warehouse space
- Request comparable technical and commercial quotations from shortlisted suppliers
- Finalize financing, logistics, installation, training, and spare-parts plan

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Research and image references

- <https://hsnmachinery.en.made-in-china.com/product/jBREvZouMOUk/China-Open-End-Spinning-Machine-for-Recycled-Cotton.html>
- <https://jingtianshina.en.made-in-china.com/product/CxSRKvkJZcYo/China-Open-End-Rotor-Spinning-Machine-for-Waste-Recycling-Cotton-Yarn.html>