

Wool-Yarn Spinning Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real wool-yarn spinning line equipment.

1 count launch yarn specification	120-300 kg/day screened mini-mill output	240-480 entry ring spindles	14-24 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 small commercial woollen-spinning line converting released scoured and card-ready wool into knitting, weaving or carpet yarn through fibre conditioning and blending, opening, carding, web division or condenser slubbing, roving where the selected system requires it, ring spinning, yarn clearing, cone winding, conditioning, laboratory release and packing. Wool washing and dyeing are separate unless expressly included.

Why this project fits Afghanistan

- Afghan wool can enter carpet, blanket, knitwear and handcraft supply chains when count and strength are repeatable.
- A coarse woollen route tolerates shorter and more variable fibres than a fine worsted mill.
- One yarn count and fibre blend reduce drafting, twist and inventory complexity.
- Local spinning is viable only when clean-wool yield, buyer quality and maintenance support are proven.

Sanaatchi delivery scope

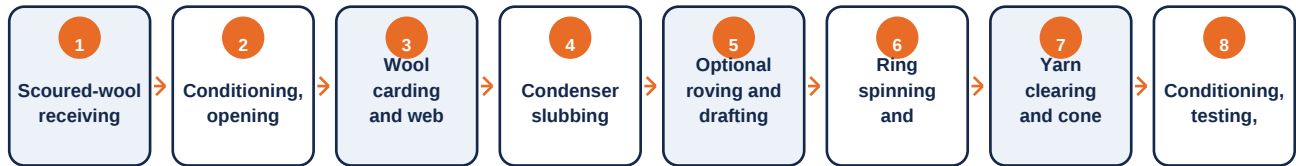
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

Begin with one coarse woollen count and one buyer. Screen a coherent mini-mill comprising a gentle opener/blender, woollen card with condenser or sliver route, matched roving only if required, one supported small ring frame, a 6-12 spindle cone winder, humidification, waste extraction and yarn laboratory. A ring frame alone is not a wool-yarn production line.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Coarse woollen carpet or weaving yarn	One buyer-approved metric count, ply, twist, strength, evenness, hairiness and package	Carpet, blanket and coarse-weaving producers
Knitting-yarn expansion	Separate softer blend, count, twist, dyeing and handle approval	Knitwear and handcraft makers after trials

Woollen, semi-worsted and worsted systems are not interchangeable. The supplier must process representative scoured wool and state fibre-length limits, clean feed rate, waste, card delivery, drafting plan, spindle count, twist and final output. Acceptance measures yarn count, twist, strength, elongation, evenness, thick/thin faults, neps, hairiness, package build and downstream knitting or weaving performance.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Fibre conditioner, opener and blender	Prepares controlled wool lots with approved spin finish	One launch blend
2	Woollen card and condenser	Cards fibre and forms slubbings for coarse yarn	Matched to fibre length and count
3	Optional draw/roving preparation	Levels and drafts sliver where the route requires it	Supplier process-specific
4	Small wool ring frame	Drafts and twists prepared fibre into yarn	240-480 spindle entry basis
5	Cone winder with tension control	Clears faults and builds buyer packages	6-12 spindle starter
6	Humidification and waste extraction	Controls fibre behavior, dust and housekeeping	Fire-safe room design
7	Yarn laboratory	Tests count, twist, strength and evenness	Buyer methods
8	Conditioning and packing equipment	Stabilizes regain and protects cones	Lot-traceable packing

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 wool-yarn spinning line equipment.



Made-in-China supplier reference: second real machine configuration for wool-yarn spinning line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Released scoured wool by fineness, length, colour, moisture and vegetable matter
- Approved blend fibres and spin finish only after trials
- Cones, bags, cartons, labels and pallets
- Card clothing, travellers, rings, aprons, cots and winding spares

Utilities & infrastructure

- Stable three-phase power with motor-starting and backup plan
- Controlled temperature and humidity for wool processing
- Fire-safe fibre waste extraction and rigorous housekeeping
- Compressed air for winding and controls where specified
- Dry separated fibre and yarn storage with lot traceability

Quality, safety and environmental controls

- Test every scoured-wool lot before blending
- Control conditioning regain, blend ratio and applied finish
- Record card waste, slubbing/sliver count and evenness
- Verify drafting, spindle speed, twist and end breaks
- Test count, twist, strength, elongation, evenness and hairiness
- Approve knitting, weaving or carpet trials before shipment

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

The lowest credible mill targets one coarse woollen yarn using a coherent card-to-ring route and a small manual winder. Fine worsted combing, dyeing, building and wool inventory are excluded.

Component	Indicative range	Notes
Opening, blending and wool card/condenser	US\$55k-155k	Core woollen preparation
Roving if required and small ring frame	US\$65k-190k	240-480 spindle entry basis
Winder, laboratory, humidity and waste systems	US\$28k-85k	Quality and environment
Freight, electrical, installation and spares	US\$35k-105k	Specialist setup and training
Indicative installed mini-mill total	US\$183k-535k	Wool washing, building and working stock excluded

Implementation sequence

Phase 1	2-5 weeks	Confirm product specification, representative raw material, buyer, capacity, site and utilities
Phase 2	3-7 weeks	Run supplier trials with the buyer material and freeze the balanced machine, tooling and utility scope
Phase 3	8-22 weeks	Manufacture or refurbish, inspect, document and ship the contracted equipment
Phase 4	3-12 weeks	Install, commission, train operators and pass material-specific acceptance tests

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

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