

Lentil Cleaning & Grading Line

Complete Turnkey Business Proposal



Supplier reference: real compact grain and pulse cleaning line with aspiration, screening and grading equipment.

500-1,000 kg/h starter raw-lentil input	3-4 saleable size grades	10-20 kW indicative connected load	3-5 entry operators
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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

This dry-processing line upgrades harvested lentils into uniform, market-ready lots without dehulling or splitting them. It removes straw, dust, stones, light seeds and density defects, then separates the accepted grain by size before weighing and bagging. Screen selection and air settings must be trialled with the buyer's red, green or brown lentil samples because seed size, moisture and impurity profile determine recovery.

Why this project fits Afghanistan

- Afghan lentils can be cleaned near producing areas and sold in consistent wholesale or retail grades.
- Dry processing avoids process-water demand and fits a small warehouse or cooperative.
- Separate size grades improve cooking uniformity and give traders clearer contract specifications.
- The same intake and grading section can later feed a dedicated lentil splitting line.

Sanaatchi delivery scope

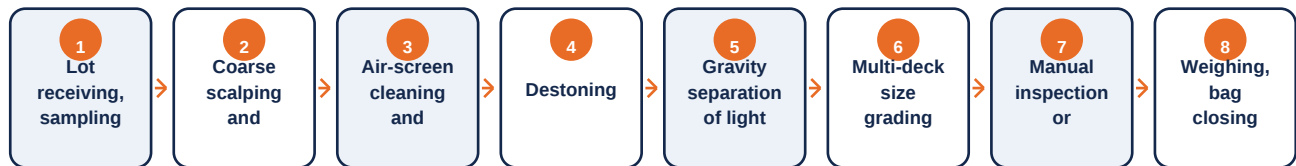
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

For the lowest credible entry, select a 500-1,000 kg/h line with an air-screen cleaner, destoner, gravity separator, multi-deck grader, magnet and semi-manual packing. Keep optical color sorting optional until an export or premium retail buyer proves the value of removing color defects beyond mechanical cleaning.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Food-grade whole lentils	Buyer-approved purity, moisture, color and foreign-matter limits	Retail packers, wholesalers and institutional buyers
Uniform seed-size grades	Calibrated screen fractions with controlled undersize	Premium cooking, export and seed-market buyers where certified
Feed and cleaning rejects	Kept separate and released only after safety checks	Approved feed users

Supplier references include compact combined cleaner-destoner-graders near one tonne per hour and larger modular lentil lines. Published recovery claims are not guarantees. Sanaatchi requires a timed trial and mass balance using representative Afghan lentils, recording clean product, each grade, stones, light reject and dust before approving screens and airflow.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Receiving hopper and magnet	Meters lentils and removes ferrous contamination	Low-drop design to limit seed damage
2	Air-screen cleaner	Removes oversize, undersize, chaff and dust	Interchangeable screens for confirmed lentil varieties
3	Destoner	Separates stones and dense field impurities	Adjustable deck inclination and airflow
4	Gravity separator	Rejects light, insect-damaged and immature seed	Variable air and deck frequency
5	Multi-deck grader	Divides cleaned lentils into saleable size fractions	Three or four launch grades
6	Inspection conveyor	Allows manual removal of visible defects	Food-grade belt with suitable lighting
7	Bagging scale and closer	Fills and closes released lots	Semi-manual 5-50 kg starter range
8	Dust filter and aspiration ducting	Controls dust at cleaner and transfer points	Safe collection with accessible cleaning

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



Supplier reference: real compact grain and pulse cleaning line with aspiration, screening and grading equipment.



Supplier reference: real air-screen cleaner and grader suitable for configuration with lentil screens.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Dry Afghan red, green or brown lentils
- Food-grade retail pouches or lined wholesale bags
- Labels, sewing thread or sealing consumables
- Approved sanitation and pest-control materials

Utilities & infrastructure

- Stable three-phase electricity
- Dust extraction and safe ventilation
- Dry raw-lentil and finished-grade storage
- Calibrated moisture meter, scales and laboratory sieves
- Food-hygiene and pest-control program

Quality, safety and environmental controls

- Inspect each lot for moisture, odor, mold, insects and foreign matter
- Approve screen apertures and air settings with representative lentils
- Measure clean-product recovery and every reject stream by weight
- Verify stones, foreign matter, damaged seed and size uniformity
- Prevent commingling of varieties and released grades
- Check pack weight, closure, lot code and storage condition

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 entry uses dry mechanical cleaning, one destoner, one gravity separator, size grading and semi-manual packing. Land, building, lentil stock, retail-film inventory and optical color sorting are excluded.

Component	Indicative range	Notes
Air-screen cleaning, magnet and aspiration	US\$4k-9k	Compact dry intake section
Destoning, gravity separation and grading	US\$5k-12k	Mechanical quality separation
Semi-manual bagging and inspection	US\$2k-5k	Color sorter excluded
Electrical, installation and initial spares	US\$2k-5k	Include screens, belts and bearings
Freight and clearance	US\$3k-7k	Consolidated shipment where practical
Indicative low-entry total	US\$16k-38k	Building, lentil inventory and optical sorter excluded

Implementation sequence

Phase 1	1-2 weeks	Confirm lentil varieties, impurity profile, grades and bag sizes
Phase 2	2-3 weeks	Run cleaning trials and approve recovery and screen set
Phase 3	4-7 weeks	Manufacture, inspect and ship the selected equipment
Phase 4	2-3 weeks	Install, balance airflow, train staff and release trial lots

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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