

Almond Shelling, Grading & Packing Line

Complete Turnkey Business Proposal



Supplier reference: real nut cracking, dehulling and separation machinery representative of an almond shelling line.

300-500 kg/h starter in-shell input	3 minimum shell-size fractions	65-85% trial-dependent whole-kernel goal	6-9 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 line converts clean in-shell Afghan almonds into inspected whole and broken kernels. Almonds must be graded by shell size before adjustable-gap cracking; aspiration and gravity separation then remove shell and return uncracked nuts. Kernel food safety, shell-fragment control and measured whole-kernel recovery define acceptance.

Why this project fits Afghanistan

- Afghan almonds gain value when sold as clean graded kernels rather than mixed in-shell lots.
- Size grading before cracking protects whole-kernel recovery.
- Broken kernels remain a separate commercial grade for paste, oil or bakery buyers.
- Compact dry equipment suits seasonal processors and cooperatives.

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 300-500 kg/h line with pre-cleaner, three-size grader, adjustable cracker, aspiration separator, gravity table, inspection conveyor, kernel grader and semi-automatic bulk packer.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Whole almond kernels	Buyer-approved variety, size, moisture, defects and shell fragments	Retail, confectionery and nut packers
Broken almond kernels	Clean declared fraction with controlled shell content	Bakery, paste and oil processors

Supplier throughput and shelling-rate claims vary with shell hardness, size distribution and kernel moisture. Acceptance must use representative Afghan almonds and record whole kernel, broken kernel, shell, uncracked and loss fractions.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Pre-cleaner and magnet	Removes dust, stalks, stones and metal	Enclosed aspiration
2	Three-size in-shell grader	Creates fractions for separate cracker gaps	Interchangeable screens
3	Adjustable almond cracker	Opens shells while limiting kernel breakage	Gap set for each size fraction
4	Aspiration separator	Removes light shell pieces	Variable airflow
5	Gravity table	Separates kernels, heavy shell and uncracked nuts	Return path to cracker
6	Inspection conveyor	Removes defects and residual shell	Food-grade belt and good lighting
7	Kernel size grader	Creates saleable whole and broken grades	Buyer-confirmed screens
8	Metal detector and bag closer	Checks and packs released kernels	Lined bulk cartons or bags

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 nut cracking, dehulling and separation machinery representative of an almond shelling line.



Supplier reference: real nut weighing and container packing equipment applicable after kernel grading and release.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Dry traceable Afghan in-shell almonds
- Food-grade lined bags or cartons
- Labels and lot records
- Cleaning and laboratory sampling materials

Utilities & infrastructure

- Stable three-phase electricity
- Potable process water and hygienic drainage
- Food-grade heat source where required
- Ventilated washable processing room
- Clean dry packing and finished-goods storage

Quality, safety and environmental controls

- Confirm variety, shell hardness, moisture and infestation
- Grade shells before cracking and document gap settings
- Measure mass balance and whole-kernel recovery
- Control shell fragments, stones and metal
- Inspect rancidity, mold, aflatoxin risk and microbiology
- Maintain allergen segregation and pest-controlled dry storage

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 three shell-size fractions, one adjustable cracker and manual final inspection. Optical sorting, roasting, retail nitrogen packing, building and almond inventory are excluded.

Component	Indicative range	Notes
Pre-cleaning and size grading	US\$5k-11k	300-500 kg/h dry intake
Cracking and aspiration	US\$5k-12k	Adjustable staged route
Gravity separation and inspection	US\$5k-12k	Kernel recovery and shell control
Kernel grading and packing	US\$3k-8k	Semi-manual bulk launch
Freight, installation and spares	US\$4k-9k	Confirm nested conveyors
Indicative low-entry total	US\$22k-52k	Building, almonds and working capital excluded

Implementation sequence

Phase 1	2-3 weeks	Confirm raw material, product, capacity and pack specifications
Phase 2	2-4 weeks	Run supplier trials with representative Afghan material
Phase 3	6-10 weeks	Manufacture, inspect and ship the selected equipment
Phase 4	3-5 weeks	Install, train, validate the process and start shelf-life checks

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://machineking.en.made-in-china.com/product/TAcYUKzvatWS/China-Multifunctional-Almond-Processing-Machine-Almond-Sheller-Peeler-Cutter-Grinder-Almond-Cutter-Machine.html>