



Apple Sorting, Grading & Waxing Line

Complete Turnkey Business Proposal



CUSTOMIZABLE | DIRECT SALES FROM THE SOURCE FACTORY

Supplier reference: real stainless fruit washing, inspection and conveying line suitable for an apple packhouse configuration.

1-2 t/h starter apple input	4-6 grading outlets	15-30 kW indicative connected load	8-14 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 packhouse line prepares fresh Afghan apples for consistent wholesale and retail grades. It emphasizes bruise prevention: gentle unloading, controlled brush pressure, short drops and padded outlets matter more than headline throughput. Weight or diameter grading is the economical entry choice; camera color and internal-defect sorting can be added only for buyers who pay for those specifications. Food-grade waxing remains optional and must meet the destination market's rules.

Why this project fits Afghanistan

- Uniform Afghan apple grades improve pricing for supermarkets, wholesalers and exporters.
- A small packhouse can serve several orchards without purchasing a high-speed optical sorter.
- Lower grades can be routed to juice, puree, drying or vinegar lines rather than discarded.
- Optional waxing and better cartons can extend presentation life when buyer rules permit.

Sanaatchi delivery scope

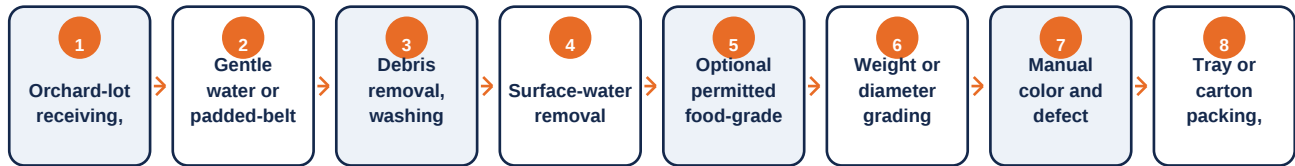
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

For the lowest credible entry, select a 1-2 t/h line with water or soft-belt unloading, brush washer, air dryer, optional waxer, four-to-six-outlet weight grader, inspection table and manual packing. Prove bruise rate, grading accuracy and carton presentation with the exact apple varieties and packaging before ordering optical automation.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Premium fresh apples	Uniform size, color and appearance within buyer defect limits	Supermarkets, premium wholesalers and export buyers
Standard fresh apples	Sound fruit with broader cosmetic tolerance	Domestic wholesale and institutional buyers
Processing apples	Sound lower appearance grade, segregated from rot	Juice, puree, drying and vinegar processors

A current supplier flow lists feeding, distribution, weight grading, camera grading, discharge, cleaning, air drying, waxing, final drying and packing, with 2-12 t/h for advanced systems. Sanaatchi's entry proposal intentionally omits internal-defect cameras and starts with four-to-six weight or size grades. All capacity and bruise-rate claims require trials using local apples and cartons.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Gentle unloading system	Transfers orchard bins while limiting impact damage	Water flume or padded low-drop conveyor
2	Brush washer and rinse	Removes field dust and surface contamination	Food-grade soft brushes and potable spray
3	Air knife or fan dryer	Removes surface water before grading or waxing	Adjustable clean air without overheating fruit
4	Optional wax applicator and dryer	Applies a controlled permitted food-grade coating	Buyer and destination approval required
5	Weight or diameter grader	Routes apples into commercial size grades	Four to six padded outlets at entry scale
6	Illuminated inspection table	Allows manual removal of bruised, rotten or defective fruit	Fruit rotation and ergonomic lighting
7	Packing tables and carton handling	Protects graded apples in trays or cartons	Low drops and buyer-approved count patterns
8	Scales, labels and traceability printer	Controls net weight and lot identification	Grower, variety, grade and pack date recorded

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 stainless fruit washing, inspection and conveying line suitable for an apple packhouse configuration.



Supplier reference: real fruit handling equipment showing washing, inspection and downstream preparation modules.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Sound Afghan apples segregated by variety and orchard lot
- Potable wash water
- Only approved food-grade wax where used
- Trays, pads, cartons, labels and pallet materials
- Approved sanitation chemicals

Utilities & infrastructure

- Stable electricity
- Potable water, filtration and hygienic drainage
- Clean compressed air where specified
- Shaded receiving and finished-pack areas
- Pre-cooling or cool storage matched to the marketing plan

Quality, safety and environmental controls

- Record orchard, variety, harvest date, maturity, firmness and defect sample
- Measure bruise incidence before and after the line
- Control wash-water quality, sanitizer where permitted and brush condition
- Verify wax identity, dose and destination-market compliance
- Calibrate grader accuracy and inspect every outlet
- Check pack count, net weight, label, ventilation and cold-chain 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 gentle unloading, brush washing, air drying, mechanical or basic weight grading, manual inspection and manual carton packing. Land, building, apples, cartons, cold storage, waxing module and optical sorting are excluded unless selected.

Component	Indicative range	Notes
Gentle unloading, washing and brushing	US\$7k-16k	One 1-2 t/h intake
Air drying and optional waxing	US\$4k-10k	Wax module can be deferred
Four-to-six-outlet grader and inspection	US\$7k-18k	Mechanical or basic electronic weighing
Packing tables, electrical and initial spares	US\$3k-8k	Manual carton packing
Freight and clearance	US\$4k-9k	Confirm conveyor nesting
Indicative low-entry total	US\$25k-61k	Building, apples, cartons, cold store and optical sorter excluded

Implementation sequence

Phase 1	2-3 weeks	Confirm varieties, grades, cartons, waxing rules and daily tonnage
Phase 2	2-4 weeks	Run handling trials and approve bruise and grading performance
Phase 3	5-9 weeks	Manufacture, inspect and ship the line
Phase 4	3-5 weeks	Install, train, calibrate outlets and validate packed 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

- <https://gelgoog.en.made-in-china.com/product/yTKpkBUPEorZ/China-Apple-Internal-Defect-Sorting-System-with-Computer-Vision.html>
- <https://genyang.en.made-in-china.com/product/pNIetVLDZshO/China-Factory-Apple-Juice-Production-Line-Fruit-Puree-Drinks-Processing-Plant.html>