SANAATCHI
INDUSTRIAL VISION GROUP

Agricultural Hand-Tool Forging Line

Complete Turnkey Business Proposal

Made-in-China supplier reference: real agricultural hand-tool forging line equipment.

2 heads launch family	**250-400 kg** air-hammer class	**45/50 steel** screened material class	**10-18** entry workforce

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 hot-forging and heat-treatment line converting certified new medium-carbon steel billets or controlled reusable steel into forged mattock, axe, adze and selected hoe heads through cutting, induction or fuel heating, upset/preform forging, closed-die finishing, flash trimming, eye punching/drifting, normalization or quench-and-temper, shot blasting, grinding, hardness testing, handle fitting and proof-load inspection.

Why this project fits Afghanistan

- Afghan farming and construction need repairable hand tools with reliable edges and eyes.
- Forging aligns material flow and can outperform simple cut-and-weld heads.
- Two head families keep dies and heat-treatment recipes manageable.
- Steel chemistry, heat treatment and proof tests determine safety.

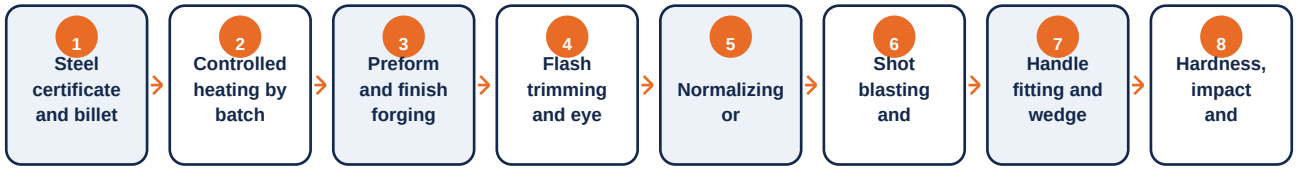
Sanaatchi delivery scope

- 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	Launch two forged head families only, for example a mattock and an axe, using certified new 45/50-class steel. Screen a 250-400 kg air hammer or 400-630 t screw/friction press, gas or induction heater, matched dies, trim press, eye punch/drifts, controlled heat-treatment furnace, shot blaster and hardness/impact tools. Do not melt unidentified scrap or infer steel grade from appearance.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Forged mattock or pick head	Mass, eye, geometry, steel grade, heat treatment, hardness, handle and proof load	Farmers, builders and hardware trade
Forged axe or adze head	Head mass, eye, edge angle, localized hardness, handle fit and impact test	Forestry, carpentry and rural users

Scrap is acceptable only after sorting, chemistry confirmation and a controlled remelting/billet route; direct forging of unknown automotive parts is unsafe. Acceptance records heating temperature, die fill, grain-flow defects, eye dimensions, heat-treatment curve, hardness map, cracks, handle retention, proof bend and impact performance.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Billet saw and gauges	Prepares repeatable charge mass	Two head families
2	Gas/induction heater	Controls forging temperature	Recorded pyrometry
3	Air hammer or screw press	Preforms and finish-forges heads	250-400 kg / 400-630 t
4	Dies, trim press and eye tools	Forms outline and handle eye	Dedicated sets
5	Heat-treatment furnace and quench	Develops strength and edge hardness	Recipe controlled
6	Shot blast, grinders and laboratory	Finishes and releases heads	Hardness/crack tests

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 agricultural hand-tool forging line equipment.

Made-in-China supplier reference: second real machine configuration for agricultural hand-tool forging line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Certified medium-carbon steel billet or bar by heat number
- Kiln-dried local hardwood handles after species and moisture approval
- Quench media, abrasives, wedges, coating and packing

Utilities & infrastructure

- Stable three-phase power with protected distribution
- Guarded hot-work or forming zones and emergency stops
- Covered raw-material and finished-goods storage
- Fume/dust extraction, fire protection and disciplined housekeeping
- Quench ventilation, spill containment and temperature-recording instruments

Quality, safety and environmental controls

- Verify steel heat/chemistry before cutting
- Record forging and heat-treatment temperatures
- Inspect laps, underfill, cracks and eye geometry
- Map hardness without brittle over-hardening
- Check handle moisture, fit and wedge retention
- Perform proof-bend and impact tests by lot

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

A genuinely safe hot-forging line is not a sub-US$50k workshop once heat treatment, dies and testing are included. A lower budget should begin with handle making or inspected imported heads, not omit metallurgical controls.

Component	Indicative range	Notes
Saw, heater and forging machine	US$28k-72k	Two-head entry
Dies, trim and eye tooling	US$10k-28k	Dedicated families
Heat treatment, finishing and laboratory	US$15k-42k	Mandatory quality scope
Freight, installation and spares	US$10k-28k	Foundation and training
Indicative installed low-entry total	US$63k-170k	Building and working steel 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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