

Solar-Panel Mounting Structures Production Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real solar-panel mounting structures production line equipment.

41 x 41 mm launch strut class	1.5-2.0 mm screened steel thickness	14-20 m/min forming range	7-12 entry 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/medium roll-forming and fabrication line producing one engineered galvanized or Zn-Al-Mg steel solar strut/rail family through coil receiving, decoiling and leveling, servo punching, multi-stand roll forming, flying cut, connector and base-plate fabrication, deburring, coating repair, dimensional gauging, sample-array assembly, structural verification, kit packing and traceability.

Why this project fits Afghanistan

- Afghanistan solar projects need reliable local rails, posts and replacement components.
- Local cut lengths reduce freight and project delays.
- One engineered family controls punching, connectors and inventory.
- Wind uplift, corrosion, roof interface and galvanic compatibility are safety-critical.

Sanaatchi delivery scope

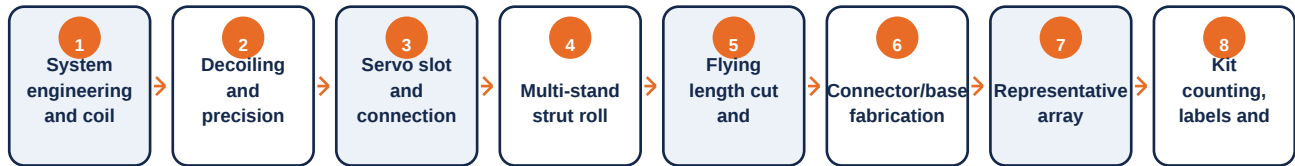
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

Launch one 41 x 41 mm class slotted steel strut family using 1.5-2.0 mm certified galvanized or Zn-Al-Mg coil, subject to an engineer-designed rooftop or ground-mount system. Screen a 3 t decoiler, leveler, servo punch, 16-20 stand former, 14-20 m/min cut system, connector tools and assembly/load-test fixtures. Aluminum extrusion is a separate plant.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Slotted solar mounting strut	Section, BMT, grade, coating, slot, length and allowable design actions	Ground and rooftop solar integrators
Matched mounting kit	Rails/struts, splice, clamp, base, fasteners, isolation and project bill of materials	Engineer-approved solar projects

A rail roll former does not validate a solar mounting system. Project engineering must consider wind uplift, snow, seismic actions, roof or foundation capacity, drainage, aluminum/steel galvanic isolation and module clamp zones. Acceptance gauges profile and slots, tests coating and connector fit, assembles an array and witnesses component tests defined by the engineer.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	3 t decoiler and leveler	Feeds certified strip	Coil ID/OD/strength
2	Servo punching press	Produces repeatable slots and holes	Contracted pattern
3	16-20 stand strut roll former	Forms one structural section	1.5-2.0 mm basis
4	Flying cut and run-out	Cuts project lengths	Encoder controlled
5	Connector/base fabrication tools	Makes matched kit components	Engineer drawings
6	Profile gauges and test fixtures	Releases geometry and structural samples	Named test method

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 solar-panel mounting structures production line equipment.

Sailo



Made-in-China supplier reference: second real machine configuration for solar-panel mounting structures production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Certified galvanized or Zn-Al-Mg coil by grade/BMT/coating
- Engineered clamps, splices, bases, bolts and isolation pads
- Zinc-rich coating repair, labels and long-product 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
- Engineering assembly/test area and calibrated structural load fixtures

Quality, safety and environmental controls

- Verify coil certificate, strength, BMT and coating
- Gauge profile, slots, holes, bow, twist and length
- Inspect burrs, cracks and coating damage
- Check connector/fastener fit and torque
- Assemble representative roof/ground array
- Perform engineer-specified pull, slip and component tests

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

Marketplace prices under US\$50k may cover only the roll former. A credible mounting-system line also needs punching, connectors, engineering and tests. Aluminum extrusion, galvanizing, building and stock are excluded.

Component	Indicative range	Notes
Decoiler, servo punch and roll former	US\$32k-82k	One strut family
Cut, handling and connector tools	US\$10k-30k	Matched kit scope
Gauges, engineering and test fixtures	US\$8k-25k	Safety-critical release
Freight, installation and spares	US\$10k-28k	Supplier coil trial
Indicative installed low-entry total	US\$60k-165k	Building, coil stock and galvanizing 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

- <https://henertrade.en.made-in-china.com/product/xZzaYukVnOWs/China-High-Precision-Solar-Strut-Channel-Roll-Forming-Machine-Rail-41X41-Uni-Strut-Shaped-Steel-Channel-Machine.html>

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