

# Light Gauge Steel Framing Machine — XHH-5S-C89

**Commercial Proposal — Metal-Asia Industrial Solutions** Global Procurement & Supply Chain  
Compliance | B2B / B2C | EMEA · APAC · Americas

## Executive Summary

The XHH-5S-C89 roll-forming machine is engineered for the automated production of cold-formed steel studs, tracks, joists, and trusses used in light-gauge steel framing (LGS) systems for residential and commercial structures up to 3 storeys. Integrated with the Vertex Design CAD/CAM suite (lifetime licence included), this line enables fully automated design-to-production workflows, reducing material waste and accelerating project delivery timelines.

Metal-Asia Industrial Solutions delivers **direct factory procurement** from Tier-1 Chinese manufacturers, backed by comprehensive **supply chain compliance**, vendor qualification protocols, and **turnkey installation & commissioning** services worldwide.

For organisations evaluating **capital equipment procurement** for modular construction, affordable housing, or cold-formed steel framing facilities, the C89 platform represents the industry benchmark in price-to-performance ratio.

Explore our full range of [production line solutions](#) or request a detailed quotation via [our procurement portal](#).

## Application Scope

Parameter	Specification
<b>Construction Type</b>	Light-gauge steel framing, panelised construction, modular buildings
<b>Building Height</b>	2–3 storeys (residential & light commercial)
<b>Output Profile</b>	C89 studs, C89 tracks, floor joists, roof trusses, bridging channels

## Technical Specifications

### Machine Dimensions & Weight

Parameter	Specification
<b>Model</b>	C89
<b>Overall Dimensions (L × W × H)</b>	4,200 × 800 × 1,100 mm
<b>Estimated Machine Weight</b>	~2.5 t
<b>Power Supply</b>	380 V / 50 Hz / 3-Phase

## Electrical Parameters

Parameter	Specification
<b>Main Servo Motor</b>	7.5 kW
<b>Hydraulic Motor</b>	7.5 kW
<b>Total Installed Power</b>	15 kW

## Forming Parameters

Parameter	Specification
<b>Forming Stages</b>	9 stands
<b>Line Speed</b>	700 m/h
<b>Shift Output Capacity</b>	4–5 t per 8-hour shift

## Profile Geometry

Parameter	Specification
<b>Effective Profile Width</b>	89 mm
<b>Coil Width (Feed Stock)</b>	174 mm
<b>Flange Height</b>	38 mm
<b>Lip Radius</b>	9 mm
<b>Material Thickness Range</b>	0.6 – 1.2 mm

## Dimensional Accuracy

Parameter	Specification
<b>Punching &amp; Cutting Tolerance</b>	±0.5 mm
<b>Roll-Forming Tolerance</b>	±0.75 mm

## LGS Components Produced

This line manufactures the following structural cold-formed steel elements:

- **Vertical Studs** (C89 load-bearing studs)
- **Horizontal Tracks** (C89 top/bottom plates)
- **Floor Joists** (C89 joists for intermediate floors)
- **Roof Trusses** (C89 truss chords and webs)
- **Node Plates** (pre-punched connection plates)

## Control System & Software

Component	Specification
<b>Control Architecture</b>	Industrial PC (IPC) with real-time CNC kernel
<b>Design Software</b>	Vertex Design — lifetime licence, no recurring fees
<b>CNC Functionality</b>	Full computer numerical control
<b>Punch Position Control</b>	Closed-loop servo positioning
<b>Cut-to-Length Control</b>	Servo-driven flying cutoff
<b>Batch Quantity Control</b>	Automated piece counting
<b>Real-Time Monitoring</b>	Live production dashboard
<b>Remote Access</b>	Secure VPN diagnostics
<b>Remote Maintenance</b>	Over-the-air software updates & support

## Standard Scope of Supply

Item	Description	Qty
1	Main roll-forming machine	1 set
2	3-tonne powered decoiler	1 set
3	Servo drive system	1 set
4	Industrial PC controller (Lenovo)	1 unit
5	Production management software	1 licence
6	Vertex Design software (lifetime)	1 licence
7	Hydraulic automatic punching station	1 set
8	Hydraulic post-cutoff station	1 set
9	Automatic ink-jet marking system	1 set
10	Product receiving table (4 m)	1 unit
11	Operator manuals & documentation	1 set

## Punching Capabilities

The hydraulic automatic punching station performs the following operations:

- Web notching (service penetrations)
- Swage / dimple embossing
- Service hole punching
- Flange chamfering (lip notching)

- Crimping / dimple creation
- Bolt hole punching (M12 / M16 clearance)

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## Key Technology Features

### 1. Post-Cutoff & Post-Punch Technology

Post-punch and post-cut architecture delivers superior length accuracy and hole positioning compared to pre-punch configurations. This eliminates material stretch-induced dimensional drift.

### 2. Seamless End-Connection Geometry

Patented LGS FORMER geometry ensures the vertical stud web flows continuously into top and bottom track webs, creating a direct load-transfer path from floor to floor — a critical safety advantage over conventional framing.

### 3. Continuous Slotting Without Burr Extrusion

The post-punch system enables continuous web slotting in material as thin as 0.55 mm without burr extrusion, preventing jamming during roll-forming and maintaining coating integrity.

### 4. Material Optimisation

Metric	Value
<b>Coil Start Waste</b>	0.02 m
<b>End-of-Run Waste</b>	1.0 m
<b>Strip Width</b>	170–174 mm (10 mm narrower than competing designs)

### 5. Material Savings — 200 m<sup>2</sup> Building Example

Material Thickness	Steel Saved vs. Conventional
0.8 mm	439.6 kg
1.0 mm	549.5 kg
1.2 mm	659.4 kg

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## Tooling & Wear-Part Materials

Component	Material	Heat Treatment / Coating
Forming Rolls	Cr12 / SKD-11	Vacuum Hardened + Hard Chrome Plating
Roll Shafts	40Cr / SKD-11	Precision ground
Punch Tooling	Cr12MoV / SKD-11	Hardened to 58–62 HRC
Cutoff Blades	Cr12MoV / SKD-11	Hardened to 58–62 HRC

## Operating Environment

Parameter	Specification
Ambient Temperature	+5 °C to +45 °C
Relative Humidity	≤ 80% (non-condensing)
Supply Voltage	380 V ± 10%
Supply Frequency	50 Hz
Required Floor Area	20–30 m <sup>2</sup>

## HS Code & Customs Clearance

Parameter	Specification
HS Code (Harmonised System)	8462.29.10.00
Customs Description	Machines for bending, folding, straightening or flattening — numerically controlled
Import Duty Rate	0–5% (varies by country of destination)
VAT / GST	Per local jurisdiction
Required Certification	CE Declaration of Conformity (Machinery Directive 2006/42/EC); ISO 9001 factory audit
Customs Lead Time	5–10 business days (DDP shipments)
Packaging	Vacuum-sealed moisture barrier + plywood crate + steel strapping

## Installation & Commissioning — Turnkey Services

Metal-Asia Industrial Solutions provides comprehensive **Installation & Commissioning (I&C)** packages for clients without in-house mechanical integration capabilities.

Phase	Deliverables	Duration
Site Readiness Review	Foundation load analysis, electrical schematics, ventilation requirements, crane specifications	1–2 weeks pre-delivery
Mechanical Installation	Machine levelling, decoiler alignment, hydraulic & pneumatic connections, guarding installation	3–5 days
Electrical & Control Integration	Power hook-up, IPC commissioning, network configuration, safety circuit verification	2–3 days

Phase	Deliverables	Duration
<b>Calibration &amp; Trial Run</b>	Roll gap setting, punch-die alignment, cutoff length calibration, material feed calibration	2–3 days
<b>Operator Training</b>	Machine operation, Vertex Design fundamentals, tool change procedures, preventive maintenance	3–5 days
<b>Production Ramp-Up</b>	Supervised first-batch production, quality verification, throughput optimisation	1–2 days
<b>Warranty Period</b>	12 months from FAT (Factory Acceptance Test) sign-off, inclusive of remote diagnostics & on-site response	12 months

Our field-service engineers are deployed globally across EMEA, APAC, and the Americas. All travel, accommodation, and visa costs are included in the I&C package. For shipping and logistics details, refer to our [Global Delivery Services](#).

## Supply Chain Risk Management — Why Direct Procurement from China Fails Without a Compliance Partner

Global procurement of capital equipment from Chinese manufacturers involves documented risks. Metal-Asia Industrial Solutions mitigates these through a formalised **Vendor Qualification & Supply Chain Compliance** programme.

Risk Category	Consequence Without Compliance Partner	Our Mitigation Protocol
<b>Unverified Factory</b>	Receipt of substandard equipment, missing documentation, supplier disappearance post-payment	<a href="#">Factory Qualification Audit</a> — we audit every facility against ISO 9001, Machinery Directive, and 5-year trading history before contract placement
<b>Specification Drift</b>	Equipment arrives without ordered options; unauthorised component substitutions	<a href="#">Pre-Shipment Factory Acceptance Testing (FAT)</a> — every machine is run against the signed technical specification; photo/video evidence provided to client
<b>Logistics &amp; Customs Complexity</b>	Port delays, incorrect HS classification, demurrage charges	In-house customs brokerage & freight-forwarding team. <a href="#">Global Trade Compliance &amp; Customs Clearance</a> — active since 2016
<b>Post-Sales Service Vacuum</b>	Critical breakdown with no local support; 48–72-hour email delays from factory	Regional service hubs in EMEA and APAC. <a href="#">Industrial Automation &amp; Spare Parts Inventory</a> — 4-hour response SLA
<b>Communication &amp; Specification Errors</b>	Poorly translated technical requirements; mismatched expectations	Bilingual engineering team (EN/CN) stationed at factory. <a href="#">Technical</a>

Risk Category	Consequence Without Compliance Partner	Our Mitigation Protocol
		<a href="#">Specification Development</a> — we draft specifications in English and enforce them
<b>Payment &amp; FX Risk</b>	Frozen funds, currency control issues, advance-payment fraud	<a href="#">Trade Finance &amp; Escrow Services</a> — documentary letters of credit, escrow accounts, milestone-based payments
<b>Regulatory Non-Compliance</b>	Equipment fails CE/UL/local certification; cannot be legally commissioned	<a href="#">Technical Compliance Audit</a> — pre-order verification against destination-market Machinery Directive and electrical codes

## Incoterms 2020 — Delivery Options

Term	Scope	Lead Time
<b>EXW</b>	Ex-Works factory gate, Xiamen, China	45–60 days production
<b>FOB</b>	Free On Board, Xiamen port	45–60 days + 3 days loading
<b>CIF</b>	Cost Insurance Freight to destination port (e.g., Rotterdam, Hamburg, Sydney, Los Angeles)	45–60 days + 25–40 days ocean transit
<b>DAP</b>	Delivered At Place — door-to-door including customs clearance & local delivery	75–100 days total
<b>DDP</b>	Delivered Duty Paid — comprehensive door-to-door with all duties, taxes, and clearance	80–110 days total

## Frequently Asked Questions (FAQ)

**Q1: What is the total project timeline from purchase order to first production?** A: With a confirmed specification, total elapsed time is 75–100 days: production (45–60 days) + ocean freight (25–40 days) + customs clearance (5–10 days) + installation & commissioning (7–10 days).

**Q2: Is the Vertex Design licence a recurring cost?** A: No. A perpetual, non-expiring licence for Vertex Design is included in the standard scope of supply. Installation and introductory training are included in the I&C package.

**Q3: What electrical infrastructure is required?** A: Standard industrial 380 V / 50 Hz / 3-phase supply with 15 kW available capacity. A dedicated circuit breaker and earth-leakage protection are recommended.

**Q4: What feedstock steel is required?** A: Hot-dipped galvanised coil, 174 mm width, 0.6–1.2 mm thickness, G300–G550 grade per EN 10346 or ASTM A653. We can bundle coil procurement via our [Global Steel Sourcing Programme](#).

**Q5: Is operator training included?** A: Yes. A 3–5 day training programme (machine operation + Vertex Design fundamentals) is standard with every turnkey installation. Advanced CNC programming modules are available as an option.

**Q6: What warranty coverage is provided?** A: 12 months from Factory Acceptance Test (FAT) sign-off. Coverage includes replacement parts, remote diagnostics via secure VPN, and on-site engineer dispatch for critical failures.

**Q7: Do you maintain a spare parts inventory?** A: Yes. We stock forming rolls, punch dies, cutoff blades, hydraulic seals, and servo components in regional hubs. Typical dispatch lead time is 1–3 business days. Full catalogue: [Industrial Automation & Spare Parts](#).

**Q8: Can we witness the Factory Acceptance Test (FAT) before shipment?** A: Absolutely. We facilitate live video-streamed FAT sessions from the factory floor. On-site witness visits to Xiamen with our engineering escort can also be arranged (travel costs borne by client).

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## Contact & Procurement

Detail	Information
<b>Company</b>	Metal-Asia Industrial Solutions
<b>Website</b>	<a href="http://www.metal-asia.pw">www.metal-asia.pw</a>
<b>Division</b>	Global Procurement — Light Gauge Steel Equipment
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<b>Office Locator</b>	See <a href="#">Contact Directory</a>

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**Request a Quotation:** Submit your technical requirements through our [main procurement portal](#) or email [procurement@metal-asia.pw](mailto:procurement@metal-asia.pw). Our engineering team responds within 4 business hours with a detailed proposal including specification, lead time, and Incoterms pricing.