

LGSConverter

Light Gauge Steel File Conversion Platform

User Guide & Reference Manual

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1 Introduction

1.1 What is LGSCConverter?

LGSCConverter is a cloud-based platform that converts architectural and structural BIM files into machine-ready output for Light Gauge Steel (LGS) roll-formers. Engineers and fabricators upload files from design tools such as FRAMECAD Detailer, Revit, ArchiCAD, or other IFC-compliant authoring software. The platform parses the structural geometry, classifies every steel member, assigns fabrication tooling (notches, swages, dimples, service holes), and produces a machine CSV that can be sent directly to the roll-former.

The 2D Frame Editor lets engineers inspect and adjust every panel before export, ensuring that the machine file exactly matches engineering intent. A built-in QA report flags potential issues such as overlapping members, out-of-tolerance geometry, or unrecognised member types so problems are caught before reaching the factory floor.

Key benefits

- * Converts IFC, FrameCAD XML, and FCP files in a single workflow.
- * Interactive 2D frame editor with live tooling preview.
- * Multiple machine profiles: PINNACLE, DHA (Dahzeb), SUSSMAN, ZEE (Howick).
- * Per-linear-metre billing -- pay only for what you export.
- * Browser-based -- no software installation required.
- * Role-based access: engineer review before fabrication release.

1.2 Supported file formats

IFC (.ifc)	Industry Foundation Classes. Exported from FRAMECAD Detailer, Revit, ArchiCAD, or any IFC 2x3/IFC 4 compliant authoring tool. Preferred format for richest structural metadata.
FrameCAD XML (.xml)	Native export from FRAMECAD Detailer. Contains full member geometry, profile data, and pre-computed fastener locations.
FCP (.fcp)	FrameCAD binary project format. Parsed directly without requiring a Detailer installation. Clone panels are resolved automatically.
CSV (.csv)	Machine CSV overlay. Upload an existing machine file to remap it to a different machine profile or adjust clearance values.

1.3 System requirements

LGSCConverter runs entirely in the browser. No installation or plugin is required.

Browser	Google Chrome 110+, Mozilla Firefox 115+, Microsoft Edge 110+,
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or Safari 16+. Chromium-based browsers are recommended.

Internet

Stable broadband connection. File uploads of 50 MB or more benefit from 10 Mbps or faster.

Screen

Minimum 1280 x 800 px resolution recommended for the Frame Editor. The tool is functional but space-constrained on smaller displays.

Account

A registered LGSCConverter account with an active plan or top-up balance is required to export CSV files.

2 Getting Started

2.1 Creating an account

Navigate to the LGSCConverter homepage and click Sign Up. Enter your work email address and choose a password. A verification email will be sent; click the link inside it to activate your account. New accounts are reviewed by an administrator before full access is granted -- you will receive a confirmation email once your account is approved.

Note: Account approval is typically completed within one business day.
Contact support if you have not received approval after 24 hours.

2.2 Logging in

Go to the LGSCConverter homepage and click Log In. Enter your email and password. If you have forgotten your password, click 'Forgot password?' on the login screen to receive a password-reset link by email.

2.3 The main interface

After logging in you are taken to the Converter tool. The interface has five main areas:

Upload panel	Left side. Drag-and-drop zone for your source file. Shows conversion status and progress.
Project tree	Left sidebar (visible after conversion). Lists all plans (Walls, Trusses, Joists) and individual frames.
Frame canvas	Central area. 2D elevation view of the selected frame. Interactive editing tools appear in the toolbar above.
Export panel	Right side. Machine profile selection, export options, and the CSV/XML download buttons.
Account menu	Top-right. Access your Account dashboard, Tutorial, and Log Out.

3 Uploading & Converting Files

3.1 Supported input formats

LGSCConverter accepts IFC, FrameCAD XML, FCP, and CSV files (see Section 1.2). Files from non-FRAMECAD tools such as Revit IFC exports are fully supported; however, member classification may be less precise because non-FC IFC exports do not carry fabrication-specific metadata.

3.2 Uploading a file

Step 1 Click inside the upload zone, or drag your file directly onto it. Files up to 200 MB are accepted.

Step 2 The platform validates the file type and rejects unrecognised formats immediately. If validation fails, a red error message describes the problem.

Step 3 Once accepted, conversion begins automatically. A progress bar shows each processing stage: parsing, member classification, orientation solving, tooling assignment.

Step 4 When conversion is complete, the Project tree populates and the first frame is displayed in the canvas. A summary banner shows total frame count and total linear metres.

Important: Files with 50 or more frames may take 30-60 seconds to process.
Do not close the browser tab during conversion. Progress is not resumable if the tab is closed.

3.3 Conversion progress

The progress indicator shows four pipeline stages:

Parsing	Reading the file structure and extracting geometry.
Classification	Identifying each member's role: Stud, Plate, TopChord, BottomChord, Web, Brace, etc.
Orientation	Resolving member facing direction and lip-side handedness.
Tooling	Assigning fabrication marks: SWAGE, LIP NOTCH, WEB NOTCH, DIMPLE, service holes.

3.4 QA report

After conversion, a QA report is automatically generated. It flags structural or geometric issues that may require attention before export. Issues are classified into three severity levels:

Error (red)

A critical issue that will likely cause an incorrect machine file. Review and resolve before exporting.

Warning (amber)

A potential problem that may be intentional (e.g., short members, unusual angles). Verify before exporting.

Info (blue)

Informational note. No action required.

Common QA checks include:

- * Overlapping members within the same frame.
- * Members with out-of-tolerance length differences vs. the source file.
- * Unrecognised member types that could not be classified.
- * Frames missing a top plate or bottom plate.
- * Tooling marks that could not be resolved from the source geometry.

Auto-Fix: Some QA issues offer a 'Confirm & Apply' button that automatically resolves the problem (e.g., adjusting a member end to close a small gap). Review the proposed fix carefully before applying it.

4 Frame Editor

4.1 Overview

The Frame Editor provides an interactive 2D elevation view of each panel. Every steel member is drawn to scale with its profile visible (web, flange, lip). Fabrication tooling marks are overlaid in colour-coded notation matching FRAMECAD Detailer conventions: green lines for LIP NOTCH, red for WEB NOTCH, blue triple-lines for SWAGE, and small crosses for DIMPLE marks.

The toolbar above the canvas contains all editing tools. A properties panel shows the selected member's profile, coordinates, gauge, and assigned tooling.

4.2 Navigation & the project tree

The project tree lists all plans grouped by type: Walls, Trusses, and Joists. Click any plan to expand it and see the individual frames it contains. Click a frame name to load it in the canvas.

Within the canvas, use the mouse wheel to zoom and click-drag on empty space to pan. The zoom level and pan position are remembered per frame.

4.3 Selecting and inspecting members

Click any member in the canvas to select it. The properties panel shows:

- * Profile -- web depth, flange width, lip length, material gauge.
- * Coordinates -- start and end positions in frame-local millimetres.
- * Role -- structural classification (Stud, TopPlate, TopChord, Web, etc.).
- * Tooling -- list of all fabrication marks assigned to this member and their stations.

Hold Shift to select multiple members. Click on empty space to clear the selection.

4.4 Editing geometry

The following geometry tools are available in the toolbar:

Move	Drag a selected member to a new position. Hold Shift to constrain to horizontal or vertical.
Trim	Shorten a member end to the nearest intersecting member. Click the end you wish to trim, then click the target member.
Extend	Lengthen a member end until it meets another member. Useful for closing small gaps left by rounding in the source file.
Lengthen	Enter an exact offset value (positive or negative mm) to adjust a member end by a precise amount.
Break	Split a member into two at a selected point. Both resulting members

retain the original profile and role.

Delete

Remove the selected member(s) from the frame. Tooling is re-computed after deletion.

All geometry edits trigger a tooling re-computation for the affected frame.
Review the updated tooling marks in the canvas after each edit.

4.5 Tooling annotations

Tooling marks are computed automatically during conversion and updated after each geometry edit. You can also add manual annotation marks from the toolbar:

Service Hole	Circular penetration through the web at a specified station. Used for services routing (electrical, plumbing, HVAC).
Bolt	Fastener hole through the web at a specified station and height.
Web Notch	Manual WEB NOTCH mark at a specified station. Use when auto-tooling has not captured a required notch.

Auto-computed marks appear in the Marks panel with their type, station (mm from the member start), and source (PDF tooling, geometry, or fastener). Individual marks can be deleted by selecting them in the marks panel and pressing the delete key.

4.6 Structural properties

Two structural flags can be toggled per member:

Boxed (back-to-back)	Marks the member as a back-to-back C-section (box beam). The machine will roll two C-sections that are bolted together. Affects member width and tooling clearances in the CSV output.
Flipped	Reverses the member's lip orientation (the open side of the C-section faces the opposite direction). Use this to correct members where the auto-detected orientation does not match the drawing.

5 Exporting Machine CSV

5.1 Machine profiles

A machine profile maps LGSCConverter's internal tooling and role names to the exact codes your roll-former expects in its CSV input file. Each machine brand uses a different CSV schema; the profile handles the translation automatically.

Supported profiles

PINNACLE	PINNACLE roll-former. Outputs role names and tool codes in PINNACLE's proprietary format. Supports stud clearance overrides.
DHA (Dahzeb)	Dahzeb roll-former. Uses DHA gauge-to-profile mapping (e.g. 0.75 mm gauge -> 89S-41-0.8).
SUSSMAN	SUSSMAN roll-former series.
ZEE (Howick)	Howick ZEE series. Supports both metric and imperial profile lookup.

5.2 Running an export

- Step 1** Select your machine profile from the Export panel on the right.
- Step 2** Review the frame list. Frames that have been excluded (greyed out in the project tree) will not appear in the export.
- Step 3** Click Export CSV. The paywall modal appears if your remaining allowance or top-up balance does not cover the export's linear-metre total.
- Step 4** If balance is sufficient, the CSV is generated server-side and downloaded automatically to your browser's Downloads folder.
- Step 5** A confirmation banner shows the export date, total linear metres charged, and remaining balance.

Always verify the exported CSV against your machine's documentation before loading it onto the roll-former. All conversion results should be reviewed by a qualified LGS engineer before fabrication.

5.3 CSV format overview

The exported CSV contains one row per steel member. Columns vary by machine profile but typically include:

Frame / Panel ID	The panel identifier as it appears in the source file.
Member name	Role-based name (e.g. S1, P1, TC1, BC1) unique within the frame.
Profile code	Machine-specific stock code derived from web depth, flange, lip, and gauge (e.g. 89S-41-0.75).
Length (mm)	Cut length in millimetres.
Tool columns	One column per tool position, containing the tool ID (or blank if no tool at that position).

5.4 XML export

In addition to machine CSV, you can export a FrameCAD-compatible XML file. This is useful for re-importing edited geometry back into FRAMECAD Detailer, or for archiving the fully-annotated frame data in an open format. Click Export XML in the Export panel to download the XML.

6 Machine Settings & Profiles

6.1 Supported machines

LGSCConverter supports four roll-former families: PINNACLE, DHA (Dahzeb), SUSSMAN, and ZEE (Howick). If your machine is not listed, contact support -- additional profiles can be configured on request.

6.2 Configuring a machine profile

Each profile can be customised to match your specific machine setup:

Gauge mapping	Maps material thickness values in the source file to the stock code format used by your machine.
Tool ID mapping	Maps tooling type names (SWAGE, LIP NOTCH, WEB NOTCH, DIMPLE, SERVICE HOLE, BOLT) to the numeric or alpha codes your machine uses. Refer to your machine's programming manual.
Stud clearance	Adjustment applied to stud lengths to account for machine cut-off clearance. Typically 0-3 mm. Default: 0 mm.
Role name mapping	Maps internal LGSCConverter role names to the name format required by your machine CSV (e.g. TopPlate -> TP, Stud -> S).

6.3 Saving configurations

After customising your machine profile, click Save Configuration to store it under a name of your choice. Saved configurations appear in the Saved Configurations dropdown and are re-applied automatically on your next session. You can save multiple configurations (e.g. one per machine on your shop floor) and switch between them before each export.

7 Billing & Pricing

7.1 How billing works

LGSCConverter uses a per-linear-metre billing model. You are charged based on the total length of steel exported in each CSV download, measured in linear metres (LM). Uploading, converting, reviewing, and editing files never incurs a charge -- only the final CSV export is billed.

Tip: Use the Frame Editor to verify all frames before exporting. You can review unlimited times at no cost. Only click Export CSV when you are ready to fabricate.

7.2 Monthly allowance

Each subscription plan includes a monthly LM allowance that resets on your billing date. The allowance is consumed first when you export. If an export would exceed your allowance, the paywall modal offers you the option to top-up before proceeding.

7.3 Top-up credits

Top-up credits are purchased in addition to your monthly allowance and do not expire.

Step 1 Click your name in the top-right corner and select Account.

Step 2 Under Billing, click Top-up Balance.

Step 3 Select a credit package or enter a custom amount.

Step 4 Complete payment via credit card (Stripe) or PayPal.

Step 5 Credits are added to your balance immediately.

7.4 Viewing usage

Your Account dashboard shows:

- * Current balance (monthly allowance remaining + top-up credits).
- * Linear metres exported this billing period.
- * A history of all export transactions with date, frame count, LM, and amount charged.

8 Account & Settings

8.1 Account dashboard

Access your account dashboard by clicking your name in the top-right corner and selecting Account.

Usage summary	Linear metres exported this period, remaining allowance, and top-up balance.
Machine configs	View, rename, and delete your saved machine configurations.
Payment methods	Add or remove credit cards and PayPal accounts used for top-ups.
Billing history	Full transaction log with downloadable invoices.

8.2 Billing history

Each billing event (export or top-up) is recorded with a timestamp, a description, the LM or dollar amount, and a downloadable PDF receipt. Invoices are generated automatically and can be downloaded at any time from the Billing History section of the Account dashboard.

9 Troubleshooting

9.1 Common upload errors

Unsupported file type	Only .ifc, .xml, .fcp, and .csv files are accepted. Rename the file with the correct extension and try again.
File too large	The maximum upload size is 200 MB. Split large projects into multiple files if necessary.
Parsing failed	The file could not be read. This is usually caused by a corrupted file or an export from an unsupported tool version. Re-export from the source application and try again.
No frames found	The file was parsed but contained no recognisable LGS panels. Verify that the source file contains structural framing members and that the correct export settings were used.

9.2 QA failures

Overlapping members	Two or more members occupy the same space in the frame. Use the Frame Editor to move or trim the overlapping member.
Member too short	A member is shorter than the minimum fabricable length for the selected machine. Review whether the member is intentional or a geometry artefact.
Unclassified member	The platform could not determine the structural role of this member. Select it in the Frame Editor and manually assign a role from the properties panel.
Tooling not resolved	A junction between members could not be tooled automatically. Use the manual tooling annotation tools to add the required marks.

9.3 Export issues

Insufficient balance	Your monthly allowance and top-up balance combined are less than the LM total of this export. Purchase a top-up or reduce the frame selection.
CSV download does not start	Check that your browser is not blocking file downloads from this site. Allow downloads in your browser settings and try again.

Machine rejects the CSV

Verify that the correct machine profile is selected. Check the tool ID mapping against your machine's programming manual. Contact support with the exported CSV and your machine model.

9.4 Contact support

If you cannot resolve an issue using this guide, contact the LGSCConverter support team:

- * Visit the Contact page from the main menu and submit a support request.
- * Include the project file (if possible), a description of the problem, and the frame or member name where the issue occurs.
- * For urgent fabrication blockers, mark your request as Urgent.

Support hours: Monday - Friday, 8 am - 6 pm AEST.

Response time: within 4 business hours for standard requests,
within 1 business hour for requests marked Urgent.

10 Glossary

Bottom Chord (BC)	The lower horizontal structural member of a truss panel. Resists tensile forces under roof loading.
Bottom Plate (BP)	The horizontal C-section at the base of a wall frame, connecting studs to the slab or floor.
Boxed member	Two C-sections placed back-to-back to form a closed box beam. Used for heavily loaded columns and beams.
DIMPLE	A small pressed indentation in the web of a member, used to locate a screw fastener at a precise position without pre-drilling.
FCP	FrameCAD Project binary file format. Contains all panels for a building project.
IFC	Industry Foundation Classes. Open BIM standard file format (.ifc) used to exchange building model data between authoring tools.
LGS	Light Gauge Steel. Cold-formed thin-gauge steel sections used for structural framing of residential and commercial buildings.
Linear metre (LM)	One metre of steel measured along the length of the member. Used as the billing unit for CSV exports.
LIP NOTCH	A rectangular notch cut into the lip of a C-section where another member passes through or seats against it. Allows flanges of both members to sit flush.
Machine profile	A configuration file that maps LGSCConverter's internal tooling and role names to the exact codes required by a specific roll-former's CSV input format.
Nog	A horizontal C-section bridging between studs within a wall frame. Provides lateral restraint and a fixing point for wall linings.
Roll-former	A machine that cold-forms coiled steel strip into C-section members and punches tooling marks in a single pass. Controlled by a machine CSV file.
SWAGE	A series of pressed dimples along a member used as an alternative fastening method to screws. Typically three dimples at a fixed pitch.
Stud	A vertical C-section in a wall frame running from the bottom plate to

the top plate.

Top Chord (TC)

The upper structural member of a truss, typically angled to match the roof pitch. Resists compressive forces under roof loading.

Top Plate (TP)

The horizontal C-section at the top of a wall frame, connecting the studs and providing a bearing surface for the floor or roof above.

WEB NOTCH

A rectangular notch cut into the web of a C-section where a perpendicular member passes through. Larger than a lip notch; used for web-side intersections.

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