SS-PROFILE™ Feature List

SS-Profile is a comprehensive programming software solution for CNC laser, plasma, oxy-fuel, waterjet, and other two-axis cutting machines. SS-Profile can be used independently for motion-optimized NC programming and interactive nesting, or combined with SS-Nest for the ultimate in automated nesting.

APPLICATION OF CUTTING

SS-Profile supports the application of the tool-path to parts dynamically during NC processing, or the tool-path can be pre-applied to parts and maintained in the part library for ongoing use. Application of the tool-path is material based to utilize OEM-specific technology tables, and dictates cutting parameters including contour process type, such as cutting or etching, default cut sequence of internal contours, and the lead in/out details including location, type, and size. Tabs can be interactively applied to the tool-path, or automatically applied during NC processing. SS-Profile also provides advanced single-contour and global editing tools giving you ultimate control over your cutting process.
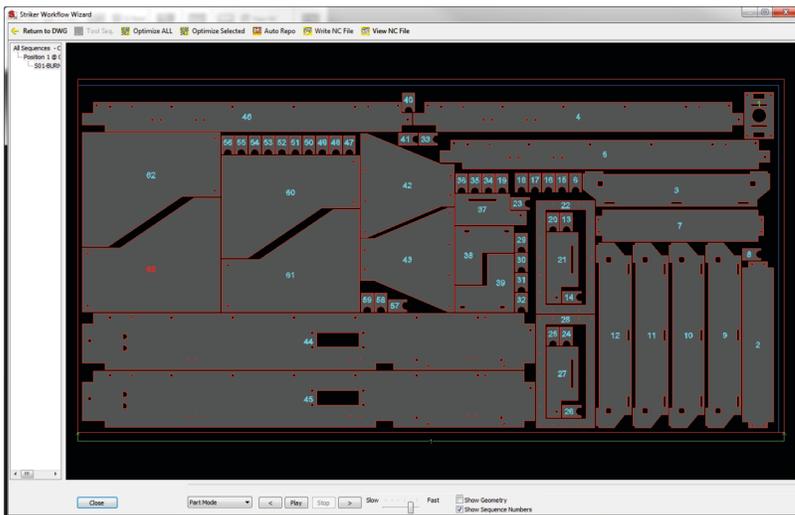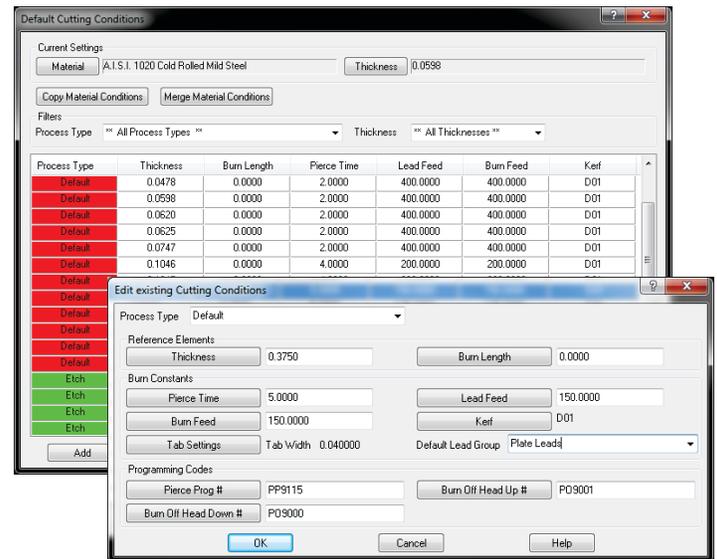
COMPREHENSIVE NC

SS-Profile creates industry standard G and M codes using OEM-specfic technology tables on the CNC machine controller.   You can incorporate desired cutting features including part and shape sub-programs, automatic tabbing, coating vaporization, pre-piercing, bridge cutting, head-down processing, skeleton scrap destruction, and more. If you have special NC code formatting requirements, the Striker Systems technical team will work with you to achieve your desired results.

ADDITIONAL SS-PROFILE FEATURES INCLUDE:

- Auto & Interactive Tool-Path Assignment
- CNC Machine Drivers Available for Virtually all Cutting Machines
- Interactive Nesting Included
- Material Based Cutting Parameters
- Leads Automatically Applied Based on Material & Process
- Automatic Geometry Error Correction
- CNC Machine Runtime Estimates

- Multiple Process Support (i.e. Cutting, Etching, etc)
- Vaporize Coating
- Pre-pierce all Start Points Before Cutting
- Quickly Modify Cutting Parameters
- Common Edge Cutting
- Auto Tab Placement
- Drop Door Support
- Bridge Cutting
- Chain Cutting

- Optimum Corner Processing
- Multiple Cut Sequence Optimization
- Head Down Processing w/ Collision Avoidance
- Sub-Program / Macro Support
- Auto Skeleton Destruction
- Auto Plate Cropping
- Tool-Path Viewing / Simulation

SS-Profile Key Benefits

- Fully automatic and interactive control over all aspects of the CNC profile cutting process including tool-path application, lead in/out control, tool-path optimization, and more.

- Machine Drivers available for virtually all CNC profile cutting machines including laser, plasma, oxy-fuel, and waterjet machines. Integrates with SS-Punch to support hybrid laser-punch and plasma-punch machines.

- Automation support including Flexible Manufacturing Systems (FMS), Production Cells, and Part Sorting Systems.

- Interactive nesting included. Automatic nesting available offering interface to your MRP, ERP, or other production scheduling software.

- Unsurpassed Flexibility. Easily incorporate part or process revisions.

- Direct interface to Autodesk Inventor, SolidWorks, and Solid Edge.

- Uses the industry standard AutoCAD DWG file as the native file format. This eliminates proprietary files that can't be opened by any other software.

- Available as a stand-alone application or, for AutoCAD users, as a plug-in to the latest AutoCAD or AutoCAD Mechanical software.

SS-Profile Feature List

The following partial feature list is intended to provide a more thorough look at the capabilities of SS-Profile CNC cutting software. Although comprehensive, it should not be considered all inclusive.

- **Automatic Tool-Path Assignment** – The tool-path represents all of the information necessary to generate the NC program. This includes cutting parameters and lead-in/out information. The tool-path is easily added to a single part, a group of selected parts, or an entire nest job. This can be an interactive process of selecting the part(s) to process, or fully automated during batch import of CAD files or nest job processing.

- **Material Based Cutting Parameters** – Cutting parameters are associated to a specific material type, thickness, and length of cut. This allows SS-Profile to create NC code optimized for your machine and cutting requirements.

- **Material Based Leads** – SS-Profile provides extensive control over lead-in and lead-out operations. The type, size, and default location of the leads can be dynamic based on specific part criteria. Lead definitions can be associated to specific materials to optimize lead selection.

- **Multiple Process Support** – SS-Profile supports multiple processes to automate such operations as laser etching. Each process can be set up with its own set of cutting parameters. The process can then be associated to a specific CAD layer name. If that layer is encountered during tool-path application, the associate cutting parameters are automatically applied to the objects on that layer.

- **Modify Cutting Parameters** – Although cutting parameters are initially assigned based on shape and material properties, it is a very easy process should it become necessary to adjust the cutting parameters on any existing tool-path.

- **Modify Lead Parameters** – Although leads are initially assigned based on shape and material properties, it is a very easy process should it become necessary to adjust the lead type, size, or location on an existing tool-path. Changes to lead parameters can be limited to the selected shape, or globally applied within the selected part.

- **Lead Location Override** – SS-Profile includes a batch lead location override that allows movement of leads to a common location on selected part(s).

- **Automatic Tab Placement** – It may be necessary to leave tabs on parts for a variety of reasons including keeping smaller parts from tipping and introducing a collision potential, to keep parts from warping due to heat build-up, or to hold parts into place on non-flying optic machines. Regardless of the reason, SS-Profile offers both automatic and interactive placement of tabs. In an automatic mode, tab parameters are dictated by the material properties. The number of tabs placed is user configurable based on the size of the shape to be tabbed.

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- **Automatically Grid Parts** – Quickly grid parts based on quantity requirements or sheet size. Output NC program as individual parts or a part macro.

- **Advanced Tool-Path Editing Interface** - Comprehensive interface includes modification of lead types and locations, cut direction, kerf, cut sequencing, and head up/down control.

- **Automatic Part Labeling** - Automatically position part numbers and other desired part information to parts for automatic etching.

- **Tool-Path Viewing/Simulation** – SS-Profile provides numerous utilities to view/edit the tool-path on individual contours, on parts, or on multiple part nested layouts.

- **Enhanced Cut Sequence Optimization** – SS-Profile provides cut sequence optimization of both internal contours and part to part. Both automatic and interactive optimization utilities are included. This minimizes machine travel and improves throughput.

- **Workflow Wizard Optimization Defaults** - The Workflow Wizard now allows a default optimization setup to be maintained with each CNC machine driver, meaning that the programmer no longer needs to adjust optimization settings between CNC machine drivers.

- **Spline/Ellipse Conversion** – When processing CAD geometry it is not uncommon to encounter spline objects. A spline object cannot be interpreted by a machine, and therefore must be converted to equivalent line/arc geometry. SS-Profile includes an automatic spline conversion feature that operates within a user-specified acceptable tolerance.

- **Drop Door Support** – Parts can be automatically dropped or interactively assigned a drop door definition. In an automatic mode a drop door definition can be assigned to a part based on part size. This definition includes the push out distance, therefore insuring proper part ejection.

- **Common Edge Cutting** – Common edge cutting makes a single cut between two adjacent parts that share a common line. Common edge cutting can significantly reduce the number of pierces and cutting length required.

- **Bridge Cutting** – Bridge cutting is a technique of continuous cutting of external contours with a single pierce. It creates a small tab (or bridge) between adjacent parts enabling the CNC cutting machine to quickly cut each part without lifting the head. This can significantly reduce pierce times thereby improving machine throughput. SS-Profile automates the bridge cutting process on selected parts or an entire nest job.

- **Chain Cutting** – Chain cutting is a pierce reduction technique where all internal contours are first processed and then external contours are cut in a chain operation. The lead-out of each part continues cutting to the lead-in of the subsequent part.

- **Head-Down Processing with Collision Avoidance** – The process of lifting the head on a CNC laser to move from one cut to another can add significant process time to a nested layout. Ideally the laser head would remain in the lowered position as it moves from one contour to the next; however, in the event that a previously cut shape has tipped the potential for a head collision is introduced. To overcome this issue and minimize machine runtime, SS-Profile includes head-down processing with collision avoidance. Lead locations are analyzed along with cut sequence and a new path is calculated that minimizes part crossover. The laser head is then operated in the lowered position except where absolutely necessary for collision avoidance.

- **Automatic Corner Ramping** – For optimized cut quality, SS-Profile provides automatic detection and adjustment of cutting parameters when cutting around corners.

- **Corner Looping** – Corner looping is a means of improving cut quality on sharp corners of external contours by cutting beyond the edge of the contour, performing a loop, and reentering the contour on the subsequent edge.

- **Reposition Support** – For machines with automatic sheet reposition capability, simply activate the automatic reposition control and sheet repositions are assigned to process contours that fall beyond the machine cutting limits.

- **Work Clamp Support** – For CNC machines with work clamps, SS-Profile provides full support including automatic placement with collision detection.

- **Setup Sheet Creation** – At the time the NC program is created, SS-Profile automatically creates a report with the desired information for machine setup. A report template is provided to adjust that output to your organization.

- **Advanced CAD Features** – Unlike many punching solutions that offer rudimentary design capability, SS-Profile provides a powerful CAD solution. SS-Design is bundled with every SS-Profile purchase, so the features of SS-Design should also be considered when comparing product features.

- **Reverse Engineering (Back Plotting)** – SS-RevEng can be added to SS-Profile to facilitate reverse engineering needs. Existing NC programs can be read and recreated in the SS-Profile workspace.

- **PARTshare** – The precision sheet metal industry has rapidly embraced solid modeling technology. SS-Profile takes full advantage of this technology by including the PARTshare module with every SS-Profile purchase.

- **DNC Communications** – SS-Profile includes DNC communications software to handle basic requirements. For more sophisticated DNC implementations Striker Systems offers SS-DNC, a comprehensive NC program transfer system.