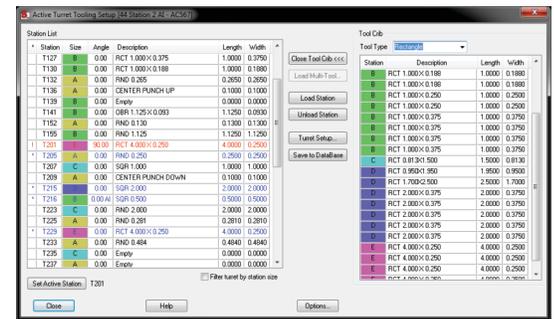


SS-PUNCH™ Feature List

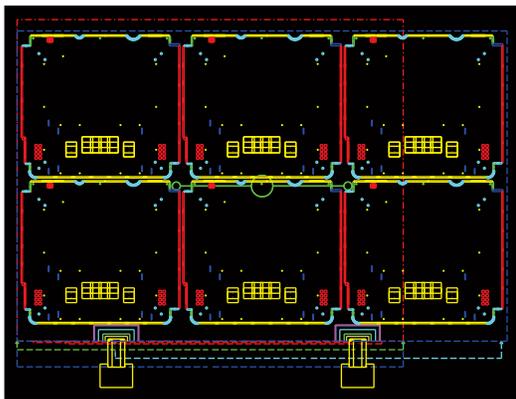
Take control of your CNC punch programming. SS-Punch provides complete management of your punching process, from fully automatic to completely interactive. And SS-Punch's unique CAD/CAM environment delivers unsurpassed flexibility.

Advanced Tooling Setup and Control

SS-Punch includes an advanced tooling database that is the heart of the automatic punching features. Usage parameters can be assigned to each tool providing greater control over tool selection and use. One or more default tool loads (turrets) can be saved and retrieved as needed for specific punching jobs. Tools can be locked into a station, or a station can be unlocked allowing SS-Punch to automatically select and load tools as necessary. The user friendly tooling interface provides drag and drop loading and unloading of tools, with user configurable color coding of tools and stations.



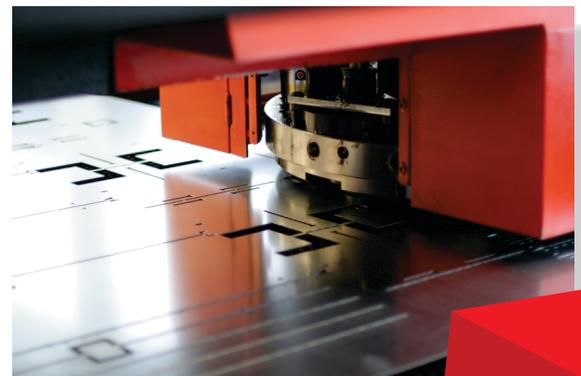
ADAPTABLE PUNCHING TECHNOLOGY



One of the more time consuming aspects of CNC punch programming is achieving the desired application of tool hits. There may be numerous ways to punch a part; but only one that meets your standards. SS-Punch provides extensive control over the punching process with both standard and special tools. Additionally, you can "teach" SS-Punch how to process specific geometric configurations through geometric pattern recognition. You're able to define your own punching rules.

COMPREHENSIVE NC PROCESSING

Whether you're processing a single shear-to-size part or a complex nested layout, SS-Punch automates many aspects of the NC code generation process. You have unprecedented control over tool selection sequencing, tool-path optimization, automatic repositioning and creation of NC programs. And with the new SS-Punch Workflow Wizard, you're provided with immediate visual feedback of the punching process.



SS-Punch Key Benefits

- Fully automatic and interactive control over all aspects of the CNC turret punch press programming process including tool selection, tool sequencing, tool-path optimization, repositioning, and more.
- Machine Drivers available for virtually all CNC turret punch press and combination (punch-laser, punch-plasma, punch-shear) machine tools.
- 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-Punch Feature List

The following partial feature list is intended to provide a more thorough look at the capabilities of SS-Punch turret punch press CAD/CAM software. Although comprehensive, it should not be considered all inclusive.

- **Automatic Punching** – Simply select the desired part(s) to be processed and SS-Punch applies tool hits based on a user defined set of rules.
- **Auto Punching Interface** - An auto punching interface allows parts to be punched in “preview” mode prior to being accepted.
- **Interactive Punching** – SS-Punch includes an entire set of commands for interactive insertion and positioning of single tool hits or cycles. Once placed, tool hits can also be moved, copied, rotated, etc, as desired.
- **Intelligent Concentric Circle Processing** - Automatic processing of concentric circular geometry that primarily benefits tapping and countersink operations.
- **Automatic Tool Substitution & Reprocessing** - Advanced tool substitution functionality that greatly simplifies the replacement of pre-existing tooling and tooling cycles present on a part.
- **Additional Auto Punching Control** - Additional user-settings have been added to the SS-Punch interface to better control automatic tool selection during auto punching operations.

- **Improved Auto Punching Algorithms** - The auto punching algorithms have been improved potentially providing better tool selection and usage during auto punching operations. This minimizes the need for manual intervention during punching operations.
- **Pattern Recognition** – Geometric patterns can be interactively tooled as desired and then saved in a “pattern library”. If that geometric pattern is encountered in any future punching operation, it will be processed with the predefined tooling. This allows SS-Punch to adapt to your unique punching requirements.
- **Sustained Shear Gap** - When punching part perimeter edges that include small notches, a shear gap variable can be set to punch across notches up to a designated width. This can better optimize the NC code and potentially reduce tool changes.
- **Micro-Joint (Tab) Placement** – SS-Punch includes full support of micro-joint placement and editing, including support for special tools such as trapezoid and bowtie tools.
- **Improved Tabbing Command Flow** - The number of mouse operations to place tabs (micro-joints) has been significantly reduced.
- **Improved Manipulation of Punched Parts** - Punched parts can now be manipulated (i.e. moved, copied, rotated) without having to window select all objects.
- **New Clone Part Command** - Revisions to a punched part (i.e. changed hole size) can be quickly propagated to other instances of the part on the layout.
- **Improved Turret Dialog** - The Tool Crib section of the turret dialog now displays additional details of each tool and a thumbnail image of special tools without having to click into the tool dialog. This makes it much easier to identify and load special tools, particularly if the special tool inventory includes a large number of special tools with similar names.
- **Advanced Turret Interface** – The turret configuration is accessed through a user-friendly dialog system. Tools can be loaded or unloaded with drag-and-drop simplicity. Tools and stations are color coded for enhanced visualization. Tool tips can be optionally enabled to provide detailed tool and station information as the cursor is positioned over dialog entries.
- **Adaptable Turret Configuration** – Many organizations operate with a standard tool setup, rarely if ever changing tools. Others change tools with every job. Most fall somewhere in between. When performing automatic punching operations, SS-Punch can be configured to limit its tool selection only to the tools in the active turret. It can also be configured to allow unlimited tool selection from the tool crib. Most SS-Punch customers operate with a partial restriction on tool loading. They “lock” a subset of their turret stations, disabling the automatic tool load of these stations. Other stations are left “unlocked”, allowing the automatic tooling process to select and load tools as necessary. This flexibility allows SS-Punch to adapt to your specific production requirements.

- **Multiple Turret Support** – SS-Punch allows an unlimited number of turret configurations to be established with a user specified name. This allows specific tool loads to be saved for specific customer or job requirements.
- **Comprehensive Tool Definition** – When a new tool is created with SS-Punch, the definition includes all of the information necessary to provide the greatest control over tool use. This includes a “Usage” option allowing tool use to be limited to specific circumstances, a “Sequence Priority” providing absolute control over tool sequence, a “Special Codes” feature allowing tool specific output in the NC program (such as a dwell on a forming tool), and a “Preferred Station” setting controlling the turret station that a tool will be loaded in during automatic tool selection.
- **Die Clearance Support** – Support for die clearances can be turned on or off. With die clearance support enabled, a die with clearance for the current material must be available for each tool used.
- **Station Size Adaptor Support** – Station size adaptors can be created to allow tools to be loaded into larger station sizes.
- **Tool Load Optimization** – SS-Punch can automatically adjust the tool load to minimize turret rotation; thereby decreasing machine run time.
- **Cross Posting** – If it becomes necessary to take part(s) that were tooled for one CNC machine and output an NC program for a different CNC machine with a different turret configuration, the SS-Punch cross posting feature can be used to map the tooled part(s) to the new turret.
- **Automatic Tool Sequence** – Tool selection can be automatically sequenced based on a variety of criteria including tool type, assigned tool priority, tool size, etc. For environments with a standard tool load, the turret stations can also be placed in the desired sequence.
- **Interactive Tool Sequence** - SS-Punch also offers a number of interactive tool sequence utilities, including the ability to interactively order from a list of in-use tools. Subsets of tool hits can also be selected to define a new tool sequence.
- **Auto Punching Can Load Tools in Reverse Station Order** - If tools are being auto loaded during auto punching, the tool load can now start at end of the station sequence and work forwards. (i.e. 345, 344,..244, 243,..100). For triple-track turrets this allows stations with the lowest table reach to be auto loaded first.
- **Tool-Path Optimization (Automatic)** – SS-Punch provides automatic tool-path optimization to minimize CNC machine run-time. The optimized tool-path is controlled by a pre-defined set of user rules.
- **Tool-Path Optimization (Interactive)** – Creating the perfect tool-path for a CNC punch is occasionally a challenge, particularly with tooling considerations such as forming tools. SS-Punch includes a comprehensive set of utilities that allow you to define your desired tool-path. Optimization can be as basic as picking the tool hits in the order that you would like them processed, with the ability to throw in no-punch moves to drive the punch machine to locations where no tool hits exist.

- **Workflow Wizard Optimization Defaults** - The Workflow Wizard now allows a default optimization setup to be maintained with each CNC machine driver. The programmer no longer needs to adjust optimization settings between CNC machine drivers.
- **Spiral Optimization** – When processing a large number of tool hits in a grid or perforated pattern, it is possible that the sheet will begin to curl or bow. To overcome this condition, SS-Punch includes a spiral optimization technique that begins with a user-selected tool hit and spirals the tool-path out to the edges.
- **Tool-Path Simulation** – The tool-path can be reviewed at any time with SS-Punch's tool-path simulation. Tool hits can be stepped through one at a time, by tool sequence, or full simulation.
- **Automatically Grid Parts** – Quickly grid parts based on quantity requirements or sheet size. Output NC program as individual parts or a part macro.
- **Automatic Perforation** – Create perforated patterns from any closed boundary. Supports individual tool hits or cluster tools.
- **Reposition Support (Automatic)** – Activate automatic reposition control and sheet repositioning automatically occurs whenever tool processing extends beyond the punching limits or when an avoidance move is required to clear a clamp dead-zone. SS-Punch's repositioning offers numerous features such as repositioning left to right or right to left, and the option to hold as many tool hits as possible to the last positions.
- **Reposition Support (Interactive)** – During interactive repositioning, the table is placed into a “drag and drop” mode and can be visually positioned at the desired location. Once a reposition has been defined, the processing of tool hits can be easily moved from one position to another if desired.
- **Work Clamp Placement (Automatic)** – If automatic work clamp placement is turned on, SS-Punch will position the work clamps at the most optimal location (based on user definition) to minimize the number of repositions required.
- **Work Clamp Placement (Interactive)** – One of the nice features about operating in a truly integrated CAD/CAM environment is the flexibility to manipulate objects. To interactively position a clamp, simply use the Move command and drag it to the desired location. It will automatically lock in to a user-defined increment position.
- **Programmable Work Clamp Support** – If your punch machine offers programmable work clamps, they are fully supported and optimized for the fewest moves.
- **Flip / Rotate Sheet** – If you're running an oversized sheet with tool hits outside of your punching limits in the Y axis, SS-Punch will automatically detect the hits and offer the options of either flipping or rotating the sheet as necessary. A description of the operation is also output as a comment in the NC program to provide guidance to the punch machine operator.

- **Rolling Tool Support** – SS-Punch offers optional support of rolling tool technology such as the Wilson Wheel® line of rolling tools.
- **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.
- **Automated Part Removal** – SS-Punch offers optional support of advanced part removal systems such as the TRUMPF® TRUMALIFT, Murata® Machinery FG, and Amada® ULX systems.
- **Auto Sheet Trim** – Automatically trims the desired edge(s) of a sheet by a specified distance. Useful for specific applications requiring sheet squaring.
- **Setup Sheet Creation** – At the time the NC program is created, SS-Punch automatically creates a report with the desired information for punch machine setup. A report template is provided to adjust that output to your organization.
- **Tool images Displayed in Setup Sheet** - Images of all tools can be included in the setup sheet at the tool load angle. This helps the machine operator verify accurate tool load, particularly with special tools.
- **Setup Sheet Tool Sorting** - Tools can now be listed on the setup sheet in the turret station order (i.e. 101, 202, 303, etc.). This is helpful in multi-track turret loading as the setup sheet station sequence now matches physical station order.
- **Advanced CAD Features** – Unlike many punching solutions that offer rudimentary design capability, SS-Punch provides a powerful CAD solution. SS-Design is bundled with every SS-Punch 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-Punch to facilitate reverse engineering needs. Existing NC programs can be read and recreated in the SS-Punch workspace.
- **PARTshare** – The precision sheet metal industry has rapidly embraced solid modeling technology. SS-Punch takes full advantage of this technology by including the PARTshare module with every SS-Punch purchase.
- **DNC Communications** – SS-Punch includes DNC communications to handle basic requirements. For more sophisticated DNC implementations Striker Systems offers SS-DNC, a comprehensive NC program transfer system.