

REDUCE TIME & ELIMINATE WASTE

The big challenge facing today's sheet metal fabricators is how to reduce or eliminate waste in manufacturing. One way to accomplish this is by doing as much of the fabrication process as possible on the punch press and avoiding secondary operations. Wilson Tool has a wide range of tooling designed to maximize the potential of the punch press and eliminate the waste associated with secondary operations.



Safe Edges

When sheet metal is cut or punched, the resulting edge is often sharp or burred. If additional handling is needed, these sharp edges present an obvious safety risk. Sharp edges and burrs can also be dangerous if cables or hoses are going to be passed through the hole. Traditionally, a rubber or plastic insert or grommet would be added, usually by hand, in an assembly area away from the punch press. Alternatively, components are de-burred using a separate de-burring machine. For a Lean company there are obvious wastes involved: transporting the materials, performing an unnecessary process; taking up an employee's time and effort in performing an unnecessary task. These wastes can be eliminated by doing the work on the punch press.



Rollover

The first step is a form up extrusion tool; either round or obround. The second tool rolls the walls of the extrusion over to form a safe edge. No grommets or inserts required.

De-burring

The De-burring tool allows punched edges to be de-burred quickly and effectively. The tool can de-burr very small diameters and acute angled corners and, because of its design, can even be used on micro-jointed components without breaking them.



ELIMINATING SECONDARY OPERATIONS

Connective Forms

Fastening parts typically requires a labor-intensive assembly process like spot welding, screwing or clipping, and often demands separate hardware. Connective forming tools for the punch press allow you to create fasteners directly on the part and avoid time-consuming secondary operations. Wilson Tool International connective forming tools fall into two categories: common tools you've likely used for other purposes, and those that are made specifically for fastening.

Familiar Forms that Double as Connectors

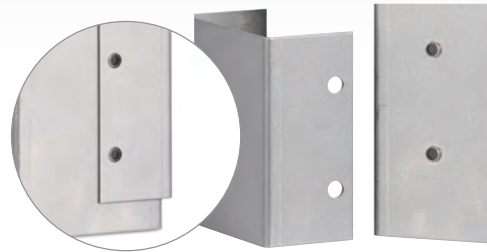


Lance and Form

Lance and Forms work in air flow, card guide and other roles. For fastening, slide a lance and form into a rectangular hole to securely join two parts.

Extrusion or Half Shear

Extrusions or half shear forms can serve as screw holes, tube holders, locators and more. When paired with a round hole, the extrusion or half shear snaps and locks two parts in place.



Louver

Louver forms typically create vents for airflow. However, a louver and a rectangular hole work like a tab and a slot to securely hold parts together.

Tapping Tools

When a component requires a thread, metal bushes or inserts are typically used. This usually requires a machine or apparatus to fix them into the sheet, which means transporting parts to a separate work area for completion. Both of these costs are eliminated if the thread can be made directly on the punch press.

In Machine Tapping

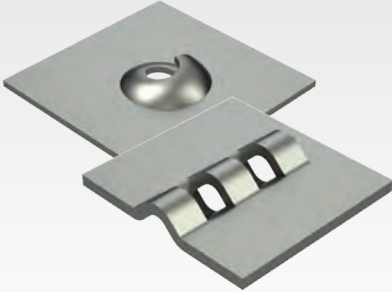
Wilson Tool offers tapping tools which produce stable, reliable threads in sheet metal at a fraction of the cost of inserts and bushes. The first step is to make an extrusion, followed by the thread forming tool. Threads produced in this way are roll formed, rather than cut, resulting in increased strength and resistance for longer life and consistent performance.



ELIMINATING SECONDARY OPERATIONS

Forms Made for Connecting

These forms are made using connective tools that are specifically designed for part assembly. Form threads, hinges and other connectors that create a secure bond between parts with the following tools.



Thread Form and Thread Loop

These forms eliminate the need for secondary threading operations. Simply formed in the punch press, these thread forms emerge ready for fastening.

Triple Lock

A Triple Lock tool creates a form that is used to secure nuts and bolts in your material.

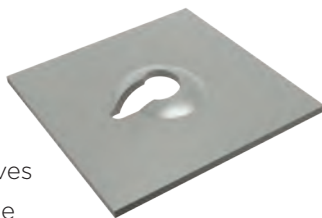


Zip-Tech

By creating a series of inter-connected snaps, Zip-Tech tool is an innovative fastening solution for exceptionally secure attachment between sheets.

Thread Forms

An alternative to tapping holes, is to create a thread form in the sheet. This involves pre-punching a small keyhole shape and then forming the material into a helix thread form as shown. These can vary in size to accommodate small screws or large plastic threaded inserts found on some household appliances.



Countersinks

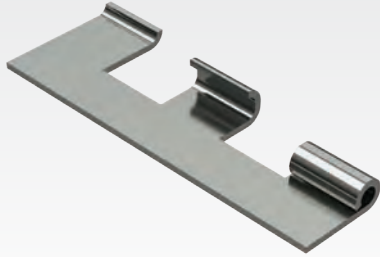
If a countersunk screw location is required, rather than a screw thread, Wilson Tool's coining tool produces an accurate, precise countersink in seconds. The old-fashioned method of carrying the parts from the punch to a machine to drill the countersink requires much more time and unnecessary effort.



ELIMINATING SECONDARY OPERATIONS

Hinge Tools

In the past, including a hinge in a metal product required several manufacturing steps. First, a length of piano hinge was purchased. Then, the hinge was cut down to size and moved to a work area. The metal product was also moved to the work area so the hinge could be welded onto it. Lastly, the welds needed to be cleaned up to remove the leftover scale from this process. Today, hinge tools can be used right in the punch press to eliminate much of this labor intensive, time consuming process.

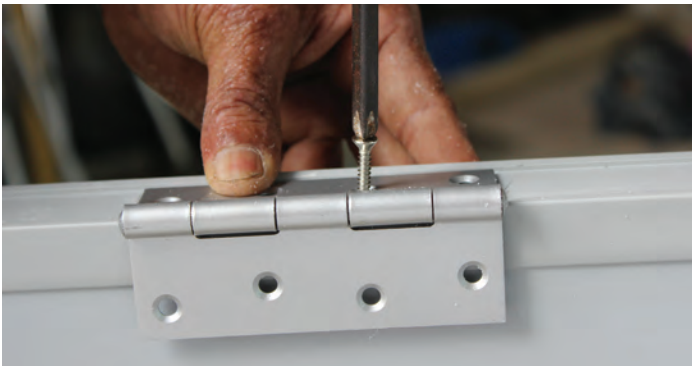


Multi-Hit Hinge

Two tools are used in this process. The first tool makes two or three hits. The second tool makes one hit to close up the hinge. This image shows stages 1, 2 and 3 of the process. The result is very strong, closed hinge incorporated within the part, made on the punch press - no follow up welding or cleaning needed!

One-Hit Hinge

Wilson Tool also manufactures a single hit hinge tool. Although this hinge is more open, it is ideally suited to some applications and has the added advantage that it can be achieved in a wider range of material thicknesses and types.



Want to explore more on eliminating secondary operations? Visit us online at [wilsontool.com/SecondaryOperations](https://www.wilsontool.com/SecondaryOperations).

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