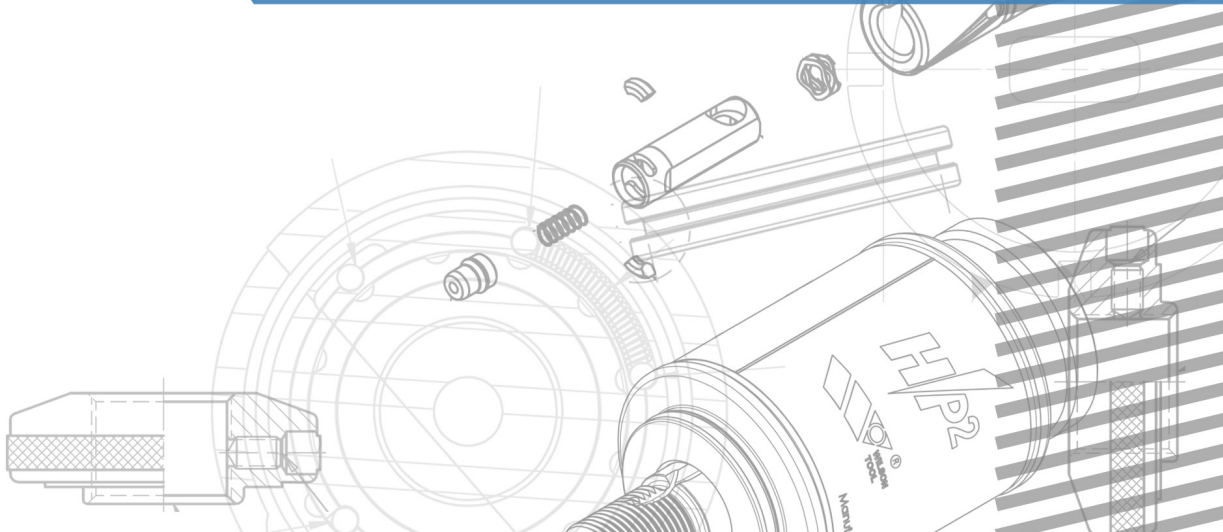
WILSON TOOL

ELIMINATING SECONDARY OPERATIONS

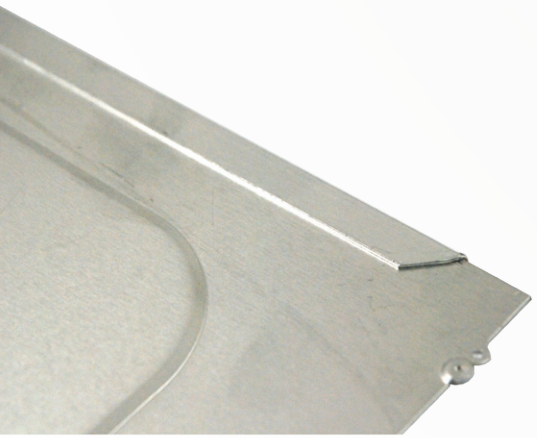


SAFE EDGES

When sheet metal is cut or punched, the resulting edge is often sharp or burred. If the component is subsequently going to be handled 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, the solution lies in some kind of rubber or plastic insert or grommet. These would be inserted, 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 at a stroke by doing the work on the punch press.

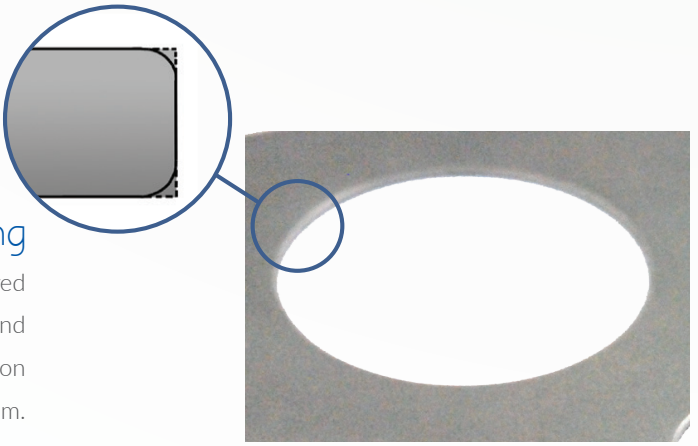
Rollover

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



Press Brake Hemming

If the safe edge is required along a straight length of sheet, a Wilson Tool hemming tool used on a press brake provides a good solution. This is a two step operation: first the edge is bent to 30° using a standard Wilson Tool 30° punch; then the bent over edge is flattened. Both operations, the bending and the flattening, are performed using the same punch and die.



De-burring

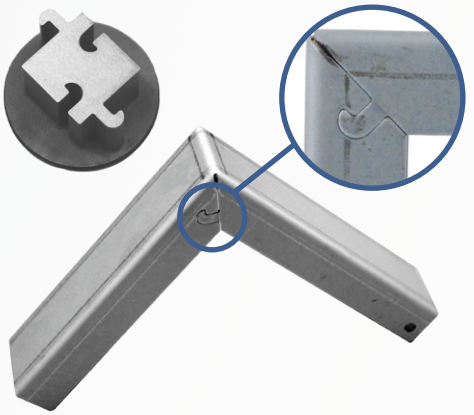
The Wilson De-burring tool allows punched edges to be de-burred quickly and effectively. The tool can de-burr very small diameters and acute angled corners and because of its design, can even be used on micro-jointed components without breaking them.

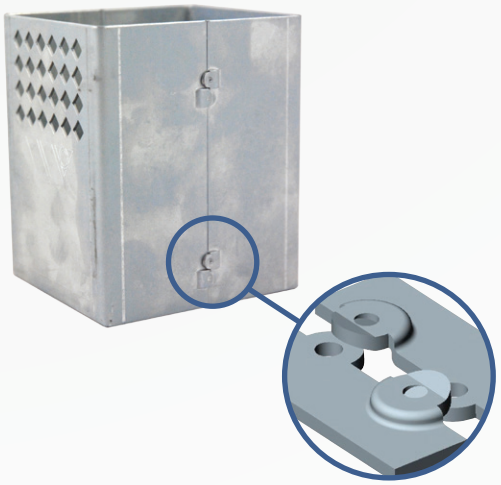
FIXING SYSTEMS

Most products made on a punch press are subsequently bent on a press brake or other bending machines. Products like boxes, trays, tubes etc often require securing or joining together two metal edges.

Corner Lock

A special shaped pre-punch as shown, produces the hook and the opening that it fits into. The hook is then formed up so that it does not hit the edge of the sheet when bent. During bending the hook is aligned with the opening. By simply pressing the hook into the gap, stable corner joint is achieved.



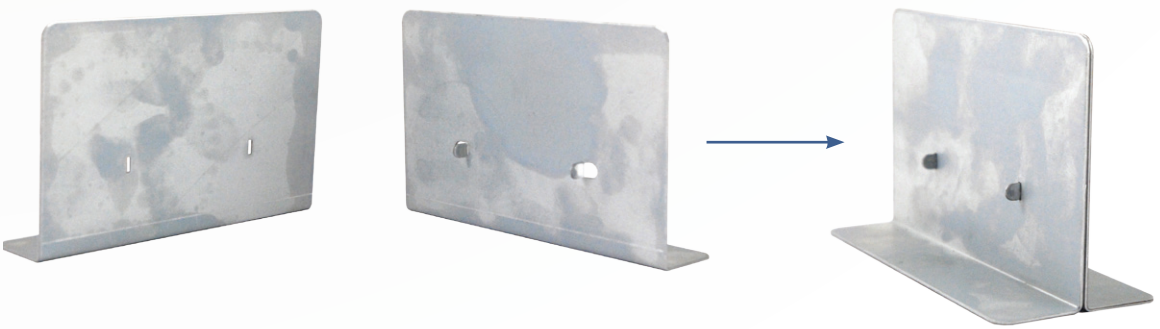


Ziptech

This application allows two metal edges to be joined together. On each edge there is a form consisting of a small round hole and a tab with a half shear built into it. When pressed together, the small half shear clicks into the small round hole on the opposite sheet edge creating clean, strong joint.

Toy Tag

The Toy Tag tool is a simple, but effective way of joining two sheet metal surface areas. One surface has a small lance and form of 90° and the other has a rectangular slot punched into it. The lance and form is inserted through the slot and when twisted with a pair of pliers, pulls the two surfaces together.

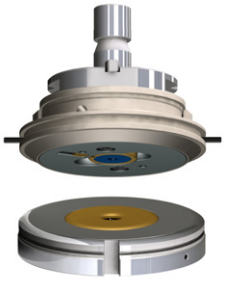


TAPPING TOOLS

If a component requires a thread, this is traditionally done with metal bushes or inserts. This usually requires some kind of machine or apparatus to fix them into the sheet and means that the parts have to be transported to a separate work area to have the work done. Both of these costs are eliminated if the thread can be made 'in situ' on the punch press.

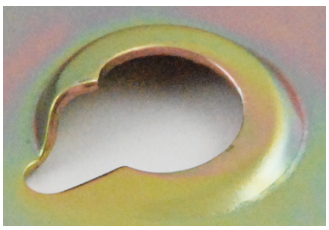
Tapping

Wilson Tool offers tapping tools which can produce stable, reliable thread forms 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. The thread produced in this way is roll formed, rather than cut, giving it increased strength and resistance for longer life and consistent performance.



TRUMPF TAPPING TOOL

THICK TURRET TAPPING TOOL

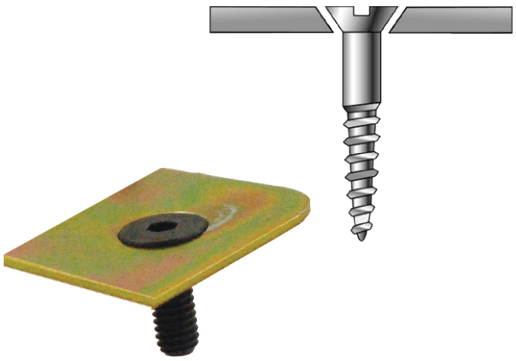


Thread Family

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

Countersink

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 considerably more time and unnecessary effort.



Eliminating Secondary Operations

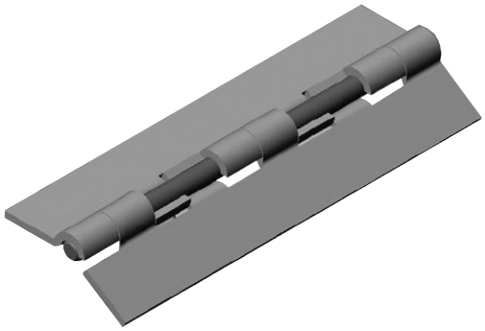
The big challenge facing today's sheet metal fabricators is how to reduce or eliminate waste in manufacturing. One way they achieve this is by doing as much of the fabrication process as possible on the punch press, thus avoiding secondary operations. Wilson Tool has developed a wide range of tooling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

HINGE TOOLS

In the past, the inclusion of a hinge in a metal product required several manufacturing steps. Firstly, a suitable length of piano hinge was bought. These came in standard lengths, so they often needed to be cut down to the required size. The metal component was transported to an area where the hinge was welded on to it. The welds usually then required cleaning up to remove the scale left from this operation.

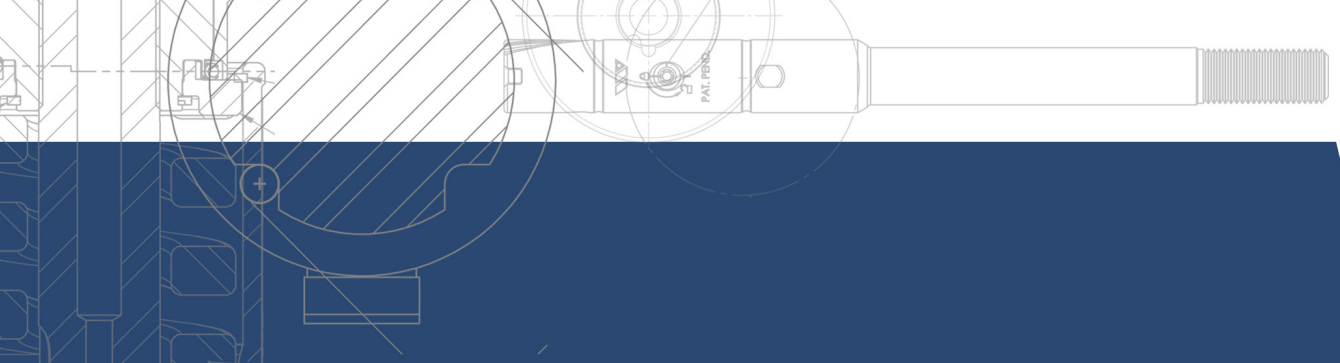
Multi-Hit Hinge

The Wilson Tool hinge tool eliminates much of this labour intensive, time consuming process. The process requires two tools, the first which makes two (or sometimes 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 component, made on the punch press and requiring no follow up welding or cleaning.



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.



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