



Press News

EuroBLECH 2004, Hannover

October 2004

PASS Notch-Tool

PASS Notch Tool for CNC punching machines

The tool was developed due to the demand of being able to make a proper bend on big sheets (e.g. cases, cabinets or cupboards) by hand.

The original method of production bending is usually made with 2 persons on a bending machine. The basic requirements for this method is a complicated manner of handling the sheet into the machine.

The basic idea for this new V-Tool is to prepare the sheet on the CNC punching machine in order to allow an acceptable and easy bend by hand. This prep- work on the CNC punching machine is possible by the punching of an endless notch with a notching angle of approx. 95° in order to weaken the sheet on the expected bending point. This enables an exact and calculated bending.

If the notch is too deep, the problem is that the sheet might break or is nearly at the point of breaking when trying to make a 90° bend. A further problem can be found in the cold work hardening of the bending process which complicates the bending enormously. A further point which has to be considered, is the bending radius of a thin sheet which goes nearly to 0 mm. It also must be considered that there are difficulties with sheets from 1,5 mm, as high bending forces are required to achieve these notching depths.



The solution of all these problems can be found in the new

PASS Notch Tool.

3 notches close together are usually made onto the sheet with a notch punch smaller than 90° . This process ensures that the sheet will not be so cold hardened to a high degree and guarantees a much easier bending. A big advantage can be found with the exact and calculated bending radius (according to the distance of the notches punched). Furthermore the breaking risk on the bending is clearly minimized as there is no need for notching so deep). Another positive advantage should be noted that the upward movement of material which results due to notching is divided by the 3 notches and will be significantly reduced.

Further advantages for this tool:

- + The tool is useable as a length-limited tool as well as an endless tool.
- + The notching depth is adjustable by using additional shims.
- + The same tool is flexible & usable for sheets with $s=0,5$ to $3,0$ mm.
- + The same tool can be used for alu, normal steel or – with restrictions – for stainless steel.
- + No lateral forces (side-load) will occur.
- + Different bending angles are possible (freehand bending).
- + Saving time and money as the sheet does not require the secondary operation of the bending machine. This eliminates as well the adjusted costs for the bending machine.
- + Easy programming as an Emboss Tool.