

## Downholder in front of knife

### Information:

- Handling of the material after the cut

### Benefit:

- How to employ machine functions in order to reduce costs
- Expert paper handling leads to higher productivity

During the cutting process, two physical facts are occasionally disrupting a smooth production flow and affecting the quality. Before we go into detail with the optional "downholder in front of knife" we have a look at these two facts:

### Labels are slipping away due to an air cushion

During the cutting process a banking-up pressure is generated under the knife and causes the material being cut to be slightly fanned out in front of the knife. This leads to a certain air cushion being formed between the upper sheets.



The product in front of the knife which has just been cut will float away on the air cushion without any control being possible.

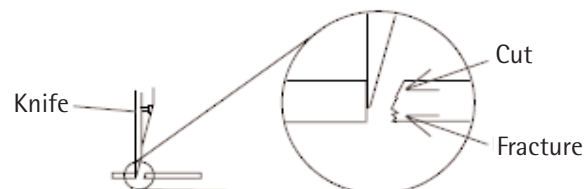


For the operator this situation is not satisfactory at all, because he/she has to re-align the material. And this alignment is extremely time consuming.



### Labels in front of the knife are drifting away

The knife enters into the sheets from above and starts cutting without cutting through the entire sheet. The lower part of the sheet practically bursts off under the load of the cut.



When processing thick materials to be cut this relation is immediately noticed. When cutting paper the action of the knife with regard to the individual sheet is almost insignificant.

The photo shows how the upper part of a 3-mm wood-like board has been cut and the lower part has broken. This is owing to the wedging effect of the knife. Our customers know these correlations and therefore make a counter-cut when dealing with certain materials.

The term counter-cut means that the material which is positioned in front of the knife after the first cut is turned 180° and then cut again. In this way the trimmed section will be straight and neat afterwards.



Now let us go one step further. Especially when cutting thick materials you can also notice another effect. Due to the last section bursting off under a cut, the material being cut will drift away uncontrolled in front of the knife. Again this has the consequence that the operator needs much time after the cut in order to re-align the cut labels.



**A "downholder in front of knife" helps to avoid these problems**

In these two examples the material positioned in front of the knife has slipped away uncontrolled.

The so-called downholder in front of knife solves this problem. It locks the labels in place in front of the knife keeping them in a proper and controlled position throughout the cut.



After the cut the operator can easily align the material and unload it, if required.

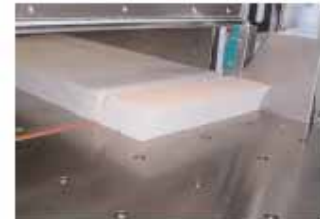


### How to use the downholder in front of knife

The operator can add the function "downholder in front of knife" to any cutting position. Via the machine parameter setting the operator can adjust both, the time as well as the pressure applied by the downholder.

### Time setting of the downholder in front of knife

The time setting serves to adapt the clamp to the relevant clamping height. When high packs are loaded on the high-speed cutter select a short time period. When loading little paper the "downholder in front of knife" needs longer to be lowered onto the paper. For this reason, a longer time interval must be preadjusted. In general, you should start with a time period of 2-3. If the knife reaches the material before the downholder does, increase the time. If the downholder pushes the products towards the knife after the cut (see photo on the right) the time period is too long and should be reduced.



### Pressure setting of the downholder in front of knife

The down-hold pressure must be adapted to the cutting material. During the machine assembly the service technician sets a medium pressure. When changing the type of cutting material you have to re-adjust the pressure. This applies first of all to thin materials being cut. If the upper product is bent by the downholder the pressure is too high and must be reduced.

### POLAR high-speed cutters\* offer:

- auxiliary functions which help to reduce production costs
- a downholder in front of knife as an option for 115 XT to 155 XT
- easy-to-operate optional equipment
- a convenient operation and fast setting of machine functions

\*Please compare the technical data relevant for the individual machine models