

Operating with Centerdrill - Short Introduction

Necessary equipment:

- All you need is a column drilling machine or a CNC workstation with sufficient power from 0.5 – 5.0 kW and spindle speed from 1000 – 5000 Upm (see our practical guide page 15). This can be a column-drilling-machine, a CNC-workstation or a milling-machine. If the power of the machine is too low, it can happen, that the machine can be stalled.
Special tool holder MC 2, MC 3, SK 30, SK 40, HSK or BT with cooling disk and special collet should be used to avoid an overheating of the spindle and to assure, that the centerdrill is spanned correctly.

Choice for the right centerdrill flow punch former:

- The diameter of the centerdrill flow punch former depends on the size of the thread or bearing bush which shall be produced. To produce a M 8 in **mild steel**, you need a 7.3 mm centerdrill. In **stainless steel**, a 7.4 mm flow punch former is needed. For all sizes bigger than M 6 you should always use a 0.1 mm thicker diameter of the centerdrill for **stainless steel** (see our practical guide page 12).
- If the metal is thicker than 3 mm, it can be better for the life time of the thread former, to use a 0.1 mm thicker diameter of the centerdrill.
- According to the thickness of the metal, either a short or a long former (see our practical guide page 12) is preferred.
- If the surface of the metal shall be flat, you take a centerdrill flat, which cuts off the rim or collar. If you want a surface with collar, use the standard centerdrill.

The process:

- When the centerdrill is fixed in the tool holder and collet and the machine runs at the requested speed, the process is started by bringing down the spindle with the centerdrill smoothly and stopped at 0.1 – 0.5 mm above the metal piece.
- Then the spindle is pressed down with a feed rate of approx. 150 mm per minute (1, 7 – 2,5 mm/sec) until the hole is formed. It takes only 2 – 4 seconds to form a hole for a thread M 8 in 2 mm thick material for example.
- When the hole is formed, the spindle with the centerdrill is lifted and it can be continued with the next hole.
- If you form a hole with a collar, the centerdrill is pressed down smoothly during the last 0.8 – 1.8 mm and stops according to the height of the collar. If you want a flat surface without collar, the centerdrill is pressed down with a higher feed rate during the last 0.5 – 1.5 mm. The higher feed rate ensures that the collar flies away. The process ends on the surface of the metal.
- The metal part must be clamped securely, so that it cannot move either vertically or horizontally. Otherwise the Centerdrill can brake.

Lubrication/Separation:

- After 5 – 10 holes. It is recommended to apply our paste, which prevents metal build up on the centerdrill.
- For thread forming we recommend our lubrication oil, which should be applied after each thread forming operation.

Safety:

- To protect you against the collar that flies away, you should wear protective clothing or install a protection shield at the machine.
- Don't touch the tool-holder or centerdrill without gloves after operating. These parts become very hot and you risk burning you.

If you need more information from our specialists, please don't hesitate to contact us.