



TECHNOLOGICAL RECOMMENDATIONS BY MILLING

Effective milling is the result of:

- technical condition of the machine
- the proper selection of the cutter
- the selection of a precise and rigid holder
- rigid and securely fixation work piece
- choice of coolant
- machine processing strategy

Machine

Machine must provide the necessary power for the selected parameters of the spindle, and minimum radial runout. In case of doubt, reduce the machining parameters.

End mill

Adjust the cutter suitable for the material and dimensions; as short as possible, with a short cutting length and a larger diameter.

For grooving choose cutters with a smaller number of teeth (2-3) for good chip evacuation. For profiling use 4-6 teeth cutters, in order to obtain a better surface quality and durability of the cutter.

Holder

For high speed milling use the hydraulic holder or with shrink fit short reach, ensuring rigidity and precision mounting. Always secure the minimum influence of the tool holder.

Coolant

Coolant ensures the maintenance of stable working conditions and evacuation of the cutter chips from the machining area. It should be clean, with a selected concentration and pressure, and served with carefully directed jets. Most emulsions (approx. 10%) are used or compressed air; depending on the material and the cutter used. Machining stainless steels, non-ferrous materials, heat-resistant alloys require a higher concentration of the emulsion.

Processing technology and strategy

To increase the life of the cutter, climb-milling is recommended. Milling of the pockets usually begins with a pre-drill the hole. It is also used a spiral interpolation.

In these cases, the feed rate should be reduced to 25-50% of the values shown in the tables and cutting speed used as for grooving. In any case operating conditions can vary considerably. Therefore at the beginning of machining is recommended to reduce cutting to 50% from the tables selection, and then increasing to them. Deviations from the described conditions, exceeding the axial depth A_p and width A_e , can lead to a reduction in the cutting parameters V and f_z from those given in the tables. n lead to a reduction in the cutting parameters V and f_z from those given in the tables.