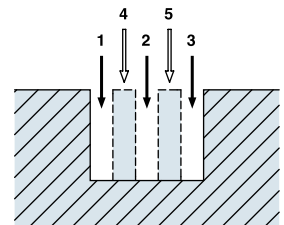


When groove width is greater than insert width, two methods are possible:

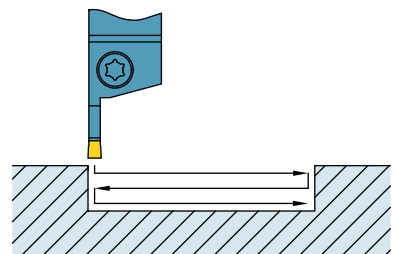
1.



### 1. Multiple Pass Grooving

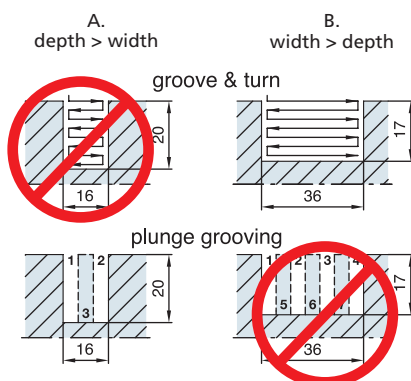
Use the widest possible insert width to achieve optimal chip control and tool life. Make grooves 1, 2, and 3 first...then connect with passes 4 and 5. For passes 4 and 5, the material removed should be no more than 0.8 times the insert width.

2.



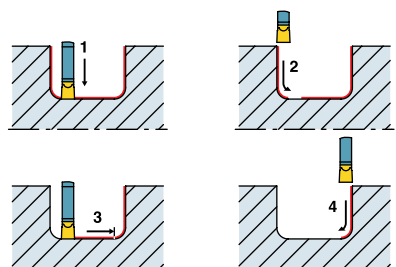
### 2. Grooving and Turning

For small and unstable workpieces, this is the preferred method to reduce vibrations experienced when axial grooving. The depth of cut in longitudinal turning should generally be 60%-70% of the groove width. Turning in both directions improves tool life.



### Choosing the Best Method:

- A.** When the groove depth is greater than the groove width, multiple pass plunge grooving offers the best results.
- B.** When the groove width is greater than the groove depth, groove & turn (plunge/longitudinal turning) is easier and faster.



### Finish Profiling

When finish profile machining internal chamfers or radii, take into account that the effective feed rate and chip cross section are reduced (the tool is cutting in both radial and axial directions). The accompanying drawing (left) shows the suggested processing sequence for the final pass, to reduce vibrations.

## A4 Grooving Tool Application Guidelines

- Always use good general machining practices.
- Make the machine and workpiece setup as rigid as possible.
- Integral shank toolholders offer the best rigidity. They should be your first toolholder choice, when possible.
- When changing inserts, make sure the new insert locates securely against the toolholder's positive stop.
- Never tighten the clamping screw without an insert in the pocket.
- Toolholder extension out of the tool block should be as short as possible.

- Inserts should cut as close to center as possible or slightly above.
- Dwell time in bottom of groove should be less than three revolutions.
- Recommended cutting speeds and feeds are a starting point. Adjust, as necessary, for optimum tool life and chip control.