



General information

Modern CNC machines have the capability of synchronizing the spindle rotation to match the feed advance for a specific tap pitch. The «Rigid» or synchronized tapping cycle is very accurate, but it is impossible to avoid small discrepancies between the machine synchronization and the actual pitch of the specific tap being used. Using a rigid tap holder MasterSYNC means that any deviation at all increases the thrust forces acting on the tap and this dramatically reduces tap life.

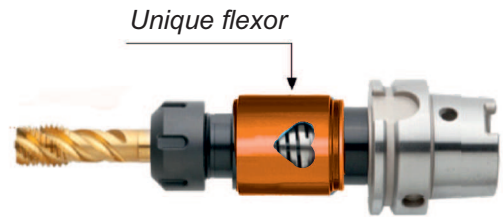


MASTERSYNC - Unique solution

Rule of action

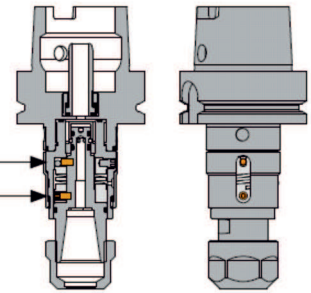
At the heart of MasterSYNC is a precisely machined flexure which provides axial and radial compensation for the unavoidable discrepancy between the machine feed advance and the actual tap pitch. By compensating for this error, the thrust forces acting on the tap are dramatically reduced. The result is the longest possible tap life, 100 % improvement or more, and much better quality threads.

By limiting the axial compensation travel, and torsional forces acting on the flexure, millions of holes can be tapped without causing the MasterSYNC holder to fatigue, take a set, or wear out.



Axial micro compensation is closely limited (mechanically secured)

Torque is transmitted through the drive pins – not through the flexure.



Features and Advantages

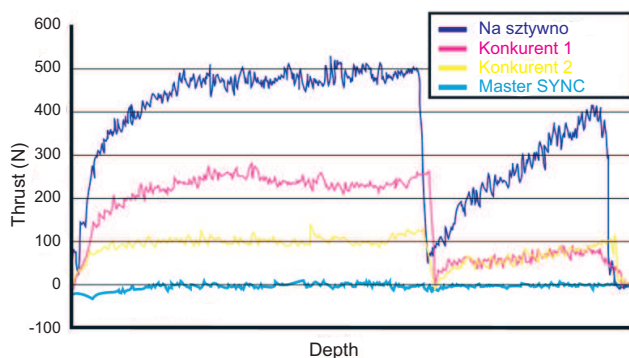
- increase tap life by 100 % or more
- improves thread quality
- reduces downtime by lowering frequency of tap replacement
- available with high pressure internal coolant system up to 80 bar
- Axial compensation +/- 0.5mm

Disadvantages:

- only for machines with synchronized tapping cycle

Case study:

Comparison tapping with an M6 spiral fluted tap in 6061 Aluminum to depth of 18 mm.



Test results

MasterSYNC tap holders have been tested and they have confirmed the dramatic improvement in tap life, and thread quality resulting from the reduction of thrust forces acting on the tap.

The graph to the left is an example of a test using a Kistler dynamometer to measure the thrust forces during the tapping process. As you can see from the graph, although the competitive holders do reduce thrust forces compared to a rigid tap holder, they are not as effective MasterSYNC