

Chamfer forms, selection and application

When cutting internal threads, all the machining is carried out by the cutting teeth of the chamfer. Therefore, a decision on the best type of chamfer form has to be carefully made as both tool life and quality of thread are thereby greatly affected.

Generally speaking, the form and length of chamfer depend on the type of hole to be tapped. The tapping of through holes does not normally give rise to any difficulties whereas the production of blind holes can create certain problems associated with the need to evacuate swarf in the reverse direction to the feed, i.e. up to the flutes of the tap and then cut off such swarf when the tap is reversed out of the hole.

The length of chamfer is determined by taking into account various conflicting factors. To avoid overloading, premature bluntness and oversize threads the number of chamfer cutting threads must not be kept too low. A too long chamfer lead, however, increases the torque and thus the danger of breakage. The spiral point with form B ensures a chip removal always in the direction of feed.



Chamfer forms to DIN 2197

Form A	<p>6...8 threads</p>	<p>long, 6 - 8 threads for short through holes</p>
Form B	<p>3.5...5.5 threads</p>	<p>medium, 3.5 - 5.5 threads, with spiral point, for all through holes and deep tapping holes in medium and long-chipping materials</p>
Form C	<p>2...3 threads</p>	<p>short, 2 - 3 threads for blind holes and generally for aluminium, grey cast iron and brass</p>
Form D	<p>3.5...5 threads</p>	<p>medium, 3.5 - 5 threads for short through holes</p>
Form E	<p>1.5...2 threads</p>	<p>extremely short, 1.5-2 threads, for blind holes with little run-out depth. Avoid use if possible.</p>
Form F	<p>1...1.5 threads</p>	<p>extremely short, 1-1.5 threads, for blind holes with little run-out depth. Avoid use if possible.</p>