

Thread Milling Methods

Climb Milling

Properties:

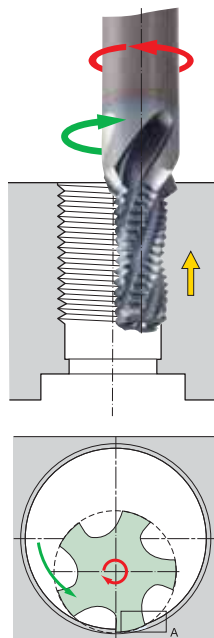
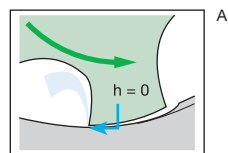
Tool rotation direction clockwise

Tool moves anti-clockwise

Pitch upwards

Right-hand thread

Climb milling is always when the cutting edge goes out of the material with a chip thickness $h = 0$



Conventional Milling

Properties:

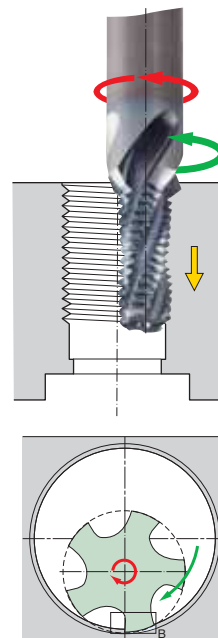
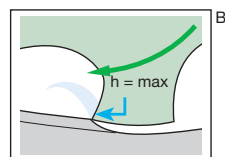
Tool rotation direction clockwise

Tool moves clockwise

Pitch downwards

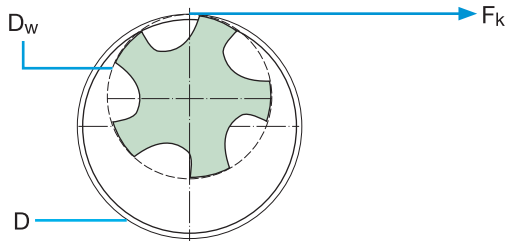
Right-hand thread

Conventional milling is always when the cutting edge goes out of the material with a chip thickness $h = \max$



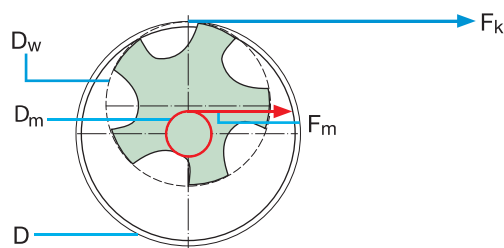
Counter Feed F_k

$$F_k = n \cdot f_z \cdot Z \text{ [mm/min]}$$

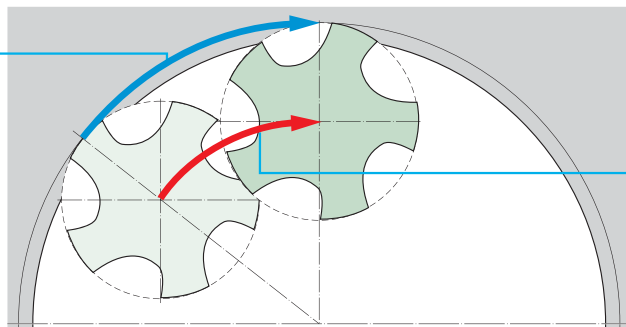


Centre Point Feed F_m

$$F_m = \frac{F_k \cdot (D - D_w)}{D} \text{ [mm/min]}$$



Centre Point Feed (F_m)



Counter Feed (F_k)

D_w = Tool diameter [mm]

n = RPM [min^{-1}]

f_z = Feed per tooth [mm]

Z = Number of teeth on tool (radial)

D = Nominal diameter of thread = Diameter of external contour [mm]

D_m = Diameter of the centre point ($D - D_w$) [mm]