FORMULAS

RPM for UNC/UNF Taps

$$\textbf{RPM} = (\text{revolution/minute}) = \frac{\text{cutting speed (SFM)} \times 3.82}{\text{Tap diameter}}$$

Feed Rate for UNC/UNF Taps

IPR=(inch/revolution)= 1 inch ÷ Threads per inch (TPI)

IPM=(inch/minute)= RPM ÷ Threads per inch (TPI)

RPM for M/MF Taps

$$\textbf{RPM} = (\text{revolution/minute}) = \frac{\text{cutting speed (SFM)} \times 97.028}{\text{Tap diameter(mm)}}$$

Feed Rate for M/MF Taps

IPR=(inch/revolution)= pitch(mm) **x** 0.03937

IPM=(inch/minute)= RPM **x** pitch(mm) **x** 0.03937

TO CALCULATE TAP DRILL SIZE

UNC/UNF and M/MF Cut Taps – General Requirements

Tap Drill Size **=** Tap basic major diameter – pitch

UNC/UNF Cut Taps – Special Percentage of Thread Requirement

$$\textit{Drill Size} = \text{Basic major diameter} - \frac{0.01299 \times \text{desired \% of thread}}{\text{Threads per Inch (TPI)}}$$

M/MF Cut Taps – Special Percentage of Thread Requirement

$$\textit{Drill Size (mm)} = \text{Basic major diameter} - \frac{\text{desired \% of thread} \times \text{pitch(mm)}}{76.98}$$

UNC/UNF and M/MF Form Taps - General Requirements

$$\textit{Tap Drill Size} = \text{Basic major diameter} - \frac{\text{pitch}}{2}$$

UNC/UNF Form Taps - Special Percentage of Thread Requirement

$$\textit{Drill Size} = \text{Basic major diameter} - \frac{0.0068 \times \text{desired \% of thread}}{\text{Threads per Inch (TPI)}}$$

M/MF Form Taps - Special Percentage of Thread Requirement

$$\textit{Drill Size (mm)} = \text{Basic major diameter} - \frac{\text{desired \% of thread} \times \text{pitch(mm)}}{147.06}$$