

## Thread Depth Calculation<sup>1</sup>

For the most common 60° V-thread in ISO M (metric) and UN (Unified National) forms:

**Total Thread Depth** [if the major and minor diameters are known]

$$\text{Thread Depth} = \frac{\text{Major}\phi - \text{Minor}\phi}{2}$$

However, only the major diameter will be known, as per drawing definition. In this case the following formulas can be used:

▪ **External Threads**

$$D_{EXT} = \frac{0.61343}{TPI} = 0.61343 \times P$$

Where,

$D_{EXT}$  = Depth of external thread

$TPI$  = Number of threads per inch

$P$  = Thread pitch in mm or  $1/TPI$  for imperial

▪ **Internal Threads**

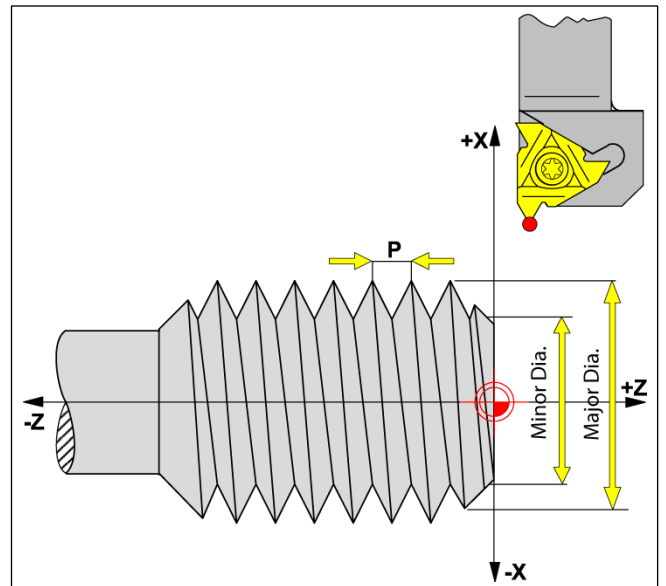
$$D_{INT} = \frac{0.54127}{TPI} = 0.54127 \times P$$

Where,

$D_{INT}$  = Depth of internal thread

$TPI$  = Number of threads per inch

$P$  = Thread pitch in mm or  $1/TPI$  for imperial



**Figure.1** | Major & Minor Diameters [external thread]

<sup>1</sup> Smid, Peter. CNC programming handbook. Industrial Press, 2007.