Carmex *Precision Tools Ltd.* **Thread Turning Inserts Technical Section**

Thread Turning - Step by Step

Step 1 : Choose Thread Turning Method from page 63
Step 2 : Choose Insert
Step 3 : Choose Toolholder
Step 4 : Choose Insert Grade
Step 5 : Choose Thread Turning Speed
Step 6 : Choose Number of Threading Passes

In most cases the above mentioned 6 steps would be the steps needed to ensure a good thread. When cutting more complicated threads such as TRAPEZ, ACME, BUTTRESS or SAGE, it is advisable to check the effect of the thread "HELIX ANGLE" β on the "RESULTANT FLANK CLEARANCE" ε. If ε is smaller than 2°, an anvil change is required.

Step 7 : Find Thread Helix Angle
Step 8 : Choose Correct Anvil

EXAMPLES:

Example No. 1:

Step 1: Choose Thread Turning Method
from page 63, we chose **EX - RH Insert & Toolholder**

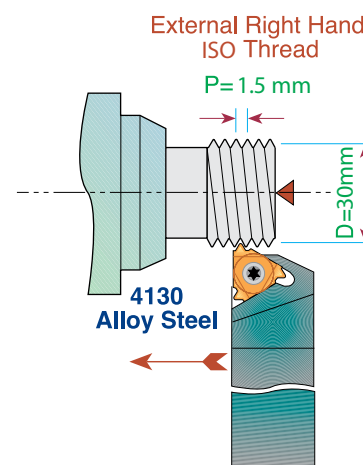Step 2: Choose Insert from page 9: **16 ER 1.5 ISO**

Step 3: Choose Toolholder from page 39: **SER 2020 K16**

Step 4: Choose Insert Grade from selection on page 60
Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page 61,
we chose **100 m/min**

Rotational Speed calculation: $N = \dfrac{100 \times 1000}{\pi \times 30} = 1065$ **rpm**

Step 6: Choose Number of Threading passes
from table on page 63, we chose **8 passes**

External Right Hand
ISO Thread
P = 1.5 mm
D = 30mm
4130
Alloy Steel

Example No. 2:

Step 1: Choose Thread Turning Method from page 63
Usually, an IN-RH Toolholder and Insert will be chosen, however, in this particular case we prefer to pull the metal chips while thread turning outward, thus we chose to work with **IN-LH Insert & Toolholder**

Step 2: Choose Insert from page 13: **16 IL 12 UN**

Step 3: Choose Toolholder from page 41: **SIL 0025 R16**
Note: since we thread cut IN-RH thread outward with an IN-LH tool, do not forget to replace the standard anvil (supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page 60
Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page 61,
we chose **150 m/min**

Rotational Speed calculation: $N = \dfrac{150 \times 1000}{\pi \times 38.1} = 1254$ **RPM**

Step 6: Choose Number of Threading passes from table
on page 63, we chose **9 passes**

IN-RH 12 UN
Thread
IN-LH
Toolholder
& Insert
D = 1.5
Change ANVIL
to Negative
Anvil
Brass