

Class Work-5

Wednesday, June 22, 2016 2:34 PM

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N5 T0202

N10 G96 S180 G95 F0.1 M3 → for small lathe (turn 55)

N15 G0 X32 Z0 } Facing

N20 G1 X-1

N25 G0 X30 Z1

N30 G73 U1 R1 ← retract height  
↳ depth \* cut

N35 G73 P40 Q90 U0.5 W0.1 F0.15

P N40 G1 X10 Z0 G42

N45 X14 Z-2

N50 Z-15.8

N55 X11.7 Z-18 ← (15.8 + 2.2)

N60 Z-20

N65 X16

N70 X18 Z-21

N75 Z-35.276

N80 G3 X28 Z-46 R14  
↓ (60-14)

N85 G1 Z-47

N90 X30 G40

N95 G72 P40 Q90 S140 F0.1 (Finishing)

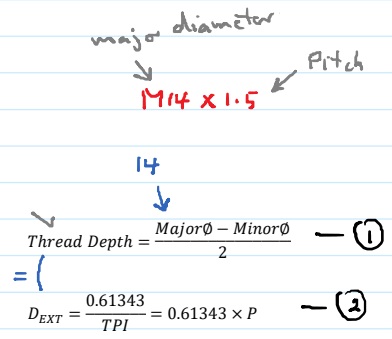
N100 G28 U1 W1

N105 T0404 (Threading)

N110 G97 S500 F1.5 M3

N115 G0 X16 Z2 (Thread start point)

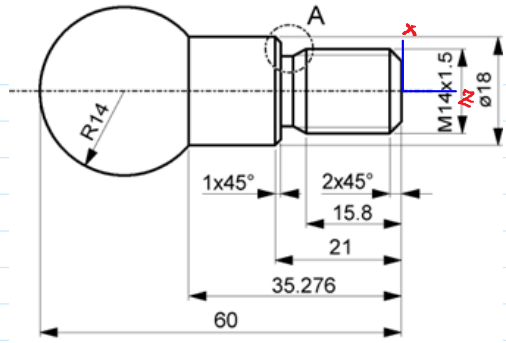
N120 G78 P0200 60 Q800 R0.05 → Min. cutting depth (A<sub>cut</sub>) D<sub>EXT</sub> = 0.61343 × 1.5 = 0.920 mm  
 ↓ chamfer value → Flank angle → Finishing offset (mm)  
 No. of finishing cuts (0°, 29°, 30°, 56°, 60°, 80°)  
 $D_{EXT} = \frac{Major \phi - Minor \phi}{2}$



N125 G78 X12.16 Z-19 R0 P920 Q120 F1.5 ← Thread Pitch (P)  
 ↓ minor diameter ↓ Taper value ↓ Thread depth (A<sub>cut</sub>)  
 $0.920 \text{ mm} \times \frac{1000 \mu\text{m}}{1 \text{ mm}} = 920 \mu\text{m}$   
 $Major \phi - Minor \phi = 2 D_{EXT}$   
 $Minor \phi = - Major \phi + 2 D_{EXT}$   
 $Minor \phi = Major \phi - 2 D_{EXT} = 14 - 2(0.920) = 12.16 \text{ mm}$

N130 G0 X50 Z50

N135 M30



Detail A

