

Utilizing Sketches to Automate Lathe Routines

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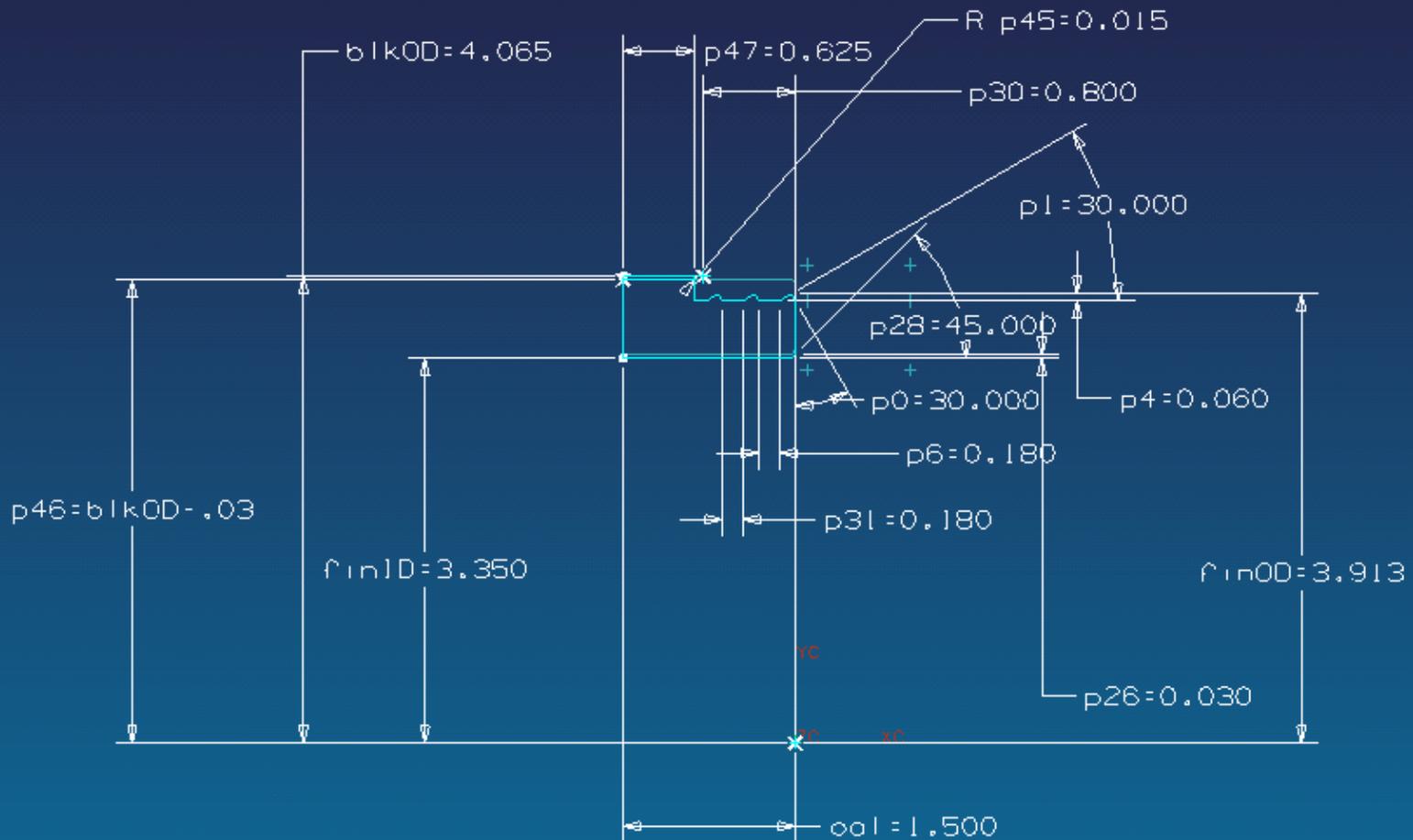
Identify the Needs

- Out of the Box UG
 - All companies have unique routine that do not fit the standard templates in UG
- Identify the routine or in some cases the parts.
 - Machine heat treat samples?
 - Specialize cut off routines?
 - Turn steady rest location spots?
 - Specialized threading joints?
- Identify data needed to drive the program.
 - Can you use existing data to reduce inputting redundant data?

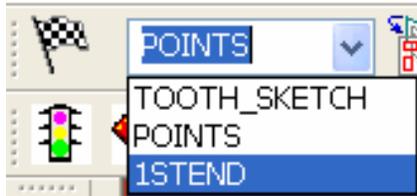
The How To....

- Sketch Layout
 - Sketching Names
 - Use Multiple Sketches
- Apply Tool Paths
- Use Grip to Drive the Sketch
 - Use Existing Data
- Examples

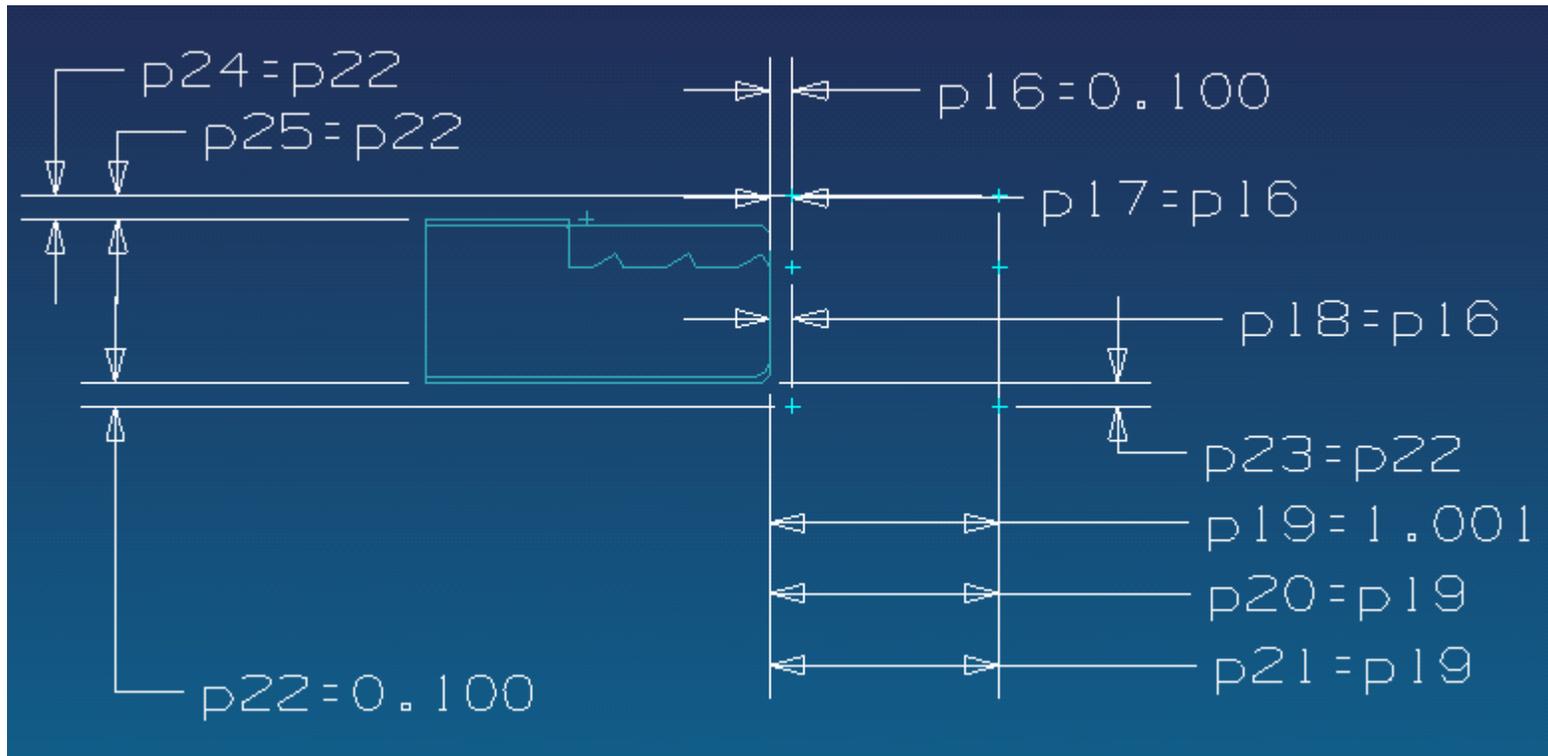
Sketch Layout



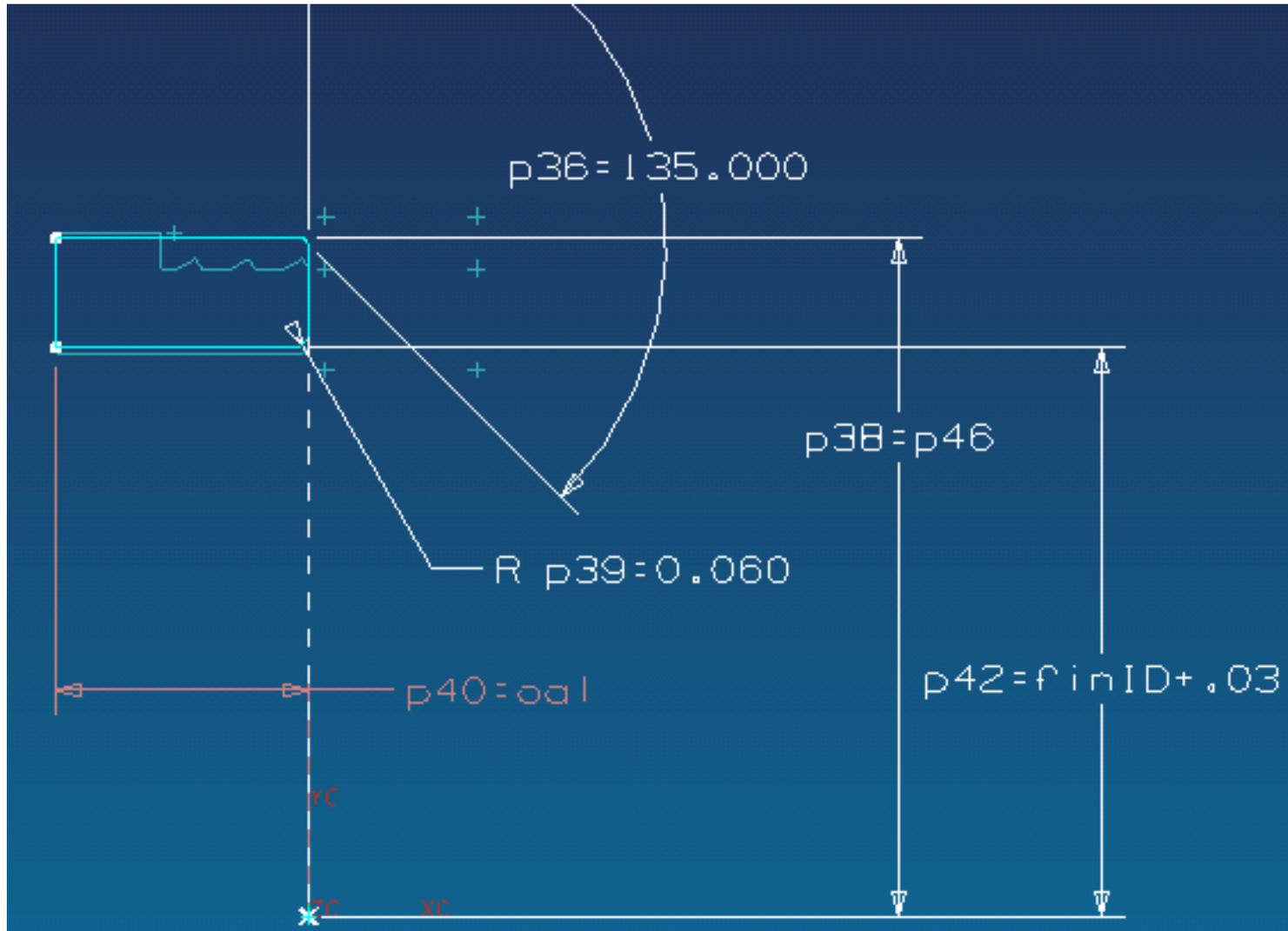
Sketch Layout (cont.)



Use multiple sketches for organization

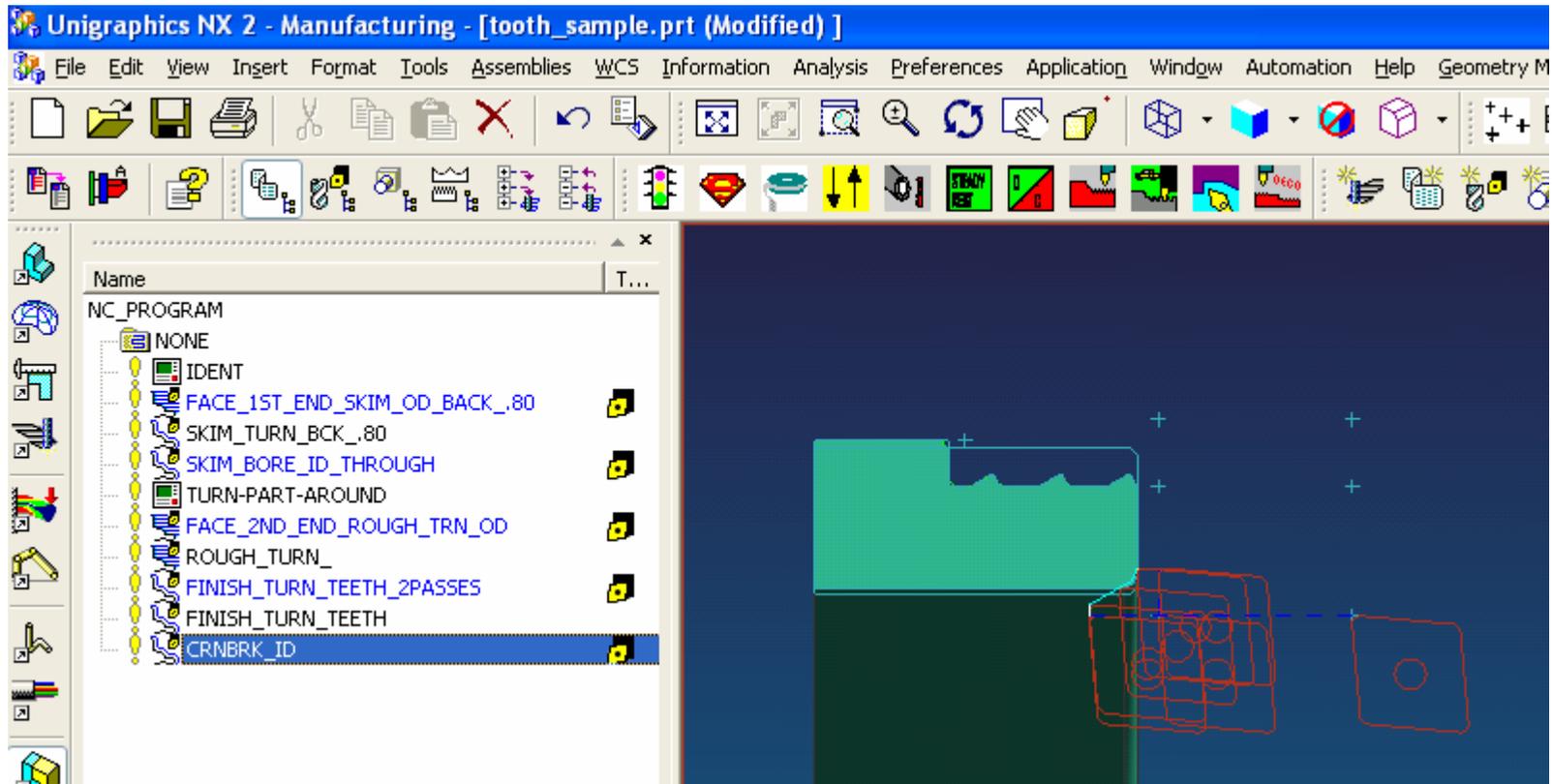


Sketch Layout (cont.)



Applying Tool Paths to the Sketch

- Use the sketch to define your blank and part boundaries.
- Tool paths become associative to sketch model

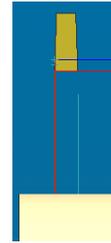


Using Grip to Drive the Sketch (cont.)

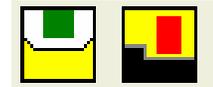
```
#####  
$$ SECTION - b: Import skim turn Geometry                                $$  
#####  
  
b10:  
filename = 'tooth_sample.prt'  
  
    FETCH/PART, 'o:\WORKGROUP\CAM_SYS\UG\AUTOMATION\'+filename           ← Location of Sketch Part  
    PARAM/ 'Enter Values', $                                             ← Prompt for Need Data  
        'Diameter over teeth' ,teethdia,$  
        resp  
tooth = (teethdia/2)  
PRINT/ tooth  
  
#####  
$$ SECTION - d: Set Expressions                                        $$  
#####  
d10:  
  
    &REG('blkOD')=bkod                                                   ← Sets Expressions to new values.  
    &REG('finID')=(bkid+.03)  
    &REG('oal')=1.50  
    &REG('finOD')=tooth  
  
Y45:  
FDEL/'C:\TEMP\'+filename, IFERR, y50:  
Y50:  
FILE/PART, 'C:\TEMP\'+filename                                         ← Saves modified part to a temp location.  
PRINT/ 'C:\TEMP\'+filename  
FTERM/PART, 'C:\TEMP\'+filename  
pfile='c:\temp\backface.txt'  
PARTOP/SET, dsplay, curname  
  
    RPATT/'C:\TEMP\'+filename, LAYER, PLMODS, 3, NOVIEW, RETCAM, 2     ← Imports modified part  
    FDEL/'C:\TEMP\'+filename                                           into base part.  
    LAYER/WORK, 50  
    LAYER/INACT, 1..6  
    LAYER/INACT, 25  
    LAYER/ACTIVE, 50, 30  
  
JUMP/z50:  
z50:  
hALT
```

Examples

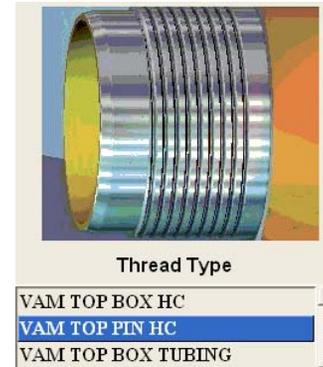
- Cut off routines



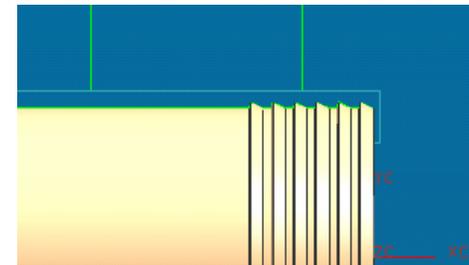
- Steady Rest Turn Spot



- Premium Thread Joints



- Heat Treat Sample



Questions

