

CHECKLIST, USING UNKNOWN CRV FILES

CHECK THE JOB SETUP PAGE

JOB TYPE

SINGLE SIDED JOBS ARE ENTIRELY CUT FROM ONE SIDE.

DOUBLE-SIDED JOBS ARE CUT ON ONE SIDE AND THEN FLIPPED OVER SO THAT ADDITION OPERATIONS CAN TAKE PLACE ON THE BACK SIDE. THESE JOBS REQUIRE PRECISE SETUPS SO THAT AFTER THE PART IS FLIPPED OVER IT CAN BE RETURNS TO THE EXACT POSITION OF THE ORIGINAL SETUP.

ROTARY PARTS ARE CUT BETWEEN TWO CENTERS. MUCH LIKE A LATHE THE PART WILL ROTATE BETWEEN THESE TWO CENTER AS THE SPINDLE REMOVES MATERIAL TO CRATE THE FINAL SHAPE.

JOB SIZE

LENGTH WIDTH AND MATERIAL THICKNESS MUST BE THE SAME AS YOUR WORKPIECE OR SHEET MATERIAL. BOTH METRIC AND INCH MEASUREMENTS ARE ACCEPTABLE AND MAY BE FOUND IN AN UNKNOWN FILE.

Z ZERO POSITION

THIS REFERES TO THE SURFACE YOU WILL REFERENCE TO CUTTING PROCESSES TO. HERE IS AN EXAMPLE USING A .750 THICK SHEET OF MATERIAL SITTING ON TOP OF YOUR MACHINE SPOIL BOARD, THE MACHINE BED.

A HOLE BEING DRILLED .500 INCHES INTO THE MATERIAL WOULD BE AT POSITION Z .000 AS IT TOUCHED THE TOP OF THE MATERIAL AND AT Z-.500 AS IT FINISHED DRILLING THE HOLE.

WITH A Z ZERO POINT ON THE MACHINE BED, THE BOTTOM OF YOUR MATERIAL, THE SAME DRILL WOULD BE AT Z .750 AS IT TOUCHED THE TOP OF THE MATERIAL AND AT .250 AS IT FINISHED DRILLING THE HOLE.

CAUTION: A PROGRAM THAT HAS BEEN WRITTEN FOR THE Z ZERO ON THE SURFACE OF THE MATERIAL BUT RUN WITH THE CNC SETUP WITH THE Z ZERO ON THE MACHINE BED WILL START DRILLING THE SAME HOLE AFTER DRILLING COMPLETELY THROUGH YOUR MATERIAL AND THEN DRILL .500 FURTHER INTO YOUR BASE OR VACUUM TABLE.



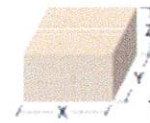
Job Setup

Job Type



- Single Sided
- Double Sided
- Rotary

Job Size



Width (X): 2440.0 mm

Height (Y): 1220.0 mm

Thickness (Z): 19.4 mm

Units

inches • mm

Z Zero Position



- Material Surface
- Machine Bed

XY Datum Position



Use Offset

X: 0.0

Y: 0.0

Design Scaling



Scale design with job size

Modeling Resolution



Standard (fastest)

1 million points



Material Settings

OK

Cancel

1200
1000
800
600

XY DATUM POINT

THIS IS X ZERO, Y ZERO POINT YOU WILL SETUP ON YOUR CNC MACHINE.

ON A LEGACY CNC SYSTEM THE WORK X ZERO AND Y ZERO POINTS ARE USUALL ON THE RIGHT HAND EDGE FOR THE Y AXIS ZERO POINT AND ON THE EDGE CLOSEST TO THE OPERATOR WHEN HE IS STANDING NEAREST THE CNC CONTROL.

THE HENRY TOY BOX SETUP PAGE

IN THE PICTURE TO THE RIGHT, YOU WILL SEE THE SETUP PAGE AFTER ALL OF THE SETTINGS HAVE BEEN CHANGED FROM JOB SETTINGS USED BY THE ORIGINAL PROGRAMMER OF THIS JOB.

DESIGN SCALING

THIS SETTING WILL BE DISCUSSED IN A FUTURE PROJECT.

MODEL RESOLUTION

THIS SETTING WILL BE USED WHEN CREATING MODELS OR VECTORS FROM BITMAPED IMAGES.

MATERIAL SETTINGS

THIS SETTING WILL BE USED TO CHANGE THE LOOK OF THE MATERIAL IN THE PART PREVIEW SCREEN.

ONCE YOU HAVE REVIEWED EACH SETTING AND MADE THE CHANGES NEEDED TO MATCH YOUR MACHINE AND SETU PREFERENCES YOU ARE READY TO REVIEW THE TOOLS AND THE TOOLPATHS CREATED BY THE UNKNOWN PROGRAMMER.

Design



Design



Job Setup

Sheets
Layers

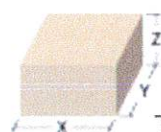
Job Type



- Single Sided
- Double Sided
- Rotary

Components

Job Size



Width (X): 97.0 inches

Height (Y): 49.0 inches

Thickness (Z): 0.75 inches

Clipart

Units

- inches
- mm

Z Zero Position



- Material Surface
- Machine Bed

XY Datum Position



Use Offset

X: 0.0

Y: 0.0

Design Scaling



Scale design with job size

Modeling Resolution



High (3 x Slower)

2 million points



Material Settings

OK

Cancel

UPDATING TOOL PATHS

IN THIS ILLUSTRATION YOU CAN SEE THAT MY UNKNOWN PROGRAMER HAS USED METRIC TOOLS.

I RECOMMEND REPLACING EACH METRIC TOOL WITH A TOOL FROM YOUR OWN LIBRARY. THIS WILL UPDATE EACH TOOL PATH WITH YOUR OWN TOOLS CUT CONDITIONS AND NAMES. YOU'LL HAVE TO CONVERT EACH DIMENSION FROM METRIC TO INCHES, FIND OR BUILD A NEW TOOL OF THE SAME TYPE AND DIAMETER AND RE-CALCULATE EACH TOOL PATH.

HOWEVER,

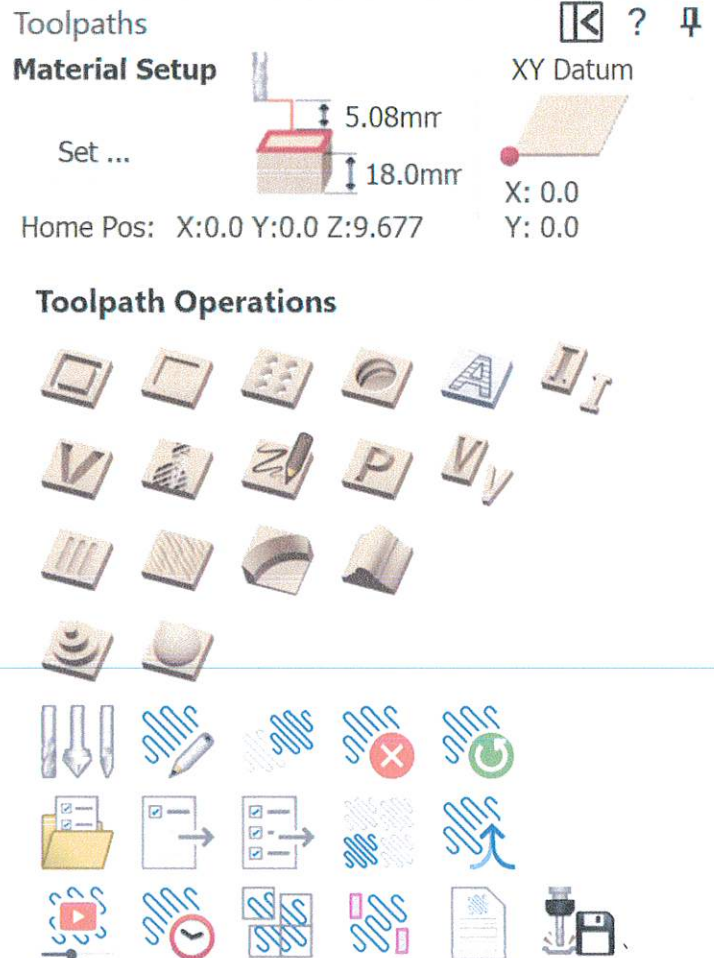
YOU CAN USE THE TOOLS AND TOOL PATHS IN THE EXISTING PROGRAM WITHOUT ADDING THESE TOOLS TO YOUR LIBRARY. THE PROGRAM WILL RUN EXACTLY AS THE ORIGINAL PROGRAMER INTENDED WITH HIS FEEDS AND SPEED CUT CONDITIONS.

IF YOU RUN THE PROGRAM AND DECIDE YOU'D LIKE TO CHANGE THE CUT CONDITIONS YOU CAN SELECT EACH TOOL IN THE PROGRAM.

BY USING THE EDIT BUTTON ON THE TOOL AND CREATING NEW SETTINGS THAT ARE APPROPRIATE FOR YOUR CNC.

HOWEVER,

THIS ISN'T QUITE A SIMPE AS IT SHOULD BE.



Toolpaths

Sheet 1

- ☐ 2mm - Hinge Stay screw holes
- ☐ 4.5mm Drill - Metal Dowel Pins
- ☐ 6mm em - Cam Pockets
- ☐ 6mm EM - Hinge Pockets
- ☐ 6mm em - Bottom Groove Pockets
- ☐ 6mm em - Outer Cutouts



Drilling Toolpath

Cutting Depths

	Start Depth (D)	0.0	inches
	Cut Depth (C)	0.1969	inches

WHEN WE OPEN THE FIRST TOOL PATH, DRILLING THE 2MM HOLES, WE CAN SEE THAT WHEN WE CONVERTED THE PROGRAM TO INCHES THE CUT DEPTH CHANGED TO 0.1969.

ON THE FOLLOWING PAGE IS AN ILLUSTRATION OF THE TOOL LIBRARY CUT CONDITIONS, RPM, AND FEED SPEEDS.



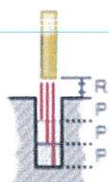
Tool: Drill (90.0° - 2 mm)

Select ...

Edit ...

THE PROBLEM HERE IS THAT WHEN WE CONVERTED FROM MM TO INCHES SOME VALUES HAVEN'T BEEN CHANGE. WE HAVE MIXTURE OF INCHES AND MM DIMENSIONS

Use Peck Drilling



Retract above the cutting start depth

Retract above the height of the previous pass

IF YOU SELECT THE INCHES ON THE MM/INCHES SETTING THE BOXES AND NOW LABLED INCHES BUT THE VALUE IN THE BOX HASN'T CHANGED.

BECAUSE THE VALUES AREN'T UPDATED, YOU WILL HAVE TO DO THE METRIC TO INCHES CONVERSION BEFORE PROCEEDING. FOR THESE VALUES.

Retract Gap (R) 0.002 inches

Peck Depth (P) 0.0787 inches

Note: Peck depth is controlled by the 'Pass Depth' for the tool

Dwell at the bottom of each drill pass

Dwell Time 0.0 seconds

Use Vector Selection Order

Safe Z 0.2 inches

Home Position X:0.00 Y:0.00 Z:0.38

Project toolpath onto 3D model

Vector Selection: Manual Selector ...

Name: 2mm - Hinge Stay screw holes

Calculate

Close

Edit Tool

Name Drill (90.0° - 2 mm)

Notes

Variables

Tool Type Drill

Geometry

Units mm
Diameter (D) 2 mm
Included Angle (A) 90 degrees

No. Flutes

Cutting Parameters

Pass Depth 2 mm

Feeds and Speeds

Spindle Speed 6000 r.p.m

Feed Units inches/min

Plunge Rate 20 inches/min

Tool Number

1



OK

Cancel