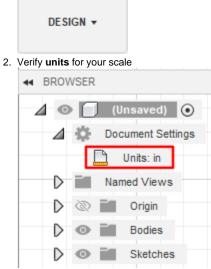
CNC | 2.5D Milling In Fusion360

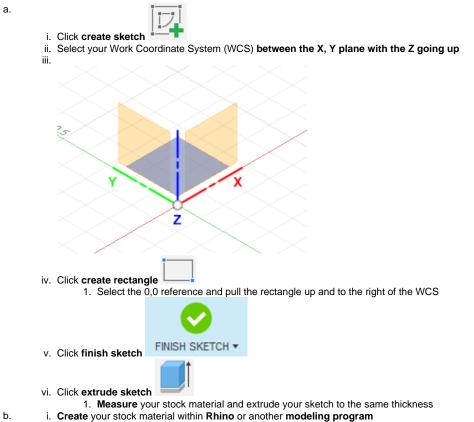
- 1 Design | Stock Material
- 2 Design | Model
- 3 Manufacture | Setups
- 4 Manufacture | Create From Template
- 5 Manufacture | Simulate
 C Manufacture | Dest Presserie
- 6 Manufacture | Post-Processing

Design | Stock Material

1. Must be in the Design workspace



3. Create or Import your stock material to Fusion360



ii. Export that stock model to a .stl file



- iii. In Fusion360 select insert mesh
- iv. Select your stock model .stl file v. Click OK
- 4. Rename your stock material (body) to keep your workspace clean
- 5. Change the opacity of your stock material by right clicking the item on the navigation tree>>opacity control>>50%

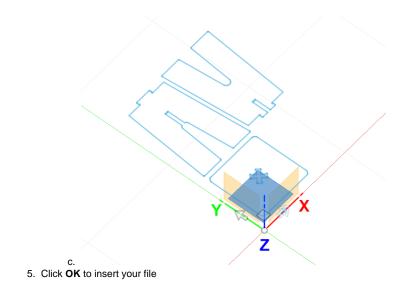
🖉 💿 🚺 (Unsaved) 💿	
Document Settings	
Units: in	
Named Views	
Origin	
Griffing Bodies	
Stock Flatsheet	
Move to Group	
Create Components from Bodies	
Create Selection Set	
Physical Material	
Appearance A	
CI Texture Map Controls	
Properties	
Save As Mesh	
Copy Ctrl+C	
Cut Ctrl+X	
Zelete Del	
← Remove	
Rename	
Display Detail Control	
Show/Hide V	
Selectable/Unselectable	
Opacity Control	Custom Opacity
	10%
Find in Window	20%
	40%
	50%
COMMENTS	60%
	70%
◣◂▶▶ы ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼	80%
TEXT COMMANDS	90%
- TEXT COMMANDS	100%

Design | Model

1. Must be in the Design workspace



- 2. On the top navigation bar, select Insert>>Insert Mesh
- 3. Select your mesh model .stl file
- 4. Click plane/sketch and select the plane between the X, Y
 a. Check your work coordinates orientation in the top right for clarity of X, Y positioning
 - b. If having trouble selecting the correct plane, hide your stock material by checking the eyeball in your navigation tree. This makes the stock material invisible and allows you to click through it.



Manufacture | Setups

1. Must be in the Manufacture workspace

	top navigation bar, select new setup
3. Setup ta a.	
	Setup Stock Post Process Machine Select
	▼ Setup Operation Type
	▼ Work Coordinate System (WCS) Orientation Origin ▲ Model origin Accessibility Analysis
	▼ Model Model
C.	Fixture OK OK

- 4. Stock tab a. Stock
 - i. Use the navigation tree to select your stock (best method)

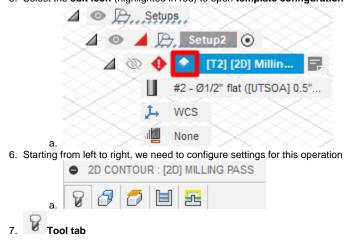
SETUP : SETUP1	
Setup Stock 🗒 Post Process	
▼ Stock	
Mode From solid 💌	
Stock Solid 🔖 Body 🗙	
▼ Stock Dimensions	
Stock Width (X) 96 in	
Stock Depth (Y) 48 in	
Stock Height (Z) 0.745 in	
OK Cancel	
ь. . Click ОК	

Manufacture | Create From Template

1. Must be in the Manufacture workspace

MANUFACTURE -

- 2. Right click the setup you just created and select 'create from template' Setup will default name to 'setup 2' in your navigation tree
- Select the template titled 2.5D Contours
 You should see new operation(s) load in from the template
- 5. Select the edit icon (highlighted in red) to open template configuration



2D CONTOUR : MILLING PASS		
7 3 5 1 2		
▼ Tool		
Tool	Select	
	#2 - Ø1/2" flat ([UTSOA] 0.5"	
Coolant	O Disabled 🔹	
▼ Feed & Speed		
Preset	Foam 🔻	
Spindle Speed	16000 rpm	
Surface Speed	2094.4 ft/min	
Ramp Spindle Speed	5000 rpm	
Cutting Feedrate	480 in/min	
Feed per Tooth	0.015 in	
Lead-In Feedrate	480 in/min	
Lead-Out Feedrate	480 in/min	
Ramp Feedrate	13.1234 in/min	
Plunge Feedrate	13.1234 in/min	
Plunge Feed per Revolution	0.00082021 in	
0	OK Cancel	

a. Select the tool required for your job as referenced on Templates for Fusion360 wiki page Tool = the bit used for this operation

Wood

 b. Select a material preset Preset = feeds & speed variables are baked into preset profiles 				
	▼ Feed & Speed			
	Preset	Wood	-	8 8 8
	Spindle Speed	Custom		
	Surface Speed	Foam Wood		



2D CONTOUR : MILLING PASS				\sim
9 <mark>8</mark> 7 8 2				
▼ Geometry				××.
Contour Selection 🛛 😽 Select 🗙				
L Sketch Profiles	÷;;;		\times	
🗂 🗇 🔗 🔻 🗙				
▼ 🖉 Stock Contours				
Stock Selections			\sim	
🗇 Chain	£33	\times	\sim	
🗂 🗐 🔻 🗙		5		
Tabs				
Rest Machining				\sim
Wrap Toolpath				• //
Tool Orientation				
ОК	Cancel			

- a. Select Geometry

 - Geometry = Line work for tool path
 Use the navigation tree to select your line work (best method)
 Geometry settings cog will display a window to select cutting on the inside or outside of a specified line

	SKETCH PROFILES		
	Sketch Selections	👆 Sketch	×
	Loops		
	Side	کہ Start out	tside 🔻
1.	0	OK	Cancel

b. Select Stock Contours

- i. Stock Contours = Creates a boundary box, keeping the tool within a certain perimeters
- ii. Select the boundary stock contour

a. Is configured for the School of Architectures ShopBot CNC machines and should not be changed.

9.

10.

Passes a. Is configured for the School of Architectures ShopBot CNC machines and should not be changed.

11. 🔁 Linking

Heights

a. Is configured for the School of Architectures ShopBot CNC machines and should not be changed.

Manufacture | Simulate

1. Must be in the Manufacture workspace

MANUFACTURE •

Right click your setup template and select Simulate	
[Autodesk Fusion 360 (Education License) දිටුි Edit
🖩 🖿 🗄 ST 👌 👗	Ty Edit Tool
	Compare and Edit
	Create NC Program
	Generate Ctrl+G
SETUP -	Gimulate
A BROWSER	61 62 Post Process
	Setup Sheet
△	Clear Toolpath
Units: in	U Machining Time
Named Views	Show V
D 🕲 🛄 Origin	Save Parameters as Defaults
⊿ 💿 🔓 Models	Suppress
▲ ● 🗍 (Unsaved):1 ●	Protect
Named Views	Dptional
D 💿 🖬 Origin	Create Derived Operation
a 💿 🖬 Bodies	Modify I
	Stock Add to New Folder
⊿ ⊙ 🖬 Sketches	Add to New Pattern
💿 🗔 Sketch1	Duplicate Ctrl+D
pt75 plywood	Cut
⊿ ⊙ ि, Setups	Copy
⊿ ⊙ ⊘ ⊵, Setup2 ⊙	Delete Del
	Associate Named View
	snow roopath Data
#2 - Ø1/2" flat ([UTS	Edit Notes
L WCS	Show Log Ctrl+L
4 60.5kb	Store as Template
Contour Selection	Collapse All Children
Stock Selections	XErinner

3. Watch the tool path simulation

- a. Take notes on the order of operations, making sure inner cuts are done before outer cuts
 b. Remember the simulation to help you out when you bring it to the ShopBot CNC as all the tool path and cuts will be exactly the same as in the operation
- 4. Once the simulation looks good, proceed with post-processing

Manufacture | Post-Processing

1. Must be in the Manufacture workspace

MANUFACTURE -

2. Right click your setup template and select Post-Process

[Autodesk Fusion 360 (Education License)	င့်္ပြို့ Edit
	🖅 Edit Tool
	Compare and Edit
	Create NC Program
	Senerate Ctrl+G
SETUP •	la Simulate
H BROWSER	61 62 Post Process
	E Setup Sheet
CAM Root	Clear Toolpath
Units: in	Machining Time
Named Views	Show V
D 🕲 🛄 Origin	Save Parameters as Defaults
△ A Models	Suppress
▲ ●	Protect
Named Views	Optional
D 🐼 🖬 Origin	Create Derived Operation
Decision de la companya de la compan	Modify •
96x48x0.745 Stock	Add to New Folder
🖌 💿 📷 Sketches	Add to New Pattern
💿 📜 Sketch1	Duplicate Ctrl+D
	Cut
⊿ ⊙ 🕞 , Setups	Copy X Delete Del
⊿ • ⊘ 💭 Setup2 •	Associate Named View
🛛 💿 🧭 💽 [T2] [2D] Millinç	
#2 - Ø1/2" flat ([UTSOA] 0	
📜 wcs	Show Log Ctrl+L
1 60.5kb	Store as Template
Contour Selection	Collapse All Children
Stock Selections	

3. Fill in the fields for

- **a. Post** = What type of machine?
- i. Use ShopBot OpenSBP found on Templates for Fusion360
 b. Name/number = Operation name within the ShopBot software
- i. May be left default
- c. File name = File name
 i. Recommended naming syntax 'EID Operation type Project'

Machine and post	
Use machine configuration	
Post	ShopBot OpenSBP / shopbi 🔹 🖉 🖆
Use cascading post	
Program	
Name/number	NM33573 - 2D Contour Stool
File name	NM33573 - 2D Contour Stool
Comment	Post-Processed on 7/17/23 at 3:18PM
Output folder	C:/Users/NM33573/Download 🔀 🖆
Post to Fusion Team	
NC extension	.sbp
Unit	Inches -
Open NC file in editor	
Create in browser	

4.