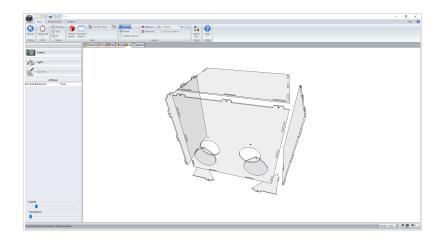
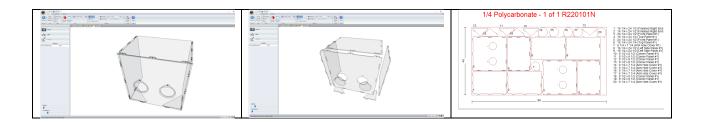
Planit Canada Shares Tips for Cutting Acrylic and Making a COVID Box Using Cabinet Vision



Manufacturers are answering the call to help protect our medical workers by dedicating their manpower and their machines to construct personal protective equipment that will help stop the spread of COVID-19. For woodworkers, navigating these uncharted waters presents some challenges. Knowing what to make, who to make it for and how to apply for government funding is all new. Learning how to cut acrylic, using their CNC router and Cabinet Vision, is the part of the equation that Planit Canada can help with.

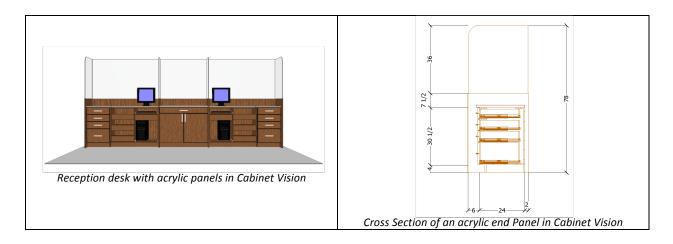
The COVID box, or intubation box, is designed, built, tested and distributed to Canadian hospitals by a Toronto-based team of volunteer physicians and engineers. The CAD drawings and parts list is available on their website (www.covidbox.org). Planit Canada Senior Software Specialist, Christopher Manclière, created the box in Cabinet Vision and is giving them to any manufacturer interested in making it. If you have a CNC Router and can get a ¼ tool to cut Acrylic (Polycarbonate), then you can start building these flat-packed boxes.

We caution all manufacturers against getting stuck with product they can't move. Please ensure you've gone through the correct channels before producing any personal protective equipment for medical workers. If you aren't sure where to turn, our industry associations are hard at work collecting and sharing relevant and up-to-the-minute information and can help direct you to Provincial and Federal resources.



Working with plastic materials requires a little bit more care than cutting wood. The following are some basics you need to know in order to ensure success with Cabinet Vision.

9 Tips for Cutting Acrylic Using Cabinet Vision



- 1. **Material Manager.** In Cabinet Vision you create the acrylic as a Panel Stock material in the material manager. It's really similar to a glass material in terms of finishes and texture.
- 2. **Assigning a tool.** You'll need to assign a tool to this material to make sure it doesn't use the same tool as your typical wood panels.
- 3. **Selecting the right bit.** You need to use a bit designed for acrylic cutting; an up-shear tool is recommended for this type on material. The O-Flute Bit is a good choice:



Example of a solid carbide O-Flute up shear bit for plastics

- 4. **Bit diameter.** If you cut large panels, it's better to use the largest diameter of bit possible to be able to cut deeper in a single pass and have a better finish. A good rule to determine the cut depth, is to cut half of the tool diameter in a single pass (for a 1/2 bit you will have a 1/8 pass depth).
- 5. **Feed Rate.** The feed rate would be slower than when you cut wood. For an 1/2 bit you could try a feed rate of 200 inch per minute (5 meter per minute)

6. Spindle Speed. The spindle speed (Rotation Per Minute) would be on the high end (18000 RPM)

Indexine Any Iname J/2 O Flut Iname J/2 O Flut Tool Struker 4 Inoid Dia 24 Inoid Dia 24 <th></th> <th></th> <th></th> <th></th>				
Marie Ary Name Ary State 4 Fool Studer 4 More Dia 24 Dia State 4 More And State 4 Dia State 4 Dia State 4 Dia State 4 Dia State 10 Dia State 10 Down State 10 Dia Dia Dia Dia Dia Dia Dia Dia Dia D	1/2 O-Flute	~		
Same 1/2 Of Made Coll Ruder 4 Mark Street 4 Coll Differ 9 Damake 1/2 Damake 1	- General		^	_
Food Stunder 4 Regist Offset D 4 Total D 24 Damate dreph 12 Damate dreph 12 Damate dreph 12 Down Steet 14 Down Steet 10 Person State 10	Machine			
Segit of Gife ID 4 Or DI 94 Di Gol Size Danete Danete 9/2 Vork Deph 2 Gol Selection Gol Selection Journal Sector Fee Outher Tool No Down Steer No	Name	1/2 O-Flute		
Ford ID 04 Density 040582 Density 1/2 Versity Depth 1/2 Versity Tepth 1/2 Versity 1/2		4		
Text Site Denteter 1/2 Work Deph 2 Text Site Control 2 Joint Site Control 1 Alow Auto Solicit Yes Outher Tool No Down Sheet No	Height Offset ID	4		
Dameter 1/2 Void Tegh 2 Void Tegh 2 Void Tegh 2 Aller Auto Stack Reit John Auto Stack Reit John Status No Johner Reit Johner Reit <tr< td=""><td>Tool ID</td><td>24</td><td></td><td></td></tr<>	Tool ID	24		
Toyot Deph 2 Toyot Selection Toyot Selection Allow Ako Selecti Yes Outher Tool No Lip Share No Lip Heed Rate No Lip Share No	- Tool Size			
Tot Section Addition Addition Addition Fee Outline Total No Down Stear No	Diameter	1/2		
Allow Auto Select Yes Conternation No. C	Work Depth	2		
Allow Auto Solicit Yes Down Sheet No	Tool Selection			Edit Change
Down Sheer No Log Shara Yes Decement Output Fash Diffect (Tod Carpo Rotate Codonies Yes Availage of the fast (Tod Carpo Rotate Codonies Yes December Data UR December Data UR December Data 0.0.000 JAfreed Rate 000.000	Allow Auto Select	Yes		cos snape
Lp Deter Yes Dotput Phil Offset // Tool Comp Datata Codoling Yes Max Dephilt Phase 1/8 Add To Through Cut B I If Yes Rate L/H Yes Rate J/H Yes Rate J/H Yes Rate Vertices Xes	Outline Tool	No	_	
Bycenent Dougut Pash Ratate Codewise Yes Max Oppin Pash By UB Additional Pash Addition Provide Cut P Addition P	Down Shear	No	_	
Object Arth Offset / Tool Comp Batter Goldwing Yes Max DephNer Pass 1/8 Add To Through Cut 0 If end Rate 1/4/4/end Rate U/4/4/end Rate 200.000	Up Shear	Yes		
Robate Codowies Yes Max Doph Pre Nav (J) Add To Through Out 0 Di Affred Rute 2000.000 Di Affred Rute 2000.000 V Affred Rute 2000.000 V	- Movement			
Has Depth Press (R Add To Phrough Cut D D Peel Rate U/Afreed Rate 200.000 D/Afreed Rate 200.000	Output Path	Offset / Tool Comp		
Add To Through Cut. 0 Perced Rate U4Feed Rate 200,000 U4Feed Rate 200,000 V	Rotate Clockwise	Yes		
□ Peed Rate 1/4 Feed Rate p00.000 2/4 Feed Rate p00.000 ↓	Max Depth Per Pass	1/8	_	
1/4 Feed Rate 200.000	Add To Through Cut	0	_	
3/4 Feed Rate 200.000 v	E Feed Rate			
b	1/4 Feed Rate	200.000		
\$	3/4 Feed Rate	200.000		
U	Daarant Data	400.000	~	
Inches 1/32			^	
Inches 1/32				
		Inches 1/2	32	

- 7. **Run Tests.** You need to run some test parts and find the optimal cutting feed rate and spindle speed for your machine. The settings above are just a starting point. The idea is to get a good clean cut without melting the plastic as it's being cut.
- 8. **Suction.** You need good suction on the CNC machine table to secure the acrylic parts. Excess vibration can result in poor finish.
- 9. **Protective film.** You can leave the protective film on the bottom surface on the acrylic panel while cutting.

	- 0	_
Pattern Zoom View Ender Columns		
Cat Patterns	1/4 Acrylic - 1 of 3 R420201N	_
50 Teture(Melanine (3)	1 : (2 12 x 30 (Acris Parel #12) 2 : 31 12 x 30 (Acris Parel #12)	
HANK [1]	2:31:12x30 (Acrigic Panel #1)*	
38 Tedase(Malarias (2)		
	v	
Report		
NC Code & Labels		
Show Tool Path	90	
Matheiro Tendaton		
	(m) (m) *** *** (点点)(m) (m) (m) (m) (m) (m) (m) (m) (m) (m)	
	and a stronger resolution. Consider rates into one rates of the resolution of the stronger rates of the strongerates of the strongerates of the stronger r	
This Product is Licenced to : Planit Canada	when 152 足 息 書 書	

Optimization of acrylic panels in S2M Center

Planit Canada is providing complimentary technical assistance for projects contributing to the effort to slow the spread of the COVID-19 virus. If your team is producing personal protective equipment (PPE) and requires help setting up for production with Cabinet Vision, our team is here to help - free of charge. Reach out to us at <u>tech@planitcanada.ca</u> to talk about designing and engineering for the COVID-19 effort.

For more information on the intubation box itself, visit <u>https://www.covidbox.org/home</u>, or visit this article from the New England Journal of Medicine <u>https://www.nejm.org/doi/full/10.1056/NEJMc2007589</u>