

## ShopBot Starter Bit Kit: Gantry Tools

## Suggested Settings for Vectric Tool Library

*Suggestion: create your own tool library, save it on a thumb drive, and copy it onto all computers with Vectric software to ensure common tool library*

**Post: ShopBot TC (inch)** (checks if tool number is different than one used in last toolpath. If it is different, you are asked if you have correct bit in spindle and have zeroed it.)

**Note: Tool numbers are somewhat arbitrary. The ones listed are just suggestions, with the following important point:**

**Available tool numbers for a single router or spindle = 1 - 19. ShopBot File (.sbp) will not start spindle/ router if you assign a tool number => 20.**

toolpath	example	material	geometry	diameter	type	Manuf	Mfg ID	tool #	pass depth	spindle speed	feed rate	plunge rate (Z)	why/results
<i>2D toolpaths plunge to set depth, then stay there for the entire operation</i>													
2D	profile, pocket, drill	wood	straight	1/4"	end mill	Onsrud	48-005	1	diameter of bit	12000	4 ips	1 ips	all purpose bit
2D	profile, pocket, drill	wood	up spiral	1/4"	endmill	Onsrud	52-910	1	diameter of bit	12000	4 ips	1 ips	top edge rough (pull fibers up)
2D	profile, pocket, drill	wood	down spiral	1/4"	endmill	Onsrud	57-910	1	diameter of bit	12000	4 ips	1 ips	top edge clean (push fibers down)
2D	profile, pocket, drill	wood	straight	1/2"	endmill	Onsrud	48-072	5	diam of bit or less	12000	4 ips	1ips	
2D	profile, pocket, drill	plastic/alum	"O" flute	1/4"	endmill	Onsrud	65-025	3	plastic: diam of bit	10 - 11K	4 ips	1ips	
<i>note: if plastic melts back, slow down RPMs 100 -200 RPMs aluminum has special settings see Chapter Bit Selection, Feeds, Speeds</i>													
2D	surface the ShopBot table	spoil board	end mill, no plunge	1.25"	endmill	Onsrud		12	.08"	12000	5 ips	1 ips	
<i>note: taking off little material so can go fast. Use Pocket Toolpath. Set stepover to 50%. Set toolpath option to raster.</i>													
<b>Engrave or VCarve</b>													
	V carving	wood/plastic	V - 60 deg	1"	V Bit	Onsrud	37-82	6	.25"	12000	3 ips	3 ips	
<i>note: simultaneous XY and Z movement, so match speeds to improve machining efficiency</i>													
<i>note: suggestions for other V bits:</i>													
	V carving	wood/plastic	V - 90 deg	1.5"	V Bit	Onsrud	37-87	9	.25"	12000	3 ips	3 ips	
	V carving	wood/plastic	V - 90 deg	.5"	V Bit	Onsrud	37-61	9	.125"	12000	3 ips	3 ips	
<i>also: Amana bits where you replace the blade</i>													
<b>3D Finish</b>													
pass	3D finish pass	wood/plastic	tapered ball nose	1/8"	ball nose	Onsrud	77-102	4	.125"	12000 for wood	6 ips	6 ips	
<i>note: 3D movement for finish pass. Set stepover to 10% to get a smooth result. Removing very little material, so match XY &amp; Z speeds and go fast.</i>													
<i>note: suggestion for other 3D finish bits: 1/4" ball nose or 1/2" ball nose for 3D carving that does not require details</i>													
				1/4"	ball nose	Onsrud	52-280BL		0.25	12000	6 ips	6 ips	