

# Manufacturing Comparison Chart

		Fusion 360	Fusion 360 PLUS Machining Extension
DRILLING	<b>Drilling</b> Choose from a range of tools and toolpath types to create NC code to drill holes in components.	✓	✓
	<b>Automatic hole recognition</b> Speed up drilling by automatically recognizing holes in 3D models, selecting tools, and creating efficient toolpaths. Also supports the identification and machining of multi-axis holes.	-	✓
MILLING	<b>2.5-axis milling</b> Quickly create toolpaths for pockets, bosses, slots, and other 2D features. Includes 2D Adaptive Clearing for high efficiency roughing.	✓	✓
	<b>3-axis milling</b> Access a range of 3D roughing and finishing toolpaths, including 3D Adaptive Clearing for fast and efficient machining of complex parts.	✓	✓
	<b>3+1 and 3+2-axis (positional) milling</b> Use the rotary axes of your CNC machine to orient the toolaxis and access undercuts or difficult to reach features. Also enables the use of shorter, more rigid cutting tools for more aggressive feed rates, faster cycle times, and improved part quality.	✓	✓
	<b>Wrap 2D to 4-axis milling</b> Wrap 2D toolpaths around a single rotary axis to produce NC code that can machine cylindrical parts on you 4-axis or mill/turn machinery..	✓	✓
	<b>Steep &amp; Shallow machining</b> Automate the machining of feature rich 3D parts with this highly effective toolpath type. Independently control how steep and shallow regions of the model are machined to improve surface finish and reduce CAM programming time.	-	✓
	<b>Interactive 3+2 toolaxis orientation</b> Unlock additional, interactive toolaxis orientation controls to simplify 3+2 machining. Use drag-and-drop controls to quickly find the optimum toolaxis setting to machine parts safely and completely.	-	✓
	<b>4-axis simultaneous milling</b> Create rotary toolpaths that use all 4 axes of your machine simultaneously to manufacture non-cylindrical parts.	-	✓
<b>5-axis simultaneous milling</b> Choose from a range of toolpaths and toolaxis options that use all 5 axes of your machine simultaneously to manufacture complex parts. Note: while some basic 5-axis options exist in Fusion 360 <b>the Machining Extension offers substantially more functionality.</b>	-	✓	
TURNING	<b>2-axis turning</b> Choose from a range of turning specific tools and toolpath types to machine turned components quickly and effectively.	✓	✓
	<b>Turn-milling</b> Seamlessly combine turning and milling toolpaths to produce NC code for use on mill/turn and turn/mill machines.	✓	✓
EDITING	<b>Toolpath limiting</b> Make quick edits to toolpaths by limiting them to sketched polygons and choosing which regions to keep. Modifications are automatically reapplied if the toolpath is recalculated and can also be modified if you needs change.	-	✓
	<b>Delete passes</b> Quickly select and delete sections of toolpaths that you no longer need, whilst avoiding unnecessary recalculations. Reduce your CAM programming time and effort and start machining your parts sooner.	-	✓
INSPECTION & PART ALIGNMENT	<b>Work Coordinate System (WCS) setup probing</b> Measure and adjust work coordinate setups using in-spindle probes to reduce machine setup time and maximize spindle uptime.	✓	✓
	<b>Manual inspection</b> Create an interactive measurement plan for use with hand held measurement tools. Combine probing results with manual inspection to produce comprehensive reports.	✓	✓
	<b>Geometry probing</b> Measure the dimensions and locations of features during machining. Optionally use the measurement to take corrective action, like updating tool wear parameters, for increased part accuracy and reduced scrap rates.	-	✓
	<b>Surface inspection</b> Use in-spindle probes to inspect and validate the dimensional accuracy of complex surfaces during the machining process. Use the results to catch problems early so you can take corrective action.	-	✓
	<b>Part alignment</b> Go beyond simple inspection and realign subsequent machining operations based on surface inspection results. Use to automate initial part setup - especially when machining castings, 3D printed parts, or other near net shapes.	-	✓