

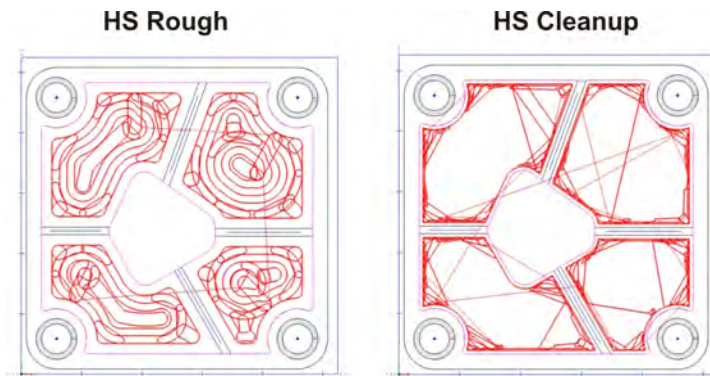
# BobCAD-CAM Version 23

## HSP Technology: High Speed Pocketing

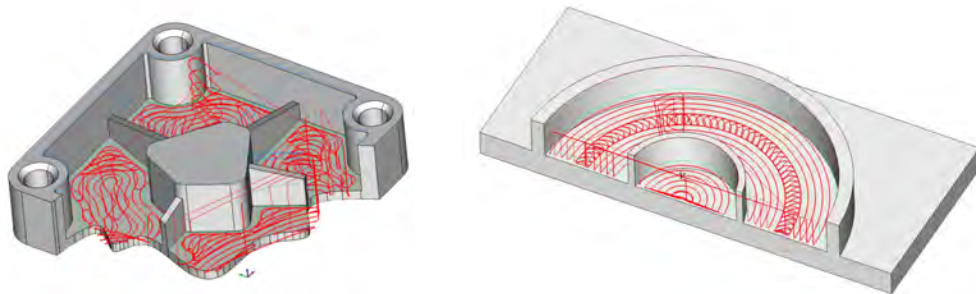
### The Advantages

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**High Speed Machine strategy:** The new high speed pocketing utilizes the idea of a constant material removal rate to eliminate excessive tool engagement particularly in corners and movements from one toolpath to another. What this means is that the tool feeds and speeds can be dramatically increased, depths of cuts can be increased, and tool wear can be minimized.



**Open ended pocketing:** The new pocketing algorithm offers support for open ended pocketing. The toolpath automatically adapts to open sides of the pocket to start your tool off the part while still maintaining the constant material removal strategy and minimizing plunging into the material.



**Slot milling and Side milling options:** The toolpath calculations automatically adjust whether to use a slot milling or side milling strategy to optimize the cycle times. Users can force side milling only for harder materials to avoid burying the tool in the material.

**High Speed Repositioning and Feed rate optimization:** The feed rates for each movement of the toolpath are optimized, so if the tool is traveling over an area that has all ready been cut, the tool can be lifted and moved at a much higher feed than what is programmed to be used during cutting. Also, the feed rates during the cut are optimized to ensure constant efficient material removal.

**Clean up option:** Clean up operations can be applied, which means the user is given the option to come back and automatically clean up areas that were left from a larger tool. Again, the same constant material removal algorithm applies to the cleanup optimizations.

**Cuts using up to 100% of the tool diameter:** With standard parallel offset pocketing, using over 50% of the tool will typically result in stand ups that need to be removed with

secondary operations. The high speed pocket toolpath requires no special operations to handle using over 50% of the tool diameter for the cut amount.

**Specialized tool motion for small pockets:** When the tool is nearly the size of the pocket that is trying to be machined, the toolpath automatically adjusts its strategy for machining the tight spaced.

## **SPEED/FEED DATA SHEET**

### **ALUMINUM 6061-T6**

Getting the best performance from the new High Speed Pocketing toolpaths requires using more aggressive machining parameters than you may be used to. This data sheet provides some examples of parameters used for milling 6061-T6 aluminum. This data is from tests performed by Celeritive Technologies, Inc., independent research facilities, and existing customers using these cutting strategies on a daily basis in their shops. No two machining environments are exactly alike, so you may need to adjust your parameters accordingly, but these numbers have worked well for others.

MACHINE	TOOL	TOOL DIAM.	DOC	STEPOVER	SPINDLE SPEED	* PROGRAMMED FEEDRATE
HAAS VF3	HANITA 5A0316006 3 Flute	0.625	0.625	0.250	10,800 RPM	300 IPM
HAAS SUPER MINI MILL	OSG EXOCARB 20415100 3 Flute	0.500	0.500	0.225	10,000 RPM	350 IPM
HAAS VF3	OSG EXOCARB 20425100 3 Flute	0.500	0.500	0.250	12,000 RPM	500 IPM
MORI SEIKI NH4000- DCG	Swift-CARB ARR323CB 3 Flute	0.500	1.000	0.200	10,000 RPM	210 IPM
MORI SEIKI NH4000- DCG	Swift-CARB ARR323CB 3 Flute 3 flt	0.500	1.000	0.250	12,700 RPM	260 IPM

The NEW BobCAD-CAM High Speed Pocketing dynamically and automatically adjusts feed rates and/or axial depths of cut to manage the material removal rate. All feed rate adjustments are based on the programmed feed rate.

For more information, contact BobCAD-CAM, Inc at 877-262-2231 or Internationally at 727-441-3554. You can visit us online at [www.bobcad.com](http://www.bobcad.com).