



## VOC - A new functionality for greater accuracy

### Greater accuracy

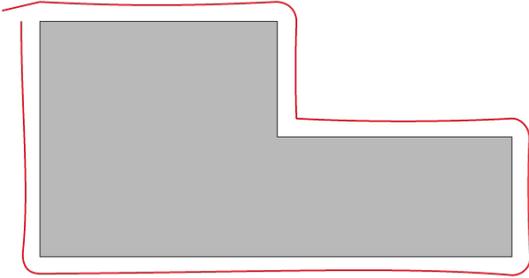
If you measure your parts, you will find that the dimensions of your parts are different depending on the cutting speed. It's because the jet will wash out more material when cutting with lower speed than higher speed.



Image **A** is cut with high speed and image **B** is cut with low speed.

# VOC

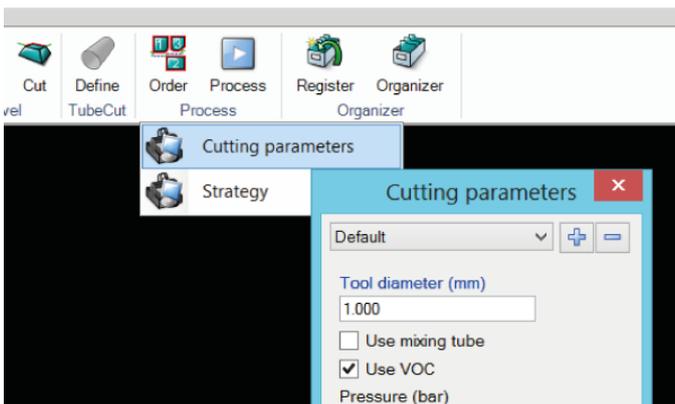
We just released a new optimizing functionality in IGEMS 2013.4 called VOC, (Variable Offset Control). It calculates a new path for the jet with variable tool offset based on the cutting speed. When the speed changes, the offset will also change in order to make the part dimensions more exact.



The image describes a part with a VOC tool path.

## How to activate VOC

The VOC calculation can be activated from the Cutting parameter settings. Please make sure the Tool Diameter is correct when you do this. The value is the size for Rough quality.



## Setting up the VOC values

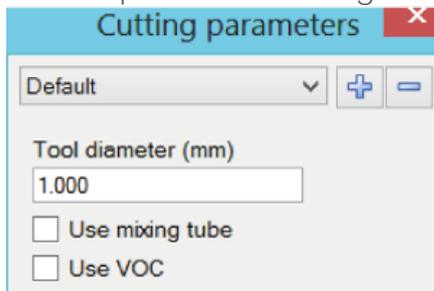
To be able to use the VOC technology, you need to know the offset of the Rough and X-Fine quality.

Here's how you set up these values:

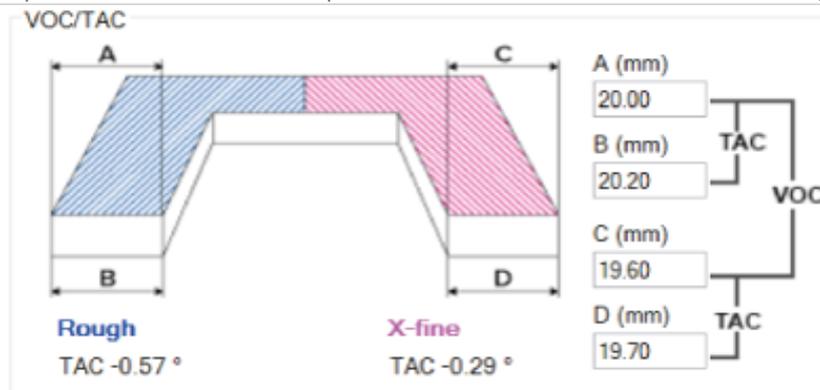
1. Make a simple part with Rough and X-Fine cutting quality.



2. Cut the part without using VOC.



3. Open the Material setup and scroll to the VOC/TAC settings.



**A**, Enter the top-width of the part in the area specified as Rough.

**C**, Enter the top-width of the part in the area specified as X-Fine.

### TAC settings

If you have an 5-x cutting machine you may also enter the bottom-width of the part (**B & D**). This will make the jet tilted to obtain a straight cut.

4. Now that you have changed the values you will cut parts with greater accuracy than before. Please don't forget to activate the VOC checkbox in the Cutting parameters before you start cutting.

## Q&A

- Can the VOC function be used on any waterjet machine?  
*Yes, as far as we know, it's possible to use this on any machine.*
- Do I need to buy anything to be able to use VOC?  
*If you have the AWJ module this feature is free of charge.*
- Can the VOC be used together with the Bevel module?  
*The technology can so far only be used for 2D cutting.*
- I have IGEMS 2013.3. How can I get this function?  
*You must download and install a version newer than 2013.4.276*
- Is this function well tested?  
*We have so far only tested this in our own Waterjet Lab.*
- I have made some tests and I don't see any improvement?  
*The maximum VOC is depending on the difference between Maximum tool diameter and the Tool diameter for Rough cutting quality. It's a good idea to increase the Maximum tool diameter that can be found in the Machine settings.*
- Does this function require any changes to the postprocessor?  
*No changes required.*

If you have any questions, please contact us at [igems.se](http://igems.se)