TB083 (Rev1) - Rigid Tapping Guidelines

In order for the rigid tapping feature to be used, it is necessary that a spindle encoder is mounted in a 1:1 ratio with the spindle and wired into the 5th axis encoder input on the CPU7 card (already provided with ATC kits), the tapping software option is unlocked, and the following control parameters are set as in the table below:

Parameter	Value	Function
34	4,096	Sets the counts per revolution (cpr) of the encoder. The encoders so far have been 1024 lines, providing 4096 cpr. If the encoder counts up when the spindle turns CW then the value should be positive. If the encouder counts up when the spindle turns CCW then the value should be negative.
36	Bitwise value	Bit 0: 0-Disable rigid tapping, 1-Enable rigid tapping Bit 1: 0-Wait for index pulse during rigid tapping, 2-Do not wait for index pulse Bit 2: 0-Do not allow spindle override, 4-Allow spindle override. ***Example:*** A value of 3 will enable rigid tapping (bit 0 = 1) and during execution will not wait for the index pusle to start (bit 1 = 2) and the spindle override will not change the spindle speed (bit 2 = 0).
37	3.0	Spindle deceleration time. Although the inverter accel/decel rates are programmed at .0 seconds, it does not take 2 seconds to decel at slower rates.

Generating G-code for rigid tapping is easily done with Intercon using drilling cycles to drill out the minor diameter of the tap and then using the floating tap cycle to generate the rigid tap.

Document History

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