

# Working With Master Program Loops

June 18, 2007

## 1.0 Overview

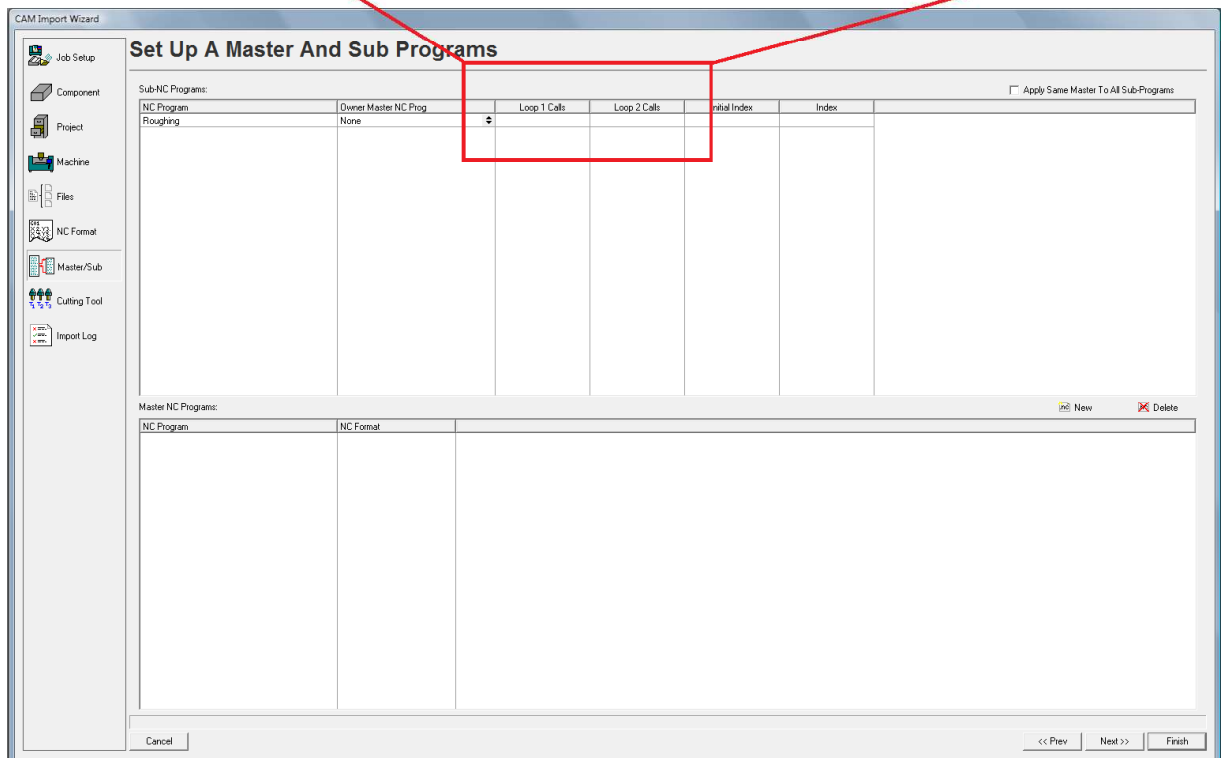
This document explains how you can work with Master Program loops.

## 2.0 Master/Sub tab on the CAM Import Wizard

Some changes have been made to the Master/ Sub tab on the CAM Import Wizard. Previously there was only one column to set up the number of Loops called "Number of Calls". This has been changed to two columns named "Loop 1 Calls" and "Loop 2 Calls".

"Loop 1 Calls" is the master loop while "Loop 2 Calls" is an embedded loop within "Loop 1". Thus "Loop 2" will get called the number of times set within the column for each instance of "Loop 1". Initial Index and Index are used as optional variables that can be used to set the array indices of the sub programs.

	Loop 1 Calls	Loop 2 Calls	
▲▼			



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## 3.0 The NC Format

To allow the changes to the columns in the Master/Sub Tab we have to change the way that Execute Sub Program block within the NC Format works. There are 4 new Option codes that must be used, [LOOP1\_BEGIN], [LOOP1\_END], [LOOP2\_BEGIN] and [LOOP2\_END]. [LOOP1\_BEGIN] / [LOOP1\_END] defines the outer limits of the master loop. [LOOP2\_BEGIN] / [LOOP2\_END] defines the outer limits of the embedded loop, this loop needs to be contained within "Loop 1" ([LOOP1\_BEGIN] / [LOOP1\_END]).

Additionally, you can add Program Control codes to output custom codes with the values from the Initial Index and Index columns of the Master Program page of the CAM Wizard. These are input as [MASTER\_PROG\_INIT] and [MASTER\_PROG\_INDEX] in the code text.

**Note:** You can make CAMplete TruePath behave the same as before, only executing one loop, by either leaving out the [LOOP2\_BEGIN] / [LOOP2\_END] codes in the NC Format or by setting the value in the "Loop 2 Calls" column in the Master/Sub tab in the CAM Import Wizard to be 1.

NC Format Editor

### Fanuc Master Program: Execute Sub-Program

Name: Fanuc Master Program: Execute Sub-Program    Description: 6/20/06    Status: 

Property	Status
Inactive	<input type="checkbox"/>

Last Modified: 13/06/2007 9:54:19 AM

Controller: Fanuc

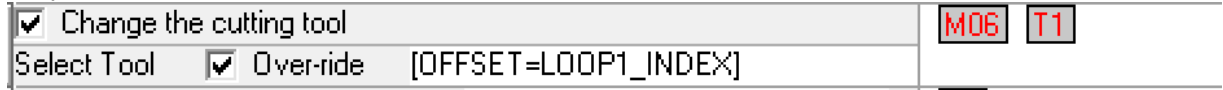
Start Block   
 Middle Block   
 End Block   
 Show All

Execute Sub-Program Lines: Insert New Line

Index	Default Settings	Code Layout
1	Auto Comment: Execute Sub: [REMARK=Op: ][NAME][REMARK]	Auto Comment: Execute Sub Program
2	Options [LOOP1_BEGIN]	Simulation/Post Option
3	<input checked="" type="checkbox"/> Change the cutting tool Select Tool <input checked="" type="checkbox"/> Over-ride: [OFFSET=LOOP1_INDEX]	M06 T1
4	Spindle Speed 0	S0
5	Program Control G90 C[MASTER_PROG_INIT]	G90 C[MASTER_PROG_INIT]
6	Options [LOOP2_BEGIN]	Simulation/Post Option
7	Execute Sub-Program:	M98 P0000
8	Program Control G91 C[MASTER_PROG_INDEX]	G91 C[MASTER_PROG_INDEX]
9	Options [LOOP2_END]	Simulation/Post Option
10	Options [LOOP1_END]	Simulation/Post Option

4.0 Numbering the Select Tool calls within the Loops

There is now the option to override the options for the Select Tool call. If the line [OFFSET=LOOP1\_INDEX] is found on the Select Tool line we will enumerate the Select tool calls within the Loop.



Upon loading the file you will notice in the Object Inspector window of CAMplete TruePath will replace the "LOOP1\_INDEX" with the number of the current loop being executed by "Loop 1". It will also increment the tool number in the G-Code for each loop.

