102-NF-20100

FFCAM 2020.1

Description of New Functions

MAKINO

Preface

This manual describes the functions added to MAKINO FFCAM 2020.1 and how to use them.

Created

September 2020

List of Functions Added to FFCAM 2020.1

1. Function to Export the Machining Information to Excel

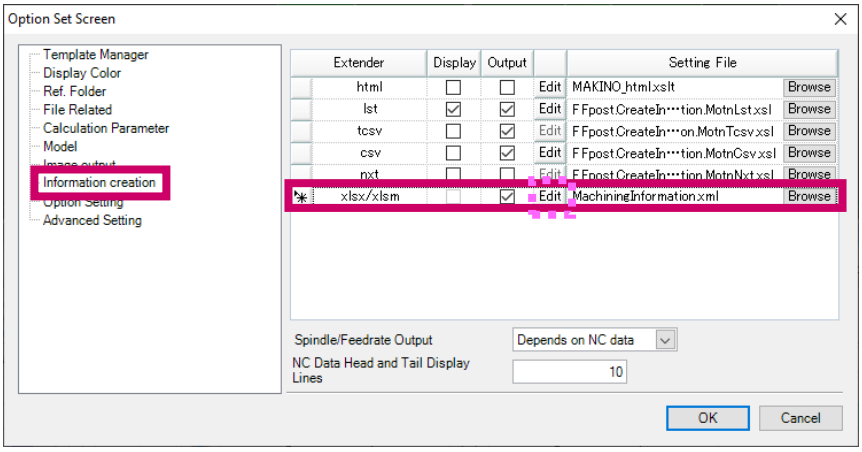
A function to output Machining Information to an Excel file (.xlsx/.xlsm) has been added to FFCAM.

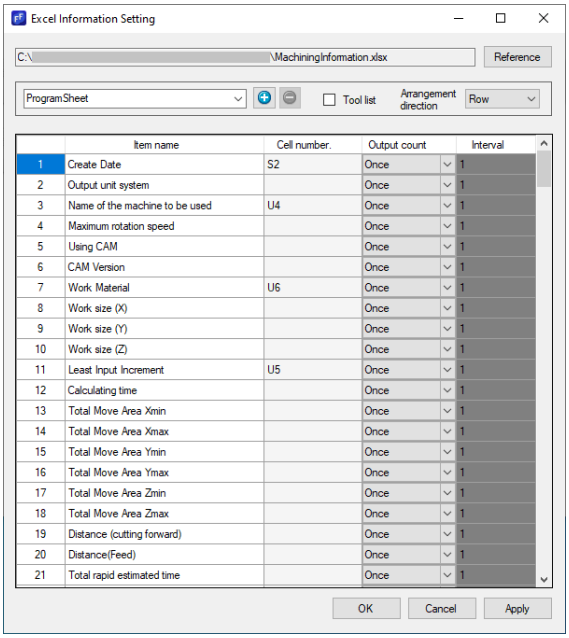
In addition to the existing Machining Information output function of FFCAM, the new function allows the output of Machining Information in Excel format, enabling detailed customization.

■ Setting Screen

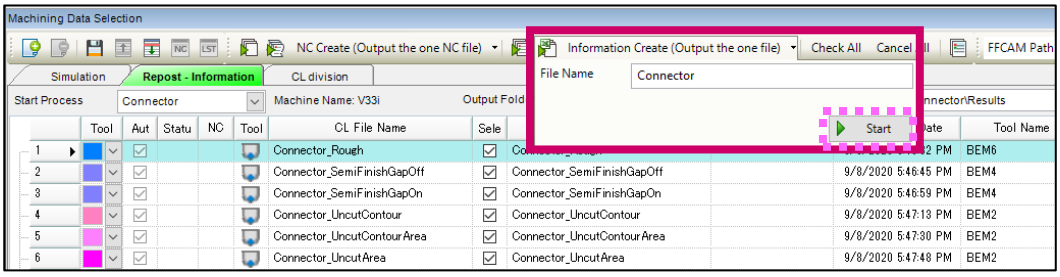
In [Option Set Screen] -> [Information creation] -> "xlsx / xlsm" item, you can set the items to be output in Excel Machining Information and the destination to save the Excel file.

Click the [Edit] button of "xlsx / xlsm" item to display the [Excel Information Setting] screen, and set the required details.

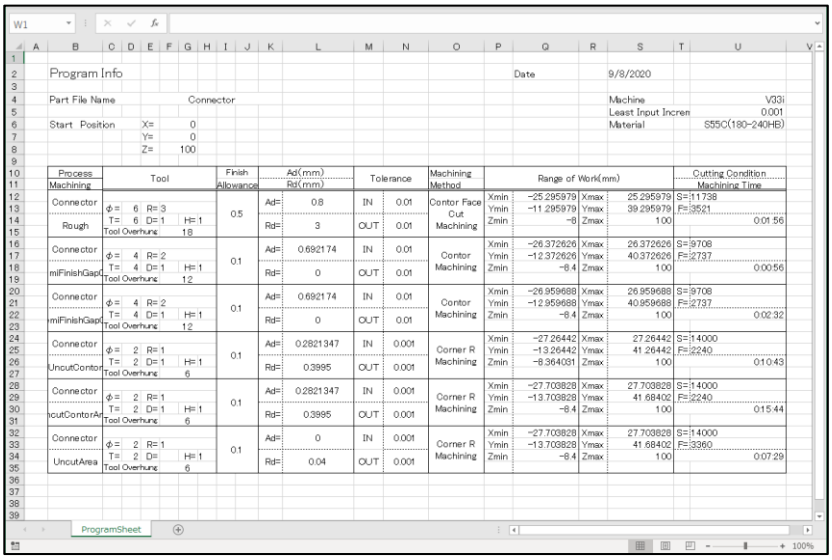




The Excel Machining Information that is set will be output when the "Information Create (Output the one file)" function in [Repost - Information] is used.

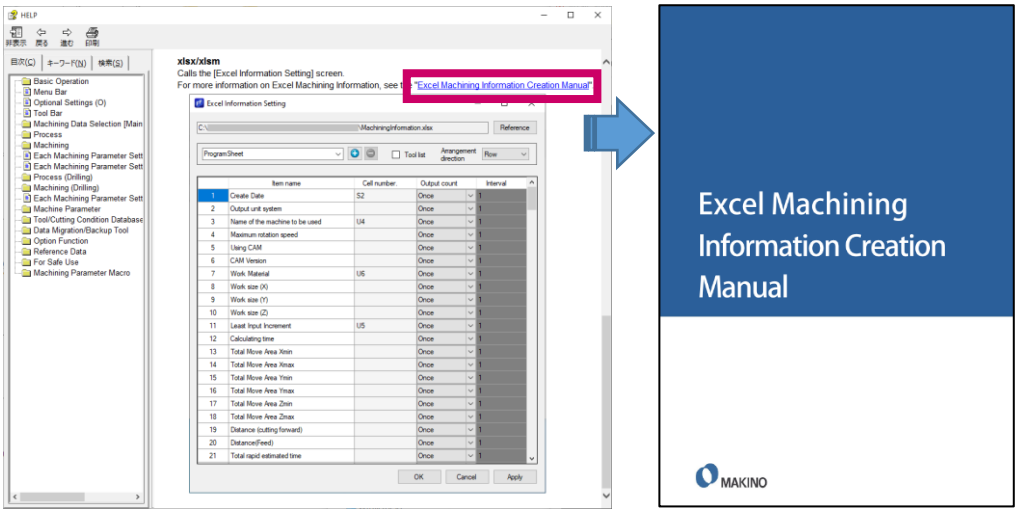


Ex.: Excel Machining Information that is output



For details on the Excel Machining Information output function, refer to the *Excel Machining Information Creation Manual* in the Help of FFCAM.

The manual can be browsed from Home > Basic Operation > Optional Settings > Information Creation in Help.



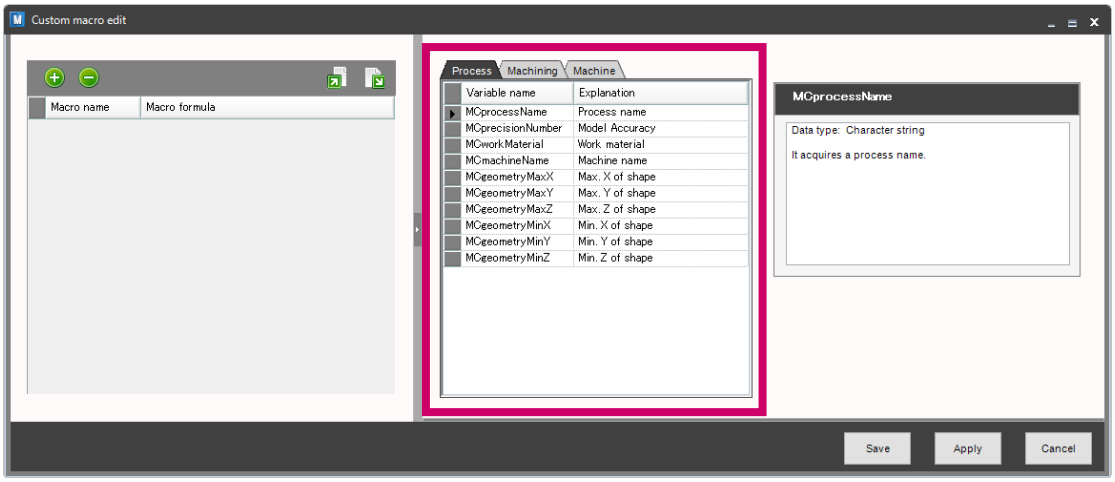
2. New Definitions for Parameter Macro Definition Function

Macro variable types that can be defined and parameter types that support macro settings have been increased in the parameter macro definition function.

■ Setting Screen

Macro variable types that can be defined in [Custom macro edit] and parameter types that can be set in the [Macro edit] screen have been added. The details are described below.

[Custom macro edit] screen

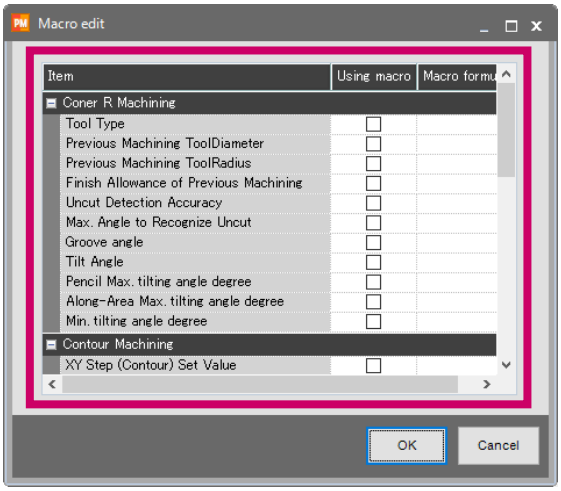


List of new macro variables

Variable name	Parameter name	Data type	Description
MCprocessName	Process name	String	Acquires the process name.
MCmachiningName	Machining name	String	Acquires the machining name.
MCtoolName	Tool name	String	Acquires the tool name.
MCshankAngle	Shank angle	Real	Acquires the shank angle.
MCholder1Name	Holder name (1)	String	Acquires holder name (1).
MCholder2Name	Holder name (2)	String	Acquires holder name (2).
MCcontourCornerR	Contour corner R specification mode	String	Acquires the contour corner R specification mode None : None ToolRatio : Tool Ratio Radius : Radius Value

Variable name	Parameter name	Data type	Description
MCcontourCornerRValue	Contour corner R - Set value	Real	Acquires the contour corner R setting value.
MCoutputStockName	Output stock file name	String	Acquires the output stock file name.
MCmachiningIndex	Machining order	Integer	Acquires the machining order.
MCroughType	Motion type	String	Acquires the value of [Motion Type] for "Contour Face Cut Machining" and "Flat Face Machining". Follow : Follow Scanning : Scan Trochoidal : Trochoidal Side : XY Drive-in Cut Spiral : Spiral Follow2 : Follow (High-feed machining)
MCtrochoidalSlotType	Trochoidal machining diameter	String	Acquires the value of [Trochoidal Machining Diameter] for "Contour Face Cut Machining" and "Flat Face Machining". None : None ToolRatio : Tool Ratio Diameter : Diameter Value
MCtrochoidalSlotWidth	Trochoidal machining diameter - Set value	Real	Acquires the value of [Trochoidal Machining Diameter] - [Set Value] for "Contour Face Cut Machining" and "Flat Face Machining".
MCrestFollow	Along-Area - Drive-in Cut Amount	String	Acquires the [Drive-in Cut Amount] of Corner R machining. Length : Width CuspHeight : Scallop Height ToolRatio : Tool Ratio
MCrestFollowValue	Along-Area - Drive-in Cut Amount - Set Value	Real	Acquires the [Drive-in Cut Amount] - [Set Value] of Corner R machining.

[Macro edit] screen



List of new FFCAM parameters that support macro settings

- **[Process Setting] screen**

Tab name	Setting name	Name of parameters that support the macro settings
Process setting	Process setting	Process name
Set of Machining Geometry	Machining Geometry	Mesh Width

- **[Machining Parameter Setting] screen**

Tab name	Setting name	Name of parameters that support the macro settings
Machining Setting	Machining Setting	Machining name
		Comment
Tool Setting	Holder	Holder clearance
		Shank clearance
Relief/Approach/Infeed Setting	Z Direction Approach	Lead amount (Infeed)
		Lead amount (Escape)
	Path Approach Motion	Infeed Length
		Infeed Width
		Infeed Circular Radius
		Infeed Z Tilt Angle
		Escape Length
		Escape Width

Tab name	Setting name	Name of parameters that support the macro settings
		Escape Circular Radius
		Escape Z Tilt Angle
Machining Parameter Setting	Path Detail Parameter	Cutting Length
		Delete Short Cutting Movement
		Max. Area Moving Length
		Runout Change Mode Length
		Remove the Micro Machining Area - Offset
		Remove the Micro Machining Area - XY Area
	Model Top Automatic Recognition	Min. Cutting Width - Set Value
	Corner R Machining	Tool Type *1
		Diameter of Pre-machining Tool *1
		Max. Angle to Recognize Uncut *1
		Groove Angle *1
		Tilt Angle *1
		Min. Tilt Angle *1
		Along-Area - Max. Tilt Angle *1
		Pencil - Max. Tilt Angle *1
	Contour Projection Machining	Path Switching Angle *2
	Contour Face Cut Machining	Trochoidal Machining Diameter - Set Value *3
	Flat Face Machining	Trochoidal Machining Diameter - Set Value *3
	Along-Area	Drive-in Cut Amount - Set Value *1
Uncut Model Setting	Stock	Stock File *4

*1 Macro settings of this parameter can be specified only for Corner R Machining.
*2 Macro settings of this parameter can be specified only for Contour Projection Machining.
*3 Macro settings of this parameter can be specified only for "Contour Face Cut Machining" and "Flat Face Machining".
*4 Macro settings can be specified for only one stock file.

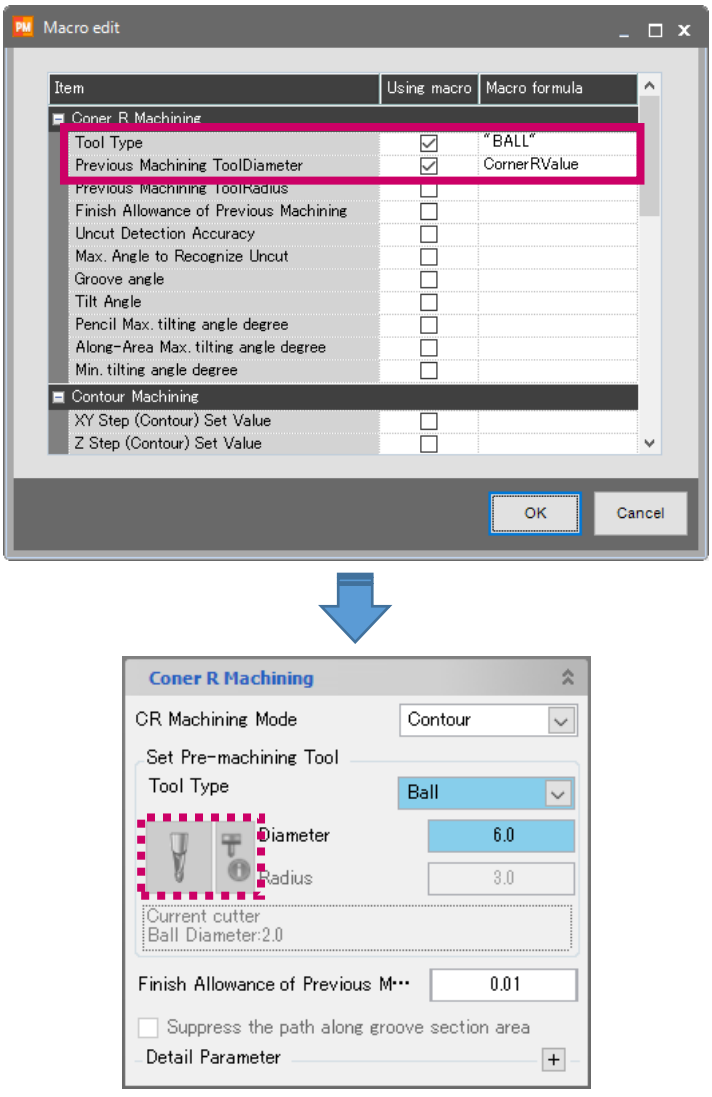
3. [Pre-machining Tool] and [Pre-machining Tool Information Acquisition] buttons in CR Machining Now Support Macro Function

The function has been improved so that the [Pre-machining Tool] and [Pre-machining Tool Information Acquisition] buttons cannot be selected when a parameter macro is specified for [Set Pre-machining Tool] of [Corner R Machining] in [Machining Setting].

When a macro is specified for [Set Pre-machining Tool], these two buttons are grayed out, and their values cannot be changed.

■ Setting Screen

When a macro is specified for [Set Pre-machining Tool] in [Macro edit], the [Pre-machining Tool] and [Pre-machining Tool Information Acquisition] buttons are grayed out and cannot be selected.



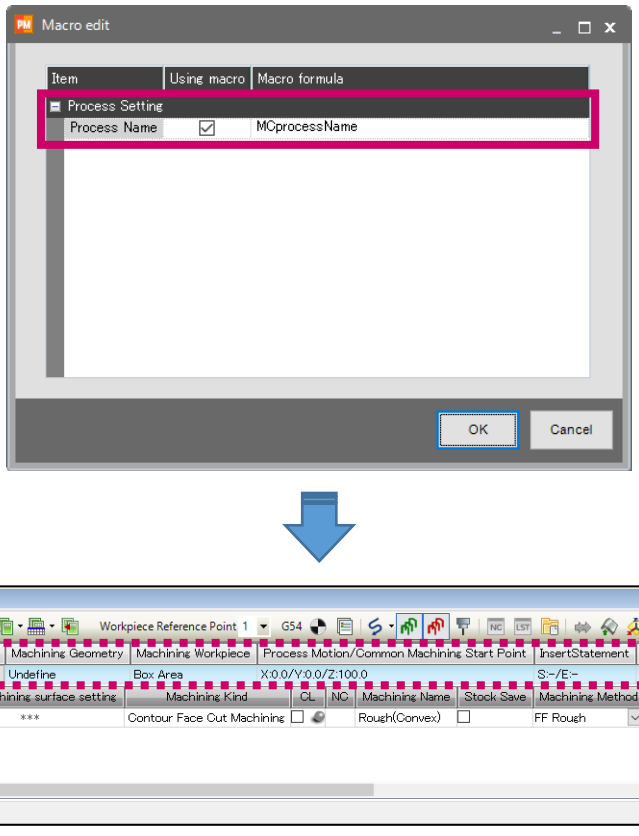
4. Updates Changes in Content of Process List after Application of Parameter Macro

When a parameter macro is specified in the process setting, process list information in [Machining Data Selection] is updated after path calculation.

Since items that allow you to set parameter macros have been added to the process setting, the contents are updated in the process list.

■ Setting Screen

When a macro is specified in the process setting, the process list information in [Machining Data Selection] is updated after path calculation.



The following process settings have been added to the setting items of parameter macro.

- Process Setting (Milling)
- Process Setting (Drilling)

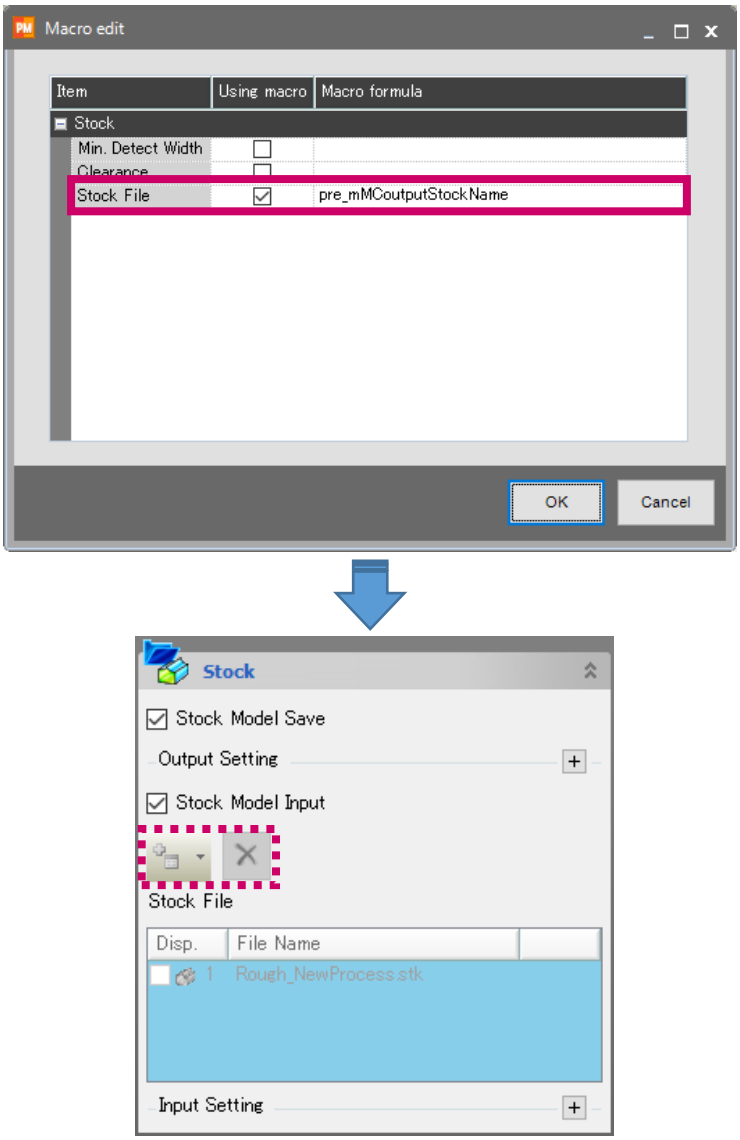
5. [File Registration] and [File Deletion] buttons in [Stock Setting] Support the Macro Function

The function has been improved so that the [File Registration] and [File Deletion] buttons cannot be selected when a parameter macro is specified for [Stock File] setting in [Machining Setting].

When a macro is specified for the [Stock File] setting, these two buttons are grayed out, and their values cannot be changed.

■ Setting Screen

When a macro is specified for the [Stock File] setting in [Macro edit], the [File Registration] and [File deletion] buttons are grayed out and cannot be selected.



6. Number of Comment Characters in [Process Setting] and [Machining Setting] Increased

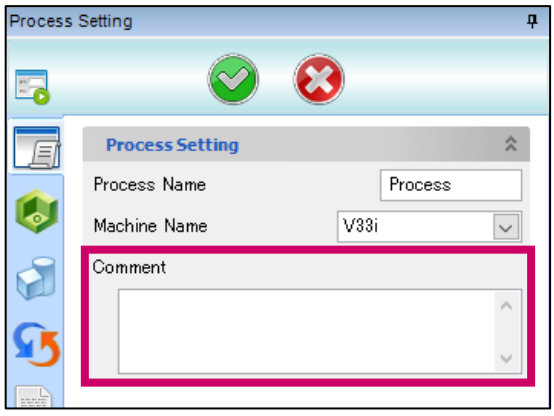
The number of characters that can be entered in the comment fields of [Process Setting] and [Machining Setting] has been increased.
Comment up to 127 double byte characters or 254 single byte characters can be entered.
You can now enter more words in the comment field, such as, when parameter macros are set.

■ Setting Screen

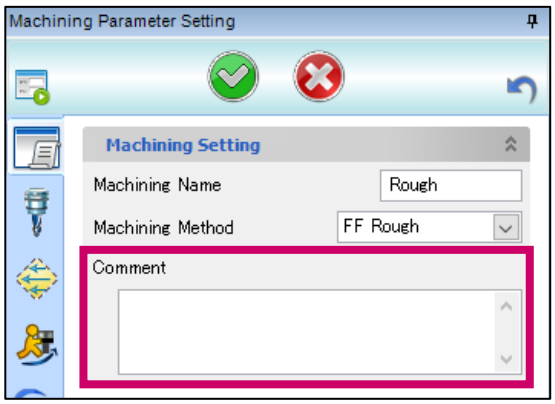
The number of characters has been increased for the following four comment fields.

- Processing Setting comment field (Milling)
- Machining Setting comment field (Milling)
- Process Setting comment field (Drilling)
- Hole Information comment field (Drilling)

[Process Setting] screen



[Machining Setting] screen



7. Function to Check Duplicate Process and Machining Names during Path Calculation

A function to check for duplicate process and process names when path calculation is executed has been added.

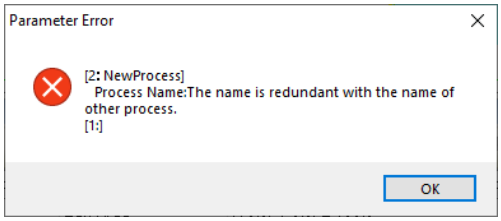
Process and machining names can be set by the parameter macro. If process or machining names are duplicated, FFCAM may not complete the path calculation successfully.

Depending on the macro expression, process or machining names may be duplicated during path calculation. This function prevents such duplication.

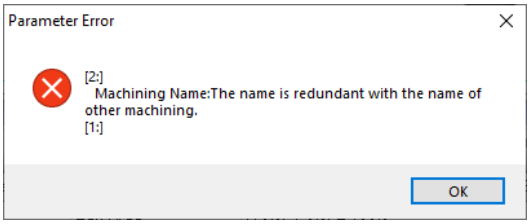
■ Setting Screen

If there are duplicate process names or machining names during path calculation, the following error messages are displayed.

Error message for duplicate process name



Error message for duplicate machining name



The following process and machining names are checked for duplication.

- Process name (Milling)
- Machining name (Milling)
- Process name (Drilling)
- Hole information name (Drilling)
- Machining name (Drilling)