

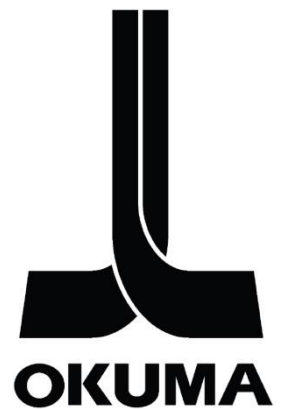
SOFTWARE

OSP VARIABLES MANAGER

USERS MANUAL

(4rd Edition)

AUG 2021



REVISION HISTORY

Date	Version	Description
June 2014	1.0	Initial release
June 2017	1.2.2	User's Manual for OSP Variables Manager version 1.2.2
July 2018	1.5.1	User's Manual for OSP Variables Manager version 1.5.1
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1. INTRODUCTION

1.1 Purpose

The application it is meant to be a more user-friendly interface for the common variables.

It allows the user to focus on only the variables that are important, with the possibility to associate a comment for each variable. The application will be visible along with the program, helping in the debug of part programs that use common variables.

1.2 Application Screenshots

1.2.1 Quick Add Value's operation screen

OSP Variables Manager V1.6 for PCNCM

✓	Name	Value	Prev.	Comment
	V150	0		
	V151	0		
	V1	0.12346		
	V2	3		
	V1000	0		
	V999	0		
	V100	1		
	V101	0		
	V20	20.1		V20, V21 COMMENTS
	V21	21.1		V20, V21 COMMENTS
	V10	10.1		V10 COMMENT
	V50	50.1		V10 COMMENT
	V11	100		V11, V12 COMMENTS

Quick Add

New (N) Open (O) Save (S) Import (I) Add (A) Delete (D) Pin (P) Help (H) API Ready

1.2.2 Add/Set Value's operation screen

OSP Variables Manager V1.6 for PCNCM

Name	Value	Prev.	Comment
V1	0.12346		
V2	3		
V1000	0		
V20			V20, V21 COMMENTS
V20			V20, V21 COMMENTS
V10			V10 COMMENT
V10			V10 COMMENT
V11			V11, V12 COMMENTS
V11			V11, V12 COMMENTS
V14	14.1		V14,V15,V16 COMMENTS
V15	15.1		V14,V15,V16 COMMENTS
V16	16.1		V14,V15,V16 COMMENTS

Add or Set a Variable Value

12343.567

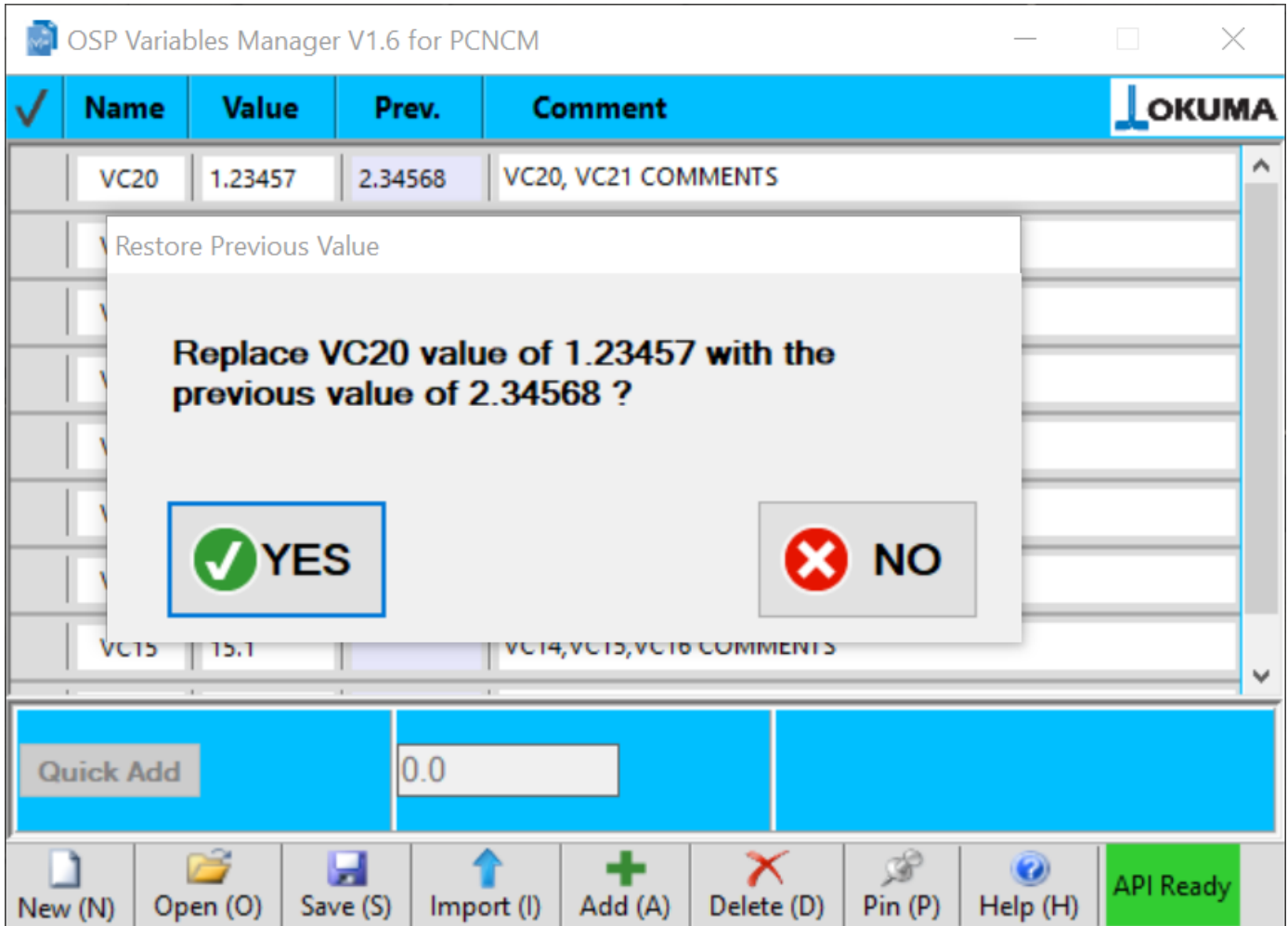
SET ADD

CANCEL

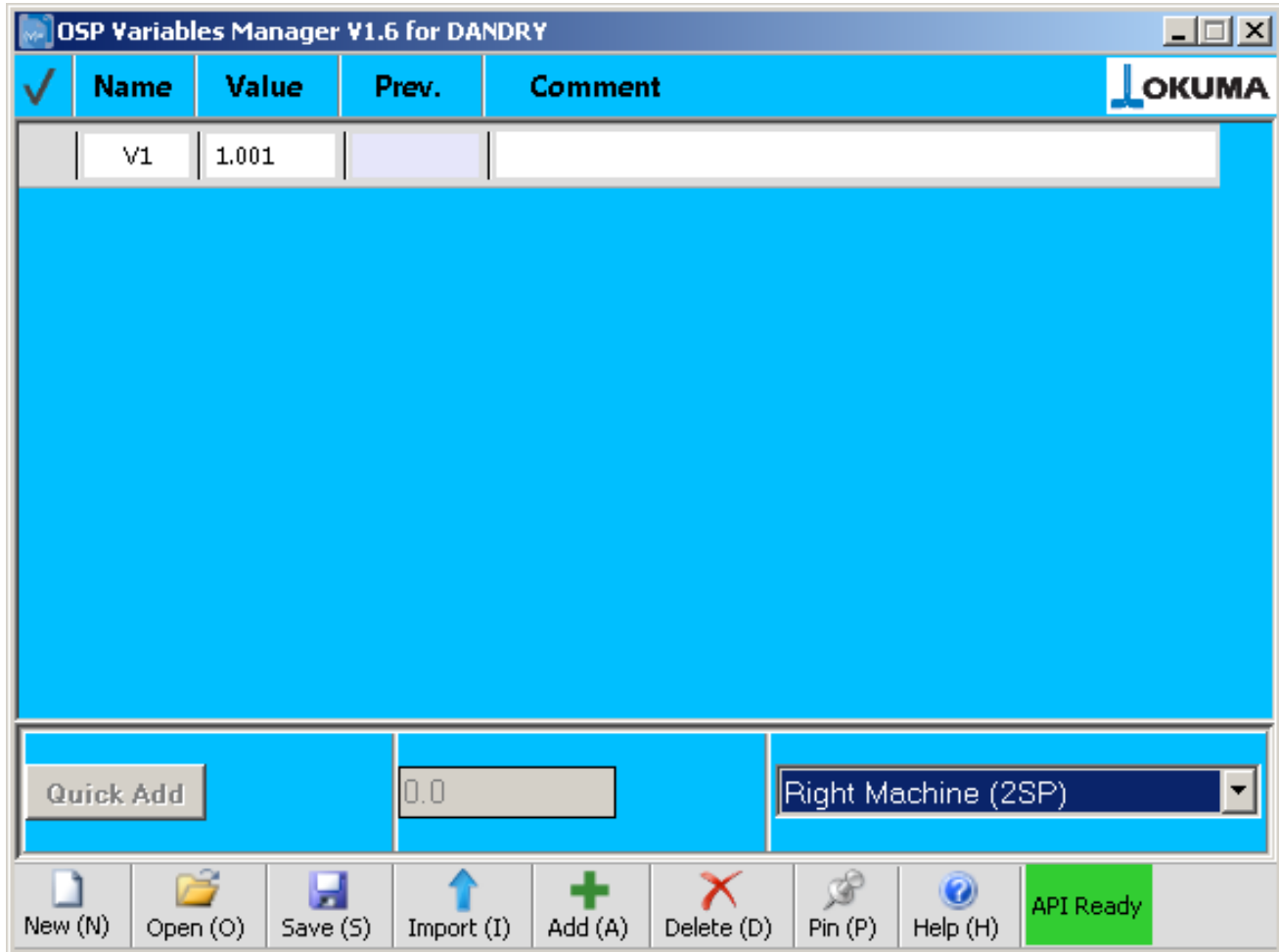
Quick Add 0.0

New (N) Open (O) Save (S) Import (I) Add (A) Delete (D) Pin (P) Help (H) API Ready

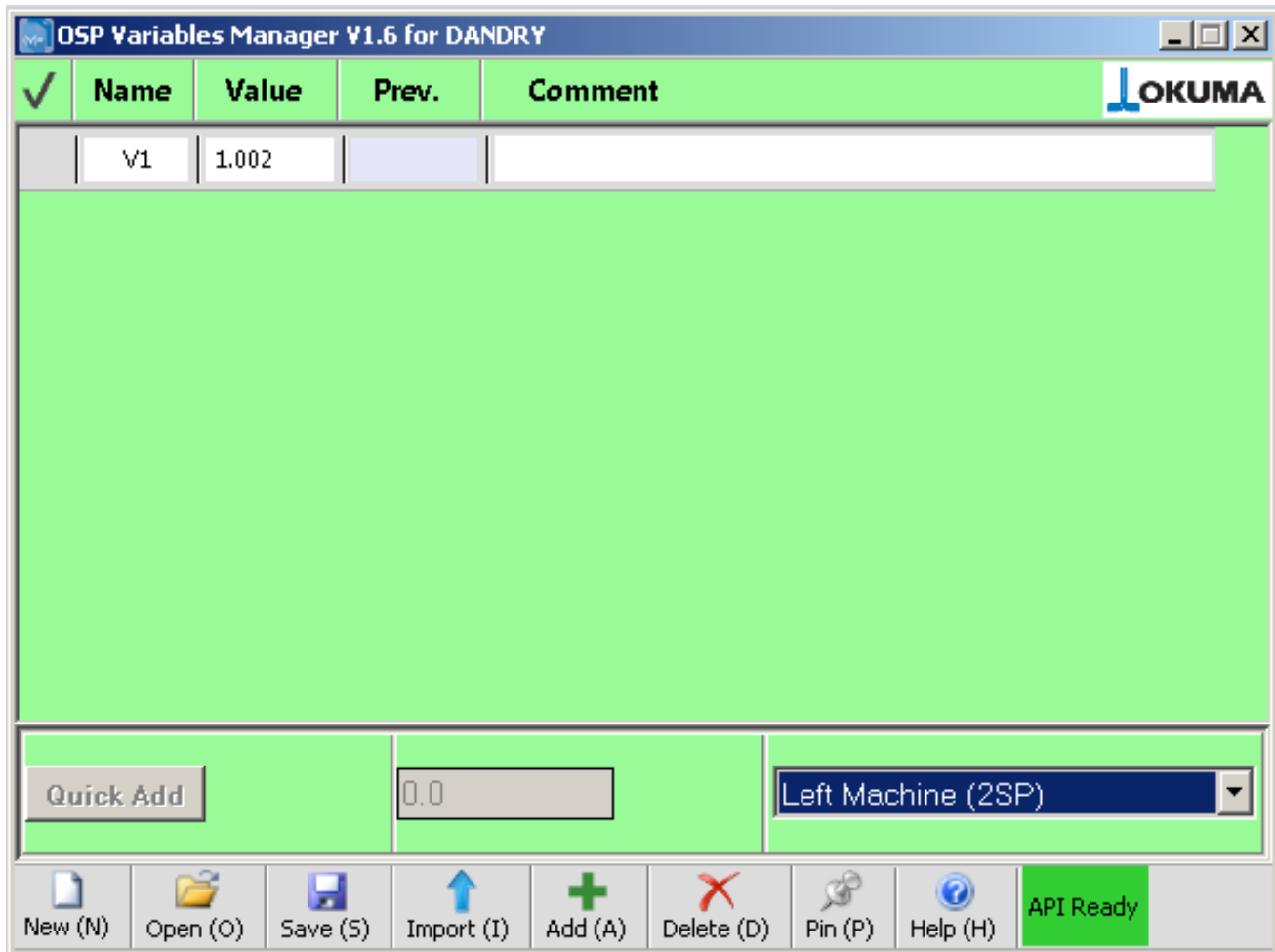
1.2.3 Restore Previous Value's operation screen



1.2.1 R Machine of 2SP machine's operation screen



1.2.2 L Machine of 2SP machine's operation screen



1.3 Application specifications

- The application works for Lathes (2SP), Multifunction, Machining center, and Grinder machines
- Select a variable to enable the quick Add button, for adding the value in the nearby textbox to the variable value
- Click the variable value field and the Add/Set dialog pops up.
- 'Undo' functionality, for the 20 previous values of the variable.
- Automatically search for the common variables used in the selected part program and load them in the application form
- If the variable definition is followed by a comment (in the part program), the comment is automatically displayed in the variable comment field
- The variable list, the current and previous values and the comment can be saved in a file, so they can be reloaded in a second moment
- Pin/unpin functionality to keep the application always visible or not
- Help button that shows a brief explanation of the icons and the basic functionality of the application
- Automated installation and removal of the application

1.4 Minimum Requirements

- OSP THINC API 1.9.1.0 or greater for Lathe and Machining Center
- OSP THINC API 1.21.1.0 or greater for Grinder
 - Click on the API icon in the tray (next to date and time), a window will pop up showing the API is currently running version. If the version number is less than the specified version number required per machine type, please contact your distributor for obtaining newer API.
- .NET framework 4.0 or greater: The setup wizard will check if the proper .NET framework is already installed and prompt to install if not already present.

2. Application Installation

2.1 Adobe Reader Installation

Run the AdbeRdr950_en_US.exe in the Tools folder.

2.2 Application Installation

Run the Setup executable, and follow the installation wizard. For starting the application, simply open to the start menu and look for the 'Okuma' program group. To uninstall application, go to the control panel (Add/Remove application) area.

3. OPERATIONS

3.1 The Main Form Window and the Quick Add functionality

OSP Variables Manager V1.6 for PCNCM

✓	Name	Value	Prev.	Comment
	V1	0.12346		
	V2	3		
	V1000	0.123	1234.567	
✓	V999	0		
	V20	20.1		V20, V21 COMMENTS
	V21	21.1		V20, V21 COMMENTS
	V10	10.1		V10 COMMENT
	V50	50.1		V10 COMMENT
	V11	100		V11, V12 COMMENTS
	V12	100		V11, V12 COMMENTS
	V14	14.1		V14,V15,V16 COMMENTS
	V15	15.1		V14,V15,V16 COMMENTS
	V16	16.1		V14,V15,V16 COMMENTS

Quick Add

New (N)
 Open (O)
 Save (S)
 Import (I)
 Add (A)
 Delete (D)
 Pin (P)
 Help (H)
 API Ready

The 'Quick Add' button is disabled if there is no variable is selected. Just click/touch the area at the left of the variable name and the variable will be highlighted and ready for the Quick Add functionality.

Click anywhere in the comment white area to input a comment.

The variable name can be changed anytime, just click/touch it and input the new variable. The maximum number of variables is limited by the machine where the application is running. Normally 200 common variables are allowed or up to 1000 variables if machine can support.

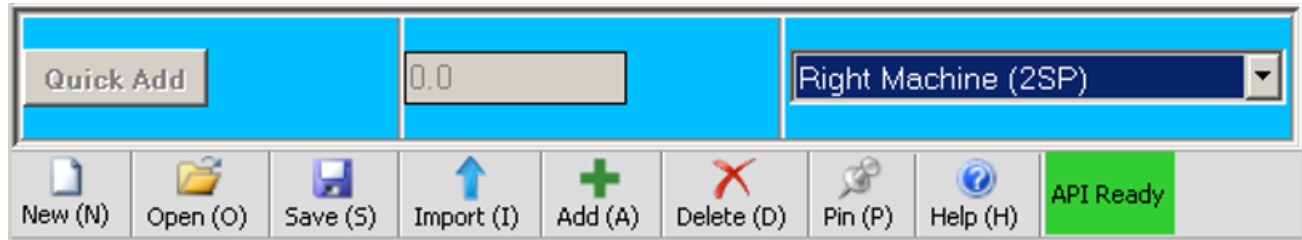
The selected variable is the target of the Quick Add button and of the Delete Button.

3.2 The Main Form Window and the Machine Selection for 2SP Machine

This operation is only available on Lathe 2SP machine.

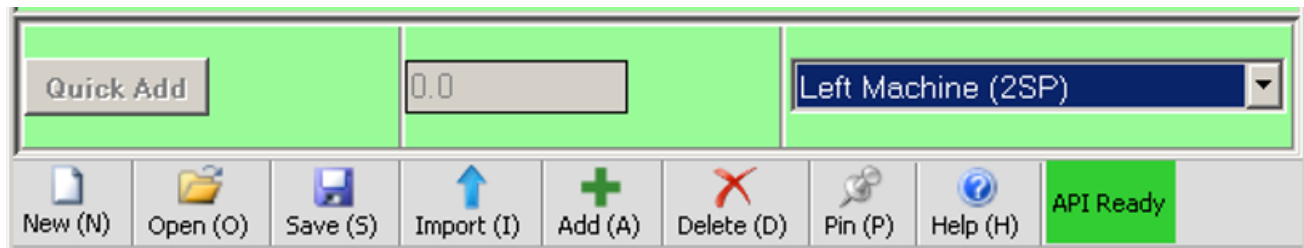
3.2.1 Right Machine of 2SP Machine

By selecting Right Machine (2SP) from ComboBox as shown below, the screen will change to data for Right Machine. All operations will now interact with Right machine only.

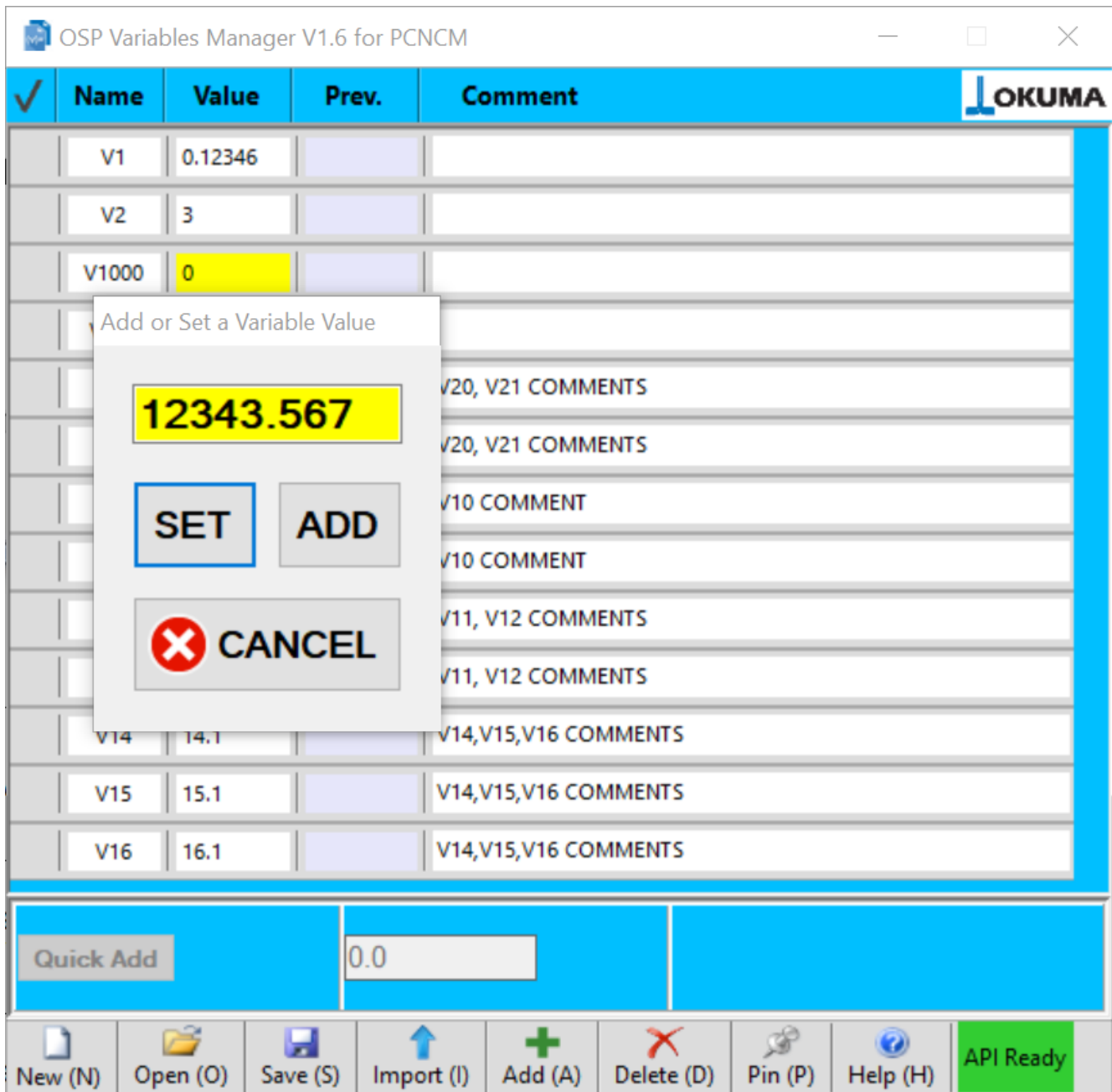


3.2.2 Left Machine of 2SP Machine

By selecting Left Machine (2SP) from ComboBox as shown below, the screen will change to data for Left Machine. All operations will now interact with Left machine only.

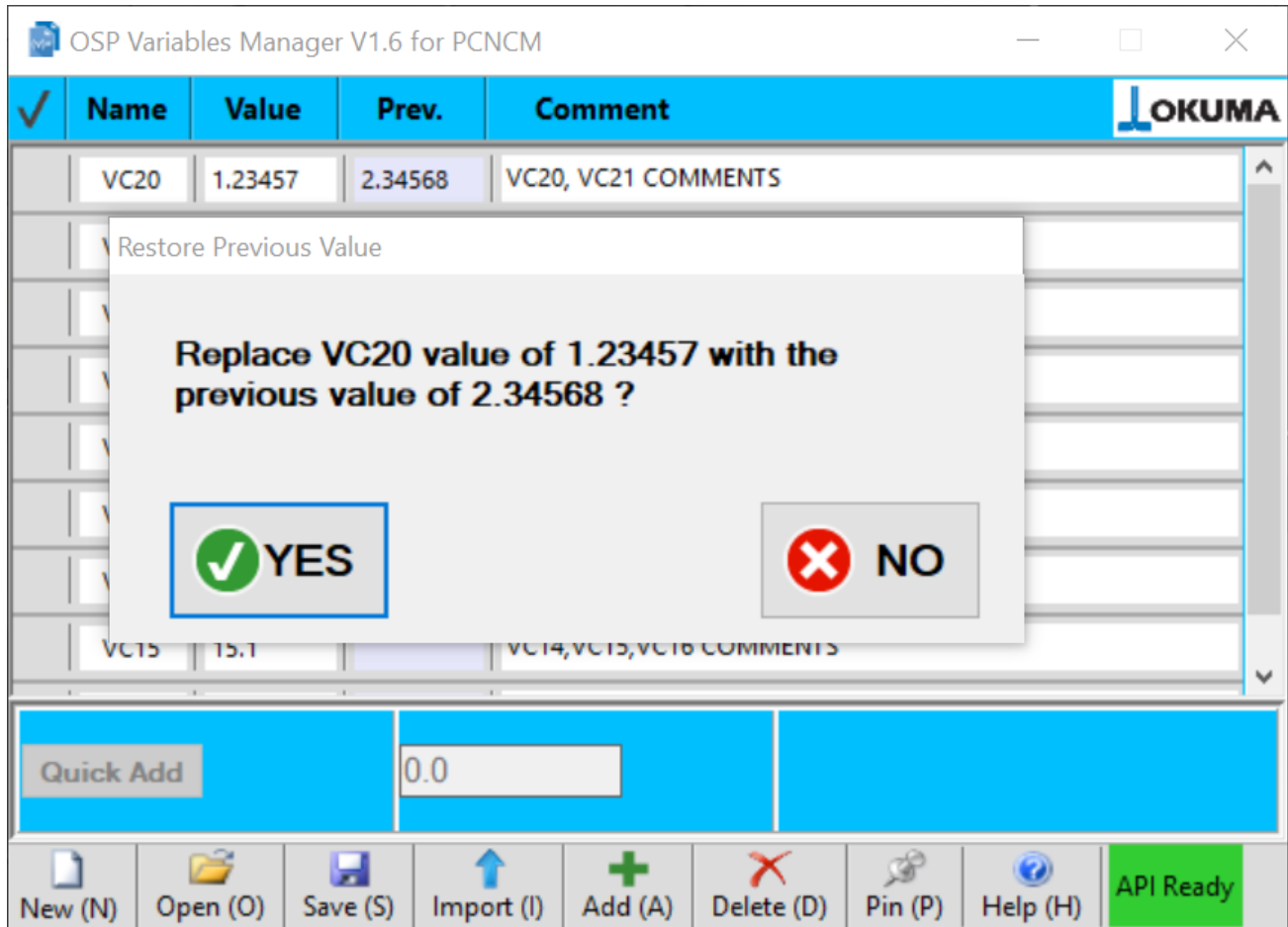


3.3 The Add/Set functionality



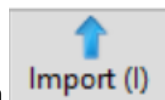
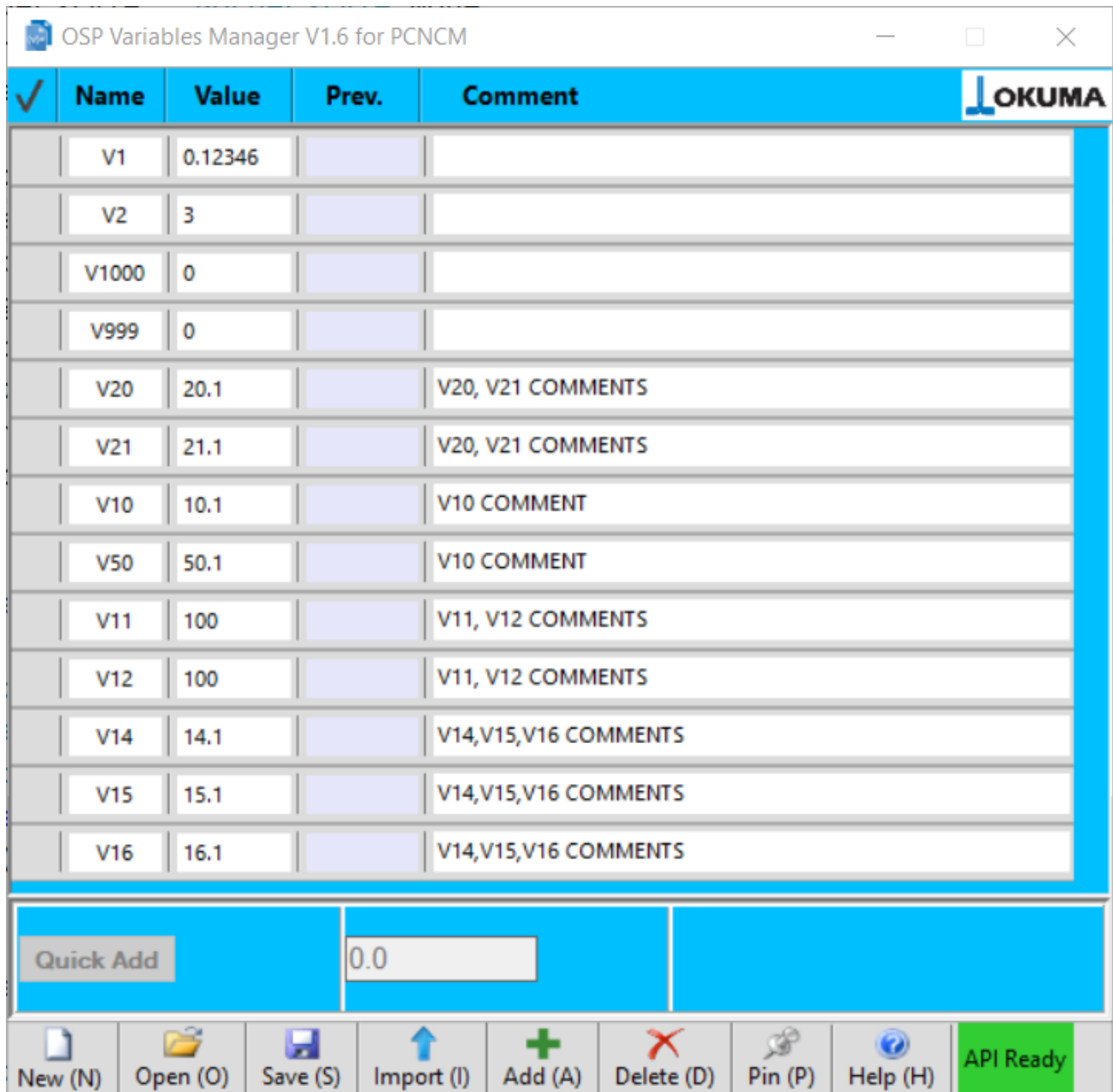
Click/touch the variable value and the Add/set dialog box appear just below the variable name. Use the SET button to set the variable value to be equal to the number input in the textbox with the yellow background. Use the add button to perform math operation as +, -, * and /. For example if the input is -2 when the add button is pressed, -2 will be subtracted to the actual variable value. Again, input /2 and click Add, and the variable value will be divided by 2. Click Cancel to abort. The variable doesn't need to be selected for use the Add/Set functionality. The application let you insert only numbers in the proper format: 1 math sign (+, -, *, /) at the beginning and only one digital separator if needed.

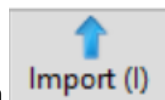
3.4 The Undo functionality



Each time you give a variable a new value, the previous one is saved. Up to 20 previous values are saved. To restore the previous value, just click/touch the 'Prev.' field and the 'Restore Previous Value' dialog appears, showing what is going to be replaced and waiting for a confirmation. The variable doesn't need to be selected in order to use the Undo functionality.

3.5 The Import functionality



Click/touch the Import Button  and the application will automatically scan the part program selected for execution, for common variables. The following is a portion of a part program:

O1234

G13

IF [V150 LT V151] NV0

NV0 V1=0.1V2=0.2 V1000 =1000 V999 =999

V20 =20.1 V21=21.1 (V20, V21 COMMENTS)

NV10 V10=10.1 (V10 COMMENT) V50=50.1(V10 SECOND COMMENTS)

NV11 V11 =100 V12 = 100 (V11, V12 COMMENTS)
 NV14 V14=14.1V15=15.1V16=16.1(V14,V15,V16 COMMENTS)
 NV20

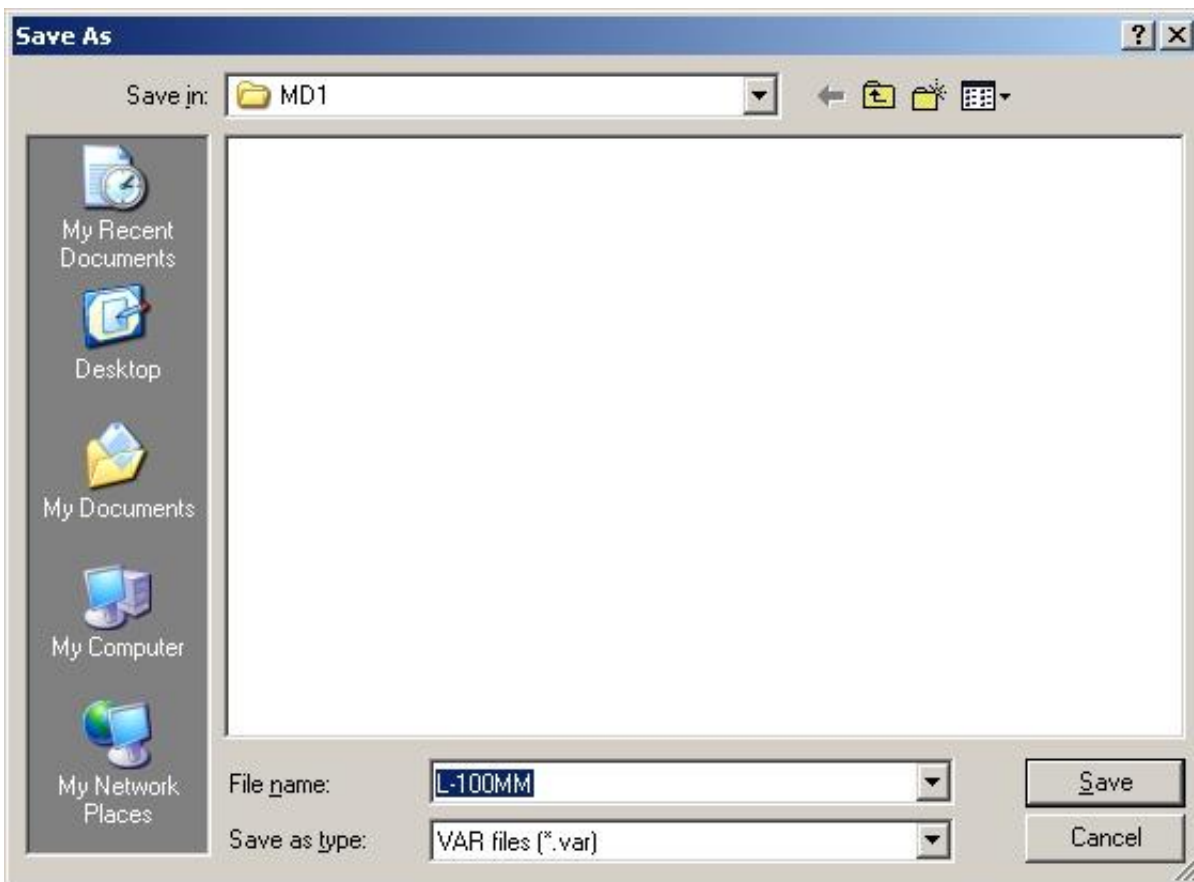
The application will find v150, 151, V1, V2, V1000, V999, V20, V21, V10, V50, V11, V12, V14, V15, and V16. If there are comments in the same line where common variables are found, the comments will be shown in the comment field for each related common variable.

Notes:

Common variables cannot be supported by OSP system will not be selected.

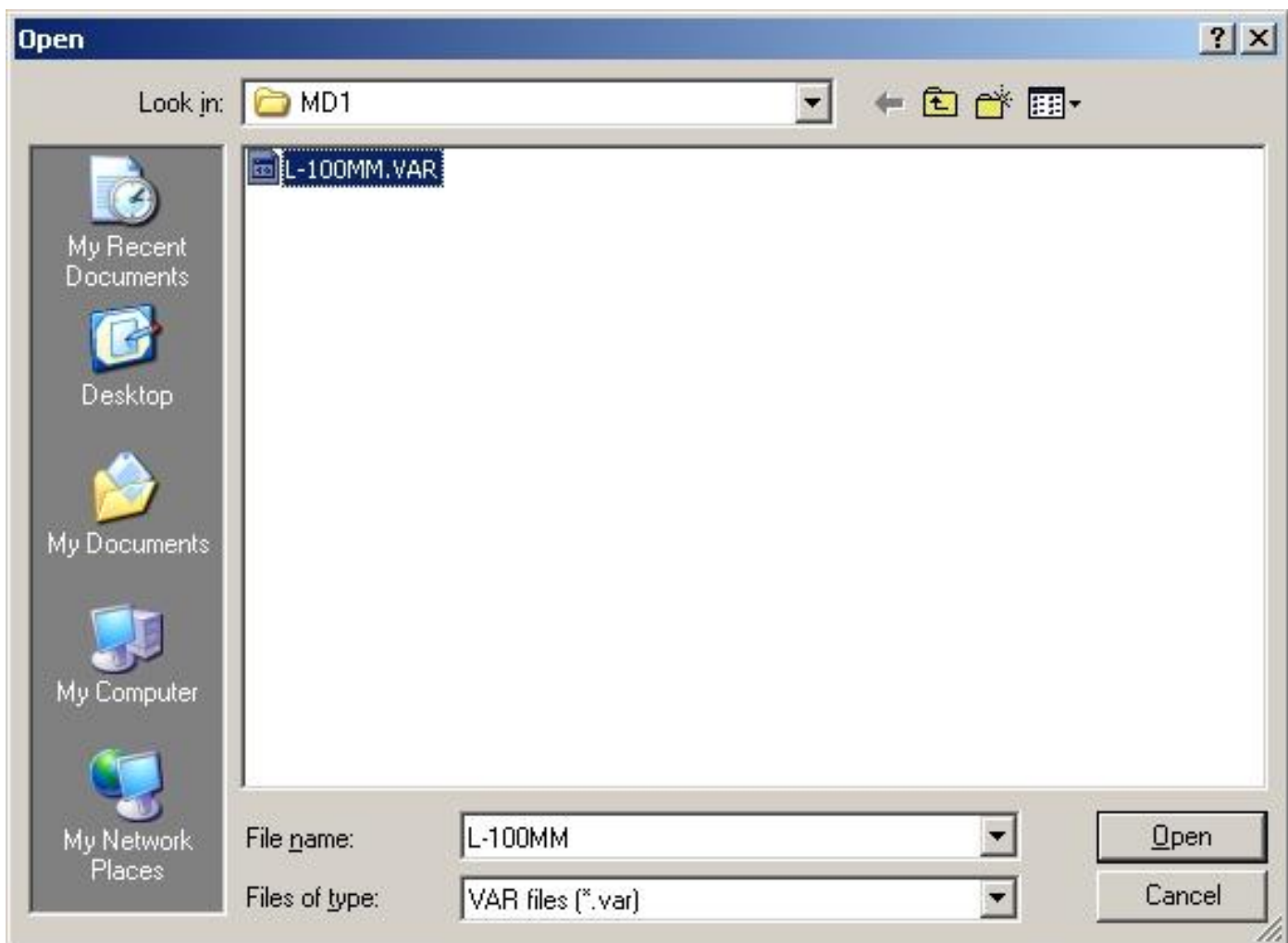
Note: Part program must be located in the D:\MD1 folder only.

3.6 The File Save functionality



The File Save button in the toolbar gives the possibility to save the current list of variables displayed by the application, along with the list of previous values and comments. The application will use the current part program filename as the name of the variables file and the extension is '.VAR'. The user can assign a different filename in the 'Save As' form. The default location for saving the file is MD1, like the part program files.

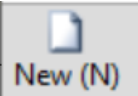
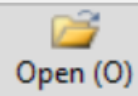
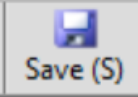
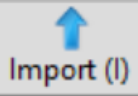
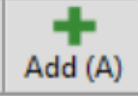


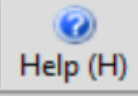
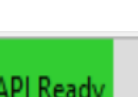
3.7 The File Open functionality



The file Open button will read a variable file previously saved, and restore the list of variables, along with the previous values and comments. By default, the application looks in the MD1 folder and the file has a '.VAR' extension.

3.8 The toolbar buttons

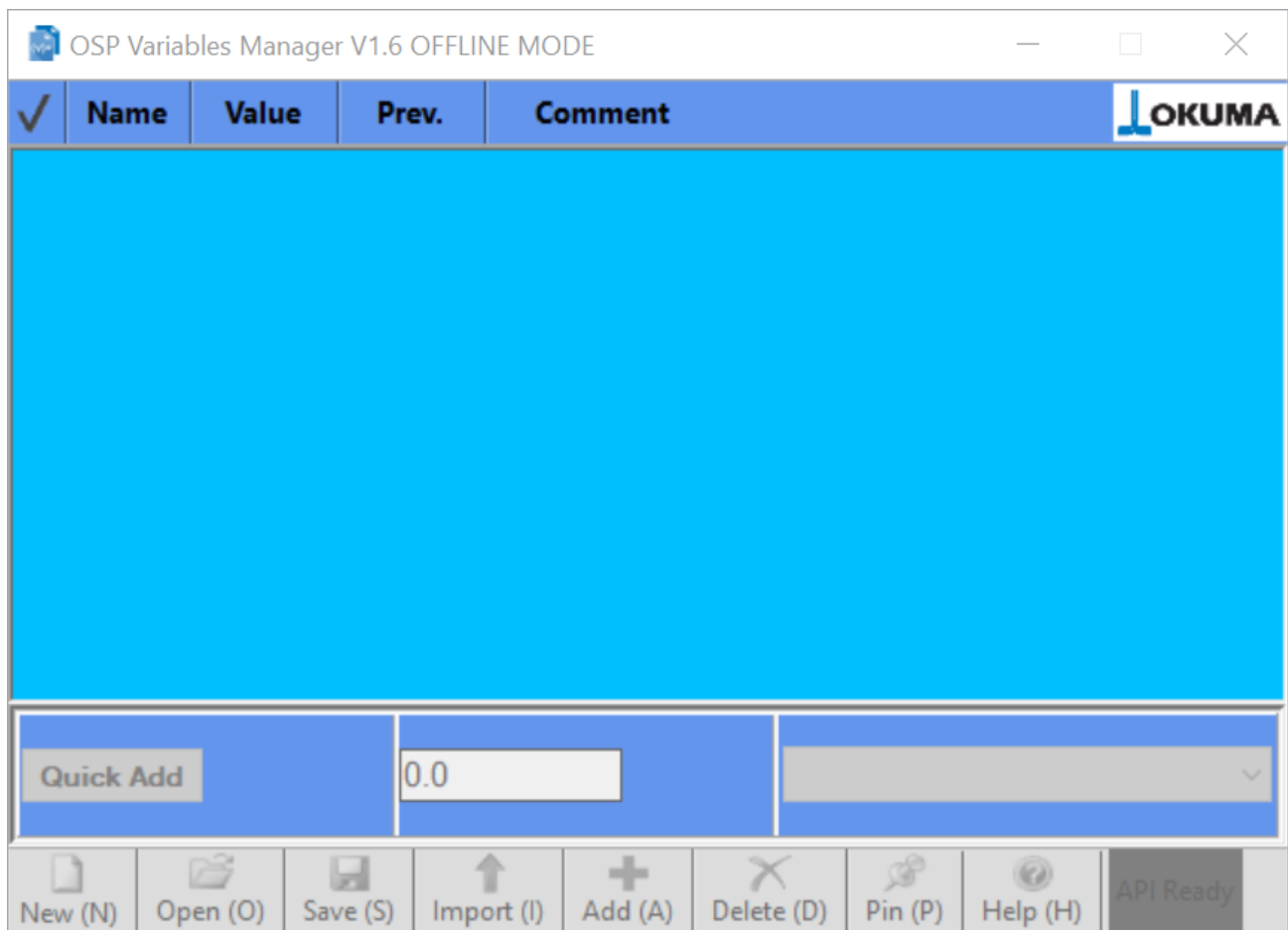
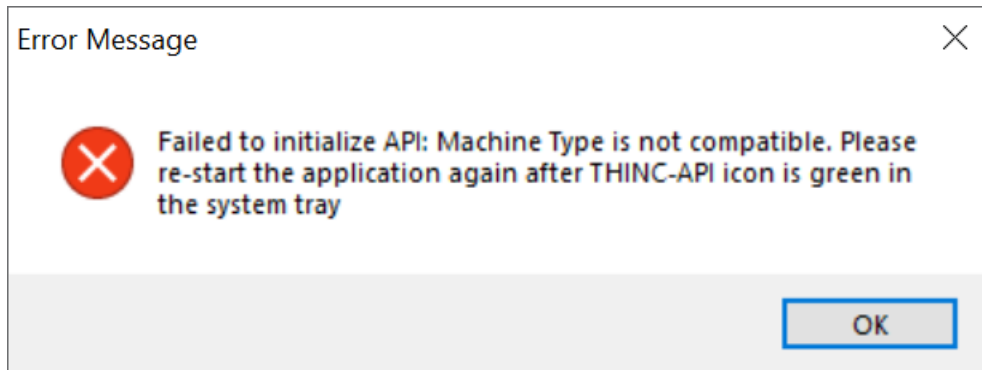


	<p>New button: delete all the variables in the list and reset the application to its initial state. Note: It does not delete variables in OSP part program.</p>
	<p>Save file: the variable list along with their values, previous values and comment in a file will be saved in a file with .VAR extension.</p>
	<p>Open file: a .VAR can be read, restoring the variable list along with their values, previous value and comment.</p>
	<p>Import: when clicked/touched the application will read the part program selected for execution and automatically find any variable used. If a comment is present after the variable name, it will be shown in the comment field.</p>
	<p>Add variable: each time you click/touch this button a new variable is added to the list. The variable name will be automatically selected at the next one not already used in the list.</p>
	<p>Delete variable: remove the variable selected (by clicking/touching the area at the left of the variable name) from the list. Note: It does not delete variable in OSP part program.</p>
	<p>Pin/Unpin : click/tough to toggle between the application always visible (icon with green shade) or the application can be sent on background (icon with gray shade)</p>
	<p>Help button: shows a quick help of the application functionality</p>
	<p>API Ready: shows status of THINC-API. Green Color: Application can function when API Ready is green. Red Color: Application cannot function when API Ready is red. API has errors. Gray Color: Application cannot function when API Ready is gray. Machine Type is not compatible</p>

4. TROUBLESHOOTING

4.1 Machines/NC-Masters/PC NC-Masters

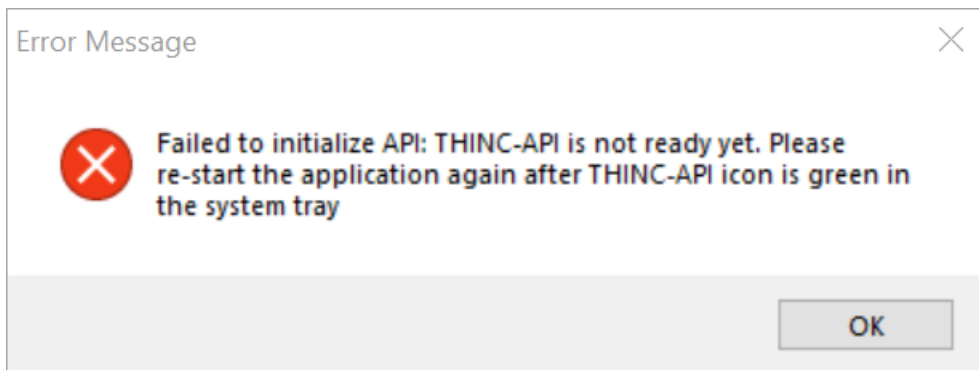
Application can only run on machines, NC Masters, and PC NC Master only. Otherwise, it will be error as shown below.



4.2 THINC-API

4.2.1 API Ready

Application cannot run correctly while THINC-API icon has white or yellow color since THINC-API not fully started yet as shown below:

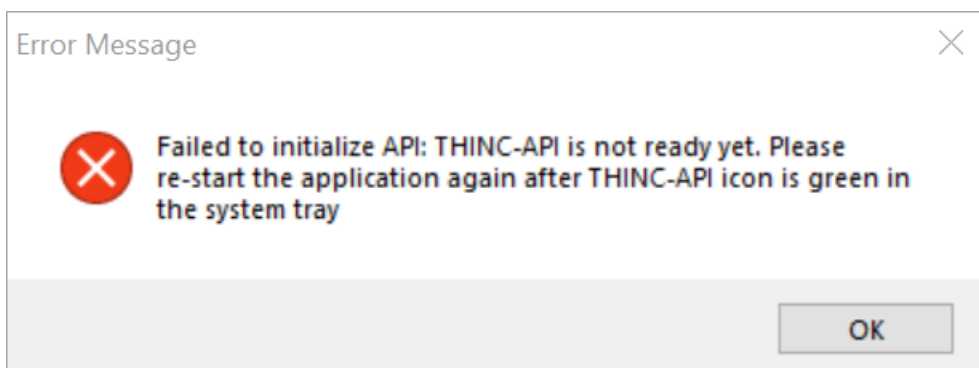


Application can only be functioned correctly when the icon of THINC-API in the system has green color.



4.2.2 API Error

If THINC-API icon has red color, then application cannot run correctly and has a message as shown below:

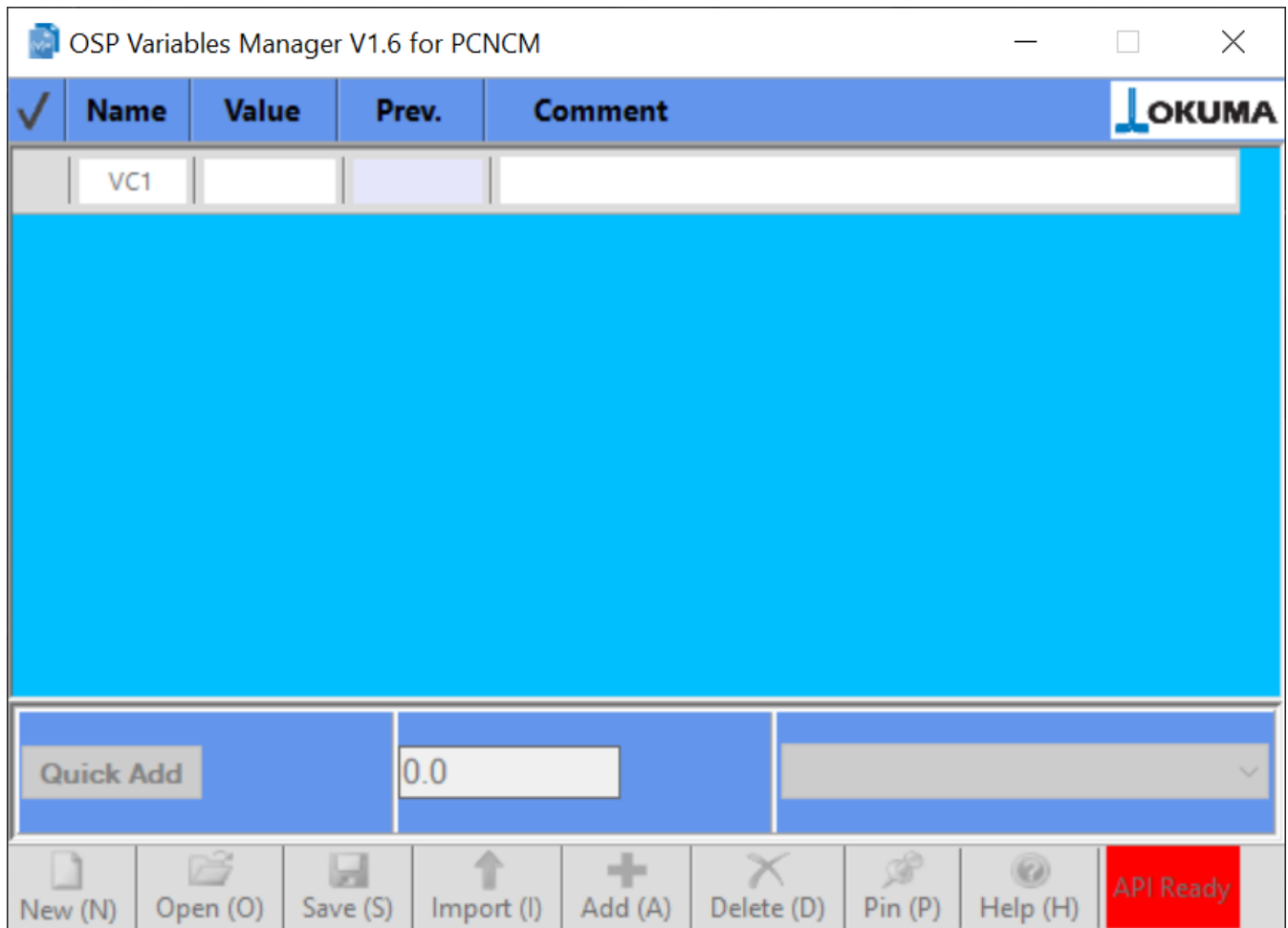




Please capture the error the message in the dialog of API Notifier. The dialog can be displayed by double clicking the API icon in the system tray.

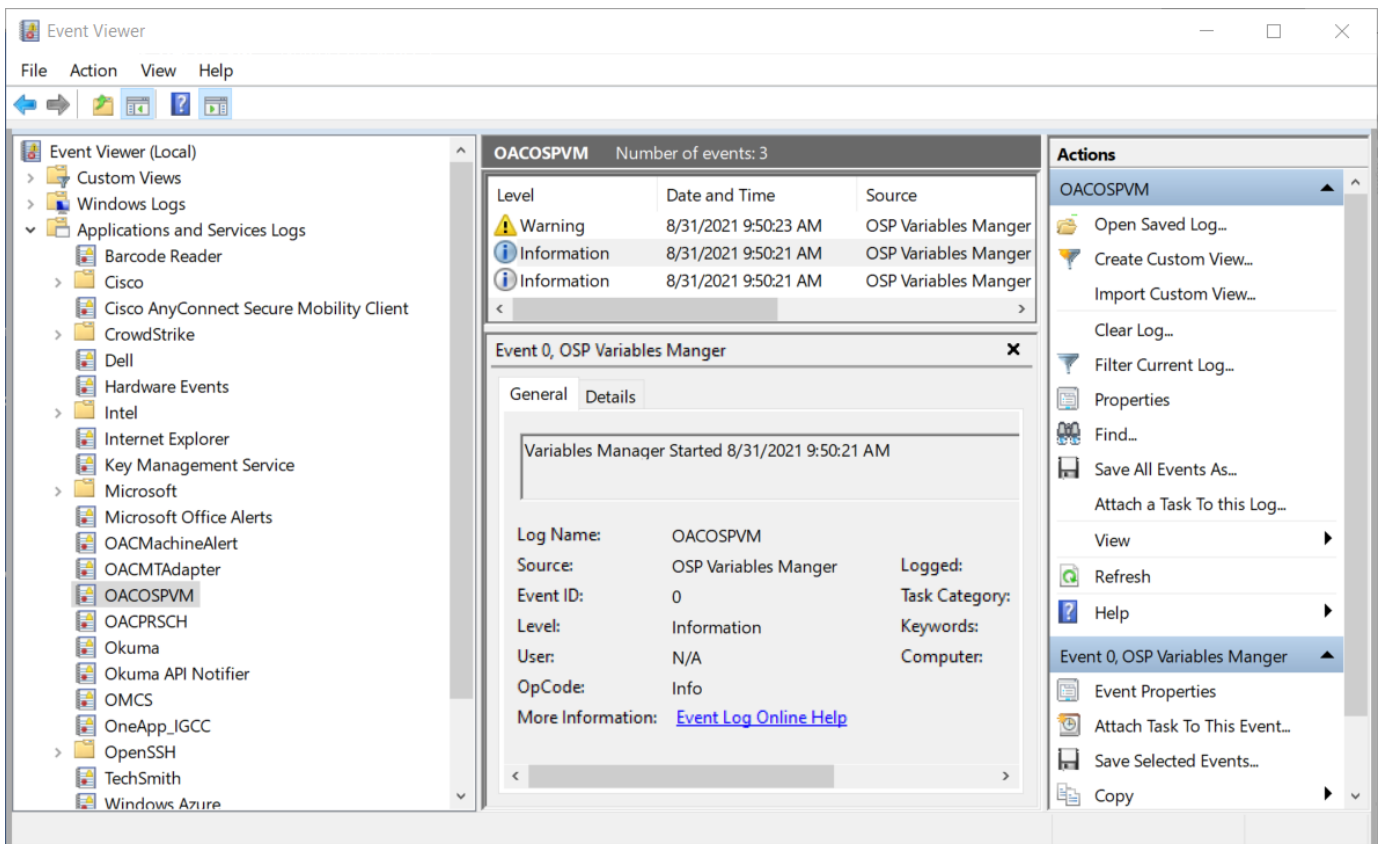
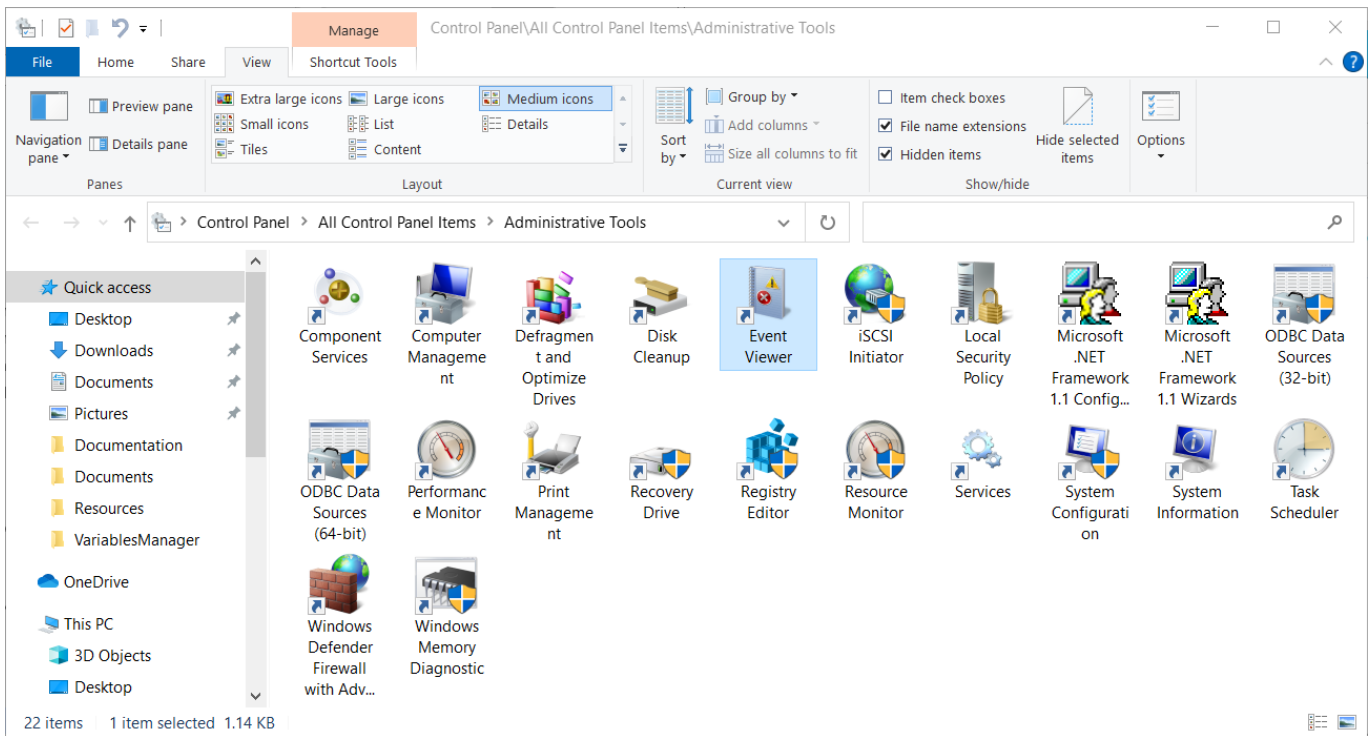
Note: The content of the error message could be different per machine spec and conditions.





4.2.3 Log

Application does generate a log to the Windows System Event as shown below. The name of the log is OACOSPVM and is under Applications and Services Logs folders of Event Viewer. The Event Viewer can be opened from the Control Panel\All Control Panel Items\ Administrative Tools as shown below.

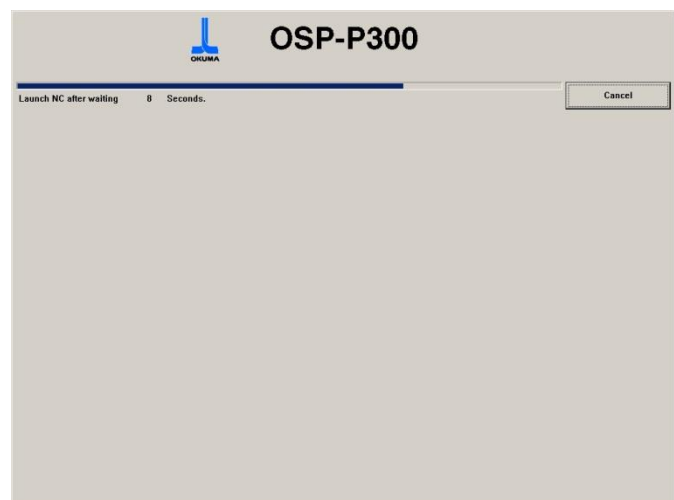
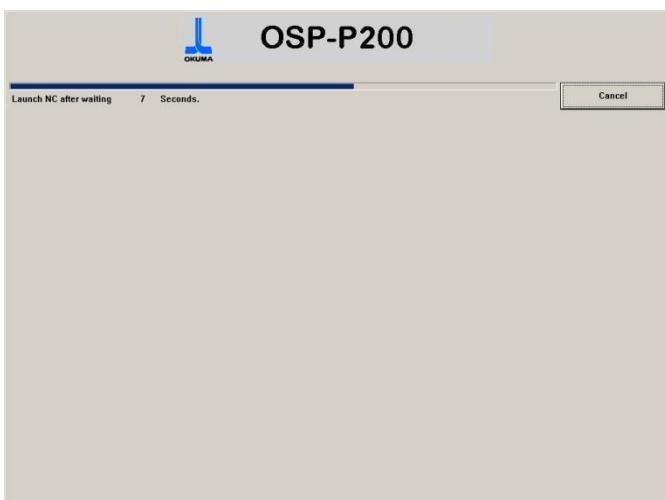
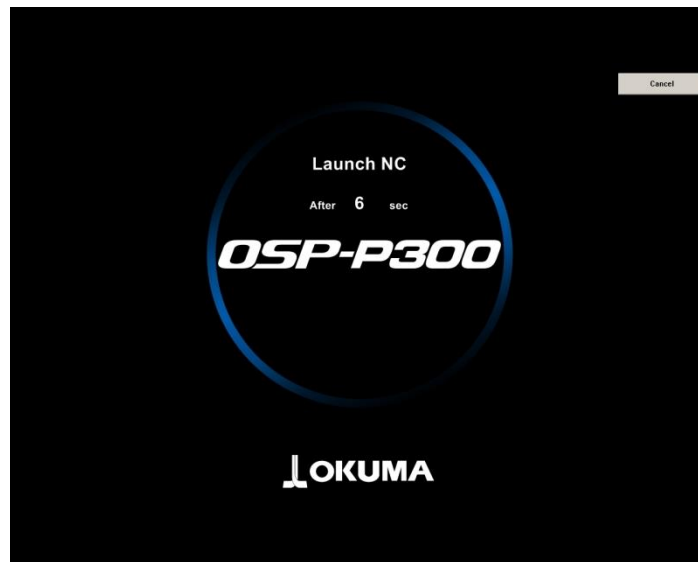


5. METHOD TO START NC IN WINDOWS ONLY MODE

Many applications for Okuma Machines require that the machine is in “Windows Only” mode before the application can be installed or uninstalled. Perform the following steps to enter Windows Only Mode.

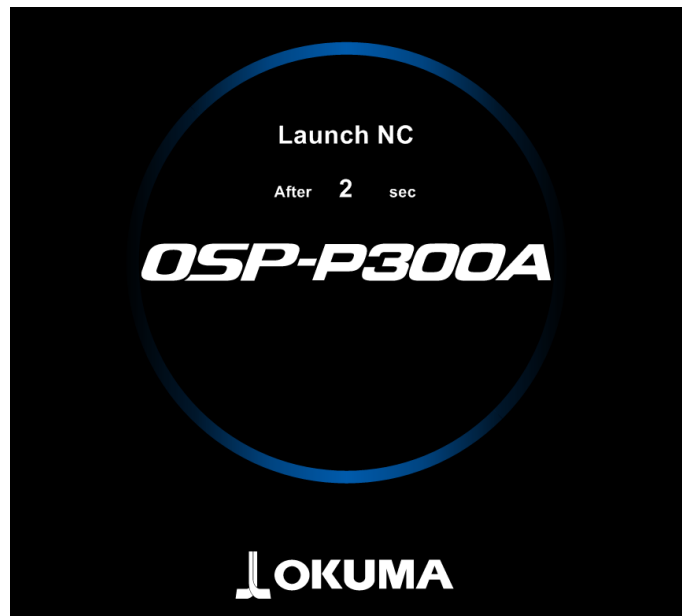
5.1 OSP-P200/OSP-P300 or newer Series Controls

- 1) Power ON the OSP Control (Power OFF the control first if already running)
- 2) When the OSP Loading screen shows, touch the screen anywhere to ensure it is selected
- 3) Press the ESC key to reveal a button labeled “Cancel”
- 4) Click the Cancel button.



5.2 OSP-P300A Series Controls

- 1) Power ON the OSP Control (Power OFF the control first if already running)
- 2) As soon as the OSP Loading screen shows, press the left Shift key to stop the OSP system from loading. Note that there is a very short window to execute this procedure (about 2 seconds).



6. GLOSSARY

API: Application Programming Interface. When referring to the Okuma API, or THINC API, it is a set of libraries, which allows applications written in .NET to communicate with the machine tool.

ESC: The Escape key. It is represented by the following symbol on Okuma controls:



GUI: Graphical User Interface

NC: Numerical Control

OSP: “Okuma Sampling Path” intelligent control

THINC API: The Intelligent Numerical Control Application Programming Interface, used to access machine information via software applications.

.NET Framework: The Microsoft® common language runtime environment for applications developed with Visual Studio®. This is required to run most applications for the OSP control.

Write: The Write key. It also serves as the Enter key. It appears as follows on Okuma controls:



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