

Subject: Report of RT ToolBox3 Ver.1.10L release

Applicable to: FR series, F series, SQ series, SD series, S series
(CR800/CR750/CR700/CR500 series robot controller)

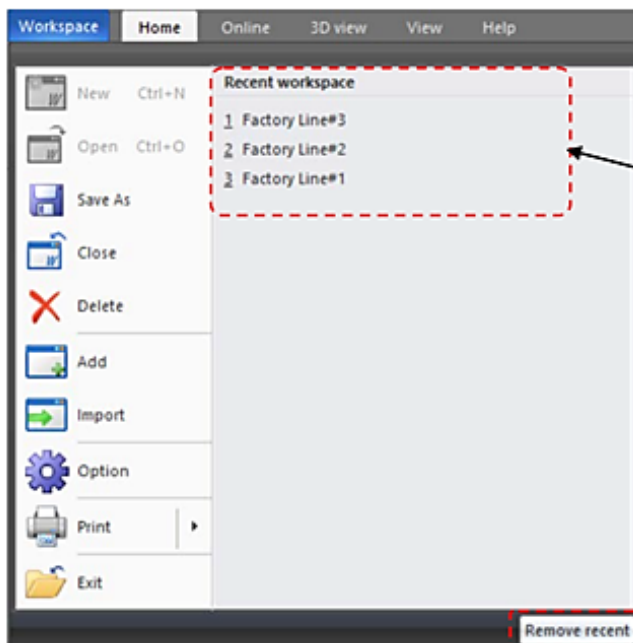
Thank you for your continued support of Mitsubishi industrial robot "MELFA".

This Technical news describes the new version 1.10L of the RT ToolBox3.
3F-14C-WINJ(E)/3F-15C-WINJ(E)/3F-16D-WINJ(E)

In order to use the functions described in this technical news, you need to download the latest version from MITSUBISHI ELECTRIC FA site, and upgrading the RT ToolBox3.

1. Workspace

- Add function to delete history opened workspace.

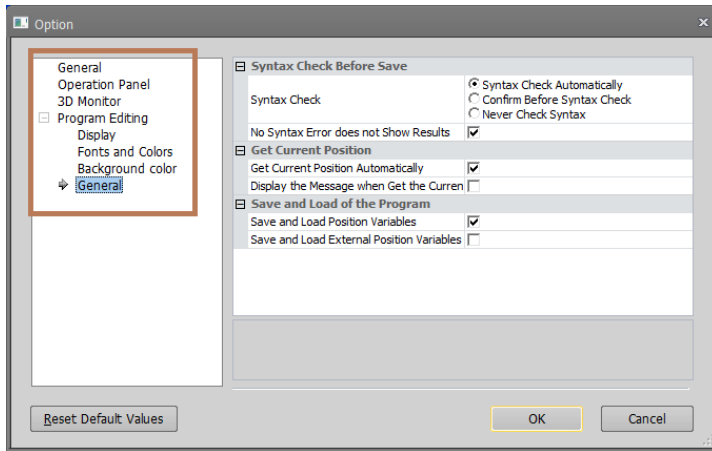


The recently used workspaces are added.
When you click one of these workspace names, the workspace is opened.
When the mouse cursor is placed over the workspace name, the path of the folder containing the workspace is displayed.

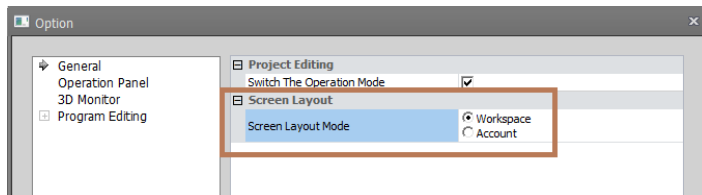
When you click the [Remove Recent] button, all workspace names displayed in "Recent workspace" are deleted.

2.Option

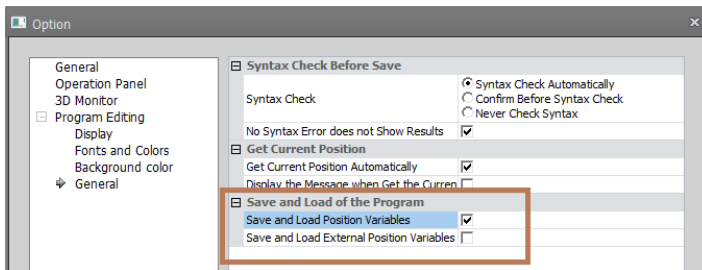
- Change so that options can be set separately for each category.



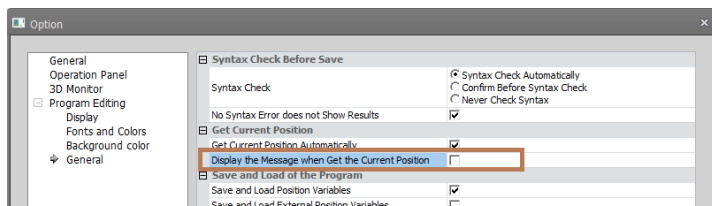
- Add screen layout mode to option.



- Add setting of saving and loading position variables to option.

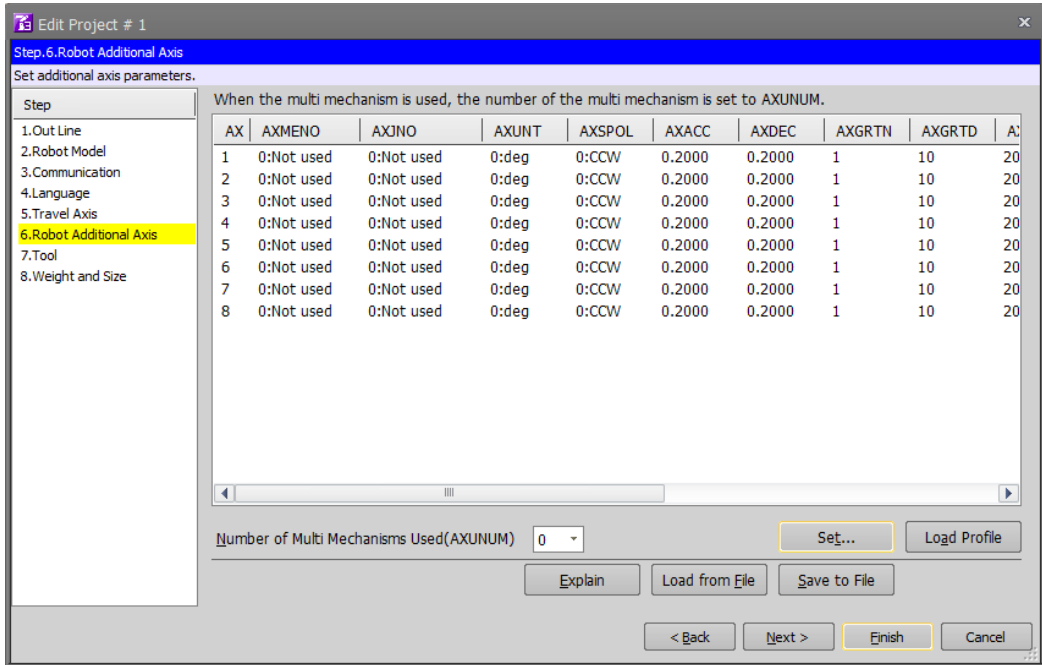


- Add presence / absence of message when you get current position.



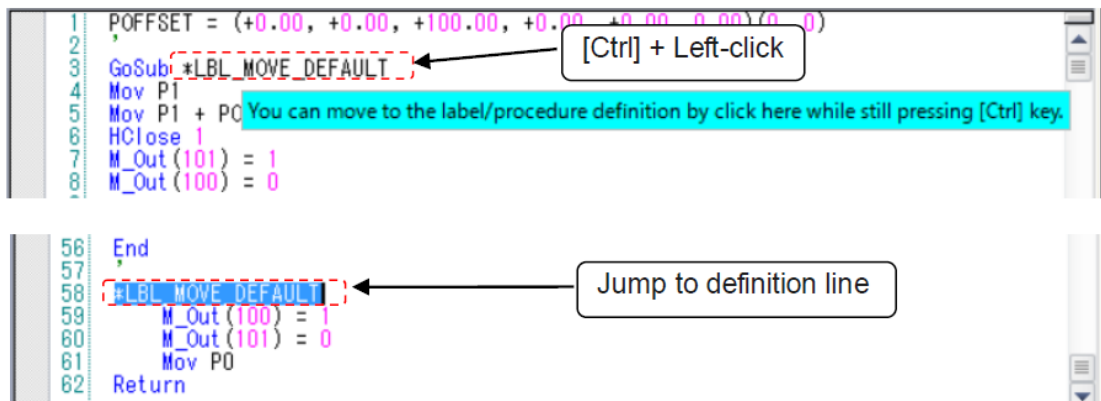
3. Project editor

- Add additional axis, tool, weight and size.



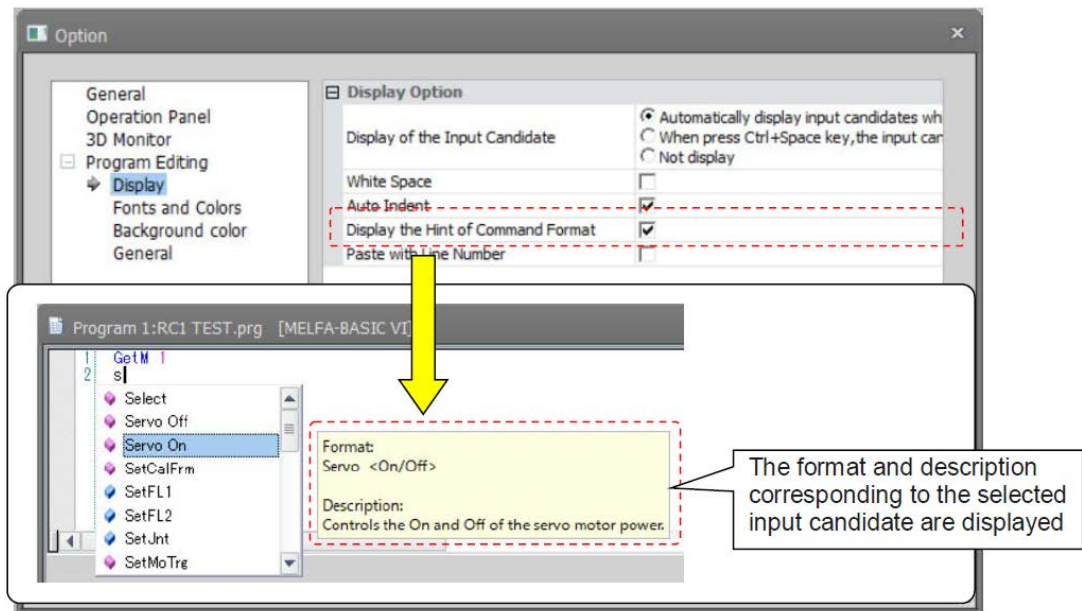
4. Program editor

- Add label jump function in command edit area.



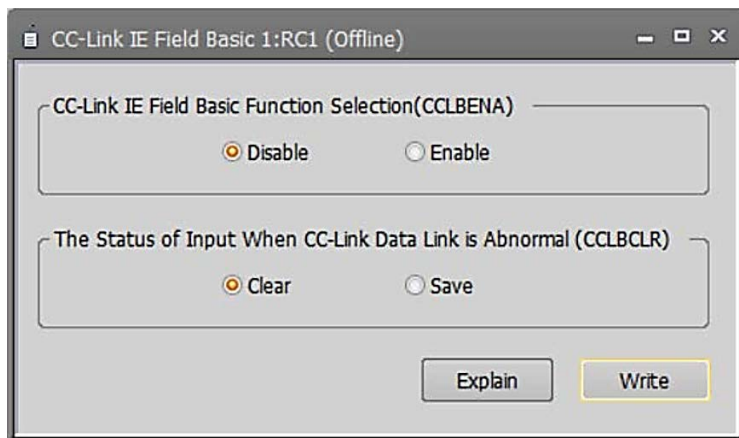
- Add explanatory display corresponding to reserved word as input candidate.

You can use pop-up hint display to display the format for the robot program command, system functions, and system status variables displayed in the command edit area.



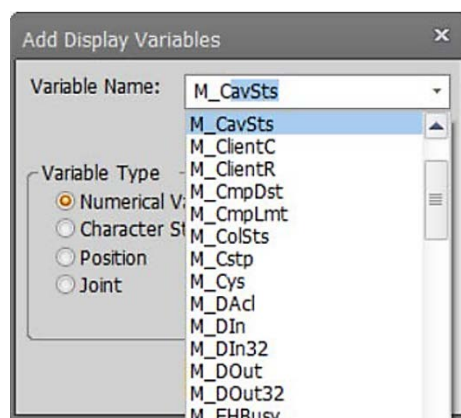
5.Parameter editor

- Add CC-Link IE Field Basic screen.



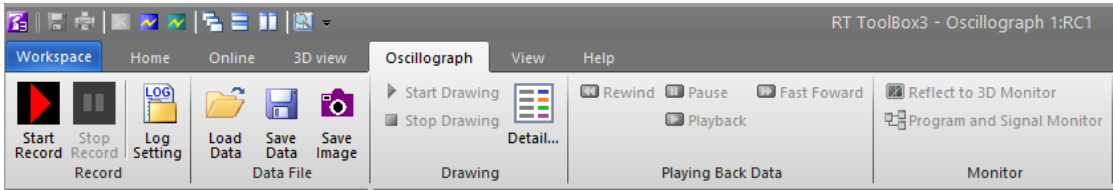
6.Program monitor

- Add auto-complete function when monitoring variables are input.

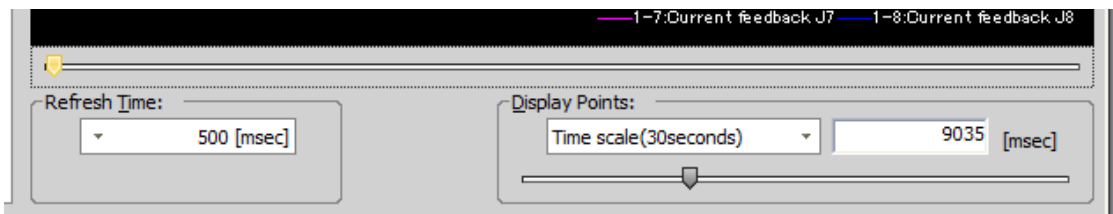


7.Oscillograph

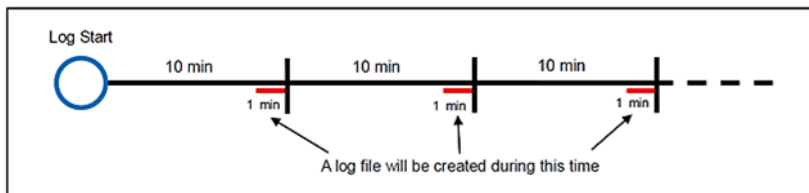
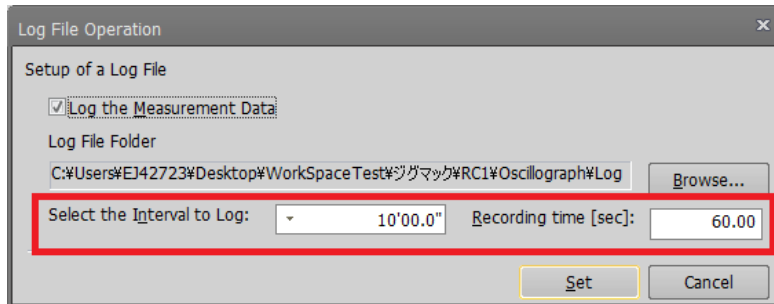
- Add additional axis, tool, weight and size.



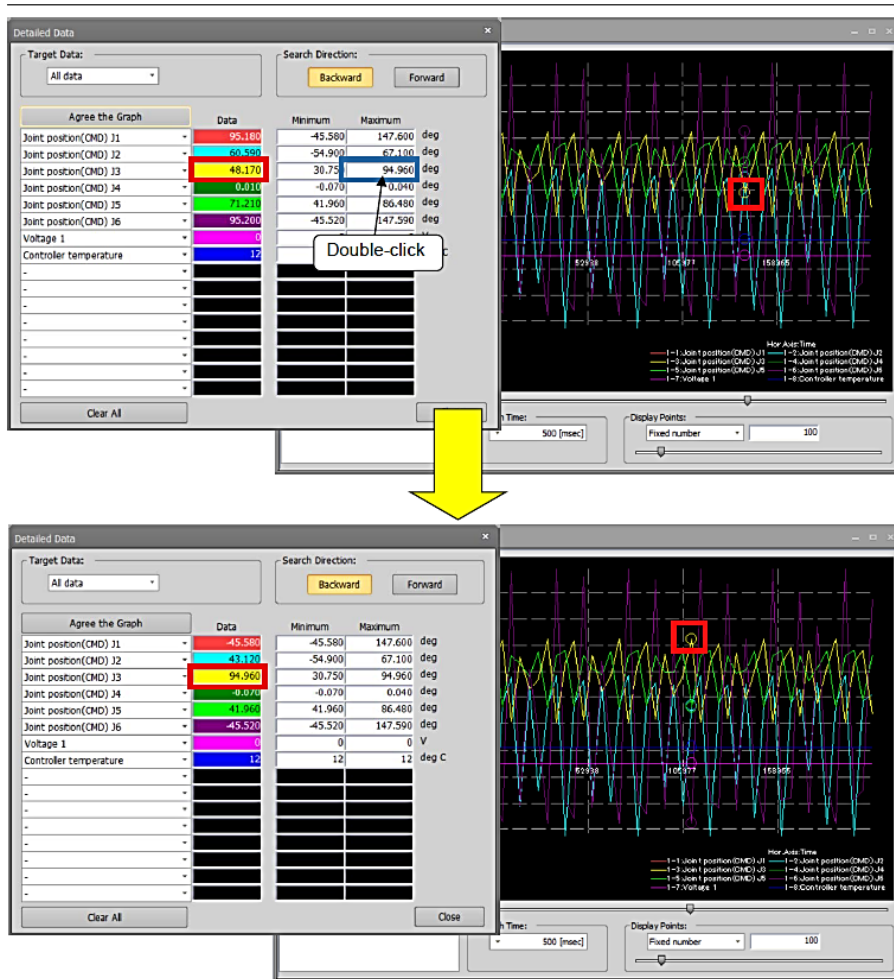
- Add function to change graph update time and number of display points on the oscillograph screen.



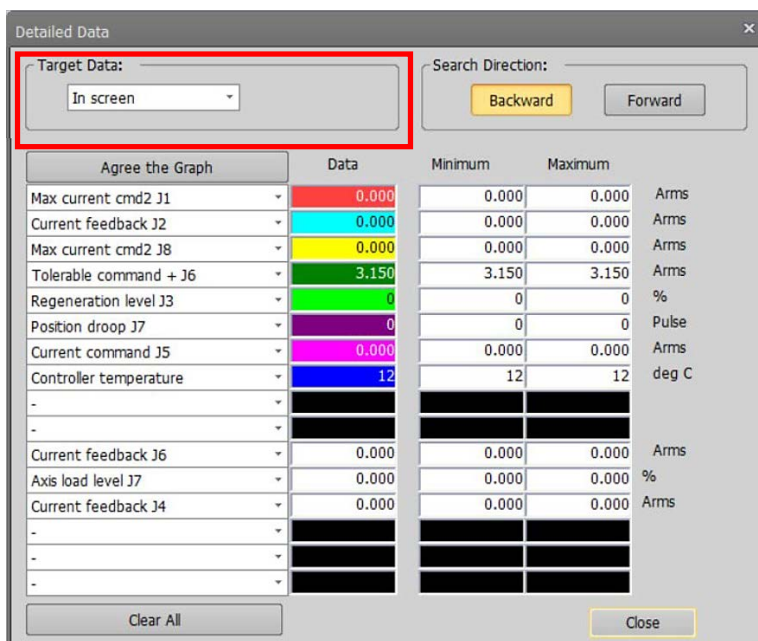
- Add function to change graph update time and number of display points on the oscillograph screen.



- Add function to jump from the detailed data screen to the maximum value and minimum value.



- Add function to display maximum and minimum values in screen to detailed screen.



- Add program / signal monitor screen.

Program and Signal Monitor

Robot Name: Program Name:

```

25 Mvs P1
26 '
27 'Hand Close
28 HClose 1
29 'Hide the object A
30 M_Out(100) = 0
31 'Wait 0.5 seconds
32 Dly 0.5
33 'Move above the object A
34 Mvs P1 + POFFSET
35 '
36 '***** Move the object B *****
37 'Move above the object B
38 Mov P2 + POFFSET
39 '
    
```

Signal

Input Signal: Display Format :

Signal#	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0	Hex
15- 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
31- 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

Output Signal:

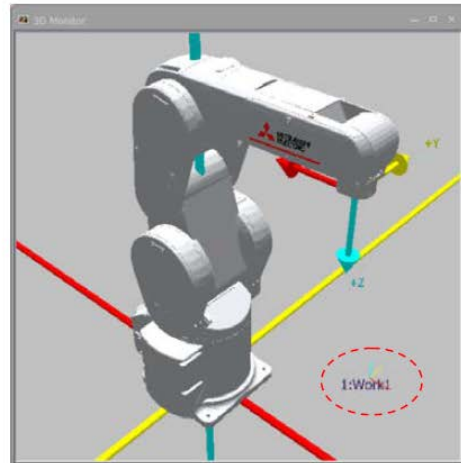
Signal#	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0	Hex
15- 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0003
31- 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

Close

8.3D monitor

- Add display function of work coordinate.

Robot Model	
Display robot model	True
View type	Solid
Display solenoid valve	False
Interference check	True
Display tool coordinate system	True
Display tool position	True
Display base coordinate system	False
Display work coordinate	[1]
1	True
2	False
3	False
4	False
5	False
6	False
7	False
8	False



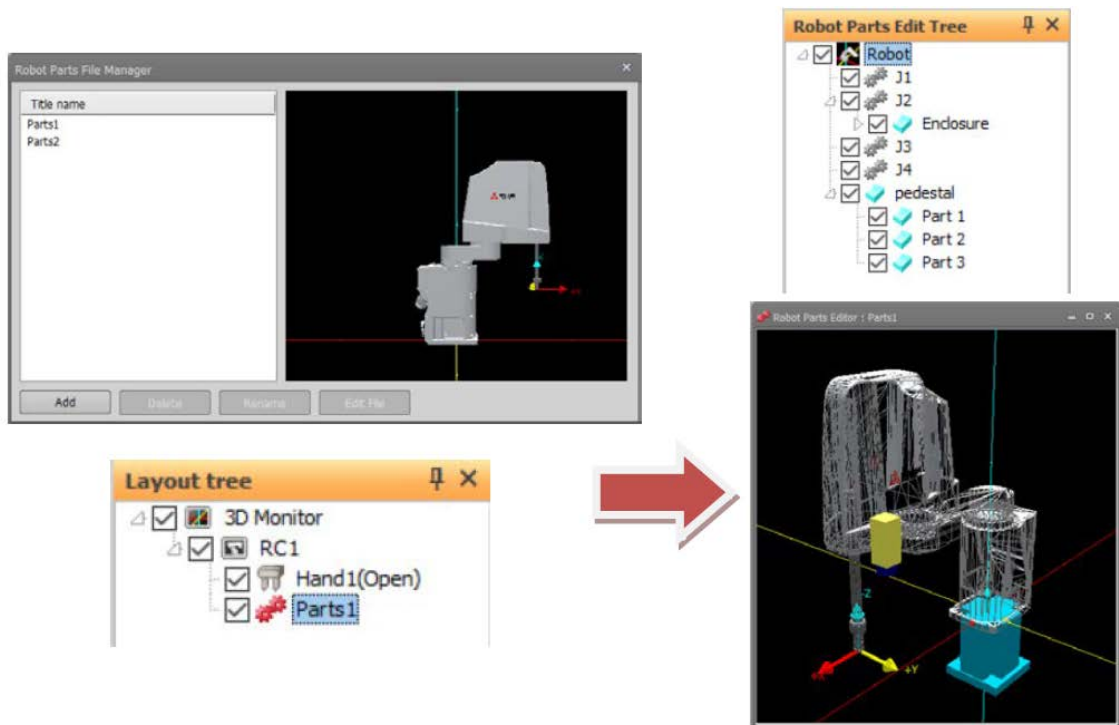
- Add tube object to layout .

Tube	Properties	Diagram																																								
	<table border="1"> <tr><td>Object</td><td></td></tr> <tr><td>Name</td><td>wiring</td></tr> <tr><td>Figure</td><td>Tube</td></tr> <tr><td>Color</td><td>255; 87; 128</td></tr> <tr><td>Size</td><td>100.000, 100.500, 200.000</td></tr> <tr><td> Inner Radius[mm]</td><td>100.000</td></tr> <tr><td> Outer Radius[mm]</td><td>100.500</td></tr> <tr><td> Height[mm]</td><td>200.000</td></tr> <tr><td>Position</td><td>500.000, 0.000, 0.000</td></tr> <tr><td> X[mm]</td><td>500.000</td></tr> <tr><td> Y[mm]</td><td>0.000</td></tr> <tr><td> Z[mm]</td><td>0.000</td></tr> <tr><td>Rotation order</td><td>X-Y-Z</td></tr> <tr><td>Angle</td><td>0.000, 0.000, 0.000</td></tr> <tr><td> X[deg]</td><td>0.000</td></tr> <tr><td> Y[deg]</td><td>0.000</td></tr> <tr><td> Z[deg]</td><td>0.000</td></tr> <tr><td>View type</td><td>Solid</td></tr> <tr><td>Condition</td><td>Default</td></tr> <tr><td>Interference check</td><td>True</td></tr> </table>	Object		Name	wiring	Figure	Tube	Color	255; 87; 128	Size	100.000, 100.500, 200.000	Inner Radius[mm]	100.000	Outer Radius[mm]	100.500	Height[mm]	200.000	Position	500.000, 0.000, 0.000	X[mm]	500.000	Y[mm]	0.000	Z[mm]	0.000	Rotation order	X-Y-Z	Angle	0.000, 0.000, 0.000	X[deg]	0.000	Y[deg]	0.000	Z[deg]	0.000	View type	Solid	Condition	Default	Interference check	True	<p>* The minimum thickness ([Outer radius [mm]] - [Inner radius [mm]]) is 0.5 mm.</p>
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Interference check	True																																									

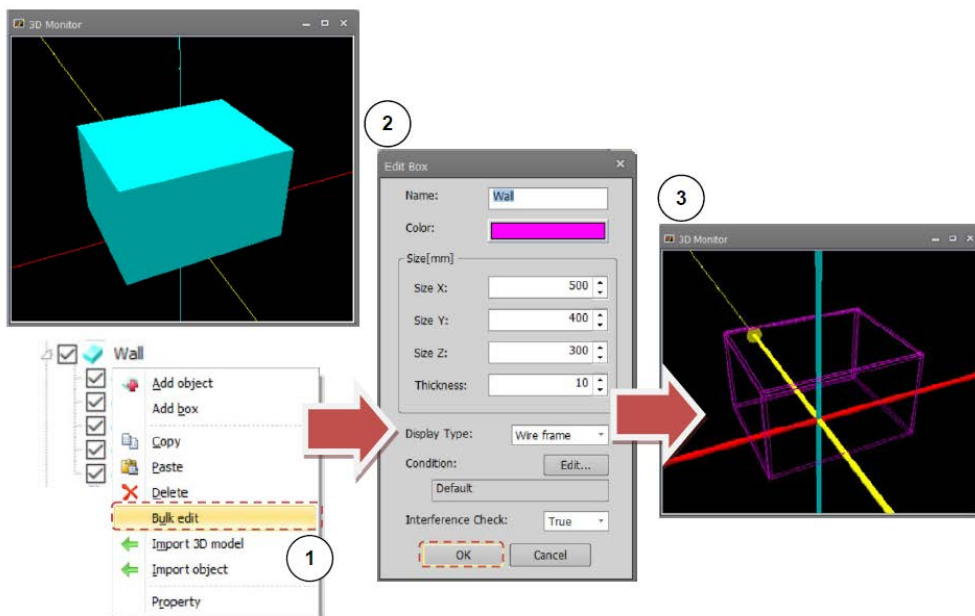
- Add display function of strings.

String	Properties	Diagram																				
	<table border="1"> <tr><td>Object</td><td></td></tr> <tr><td>Name</td><td>Rotation Table</td></tr> <tr><td>Figure</td><td>String</td></tr> <tr><td>Color</td><td>255; 255; 255</td></tr> <tr><td>Size</td><td>Middle</td></tr> <tr><td>Position</td><td>500.000, 0.000, 0.000</td></tr> <tr><td> X[mm]</td><td>500.000</td></tr> <tr><td> Y[mm]</td><td>0.000</td></tr> <tr><td> Z[mm]</td><td>0.000</td></tr> <tr><td>Condition</td><td>Default</td></tr> </table>	Object		Name	Rotation Table	Figure	String	Color	255; 255; 255	Size	Middle	Position	500.000, 0.000, 0.000	X[mm]	500.000	Y[mm]	0.000	Z[mm]	0.000	Condition	Default	<p>* The maximum number of characters that can be displayed is 32 characters. * Multibyte characters are displayed only in the same language as the OS. (Different languages may display garbled characters.) * If you create many character strings, screen rendering processing becomes heavy.</p>
Object																						
Name	Rotation Table																					
Figure	String																					
Color	255; 255; 255																					
Size	Middle																					
Position	500.000, 0.000, 0.000																					
X[mm]	500.000																					
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Z[mm]	0.000																					
Condition	Default																					

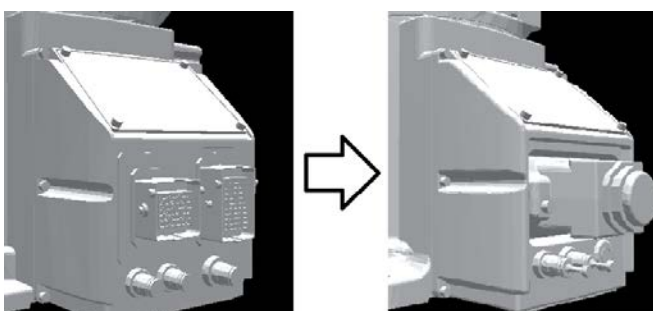
- Add function to attach objects to each axis of the robot.



- Add bulk editing function of boxes.

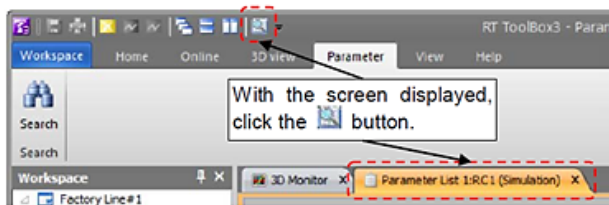


- The connector shape of the FR series robot has been changed.



9.Manual

- Add function to jump to corresponding page of user's manual.



file:///C:/Program%20Files%20(x86)/MELSOFT/RT%20ToolBox3/lang/en/Manual.pdf

13.1. Editing from parameter list

You can reference and rewrite individual items of parameter information set in a robot controller by specifying the name of the parameter.

13.1.1. Starting

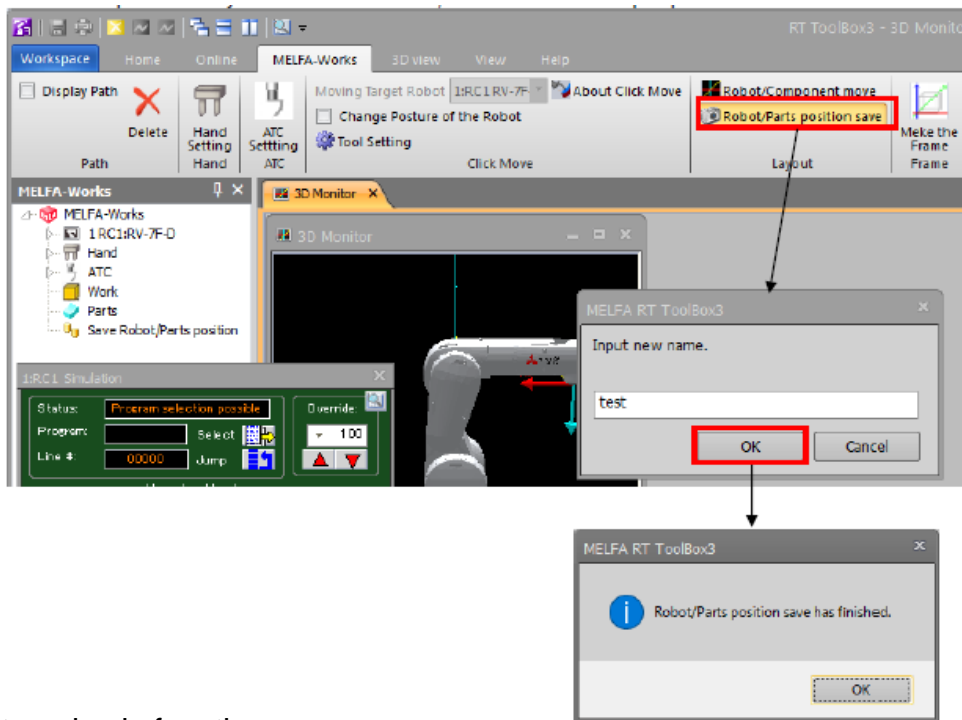
This is used in a state with the robot controller connected.
Double-click [Parameter list] under the [Parameter] item to be edited from the project tree.

Parameter	Explanation	Attribute
ACCODE	Initial value of acceleration/deceleration mode(0:Fixed value,1:Optimum ...	Robot
ABERR1	Robot1 air pressure error INPUT,During robot1 air pressure em...	Common
ABERR2	Robot2 air pressure error INPUT,During robot2 air pressure em...	Common
ABERR3	Robot3 air pressure error INPUT,During robot3 air pressure em...	Common
ABERR4	Robot4 air pressure error INPUT,During robot4 air pressure em...	Common
ABERR5	Robot5 air pressure error INPUT,During robot5 air pressure em...	Common
ALIGN1YP	Align type select(0:Normal,1:Cylindrica)	Robot
ALWENA	Enable X-command,SERVO command and RESET command in ALWAYS ...	Common
AROH1S	Shape of AROH1	Robot
AROH1T	Type of interpolation for AROH1	Robot

10.MELFA-Works

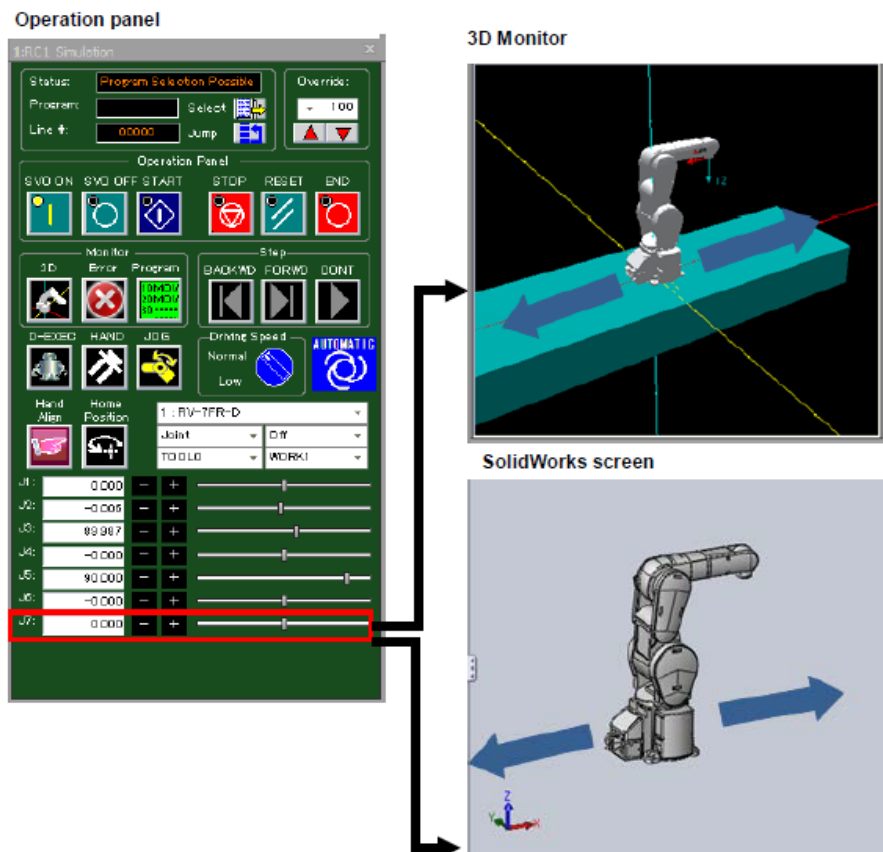
- Add Robot/Parts position save function.

It is possible to save the position of the robot and peripheral devices such as hands and workpieces. By putting back the saved position data, it is possible to reproduce the arrangement of the robot and peripheral devices.



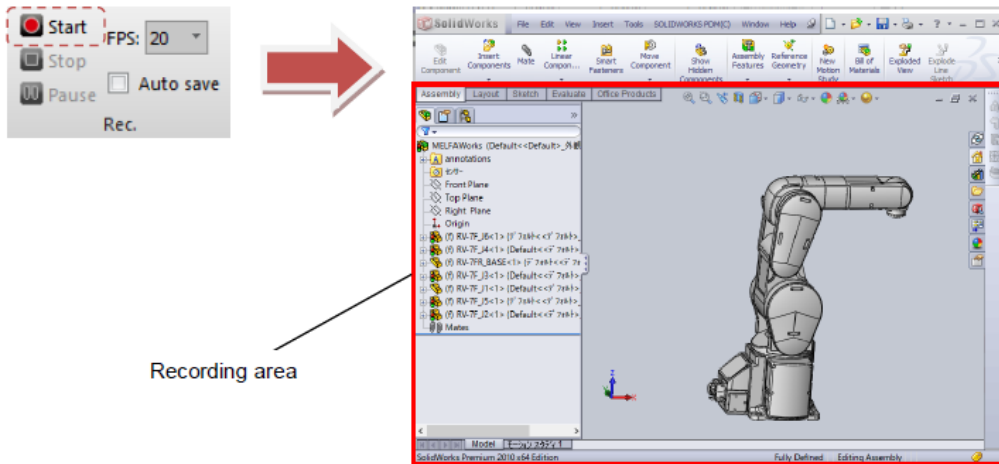
- Add travel axis function.

By setting the travel axis in the project setting of RT Toolbox 3, it is possible to move robot by travel axis.



- Add recording function.

It is possible to record the screen displayed in SolidWorks and save it in AVI file.



11. Trouble correction

- Fixed a bug that error history and user-defined external variables disappear when switching between simulation and offline mode.
- Fixed a bug that the user defined area was not displayed correctly when changing base.
- Fixed a bug that functional safety display area moved by base coordinate switching.
- Fixed a bug that programs deleted offline remained in simulation.
- Fixed a bug related to comment-out processing of command line containing tab characters.

(End)