Changes for the Better

MITSUBISHI ELECTRIC

Mitsubishi Electric Corporation Industrial Robot

MELFA Technical News

BFP-A6079-0147E

July 2015

Subject: **Report of RT ToolBox2 Version 3.40S release**

Applicable to: **F series, SQ series, SD series, S series (CR750/CRnQ-700/CRnD-700/CRn-500 series robot controller)**

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

This Technical news describes the new version 3.40S of the RT ToolBox2. 3D-11C-WINJ(E)/3D-12C-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 ToolBox2.

1. Model addition

The following models were added.

< RV-F Load maximum:2Kg / Long arm >
RV-2FL-D/Q

< RV-F Load maximum:2Kg / Long arm / Brake specification >
RV-2FLB-D/Q

<RV-F Load maximum:35Kg/50Kg/70Kg >
RV-35F-D/Q RV-50F-D/Q RV-70F-D/Q

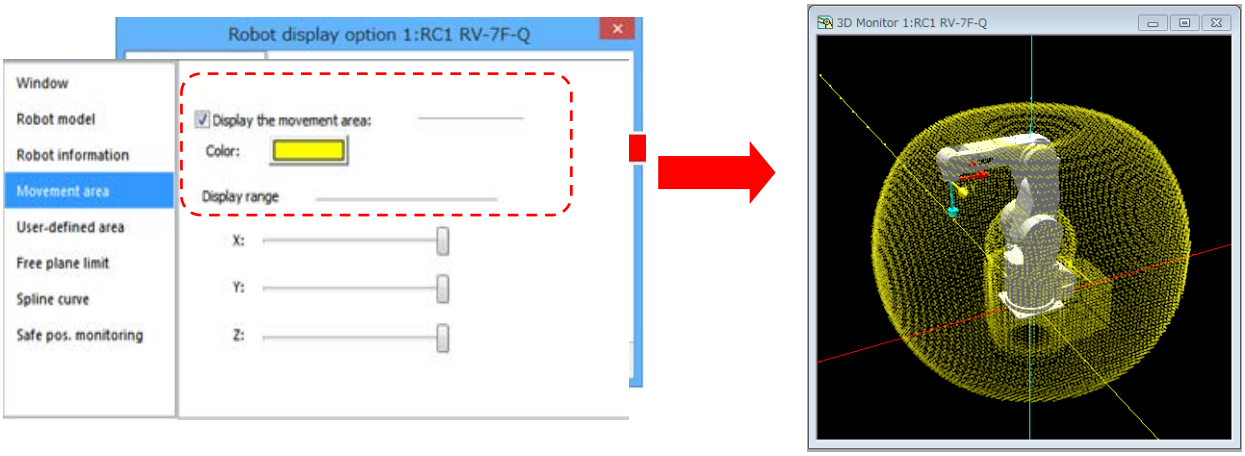
<RV-F Load maximum:35Kg/50Kg/70Kg / Mist specification >
RV-35FM-D/Q RV-50FM-D/Q RV-70FM-D/Q

(Note) Some of the parameters until the robot shipment is changed, it may be different from the simulator.

2. 3D monitor

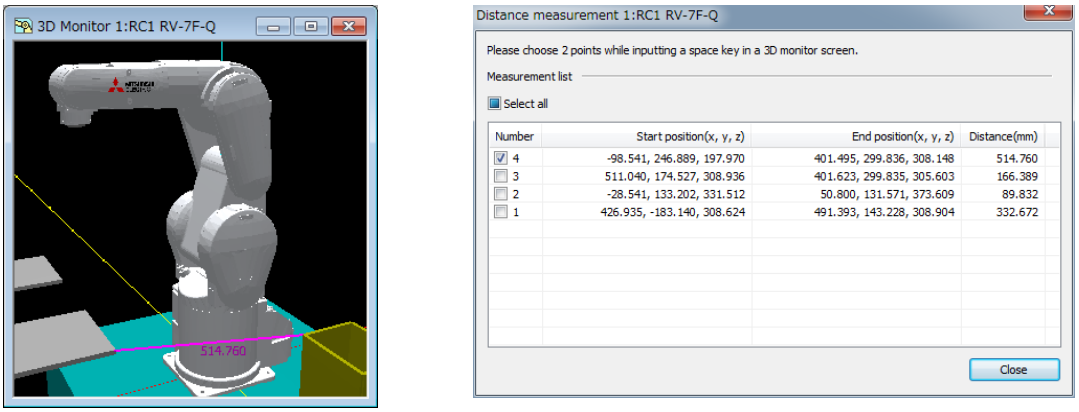
●Added the function of display movement area.

The position where robot can move with the posture of tool center point (TCP) at the time is displayed.



●Added the function of distance measurement.

You can measure the distance between any two points on objects (robots, layouts etc.) displayed in 3D monitor.



●Added the function of switching view (XY/YZ/ZX plane).

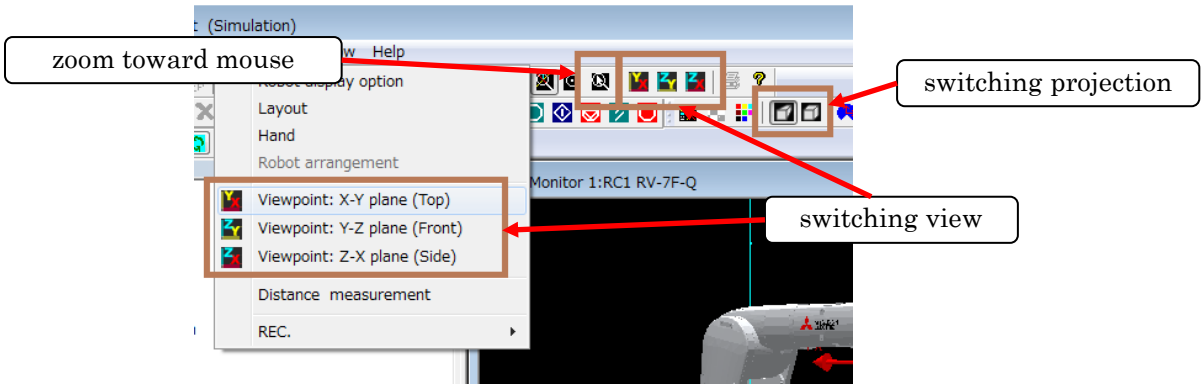
You can select the XY or YZ or ZX plane with buttons of the toolbar.

●Added the function of switching projection (Perspective/Orthogonal).

You can change the projection mode with buttons of toolbar.

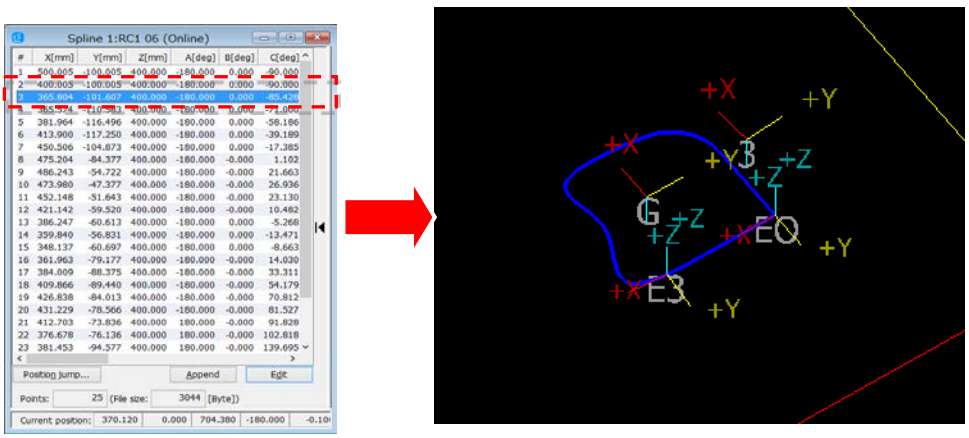
●Added the function of zoom toward mouse.

If you select the button, enlargement/reduction toward mouse on the 3D monitor.



● Added the function of display of curves correspond to the Ex-T-spline.

If opened a spline file corresponding to the Ex-T spline, spline curve will be displayed in the start position was along the Ex-T coordinate position.

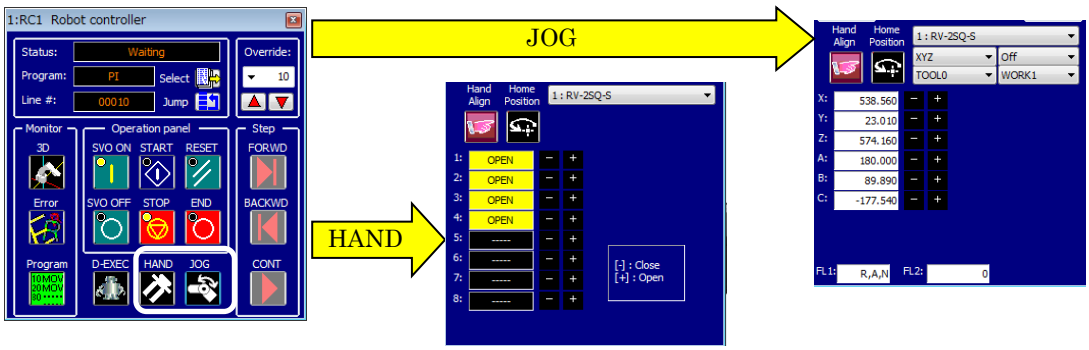


●Extend the recordable time by compressing when recording in save AVI.

3. Operation panel

●Added the jog operation of real robot.

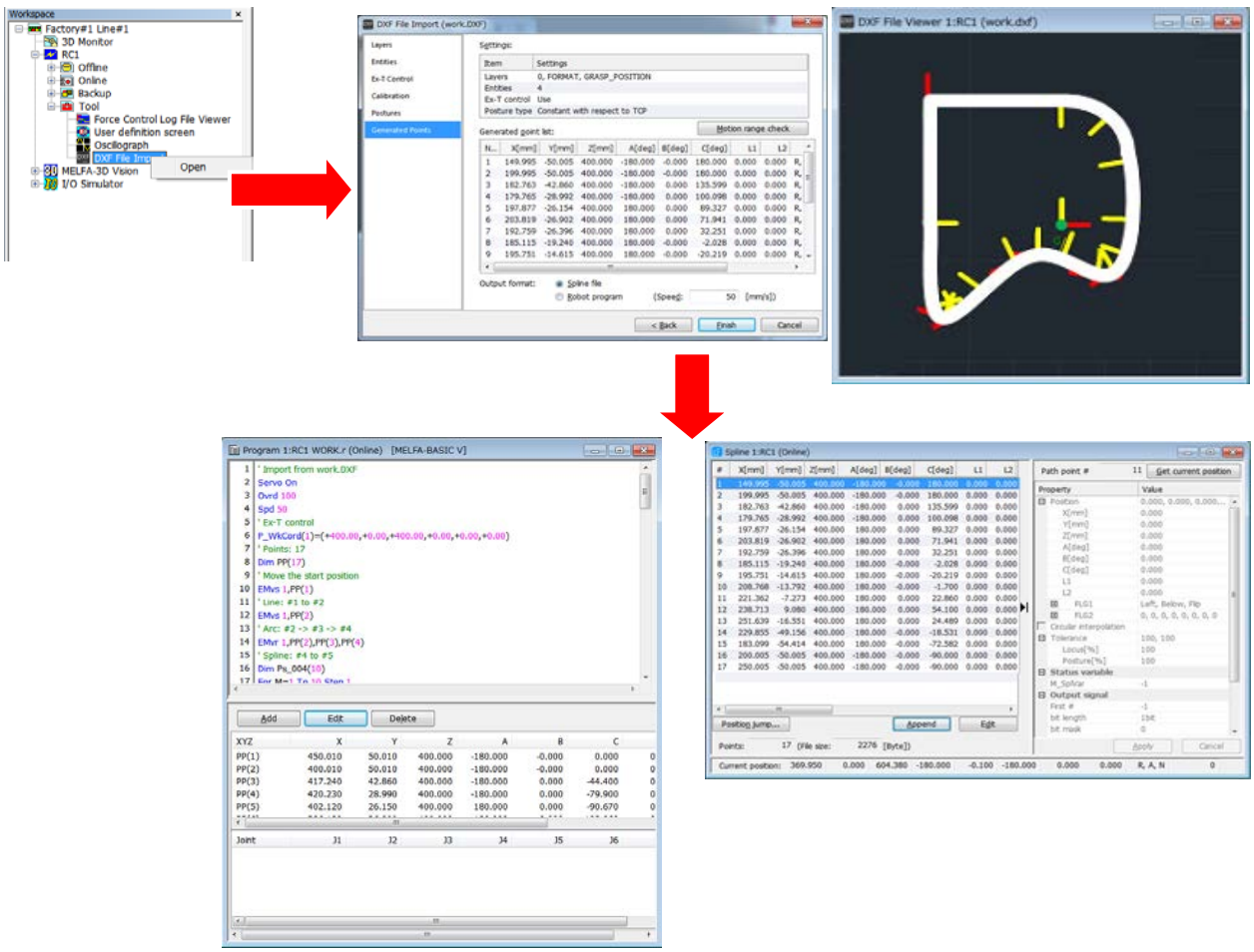
You can open / close each hand, align hand or move the robot to home position to the real robot controller.



4. DXF file import

●Added the function of “DXF File Import”.

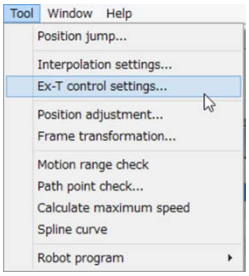
You can convert to the robot program / the spline file from the DXF file.

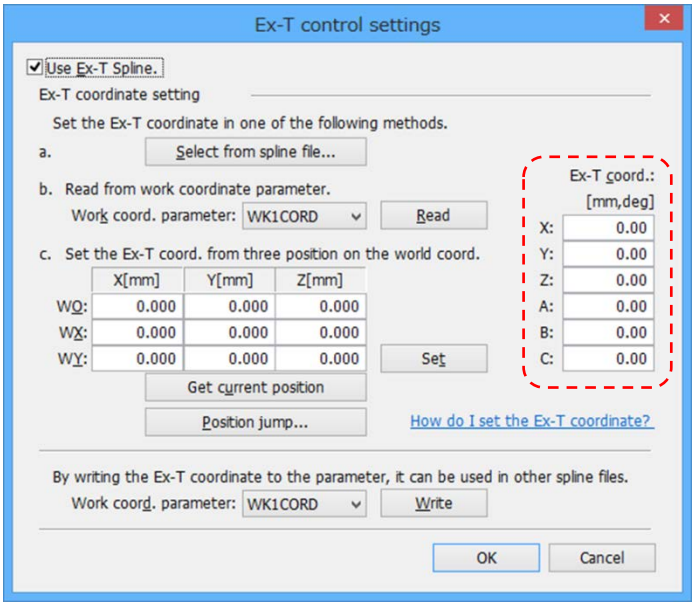


5. Spline

●Corresponded to the Ex-T spline.

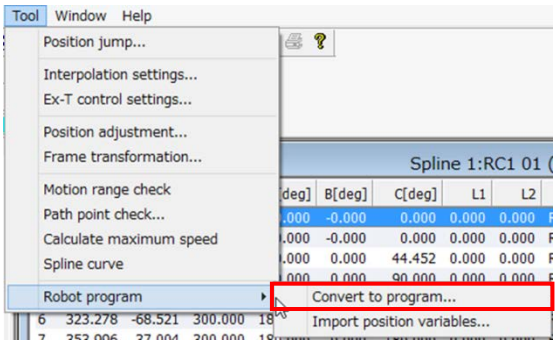
You can set the Ex-T coordinates in the spline file for the Ex-T spline interpolation command.

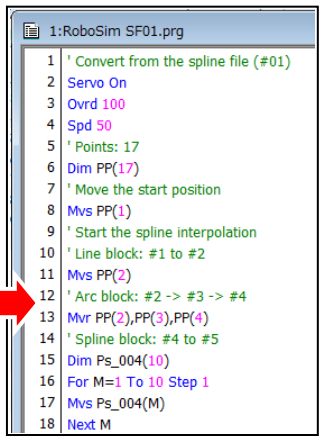




●Added the function of convert the robot program.

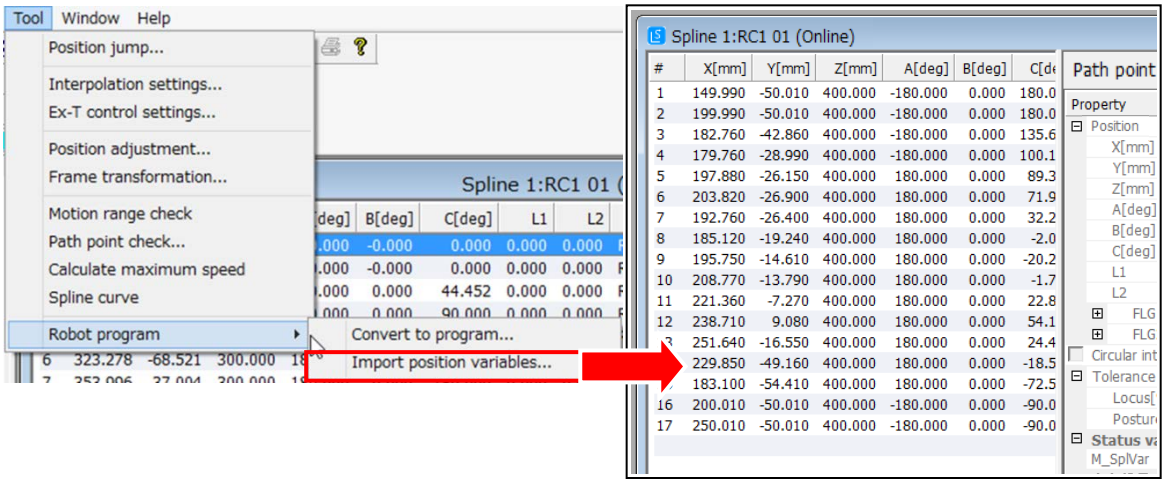
You can create the robot program using path points data registered in the spline file.





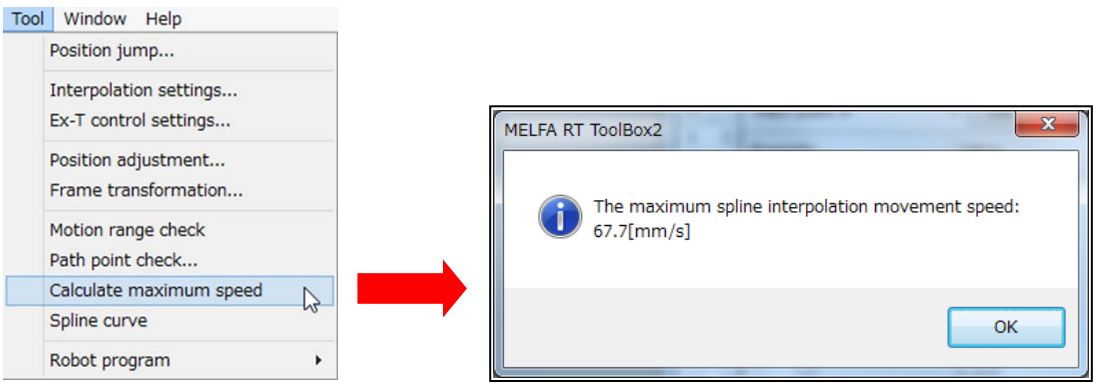
●Added the function of load the position of the robot program.

You can import the position data as the path point's data in the spline file.
The position data can be imported is PP(n) or Pn (n: Path point number).



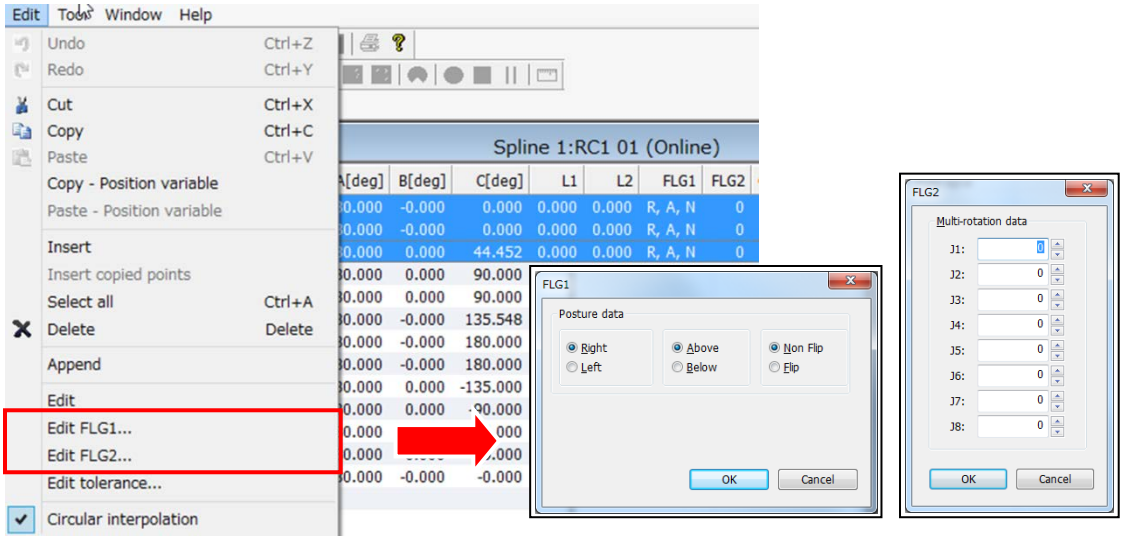
●Added the function of spline interpolation operating maximum speed calculation.

The possible execution maximum speed in the spline interpolation command (MvSpl, EMvSpl command) is calculated.



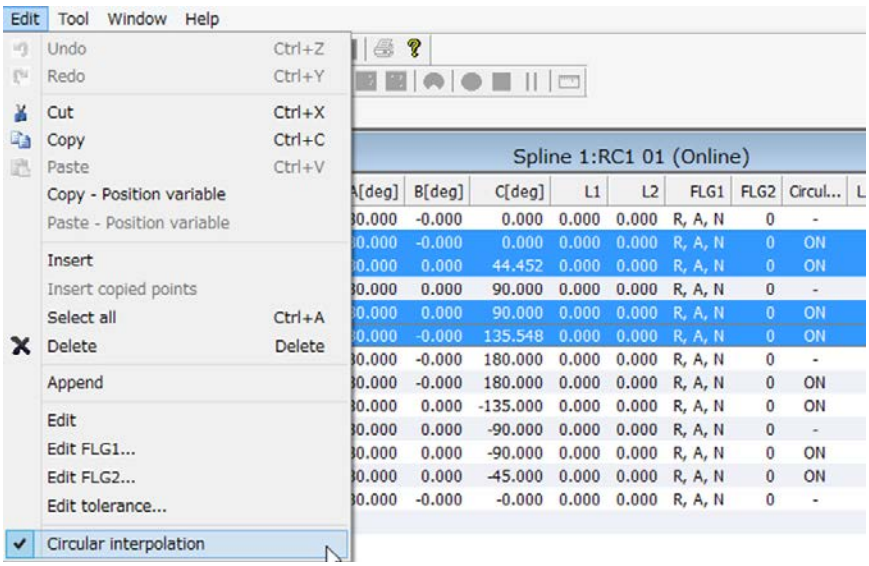
●Added the function of editing the structure flags.

You can edit the structure flags (FLG1, FLG2) of selected path points.



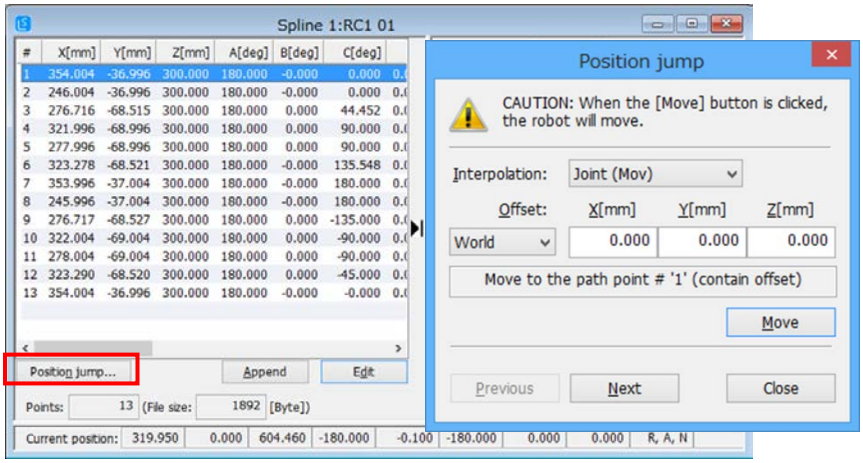
●Added the function of editing the circular interpolation.

You can edit the circular interpolation of selected path points.



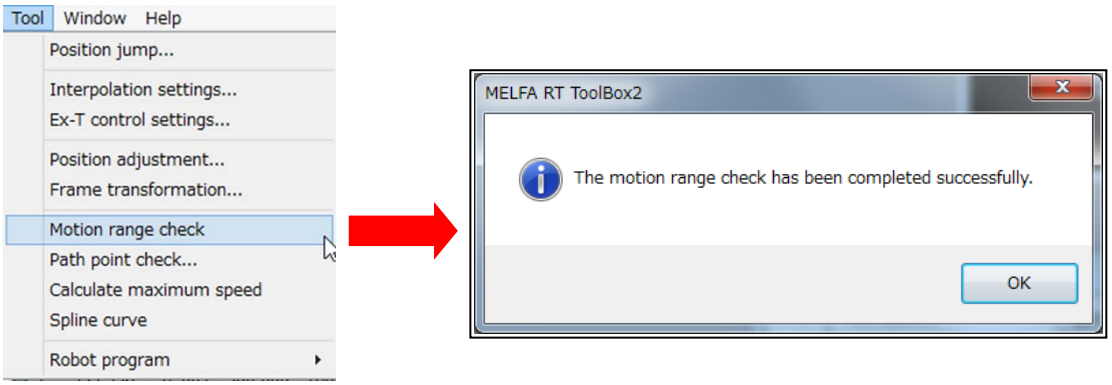
●Added the function of position jump.

You can move the robot to the selected path point.



● Added the function of motion range check.

You can check whether the robot can move in each path points.
This function can be used in the simulation.



6. Oscillograph

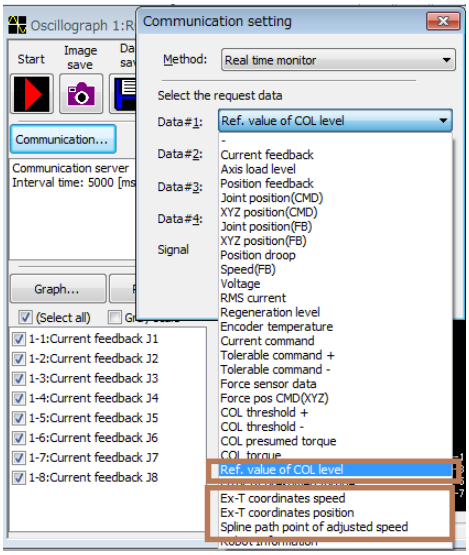
●New four types of data is able to be acquired.

"Ref. value of COL level"

"Ex-T coordinates speed"

"Ex-T coordinates position"

"Spline path point of adjusted speed"

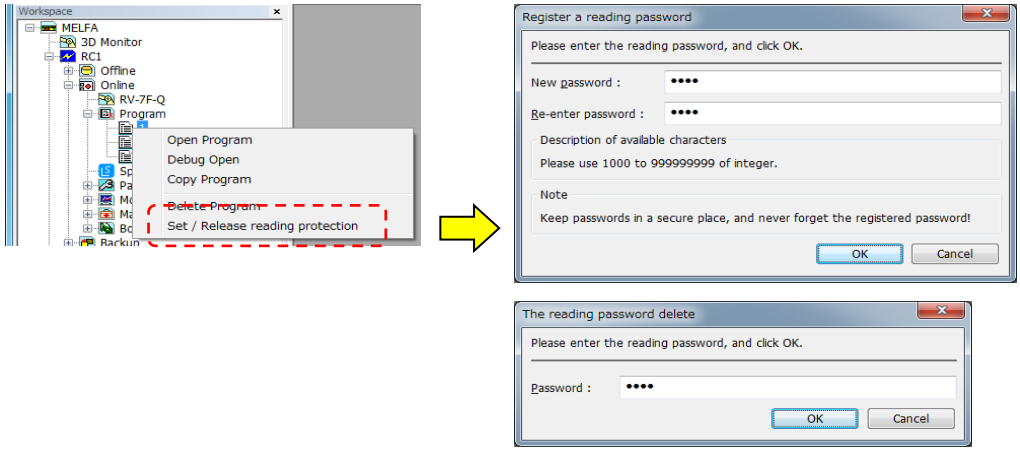


7. Program

●Added the function of “Reading protection of each program”.

If you set the reading protection to the robot program, you can make sure the third person can’t read it easily.

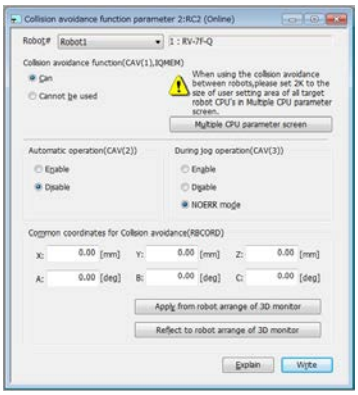
This function can be used with Version R5n/S5n or later of the controller software.



8. Parameter

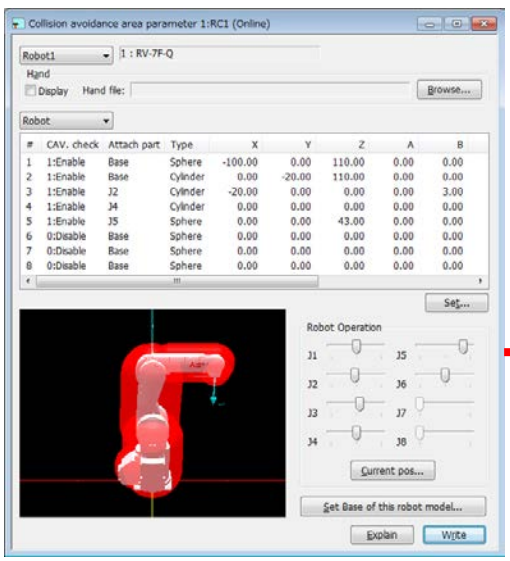
●Added the function of setting the “Collision avoidance function” parameters.

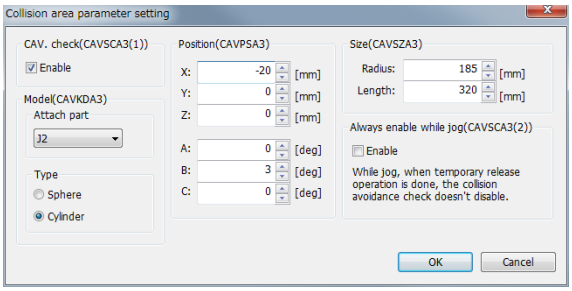
You can set parameters of collision avoidance in PC and robot controllers.



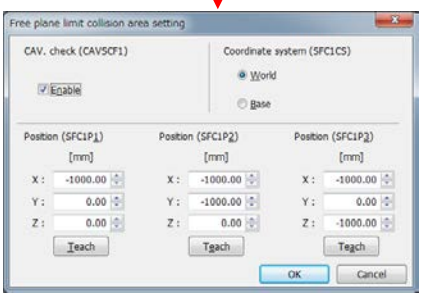
●Modified “Collision avoidance area” parameter screen.

Added the function of “Free plane limit collision avoidance area” to “Collision avoidance area” parameter screen .





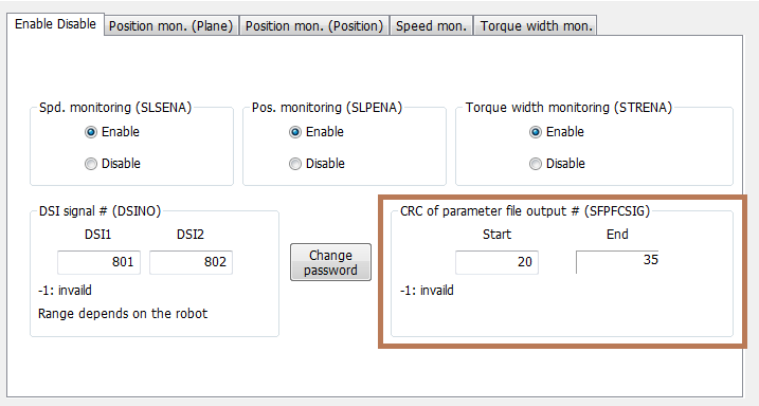
Robot/Hand/Work



Free plane limit

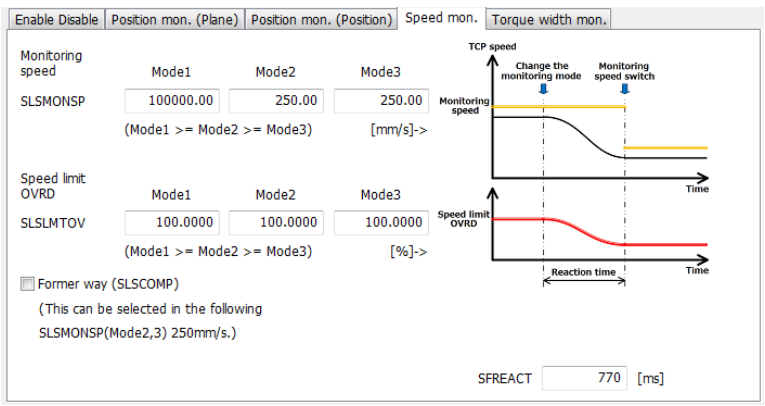
●Modified “Safety” parameter screen “Enable Disable”.

Added the setting item [CRC of parameter file output #].

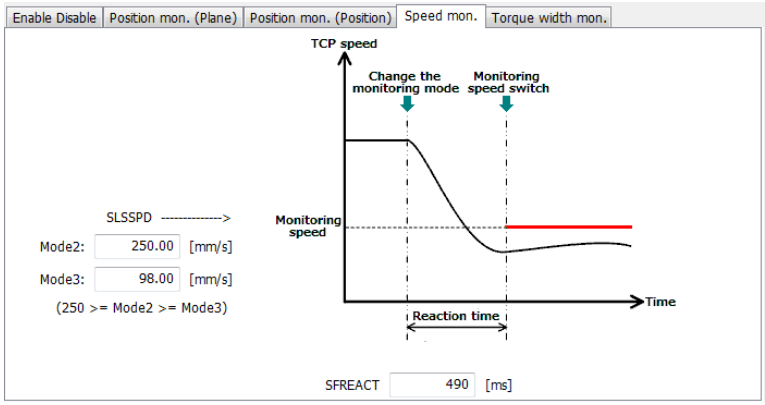


● Modified “Safety” parameter screen “Speed mon.”.

If you use with Version R6b/S6b or later of the controller software, the A screen is displayed. In other cases, the B screen is displayed.



Safety parameter (Speed mon.) A

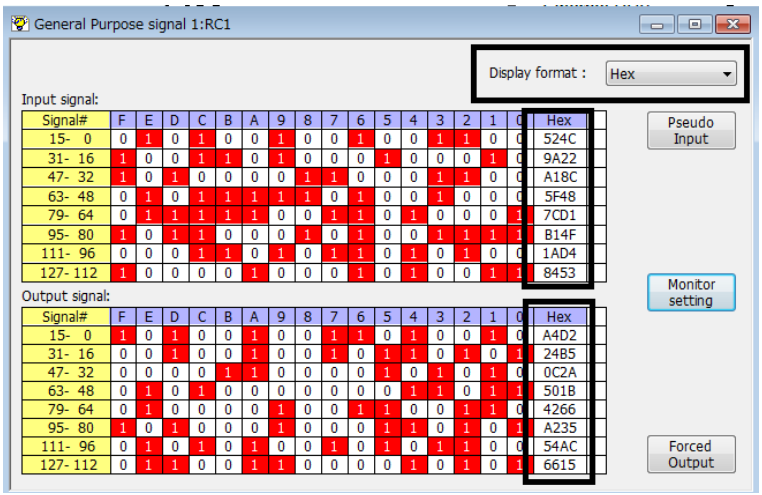


Safety parameter (Speed mon.) B

9. Monitor

●Added the change function decimal notation of the signal value in General signal monitor.

The right end of the column, will appear in notation that you selected, the signal value of the line in the “Display format”.(Hex/Unsigned decimal/Signed decimal)



10. Simulator

●The operating speed of the simulator has become equal to the real robot.

In the PC machine power is insufficient, please view the robot model in the simple mode.

When the detailed model display, it is recommended personal computer equipped with a Core i7 or more of the CPU.