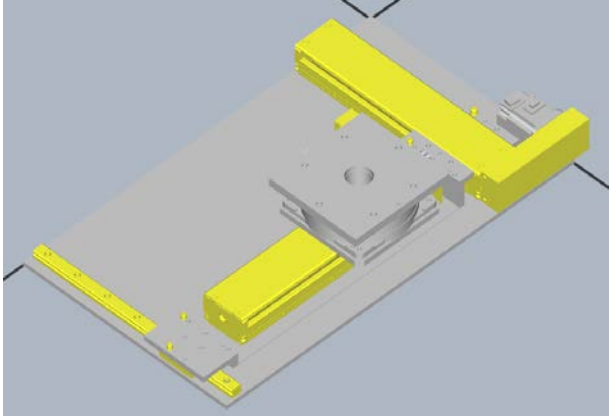
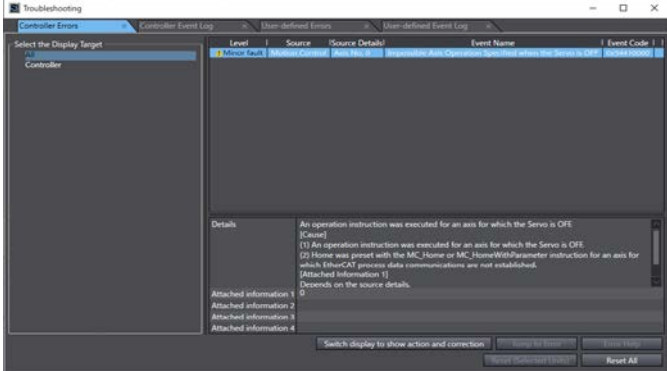
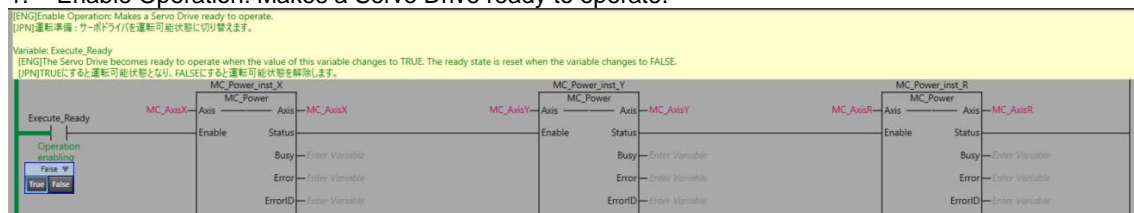


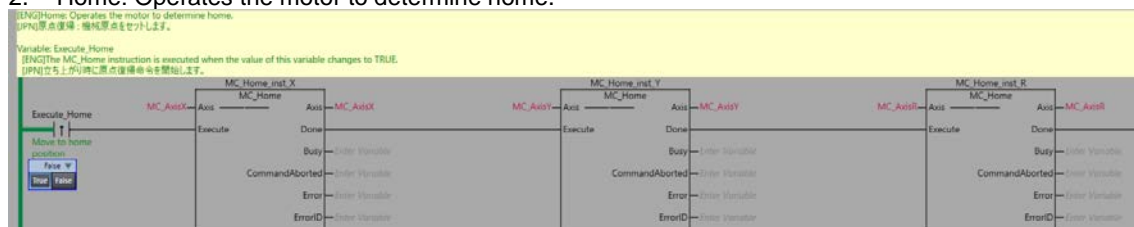
3D Simulation Sample Program No.19	X-Y-θ mechanism	
Basic function	Makes the device to be ready for operation, and performs homing, jog, and demonstration.	
3D image	 <p>CAD data: MISUMI Corporation inCAD Library No. 000613 (*)  The CAD data was edited by OMRON. Refer to the Sysmac Studio 3D Simulation Function Operation Manual (W618-E1) for the editing procedures.  (*The component name is not listed in the English website of MISUMI Corporation.)</p>	
File name	3DSimulationSample_19_X-Y-Theta_mechanism_V1_00.smc2	
Applicable model	Sysmac Studio (64-bit version)	SYSMAC-SE2xxx Ver.1.40 or higher
	Sysmac Studio 3D Simulation Option	SYSMAC-SA4xxL-64
Used language	Ladder programming	
Used materials and equipment	OMRON 1S-series Servo System is used as the motor component in this simulation.	
Function description	<ul style="list-style-type: none"> <li>When the Execute_Ready variable (Boolean) changes to TRUE, the Servo Drive becomes ready to operate.</li> <li>When the Execute_Home variable (Boolean) changes to TRUE, the MC_Home instruction is executed to move each axis to its home.</li> <li>While the following variable (Boolean) is TRUE, the jog operation is performed to move the axis in the specified direction. <ul style="list-style-type: none"> <li>X_Jog_Posi (Boolean): Jogs the Axis X in the positive direction.</li> <li>X_Jog_Nega (Boolean): Jogs the Axis X in the negative direction.</li> <li>Y_Jog_Posi (Boolean): Jogs the Axis Y in the positive direction.</li> <li>Y_Jog_Nega (Boolean): Jogs the Axis Y in the negative direction.</li> <li>R_Jog_Posi (Boolean): Jogs the Axis R(Theta) in the positive direction.</li> <li>R_Jog_Nega (Boolean): Jogs the Axis R(Theta) in the negative direction.</li> </ul> </li> <li>When the Execute_Demo variable (Boolean) changes to TRUE, a demonstration is performed.</li> </ul>	
Mechanical component types provided on the Sysmac Studio	XY Theta Table (XY Theta)	
Precaution for use	<ul style="list-style-type: none"> <li>This sample program is specifically prepared for 3D simulation. Do not use this program in actual machine operation.</li> <li>MISUMI Corporation may not offer all parts in each application design. Available parts can only be purchased separately not as a unit shown in each application design. MISUMI Corporation does not guarantee quality, accuracy, functionality, safety or reliability for the combination of the parts in each application example.</li> </ul>	
Restrictions and others	<ul style="list-style-type: none"> <li>Error processing is not included in the sample program.  To reset errors, select <b>Troubleshooting</b> from the Tools Menu, then click the <b>Reset All</b> button.</li> </ul> 	

## Application example

## 1. Enable Operation: Makes a Servo Drive ready to operate.



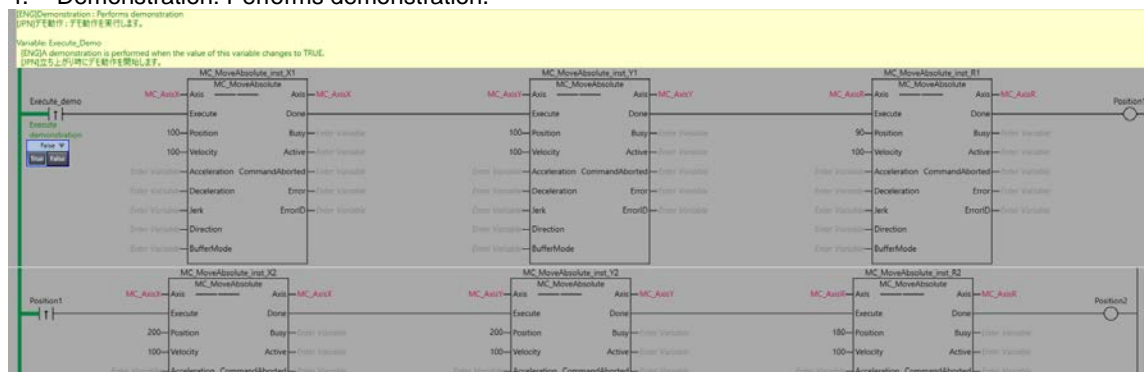
## 2. Home: Operates the motor to determine home.



## 3. Manual Operation: Jogs an axis according to the specified target velocity.



## 4. Demonstration: Performs demonstration.



(Additional information)

To confirm 3D operation, select **3D Visualizer** from the View menu. You can confirm the operation on the 3D Visualizer.

## Related manuals

Sysmac Studio Version 1 Operation Manual (W504-E1)  
Sysmac Studio 3D Simulation Function Operation Manual (W618-E1)

## ■ Variable Tables

### Input Variables

Meaning	Name	Data type	Default	Range	Description
Enable Operation	Execute_Ready	BOOL		TRUE or FALSE	The Servo Drive becomes ready to operate when the value of this variable changes to TRUE. The ready state is reset when the variable changes to FALSE.
Home	Execute_Home	BOOL		TRUE or FALSE	The MC_Home instruction is executed when the value of this variable changes to TRUE.
Jog Axis X in Positive Direction	X_Jog_Pos	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis X starts moving in the positive direction. When it changes to FALSE, the Axis X stops moving.
Jog Axis X in Negative Direction	X_Jog_Nega	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis X starts moving in the negative direction. When it changes to FALSE, the Axis X stops moving.
Jog Axis Y in Positive Direction	Y_Jog_Pos	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis Y starts moving in the positive direction. When it changes to FALSE, the Axis Y stops moving.
Jog Axis Y in Negative Direction	Y_Jog_Nega	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis Y starts moving in the negative direction. When it changes to FALSE, the Axis Y stops moving.
Jog Axis R(Theta) in Positive Direction	R_Jog_Pos	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis R(Theta) starts moving in the positive direction. When it changes to FALSE, the Axis R(Theta) stops moving.
Jog Axis R(Theta) in Negative Direction	R_Jog_Nega	BOOL		TRUE or FALSE	When the value of this variable changes to TRUE, the Axis R(Theta) starts moving in the negative direction. When it changes to FALSE, the Axis R(Theta) stops moving.
Demonstration	Execute_Demo	BOOL		TRUE or FALSE	A demonstration is performed when the value of this variable changes to TRUE.

### Output Variables

Meaning	Name	Data type	Range	Description

## ■ Version History

Version	Date	Contents
1.00	July 2020	Original production.

## ■ Note

This document explains the function of the sample programs specifically prepared for 3D simulation.

It does not provide information of restrictions on the use of Units and Components or combination of them. For actual applications, make sure to read the operation manuals of the applicable product

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