

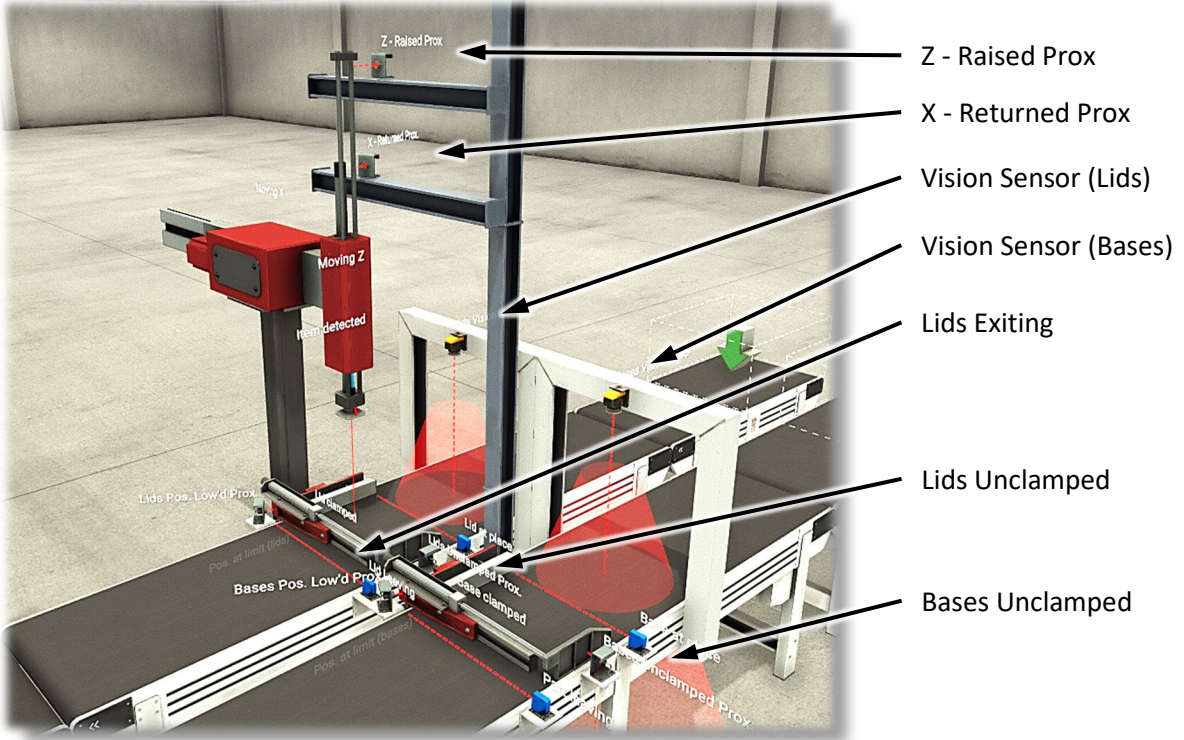
NOTES AND IDEAS:

The following images detail some of the changes suggested and necessary to move from Lab 2 to Lab 3. Your factory will not necessary look exactly like the one shown here, however, the concepts are similar. Your factory could have more or fewer inputs and outputs. In fact, the example shown here may still be missing a few important indicators. The position proximity switch could have already been added depending on how you archived position indication in Lab 2.

As mentioned at the end of the lab document, the interfacing between PLC 1 and PLC 2 is operating at a pretty basic level and, as such, the equipment may not run perfectly. Key requirements have not been specified due to some impossible operational issues such as the number of Lids and Bases of each type are not equal. Without buffering capability, it is virtually impossible for the equipment to run without purposely losing parts.

Students are encouraged to create a basic report with notes and ideas required to move from Lab 2 to Lab 3. The screenshots and notes shown below are a small example of what is expected.

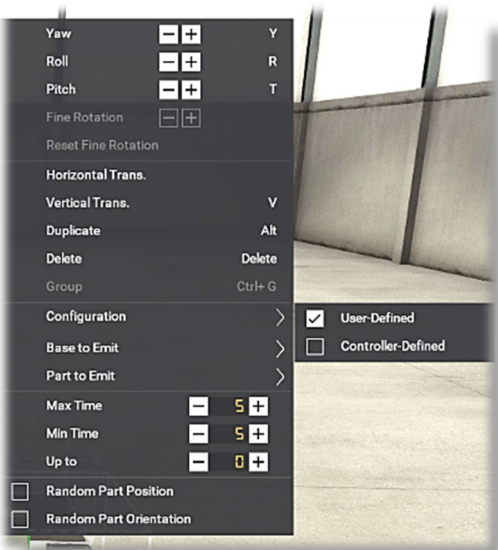
PLC 1 / 2 – Recommended I/O



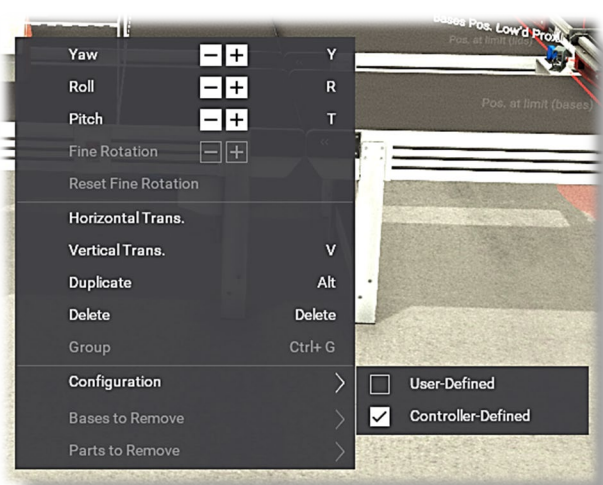
Suggested and required additional sensors for Lab 3

Note that brackets and supports are not required but aid in visualization of the simulation.

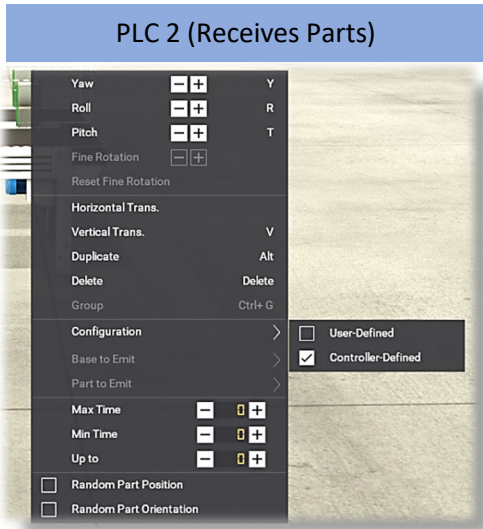
PLC 1 (Sends Parts)



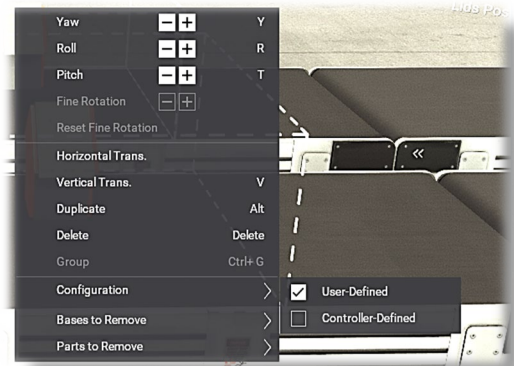
Emitter Settings – User Defined
 Changed to 5 seconds (Min and Max)



Remove Settings – Controller Defined
 Add Input and Output Words to I/O



Emitter Settings – Controller Defined
Changed to 0 seconds (Min and Max)
Add Input and Output Words of I/O



Remove Settings – User Defined
Set to remove all objects

PLC 1 (Sends Parts)

X - Returned Prox.	BOOL_IN_33	BOOL_OUT_33	Bases emitter
Lids Pos. Low'd Prox.	BOOL_IN_34	BOOL_OUT_34	Lids emitter
Lids Unclamped Prox.	BOOL_IN_35	BOOL_OUT_35	
Pos. at limit (lids)	BOOL_IN_36	BOOL_OUT_36	Lids Feed Conveyor
Bases Pos. Low'd Prox.	BOOL_IN_37	BOOL_OUT_37	Lids Remover Conveyor
Bases Unclamped Prox.	BOOL_IN_38	BOOL_OUT_38	Bases Feed Conveyor
Pos. at limit (bases)	BOOL_IN_39	BOOL_OUT_39	Bases Remover Conveyor
Z - Raised Prox	BOOL_IN_40	BOOL_OUT_40	
Lid Leaving	BOOL_IN_41	BOOL_OUT_41	Good Lid Detected
	BOOL_IN_42	BOOL_OUT_42	Good Base Detected
	BOOL_IN_43	BOOL_OUT_43	Good Assembly
	BOOL_IN_44	BOOL_OUT_44	
Bases Vision Sensor	INT_IN_0	INT_OUT_0	Digital Display
Lids Vision Sensor	INT_IN_1	INT_OUT_1	
	INT_IN_2	INT_OUT_2	
Bases Remover (Detected Parts)	INT_IN_3	INT_OUT_3	Bases Remover (Parts to Remove)
Lids Remover (Detected Parts)	INT_IN_4	INT_OUT_4	Lids Remove (Parts to Remove)
	INT_IN_5	INT_OUT_5	
	INT_IN_6	INT_OUT_6	
	INT_IN_7	INT_OUT_7	
	INT_IN_8	INT_OUT_8	
	INT_IN_9	INT_OUT_9	
	INT_IN_10	INT_OUT_10	
	INT_IN_11	INT_OUT_11	

Add:

- Remove Integers
- Lid and Base Emitter Output
- Vision Sensors
- Proximity Switches for Position Detection

PLC 2 (Receives Parts)

X - Returned Prox.	BOOL_IN_33	BOOL_OUT_33	Bases Emitter
Lids Pos. Low'd Prox.	BOOL_IN_34	BOOL_OUT_34	Lids Emitter
Lids Unclamped Prox.	BOOL_IN_35	BOOL_OUT_35	
Pos. at limit (lids)	BOOL_IN_36	BOOL_OUT_36	Lids Feed Conveyor
Bases Pos. Low'd Prox.	BOOL_IN_37	BOOL_OUT_37	Lids Remover Conveyor
Bases Unclamped Prox.	BOOL_IN_38	BOOL_OUT_38	Bases Feed Conveyor
Pos. at limit (bases)	BOOL_IN_39	BOOL_OUT_39	Bases Remover Conveyor
Z - Raised Prox	BOOL_IN_40	BOOL_OUT_40	
Lid Leaving	BOOL_IN_41	BOOL_OUT_41	Good Lid Detected
	BOOL_IN_42	BOOL_OUT_42	Good Base Detected
	BOOL_IN_43	BOOL_OUT_43	Good Assembly
	BOOL_IN_44	BOOL_OUT_44	
Bases Vision Sensor	INT_IN_0	INT_OUT_0	Digital Display
Lids Vision Sensor	INT_IN_1	INT_OUT_1	
	INT_IN_2	INT_OUT_2	
	INT_IN_3	INT_OUT_3	Emitter (Bases)
	INT_IN_4	INT_OUT_4	Emitter (Lids)
	INT_IN_5	INT_OUT_5	
	INT_IN_6	INT_OUT_6	
	INT_IN_7	INT_OUT_7	
	INT_IN_8	INT_OUT_8	
	INT_IN_9	INT_OUT_9	
	INT_IN_10	INT_OUT_10	
	INT_IN_11	INT_OUT_11	

Add:

- Emitter Integers
- Lid and Base Emitter Output
- Vision Sensors
- Proximity Switches for Position Detection