

## Main\_Program [OB1]

### Main\_Program Properties

#### General

<b>Name</b>	Main_Program	<b>Number</b>	1	<b>Type</b>	OB
<b>Language</b>	LAD	<b>Numbering</b>	Manual		

#### Information

<b>Title</b>	SP21-3	<b>Author</b>		<b>Comment</b>	
<b>Family</b>		<b>Version</b>	0.1	<b>User-defined ID</b>	

Name	Data type	Default value
▼ Temp		
OB1_EV_CLASS	Byte	
OB1_SCAN_1	Byte	
OB1_PRIORITY	Byte	
OB1_OB_NUMBR	Byte	
OB1_RESERVED_1	Byte	
OB1_RESERVED_2	Byte	
OB1_PREV_CYCLE	Int	
OB1_MIN_CYCLE	Int	
OB1_MAX_CYCLE	Int	
OB1_DATE_TIME	Date_And_Time	
Constant		

### Network 1: SP21-3

Copyright (c) 2011, 2015 Dogwood Valley Press, LLC

SP21-3 Erbia Can Tipper/Rotator Control with simulation

Additional internal memory:

Tag Address

Run M5.0 BOOL On while station running

Int\_Reset M5.1 BOOL Internal reset

Run\_Trans M61.0 BOOL Run has changed

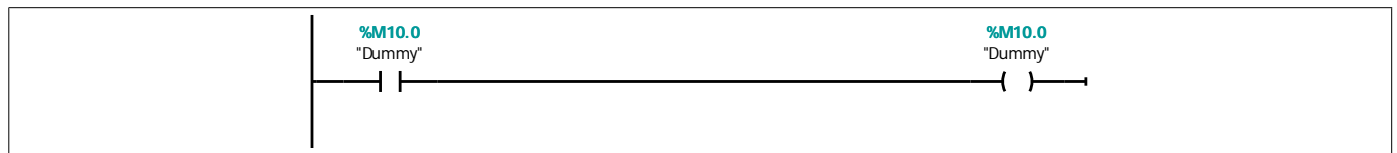
Run\_PTrans M61.1 BOOL Bit for Run neg transition

Run\_NTrans M61.2 BOOL Bit for Run pos transition

OP\_Zeroed M61.3 BOOL Operation paused

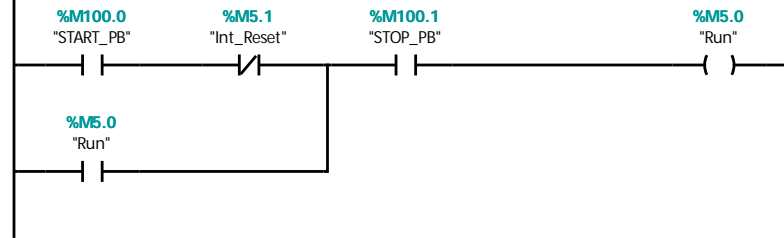
Reset\_Trans M61.4 BOOL Reset\_PB transition to start-kick SFC

ResetPB\_PTrans M61.5 BOOL Bit for Reset\_PB pos trans

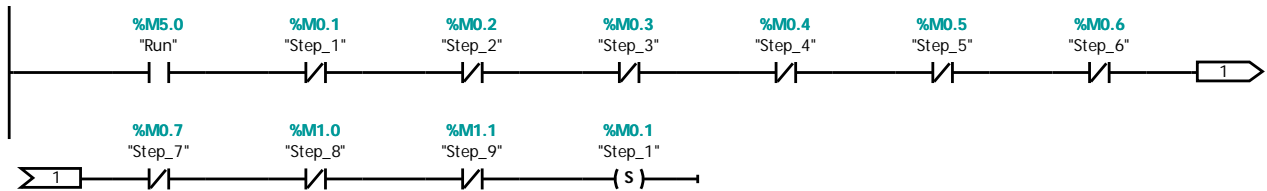


### Network 2: Start/stop

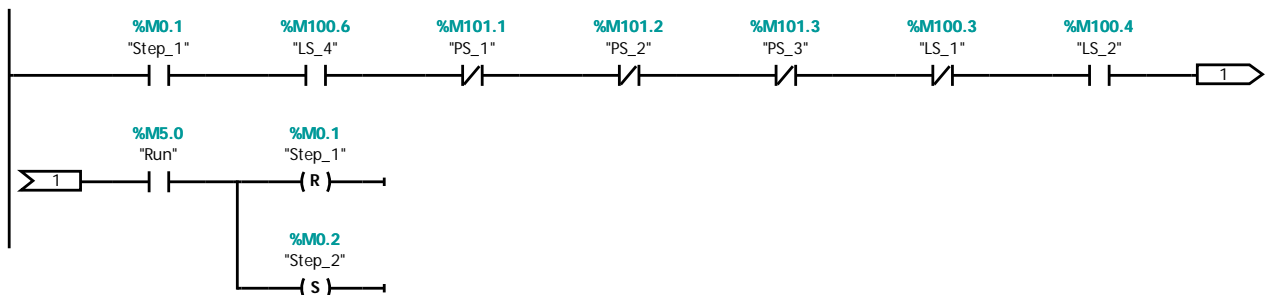
During reset prevent start



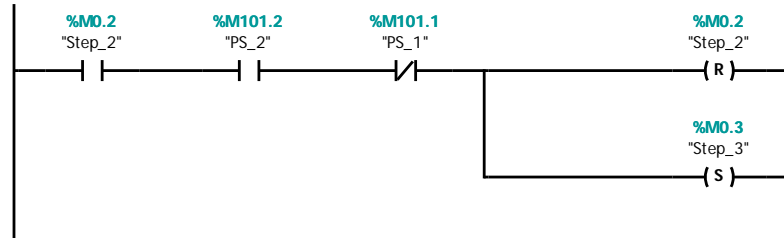
### Network 3: Initial start



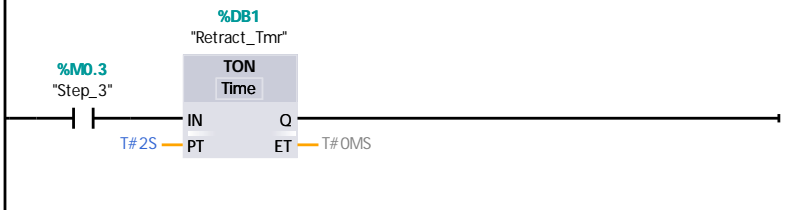
### Network 4: Step 1 Wait for can



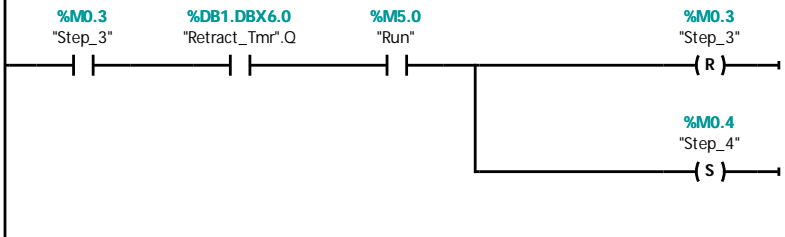
### Network 5: Step 2 Push can into tipper.



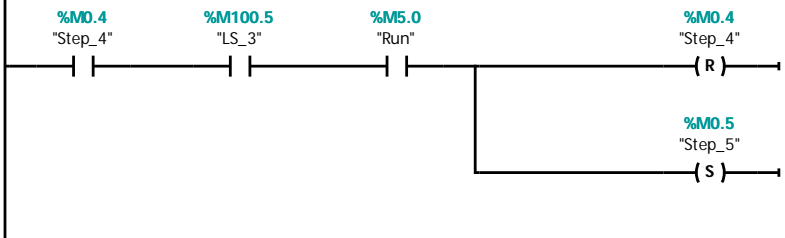
### Network 6: Retract timer



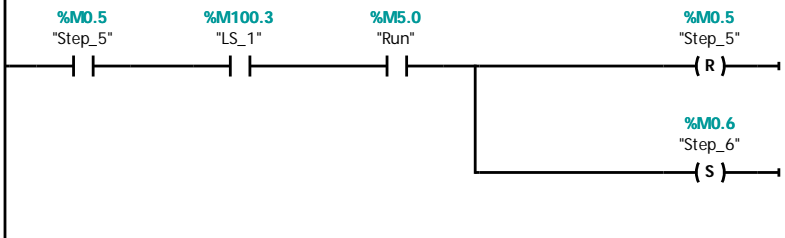
**Network 7: Step 3 Wait for CYL\_4 to retract**



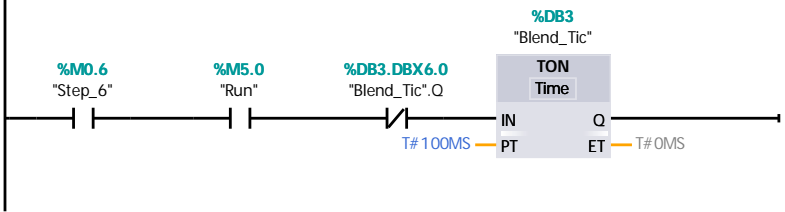
**Network 8: Step 4 Clamp can**



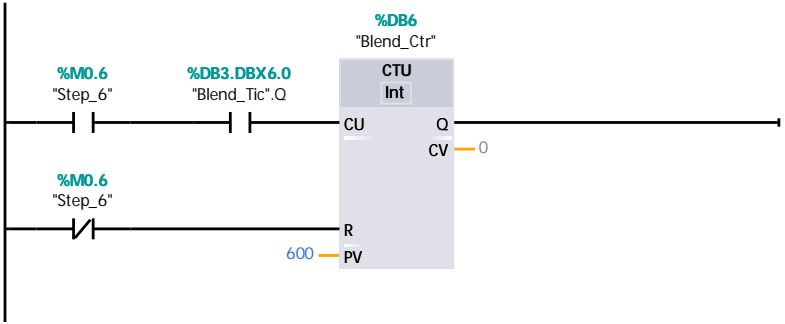
**Network 9: Step 5 Tip rotator**



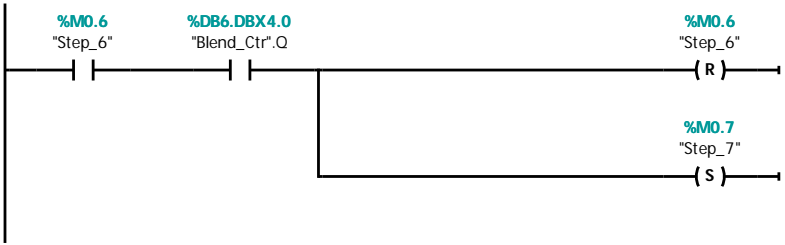
**Network 10: Blend tic for retentive timer**



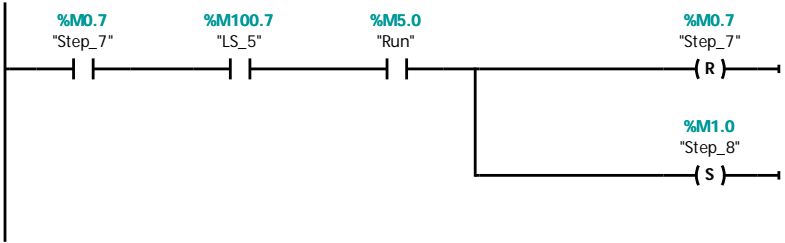
Network 11: Counter for retentive blend timer



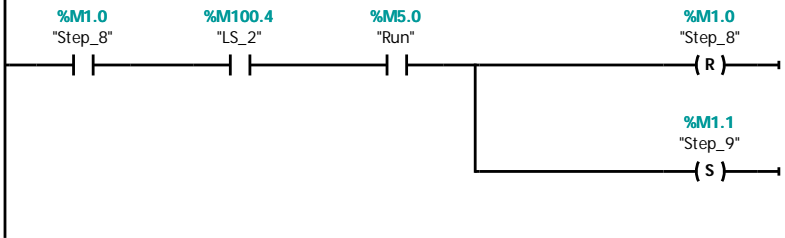
Network 12: Step 6 Blend



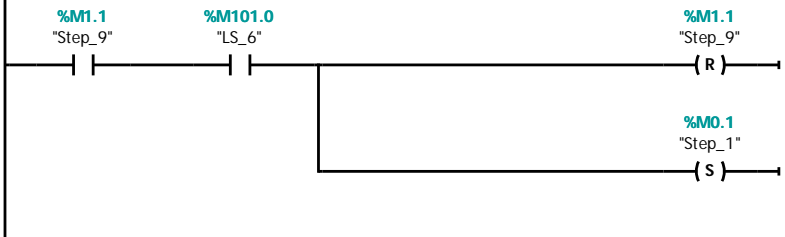
Network 13: Step 7 Untip



Network 14: Step 8 Unclamp

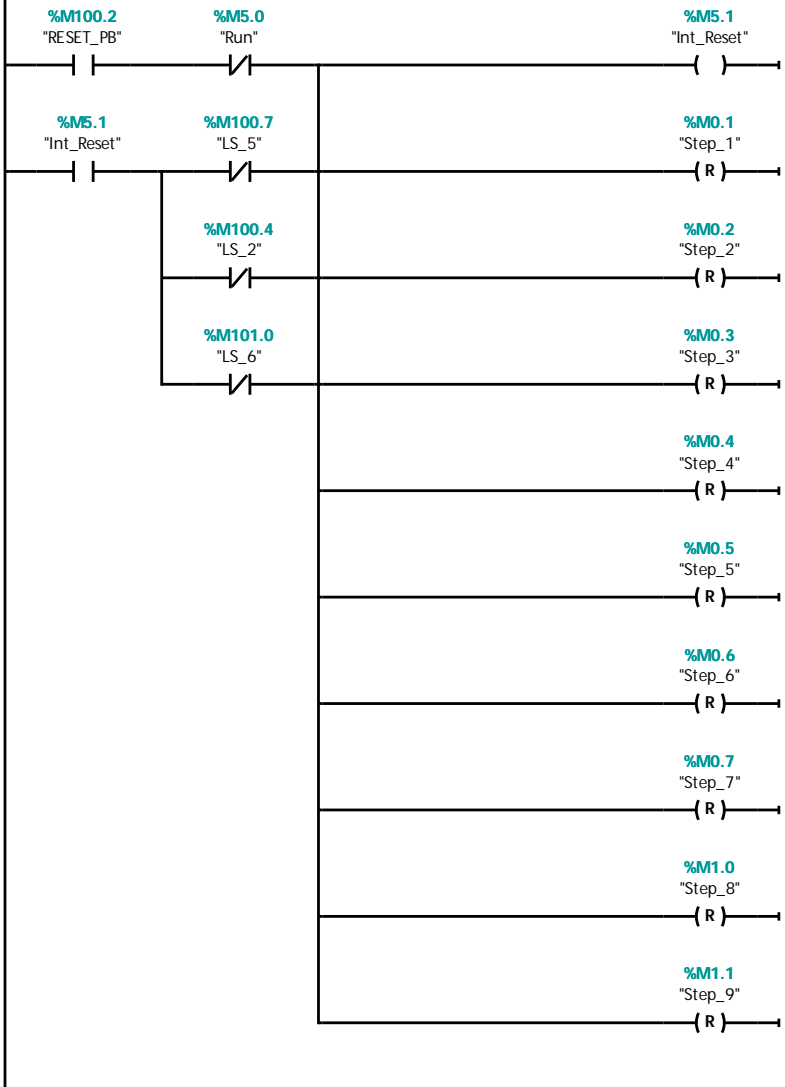


**Network 15: Step 9 - Push out**



**Network 16: Reset**

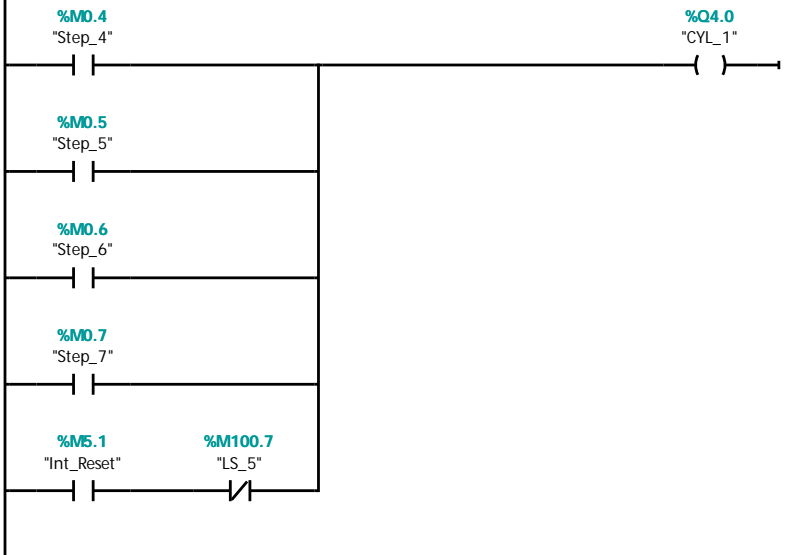
Keep internal reset on until can unclamped, vertical and out of station.



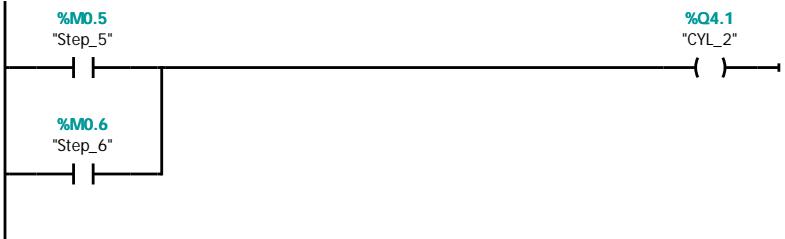
**Network 17: Physical Outputs**

Gate cylinder controls. Cannot turn off CYL\_1 to CYL\_3 when paused.

On reset, do not unclamp until vertical.

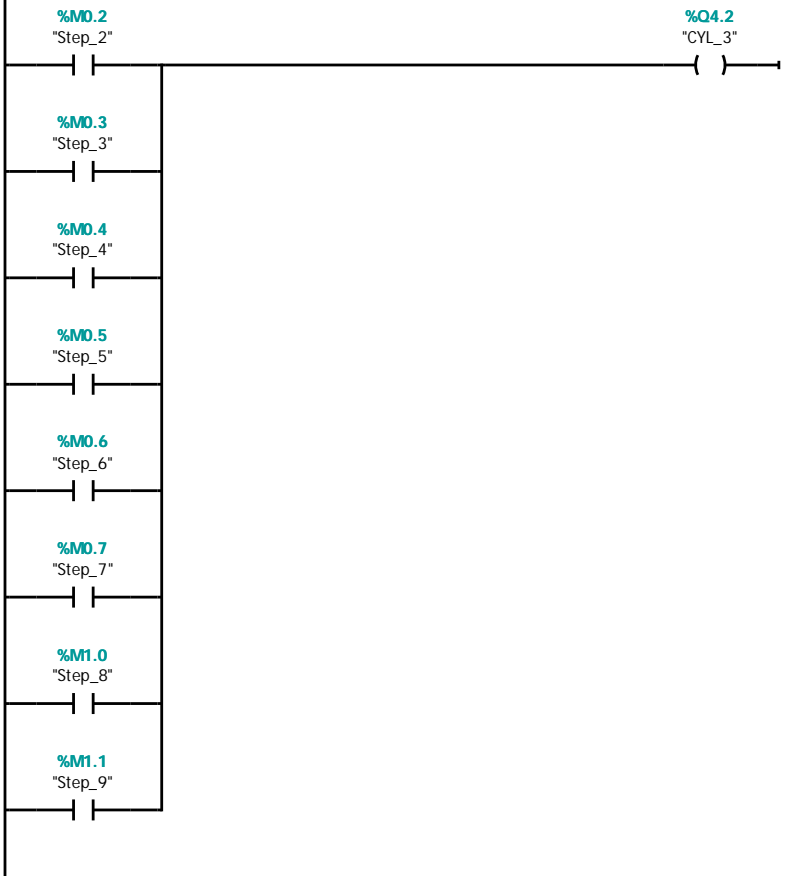


**Network 18: CYL\_2 control**



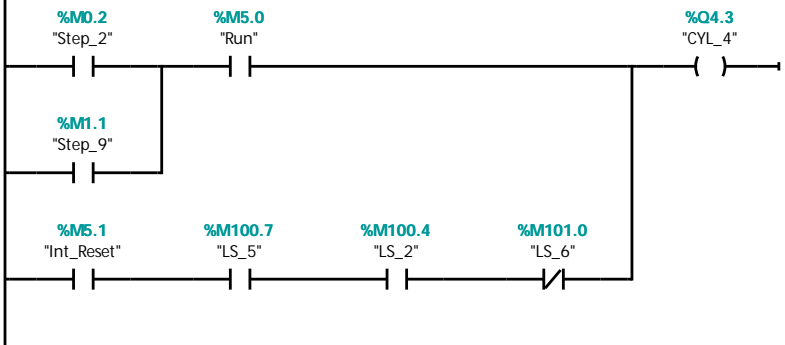
**Network 19: CYL\_3 control**

Retract on reset



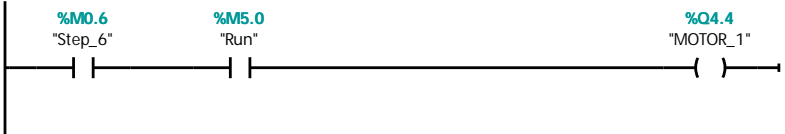
**Network 20: CYL\_4 control**

On reset, do not push out until in vertical position and unclamped.



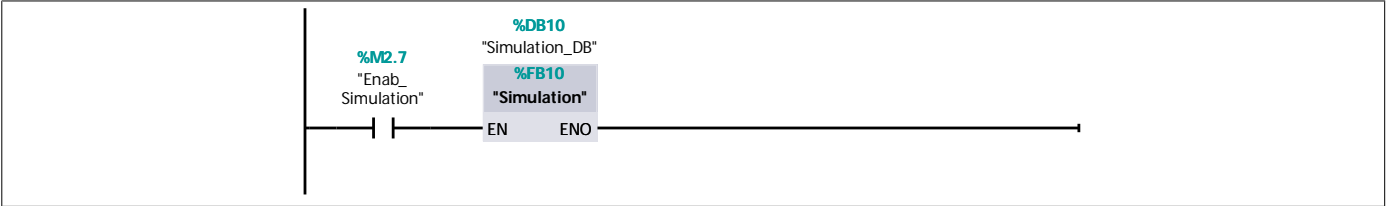
**Network 21: Rotator motor control**

Retract on reset

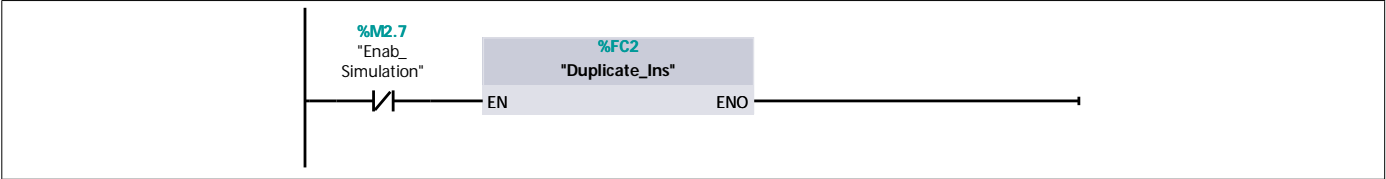




**Network 22: Simulation**



**Network 23: Copy real inputs to input image if not simulating**



## Duplicate\_Ins [FC2]

### Duplicate\_Ins Properties

#### General

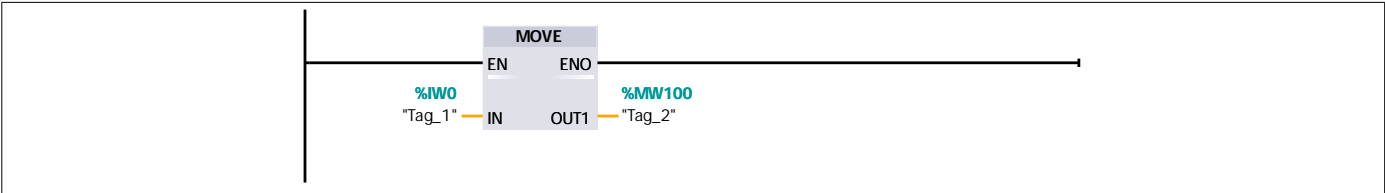
Name	Duplicate_Ins	Number	2	Type	FC
Language	LAD	Numbering	Manual		

#### Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
Input		
Output		
InOut		
Temp		
Constant		
▼ Return		
Duplicate_Ins	Void	

### Network 1:



## Simulation [FB10]

### Simulation Properties

#### General

Name	Simulation	Number	10	Type	FB
Language	LAD	Numbering	Manual		

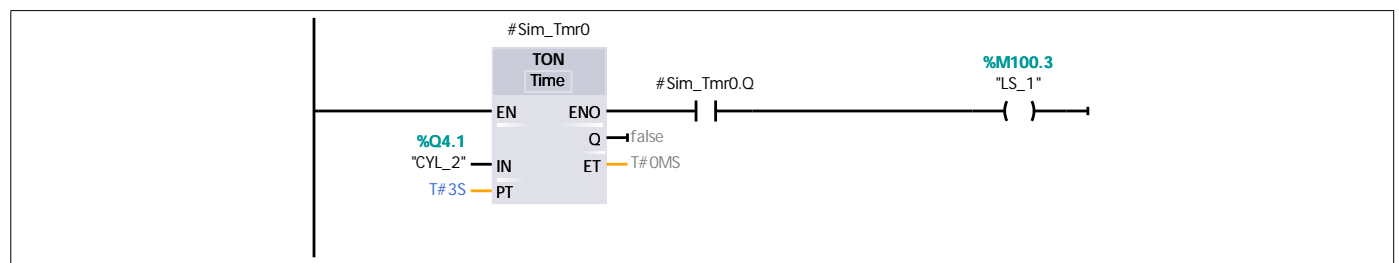
#### Information

Title	Simulation	Author		Comment	Copyright (c) 2011 Dogwood Valley Press, LLC SIMULATION LOGIC
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
Input		
Output		
InOut		
▼ Static		
Sim_Tmr0	TON	
Sim_Tmr1	TON	
Sim_Tmr2	TON	
Sim_Tmr3	TON	
Sim_Tmr4	TON	
Sim_Tmr5	TON	
Sim_Tmr_4_ET	Int	0
Sim_Tmr_5_IN	Bool	false
Temp		
Constant		

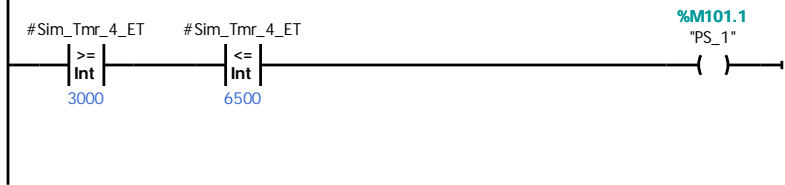
### Network 1: Limit switch that closes when feeder ram is retracted.

Horizontal/vertical limit switch simulation: Turn on LS\_1 when CYL\_2 on for 3 secs. Turn on LS\_5 when CYL\_2 off for 3 secs.

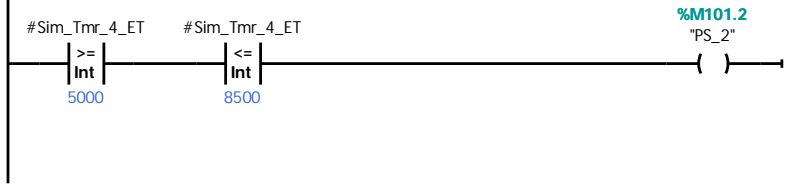


### Network 2: Vertical position limit switch

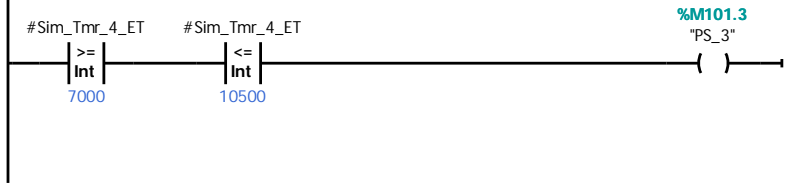




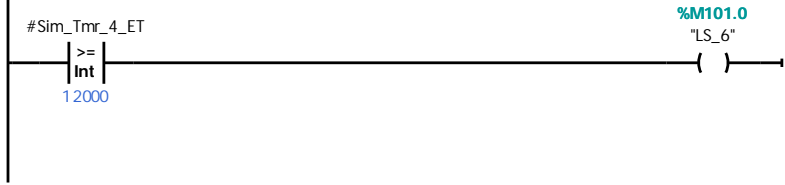
**Network 7: Middle can photoelectric switch**



**Network 8: Right can photoelectric switch**



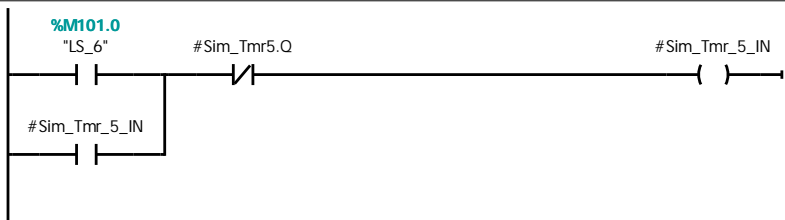
**Network 9: Cylinder CYL\_4 fully extended limit switch**



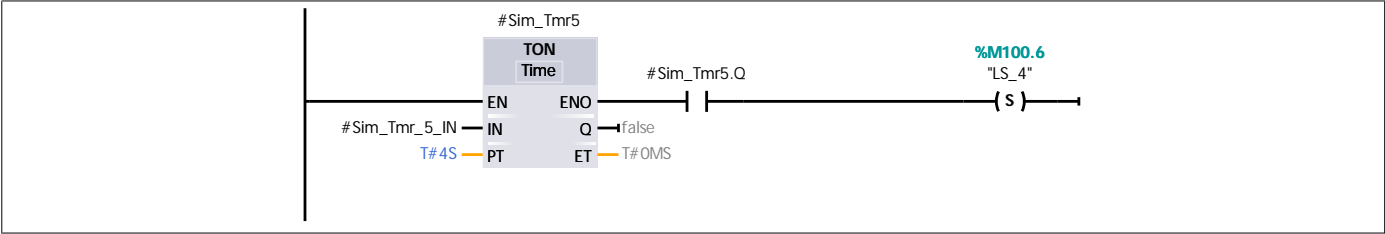
**Network 10:**

Simulate next one in 4 sec after LS\_6 is activated.  
Reset 2 seconds after CYL\_4 activated.

This will also generate first one in after reset since LS\_6 is always activated to push one out.



Network 11: Can present on input conveyor limit switch



Network 12: Can present on input conveyor limit switch

