

## Main [OB1]

### Main Properties

#### General

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

#### Information

<b>Title</b>	SP7-12	<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: SP7-12

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#### SP7-12 Part Height Sorter Control

Additional internal memory:

Tag Address

Step\_1 to Step\_5 %M0.1 to M0.5 BOOL Step-in-progress bits

Down\_Tmr %DB1 IEC\_TIMER Times lowering of measuring ram

Eject\_Tmr %DB3 IEC\_TIMER Times eject pulse

LVDT\_Val %MD116 REAL LVDT measurement in mm

Height\_60 %M20.0 BOOL Height in range of 56 - 64

Height\_75 %M20.1 BOOL Height in range of 71 - 79

Height\_90 %M20.2 BOOL Height in range of 86 - 94

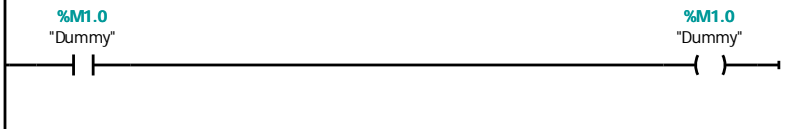
Height\_Other %M20.3 BOOL Height in range not one of above

TmpDI %MD120 DINT Temporary double integer

Ret\_Val %MW12 WORD Return value from SCALE block

Calculation:

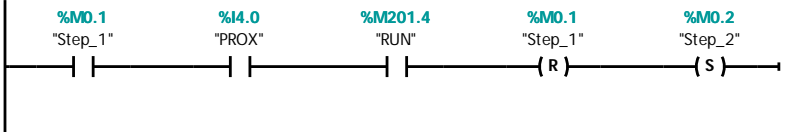
HGT\_VAL = 150 - LVDT\_VAL (calculated on transition from Step\_2 to Step\_3)



**Network 2: Initial Start**

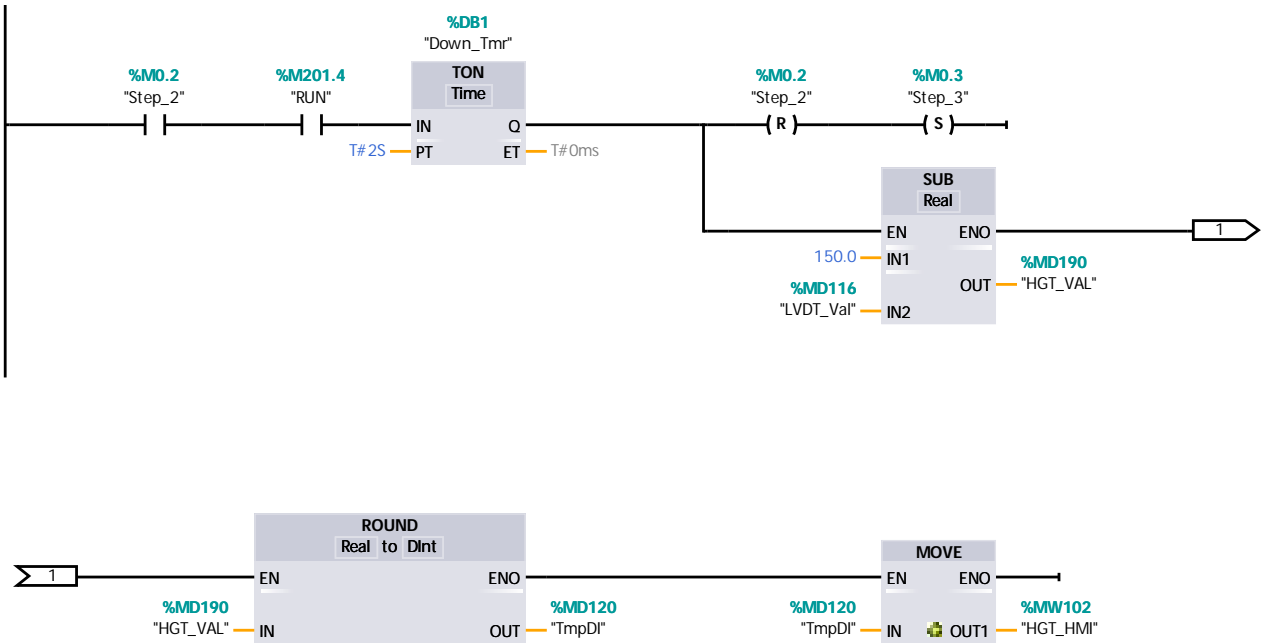


**Network 3: Step 1 Wait for piece**



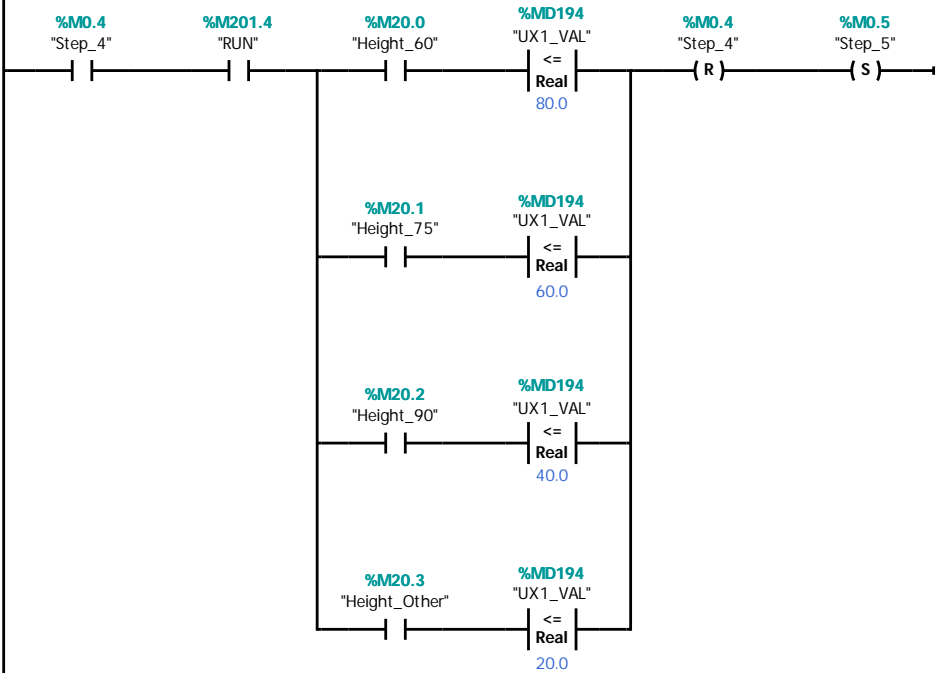
**Network 4: Step 2 Move down**

Measure height on transition.  
Also convert to integer for display.

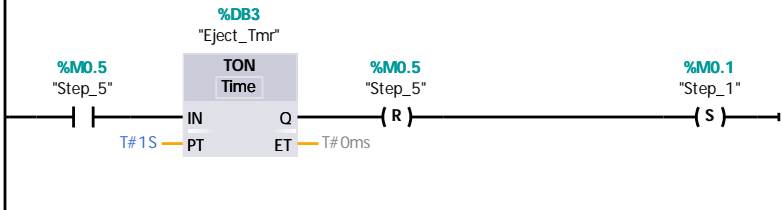


**Network 5: Size range for 60 mm part**

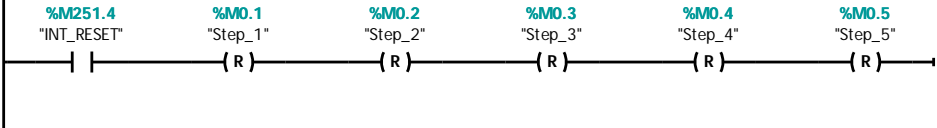
Totally Integrated Automation Portal		
<div><div><div><div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&gt;=</div><div>Real</div><div>56.0</div></div></div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&lt;=</div><div>Real</div><div>64.0</div></div><div><div>%M20.0</div><div>"Height_60"</div></div></div></div></div>		
Network 6: Size range for 75 mm part		
<div><div><div><div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&gt;=</div><div>Real</div><div>79.0</div></div></div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&lt;=</div><div>Real</div><div>71.0</div></div><div><div>%M20.1</div><div>"Height_75"</div></div></div></div></div>		
Network 7: Size range for 90 mm part		
<div><div><div><div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&gt;=</div><div>Real</div><div>86.0</div></div></div><div><div>%MD190</div><div>"HGT_VAL"</div></div><div><div>&lt;=</div><div>Real</div><div>94.0</div></div><div><div>%M20.2</div><div>"Height_90"</div></div></div></div></div>		
Network 8: Height not in one of above ranges		
<div><div><div><div><div><div>%M20.0</div><div>"Height_60"</div></div><div><div><div><div></div></div></div></div></div><div><div>%M20.1</div><div>"Height_75"</div></div><div><div><div><div></div></div></div></div></div><div><div>%M20.2</div><div>"Height_90"</div></div><div><div><div><div></div></div></div></div></div><div><div>%M20.3</div><div>"Height_Other"</div></div></div>		
Network 9: Step 3 Move up		
<div><div><div><div><div><div>%M0.3</div><div>"Step_3"</div></div><div><div></div></div></div><div><div>%I4.1</div><div>"LS1"</div></div><div><div></div></div><div><div>%M201.4</div><div>"RUN"</div></div><div><div></div></div><div><div>%M0.3</div><div>"Step_3"</div></div><div><div><div><div></div></div></div></div><div><div>%M0.4</div><div>"Step_4"</div></div><div><div><div><div></div></div></div></div></div></div></div>		
Network 10: Step 4 - Move to eject position		



Network 11: Step 5 Eject part

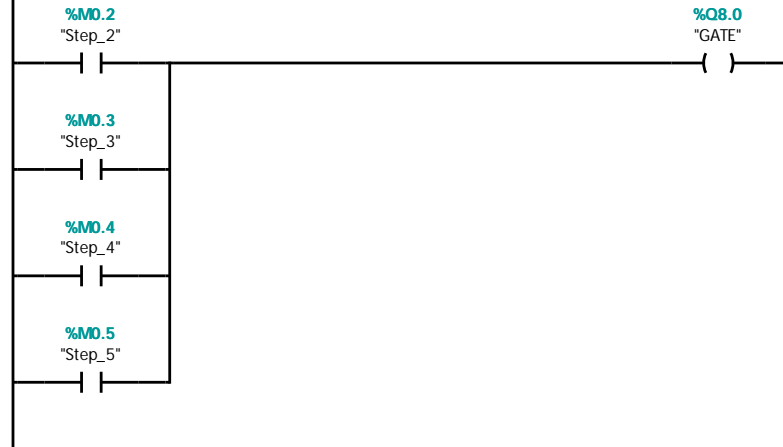


Network 12: Reset



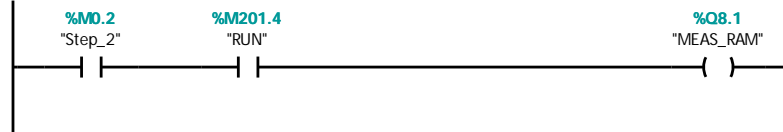
Network 13: Gate

Do not turn off when paused



### Network 14: Measuring ram

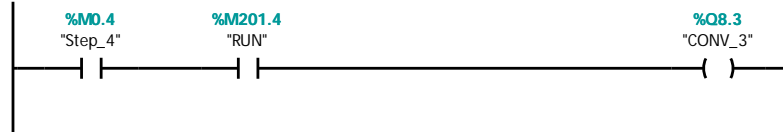
When paused it is off. This is no problem because when paused, timer is reset, so when step is resumed, timing starts over.



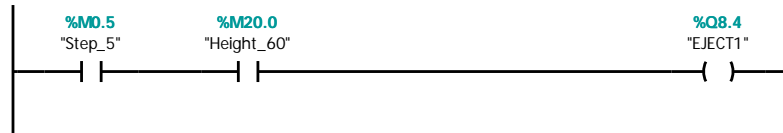
### Network 15: Conveyor Controls



### Network 16: Main cylinder extension control

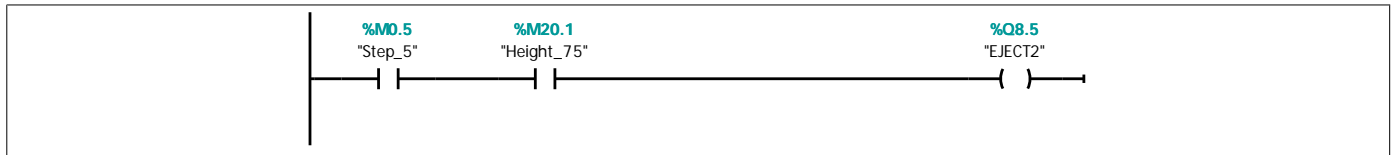


### Network 17: Eject solenoids - selected on height of part

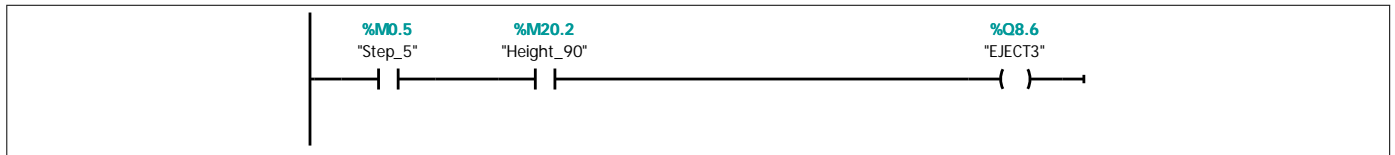


### Network 18:

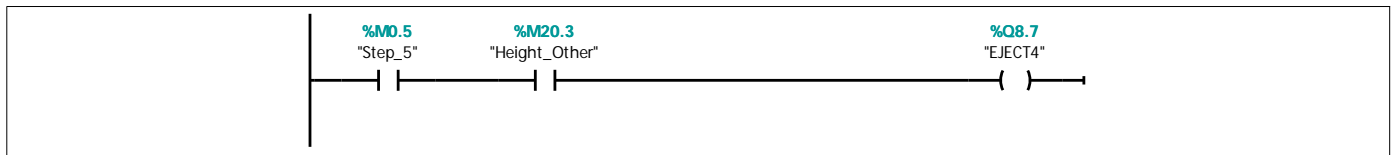
Must remain on when paused.



### Network 19:



### Network 20: On to operate cylinder to eject part onto OUTCONV\_4



### Network 21: Convert LVDT and UX1 measurement with SCALE

Convert LVDT and UX1 measurements.

Uses SCALE block. Note that the lo\_lim input is 25% lower than zero weight to account for this block assuming the minimum value of the analog in is zero rather than the 5530 (which corresponds to 4 mA).

