

Totally Integrated Automation Portal

Main [OB1]

Main Properties

General

Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Manual		

Information

Title	SP7-16	Author		Comment	
Family		Version	0.1	User-defined ID	

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: SP7-16

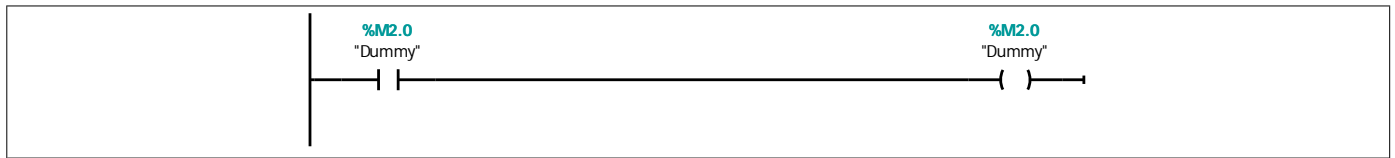
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SP7-16 Part Height Sorter Control with Parallel Branching

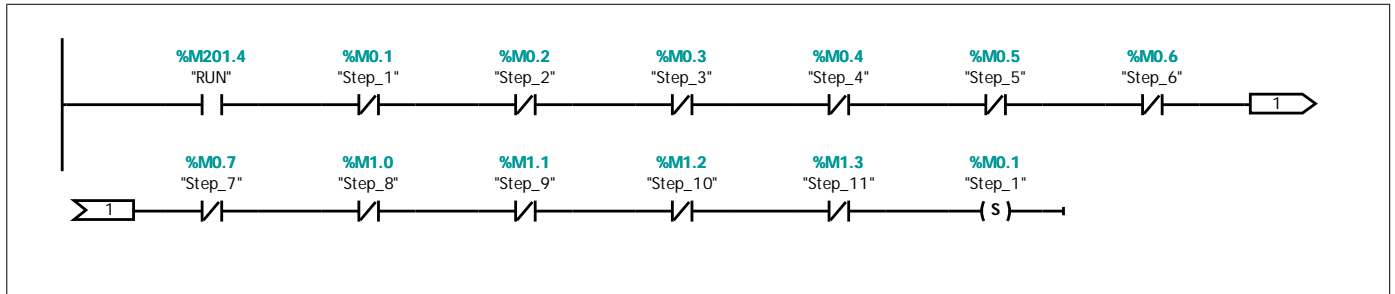
Additional internal memory:
Tag Address
Step_1 to Step_11 %M0.1 to M1.3 BOOL Step-in-progress bits
Down_Tmr %DB1 IEC_TIMER Times lowering of measuring ram
Bin1_Tmr %DB3 IEC_TIMER Times eject pulse for bin 1
Bin2_Tmr %DB4 IEC_TIMER Times eject pulse for bin 2
Bin3_Tmr %DB5 IEC_TIMER Times eject pulse for bin 3
Bin4_Tmr %DB6 IEC_TIMER Times eject pulse for bin 4
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
TmpI %MW118 INT Temporary integer
TmpDI %MD120 DINT Temporary double integer
TmpR %MD124 REAL Temporary real
Ret_Val %MW12 WORD Return value from SCALE block

Calculations:

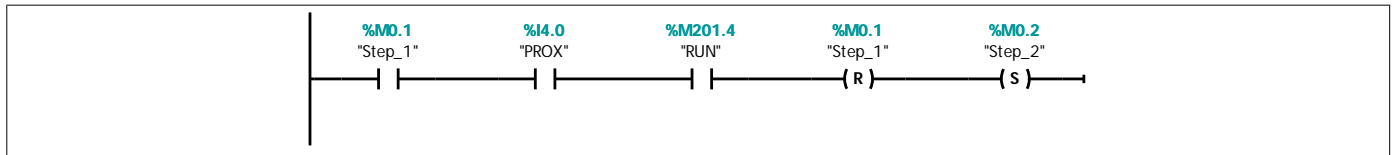
HGT_VAL = 150 - LVDT_VAL (calculated on transition from Step_2 to Step_3)



Network 2: Initial Start

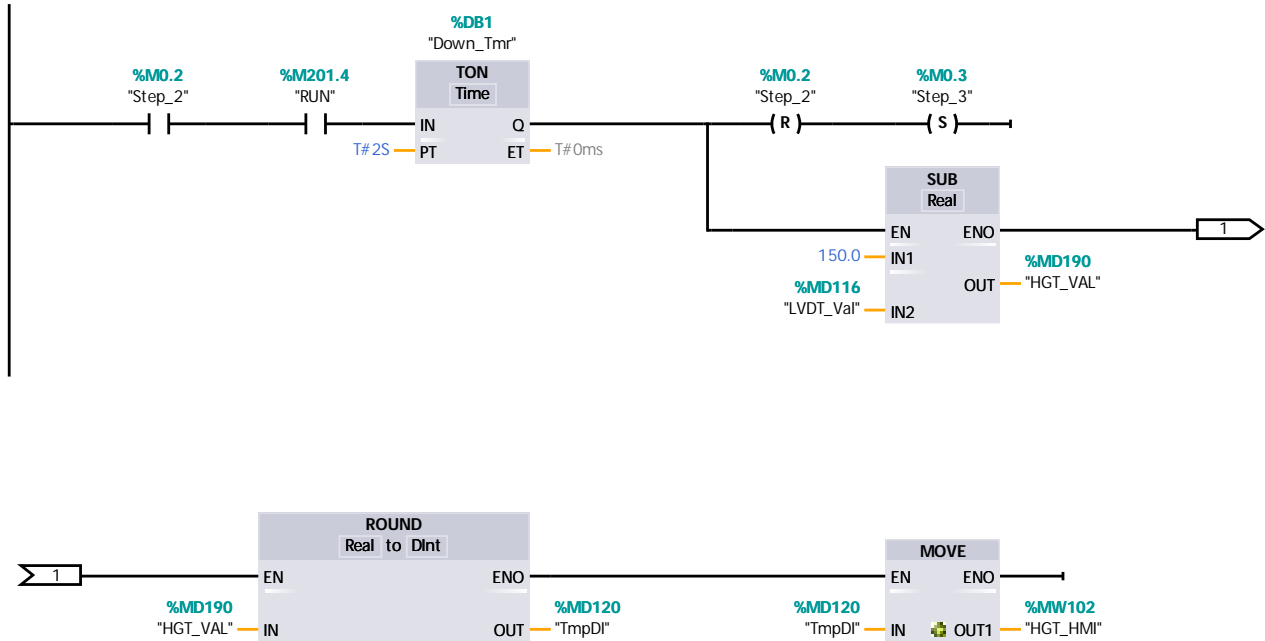


Network 3: Step 1 Wait for piece

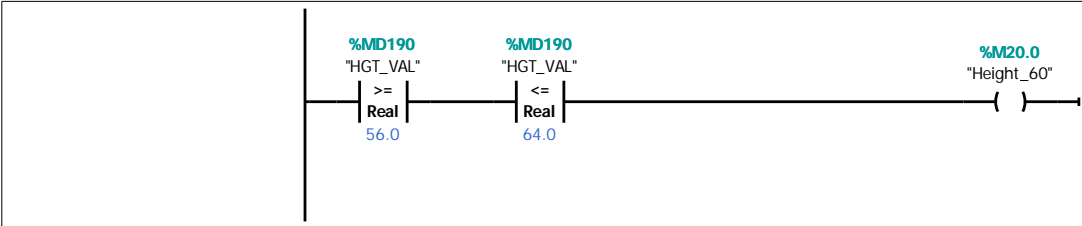


Network 4: Step 2 Move down

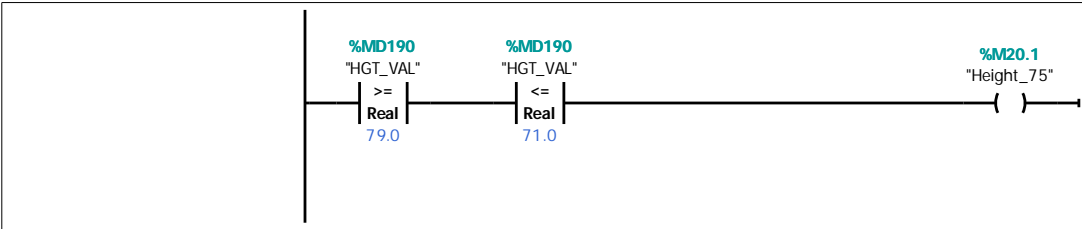
Measure height on transition.
Also convert to integer for display.



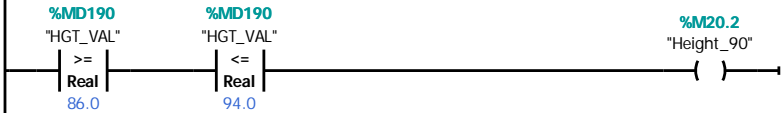
Network 5: Size range for 60 mm part



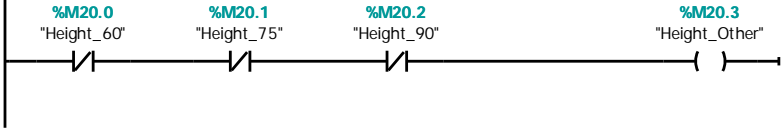
Network 6: Size range for 75 mm part



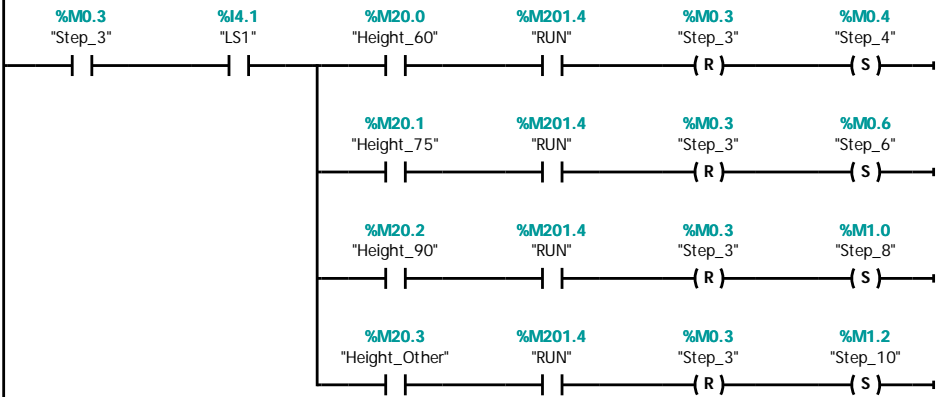
Network 7: Size range for 90 mm part



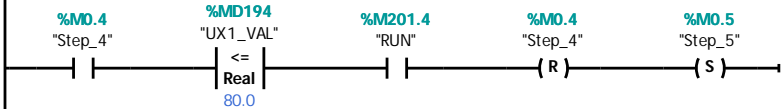
Network 8: Height not in one of above ranges



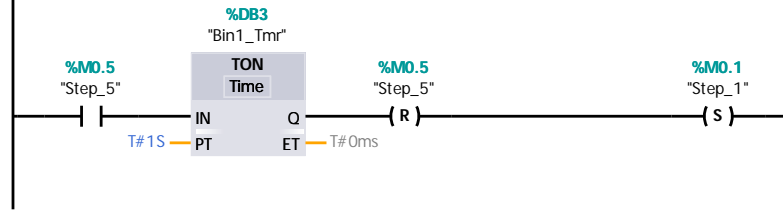
Network 9: Step 3 Move up



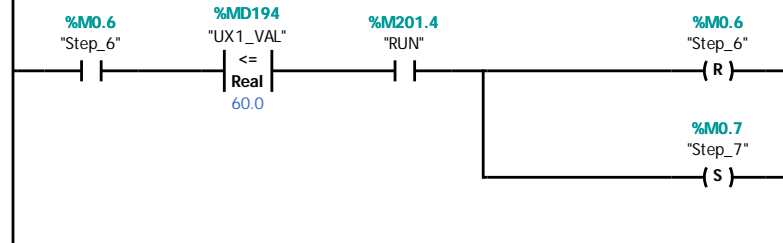
Network 10: Step 4 - Move to bin 1 eject position



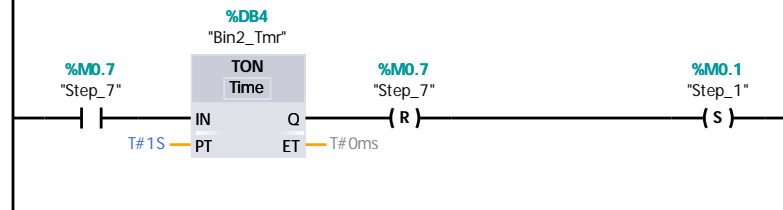
Network 11: Step 5 Eject part into bin 1



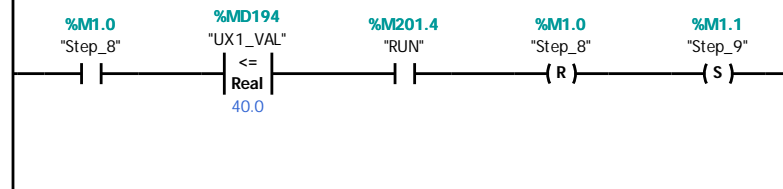
Network 12: Step 6 - Move to bin 2 eject position



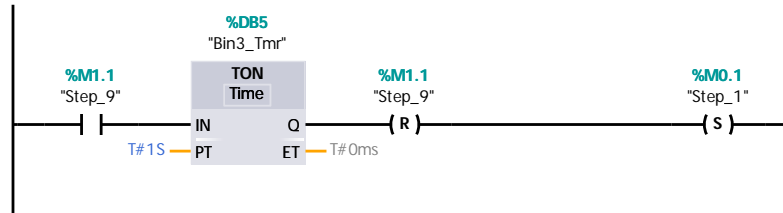
Network 13: Step 7 Eject part into bin 2



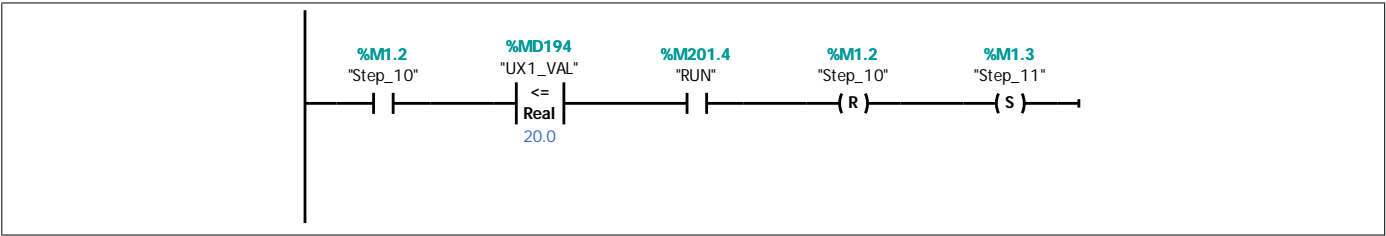
Network 14: Step 8 - Move to bin 3 eject position



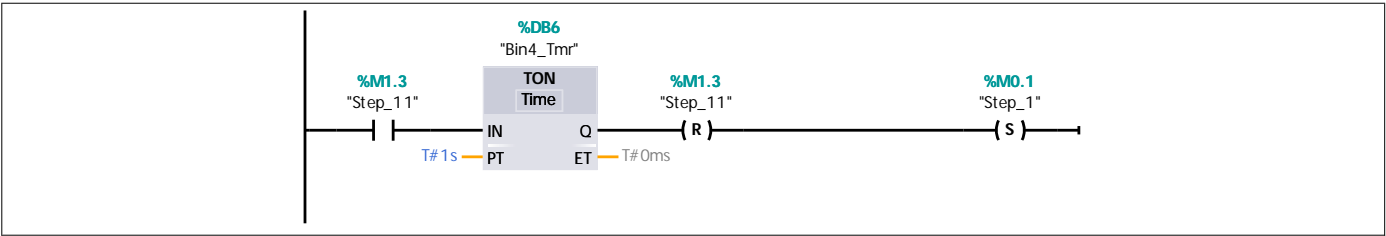
Network 15: Step 9 Eject part into bin 3



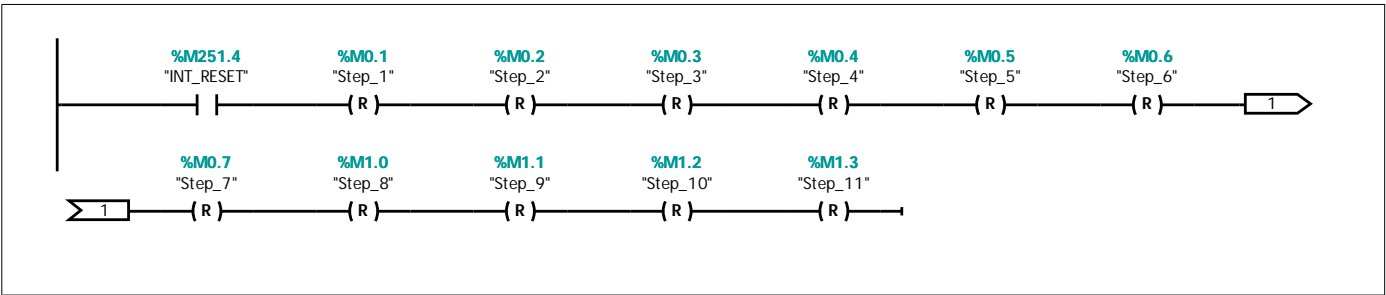
Network 16: Step 10 - Move to bin 4 eject position



Network 17: Step 11 Eject part into bin 4

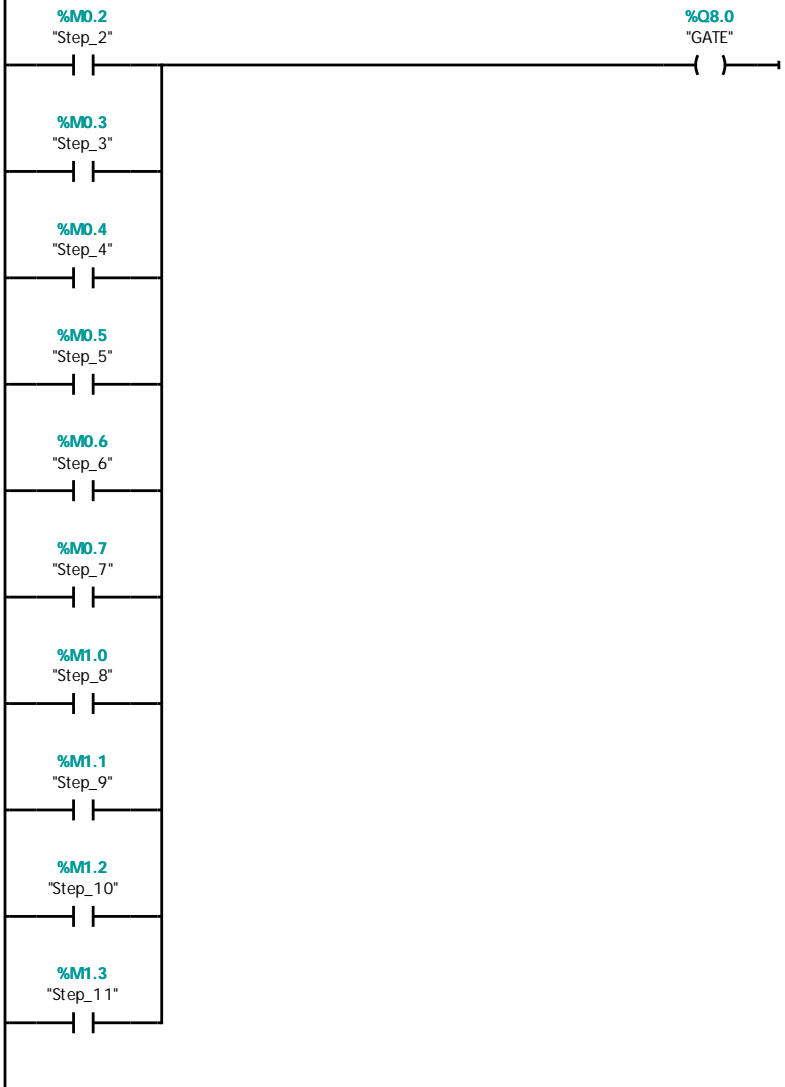


Network 18: Reset



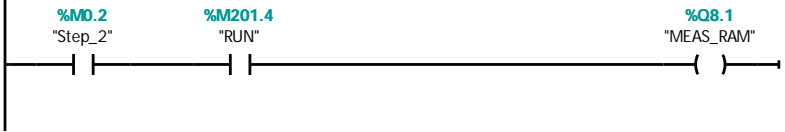
Network 19: Gate

Do not turn off when paused

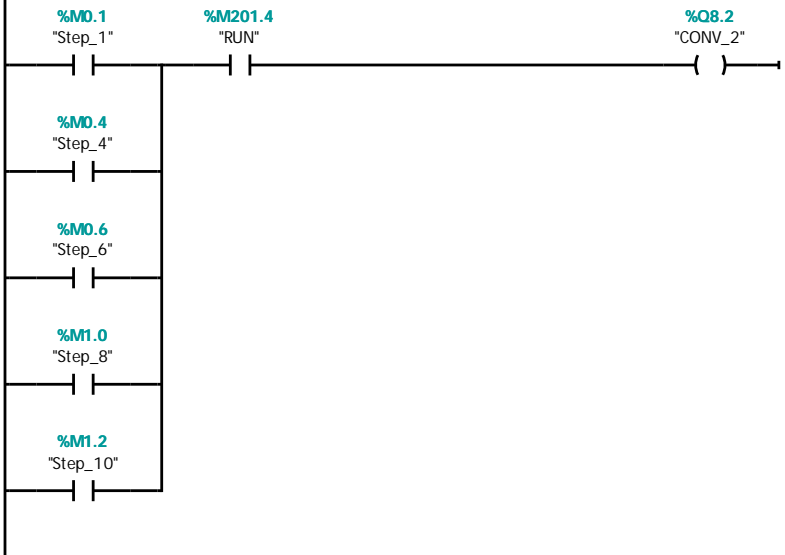


Network 20: Measuring ram

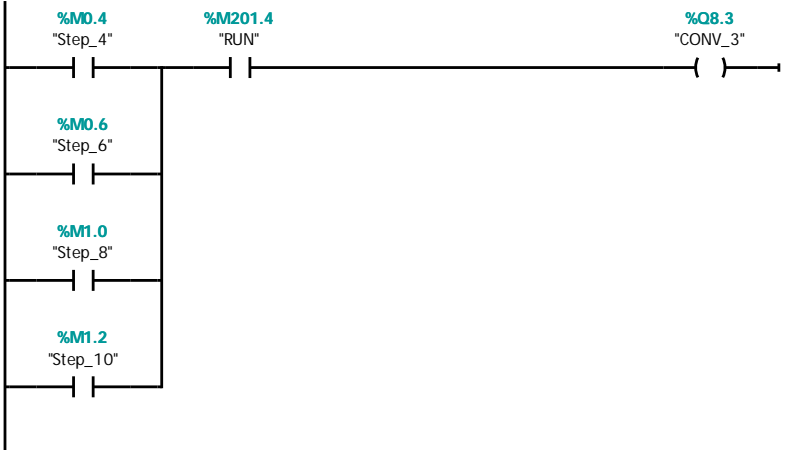
When paused it is off. This is no problem because when paused, timer is reset, so when step is resumed, timing starts over.



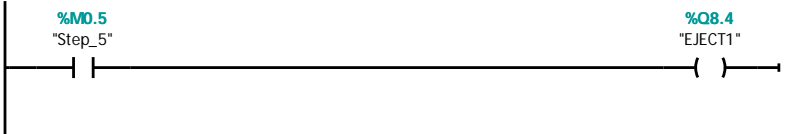
Network 21: Conveyor Controls



Network 22: Main cylinder extension control

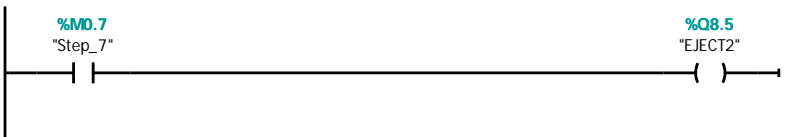


Network 23: Eject solenoids - selected on height of part

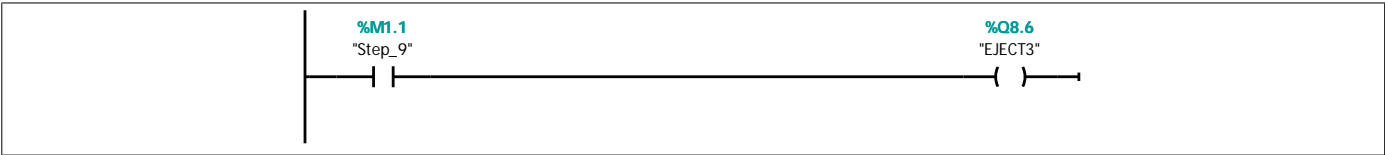


Network 24: On to operate cylinder to eject part onto OUTCONV_2

Must remain on when paused.



Network 25: On to operate cylinder to eject part onto OUTCONV_3



Network 26: On to operate cylinder to eject part onto OUTCONV_4



Network 27: Convert LVDT and UX1 measurements 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).

