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***** Part Height Sorter Control *****

Additional internal memory:

Tag	Data Type	
Step_1 to Step_11	BOOL	Step-in-progress bits
Down_Tmr	TIMER	Times lowering of measuring ram
Bin1_Tmr	TIMER	Times eject pulse for bin 1
Bin2_Tmr	TIMER	Times eject pulse for bin 2
Bin3_Tmr	TIMER	Times eject pulse for bin 3
Bin4_Tmr	TIMER	Times eject pulse for bin 4
LVDT_Val	REAL	LVDT measurement in mm
Height_60	BOOL	Height in range of 56 - 64
Height_75	BOOL	Height in range of 71 - 79
Height_90	BOOL	Height in range of 86 - 94
Height_Other	BOOL	Height in range not covered above

Conversion formulas

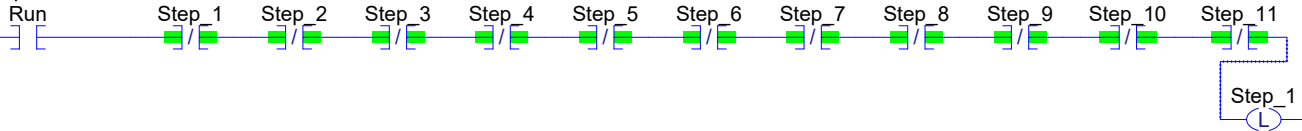
$$UX1_VAL = (UX1_MEAS/100) * (100-15) + 15$$

$$LVDT_VAL = (LVDT_MEAS/100) * (100-0) + 0$$

$$HGT_VAL = 150 - LVDT_VAL \text{ (calculated on transition for Step_2 to Step_3)}$$

Initial start

When on, allow
station to run. When
off, pause.



Conversion of LVDT reading to height in mm.

Could be a MOV, but if sensor range changes, the CPT will need to be restored.

LVDT value converted
to 0 - 100 mm

CPT Compute	
Dest	LVDT_VAL 0.0
Expression	(HGT_MEAS/100.0)*(100-0)+0

Conversion of distance reading to distance in cm.

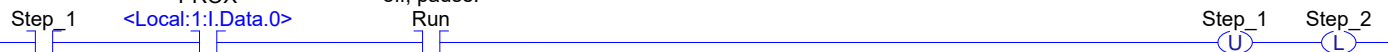
Distance, in cm

CPT Compute	
Dest	UX1_VAL 0.0
Expression	(UX1_MEAS/100.0)*(100-15)+15

Step 1. Wait for part in measure position.

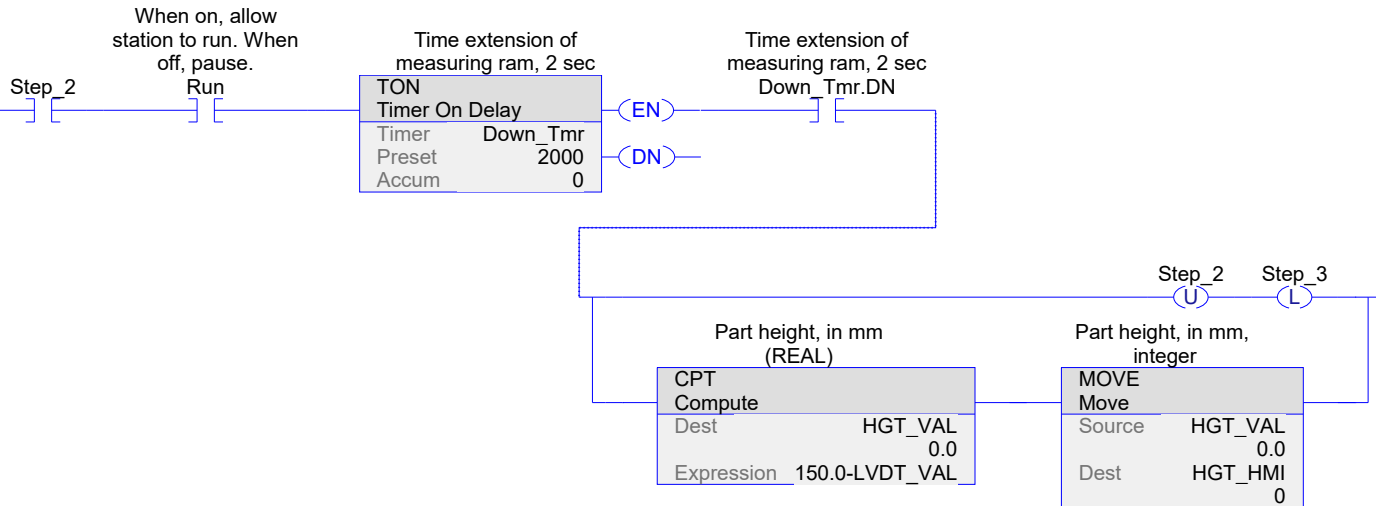
Proximity sensor
that is on when part
is in position for
height measurement
PROX

When on, allow
station to run. When
off, pause.



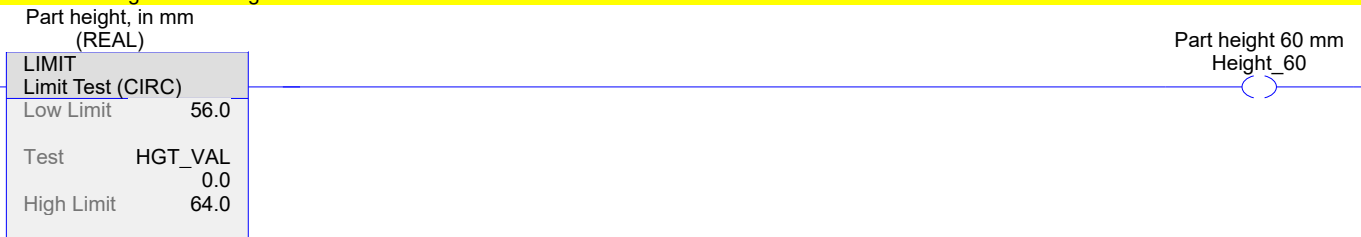
Step 2. Move Down. Measure height on transition.

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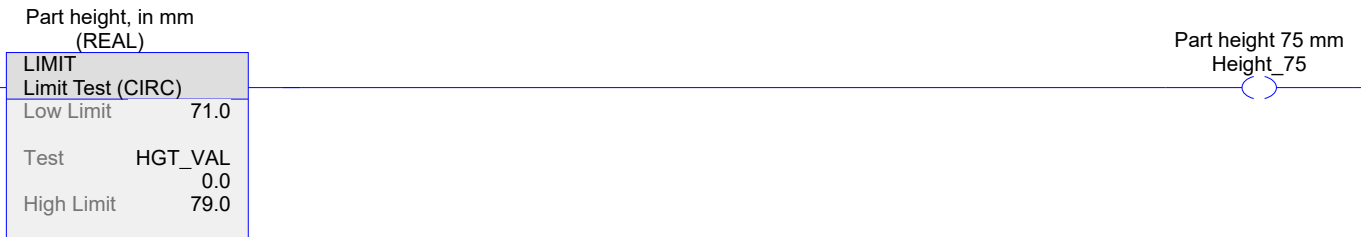


Determine size ranges for sorting.

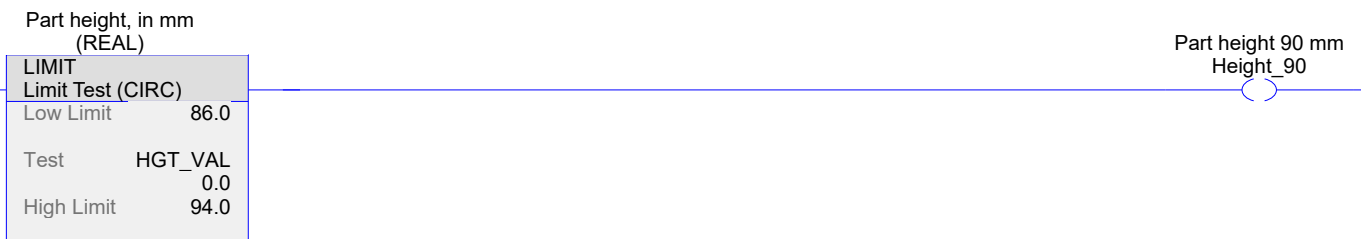
5



6



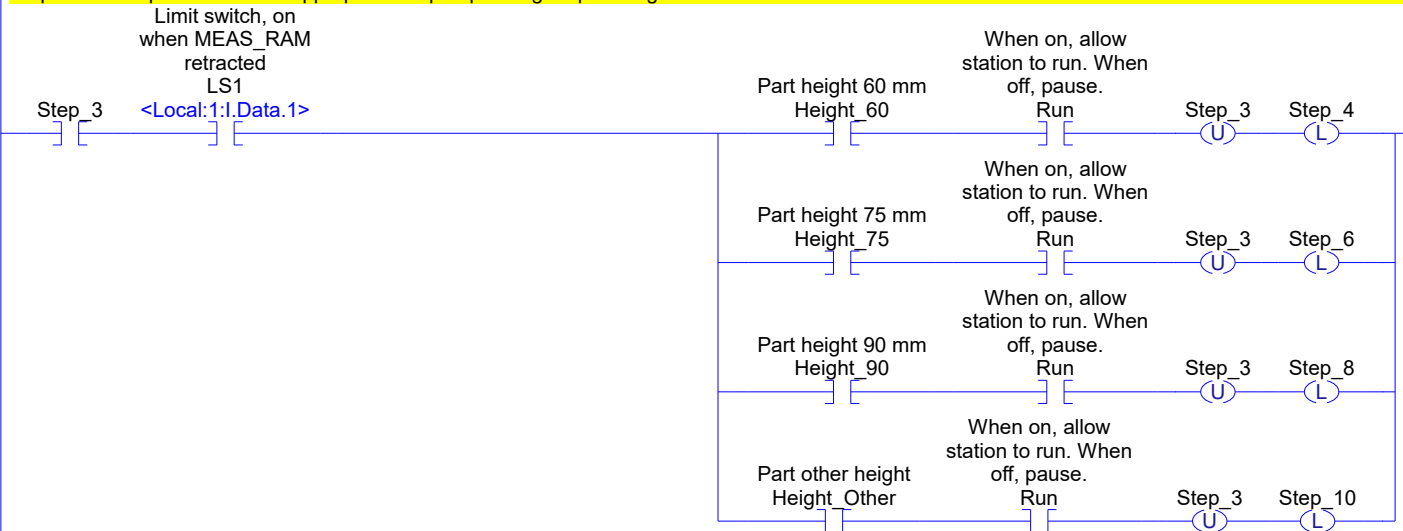
7



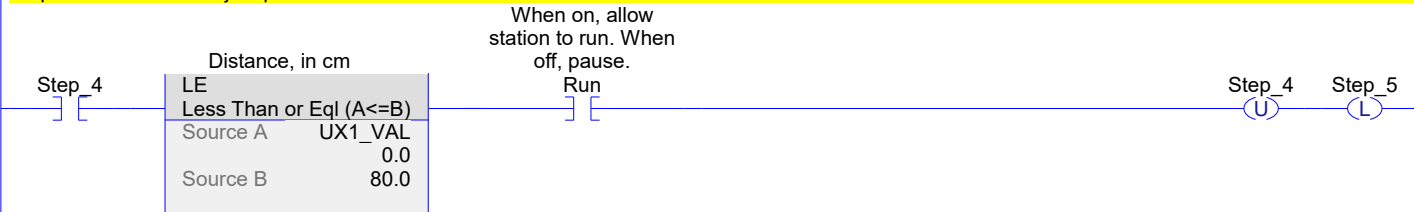
8



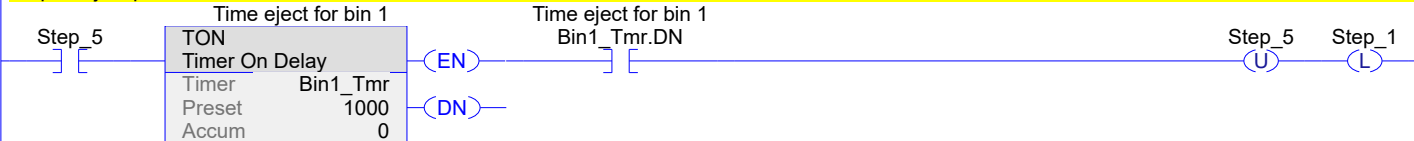
Step 3. Move up. Transition to appropriate step depending on part height.



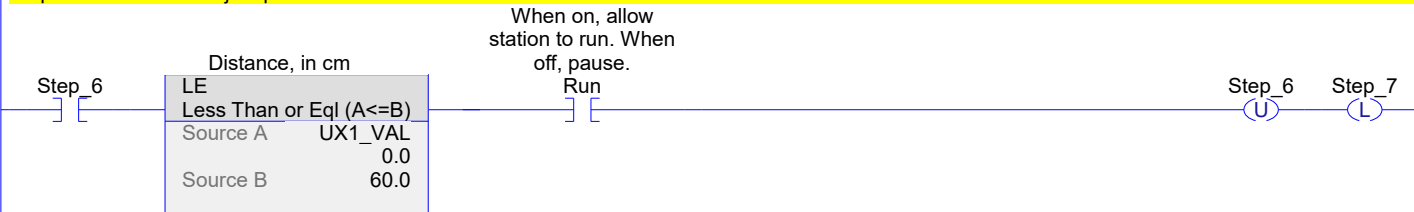
Step 4. Move to Bin 1 eject position.



Step 5. Eject part to bin 1.



Step 6. Move to Bin 2 eject position.



Step 7. Eject part to bin 2.

