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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

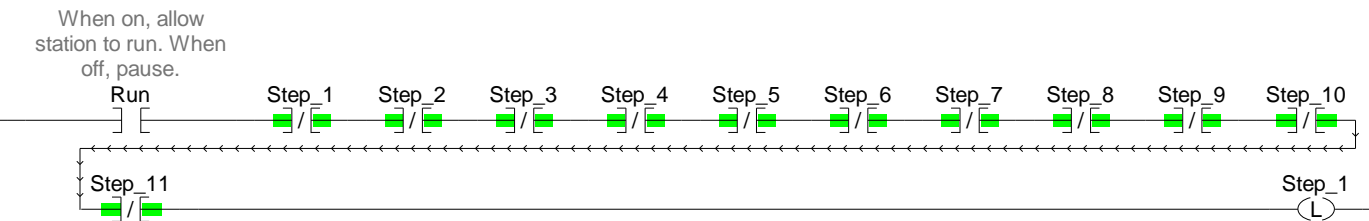
Conversion formulas

$UX1\_VAL = (UX1\_MEAS/100) * (100-15) + 15$

$LVDT\_VAL = (LVDT\_MEAS/100) * (100-0) + 0$

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

Initial start



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

Conversion of distance reading to distance in cm.

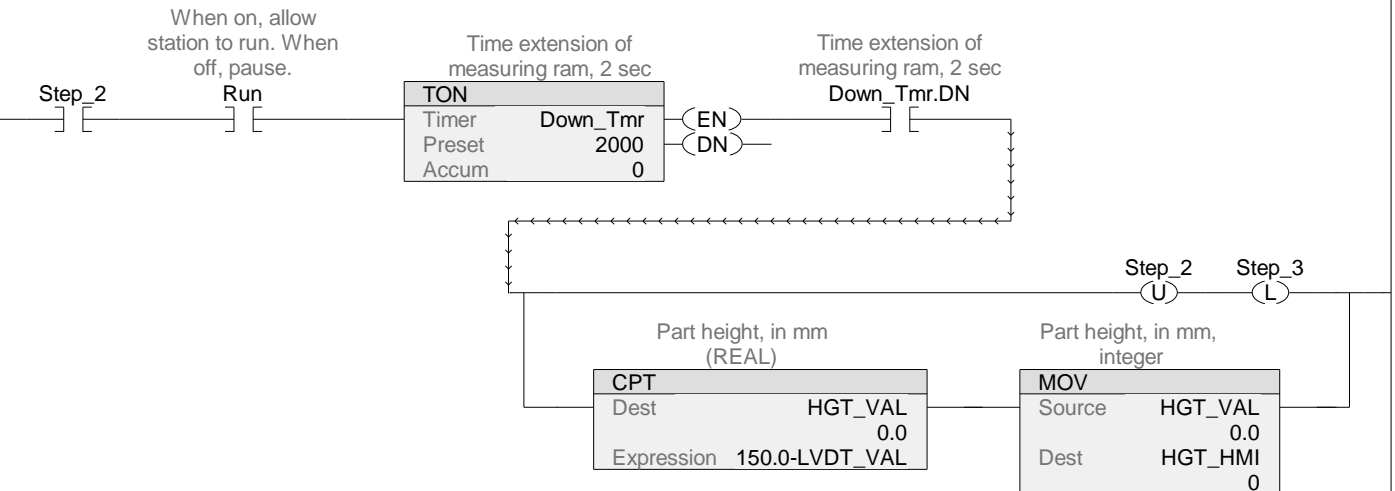
Distance, in cm

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

Step 1. Wait for part in measure position.



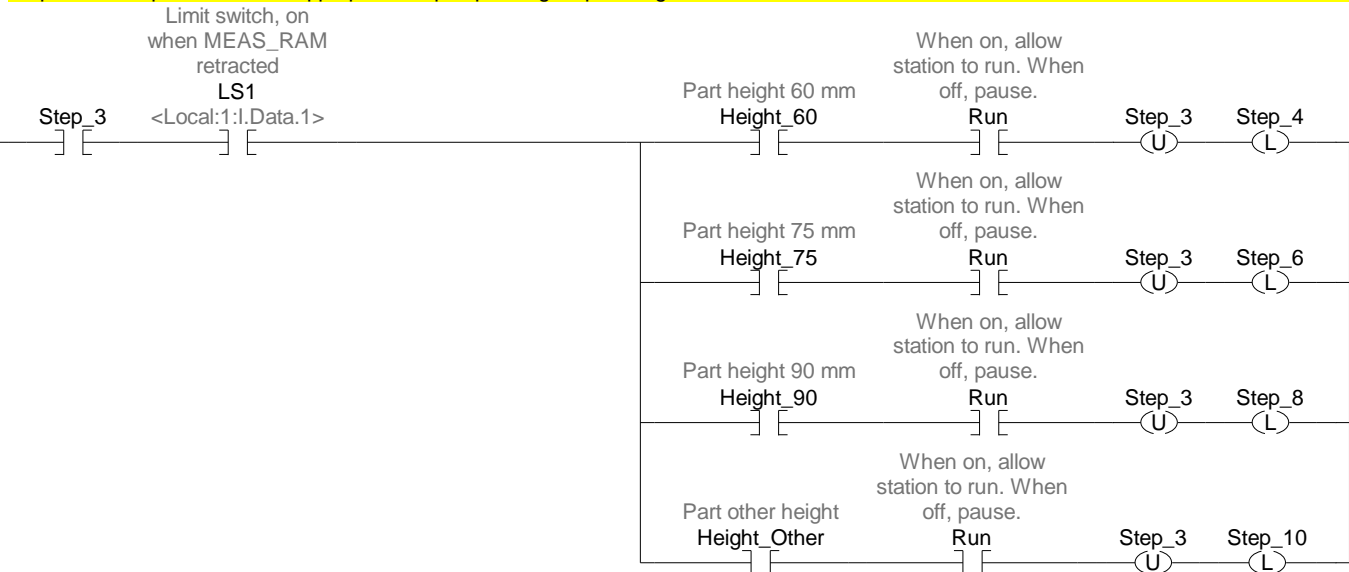
Step 2. Move Down. Measure height on transition.



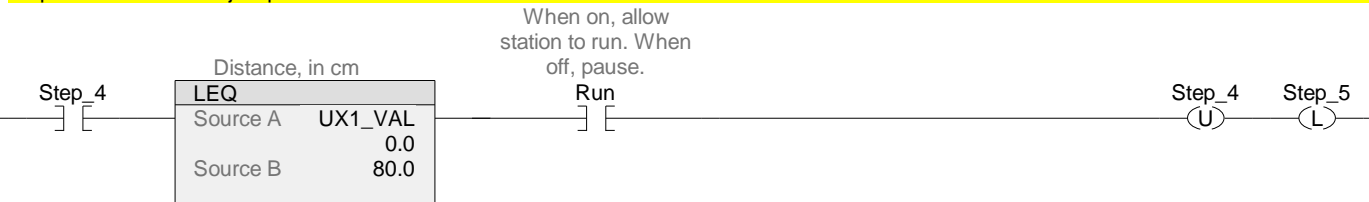
Determine size ranges for sorting.



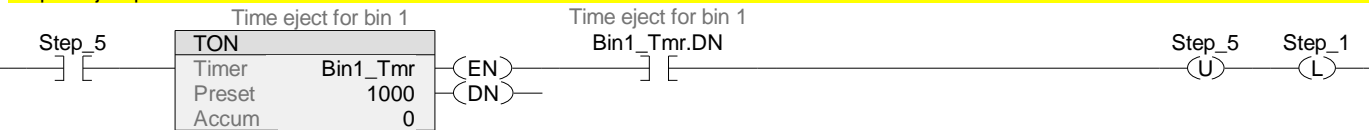
## Step 3. Move up. Transition to appropriate step depending on part height.



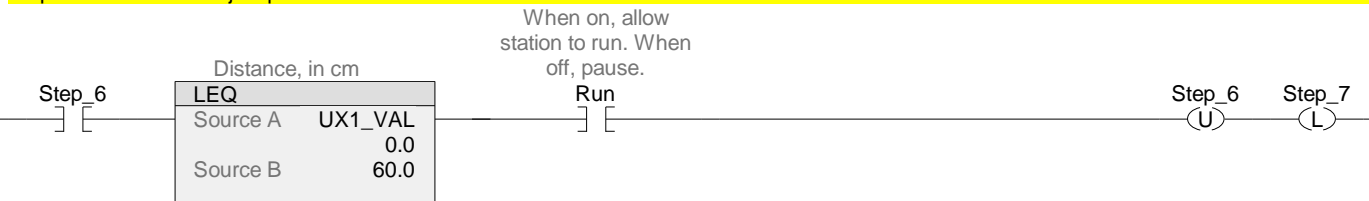
## Step 4. Move to Bin 1 eject position.



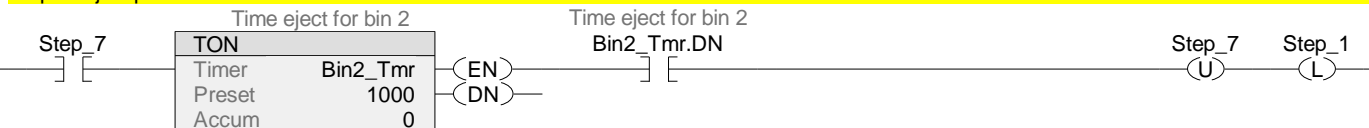
## Step 5. Eject part to bin 1.

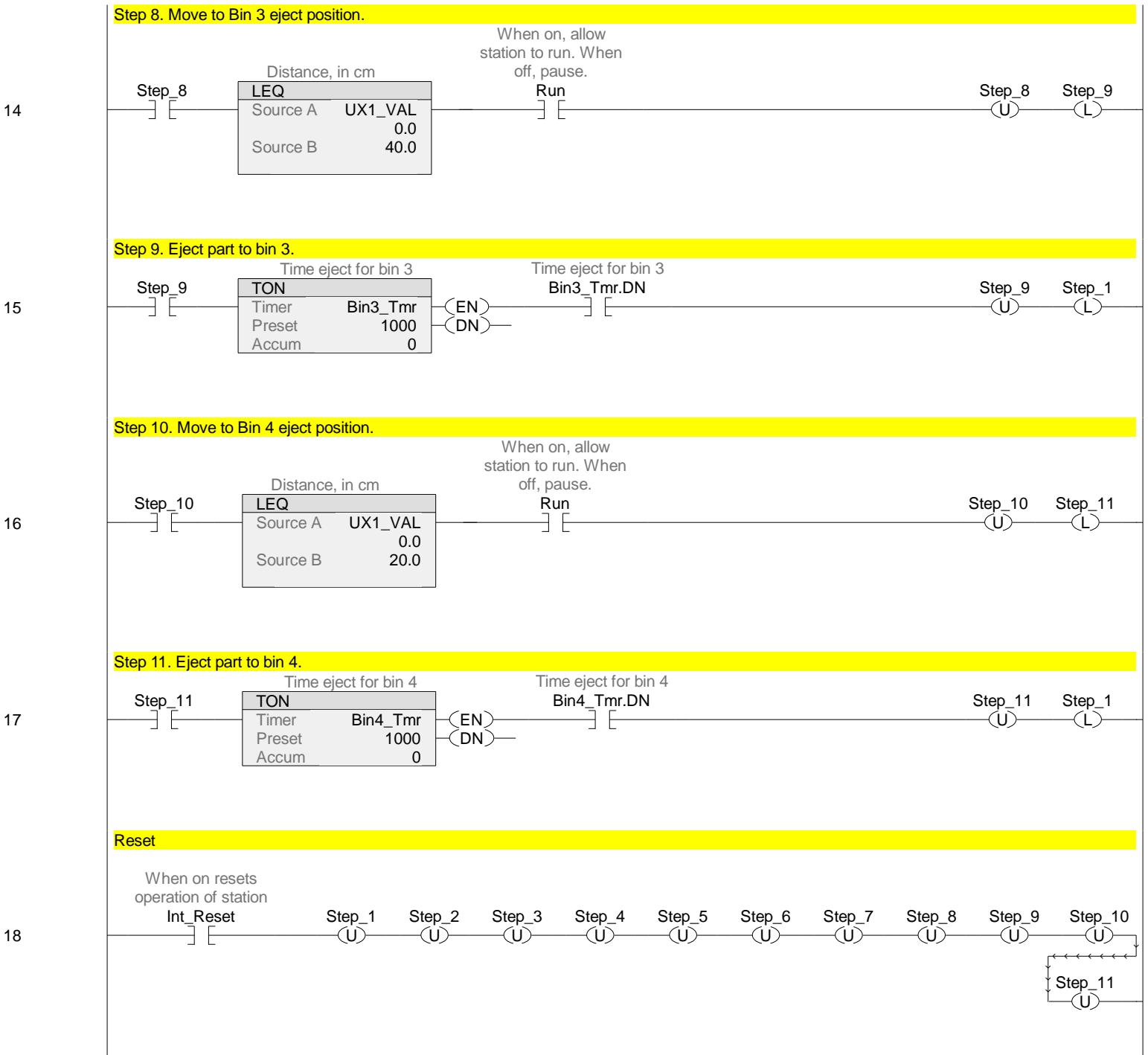


## Step 6. Move to Bin 2 eject position.



## Step 7. Eject part to bin 2.





Outputs.

Gate - Do not turn off when paused.

Gate ram control, on  
to extend ram, off  
retracts ram  
**GATE**  
<Local:2:O.Data.0>

Step\_2

Step\_3

Step\_4

Step\_5

Step\_6

Step\_7

Step\_8

Step\_9

Step\_10

Step\_11

Measuring Ram - when paused it is off. This is no problem beause when paused, timer is reset, so when step is resumed, timing starts over.

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

Step\_2

Run

Measuring ram  
control, on to  
extend ram, off  
retracts ram  
**MEAS\_RAM**  
<Local:2:O.Data.1>

Conveyors.

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

Step\_1

Run

Short conveyor motor  
control, on to run  
conveyor belt  
**CONV\_2**  
<Local:2:O.Data.2>

Step\_4

Step\_6

Step\_8

Step\_10

