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Drilling Station Control

Additional internal memory:

Tag	Data Type	
Run	BOOL	On while station running
Int_Reset	BOOL	Internal reset
Step_1 to Step_10	BOOL	Step-in-progress bits
Unclamp_Tmr	TIMER	Times unclamp of part carrier

Start/stop and initial start. During reset, prevent start

0 Start push button START_PB <Local:4:I.Data.0> | Int_Reset | Stop push button STOP_PB <Local:4:I.Data.1> | Process Running Run ( ) | Process Running Run

1 Process Running Run | Step_1 | Step_2 | Step_3 | Step_4 | Step_5 | Step_6 | Step_7 | Step_8 | Step_9 | Step_10 | Step_1 (L)

Step 1 Wait for part

2 Step_1 | Proximity sensor, on when part in position 1 PROX1 <Local:4:I.Data.3> | Process Running Run | Step_1 (U) | Step_2 (L)

Step 2 Open Gate 1

3 Step_2 | Proximity sensor, on when part in position 2 PROX2 <Local:4:I.Data.4> | Process Running Run | Step_2 (U) | Step_3 (L)

Step 3 Open Gate 2

4 Step_3 | Proximity sensor, on when part in position 3 PROX3 <Local:4:I.Data.5> | Process Running Run | Step_3 (U) | Step_4 (L)

Step 4 Clamp Part

5 Step_4 | Part clamped LS LS5 <Local:4:I.Data.10> | Process Running Run | Step_4 (U) | Step_5 (L)

Step 5 Extend drill 1

6 Step_5 | Drill 1 extended LS LS2 <Local:4:I.Data.7> | Step_5 (U) | Step_6 (L)

Step 6 Retract drill 1

7 Step_6 | Drill 1 retracted LS LS1 <Local:4:I.Data.6> | Process Running Run | Step_6 (U) | Step_7 (L)

Step 7 Extend drill 2

8 Step_7 | Drill 2 extended LS LS4 <Local:4:I.Data.9> | Step_7 (U) | Step_8 (L)

Step 8 Retract drill 2

9 Step_8 | Drill 2 retracted LS LS3 <Local:4:I.Data.8> | Process Running Run | Step_8 (U) | Step_9 (L)

Step 9 Unclamp part

10 Step_9 | TON Timer On Delay, Timer: Times unclamp of part carrier Unclamp_Tmr, Preset: 500, Accum: 0 | EN | DN | Times unclamp of part carrier Unclamp_Tmr.DN | Process Running Run | Step_9 (U) | Step_10 (L)

Step 10 Move out part

11 Step_10 | Proximity sensor, on when part in position 3 PROX3 <Local:4:I.Data.5> (/) | Process Running Run | Step_10 (U) | Step_1 (L)

Reset - Do not allow if running
Retract drills. Maintain reset until both retracted

12 Reset push button RESET_PB <Local:4:I.Data.2> | Process Running Run (/) | Int_Reset | Drill 1 retracted LS LS1 <Local:4:I.Data.6> (/) | Drill 2 retracted LS LS3 <Local:4:I.Data.8> (/) | Int_Reset ( ) | Step_1 (U) Step_2 (U) Step_3 (U) Step_4 (U) Step_5 (U) Step_6 (U) Step_7 (U) Step_8 (U) Step_9 (U) Step_10 (U)

Physical Outputs

Gate Controls

13 Step_2 | Gate 1 control GATE1 <Local:5:O.Data.0> ( )

14 Step_3 | Gate 2 control GATE2 <Local:5:O.Data.1> ( )

15 Step_10 | Gate 3 control GATE3 <Local:5:O.Data.2> ( )

Drill 1 Controls, must retract on reset

16
Step_5
Drill 1 extension control
DRILL1_EXTEND
<Local:5:O.Data.3>

17
Step_6
Drill 1 retracted LS
LS1
Int_Reset
<Local:4:I.Data.6>
Drill 1 retraction control
DRILL1_RETRACT
<Local:5:O.Data.4>

18
Step_5
Step_6
Drill 1 retracted LS
LS1
Int_Reset
<Local:4:I.Data.6>
Drill 1 motor control
DRILL1_MOTOR
<Local:5:O.Data.5>

Drill 2 Controls, must retract on reset

19
Step_7
Drill 2 extension control
DRILL2_EXTEND
<Local:5:O.Data.6>

20
Step_8
Drill 2 retracted LS
LS3
Int_Reset
<Local:4:I.Data.8>
Drill 2 retraction control
DRILL2_RETRACT
<Local:5:O.Data.7>

21
Step_7
Step_8
Drill 2 retracted LS
LS3
Int_Reset
<Local:4:I.Data.8>
Drill 2 motor control
DRILL2_MOTOR
<Local:5:O.Data.8>

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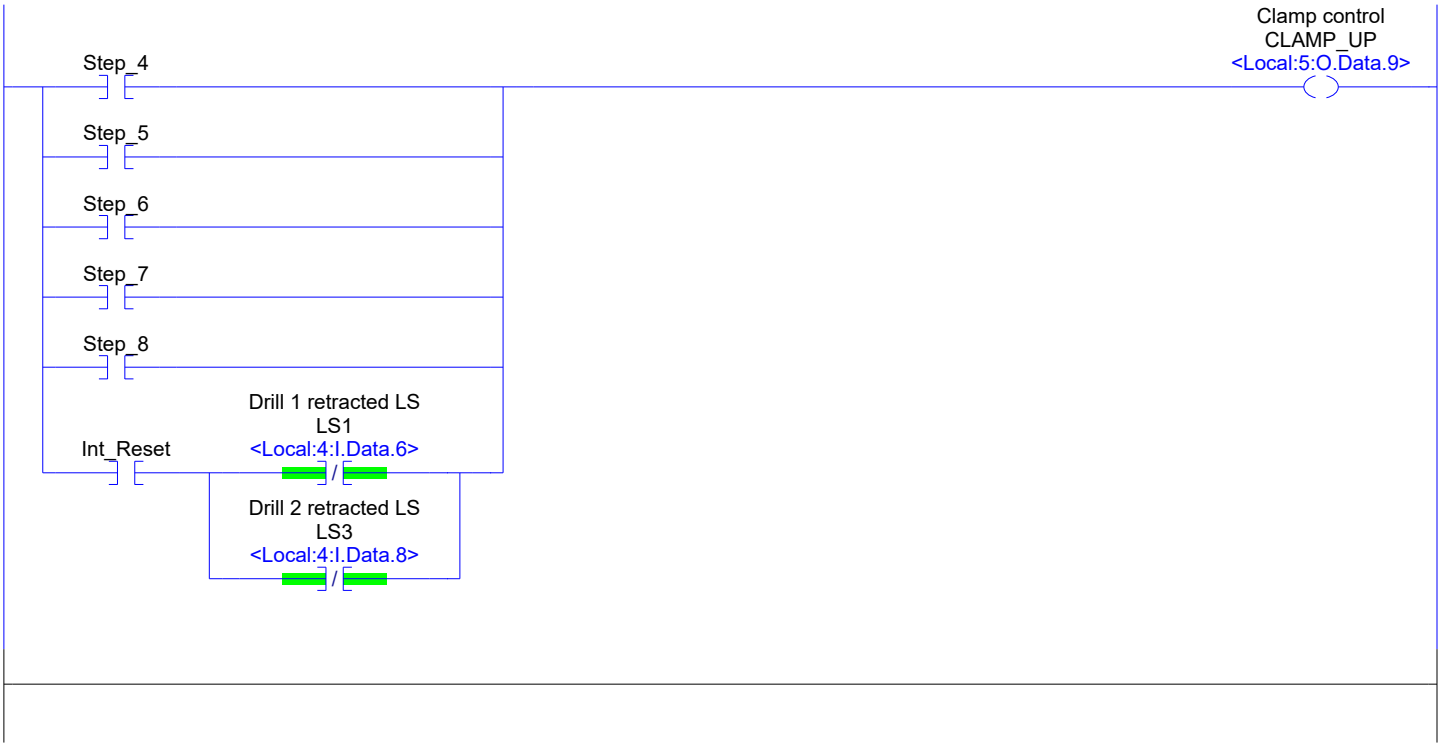
Clamp control
CLAMP_UP
<Local:5:O.Data.9>
Step_4
Step_5
Step_6
Step_7
Step_8
Drill 1 retracted LS
LS1
<Local:4:I.Data.6>
Int_Reset
Drill 2 retracted LS
LS3
<Local:4:I.Data.8>

(End)