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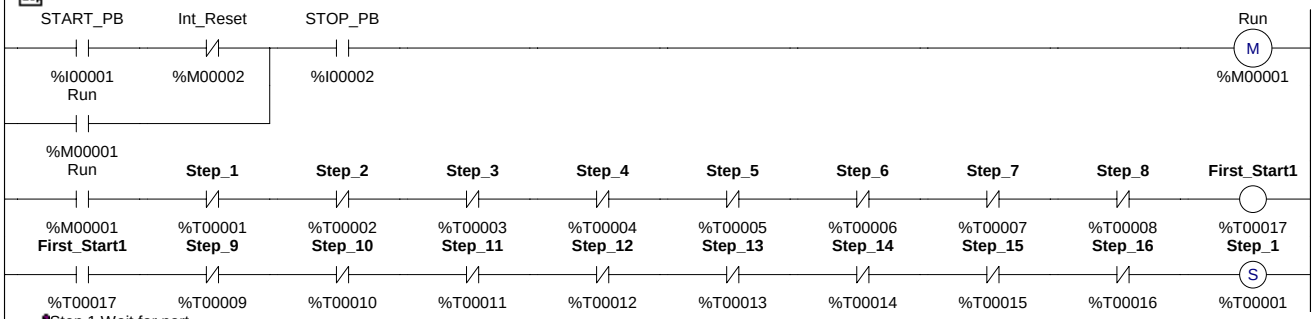
Drilling Station Control

Additional internal variable declarations:

Variables	Address	Data Type	
Run	%M1	BOOL	On while station running
Int_Reset	%M2	BOOL	Internal reset
Step_1 to Step_16	%T1 to %T16	BOOL	Step-in-progress bits
Unclamp_Tmr		TON	Times unclamping

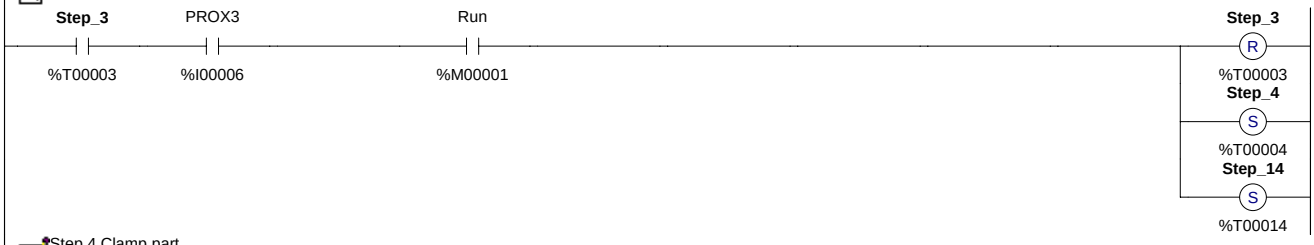
Start/stop and initial start. During reset prevent start.



Step 1 Wait for part

Step 2 Open gate 1 to move part to position 2

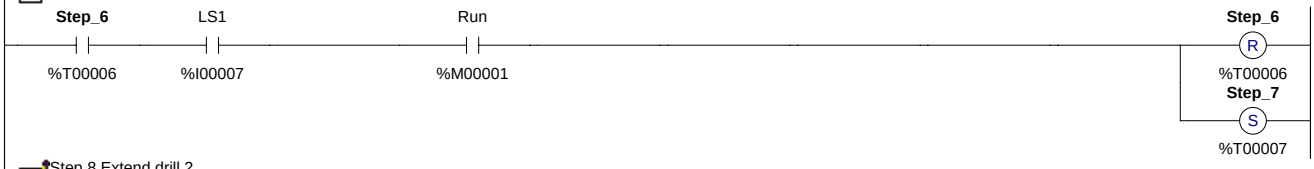
Step 3 Open gate 2 to move part to position 3



Step 4 Clamp part

Step 5 Extend drill 1

Step 6 Retract drill 1



Step 8 Extend drill 2

22 Step_8 %T00008 | LS4 %I00010 → Step_8 R %T00008; Step_9 S %T00009

23 Step 9 Retract drill 2

24 Step_9 %T00009 | LS3 %I00009 | Run %M00001 → Step_9 R %T00009; Step_10 S %T00010

25 Step 7 and Step 10 Wait for both holes to be drilled

26 Step_7 %T00007 | Step_10 %T00010 | LS1 %I00007 | LS3 %I00009 → Step_7 R %T00007; Step_10 R %T00010; Step_11 S %T00011

27 Step 11 Unclamp

28 Step_11 %T00011 | TON Unclamp_... IN Q, 500 PT ET | Run %M00001 → Step_11 R %T00011; Step_12 S %T00012

29 Step 12 Move out part

30 Step_12 %T00012 | PROX3 %I00006 | Run %M00001 → Step_12 R %T00012; Step_13 S %T00013

31 Step 14 Wait for part in position 1

32 Step_14 %T00014 | PROX1 %I00004 | Run %M00001 → Step_14 R %T00014; Step_15 S %T00015

33 Step 15 Move part to position 2.

34 Step_15 %T00015 | PROX2 %I00005 | Run %M00001 → Step_15 R %T00015; Step_16 S %T00016

35 Step 13 and 16 Wait for one part to be unclamped and another part to be in position 2.

36 Step_13 %T00013 | Step_16 %T00016 | PROX3 %I00006 | PROX2 %I00005 | Run %M00001 → Step_13 R %T00013; Step_16 R %T00016; Step_3 S %T00003

37 Reset - keep on until both drills retracted.

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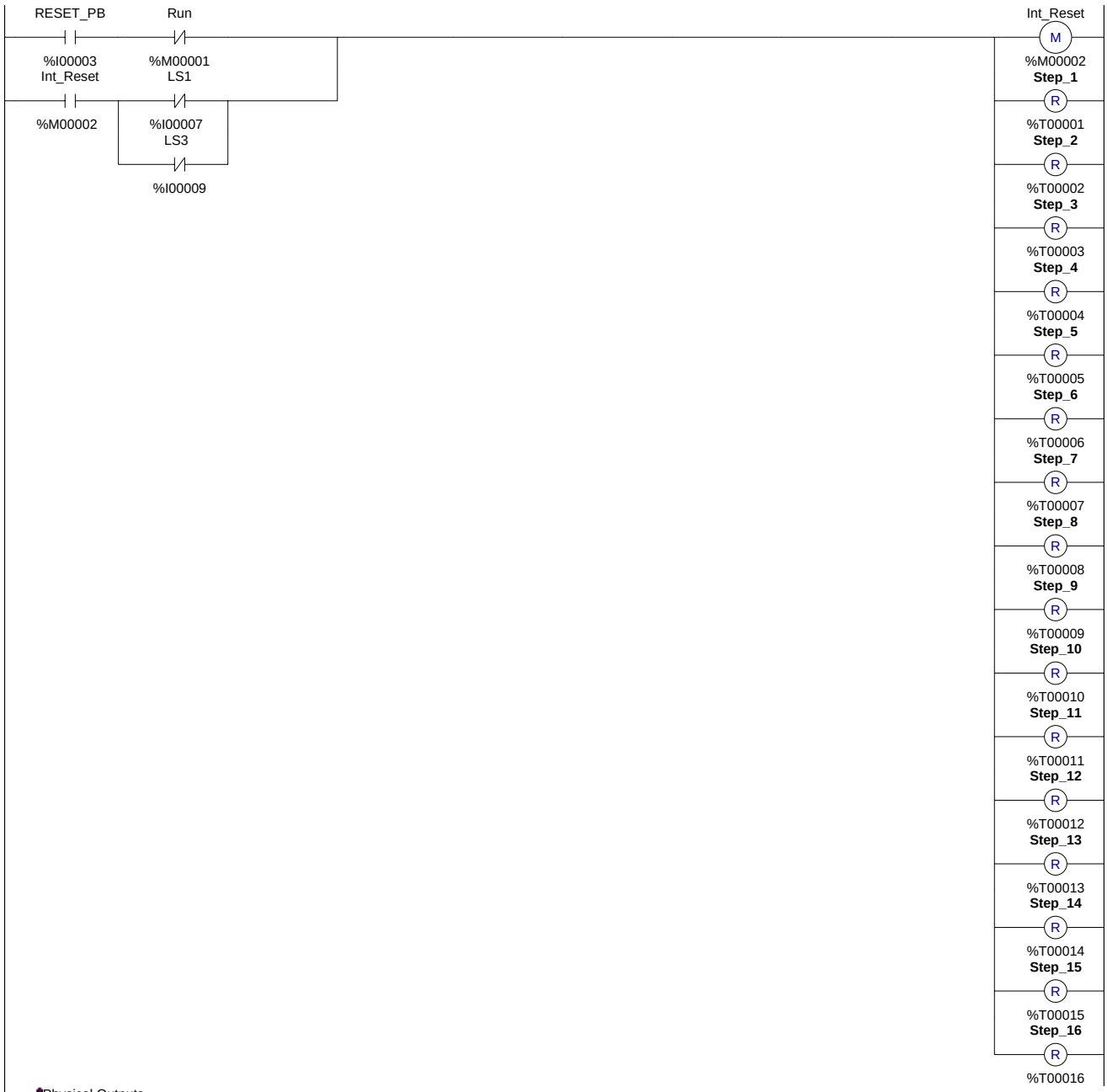

39 Physical Outputs

Gate controls. Cannot turn off when paused

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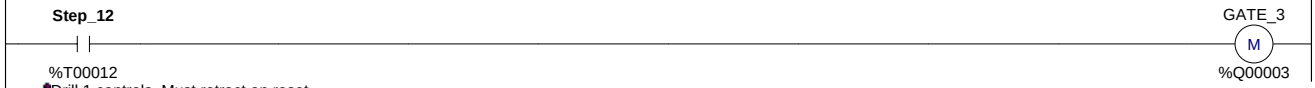

43 Drill 1 controls. Must retract on reset.

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46 Step_5 — %T00005 Step_6 — %T00006 Int_Reset — LS1 %M00002 %I00007 — DRILL1_MOTOR M %Q00006

47 Drill 2 controls

48 Step_8 %T00008 — DRILL2_EXTEND M %Q00007

49 Step_9 %T00009 Int_Reset — LS3 %M00002 %I00009 — DRILL2_RETR... M %Q00008

50 Step_8 %T00008 Step_9 %T00009 Int_Reset — LS3 %M00002 %I00009 — DRILL2_MOTOR M %Q00009

51 Clamp control. Maintain during reset while drills not retracted.

52 Step_4 %T00004 Step_5 %T00005 Step_6 %T00006 Step_7 %T00007 — CLAMP_UP M %Q00010

Int_Reset %M00002 — LS1 %I00007 — LS3 %I00009

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