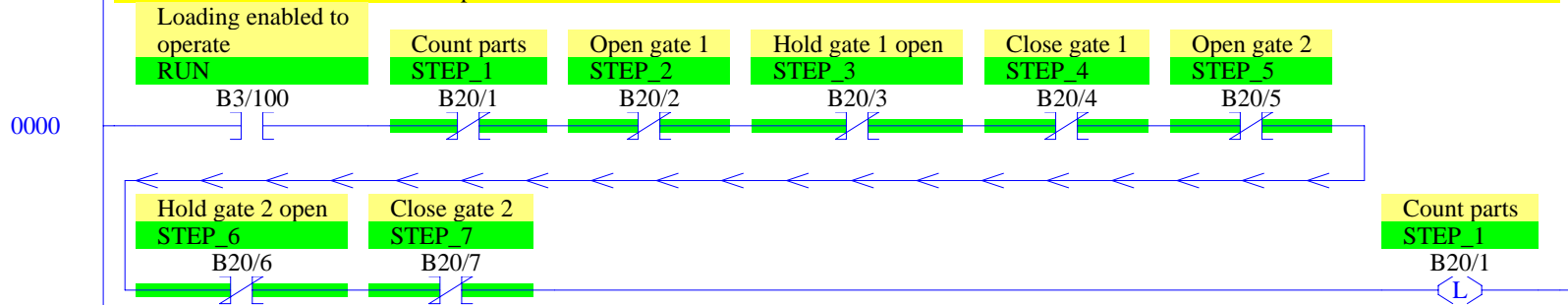


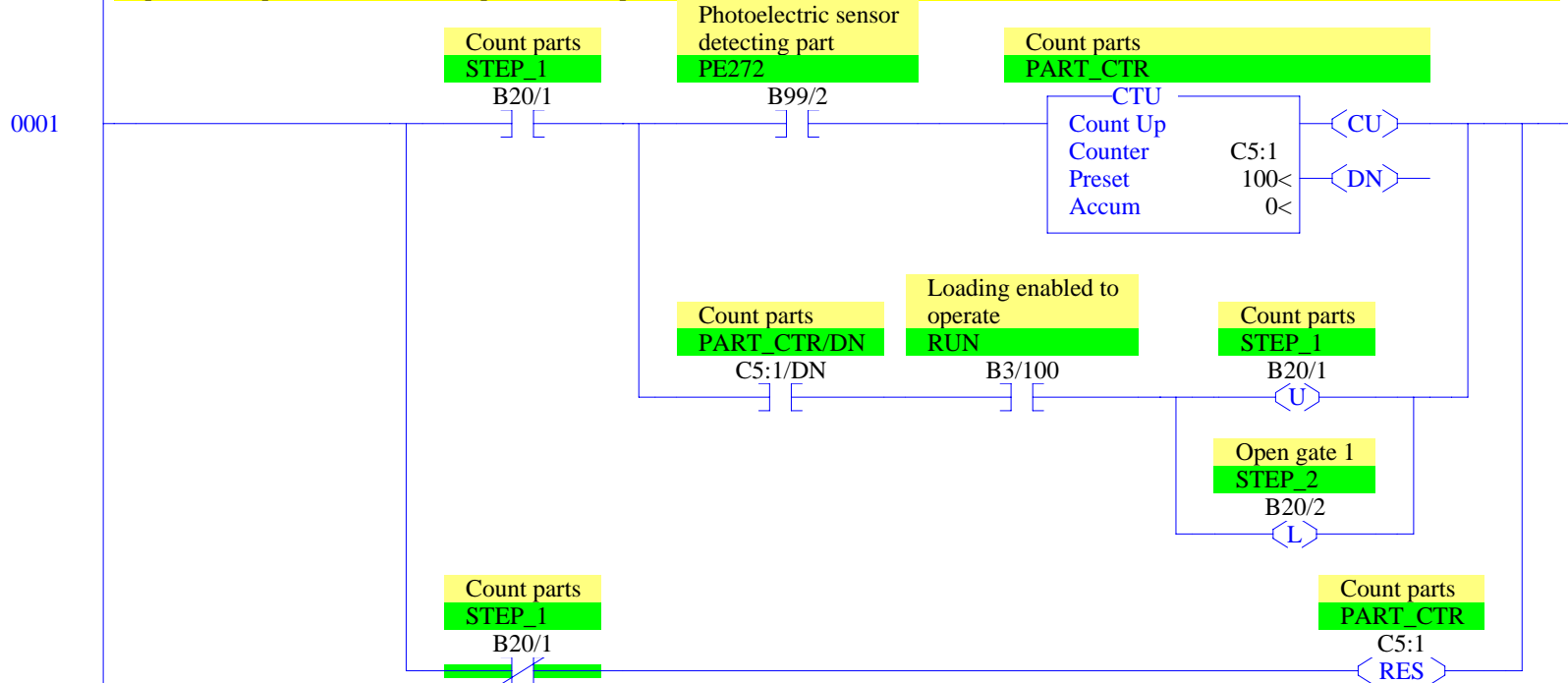
### Example 6.3 Tub Loader Control with Simulation

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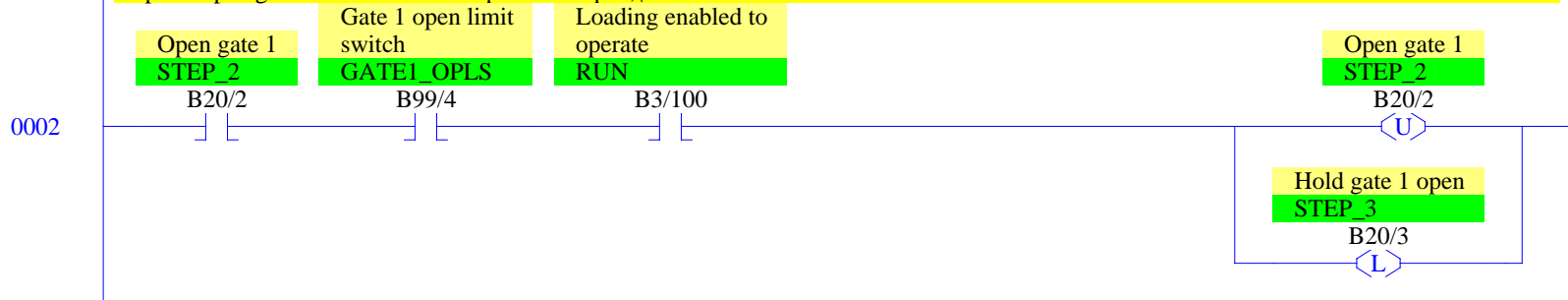
## Generate transition out of initial step



Step 1 - Count parts. Transition to step 2 when 100 parts counted.



Step 2 - Open gate 1. Transition to step 3 when open,\.



0003

Step 3 - Hold gate 1 open for 3 secs after tub passes. Transition to step 4 when done.

Hold gate 1 open  
STEP\_3

B20/3

Proximity sensor  
detecting tub  
TUB\_PROX

B99/3

Loading enabled to  
operate  
RUN

B3/100

Gate 1 hold  
open timer  
G1\_HOLD\_TMR

|                    |      |
|--------------------|------|
| RTO                |      |
| Retentive Timer On |      |
| Timer              | T4:1 |
| Time Base          | 0.01 |
| Preset             | 300< |
| Accum              | 0<   |

Gate 1 hold  
open timer  
G1\_HOLD\_TMR/DN

T4:1/DN

Hold gate 1 open  
STEP\_3

B20/3

Hold gate 1 open  
STEP\_3

B20/3

Close gate 1  
STEP\_4

B20/4

Gate 1 hold  
open timer  
G1\_HOLD\_TMR

T4:1

&lt; RES &gt;

0004

Step 4 - Close gate 1. Transition to step 5 when closed.

Close gate 1  
STEP\_4

B20/4

Gate 1 closed limit  
switch  
GATE1\_CLLS

B99/5

Loading enabled to  
operate  
RUN

B3/100

Close gate 1  
STEP\_4

B20/4

Open gate 2  
STEP\_5

B20/5

0005

Step 5 - Open gate 2. Transition to step 6 when open, \.

Open gate 2  
STEP\_5

B20/5

Gate 2 open limit  
switch  
GATE2\_OPLS

B99/6

Loading enabled to  
operate  
RUN

B3/100

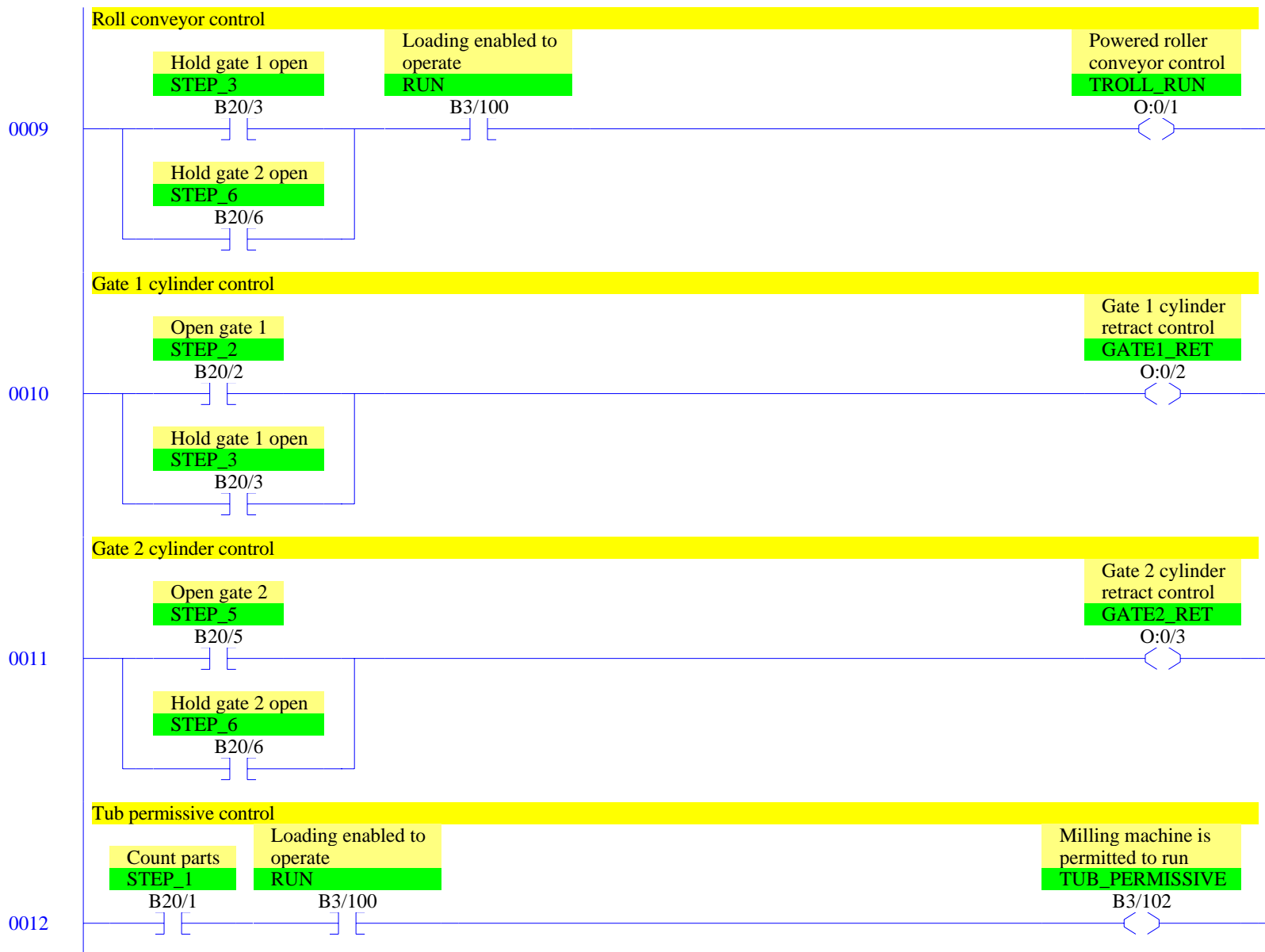
Open gate 2  
STEP\_5

B20/5

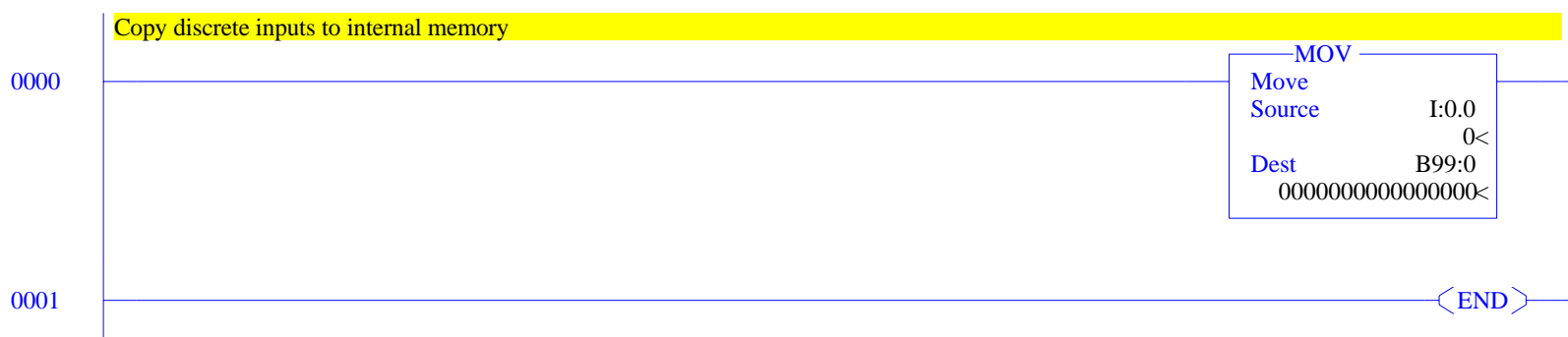
Hold gate 2 open  
STEP\_6

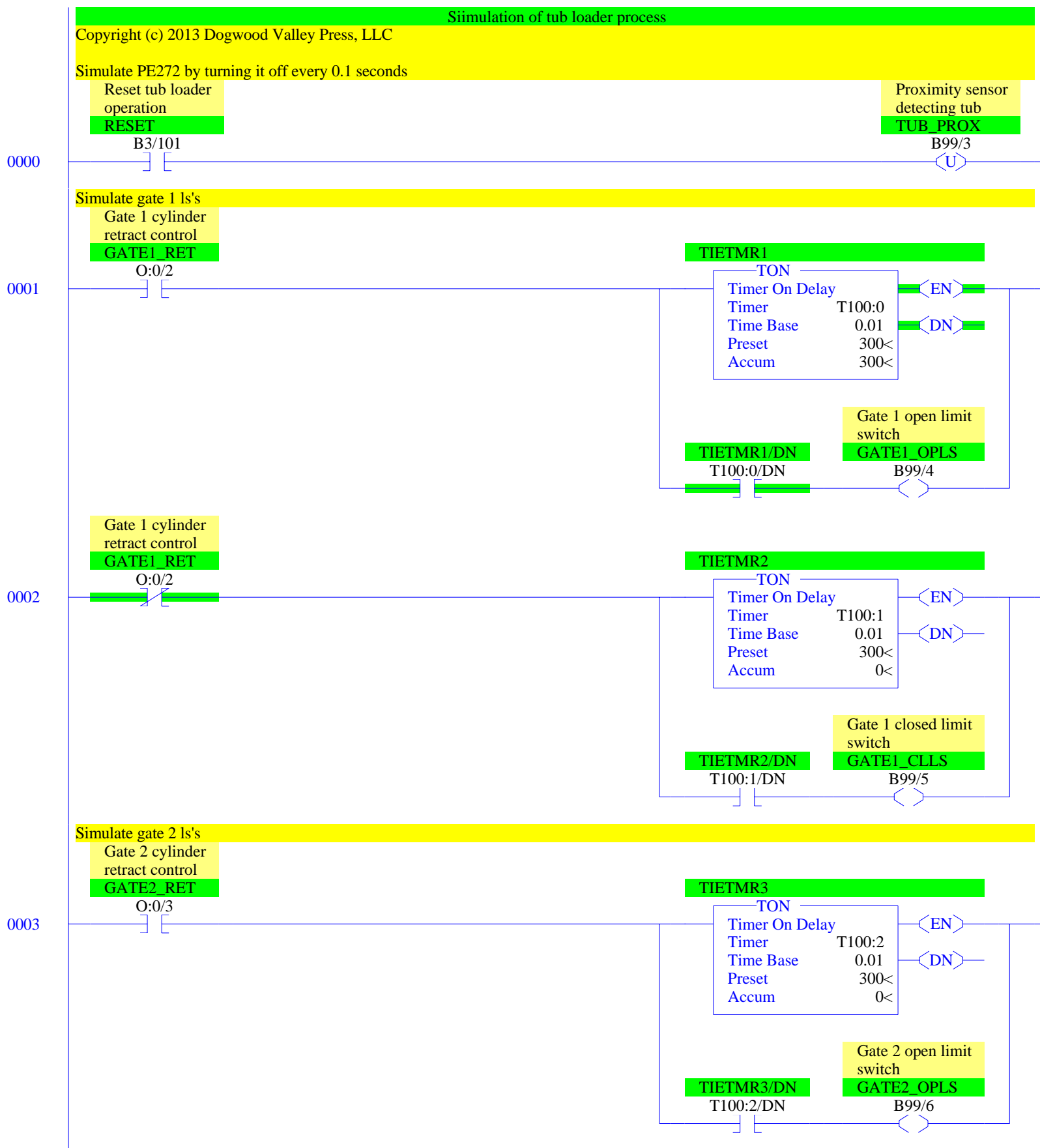
B20/6

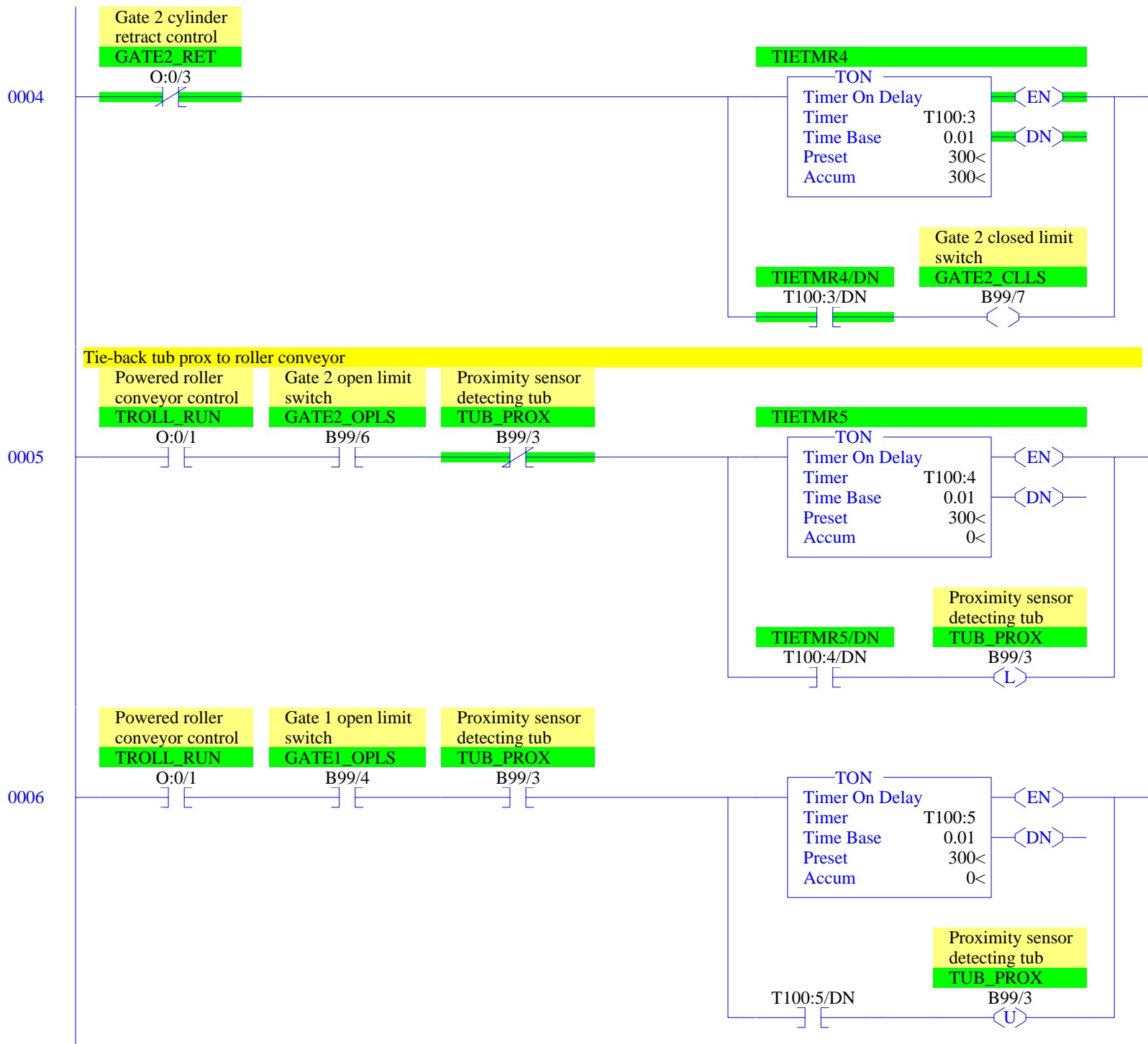




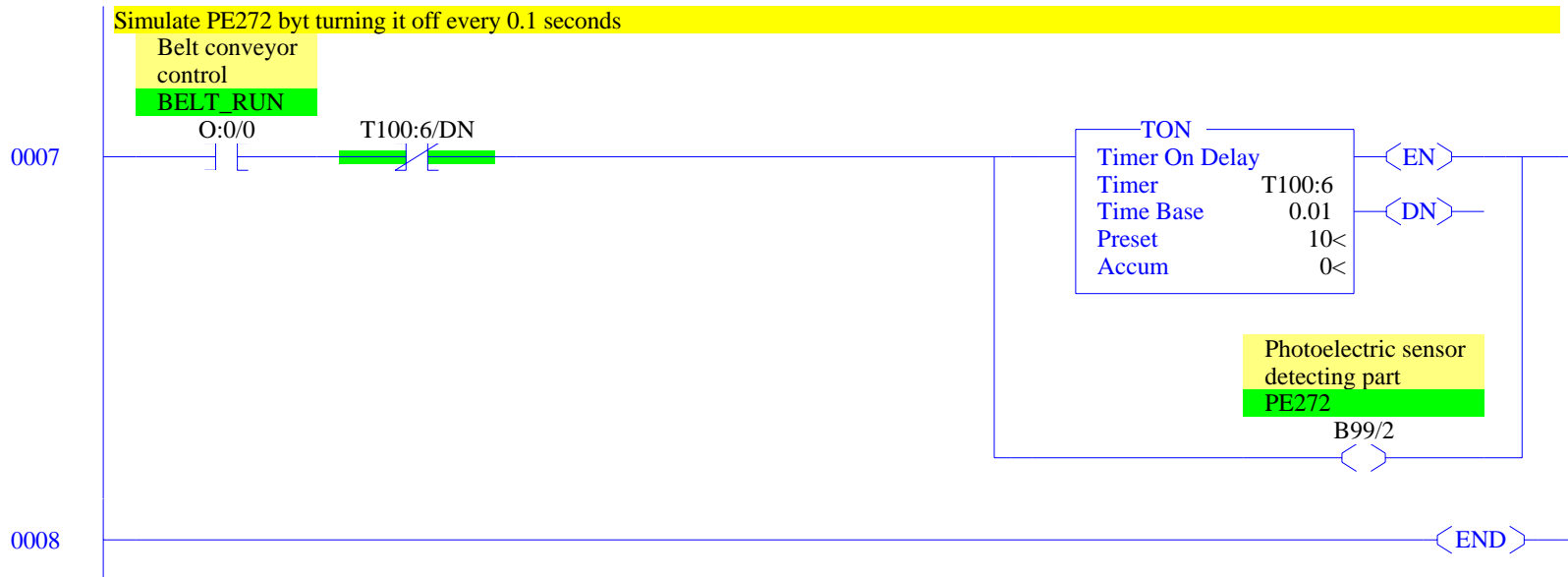












## RSLogix 500 Cross Reference Report - Sorted by Address

|         |   |
|---------|---|
| O:0/0   | - {BELT_RUN} Belt conveyor control<br>OTE - File #2 - 8<br>XIC - File #100 TIEBACK - 7  |
| O:0/1   | - {TROLL_RUN} Powered roller conveyor control<br>OTE - File #2 - 9<br>XIC - File #100 TIEBACK - 5, 6                              |
| O:0/2   | - {GATE1_RET} Gate 1 cylinder retract control<br>OTE - File #2 - 10<br>XIC - File #100 TIEBACK - 1<br>XIO - File #100 TIEBACK - 2 |
| O:0/3   | - {GATE2_RET} Gate 2 cylinder retract control<br>OTE - File #2 - 11<br>XIC - File #100 TIEBACK - 3<br>XIO - File #100 TIEBACK - 4 |
| I:0.0   | - MOV - File #99 DUPLIC_INS - 0   |
| B3/100  | - {RUN} Loading enabled to operate<br>XIC - File #2 - 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12  |
| B3/101  | - {RESET} Reset tub loader operation<br>XIC - File #2 - 13<br>File #100 TIEBACK - 0   |
| B3/102  | - {TUB_PERMISSIVE} Milling machine is permitted to run<br>OTE - File #2 - 12  |
| B3/200  | - {ENAB_TIE_BACK} Enable tie-back simulation logic<br>XIC - File #2 - 14<br>XIO - File #2 - 15                                    |
| T4:1    | - {G1_HOLD_TMR} Gate 1 hold open timer<br>RTO - File #2 - 3<br>RES - File #2 - 3  |
| T4:1/DN | - XIC - File #2 - 3   |
| T4:2    | - {G2_HOLD_TMR} Gate 2 hold open timer<br>RTO - File #2 - 6<br>RES - File #2 - 6  |
| T4:2/DN | - XIC - File #2 - 6   |
| C5:1    | - {PART_CTR} Count parts<br>CTU - File #2 - 1<br>RES - File #2 - 1  |
| C5:1/DN | - XIC - File #2 - 1   |
| B20/1   | - {STEP_1} Count parts<br>OTL - File #2 - 0, 7<br>OTU - File #2 - 1, 13<br>XIC - File #2 - 1, 8, 12<br>XIO - File #2 - 0, 1       |
| B20/2   | - {STEP_2} Open gate 1<br>OTL - File #2 - 1<br>OTU - File #2 - 2, 13<br>XIC - File #2 - 2, 10<br>XIO - File #2 - 0                |
| B20/3   | - {STEP_3} Hold gate 1 open<br>OTL - File #2 - 2<br>OTU - File #2 - 3, 13<br>XIC - File #2 - 3, 9, 10<br>XIO - File #2 - 0, 3     |
| B20/4   | - {STEP_4} Close gate 1<br>OTL - File #2 - 3<br>OTU - File #2 - 4, 13<br>XIC - File #2 - 4<br>XIO - File #2 - 0                   |
| B20/5   | - {STEP_5} Open gate 2<br>OTL - File #2 - 4<br>OTU - File #2 - 5, 13<br>XIC - File #2 - 5, 11<br>XIO - File #2 - 0                |
| B20/6   | - {STEP_6} Hold gate 2 open<br>OTL - File #2 - 5<br>OTU - File #2 - 6, 13<br>XIC - File #2 - 6, 9, 11                             |

## RSLogix 500 Cross Reference Report - Sorted by Address

```

B20/7      XIO - File #2 - 0, 6
           - {STEP_7} Close gate 2
           OTL - File #2 - 6
           OTU - File #2 - 7, 13
           XIC - File #2 - 7
           XIO - File #2 - 0
B99:0      - MOV - File #99 DUPLIC_INS - 0
B99/2      - {PE272} Photoelectric sensor detecting part
           OTE - File #100 TIEBACK - 7
           XIC - File #2 - 1
B99/3      - {TUB_PROX} Proximity sensor detecting tub
           XIC - File #2 - 6
           OTU - File #100 TIEBACK - 0
           XIO - File #100 TIEBACK - 5
           OTL - File #100 TIEBACK - 5
           OTU - File #100 TIEBACK - 6
           XIC - File #100 TIEBACK - 6
           XIO - File #2 - 3
B99/4      - {GATE1_OPLS} Gate 1 open limit switch
           XIC - File #100 TIEBACK - 6
               File #2 - 2
           OTE - File #100 TIEBACK - 1
B99/5      - {GATE1_CLLS} Gate 1 closed limit switch
           XIC - File #2 - 4, 7
           OTE - File #100 TIEBACK - 2
B99/6      - {GATE2_OPLS} Gate 2 open limit switch
           XIC - File #100 TIEBACK - 5
               File #2 - 5
           OTE - File #100 TIEBACK - 3
B99/7      - {GATE2_CLLS} Gate 2 closed limit switch
           OTE - File #100 TIEBACK - 4
T100:0     - {TIETMR1}
           TON - File #100 TIEBACK - 1
T100:0/DN  - XIC - File #100 TIEBACK - 1
T100:1     - {TIETMR2}
           TON - File #100 TIEBACK - 2
T100:1/DN  - XIC - File #100 TIEBACK - 2
T100:2     - {TIETMR3}
           TON - File #100 TIEBACK - 3
T100:2/DN  - XIC - File #100 TIEBACK - 3
T100:3     - {TIETMR4}
           TON - File #100 TIEBACK - 4
T100:3/DN  - XIC - File #100 TIEBACK - 4
T100:4     - {TIETMR5}
           TON - File #100 TIEBACK - 5
T100:4/DN  - XIC - File #100 TIEBACK - 5
T100:5     - TON - File #100 TIEBACK - 6
T100:5/DN  - XIC - File #100 TIEBACK - 6
T100:6     - TON - File #100 TIEBACK - 7
T100:6/DN  - XIO - File #100 TIEBACK - 7
U:99       - JSR - File #2 - 15
U:100      - {TIEBACK}
           JSR - File #2 - 14

```