

## Batch Process Control

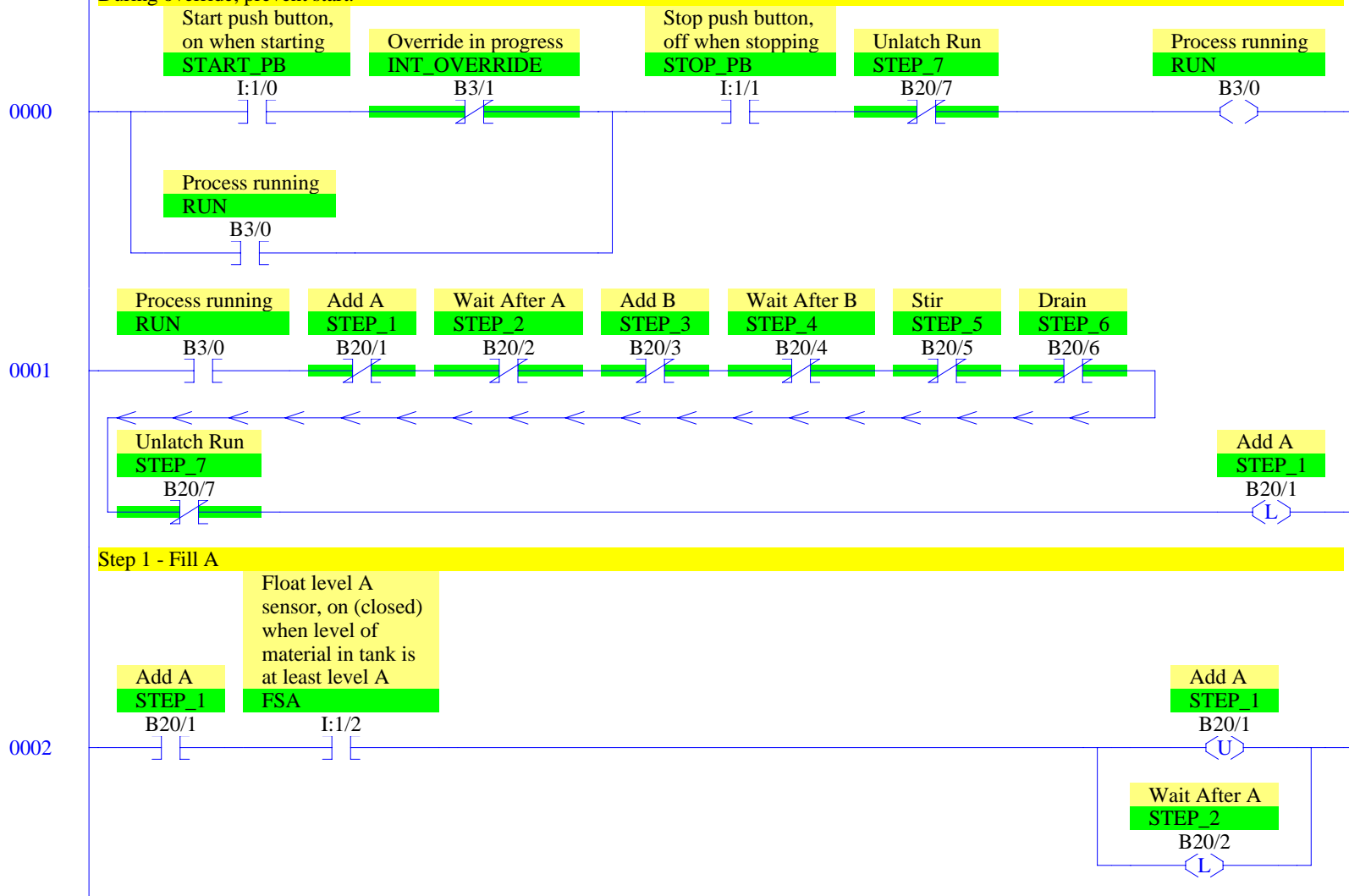
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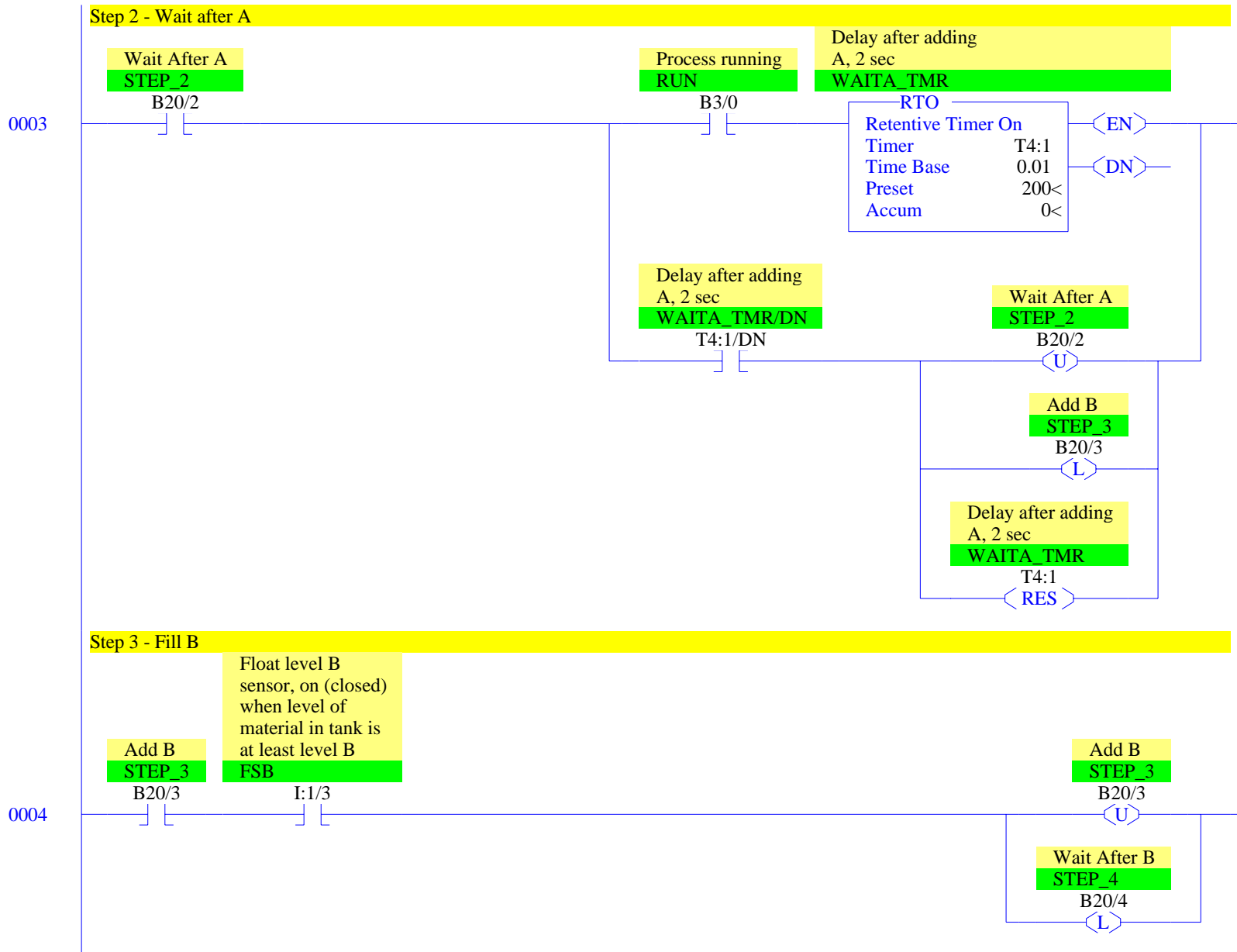
Additional internal memory:

| Symbol           | Address        |   |
|------------------|----------------|---|
| RUN              | B3/0           | On while station running                    |
| INT_OVERRIDE     | B3/1           | Override during draining                    |
| STEP_1 to STEP_7 | B20/1 to B20/7 | Step-in-progress bits                       |
| WAITA_TMR        | T4:1           | Delay after adding A                        |
| WAITB_TMR        | T4:2           | Delay after adding B                        |
| STIR_TMR         | T4:3           | Stir timer                                  |
| EMPTY_TMR        | T4:4           | Times tank empty sensor in normal operation |
| OVERRIDE_TMR     | T4:5           | Times tank empty sensor when override       |

Start/stop and initial start.

During override, prevent start.





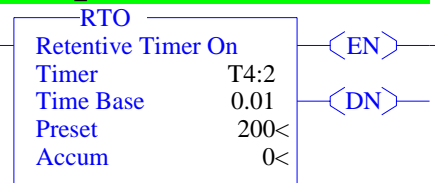
0005

## Step 4 - Wait after B

Wait After B  
STEP\_4  
B20/4

Process running  
RUN  
B3/0

Delay after adding  
B, 2 sec  
WAITB\_TMR



Delay after adding  
B, 2 sec  
WAITB\_TMR/DN  
T4:2/DN

Wait After B  
STEP\_4  
B20/4

(U)

Stir

STEP\_5

B20/5

(L)

Delay after adding  
B, 2 sec  
WAITB\_TMR

T4:2

(RES)

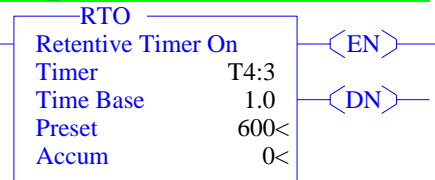
0006

## Step 5 - Stir

Stir  
STEP\_5  
B20/5

Process running  
RUN  
B3/0

Stir timer,10 min  
STIR\_TMR



Stir timer,10 min  
STIR\_TMR/DN  
T4:3/DN

Stir

STEP\_5

B20/5

(U)

Drain

STEP\_6

B20/6

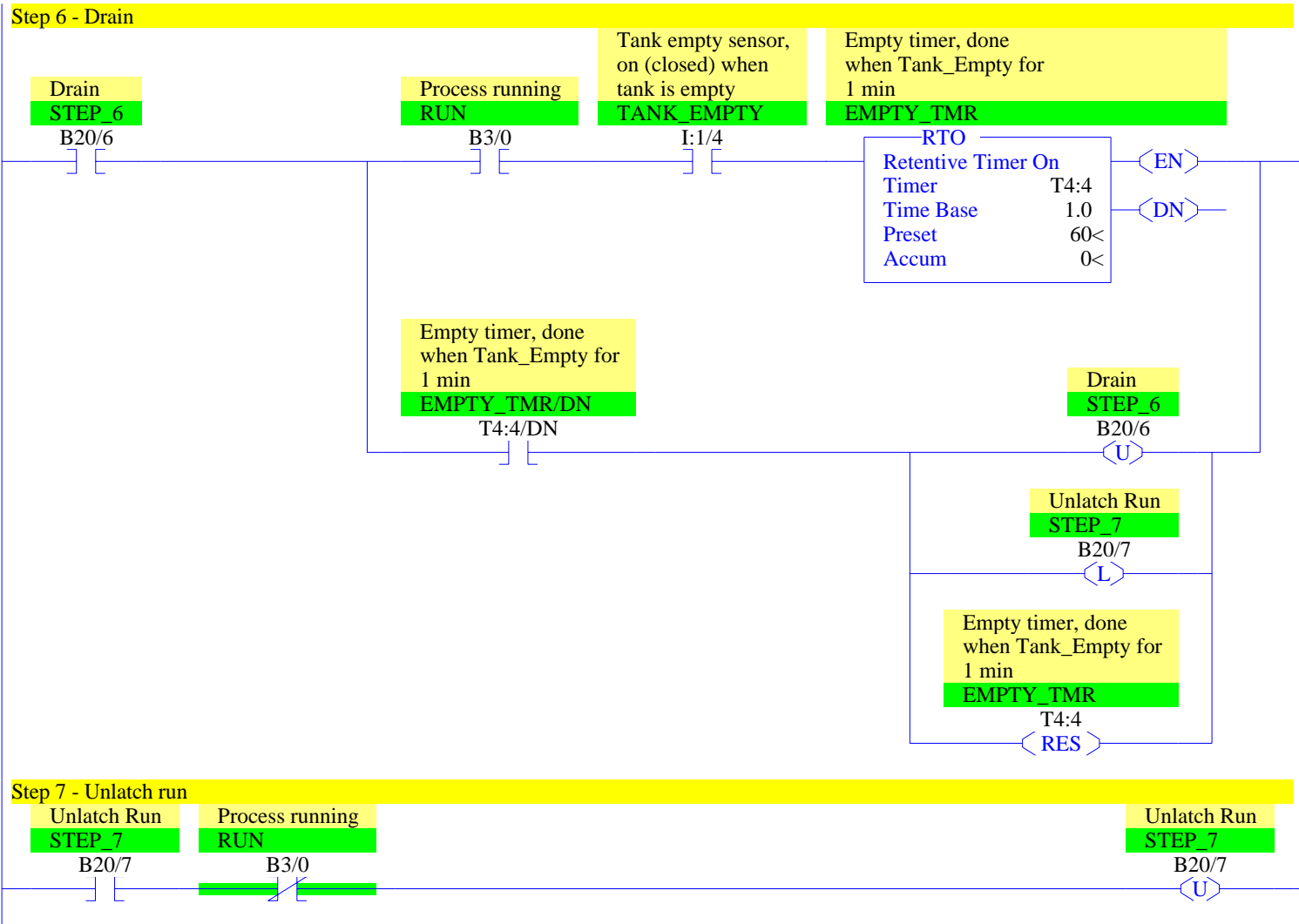
(L)

Stir timer,10 min  
STIR\_TMR

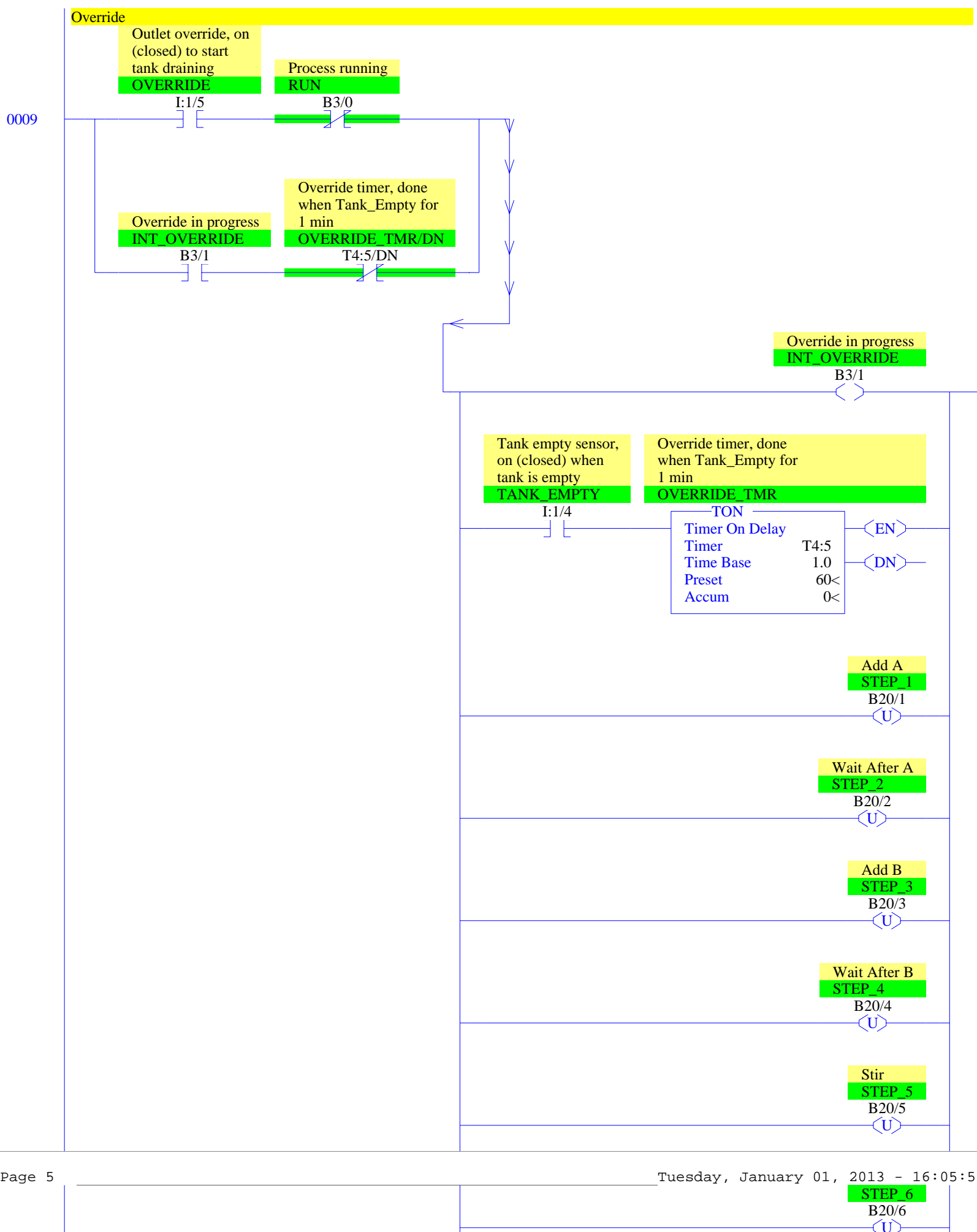
T4:3

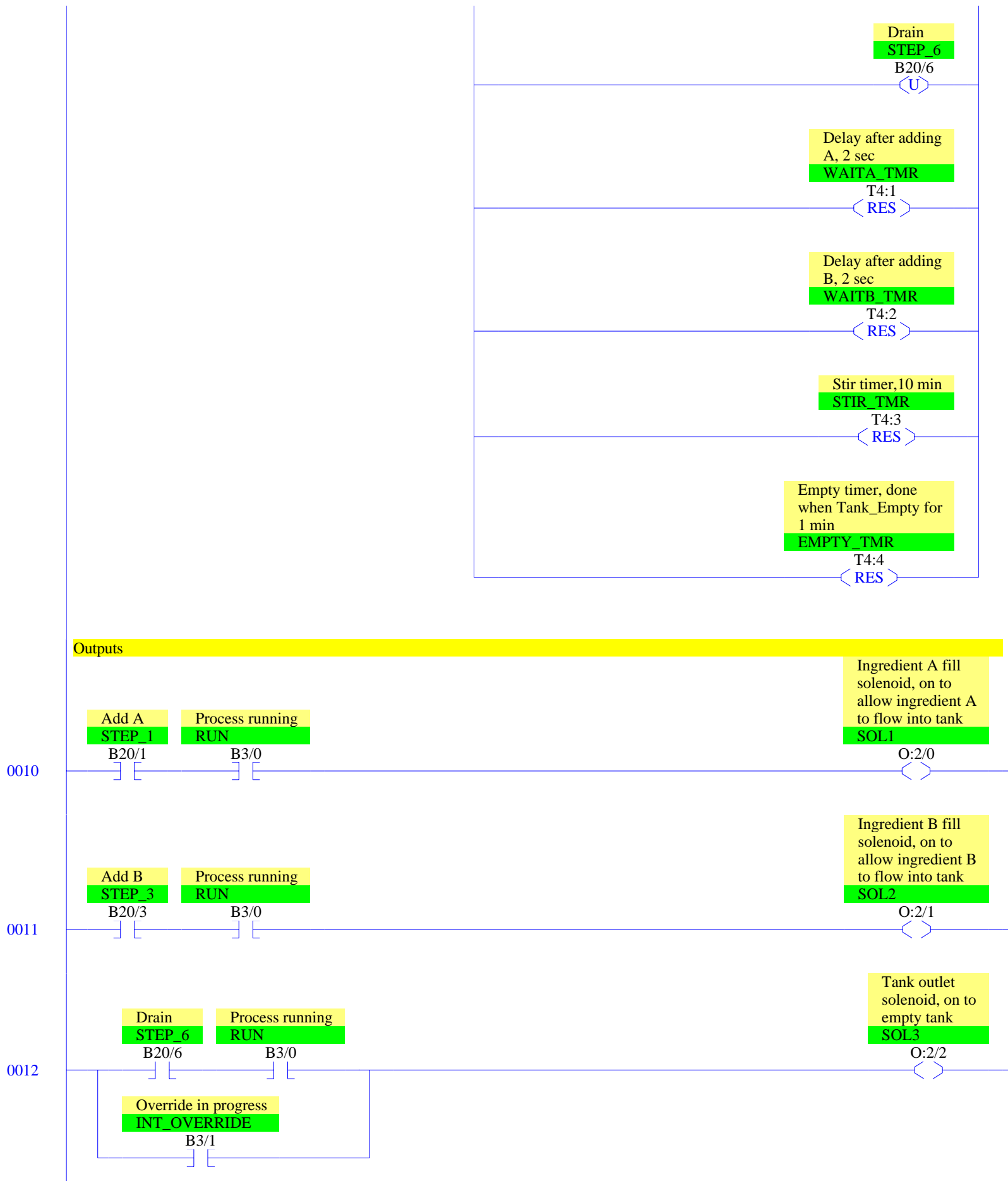
(RES)

0007

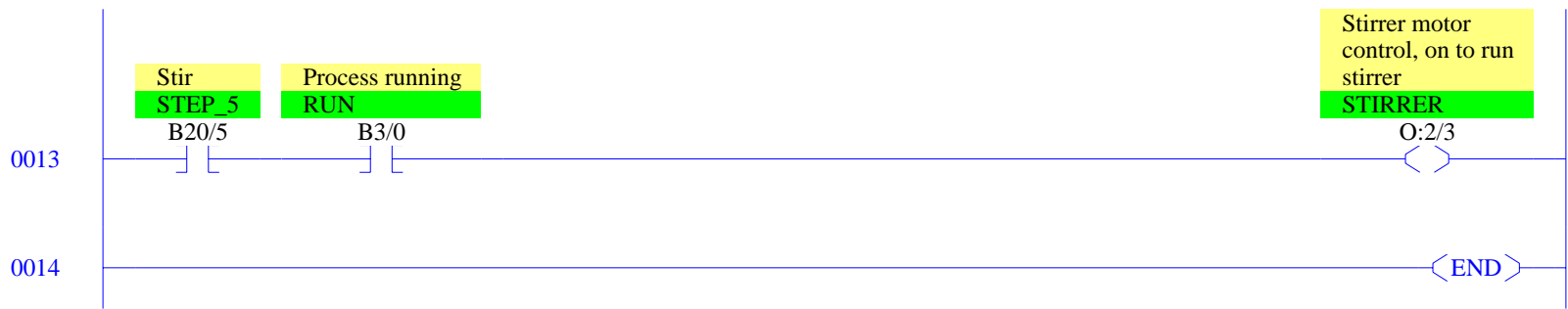


0008





LAD 2 - --- Total Rungs in File = 15



## RSLogix 500 Cross Reference Report - Sorted by Address

|         |  |
|---------|--|
| O:2/0   | - {SOL1} Ingredient A fill solenoid, on to allow ingredient A to flow into tank<br>OTE - File #2 - 10                    |
| O:2/1   | - {SOL2} Ingredient B fill solenoid, on to allow ingredient B to flow into tank<br>OTE - File #2 - 11                    |
| O:2/2   | - {SOL3} Tank outlet solenoid, on to empty tank<br>OTE - File #2 - 12  |
| O:2/3   | - {STIRRER} Stirrer motor control, on to run stirrer<br>OTE - File #2 - 13   |
| I:1/0   | - {START_PB} Start push button, on when starting<br>XIC - File #2 - 0  |
| I:1/1   | - {STOP_PB} Stop push button, off when stopping<br>XIC - File #2 - 0   |
| I:1/2   | - {FSA} Float level A sensor, on (closed) when level of material in tank is at least 1<br>XIC - File #2 - 2              |
| I:1/3   | - {FSB} Float level B sensor, on (closed) when level of material in tank is at least 1<br>XIC - File #2 - 4              |
| I:1/4   | - {TANK_EMPTY} Tank empty sensor, on (closed) when tank is empty<br>XIC - File #2 - 7, 9                                 |
| I:1/5   | - {OVERRIDE} Outlet override, on (closed) to start tank draining<br>XIC - File #2 - 9                                    |
| B3/0    | - {RUN} Process running<br>OTE - File #2 - 0<br>XIC - File #2 - 0, 1, 3, 5, 6, 7, 10, 11, 12, 13<br>XIO - File #2 - 8, 9 |
| B3/1    | - {INT_OVERRIDE} Override in progress<br>OTE - File #2 - 9<br>XIC - File #2 - 9, 12<br>XIO - File #2 - 0                 |
| T4:1    | - {WAITA_TMR} Delay after adding A, 2 sec<br>RTO - File #2 - 3<br>RES - File #2 - 3, 9                                   |
| T4:1/DN | - XIC - File #2 - 3  |
| T4:2    | - {WAITB_TMR} Delay after adding B, 2 sec<br>RTO - File #2 - 5<br>RES - File #2 - 5, 9                                   |
| T4:2/DN | - XIC - File #2 - 5  |
| T4:3    | - {STIR_TMR} Stir timer, 10 min<br>RTO - File #2 - 6<br>RES - File #2 - 6, 9   |
| T4:3/DN | - XIC - File #2 - 6  |
| T4:4    | - {EMPTY_TMR} Empty timer, done when Tank_Empty for 1 min<br>RTO - File #2 - 7<br>RES - File #2 - 7, 9                   |
| T4:4/DN | - XIC - File #2 - 7  |
| T4:5    | - {OVERRIDE_TMR} Override timer, done when Tank_Empty for 1 min<br>TON - File #2 - 9                                     |
| T4:5/DN | - XIO - File #2 - 9  |
| B20/1   | - {STEP_1} Add A<br>OTL - File #2 - 1<br>OTU - File #2 - 2, 9<br>XIC - File #2 - 2, 10<br>XIO - File #2 - 1              |
| B20/2   | - {STEP_2} Wait After A<br>OTL - File #2 - 2<br>OTU - File #2 - 3, 9<br>XIC - File #2 - 3<br>XIO - File #2 - 1           |
| B20/3   | - {STEP_3} Add B<br>OTL - File #2 - 3<br>OTU - File #2 - 4, 9<br>XIC - File #2 - 4, 11<br>XIO - File #2 - 1              |
| B20/4   | - {STEP_4} Wait After B<br>OTL - File #2 - 4<br>OTU - File #2 - 5, 9<br>XIC - File #2 - 5                                |



## RSLogix 500 Cross Reference Report - Sorted by Address

|       |                        |
|-------|------------------------|
| B20/5 | XIO - File #2 - 1      |
|       | - {STEP_5} Stir        |
|       | OTL - File #2 - 5      |
|       | OTU - File #2 - 6, 9   |
|       | XIC - File #2 - 6, 13  |
|       | XIO - File #2 - 1      |
| B20/6 | - {STEP_6} Drain       |
|       | OTL - File #2 - 6      |
|       | OTU - File #2 - 7, 9   |
|       | XIC - File #2 - 7, 12  |
|       | XIO - File #2 - 1      |
| B20/7 | - {STEP_7} Unlatch Run |
|       | OTL - File #2 - 7      |
|       | OTU - File #2 - 8      |
|       | XIC - File #2 - 8      |
|       | XIO - File #2 - 0, 1   |