

Hole Drilling Station 3 Control

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Additional internal memory:

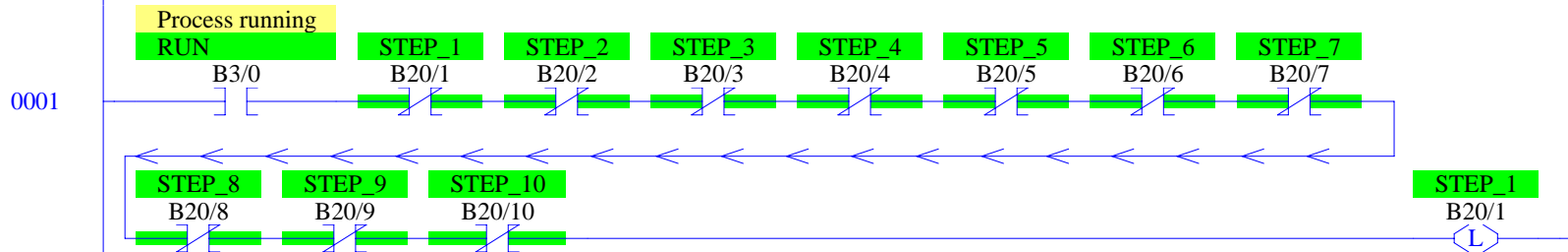
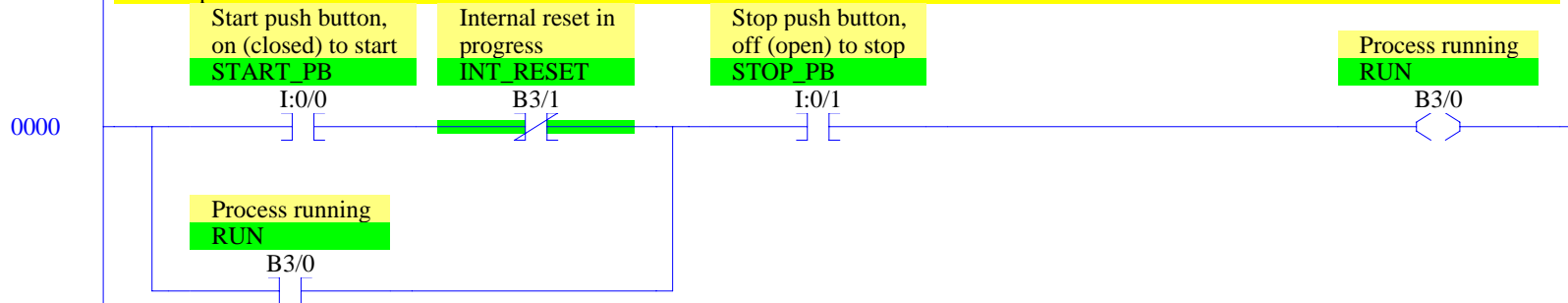
Symbol	Address	
RUN	B3/0	On while station running
INT_RESET	B3/1	Internal reset
STEP_1 to STEP_10	B20/1 to B20/10	Step-in-progress bits
CLAMP_TMR	T4:1	Times clamping
PAUSE_TMR	T4:2	Times pause during drilling
RESET_TMR	T4:0	Times retract of YCYL when reset

Conversion formulas

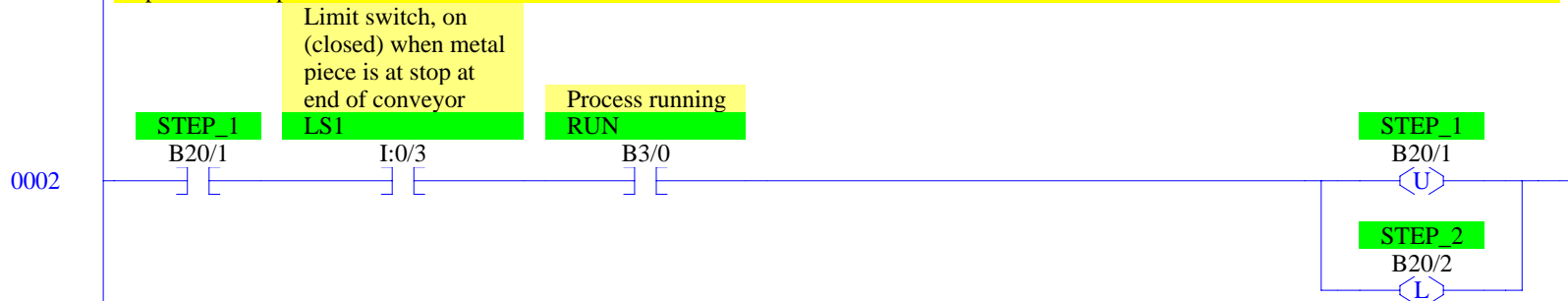
$$X_VAL = ((X_MEAS - 6241) / 24965) * (300 - 150) + 150$$

$$Y_VAL = ((Y_MEAS - 6241) / 24865) * (110)$$

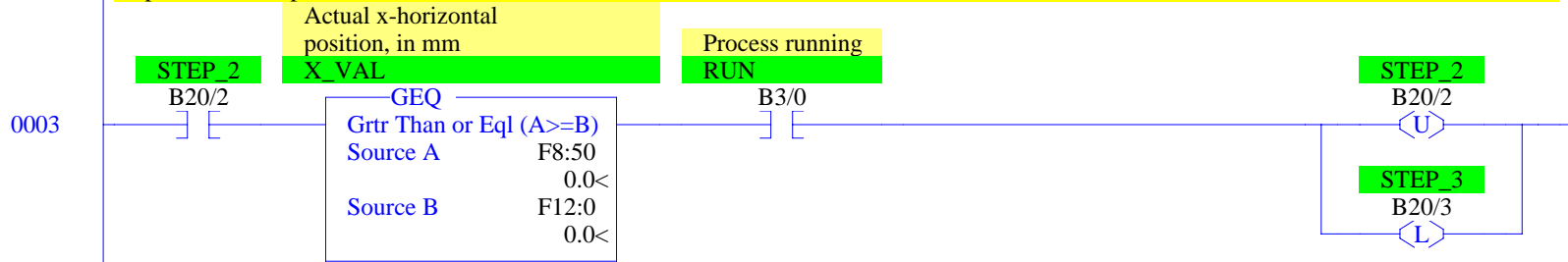
Start/Stop/Pause. Initial start

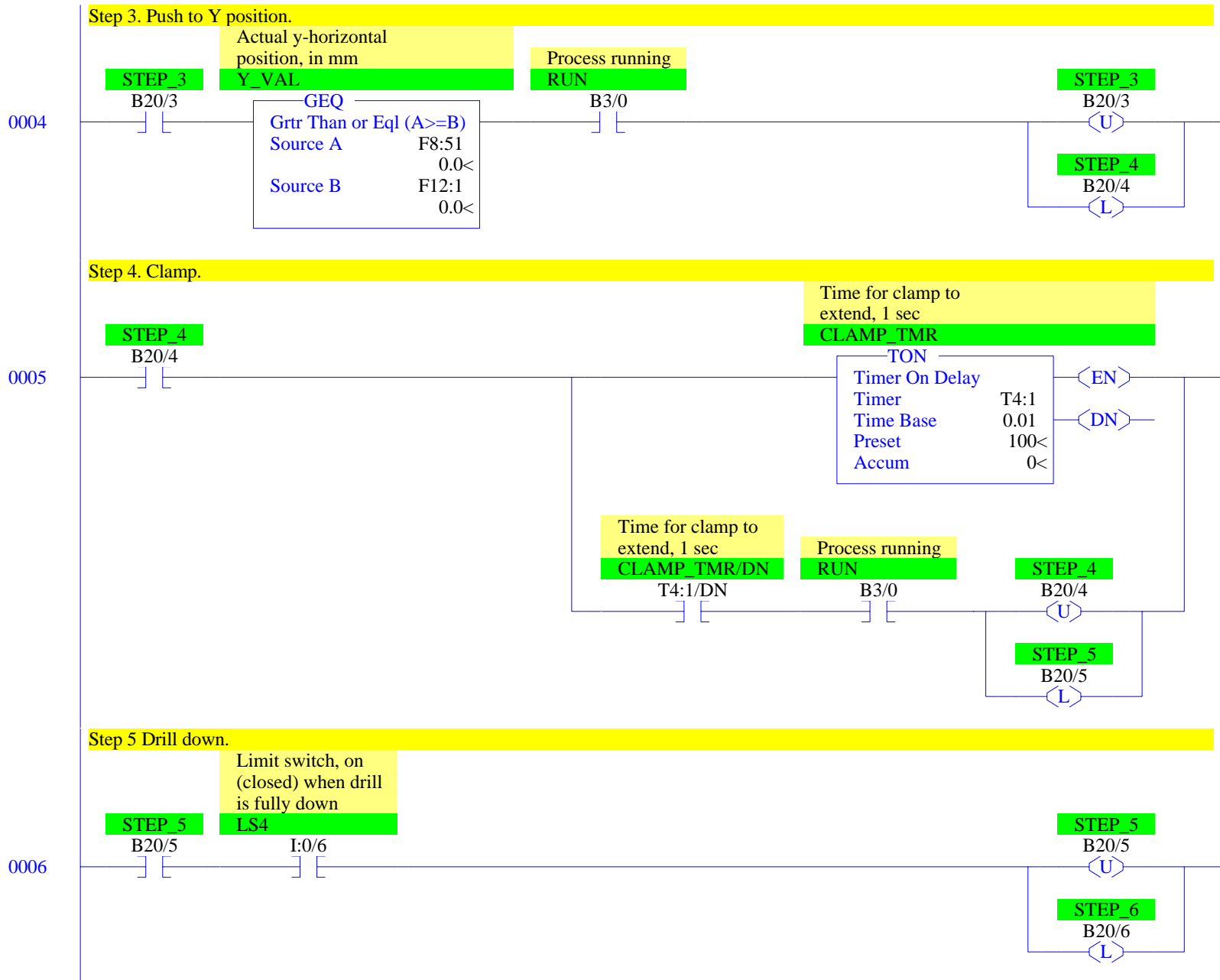


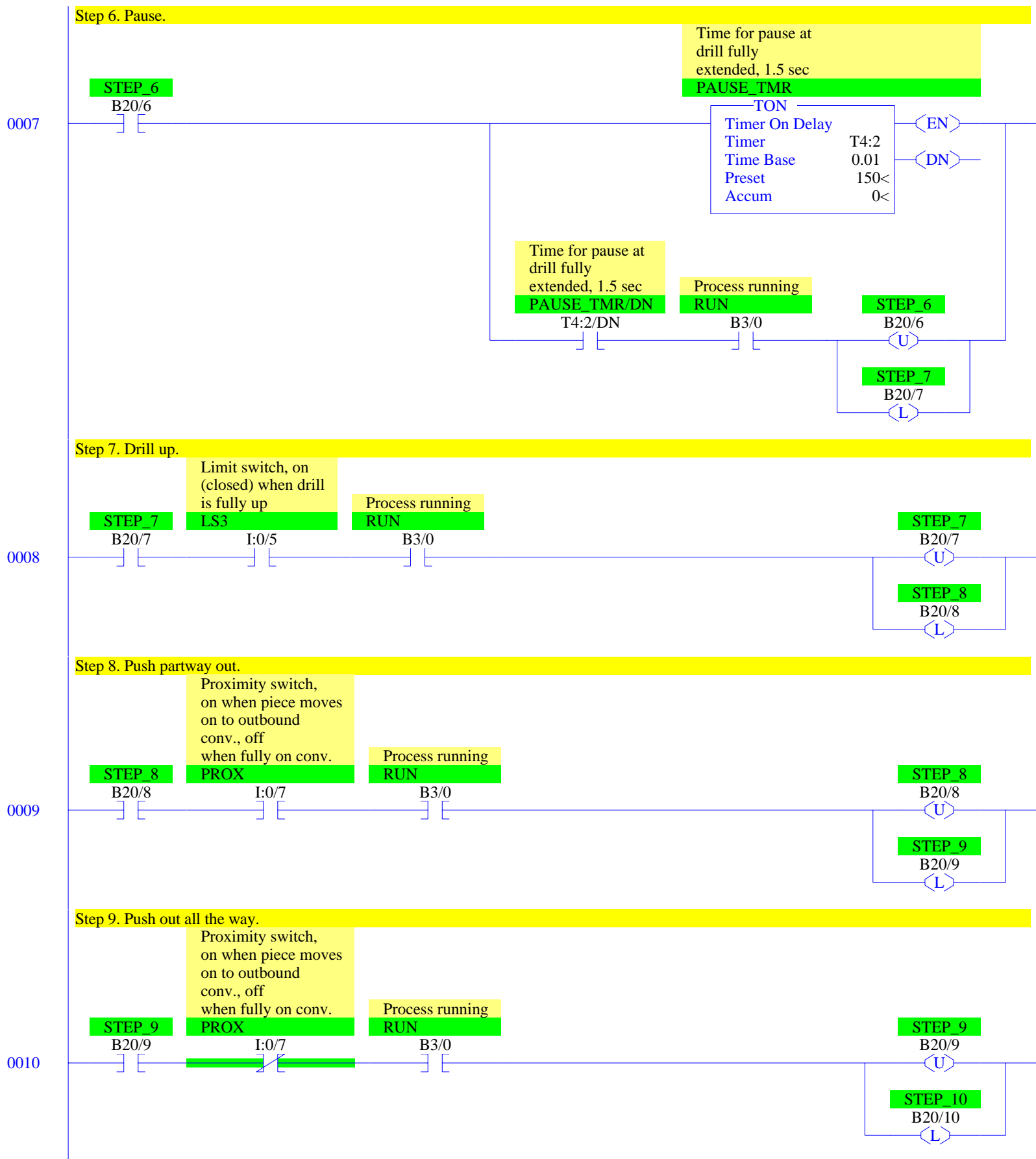
Step 1. Wait for piece.



Step 2. Push to X position.







Step 10. Retract XCYL.

Limit switch, on
(closed) when XCYL
ram is retracted

Process running

STEP_10

LS2

RUN

STEP_10

B20/10

I:0/4

B3/0

B20/10

STEP_1

B20/1

Measurement Conversions

SUB

Subtract
Source A

I:1.0

0.0<

Source B

6241.0

6241.0<

Dest

F8:0

0.0<

DIV

Divide
Source A

F8:0

0.0<

Source B

24965.0

24965.0<

Dest

F8:0

0.0<

MUL

Multiply
Source A

F8:0

0.0<

Source B

150.0

150.0<

Dest

F8:0

0.0<

Actual x-horizontal
position, in mm

X_VAL

ADD

Add

Source A

F8:0

0.0<

Source B

150.0

150.0<

Dest

F8:50

0.0<

0013

SUB
Subtract
Source A I:1.1
0<
Source B 6241.0
6241.0<
Dest F8:0
0.0<

DIV
Divide
Source A F8:0
0.0<
Source B 24965.0
24965.0<
Dest F8:0
0.0<

Actual y-horizontal
position, in mm

Y_VAL

MUL
Multiply
Source A F8:0
0.0<
Source B 110.0
110.0<
Dest F8:51
0.0<

0014

Reset

Ignore reset in steps 5 and 6

Maintain until drill up and both cylinders retracted.

Reset push button,
on (closed) to reset
RESET_PB
I:0/2Process running
RUN
B3/0**STEP_5**
B20/5**STEP_6**
B20/6Internal reset in
progress
INT_RESET
B3/1Limit switch, on
(closed) when XCYL
ram is retracted
LS2
I:0/4Limit switch, on
(closed) when drill
is fully up
LS3
I:0/5Time for cylinder
to retract during
reset, 1 sec
RESET_TMR/DN
T4:3/DNInternal reset in
progress
INT_RESET
B3/1Time for cylinder
to retract during
reset, 1 sec
RESET_TMR

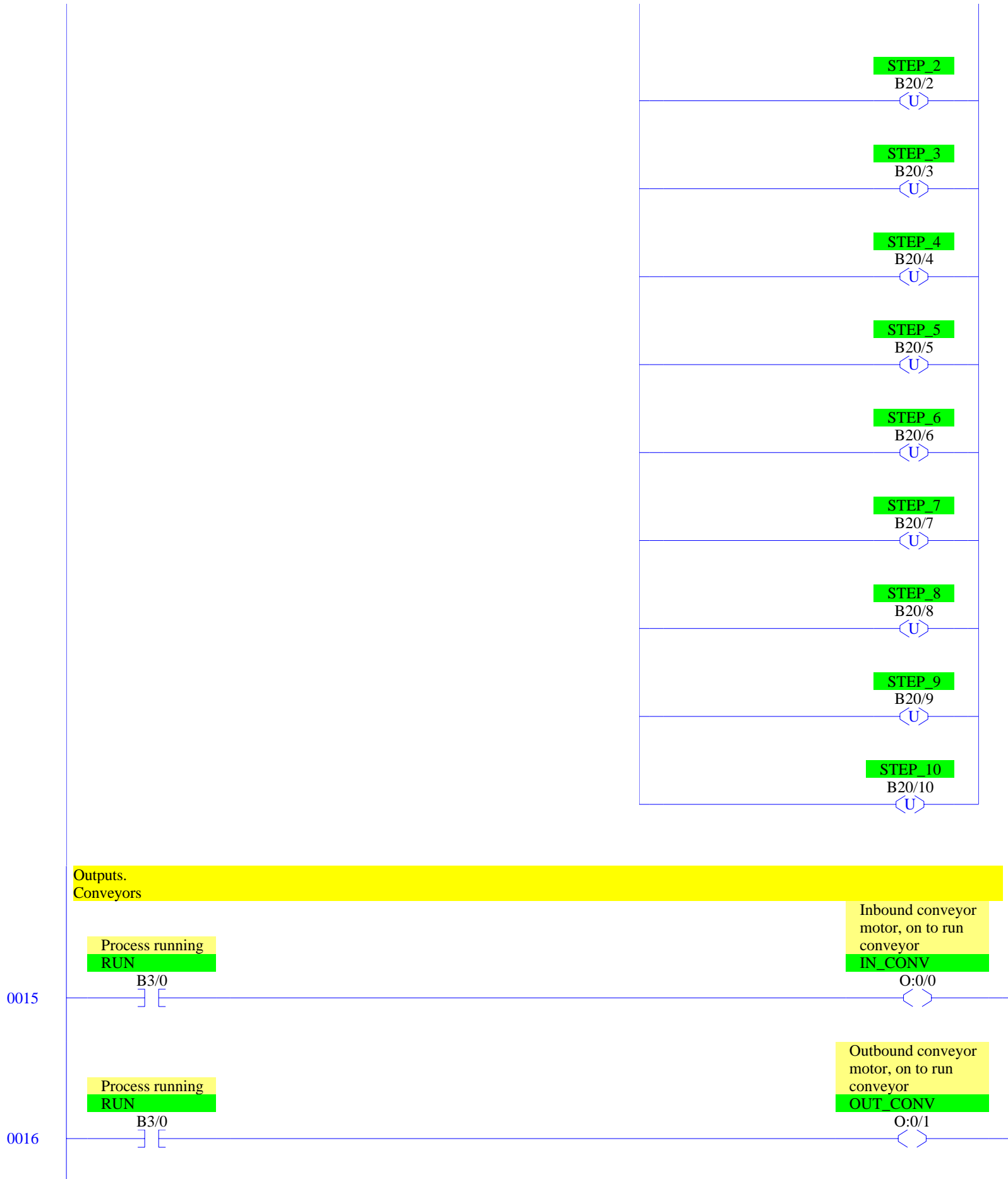
TON	
Timer On Delay	
Timer	T4:3
Time Base	0.01
Preset	100<
Accum	0<

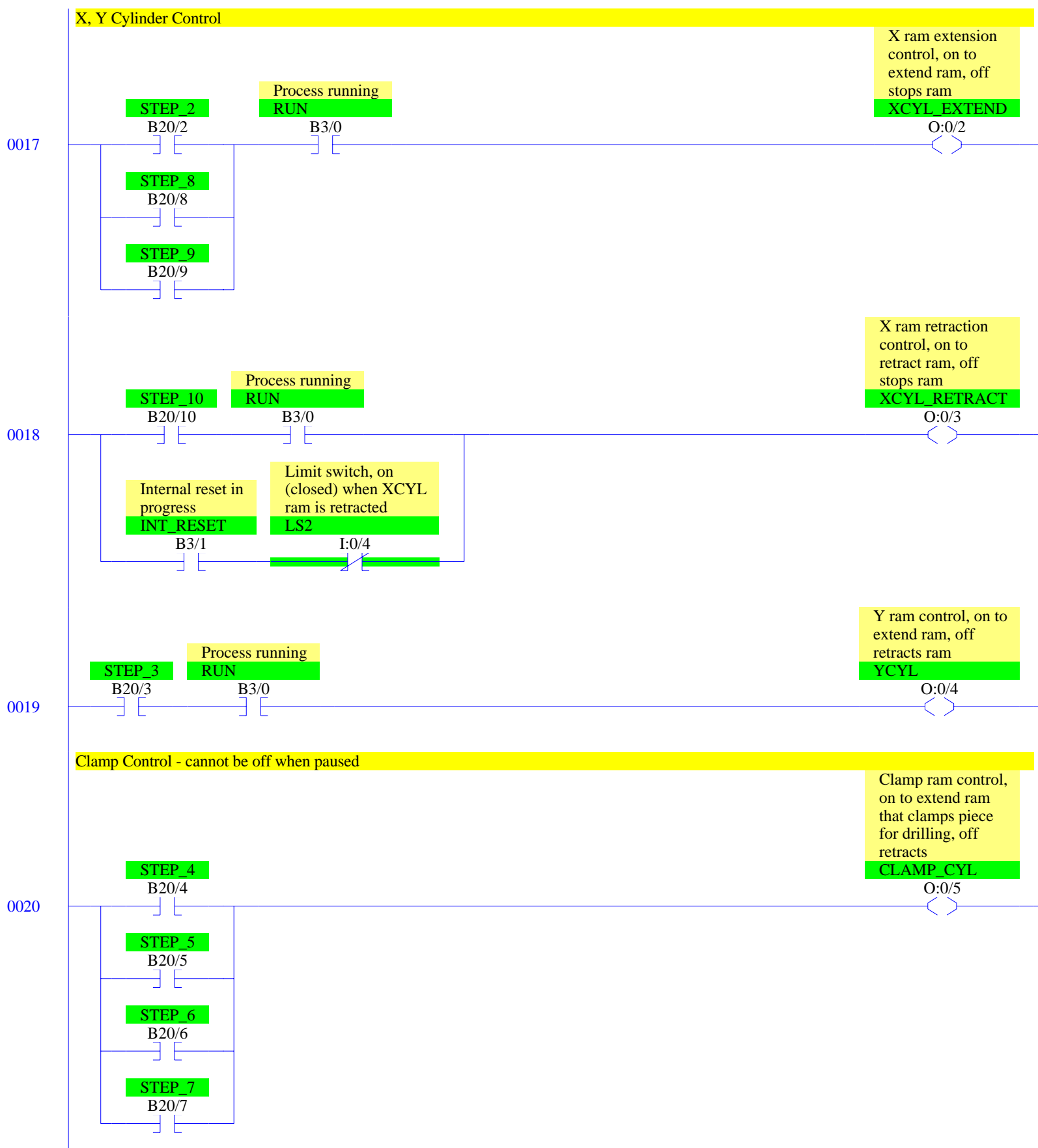
STEP_1

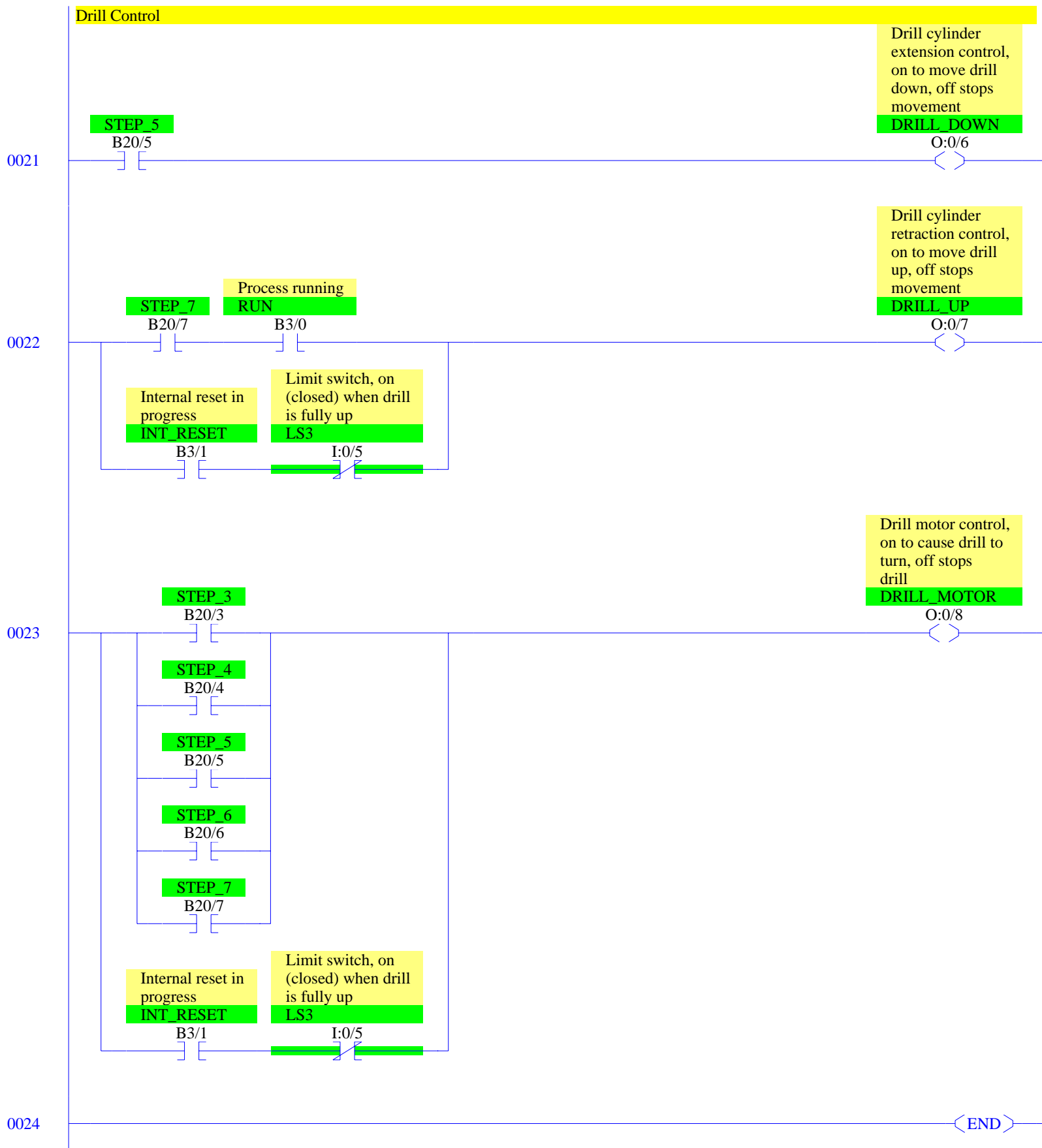
B20/1

STEP_2

B20/2







RSLogix 500 Cross Reference Report - Sorted by Address

O:0/0	- {IN_CONV} Inbound conveyor motor, on to run conveyor OTE - File #2 - 15
O:0/1	- {OUT_CONV} Outbound conveyor motor, on to run conveyor OTE - File #2 - 16
O:0/2	- {XCYL_EXTEND} X ram extension control, on to extend ram, off stops ram OTE - File #2 - 17
O:0/3	- {XCYL_RETRACT} X ram retraction control, on to retract ram, off stops ram OTE - File #2 - 18
O:0/4	- {YCYL} Y ram control, on to extend ram, off retracts ram OTE - File #2 - 19
O:0/5	- {CLAMP_CYL} Clamp ram control, on to extend ram that clamps piece for drilling, off 1 OTE - File #2 - 20
O:0/6	- {DRILL_DOWN} Drill cylinder extension control, on to move drill down, off stops movement OTE - File #2 - 21
O:0/7	- {DRILL_UP} Drill cylinder retraction control, on to move drill up, off stops movement OTE - File #2 - 22
O:0/8	- {DRILL_MOTOR} Drill motor control, on to cause drill to turn, off stops drill OTE - File #2 - 23
I:0/0	- {START_PB} Start push button, on (closed) to start XIC - File #2 - 0
I:0/1	- {STOP_PB} Stop push button, off (open) to stop XIC - File #2 - 0
I:0/2	- {RESET_PB} Reset push button, on (closed) to reset XIC - File #2 - 14
I:0/3	- {LS1} Limit switch, on (closed) when metal piece is at stop at end of conveyor XIC - File #2 - 2
I:0/4	- {LS2} Limit switch, on (closed) when XCYL ram is retracted XIC - File #2 - 11 XIO - File #2 - 14, 18
I:0/5	- {LS3} Limit switch, on (closed) when drill is fully up XIC - File #2 - 8 XIO - File #2 - 14, 22, 23
I:0/6	- {LS4} Limit switch, on (closed) when drill is fully down XIC - File #2 - 6
I:0/7	- {PROX} Proximity switch, on when piece moves on to outbound conv., off when fully on XIC - File #2 - 9 XIO - File #2 - 10
I:1.0	- {X_MEAS} x-horizontal position measurement, represents 150 to 300 mm SUB - File #2 - 12
I:1.1	- {Y_MEAS} y-horizontal position measurement, represents 0 to 110 mm SUB - File #2 - 13
B3/0	- {RUN} Process running OTE - File #2 - 0 XIC - File #2 - 0, 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 15, 16, 17, 18 19, 22 XIO - File #2 - 14
B3/1	- {INT_RESET} Internal reset in progress OTE - File #2 - 14 XIC - File #2 - 14, 18, 22, 23 XIO - File #2 - 0
T4:1	- {CLAMP_TMR} Time for clamp to extend, 1 sec TON - File #2 - 5
T4:1/DN	- XIC - File #2 - 5
T4:2	- {PAUSE_TMR} Time for pause at drill fully extended, 1.5 sec TON - File #2 - 7
T4:2/DN	- XIC - File #2 - 7
T4:3	- {RESET_TMR} Time for cylinder to retract during reset, 1 sec TON - File #2 - 14
T4:3/DN	- XIO - File #2 - 14
F8:0	- ADD - File #2 - 12 SUB - File #2 - 12, 13 MUL - File #2 - 12, 13 DIV - File #2 - 12, 13
F8:50	- {X_VAL} Actual x-horizontal position, in mm ADD - File #2 - 12 GEQ - File #2 - 3

RSLogix 500 Cross Reference Report - Sorted by Address

F8:51	- {Y_VAL} Actual y-horizontal position, in mm MUL - File #2 - 13 GEQ - File #2 - 4
F12:0	- {DES_X} Desired x-horizontal position, in mm GEQ - File #2 - 3
F12:1	- {DES_Y} Desired y-horizontal position, in mm GEQ - File #2 - 4
B20/1	- {STEP_1} OTL - File #2 - 1, 11 OTU - File #2 - 2, 14 XIC - File #2 - 2 XIO - File #2 - 1
B20/2	- {STEP_2} OTL - File #2 - 2 OTU - File #2 - 3, 14 XIC - File #2 - 3, 17 XIO - File #2 - 1
B20/3	- {STEP_3} OTL - File #2 - 3 OTU - File #2 - 4, 14 XIC - File #2 - 4, 19, 23 XIO - File #2 - 1
B20/4	- {STEP_4} OTL - File #2 - 4 OTU - File #2 - 5, 14 XIC - File #2 - 5, 20, 23 XIO - File #2 - 1
B20/5	- {STEP_5} OTL - File #2 - 5 OTU - File #2 - 6, 14 XIC - File #2 - 6, 20, 21, 23 XIO - File #2 - 1, 14
B20/6	- {STEP_6} OTL - File #2 - 6 OTU - File #2 - 7, 14 XIC - File #2 - 7, 20, 23 XIO - File #2 - 1, 14
B20/7	- {STEP_7} OTL - File #2 - 7 OTU - File #2 - 8, 14 XIC - File #2 - 8, 20, 22, 23 XIO - File #2 - 1
B20/8	- {STEP_8} OTL - File #2 - 8 OTU - File #2 - 9, 14 XIC - File #2 - 9, 17 XIO - File #2 - 1
B20/9	- {STEP_9} OTL - File #2 - 9 OTU - File #2 - 10, 14 XIC - File #2 - 10, 17 XIO - File #2 - 1
B20/10	- {STEP_10} OTL - File #2 - 10 OTU - File #2 - 11, 14 XIC - File #2 - 11, 18 XIO - File #2 - 1