

## Example 6.5 - Engine Inverter Control with Parallel Branches

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Start/stop/pause. Start prevented if reset in progress.

0000

Start pushbutton  
START\_PB

I:0/0

Reset in progress  
INT\_RESET

B20/40

Stop pushbutton  
STOP\_PB

I:0/1

Station running  
RUN

B20/0

Station running  
RUN

B20/0

0001

Station running  
RUN

B20/0

Wait for pallet  
STEP\_1

B20/1

Move to hook 2  
STEP\_2

B20/2

Raise pallet  
STEP\_3

B20/3

Lower rotator  
STEP\_4

B20/4

Clamp engine  
STEP\_5

B20/5

Raise rotator  
STEP\_6

B20/6

Rotate clockwise  
STEP\_7

B20/7

Lower rotator  
STEP\_8

B20/8

Unclamp timer  
STEP\_9

B20/9

Raise rotator  
STEP\_10

B20/10

Rotate CCW  
STEP\_11

B20/11

Drop engine  
STEP\_12

B20/12

Move out pallet  
STEP\_13

B20/13

Move out pallet  
STEP\_14

B20/14

Wait after moving  
out pallet  
STEP\_15

B20/15

Wait for pallet  
STEP\_1

B20/1

## Step 1 - Wait for pallet

Wait for pallet  
STEP\_1

B20/1

Proximity sensor  
Pallet at engaging  
hook 1  
PROX1

I:0/3

Station running  
RUN

B20/0

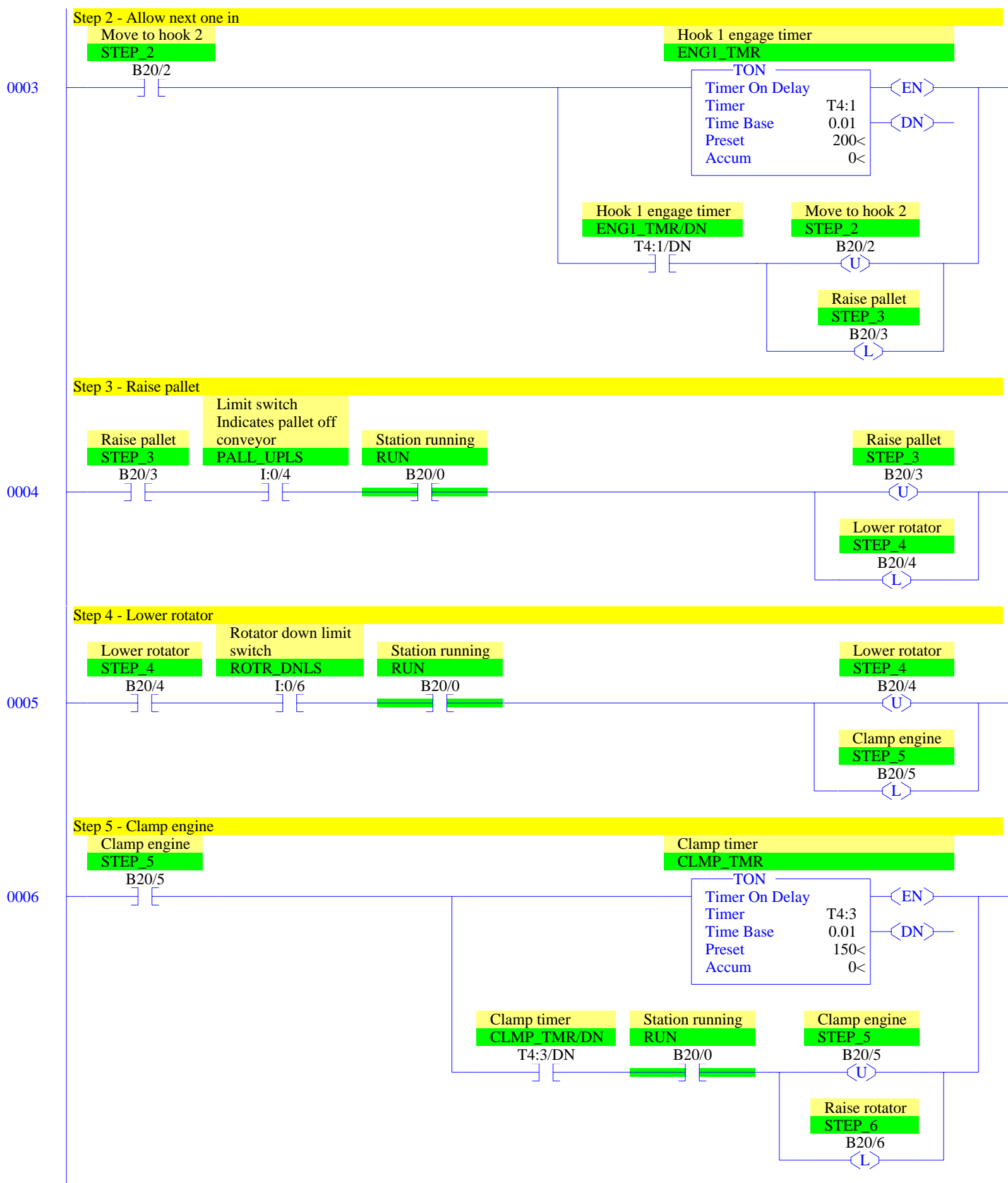
Wait for pallet  
STEP\_1

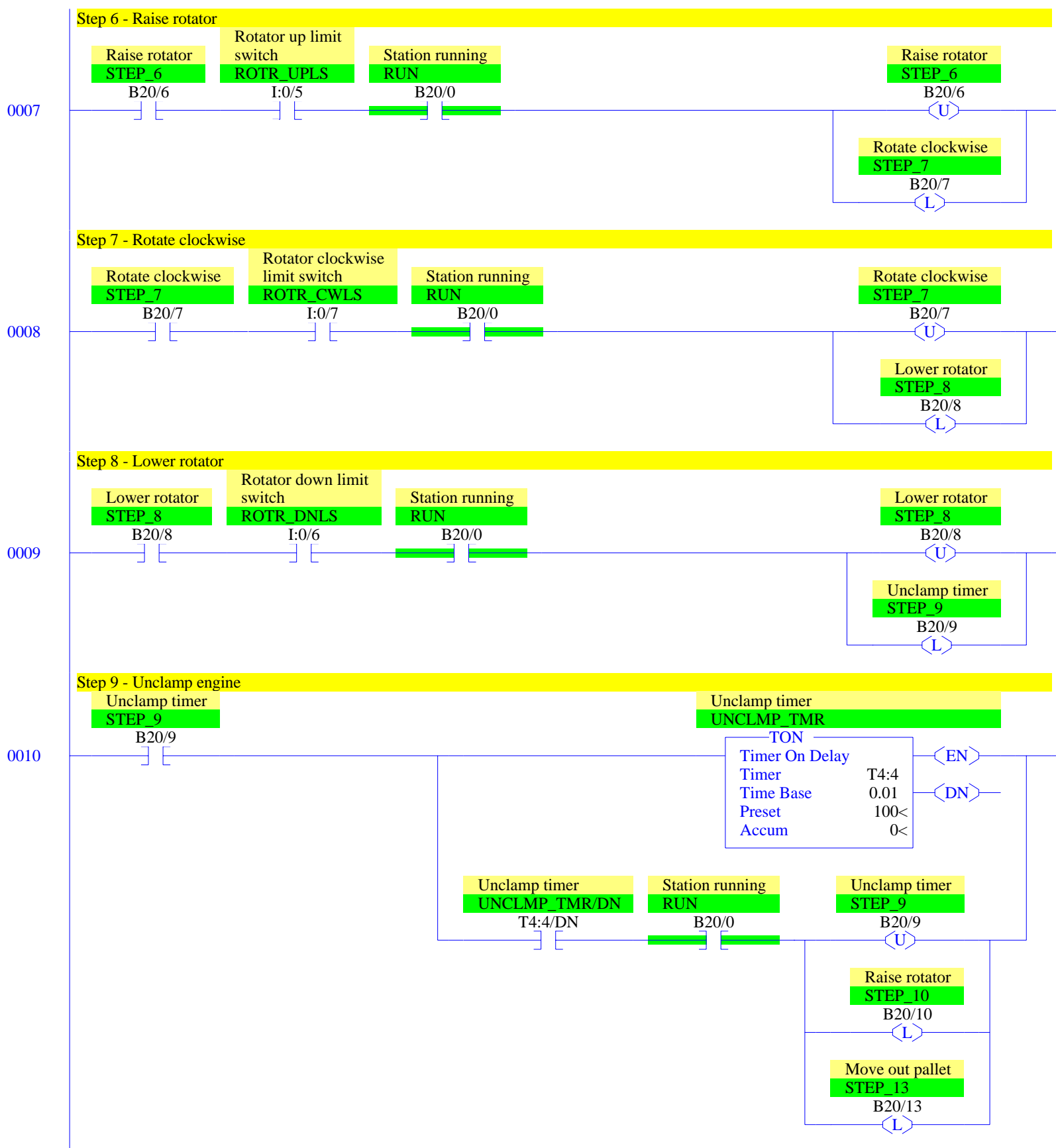
B20/1

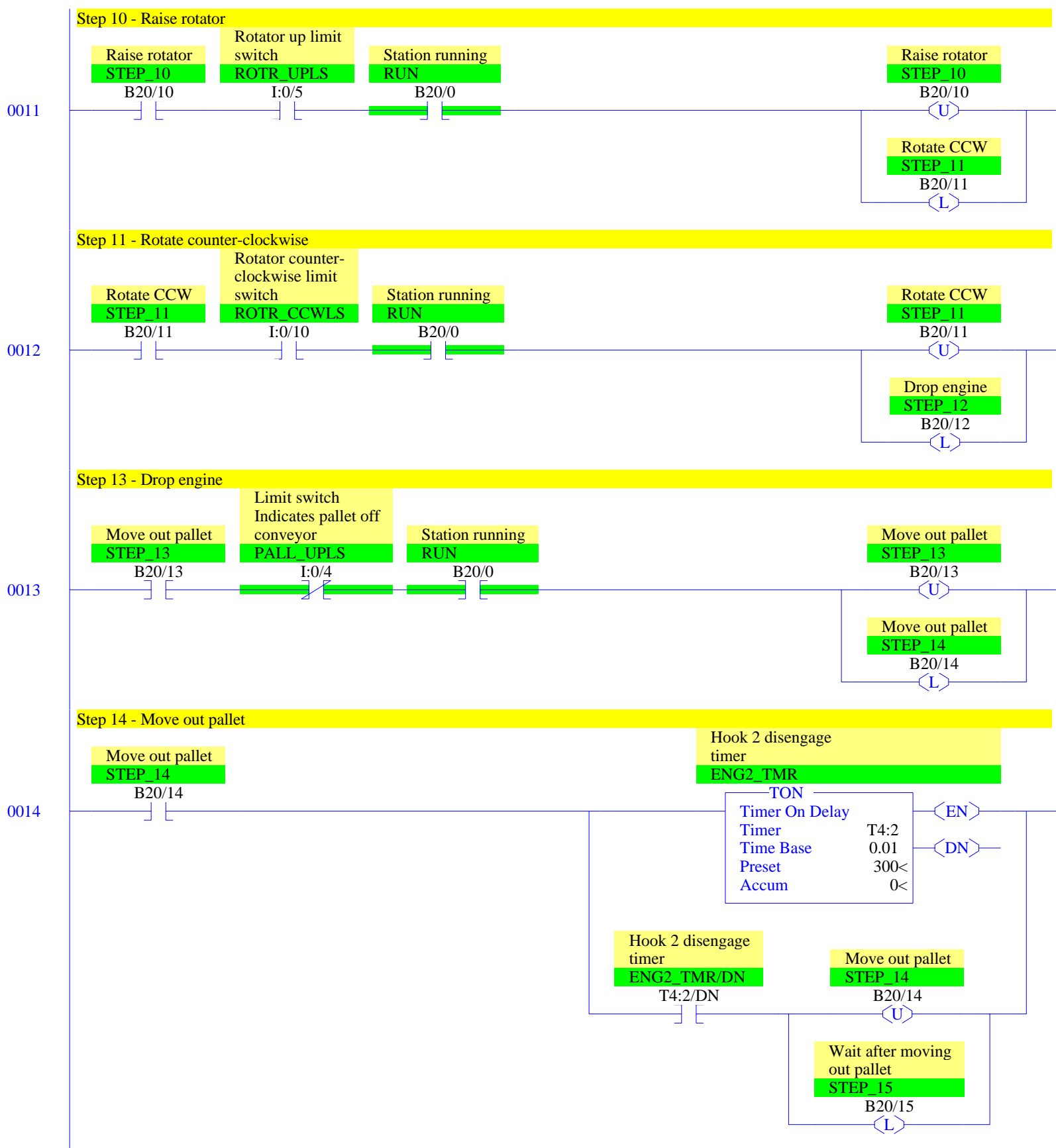
Move to hook 2  
STEP\_2

B20/2

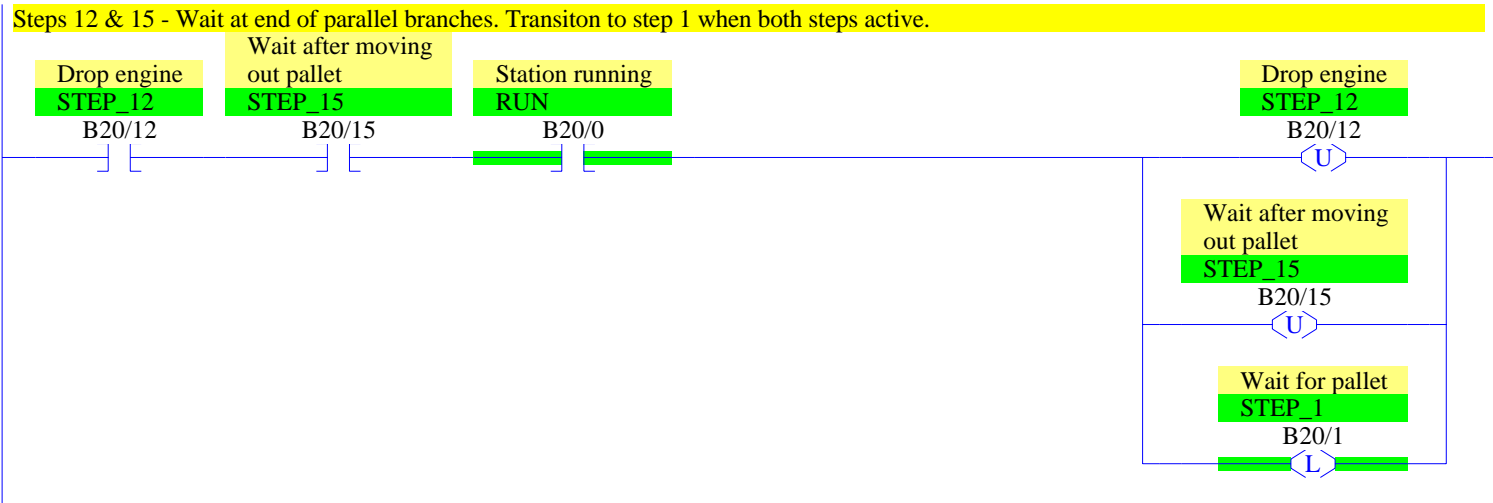
0002

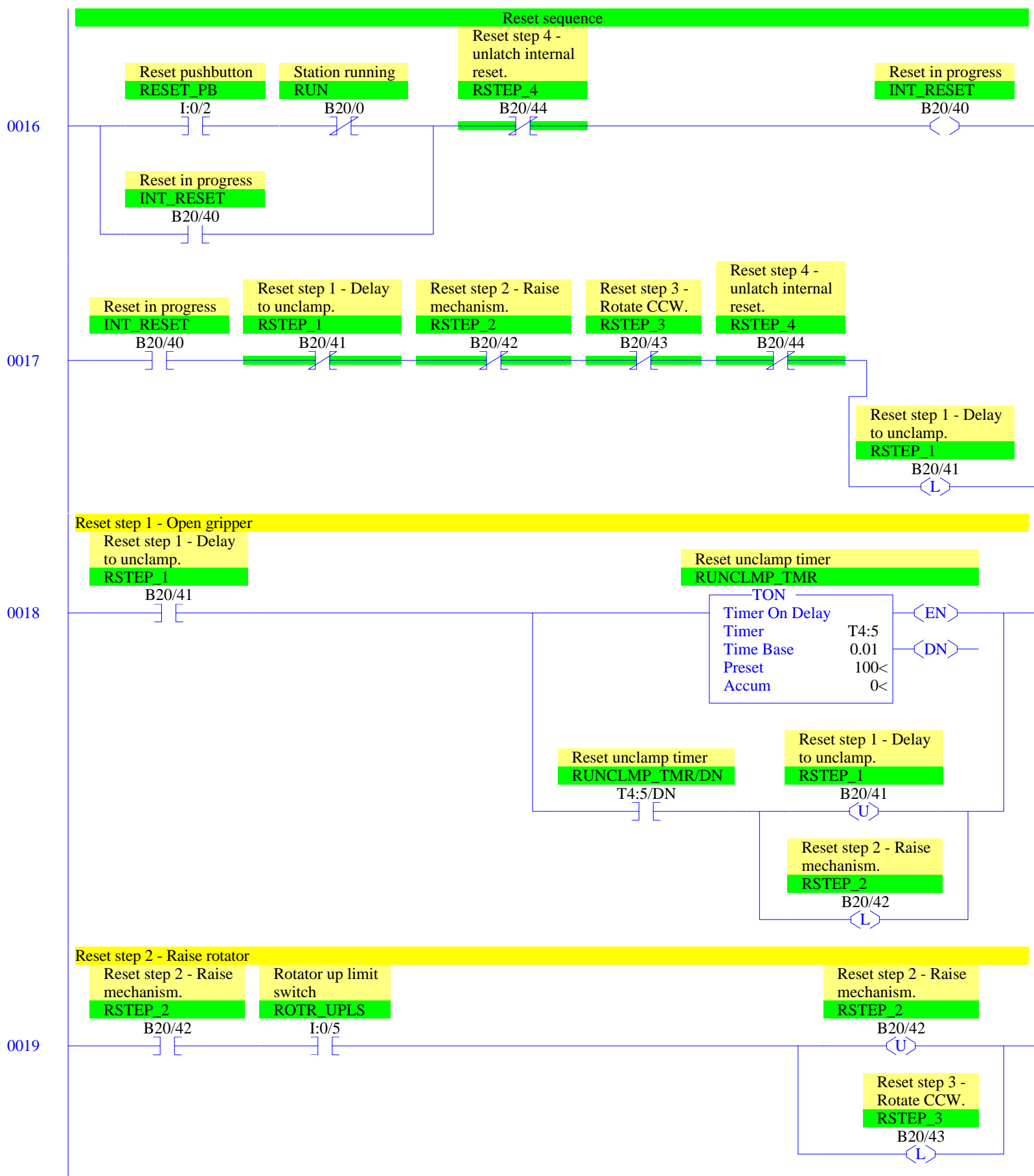


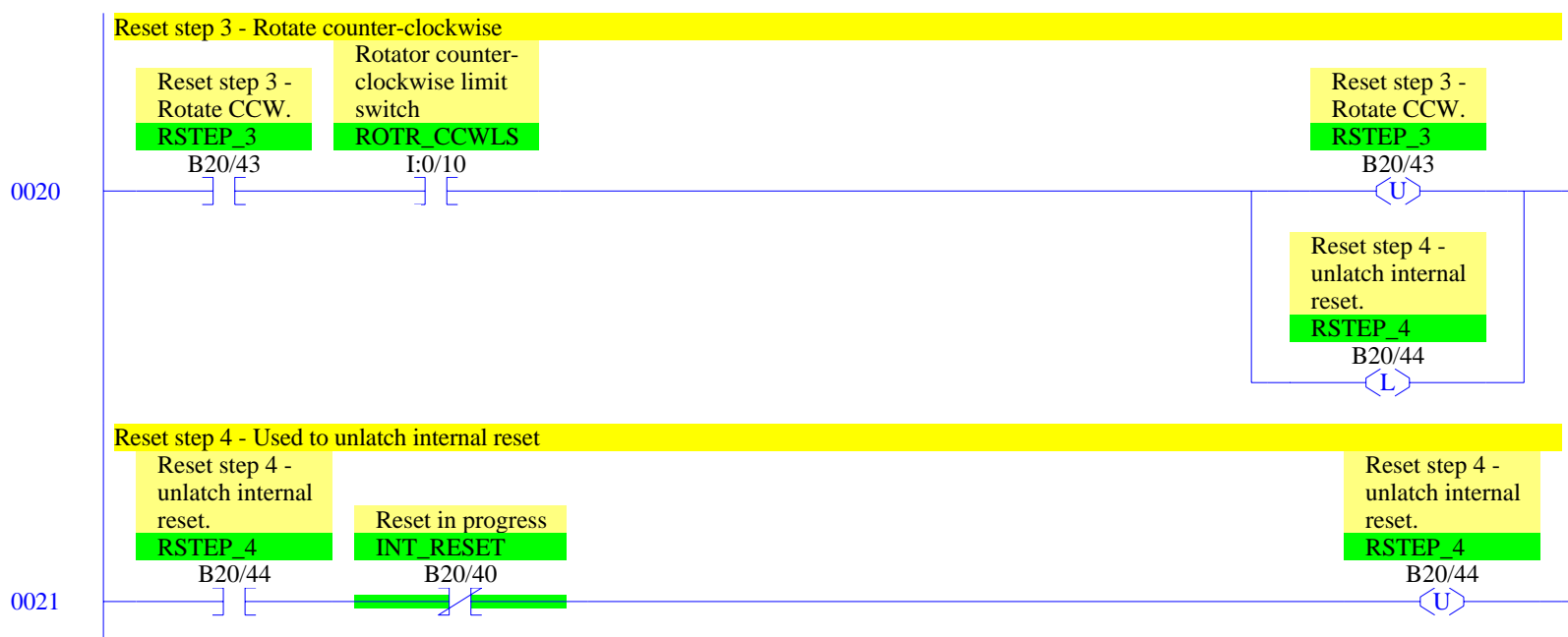




0015







0022

Reset unlatches all normal operation step-in progress bits

Reset in progress

INT\_RESET

B20/40

Wait for pallet

STEP\_1

B20/1

U

Move to hook 2

STEP\_2

B20/2

U

Raise pallet

STEP\_3

B20/3

U

Lower rotator

STEP\_4

B20/4

U

Clamp engine

STEP\_5

B20/5

U

Raise rotator

STEP\_6

B20/6

U

Rotate clockwise

STEP\_7

B20/7

U

Lower rotator

STEP\_8

B20/8

U

Unclamp timer

STEP\_9

B20/9

U

Raise rotator

STEP\_10

B20/10

U

Rotate CCW

STEP\_11

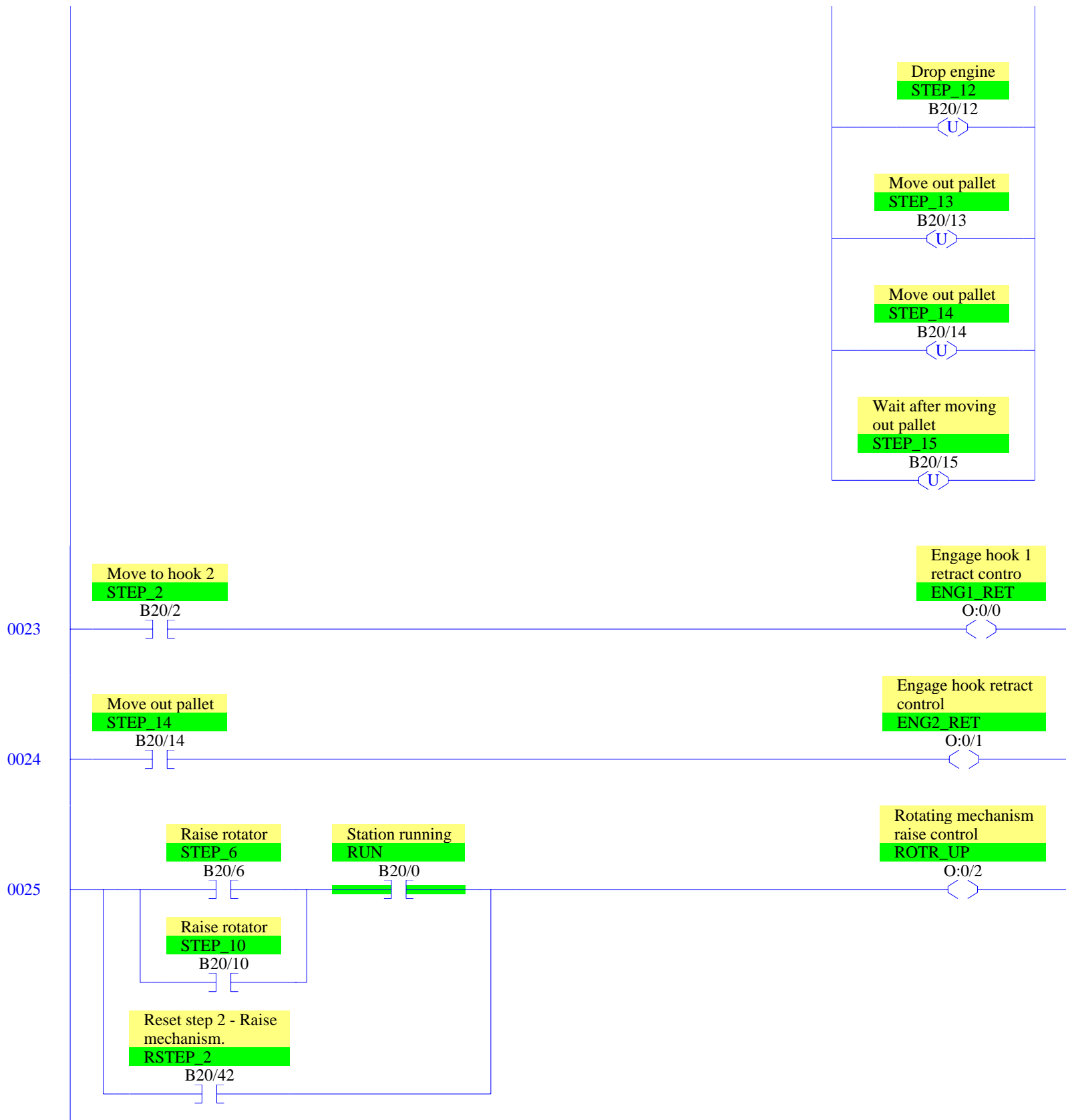
B20/11

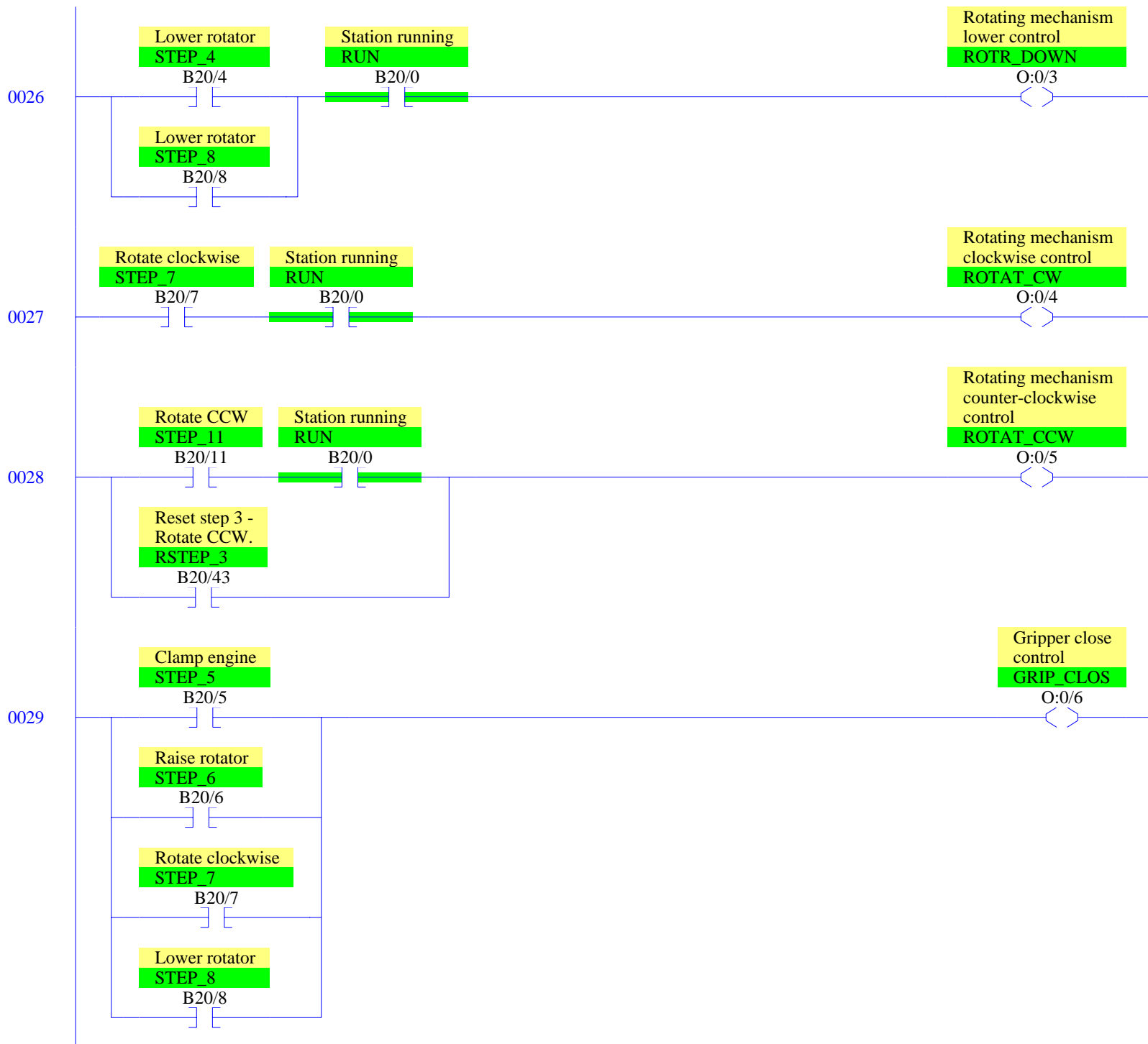
U

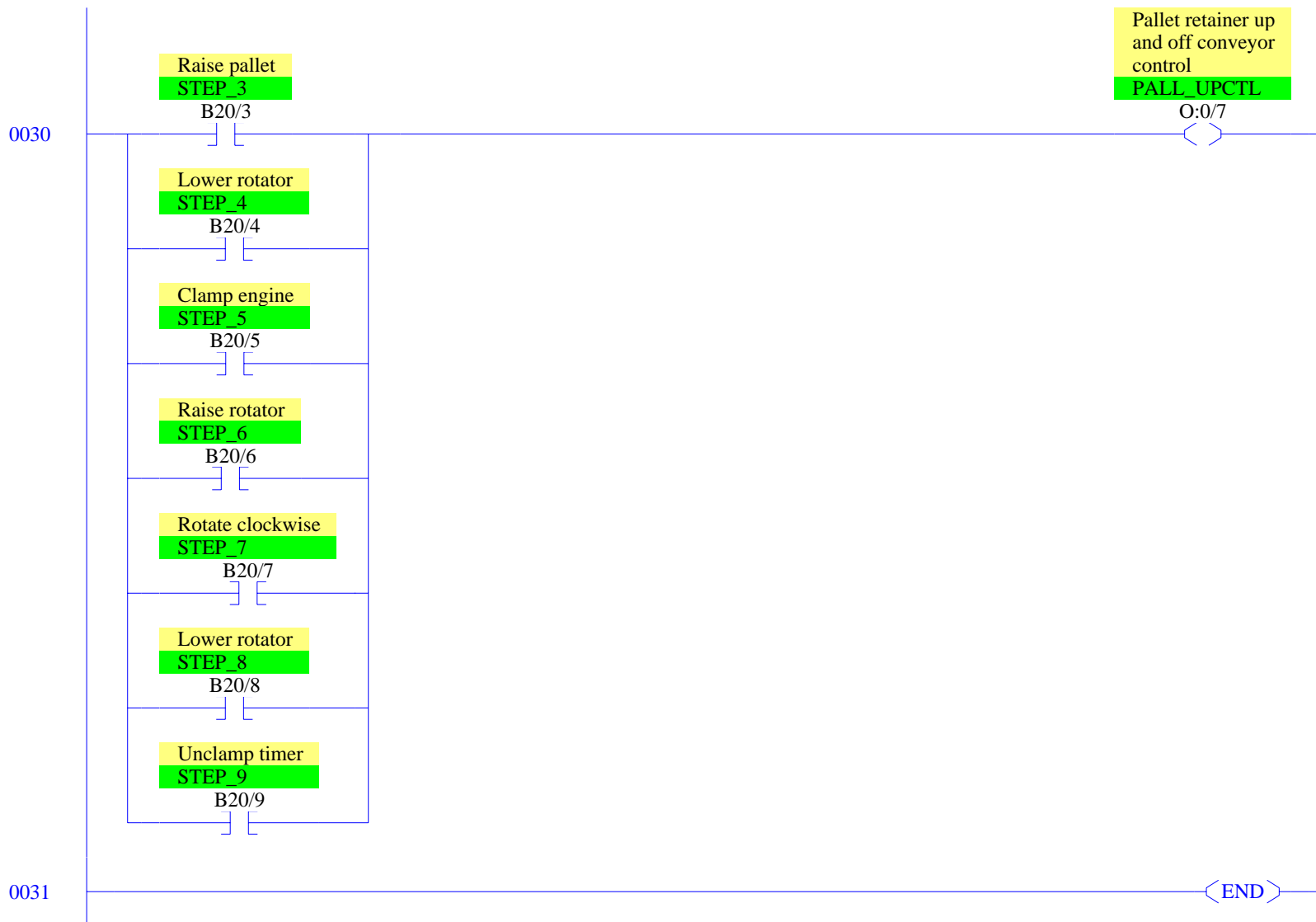
Drop engine

STEP\_12









## RSLogix 500 Cross Reference Report - Sorted by Address

O:0/0	- {ENG1_RET} Engage hook 1 retract contro OTE - File #2 - 23
O:0/1	- {ENG2_RET} Engage hook retract control OTE - File #2 - 24
O:0/2	- {ROTR_UP} Rotating mechanism raise control OTE - File #2 - 25
O:0/3	- {ROTR_DOWN} Rotating mechanism lower control OTE - File #2 - 26
O:0/4	- {ROTAT_CW} Rotating mechanism clockwise control OTE - File #2 - 27
O:0/5	- {ROTAT_CCW} Rotating mechanism counter-clockwise control OTE - File #2 - 28
O:0/6	- {GRIP_CLOS} Gripper close control OTE - File #2 - 29
O:0/7	- {PALL_UPCTL} Pallet retainer up and off conveyor control OTE - File #2 - 30
I:0/0	- {START_PB} Start pushbutton XIC - File #2 - 0
I:0/1	- {STOP_PB} Stop pushbutton XIC - File #2 - 0
I:0/2	- {RESET_PB} Reset pushbutton XIC - File #2 - 16
I:0/3	- {PROX1} Proximity sensor Pallet at engaging hook 1 XIC - File #2 - 2
I:0/4	- {PALL_UPLS} Limit switch Indicates pallet off conveyor XIC - File #2 - 4 XIO - File #2 - 13
I:0/5	- {ROTR_UPLS} Rotator up limit switch XIC - File #2 - 7, 11, 19
I:0/6	- {ROTR_DNLS} Rotator down limit switch XIC - File #2 - 5, 9
I:0/7	- {ROTR_CWLS} Rotator clockwise limit switch XIC - File #2 - 8
I:0/10	- {ROTR_CCWLS} Rotator counter- clockwise limit switch XIC - File #2 - 12, 20
T4:1	- {ENG1_TMR} Hook 1 engage timer TON - File #2 - 3
T4:1/DN	- XIC - File #2 - 3
T4:2	- {ENG2_TMR} Hook 2 disengage timer TON - File #2 - 14
T4:2/DN	- XIC - File #2 - 14
T4:3	- {CLMP_TMR} Clamp timer TON - File #2 - 6
T4:3/DN	- XIC - File #2 - 6
T4:4	- {UNCLMP_TMR} Unclamp timer TON - File #2 - 10
T4:4/DN	- XIC - File #2 - 10
T4:5	- {RUNCLMP_TMR} Reset unclamp timer TON - File #2 - 18
T4:5/DN	- XIC - File #2 - 18
B20/0	- {RUN} Station running OTE - File #2 - 0 XIC - File #2 - 0, 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 25 26, 27, 28 XIO - File #2 - 16
B20/1	- {STEP_1} Wait for pallet OTL - File #2 - 1, 15 OTU - File #2 - 2, 22 XIC - File #2 - 2 XIO - File #2 - 1
B20/2	- {STEP_2} Move to hook 2 OTL - File #2 - 2 OTU - File #2 - 3, 22 XIC - File #2 - 3, 23 XIO - File #2 - 1
B20/3	- {STEP_3} Raise pallet

## RSLogix 500 Cross Reference Report - Sorted by Address

	OTL - File #2 - 3
	OTU - File #2 - 4, 22
	XIC - File #2 - 4, 30
	XIO - File #2 - 1
B20/4	- {STEP_4} Lower rotator
	OTL - File #2 - 4
	OTU - File #2 - 5, 22
	XIC - File #2 - 5, 26, 30
	XIO - File #2 - 1
B20/5	- {STEP_5} Clamp engine
	OTL - File #2 - 5
	OTU - File #2 - 6, 22
	XIC - File #2 - 6, 29, 30
	XIO - File #2 - 1
B20/6	- {STEP_6} Raise rotator
	OTL - File #2 - 6
	OTU - File #2 - 7, 22
	XIC - File #2 - 7, 25, 29, 30
	XIO - File #2 - 1
B20/7	- {STEP_7} Rotate clockwise
	OTL - File #2 - 7
	OTU - File #2 - 8, 22
	XIC - File #2 - 8, 27, 29, 30
	XIO - File #2 - 1
B20/8	- {STEP_8} Lower rotator
	OTL - File #2 - 8
	OTU - File #2 - 9, 22
	XIC - File #2 - 9, 26, 29, 30
	XIO - File #2 - 1
B20/9	- {STEP_9} Unclamp timer
	OTL - File #2 - 9
	OTU - File #2 - 10, 22
	XIC - File #2 - 10, 30
	XIO - File #2 - 1
B20/10	- {STEP_10} Raise rotator
	OTL - File #2 - 10
	OTU - File #2 - 11, 22
	XIC - File #2 - 11, 25
	XIO - File #2 - 1
B20/11	- {STEP_11} Rotate CCW
	OTL - File #2 - 11
	OTU - File #2 - 12, 22
	XIC - File #2 - 12, 28
	XIO - File #2 - 1
B20/12	- {STEP_12} Drop engine
	OTL - File #2 - 12
	OTU - File #2 - 15, 22
	XIC - File #2 - 15
	XIO - File #2 - 1
B20/13	- {STEP_13} Move out pallet
	OTL - File #2 - 10
	OTU - File #2 - 13, 22
	XIC - File #2 - 13
	XIO - File #2 - 1
B20/14	- {STEP_14} Move out pallet
	OTL - File #2 - 13
	OTU - File #2 - 14, 22
	XIC - File #2 - 14, 24
	XIO - File #2 - 1
B20/15	- {STEP_15} Wait after moving out pallet
	OTL - File #2 - 14
	OTU - File #2 - 15, 22
	XIC - File #2 - 15
	XIO - File #2 - 1
B20/40	- {INT_RESET} Reset in progress
	OTE - File #2 - 16

## RSLogix 500 Cross Reference Report - Sorted by Address

	XIC - File #2 - 16, 17, 22
	XIO - File #2 - 0, 21
B20/41	- {RSTEP_1} Reset step 1 - Delay to unclamp.
	OTL - File #2 - 17
	OTU - File #2 - 18
	XIC - File #2 - 18
	XIO - File #2 - 17
B20/42	- {RSTEP_2} Reset step 2 - Raise mechanism.
	OTL - File #2 - 18
	OTU - File #2 - 19
	XIC - File #2 - 19, 25
	XIO - File #2 - 17
B20/43	- {RSTEP_3} Reset step 3 - Rotate CCW.
	OTL - File #2 - 19
	OTU - File #2 - 20
	XIC - File #2 - 20, 28
	XIO - File #2 - 17
B20/44	- {RSTEP_4} Reset step 4 - unlatch internal reset.
	OTL - File #2 - 20
	OTU - File #2 - 21
	XIC - File #2 - 21
	XIO - File #2 - 16, 17