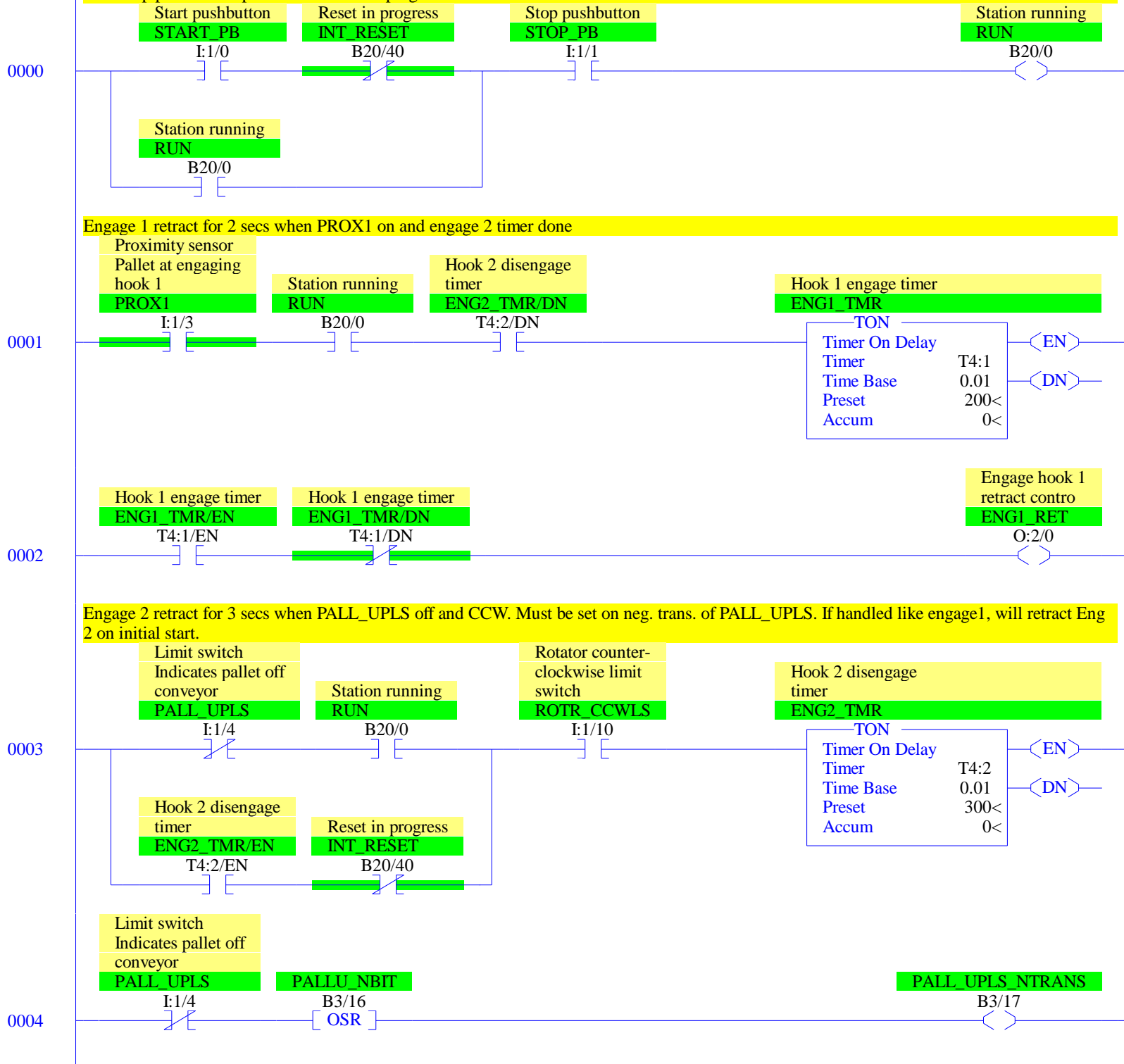
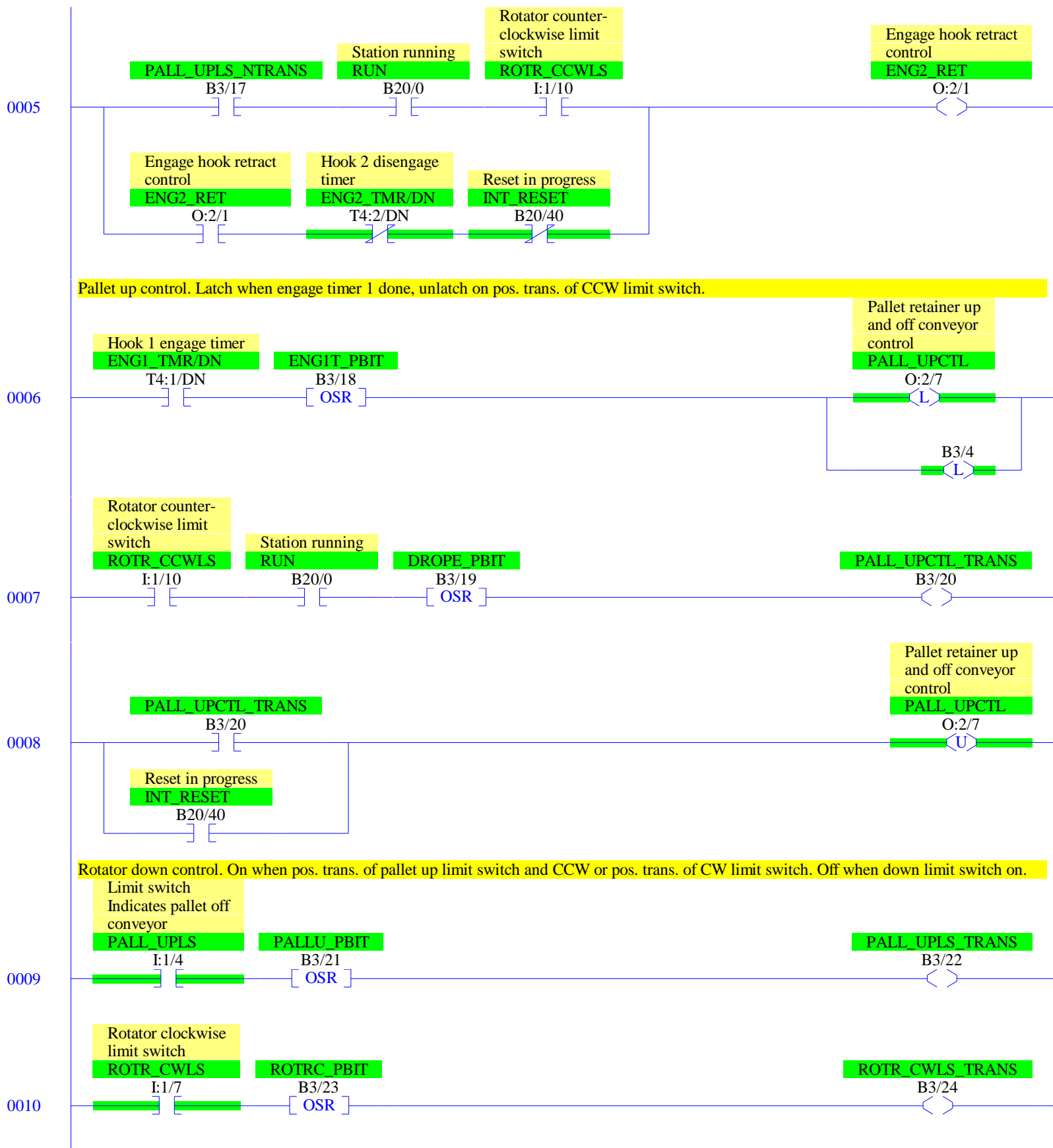


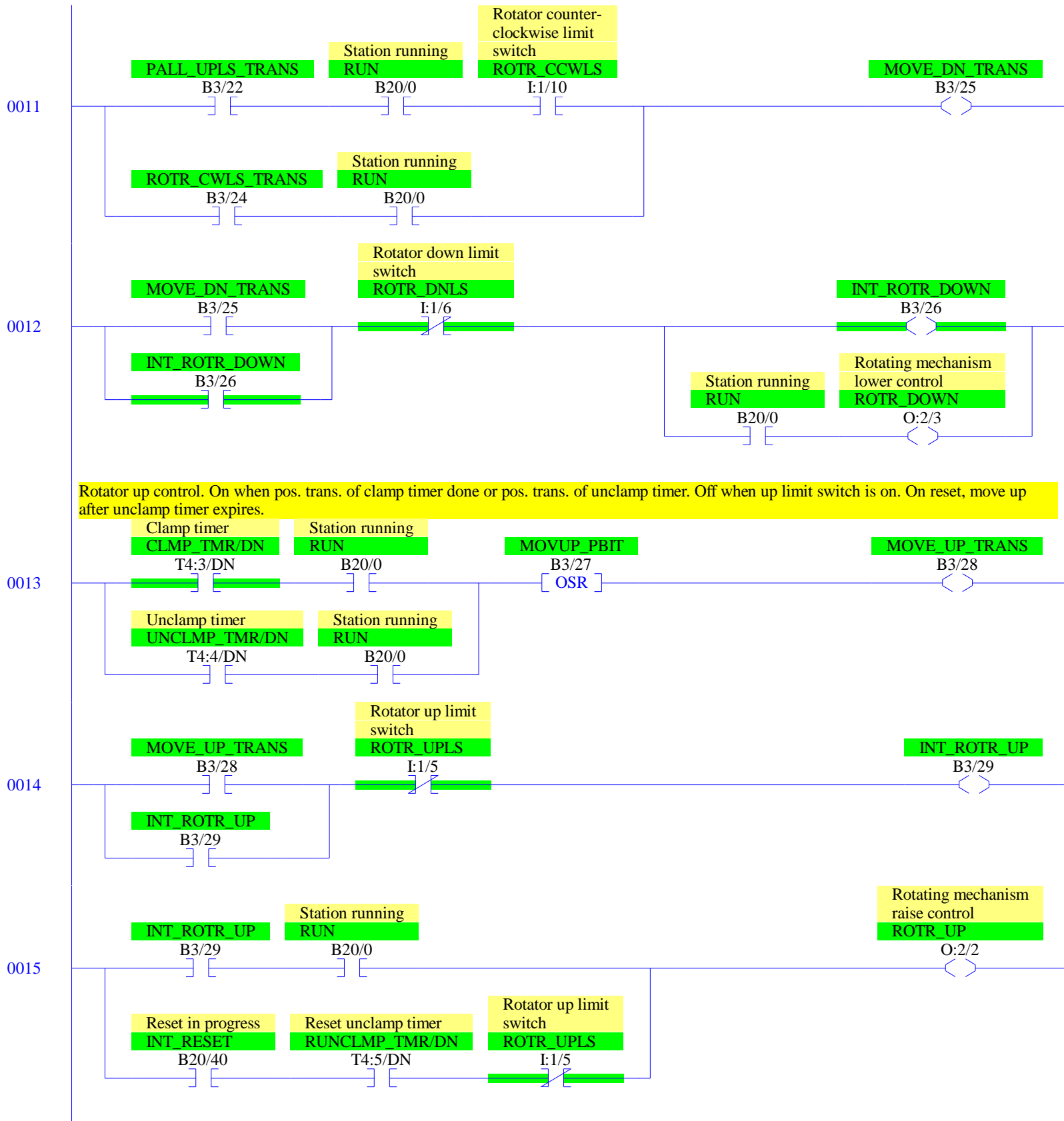
Example 6.7 - Engine Inverter Control - Unstructured Sequence with Simulation

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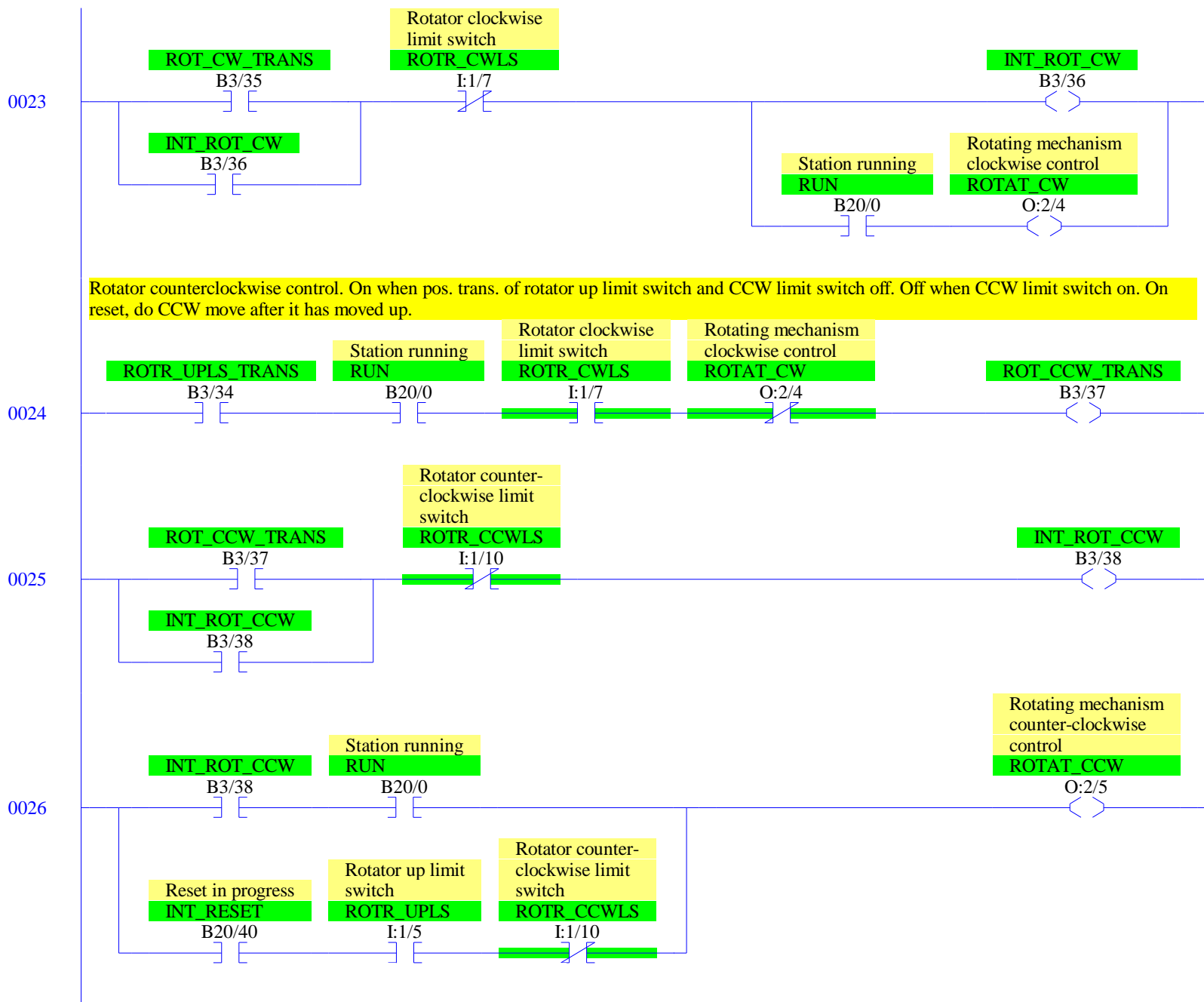
Start/stop/pause. Start prevented if reset in progress.

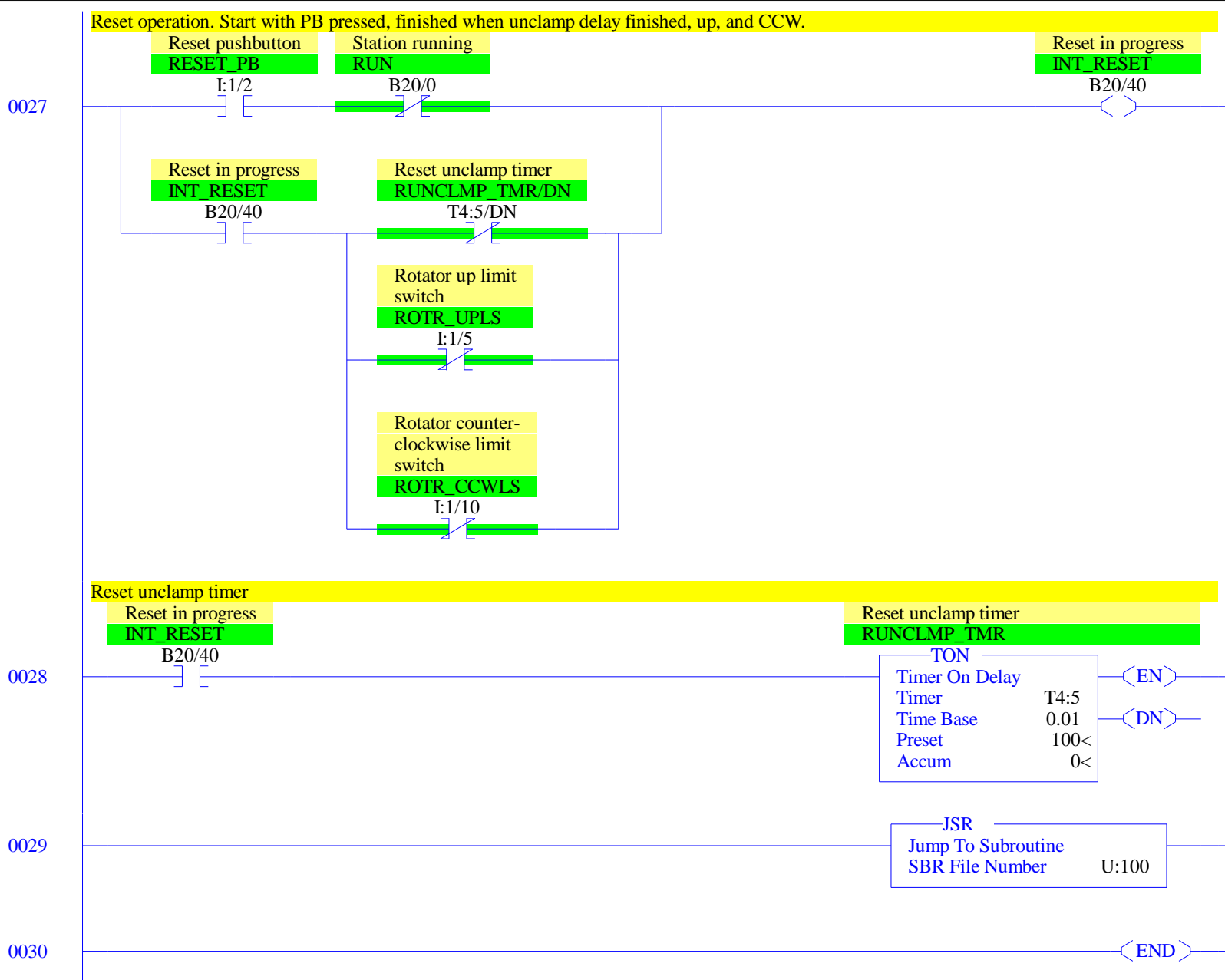










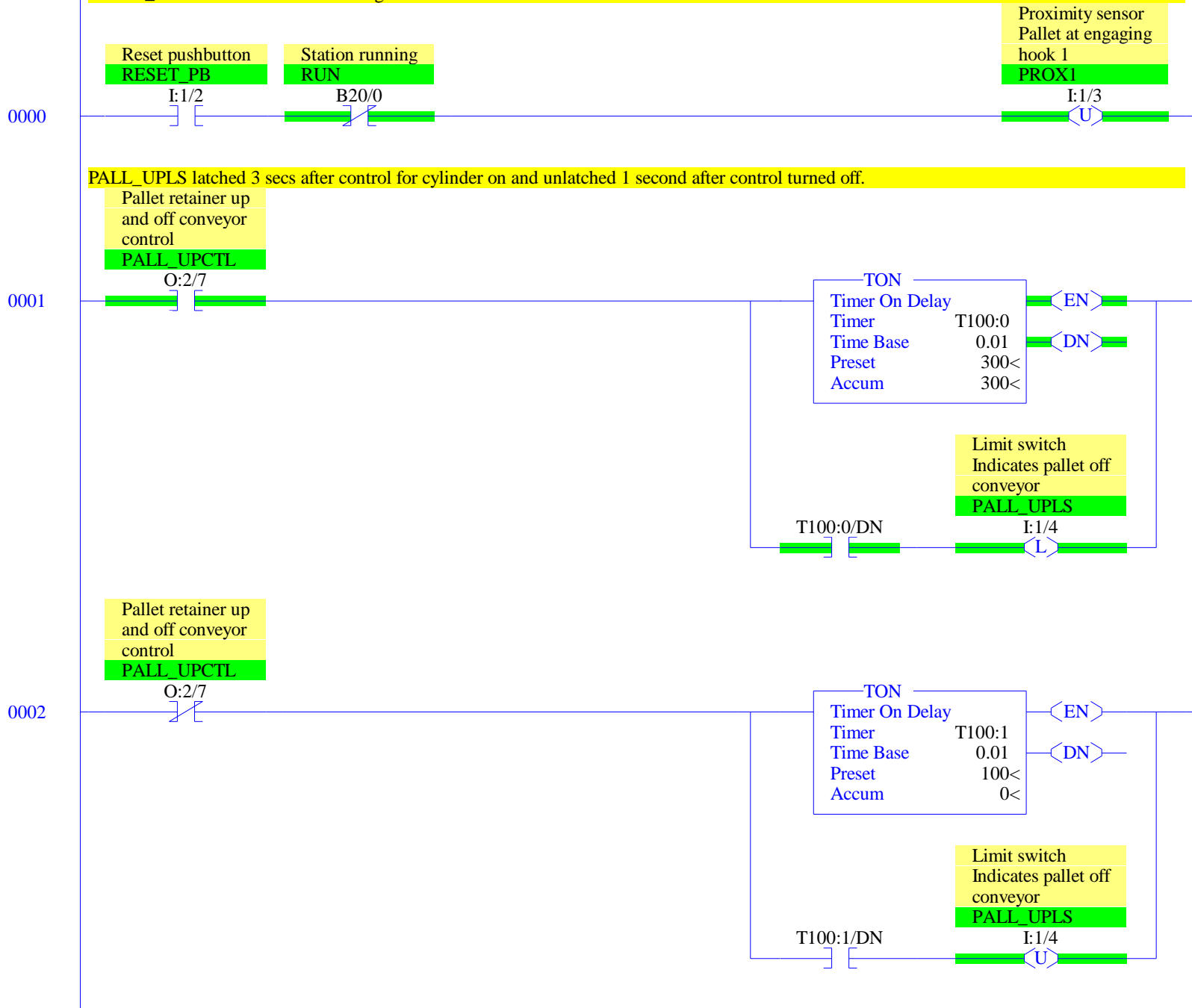


Tieback Logic for Simulation of engine inverter

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This version uses RESET_PB to generate first engine. Each subsequent engine appears 5 seconds after second engage hook goes back up.

RESET_PB latches PROX1 so that engine is at first station when run.



Up/Down limit switches.

Down LS latched 3 secs after down control active and unlatched immediately when up control active.

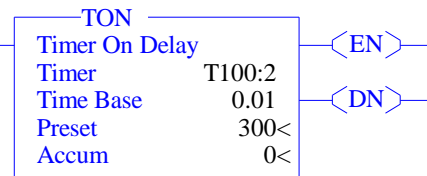
Up LS latched 3 secs after up control active and unlatched immediately when down control active.

Rotating mechanism

lower control

ROTR_DOWN

O:2/3



Rotator down limit
switch

ROTR_DNLS

T100:2/DN

I:1/6

<L>

Rotator up limit
switch

ROTR_UPLS

I:1/5

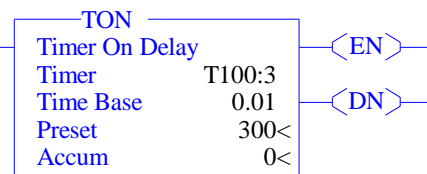
<U>

Rotating mechanism

raise control

ROTR_UP

O:2/2



Rotator up limit
switch

ROTR_UPLS

T100:3/DN

I:1/5

<L>

Rotator down limit
switch

ROTR_DNLS

I:1/6

<U>

Clockwise/Counterclockwise limit switches.

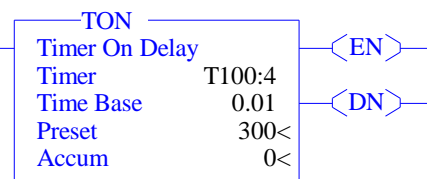
CW LS latched 3 secs after CW control active and unlatched immediately when CCW control active.

CCW LS latched 3 secs after CCW control active and unlatched immediately when CW control active.

Rotating mechanism
clockwise control

ROTAT_CW

O:2/4



T100:4/DN

Rotator clockwise
limit switch

ROTR_CWLS

I:1/7

Rotator counter-
clockwise limit
switch

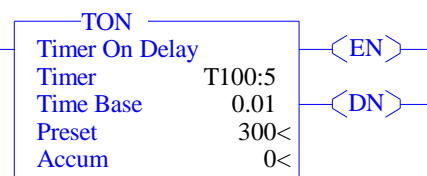
ROTR_CCWLS

I:1/10

Rotating mechanism
counter-clockwise
control

ROTAT_CCW

O:2/5



T100:5/DN

Rotator counter-
clockwise limit
switch

ROTR_CCWLS

I:1/10

Rotator clockwise
limit switch

ROTR_CWLS

I:1/7

Simulate Pallet Prox

Latch it on 6 seconds after one has left the station.

Latch it off 3 second after new one retained.

Station running

RUN

B20/0

Engage hook retract
control

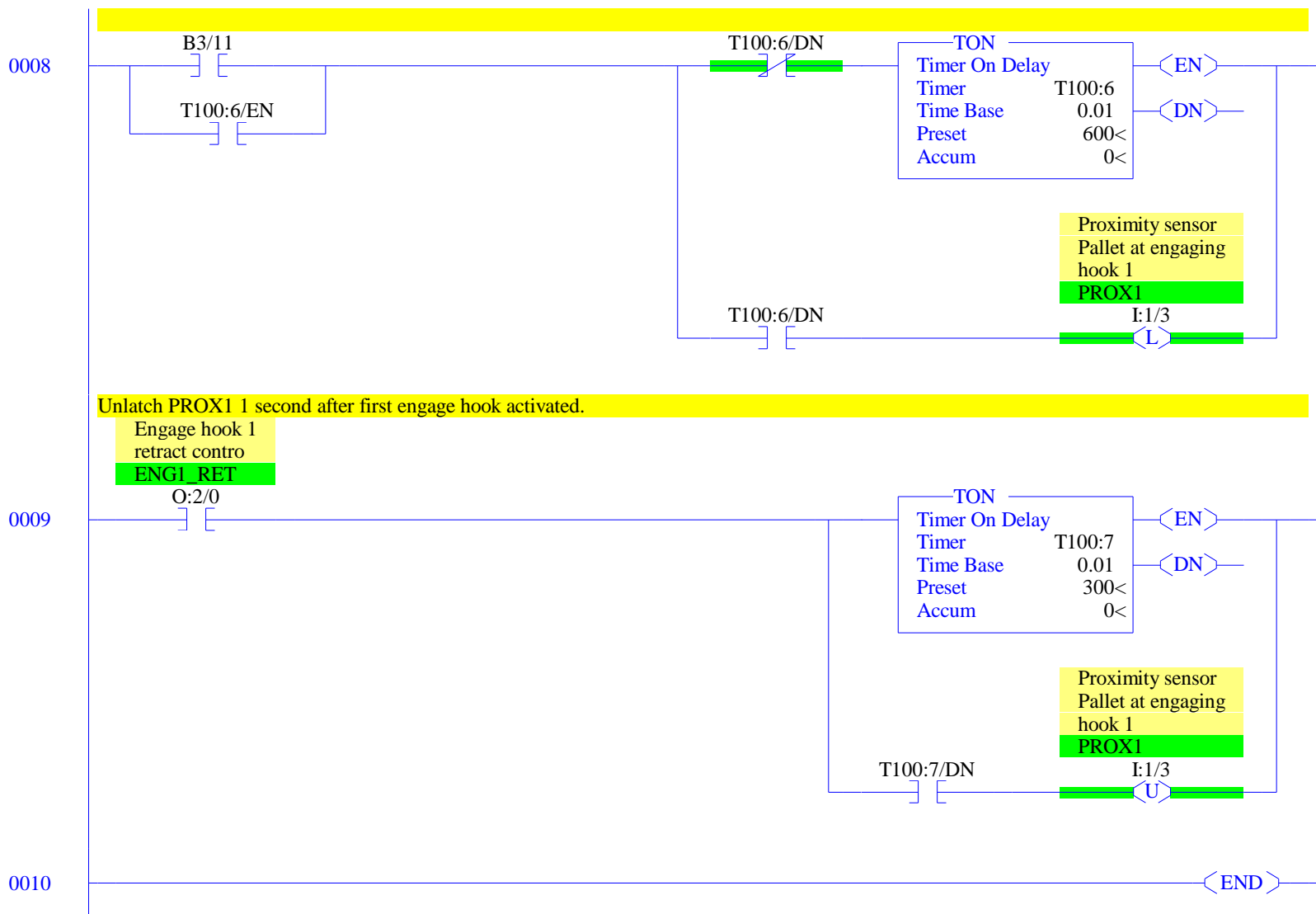
ENG2_RET

O:2/1

B3/10

OSR

B3/11



RSLogix 500 Cross Reference Report - Sorted by Address

O:2/0	- {ENG1_RET} Engage hook 1 retract contro
	OTE - File #2 - 2
	XIC - File #100 SIMULATE - 9
O:2/1	- {ENG2_RET} Engage hook retract control
	OTE - File #2 - 5
	XIC - File #2 - 5
	XIO - File #100 SIMULATE - 7
O:2/2	- {ROTR_UP} Rotating mechanism raise control
	OTE - File #2 - 15
	XIC - File #100 SIMULATE - 4
O:2/3	- {ROTR_DOWN} Rotating mechanism lower control
	OTE - File #2 - 12
	XIC - File #100 SIMULATE - 3
O:2/4	- {ROTAT_CW} Rotating mechanism clockwise control
	OTE - File #2 - 23
	XIC - File #100 SIMULATE - 5
	XIO - File #2 - 24
O:2/5	- {ROTAT_CCW} Rotating mechanism counter-clockwise control
	OTE - File #2 - 26
	XIC - File #100 SIMULATE - 6
	XIO - File #2 - 22
O:2/6	- {GRIP_CLOS} Gripper close control
	OTL - File #2 - 16
	OTU - File #2 - 18
	XIC - File #2 - 19
	XIO - File #2 - 20
O:2/7	- {PALL_UPCTL} Pallet retainer up and off conveyor control
	OTL - File #2 - 6
	OTU - File #2 - 8
	XIC - File #100 SIMULATE - 1
	XIO - File #100 SIMULATE - 2
I:1/0	- {START_PB} Start pushbutton
	XIC - File #2 - 0
I:1/1	- {STOP_PB} Stop pushbutton
	XIC - File #2 - 0
I:1/2	- {RESET_PB} Reset pushbutton
	XIC - File #2 - 27
	File #100 SIMULATE - 0
I:1/3	- {PROX1} Proximity sensor Pallet at engaging hook 1
	OTL - File #100 SIMULATE - 8
	OTU - File #100 SIMULATE - 0, 9
	XIC - File #2 - 1
I:1/4	- {PALL_UPLS} Limit switch Indicates pallet off conveyor
	OTL - File #100 SIMULATE - 1
	OTU - File #100 SIMULATE - 2
	XIC - File #2 - 9
	XIO - File #2 - 3, 4
I:1/5	- {ROTR_UPLS} Rotator up limit switch
	OTL - File #100 SIMULATE - 4
	OTU - File #100 SIMULATE - 3
	XIC - File #2 - 21, 26
	XIO - File #2 - 14, 15, 27
I:1/6	- {ROTR_DNLS} Rotator down limit switch
	OTL - File #100 SIMULATE - 3
	OTU - File #100 SIMULATE - 4
	XIC - File #2 - 16, 17
	XIO - File #2 - 12
I:1/7	- {ROTR_CWLS} Rotator clockwise limit switch
	OTL - File #100 SIMULATE - 5
	OTU - File #100 SIMULATE - 6
	XIC - File #2 - 10, 17, 24
	XIO - File #2 - 23
I:1/10	- {ROTR_CCWLS} Rotator counter- clockwise limit switch
	OTL - File #100 SIMULATE - 6
	OTU - File #100 SIMULATE - 5
	XIC - File #2 - 3, 5, 7, 11, 16, 22

RSLogix 500 Cross Reference Report - Sorted by Address

	XIO - File #2 - 25, 26, 27
B3:0/4	- OTL - File #2 - 6
B3:0/10	- OSR - File #100 SIMULATE - 7
B3:0/11	- OTE - File #100 SIMULATE - 7
	XIC - File #100 SIMULATE - 8
B3:1/0	- {PALLU_NBIT}
	OSR - File #2 - 4
B3:1/1	- {PALL_UPLS_NTRANS}
	OTE - File #2 - 4
	XIC - File #2 - 5
B3:1/2	- {ENG1T_PBIT}
	OSR - File #2 - 6
B3:1/3	- {DROPE_PBIT}
	OSR - File #2 - 7
B3:1/4	- {PALL_UPCTL_TRANS}
	OTE - File #2 - 7
	XIC - File #2 - 8
B3:1/5	- {PALLU_PBIT}
	OSR - File #2 - 9
B3:1/6	- {PALL_UPLS_TRANS}
	OTE - File #2 - 9
	XIC - File #2 - 11
B3:1/7	- {ROTRC_PBIT}
	OSR - File #2 - 10
B3:1/8	- {ROTR_CWLS_TRANS}
	OTE - File #2 - 10
	XIC - File #2 - 11
B3:1/9	- {MOVE_DN_TRANS}
	OTE - File #2 - 11
	XIC - File #2 - 12
B3:1/10	- {INT_ROT_R_DOWN}
	OTE - File #2 - 12
	XIC - File #2 - 12
B3:1/11	- {MOVUP_PBIT}
	OSR - File #2 - 13
B3:1/12	- {MOVE_UP_TRANS}
	OTE - File #2 - 13
	XIC - File #2 - 14
B3:1/13	- {INT_ROT_R_UP}
	OTE - File #2 - 14
	XIC - File #2 - 14, 15
B3:1/14	- {GRIPC_PBIT}
	OSR - File #2 - 16
B3:1/15	- {GRIPO_PBIT}
	OSR - File #2 - 17
B3:2/0	- {OPEN_GRIP_TRANS}
	OTE - File #2 - 17
	XIC - File #2 - 18
B3:2/1	- {ROTU_PBIT}
	OSR - File #2 - 21
B3:2/2	- {ROTR_UPLS_TRANS}
	OTE - File #2 - 21
	XIC - File #2 - 22, 24
B3:2/3	- {ROT_CW_TRANS}
	OTE - File #2 - 22
	XIC - File #2 - 23
B3:2/4	- {INT_ROT_CW}
	OTE - File #2 - 23
	XIC - File #2 - 23
B3:2/5	- {ROT_CCW_TRANS}
	OTE - File #2 - 24
	XIC - File #2 - 25
B3:2/6	- {INT_ROT_CCW}
	OTE - File #2 - 25
	XIC - File #2 - 25, 26
T4:1	- {ENG1_TMR} Hook 1 engage timer

RSLogix 500 Cross Reference Report - Sorted by Address

```

T4:1/DN      TON - File #2 - 1
              - XIC - File #2 - 6
              XIO - File #2 - 2
T4:1/EN      - XIC - File #2 - 2
T4:2         - {ENG2_TMR} Hook 2 disengage timer
              TON - File #2 - 3
T4:2/DN      - XIC - File #2 - 1
              XIO - File #2 - 5
T4:2/EN      - XIC - File #2 - 3
T4:3         - {CLMP_TMR} Clamp timer
              TON - File #2 - 19
T4:3/DN      - XIC - File #2 - 13
T4:4         - {UNCLMP_TMR} Unclamp timer
              TON - File #2 - 20
T4:4/DN      - XIC - File #2 - 13
T4:5         - {RUNCLMP_TMR} Reset unclamp timer
              TON - File #2 - 28
T4:5/DN      - XIC - File #2 - 15
              XIO - File #2 - 27
B20:0/0      - {RUN} Station running
              OTE - File #2 - 0
              XIC - File #2 - 0, 1, 3, 5, 7, 11, 12, 13, 15, 16, 17, 22, 23
                  24, 26
                  File #100 SIMULATE - 7
              XIO - File #2 - 27
                  File #100 SIMULATE - 0
B20:2/8      - {INT_RESET} Reset in progress
              OTE - File #2 - 27
              XIC - File #2 - 8, 15, 18, 26, 27, 28
              XIO - File #2 - 0, 3, 5
T100:0       - TON - File #100 SIMULATE - 1
T100:0/DN    - XIC - File #100 SIMULATE - 1
T100:1       - TON - File #100 SIMULATE - 2
T100:1/DN    - XIC - File #100 SIMULATE - 2
T100:2       - TON - File #100 SIMULATE - 3
T100:2/DN    - XIC - File #100 SIMULATE - 3
T100:3       - TON - File #100 SIMULATE - 4
T100:3/DN    - XIC - File #100 SIMULATE - 4
T100:4       - TON - File #100 SIMULATE - 5
T100:4/DN    - XIC - File #100 SIMULATE - 5
T100:5       - TON - File #100 SIMULATE - 6
T100:5/DN    - XIC - File #100 SIMULATE - 6
T100:6       - TON - File #100 SIMULATE - 8
T100:6/DN    - XIC - File #100 SIMULATE - 8
              XIO - File #100 SIMULATE - 8
T100:6/EN    - XIC - File #100 SIMULATE - 8
T100:7       - TON - File #100 SIMULATE - 9
T100:7/DN    - XIC - File #100 SIMULATE - 9
U:100        - JSR - File #2 - 29

```