

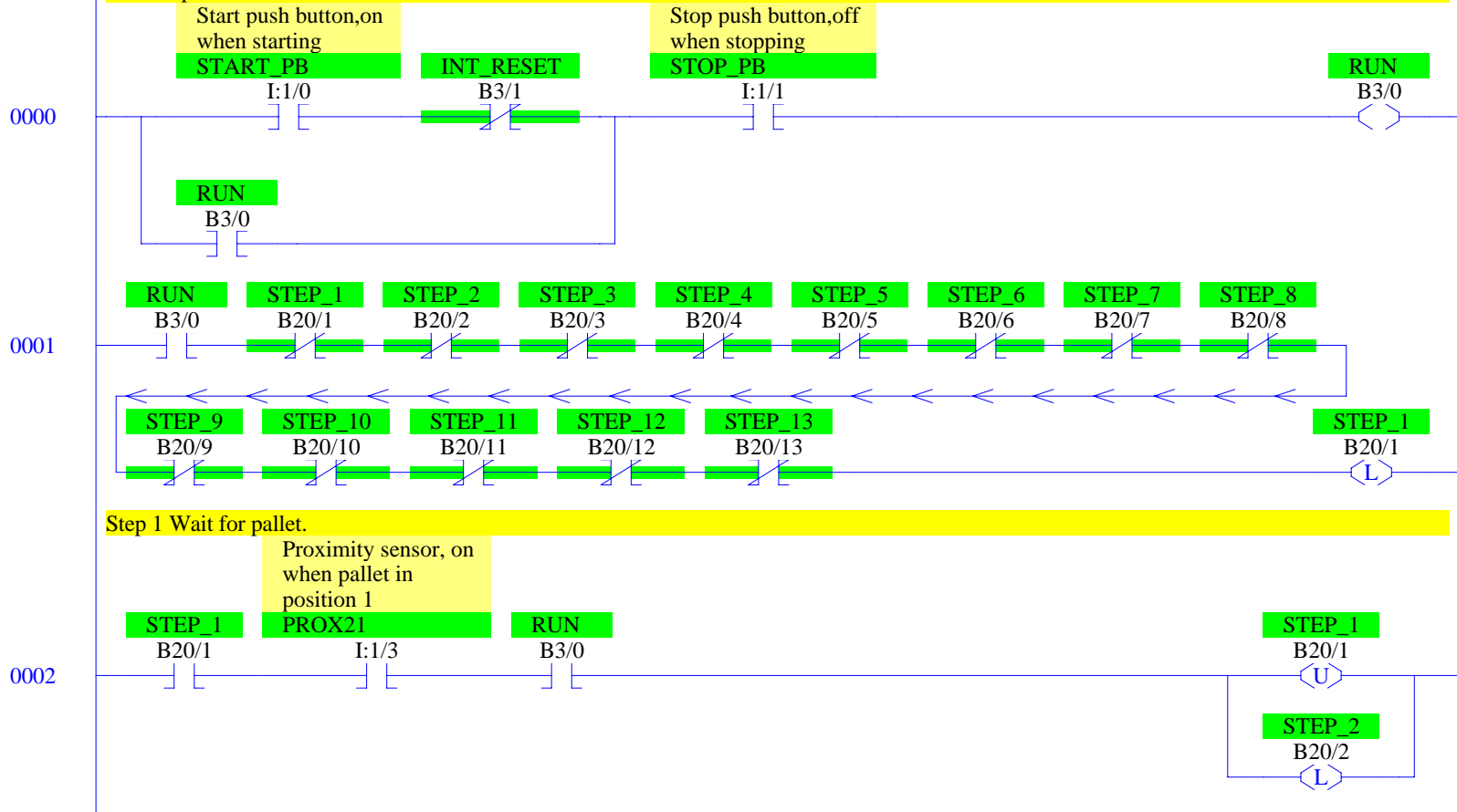
## Revised Bolt Driving Station Control

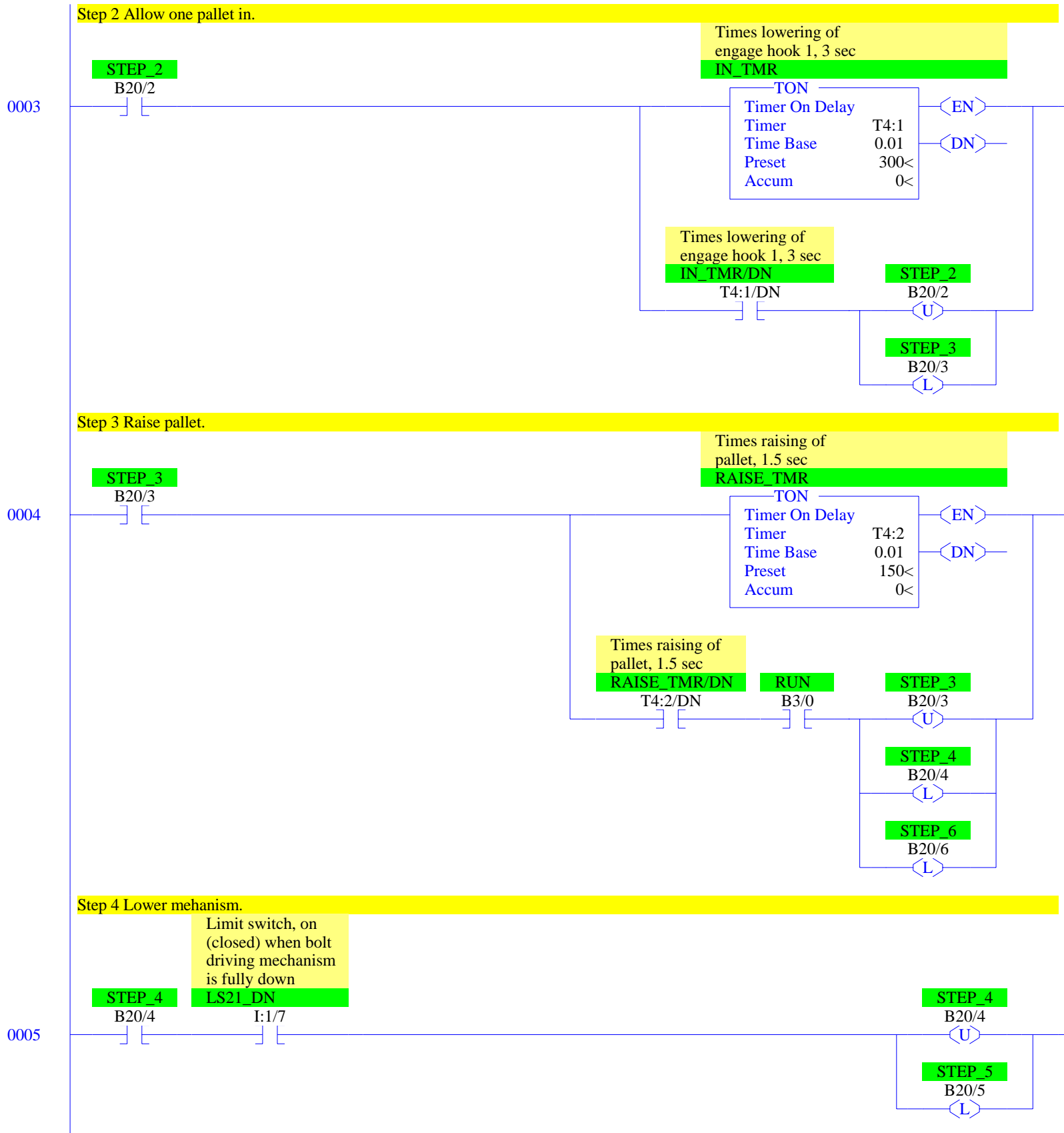
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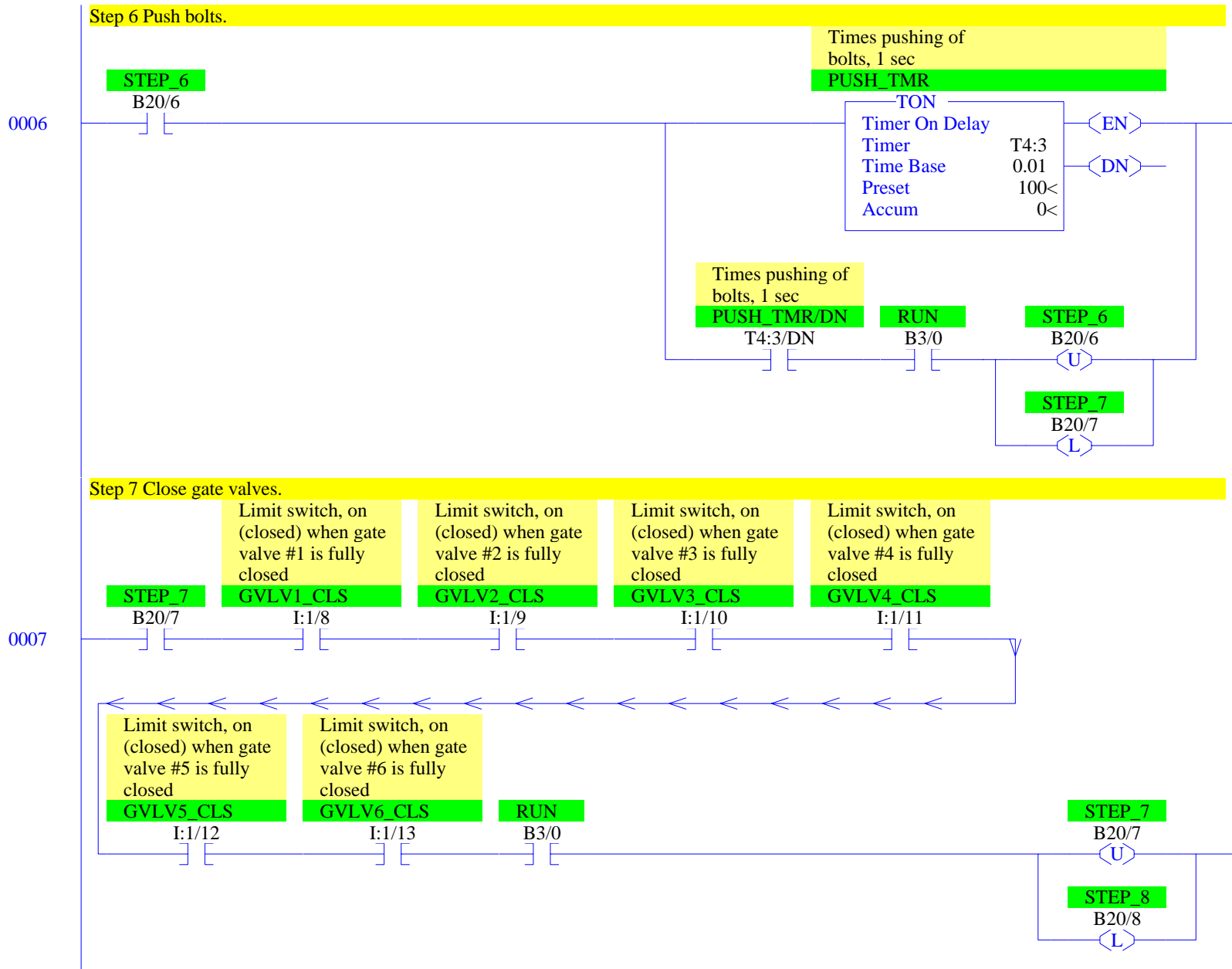
Additional internal memory:

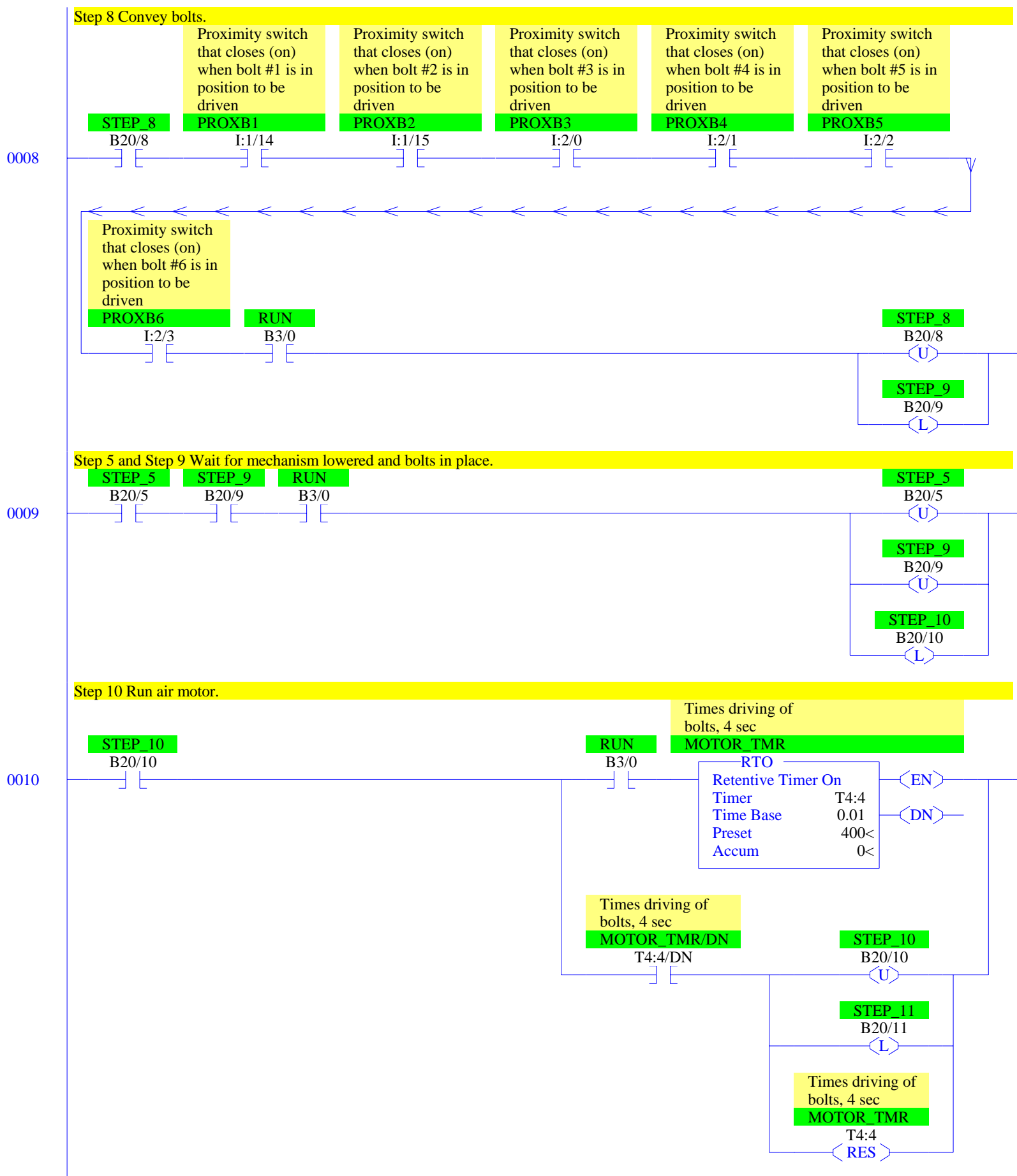
Symbol	Address	
RUN	B3/0	On while station running
INT_RESET	B3/1	Internal reset
STEP_1 to STEP_12	B20/1 to B20/12	Step-in-progress bits
IN_TMR	T4:1	Times engage cyl for bringing in pallet
RAISE_TMR	T4:2	Times raise of pallet
PUSH_TMR	T4:3	Times push of bolts
MOTOR_TMR	T4:4	Times air motor rotation
LOWER_TMR	T4:5	Times lower of pallet
OUT_TMR	T4:6	Times engage cyl for allowing out pallet

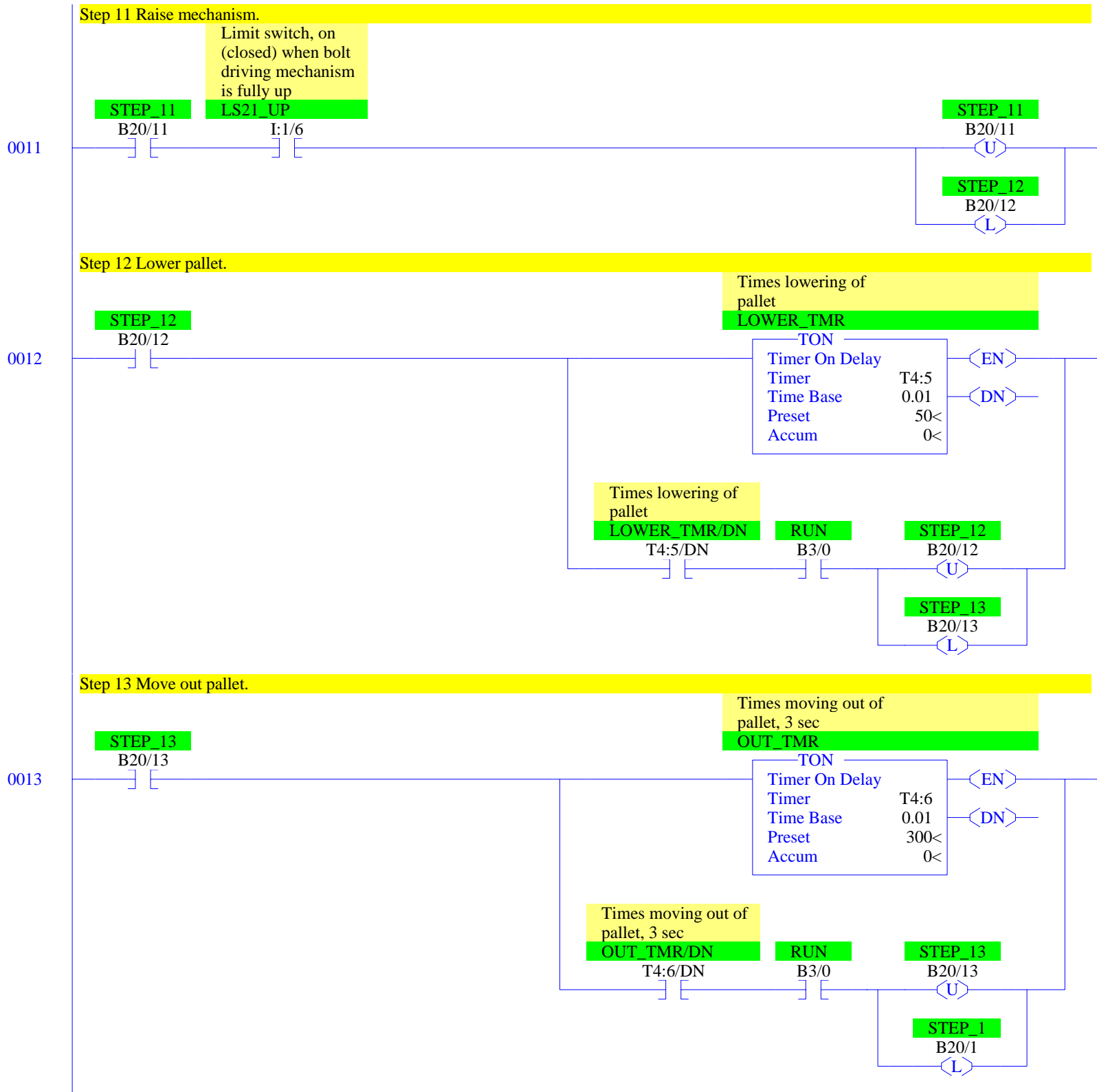
Start/stop and initial start.



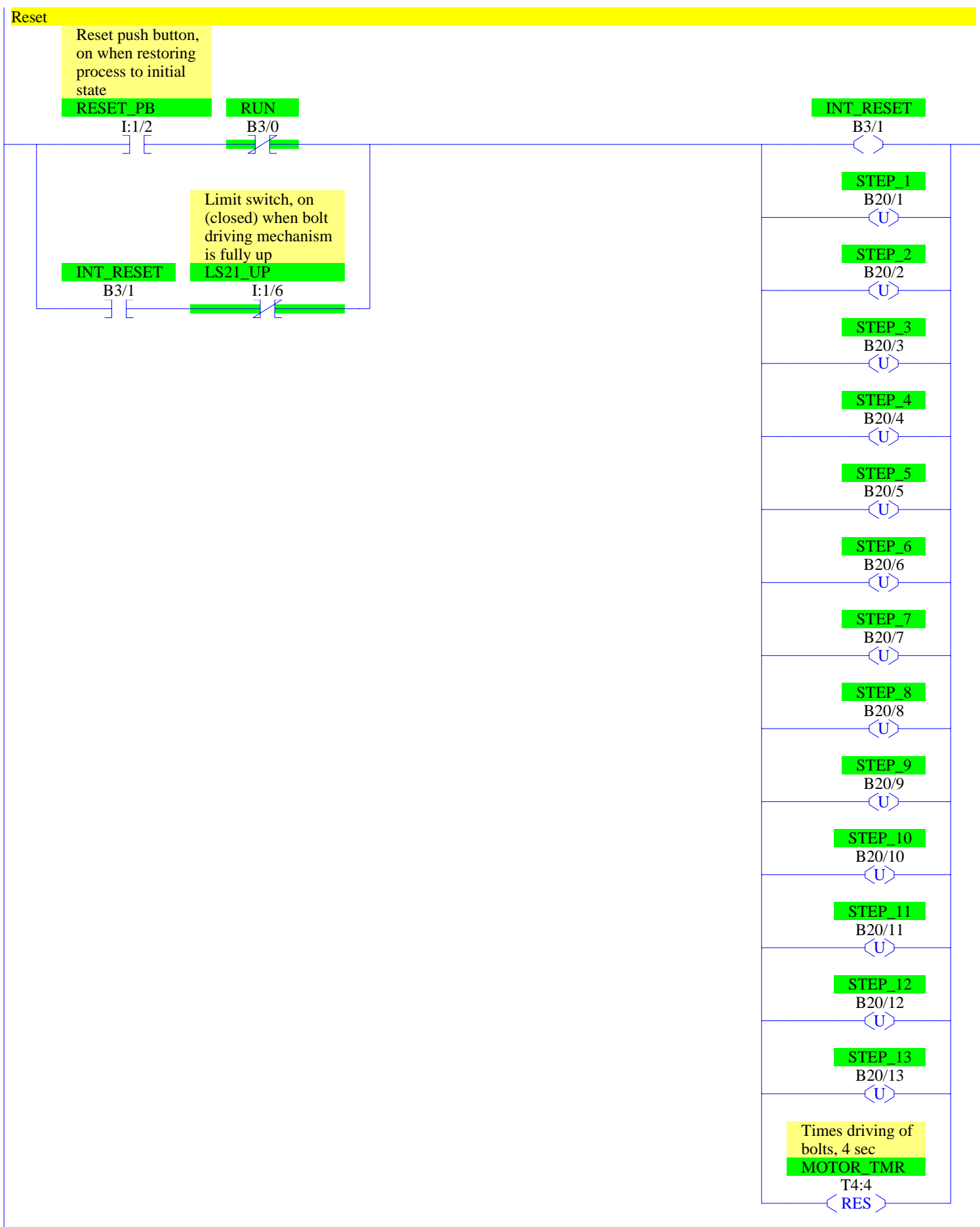


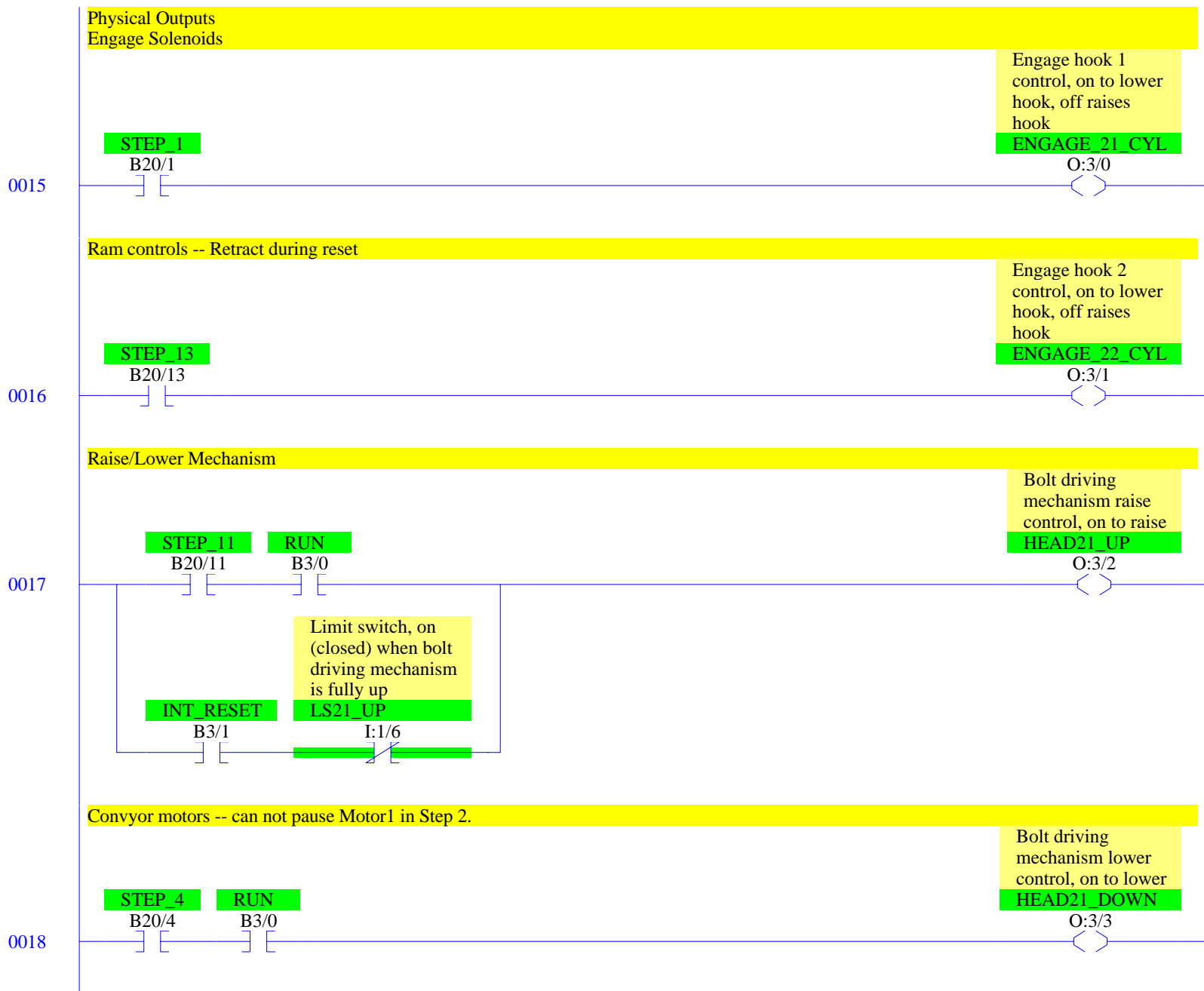






0014





0019

## Push Bolt Solenoids

STEP 6

B20/6

Pushes bolt #1 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT1\_CYL

O:3/4



Pushes bolt #2 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT2\_CYL

O:3/5



Pushes bolt #3 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT3\_CYL

O:3/6



Pushes bolt #4 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT4\_CYL

O:3/7



Pushes bolt #5 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT5\_CYL

O:3/8



Pushes bolt #6 into  
pneumatic tube, on  
extends, off  
retracts

PBOLT6\_CYL

O:3/9





0020

## Gate Valves

STEP 7

B20/7

STEP 8

B20/8

Closes gate valve #1  
to seal pneumatic  
tube, on to close,  
off to open

GVLV1

O:3/10



Closes gate valve #2  
to seal pneumatic  
tube, on to close,  
off to open

GVLV2

O:3/11



Closes gate valve #3  
to seal pneumatic  
tube, on to close,  
off to open

GVLV3

O:3/12



Closes gate valve #4  
to seal pneumatic  
tube, on to close,  
off to open

GVLV4

O:3/13



Closes gate valve #5  
to seal pneumatic  
tube, on to close,  
off to open

GVLV5

O:3/14



Closes gate valve #6  
to seal pneumatic  
tube, on to close,  
off to open

GVLV6

O:3/15



0021

## Convey Valves

STEP 8

B20/8

Opens convey valve  
#1 to convey bolt #1  
to driver, on to  
open valve, off to  
close

CVLV1

O:4/0

Opens convey valve  
#2 to convey bolt #2  
to driver, on to  
open valve, off to  
close

CVLV2

O:4/1

Opens convey valve  
#3 to convey bolt #3  
to driver, on to  
open valve, off to  
close

CVLV3

O:4/2

Opens convey valve  
#4 to convey bolt #4  
to driver, on to  
open valve, off to  
close

CVLV4

O:4/3

Opens convey valve  
#5 to convey bolt #5  
to driver, on to  
open valve, off to  
close

CVLV5

O:4/4

Opens convey valve  
#6 to convey bolt #6  
to driver, on to  
open valve, off to  
close

CVLV6

O:4/5

0022

## Air Motors

STEP 10

B20/10

RUN

B3/0

Opens valve to air  
motor #1 to drive  
bolt #1, on to  
rootate bolt, off to  
stop rotation

AMOTOR1

O:4/6

Opens valve to air  
motor #2 to drive  
bolt #2, on to  
rootate bolt, off to  
stop rotation

AMOTOR2

O:4/7

Opens valve to air  
motor #3 to drive  
bolt #3, on to  
rootate bolt, off to  
stop rotation

AMOTOR3

O:4/8

Opens valve to air  
motor #4 to drive  
bolt #4, on to  
rootate bolt, off to  
stop rotation

AMOTOR4

O:4/9

Opens valve to air  
motor #5 to drive  
bolt #5, on to  
rootate bolt, off to  
stop rotation

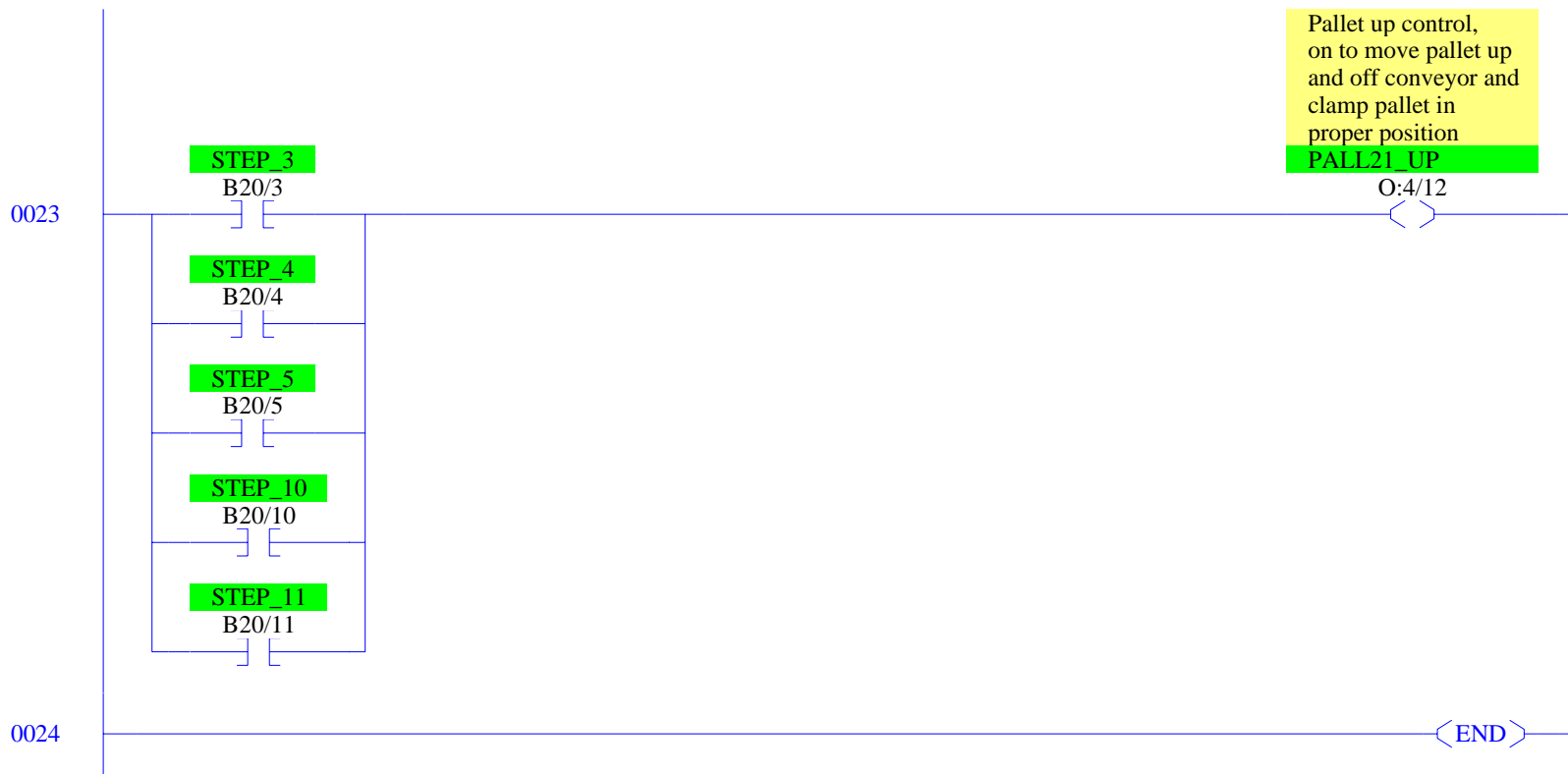
AMOTOR5

O:4/10

Opens valve to air  
motor #6 to drive  
bolt #6, on to  
rootate bolt, off to  
stop rotation

AMOTOR6

O:4/11



## RSLogix 500 Cross Reference Report - Sorted by Address

O:3/0	- {ENGAGE_21_CYL} Engage hook 1 control, on to lower hook, off raises hook OTE - File #2 - 15
O:3/1	- {ENGAGE_22_CYL} Engage hook 2 control, on to lower hook, off raises hook OTE - File #2 - 16
O:3/2	- {HEAD21_UP} Bolt driving mechanism raise control, on to raise OTE - File #2 - 17
O:3/3	- {HEAD21_DOWN} Bolt driving mechanism lower control, on to lower OTE - File #2 - 18
O:3/4	- {PBOLT1_CYL} Pushes bolt #1 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/5	- {PBOLT2_CYL} Pushes bolt #2 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/6	- {PBOLT3_CYL} Pushes bolt #3 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/7	- {PBOLT4_CYL} Pushes bolt #4 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/8	- {PBOLT5_CYL} Pushes bolt #5 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/9	- {PBOLT6_CYL} Pushes bolt #6 into pneumatic tube, on extends, off retracts OTE - File #2 - 19
O:3/10	- {GVLV1} Closes gate valve #1 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:3/11	- {GVLV2} Closes gate valve #2 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:3/12	- {GVLV3} Closes gate valve #3 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:3/13	- {GVLV4} Closes gate valve #4 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:3/14	- {GVLV5} Closes gate valve #5 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:3/15	- {GVLV6} Closes gate valve #6 to seal pneumatic tube, on to close, off to open OTE - File #2 - 20
O:4/0	- {CVLV1} Opens convey valve #1 to convey bolt #1 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/1	- {CVLV2} Opens convey valve #2 to convey bolt #2 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/2	- {CVLV3} Opens convey valve #3 to convey bolt #3 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/3	- {CVLV4} Opens convey valve #4 to convey bolt #4 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/4	- {CVLV5} Opens convey valve #5 to convey bolt #5 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/5	- {CVLV6} Opens convey valve #6 to convey bolt #6 to driver, on to open valve, off to c OTE - File #2 - 21
O:4/6	- {AMOTOR1} Opens valve to air motor #1 to drive bolt #1, on to roatate bolt, off to s OTE - File #2 - 22
O:4/7	- {AMOTOR2} Opens valve to air motor #2 to drive bolt #2, on to roatate bolt, off to s OTE - File #2 - 22
O:4/8	- {AMOTOR3} Opens valve to air motor #3 to drive bolt #3, on to roatate bolt, off to s OTE - File #2 - 22
O:4/9	- {AMOTOR4} Opens valve to air motor #4 to drive bolt #4, on to roatate bolt, off to s OTE - File #2 - 22
O:4/10	- {AMOTOR5} Opens valve to air motor #5 to drive bolt #5, on to roatate bolt, off to s OTE - File #2 - 22
O:4/11	- {AMOTOR6} Opens valve to air motor #6 to drive bolt #6, on to roatate bolt, off to s OTE - File #2 - 22
O:4/12	- {PALL21_UP} Pallet up control, on to move pallet up and off conveyor and clamp pallet OTE - File #2 - 23
I:1/0	- {START_PB} Start push button,on when starting XIC - File #2 - 0
I:1/1	- {STOP_PB} Stop push button,off when stopping XIC - File #2 - 0
I:1/2	- {RESET_PB} Reset push button, on when restoring process to initial state XIC - File #2 - 14
I:1/3	- {PROX21} Proximity sensor, on when pallet in position 1 XIC - File #2 - 2

## RSLogix 500 Cross Reference Report - Sorted by Address

I:1/6	- {LS21_UP} Limit switch, on (closed) when bolt driving mechanism is fully up XIC - File #2 - 11 XIO - File #2 - 14, 17
I:1/7	- {LS21_DN} Limit switch, on (closed) when bolt driving mechanism is fully down XIC - File #2 - 5
I:1/8	- {GVLV1_CLS} Limit switch, on (closed) when gate valve #1 is fully closed XIC - File #2 - 7
I:1/9	- {GVLV2_CLS} Limit switch, on (closed) when gate valve #2 is fully closed XIC - File #2 - 7
I:1/10	- {GVLV3_CLS} Limit switch, on (closed) when gate valve #3 is fully closed XIC - File #2 - 7
I:1/11	- {GVLV4_CLS} Limit switch, on (closed) when gate valve #4 is fully closed XIC - File #2 - 7
I:1/12	- {GVLV5_CLS} Limit switch, on (closed) when gate valve #5 is fully closed XIC - File #2 - 7
I:1/13	- {GVLV6_CLS} Limit switch, on (closed) when gate valve #6 is fully closed XIC - File #2 - 7
I:1/14	- {PROXB1} Proximity switch that closes (on) when bolt #1 is in position to be driven XIC - File #2 - 8
I:1/15	- {PROXB2} Proximity switch that closes (on) when bolt #2 is in position to be driven XIC - File #2 - 8
I:2/0	- {PROXB3} Proximity switch that closes (on) when bolt #3 is in position to be driven XIC - File #2 - 8
I:2/1	- {PROXB4} Proximity switch that closes (on) when bolt #4 is in position to be driven XIC - File #2 - 8
I:2/2	- {PROXB5} Proximity switch that closes (on) when bolt #5 is in position to be driven XIC - File #2 - 8
I:2/3	- {PROXB6} Proximity switch that closes (on) when bolt #6 is in position to be driven XIC - File #2 - 8
B3/0	- {RUN} OTE - File #2 - 0 XIC - File #2 - 0, 1, 2, 4, 6, 7, 8, 9, 10, 12, 13, 17, 18, 22 XIO - File #2 - 14
B3/1	- {INT_RESET} OTE - File #2 - 14 XIC - File #2 - 14, 17 XIO - File #2 - 0
T4:1	- {IN_TMR} Times lowering of engage hook 1, 3 sec TON - File #2 - 3
T4:1/DN	- XIC - File #2 - 3
T4:2	- {RAISE_TMR} Times raising of pallet, 1.5 sec TON - File #2 - 4
T4:2/DN	- XIC - File #2 - 4
T4:3	- {PUSH_TMR} Times pushing of bolts, 1 sec TON - File #2 - 6
T4:3/DN	- XIC - File #2 - 6
T4:4	- {MOTOR_TMR} Times driving of bolts, 4 sec RTO - File #2 - 10 RES - File #2 - 10, 14
T4:4/DN	- XIC - File #2 - 10
T4:5	- {LOWER_TMR} Times lowering of pallet TON - File #2 - 12
T4:5/DN	- XIC - File #2 - 12
T4:6	- {OUT_TMR} Times moving out of pallet, 3 sec TON - File #2 - 13
T4:6/DN	- XIC - File #2 - 13
B20/1	- {STEP_1} OTL - File #2 - 1, 13 OTU - File #2 - 2, 14 XIC - File #2 - 2, 15 XIO - File #2 - 1
B20/2	- {STEP_2} OTL - File #2 - 2 OTU - File #2 - 3, 14 XIC - File #2 - 3 XIO - File #2 - 1

## RSLogix 500 Cross Reference Report - Sorted by Address

B20/3	- {STEP_3}
	OTL - File #2 - 3
	OTU - File #2 - 4, 14
	XIC - File #2 - 4, 23
	XIO - File #2 - 1
B20/4	- {STEP_4}
	OTL - File #2 - 4
	OTU - File #2 - 5, 14
	XIC - File #2 - 5, 18, 23
	XIO - File #2 - 1
B20/5	- {STEP_5}
	OTL - File #2 - 5
	OTU - File #2 - 9, 14
	XIC - File #2 - 9, 23
	XIO - File #2 - 1
B20/6	- {STEP_6}
	OTL - File #2 - 4
	OTU - File #2 - 6, 14
	XIC - File #2 - 6, 19
	XIO - File #2 - 1
B20/7	- {STEP_7}
	OTL - File #2 - 6
	OTU - File #2 - 7, 14
	XIC - File #2 - 7, 20
	XIO - File #2 - 1
B20/8	- {STEP_8}
	OTL - File #2 - 7
	OTU - File #2 - 8, 14
	XIC - File #2 - 8, 20, 21
	XIO - File #2 - 1
B20/9	- {STEP_9}
	OTL - File #2 - 8
	OTU - File #2 - 9, 14
	XIC - File #2 - 9
	XIO - File #2 - 1
B20/10	- {STEP_10}
	OTL - File #2 - 9
	OTU - File #2 - 10, 14
	XIC - File #2 - 10, 22, 23
	XIO - File #2 - 1
B20/11	- {STEP_11}
	OTL - File #2 - 10
	OTU - File #2 - 11, 14
	XIC - File #2 - 11, 17, 23
	XIO - File #2 - 1
B20/12	- {STEP_12}
	OTL - File #2 - 11
	OTU - File #2 - 12, 14
	XIC - File #2 - 12
	XIO - File #2 - 1
B20/13	- {STEP_13}
	OTL - File #2 - 12
	OTU - File #2 - 13, 14
	XIC - File #2 - 13, 16
	XIO - File #2 - 1