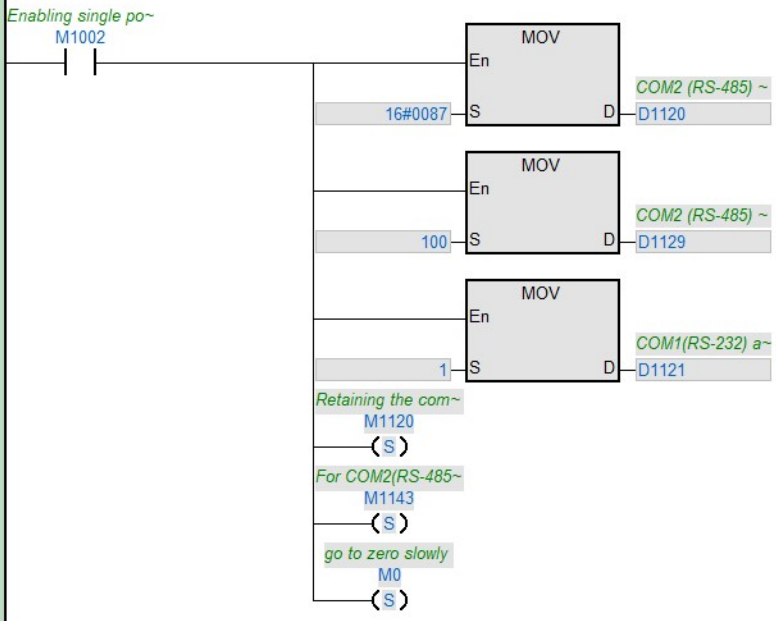
VisionGuidedRobot

Declaration Type	Identifiers	Address	Type	Initial Value	Identifier Comment

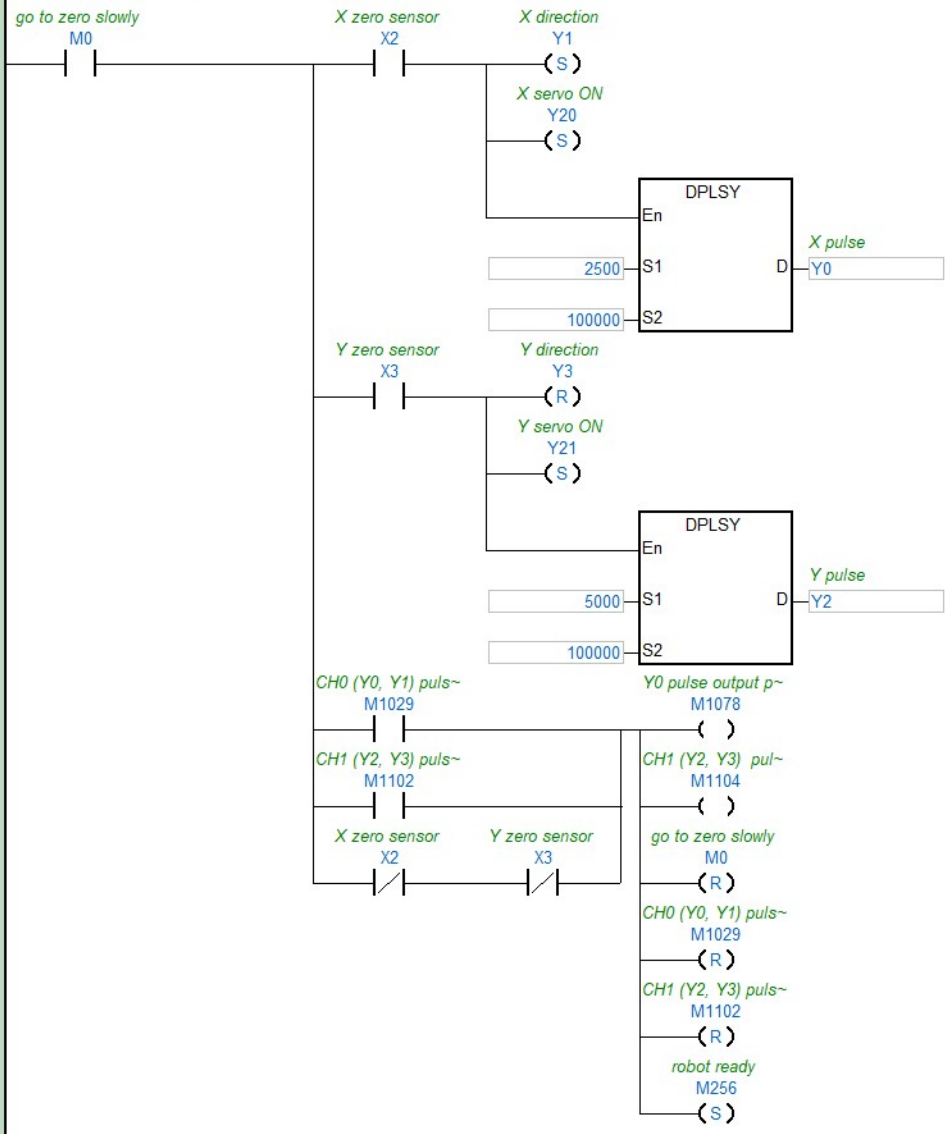
Network 1

Set MODBUS communication parameters



Network 2

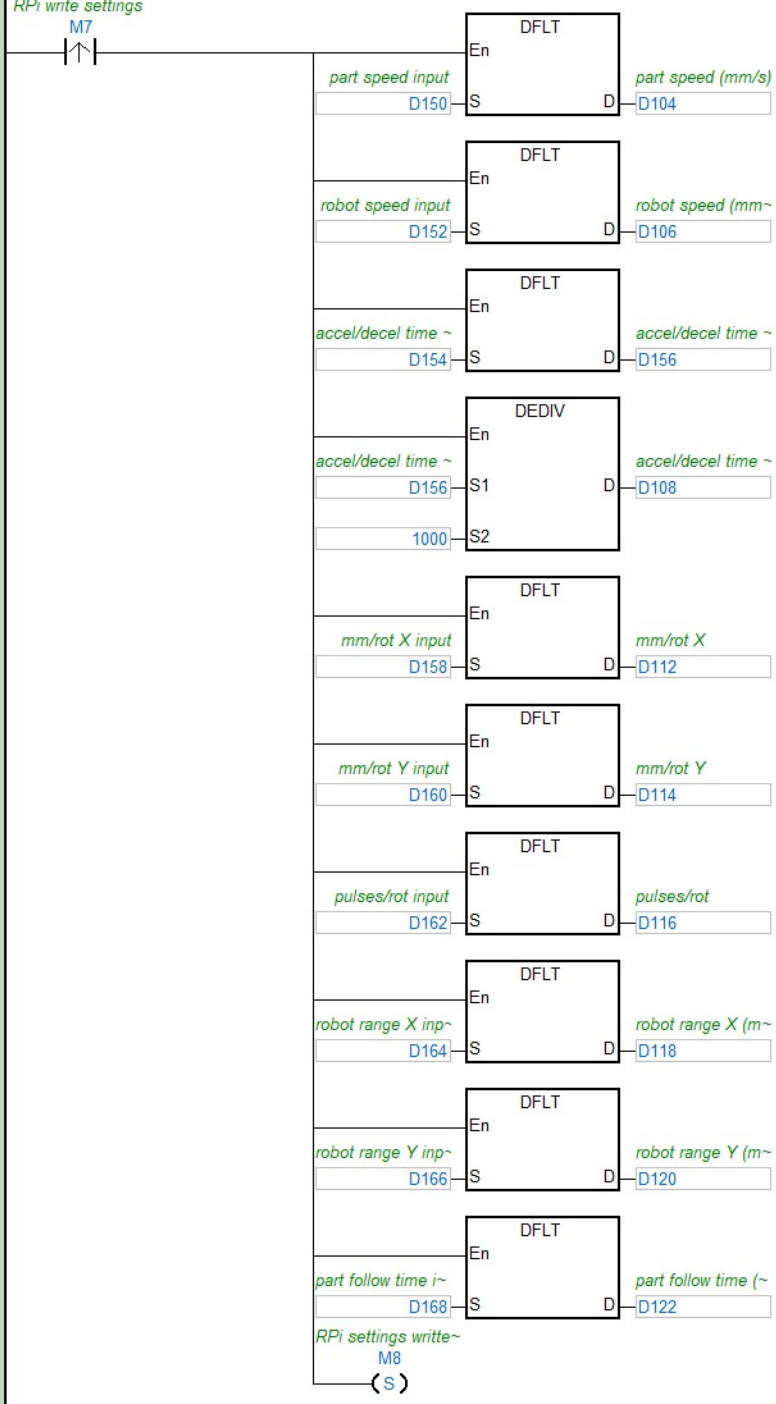
send robot to zero on X and Y axes. check motor directions!!!



Network 3

Grab RPi settings from loading registers, and place them in used registers as float numbers

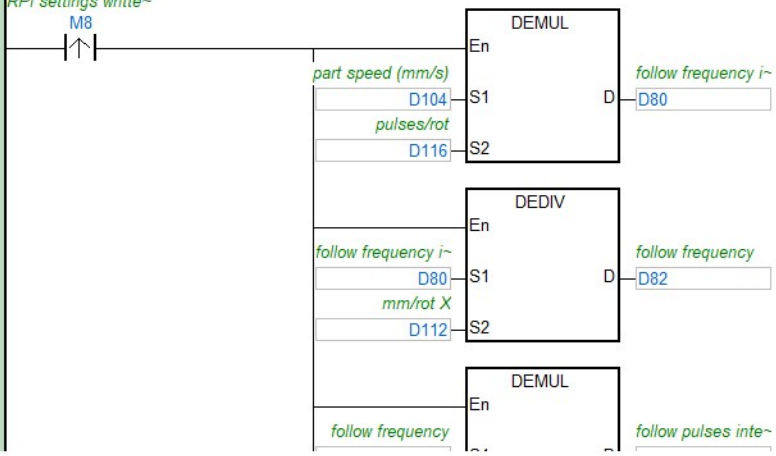
RPi write settings

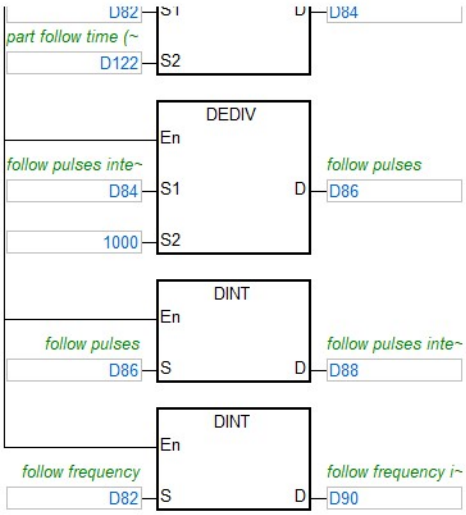


Network 4

Calculate follow pulses and frequency

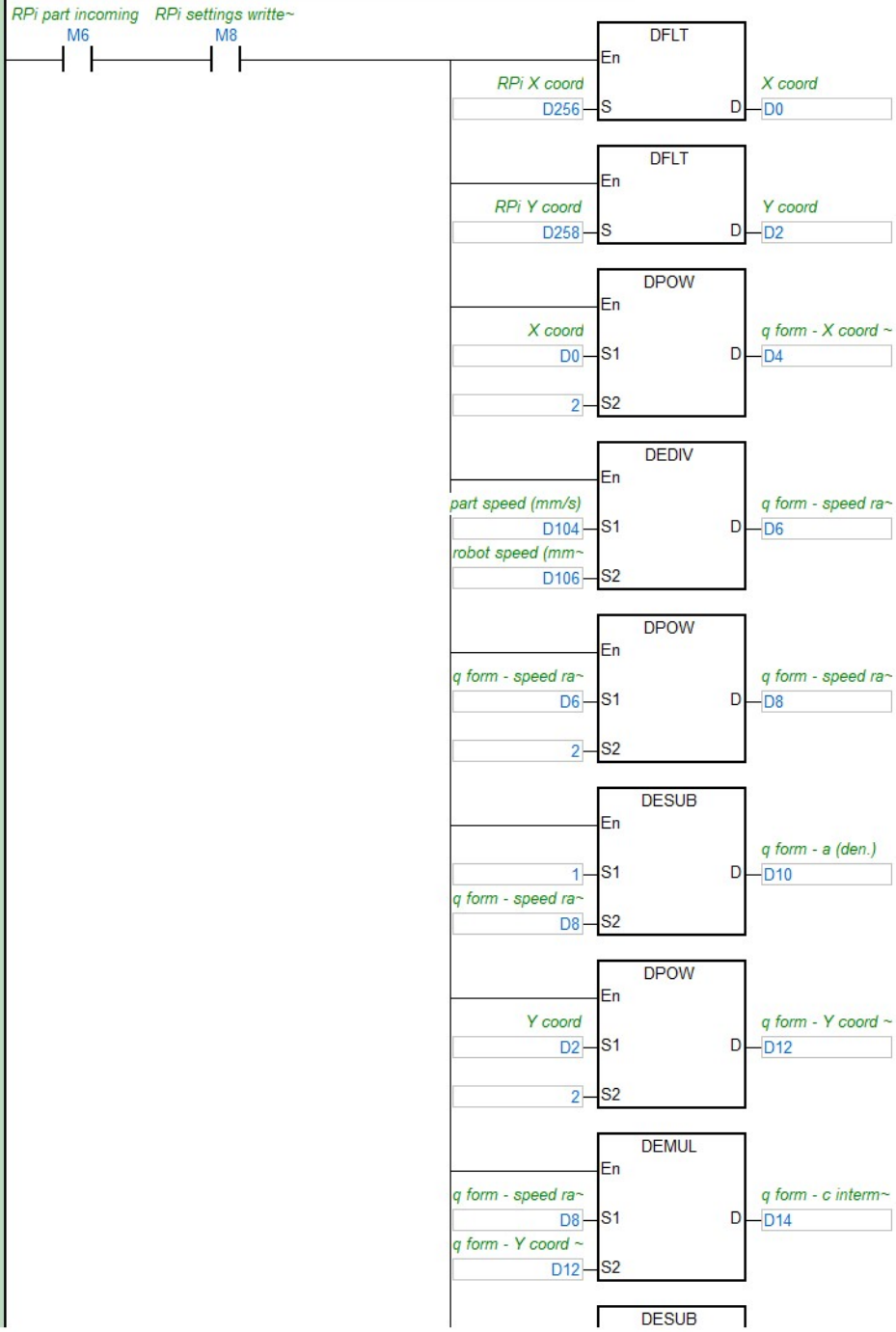
RPi settings writte~

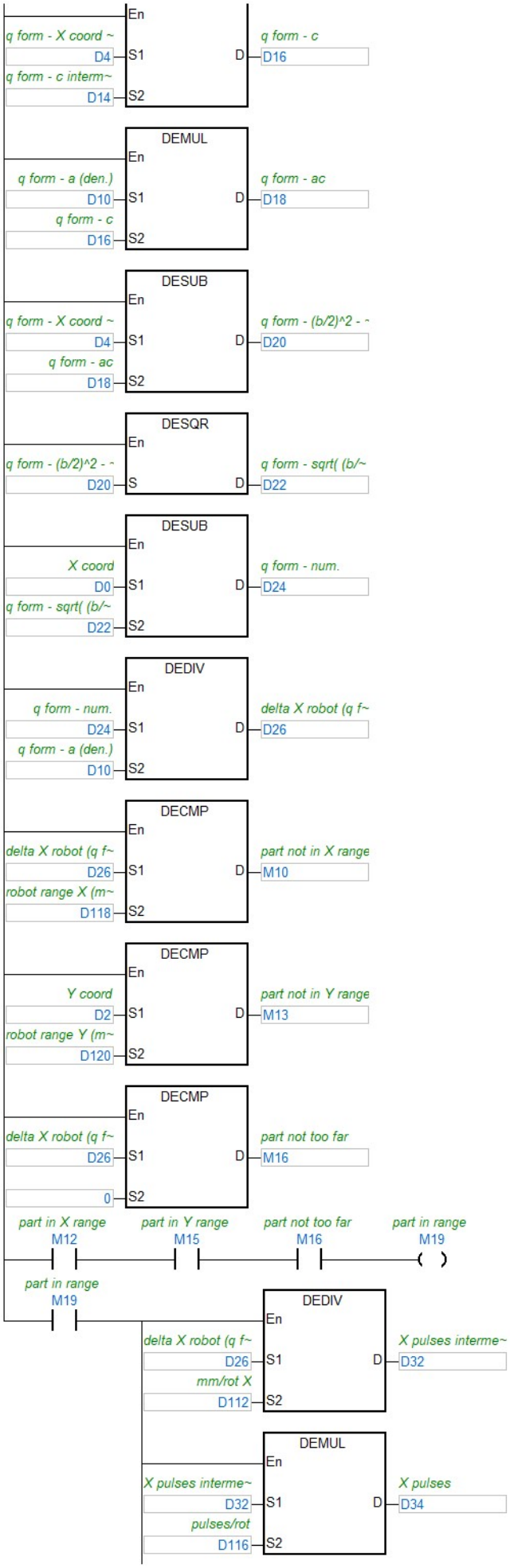


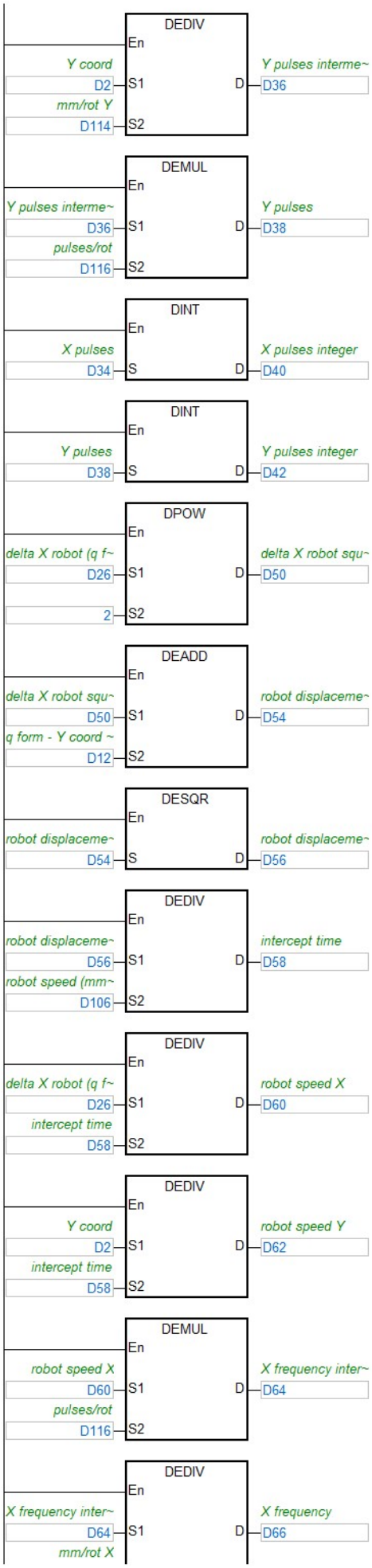


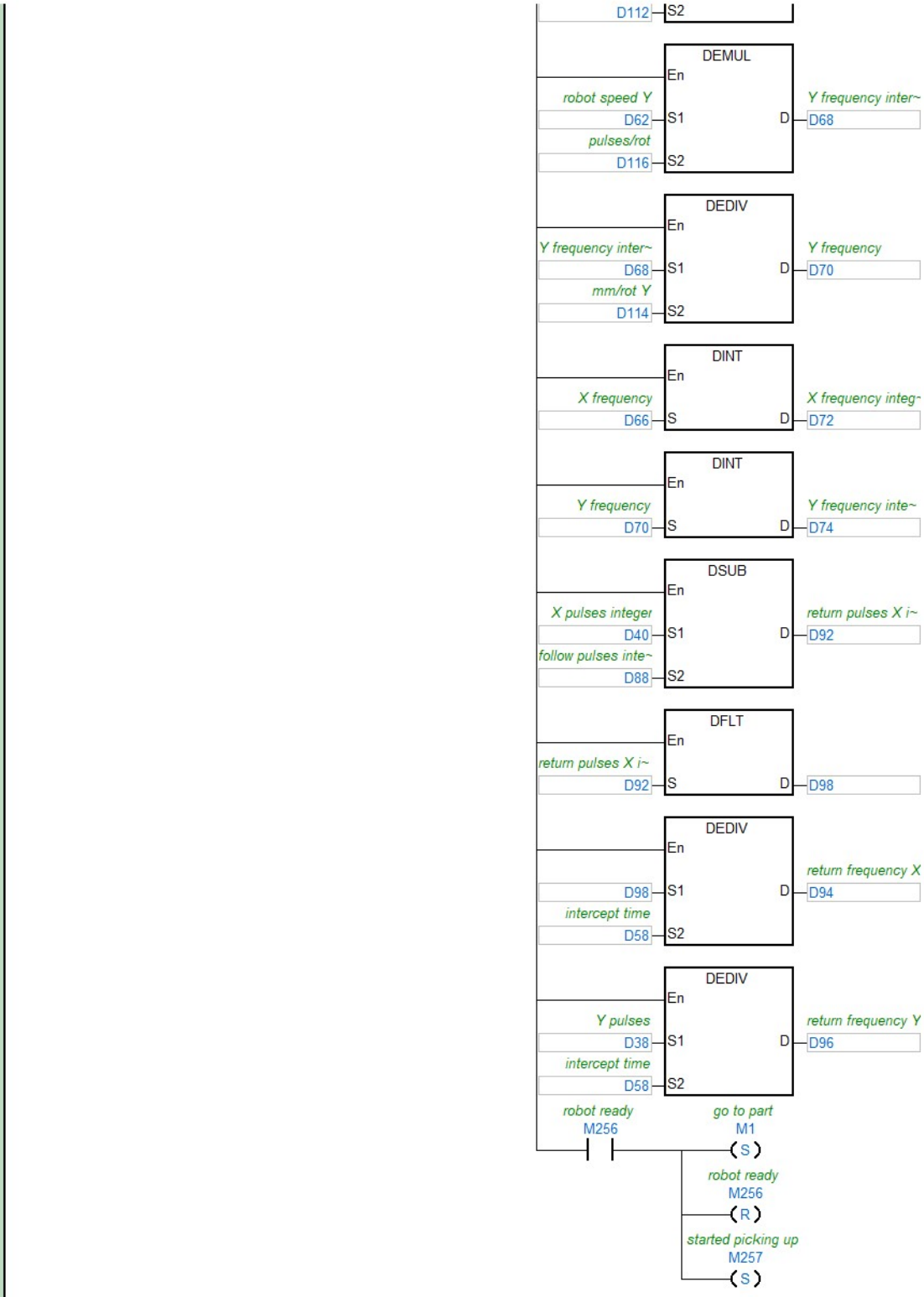
Network 5

Calculate interception location and frequencies



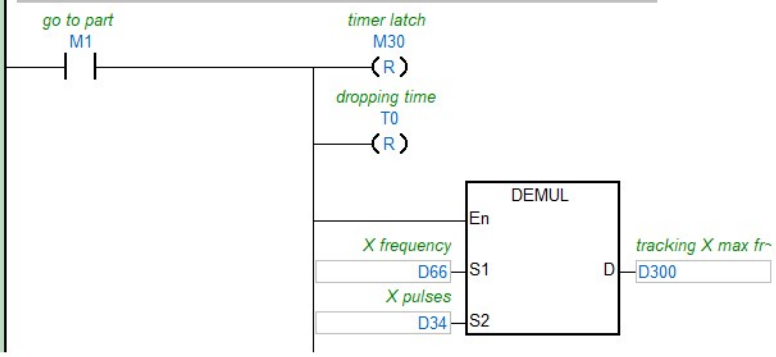

En
q form - X coord ~
D4
S1
D
q form - c
D16
q form - c interm~
D14
S2
DEMUL
En
q form - a (den.)
D10
S1
D
q form - ac
D18
q form - c
D16
S2
DESUB
En
q form - X coord ~
D4
S1
D
q form - (b/2)^2 - ~
D20
q form - ac
D18
S2
DESQR
En
q form - (b/2)^2 - ~
D20
S
D
q form - sqrt((b/~
D22
DESUB
En
X coord
D0
S1
D
q form - num.
D24
q form - sqrt((b/~
D22
S2
DEDIV
En
q form - num.
D24
S1
D
delta X robot (q f~
D26
q form - a (den.)
D10
S2
DECMP
En
delta X robot (q f~
D26
S1
D
part not in X range
M10
robot range X (m~
D118
S2
DECMP
En
Y coord
D2
S1
D
part not in Y range
M13
robot range Y (m~
D120
S2
DECMP
En
delta X robot (q f~
D26
S1
D
part not too far
M16
0
S2
part in X range
M12
part in Y range
M15
part not too far
M16
part in range
M19
part in range
M19
DEDIV
En
delta X robot (q f~
D26
S1
D
X pulses interme~
D32
mm/rot X
D112
S2
DEMUL
En
X pulses interme~
D32
S1
D
X pulses
D34
pulses/rot
D116
S2

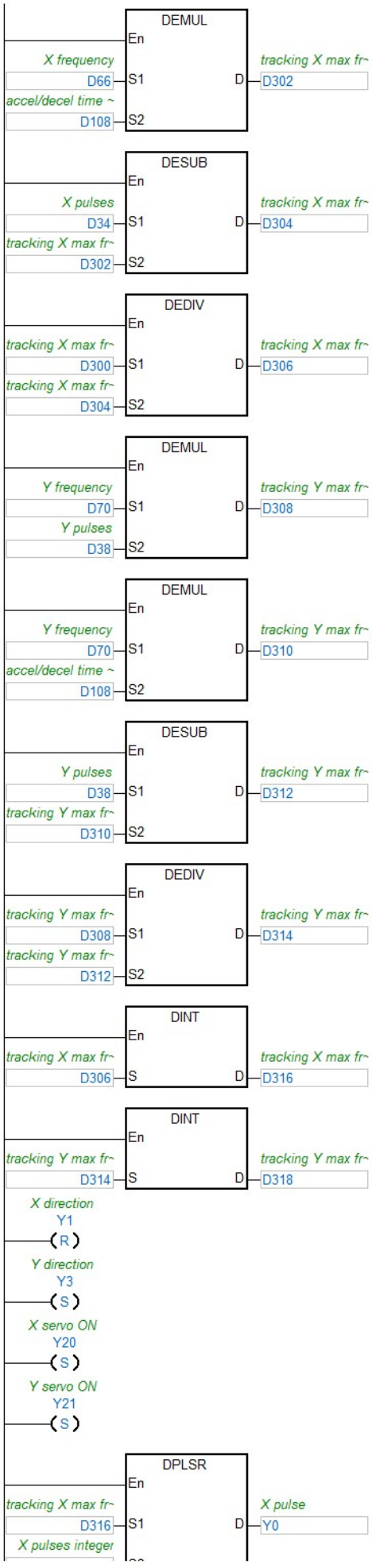

DEDIV
En
Y coord
D2
S1
D
Y pulses interme~
D36
mm/rot Y
D114
S2
DEMUL
En
Y pulses interme~
D36
S1
D
Y pulses
D38
pulses/rot
D116
S2
DINT
En
X pulses
D34
S
D
X pulses integer
D40
DINT
En
Y pulses
D38
S
D
Y pulses integer
D42
DPOW
En
delta X robot (q f~
D26
S1
D
delta X robot squ~
D50
2
S2
DEADD
En
delta X robot squ~
D50
S1
D
robot displaceme~
D54
q form - Y coord ~
D12
S2
DESQR
En
robot displaceme~
D54
S
D
robot displaceme~
D56
DEDIV
En
robot displaceme~
D56
S1
D
intercept time
D58
robot speed (mm~
D106
S2
DEDIV
En
delta X robot (q f~
D26
S1
D
robot speed X
D60
intercept time
D58
S2
DEDIV
En
Y coord
D2
S1
D
robot speed Y
D62
intercept time
D58
S2
DEMUL
En
robot speed X
D60
S1
D
X frequency inter~
D64
pulses/rot
D116
S2
DEDIV
En
X frequency inter~
D64
S1
D
X frequency
D66
mm/rot X

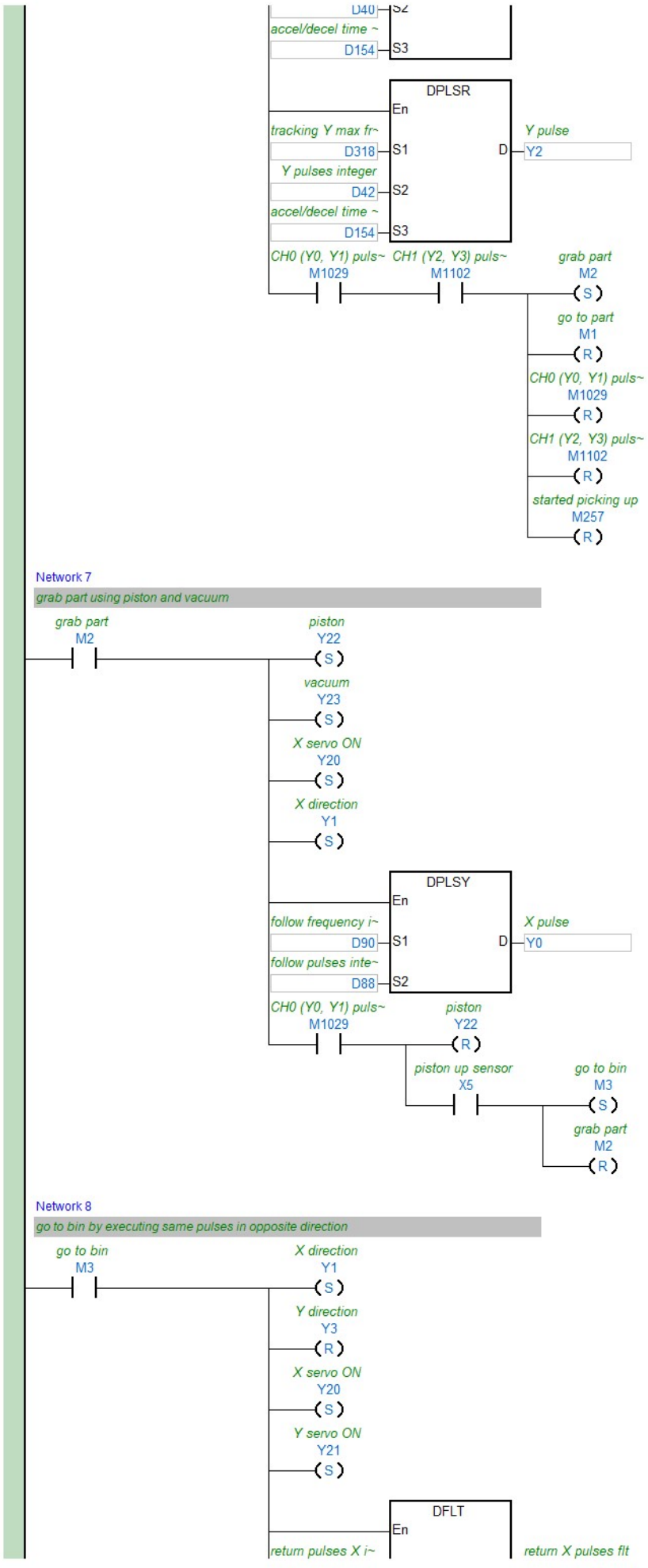


Network 6

Go to part




DEMUL
En
X frequency
D66
S1
D
tracking X max fr~
D302
accel/decel time ~
D108
S2
DESUB
En
X pulses
D34
S1
D
tracking X max fr~
D304
tracking X max fr~
D302
S2
DEDIV
En
tracking X max fr~
D300
S1
D
tracking X max fr~
D306
tracking X max fr~
D304
S2
DEMUL
En
Y frequency
D70
S1
D
tracking Y max fr~
D308
Y pulses
D38
S2
DEMUL
En
Y frequency
D70
S1
D
tracking Y max fr~
D310
accel/decel time ~
D108
S2
DESUB
En
Y pulses
D38
S1
D
tracking Y max fr~
D312
tracking Y max fr~
D310
S2
DEDIV
En
tracking Y max fr~
D308
S1
D
tracking Y max fr~
D314
tracking Y max fr~
D312
S2
DINT
En
tracking X max fr~
D306
S
D
tracking X max fr~
D316
DINT
En
tracking Y max fr~
D314
S
D
tracking Y max fr~
D318
X direction
Y1
R
Y direction
Y3
S
X servo ON
Y20
S
Y servo ON
Y21
S
DPLSR
En
tracking X max fr~
D316
S1
D
X pulse
Y0
X pulses integer

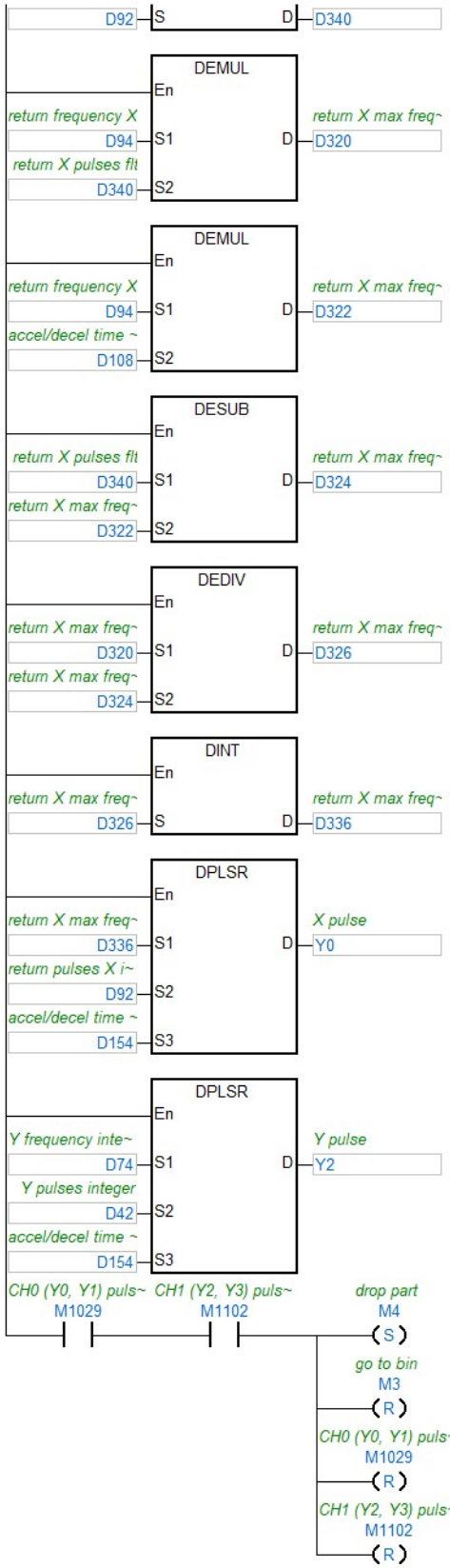


Network 7

grab part using piston and vacuum

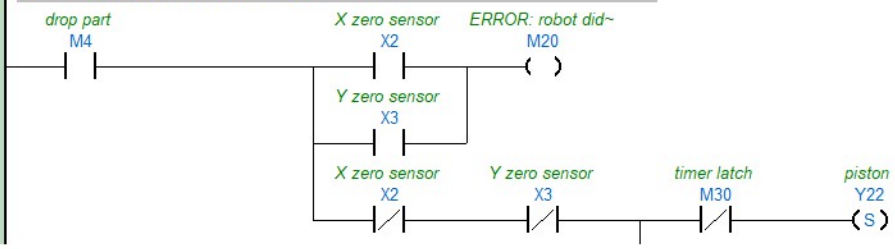
Network 8

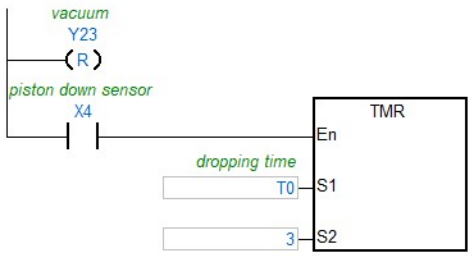
go to bin by executing same pulses in opposite direction



Network 9

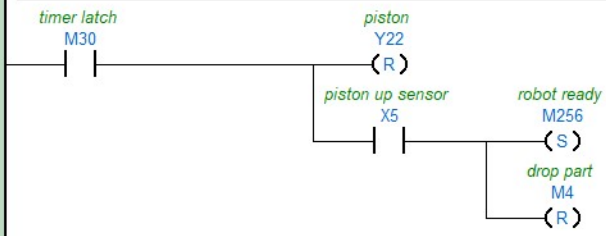
check for zero position, drop part, then signal readiness



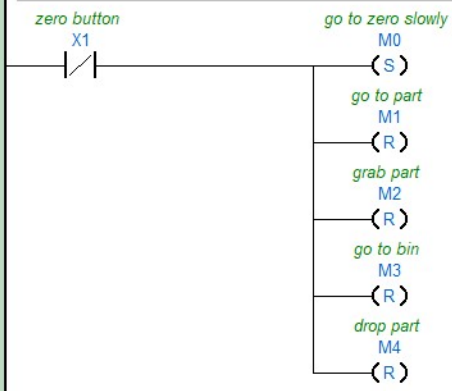


Network 10

Network 11



Network 12



Network 13

Network 14

Network 15

Network 16

Network 17

VisionGuidedRobot