Block:	Briquette_Press_B_40
Author:	#NVJOB Nicholas Veselov (www.nvjob.pro)
Created:	06/25/2018 09:33:41 pm
Last Modified:	09/17/2019 03:34:34 am

Symbol	Var Type	Data Type	Comment
	TEMP		
	TEMP		
	TEMP		
	TEMP		

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B V4.0
Custom program for WEIMATH Standard Series briquette press.
#NVJOB Nicholas Veselov (independent developer) - https://nvjob.pro, http://nvjob.dxam

----

INPUTS
I0.0 - Power.
I0.1 - Start the program in automatic mode.
I0.2 - Stop the program in automatic mode.
I0.3 - Manual mode.
I0.4 - Vertical piston, sensor, lower position.
I0.5 - Vertical piston, sensor, upper position.
I0.6 - Horizontal piston, sensor, position retracted.
I0.7 - Horizontal piston, sensor, position extended.
I1.0 - Not involved.
I1.1 - Valve button.
I1.2 - Accident, stop.
I1.3 - Change in operating time of the screw. Min time*.
I1.4 - Change in the operating time of the screw. Max. time*.
I1.5 - Not involved.

OUTPUTS
Q0.0 - The engine of the hydraulic power station (star-delta).
Q0.1 - Hydroelectric power station engine (star-delta).
Q0.2 - Fan.
Q0.3 - Auger.
Q0.4 - Vertical piston, valve, up position (pushes down).
Q0.5 - Vertical piston, valve, lower position (pushes up).
Q0.6 - Horizontal piston, valve, retracts the piston.
Q0.7 - Horizontal piston, valve, extends the piston.
Q1.0 - Collet Piston.
Q1.1 - Light Bulb Start

Network 1   //
              Power. Starting up the hydraulic station.
              //

Network 2

Q0.0 and Q0.1 - Hydroelectric power station engine (star-delta).
Q0.2 - Fan.

```
     M0.0                    Q0.0
 ─────┤ ├────────┬──────────( )──────
                 │
                 │   T37           Q0.1
                 ├───┤ ├──────────( )──────
                 │
                 │   T38           Q0.2
                 └───┤ ├──────────( )──────
```
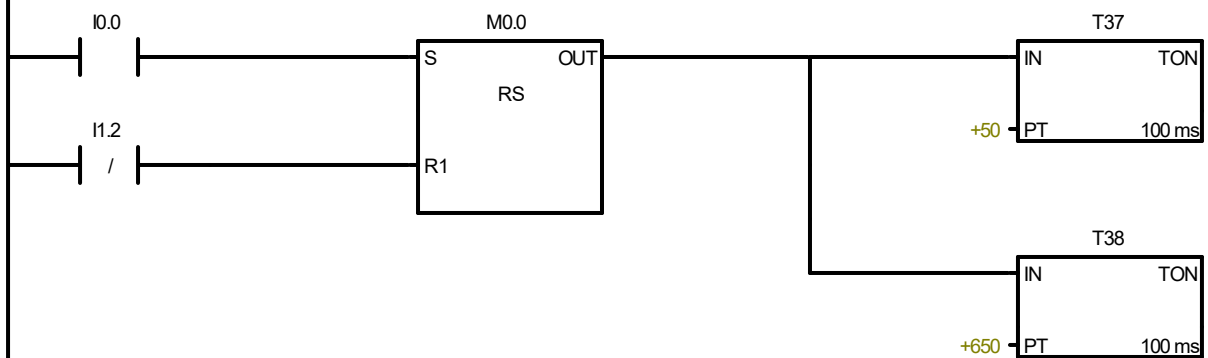
Network 2

Q0.0 and Q0.1 - Hydroelectric power station engine (star-delta).
Q0.2 - Fan.

Network 3
//
Start
//

Q1.1 - Start lamp
M0.1 - start
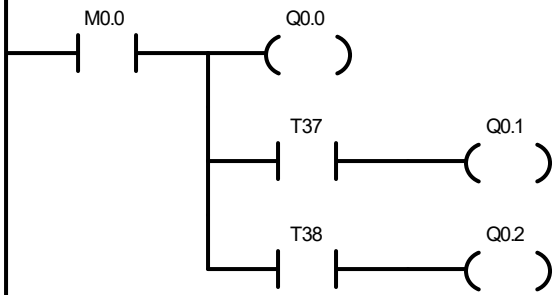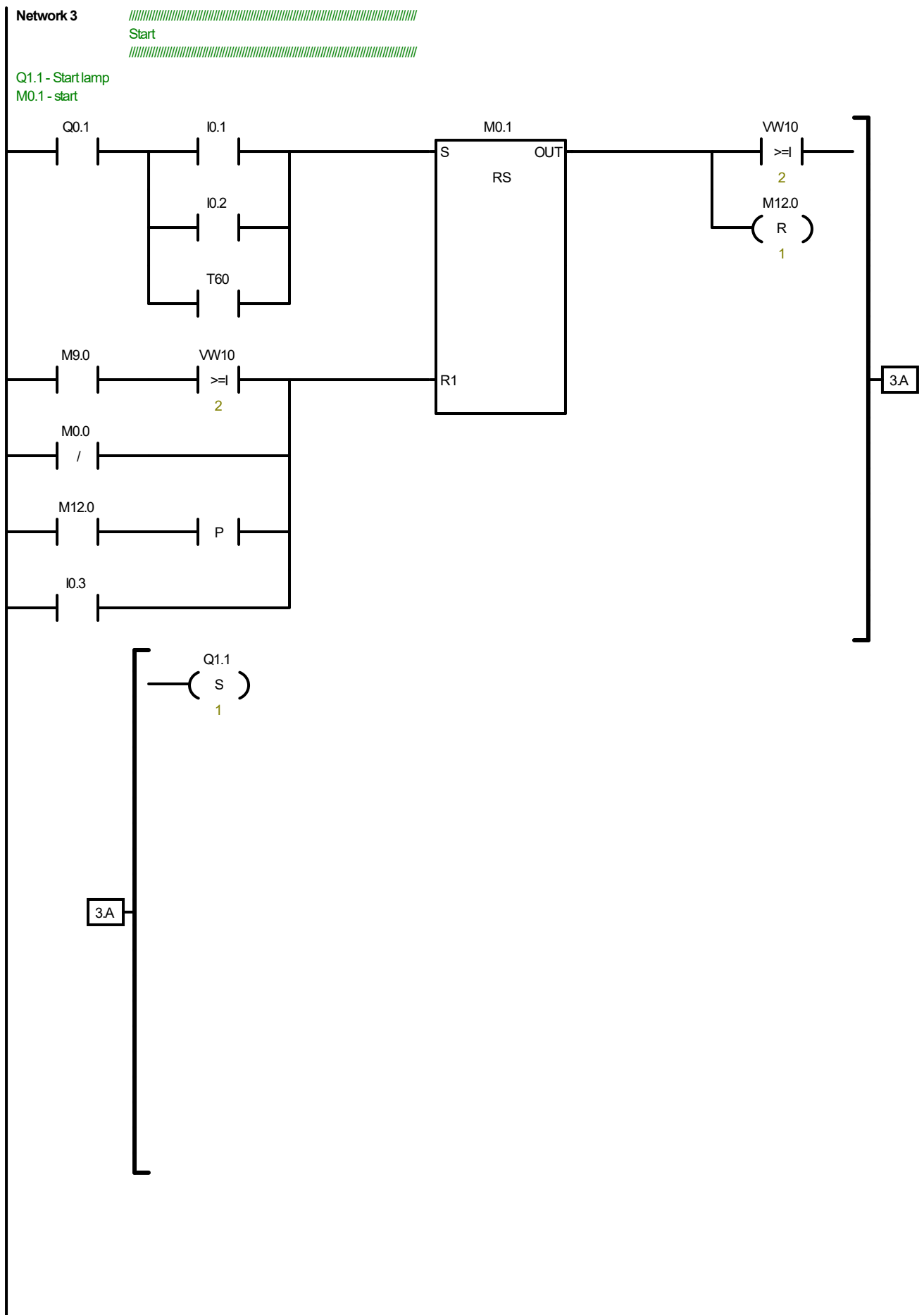
Network 4

CleaningAlarm

```
   M0.1         VW10          T51                              T50
   ─┤├──────────┤ <I ├────┬───┤ / ├────┬──────────────┤IN      TON│
                    2      │            │              │           │
                           │            │          +5 ─┤PT  100 ms │
                           │            │
                           │            │            Q1.1
                           │            └────────────( R )
                           │                            1
                           │
                           │          T50                              T51
                           └──────────┤├──────┬──────────────┤IN      TON│
                                             │              │           │
                                             │          +5 ─┤PT  100 ms │
                                             │
                                             │            Q1.1
                                             └────────────( S )
                                                             1
```
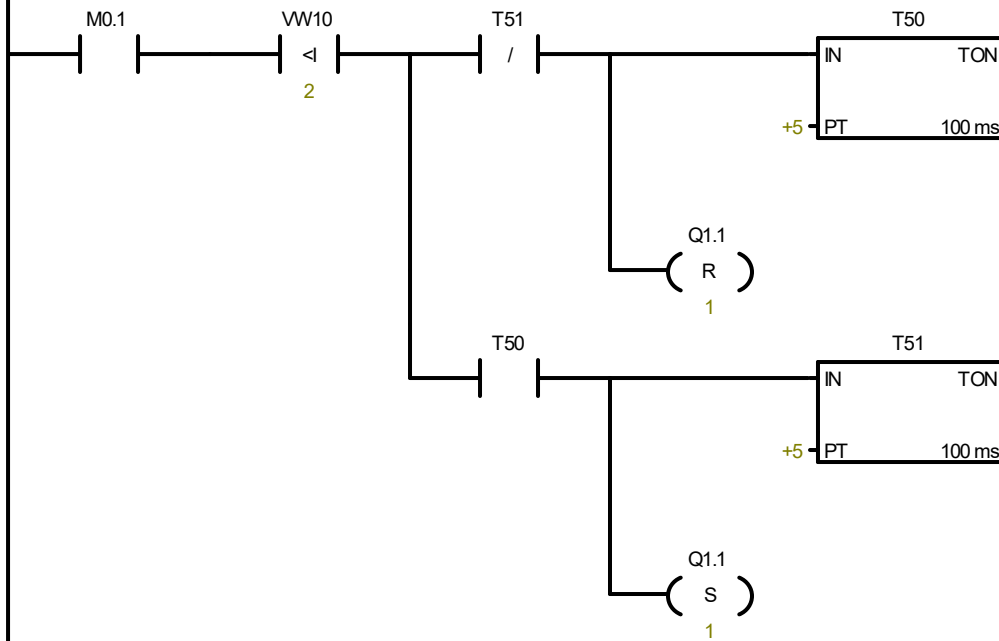
Network 5

Stop
VW10 - number of cleaning cycles

```
   I0.2         M9.0          M0.1                        M9.0
   ─┤├──────────┤ / ├─────────┤├───────────────────┤S      OUT├──────────────┐
                                                    │        │              │
                                                    │   RS   │              │
   M0.1         M9.0         VW10                    │        │              5.A
   ─┤ / ├───────┤├──────────┤ >=I ├────┬────────────┤R1       │
                                2      │            │        │
                                       │            └────────┘
   M0.0                                │
   ─┤ / ├──────────────────────────────┘


              ┌──┤ P ├────────────────┤EN  MOV_W  ENO├───>>
              │                        │              │
        5.A ──┤                     0 ─┤IN        OUT├─ VW10
              │                        └──────────────┘
              └
```

Network 6

Reset

```
     M0.1              Q0.4
  ───┤ / ├───────┬──────( R )
                 │         1
                 │       Q0.5
                 ├──────( R )
                 │         1
                 │       Q0.6
                 ├──────( R )
                 │         1
                 │       Q0.7
                 ├──────( R )
                 │         1
                 │       Q1.0
                 ├──────( R )
                 │         1
                 │       M10.0
                 ├──────( R )
                 │         1
                 │       Q1.1
                 ├──────( R )
                 │         1
                 │
                 │       ┌─────────────┐
                 │       │    MOV_W     │
                 └───────┤EN        ENO├──────│>
                         │             │
                      1 ─┤IN       OUT ├─ VW10
                         └─────────────┘
```
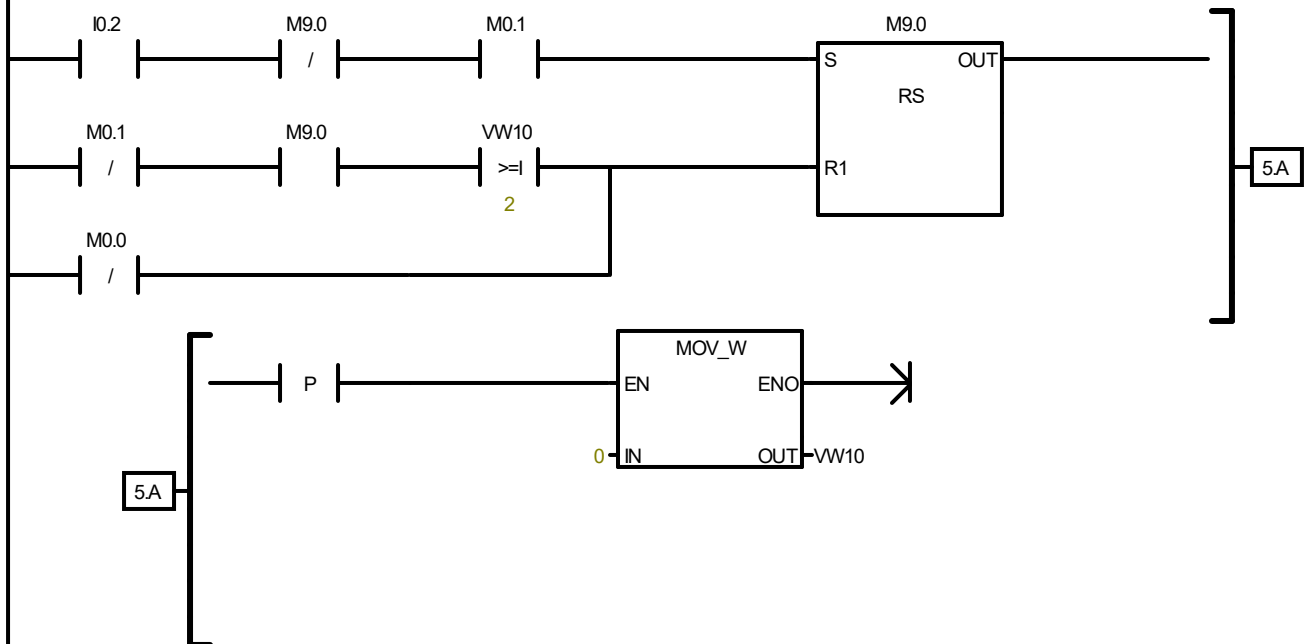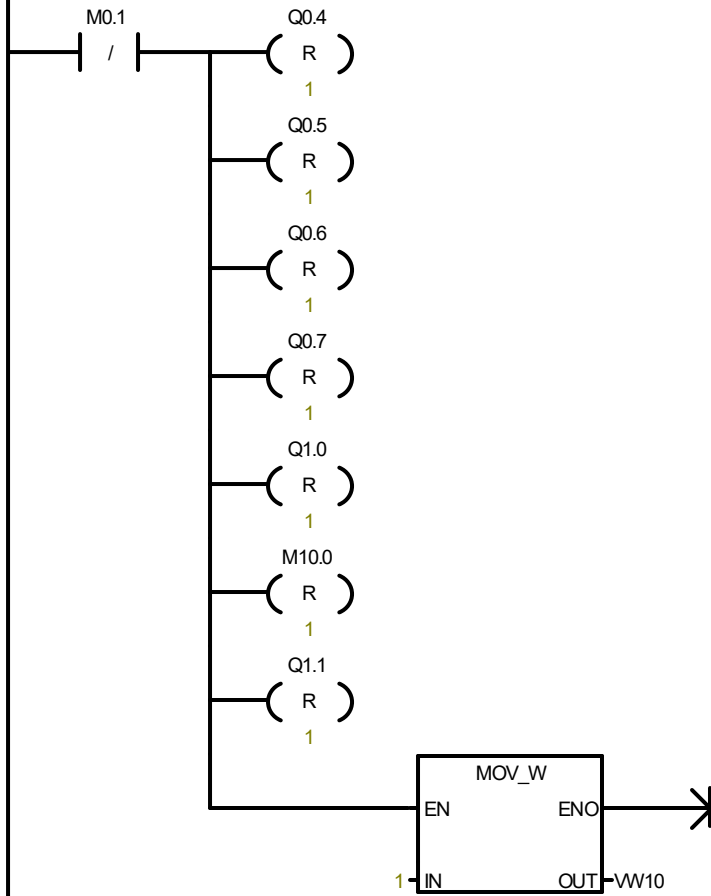
Network 7

Cleaning at work
T40 - clog test, vertical piston
T41 - clogging check, horizontal piston
T42 - Check Valve Horizontal Piston

```
     M0.1         T40            M12.0
  ───┤ ├──────┬──┤ ├─────┬───────( S )
              │          │          1
              │   T41    │
              ├──┤ ├─────┤
              │          │
              │   T42    │
              └──┤ ├─────┘
```
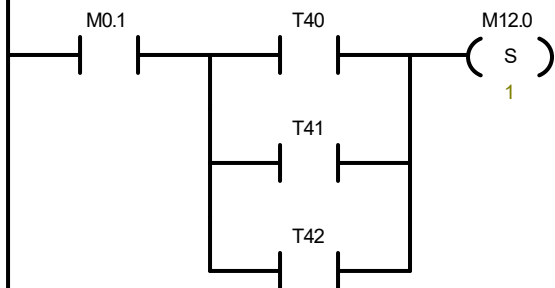
Network 8

```
  M0.1        T40         T41         T42        M12.0                    ┌──────┐
───┤/├────────┤/├─────────┤/├─────────┤/├─────────┤ ├───────────────────┤ 8.A  │
                                                                          └──────┘
                                                                    +20
```

```
  ┌────────────────────┐
  │ 8.A │   ┌─────────────┐ T60
  └─────┤───┤ IN     TON  │
        │   │             │
        │   │ PT   100 ms │
        │   └─────────────┘
```
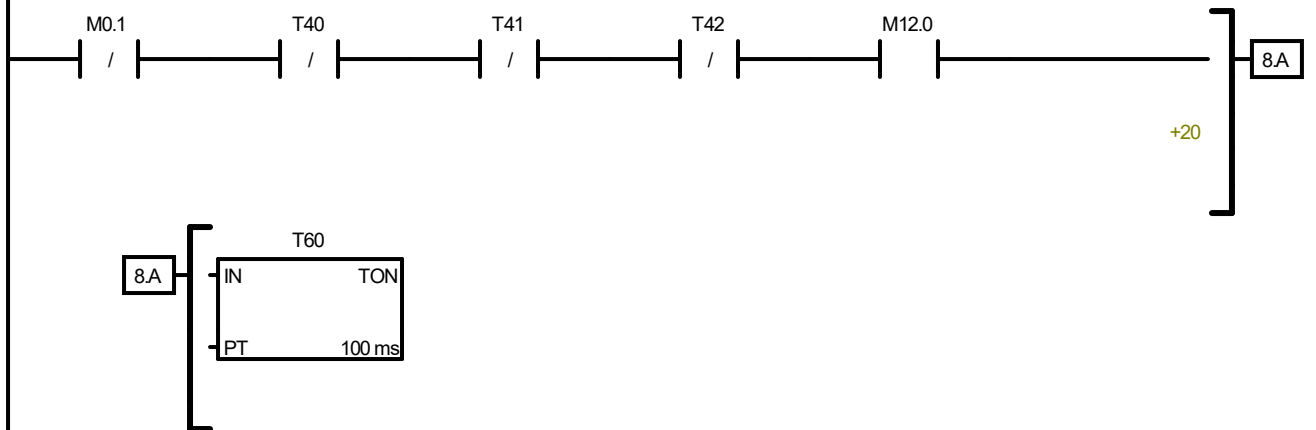
Network 9

//
Preparation for work
//

M0.3 - prepared

```
  M0.1        M0.3        I0.6        I0.7        I0.4        I0.5      ┌──────┐
───┤ ├─────────┤/├─────────┤/├─────────┤/├─────────┤ ├─────────┤ ├────┤ 9.A  │
                                                                       └──────┘
  M0.1
───┤/├──────────────────────────────────────────────────────────────
```

```
  ┌─────┐   ┌──────────┐ M0.3
  │ 9.A │───┤ S    OUT ├──────>│
  └─────┤   │          │
        │   │   RS     │
        │   │          │
        └───┤ R1       │
            └──────────┘
```

Network 10

```
  M0.1        M0.3        ┌─────────────┐ T46
───┤ ├─────────┤/├────────┤ IN     TON  │
                          │             │
                    +10 ──┤ PT   100 ms │
                          └─────────────┘
```

Network 11

```
   T46          Q0.4          Q0.5
──┤ ├──────┬───┤/├──────────( S )
           │                    1
           │    Q0.7          Q0.6
           └───┤/├──────────( S )
                               1
```

Network 12

```
   M0.3                    T47
──┤ ├──────┬───────────┌─────────────┐
           │           │ IN       TON │
           │           │              │
           │       +10─┤ PT    100 ms │
           │           └─────────────┘
           │
           │    P         Q0.5
           └───┤ ├──────( R )
                            1
```

Network 13

```
   T47      P         Q0.6
──┤ ├──────┤ ├──────( R )
                        1
```

Network 14

Cleaning

```
   M0.1      M0.3      VW10      Q1.0
──┤ ├───────┤ ├───────┤<│├─────( S )
                         2          1
```

Network 15   ///
                     Work
                     ///

Feeds sawdust in time, timing

```
   I1.3                MOV_W
──┤ ├──────────────┌─────────────┐
                   │ EN      ENO  ├──────>
                   │              │
                15─┤ IN      OUT  ├─VW20
                   └─────────────┘
```

Network 16

Feeds sawdust by time, timing

```
   I1.4              ┌─── MOV_W ───┐
───┤ ├──────────────┤EN       ENO├────>
                     │             │
             25 ─────┤IN       OUT├─ VW20
                     └─────────────┘
```

Network 17

```
   I1.3         I1.4        ┌─── MOV_W ───┐
───┤/├──────────┤/├─────────┤EN       ENO├────>
                            │             │
                    20 ─────┤IN       OUT├─ VW20
                            └─────────────┘
```

Network 18

Feeds sawdust by time

```
   M0.1       M0.3       I0.4       I0.5       I0.6       I0.7    ┐
───┤ ├────────┤ ├────────┤ ├────────┤ ├────────┤/├────────┤/├──  │
                                                                 │
   I0.4       I0.5                                                ├─ 18.A
───┤/├────────┤/├────────────────────────────────────────────   │
                  │                                              │
   M0.1           │                                              │
───┤/├────────────┘                                              ┘

        ┌  Q0.4       Q0.5       Q0.6       Q0.7              ┐
        │──┤/├────────┤/├────────┤/├────────┤/├──────────    │
        │                                                    ├─ 18.B
 18.A ──┤────────────────────────────────────────────────   │
        ┘                                                    ┘

        ┌    M0.4                                  T39
        │   ┌─ S     OUT ─┐          ┌──────── IN       TON ─┐
        │   │      RS      │──────────│                       │
        │   │              │          │ VW20 ─ PT     100 ms │
 18.B ──┤───┤ R1          │          └───────────────────────┘
        ┘   └─────────────┘
```

Network 19

Feeds sawdust on time (works, auger)

M0.1	M0.3	M10.0	M0.4	T39	VW10		19.A
─┤ ├─	─┤ ├─	─┤/├─	─┤ ├─	─┤/├─	─┤>=I├─		
					2		

```
19.A ─┐      Q0.3
     ├──────( )
```
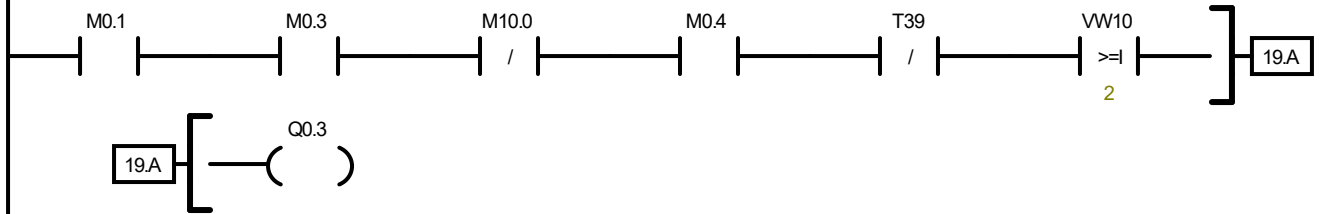
Network 20

Filed the sawdust (the auger is off), lowers the vertical piston
T40 - dog test, vertical piston

M0.1	M0.3	M10.0	M0.4	T39	Q0.3		20.A
─┤ ├─	─┤ ├─	─┤/├─	─┤ ├─	─┤ ├─	─┤/├─		

```
          Q0.5      Q0.4
       ┌──┤/├───┬───( S )
       │        │     1
       │        │   I0.4                    T40
20.A ──┤        └──┤ ├──────────────┤IN      TON
       │                        +80─┤PT    100 ms
       │
       │  Q0.7      Q0.6
       └──┤/├───────( S )
                      1
```

Network 21

```
   M0.1        M0.3        M10.0        I0.4        I0.5        I0.6                ┌──────┐
───┤├──────────┤├──────────┤/├──────────┤/├──────────┤/├──────────┤/├───────────┤ 21.A │
                                                                                  └──────┘
```

```
           ┌─      I0.7                          T48
           │                                 ┌──────────────┐
  ┌──────┐ │                                 │ IN        TON│
  │ 21.A │─┤    ──┤/├────────────────────────┤              │
  └──────┘ │                                 │              │
           │                          +10 ───┤ PT     100 ms│
           │                                 └──────────────┘
           └─
```
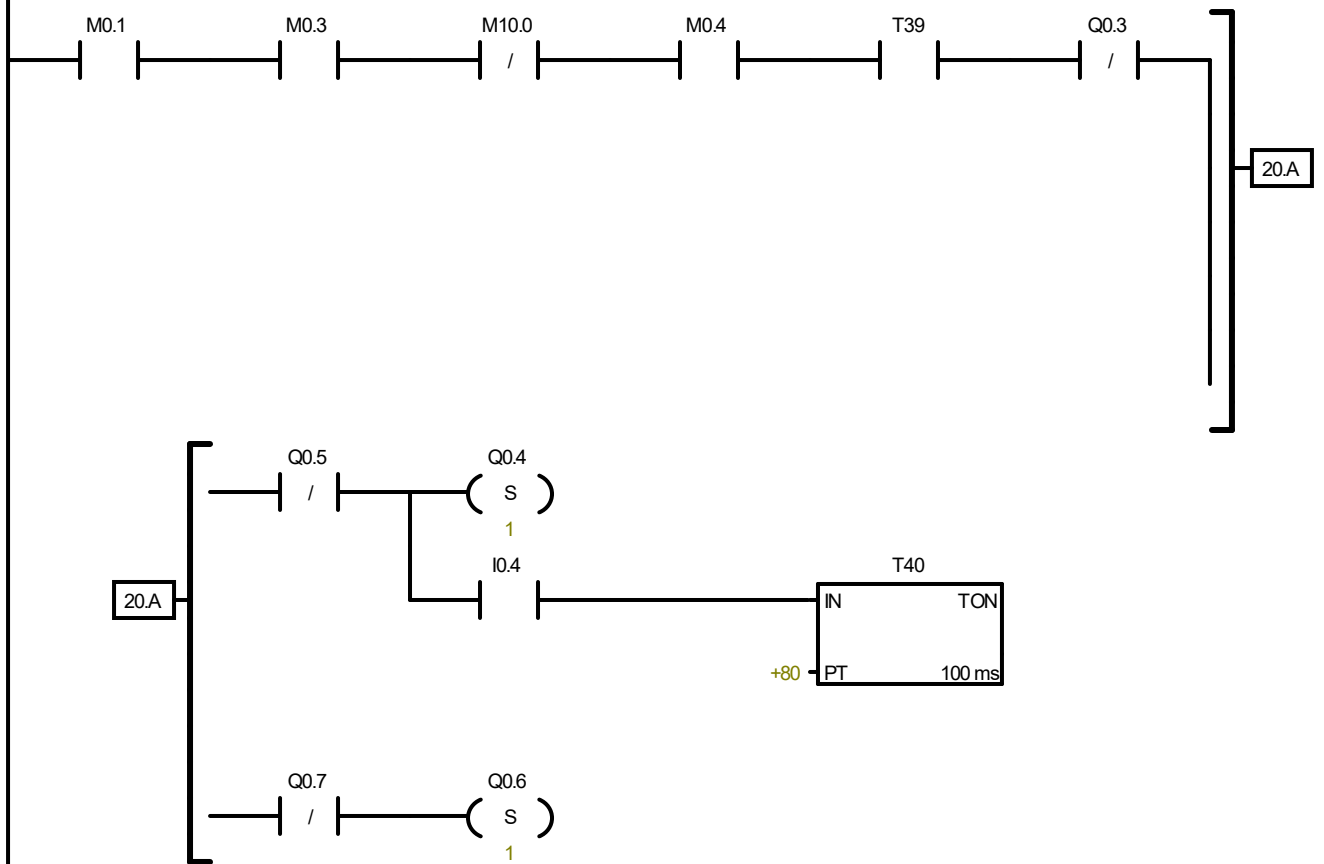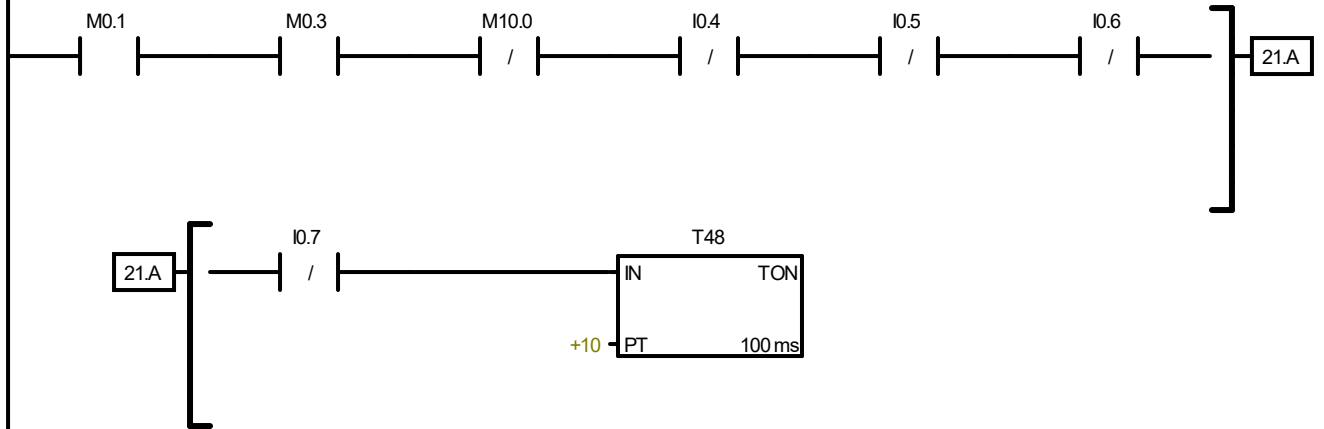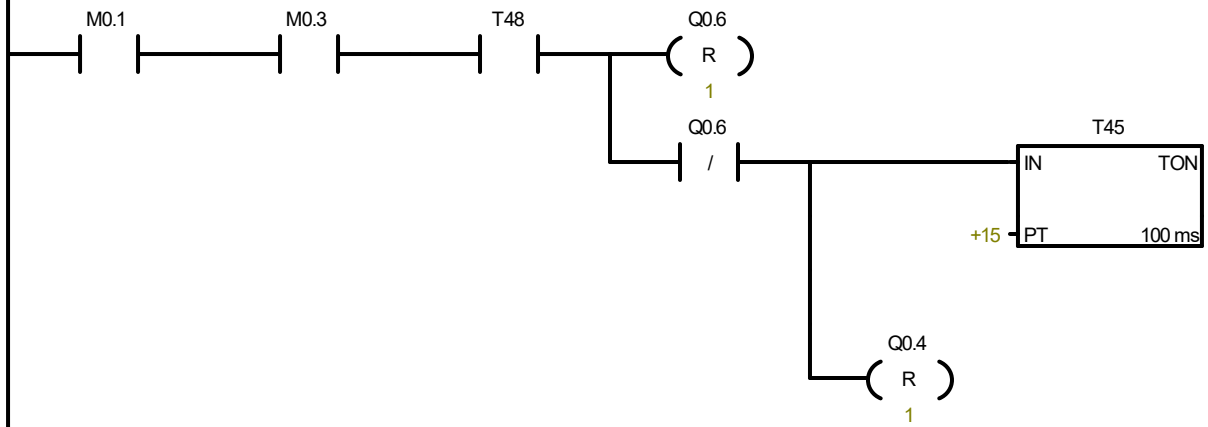
Network 22

Lowered the vertical piston, pushes the horizontal piston

```
   M0.1        M0.3         T48           Q0.6
───┤├──────────┤├──────────┤├────┬────────( R )
                                 │          1
                                 │
                                 │  Q0.6                      T45
                                 │                       ┌──────────────┐
                                 └──┤/├──────────┬───────┤ IN        TON│
                                                 │       │              │
                                                 │       │              │
                                                 │ +15 ──┤ PT     100 ms│
                                                 │       └──────────────┘
                                                 │
                                                 │       Q0.4
                                                 └───────( R )
                                                           1
```

Network 23

```
   M0.1        M0.3         T45           Q0.7
───┤├──────────┤├──────────┤├────────────( S )
                                            1
```
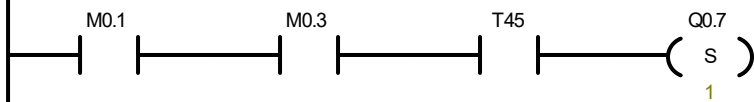
Network 24

The button has worked, the collet is opened

```
   M0.1        M0.3        M10.0        Q0.7        I0.7        I1.1
 ──┤ ├────────┤ ├─────────┤/├─────────┤ ├────┬────┤ ├────────┤ ├────┐
                                             │                      │  ┌──────┐
                                             │        I0.7          │  │ 24.A │
                                             └───────┤/├────────────┘  └──────┘
                                                                          +80
```

```
                    Q1.0
                   ─( S )─
                      1
                    M10.0
   ┌──────┐        ─( S )─
   │ 24.A │───┤       1
   └──────┘
                    T42
                  ┌──────────────┐
                 ─┤IN        TON │
                  │              │
                 ─┤PT     100 ms │
                  └──────────────┘
```
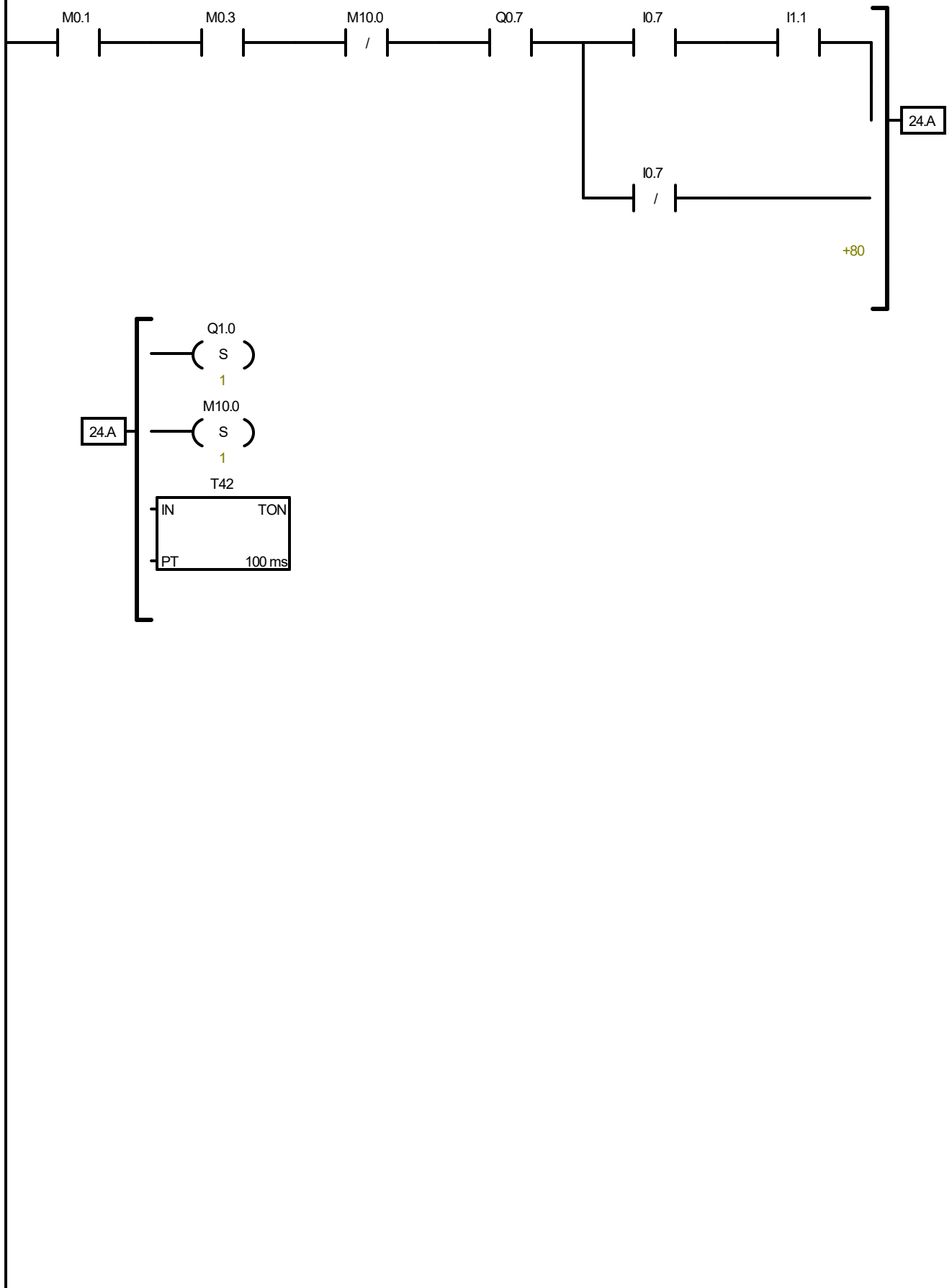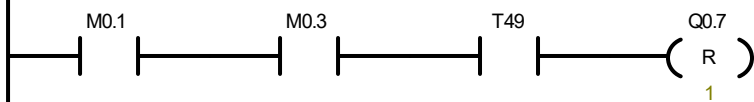
Network 25

I0.6 and I0.7 worked (horizontal piston extended all the way), horizontal piston creeps back
T41 - dogging check, horizontal piston
T42 - Check Valve Horizontal Piston

```
   M0.1        M0.3        M10.0        Q0.7         I0.7         I0.6
────┤ ├────────┤ ├──────────┤ ├──────────┤ ├──────────┤ ├────┬─────┤ ├───────┐
                                                             │                │
                                                             │    I0.6       25.A
                                                             └────┤/├─────────┘
```

```
               T49
               IN      TON
   25.A
        +5 ─┤ PT      100 ms

               T41
               IN      TON

        +80 ─┤ PT      100 ms
```

Network 26

```
   M0.1        M0.3        T49         Q0.7
────┤ ├────────┤ ├──────────┤ ├────────( R )
                                          1
```
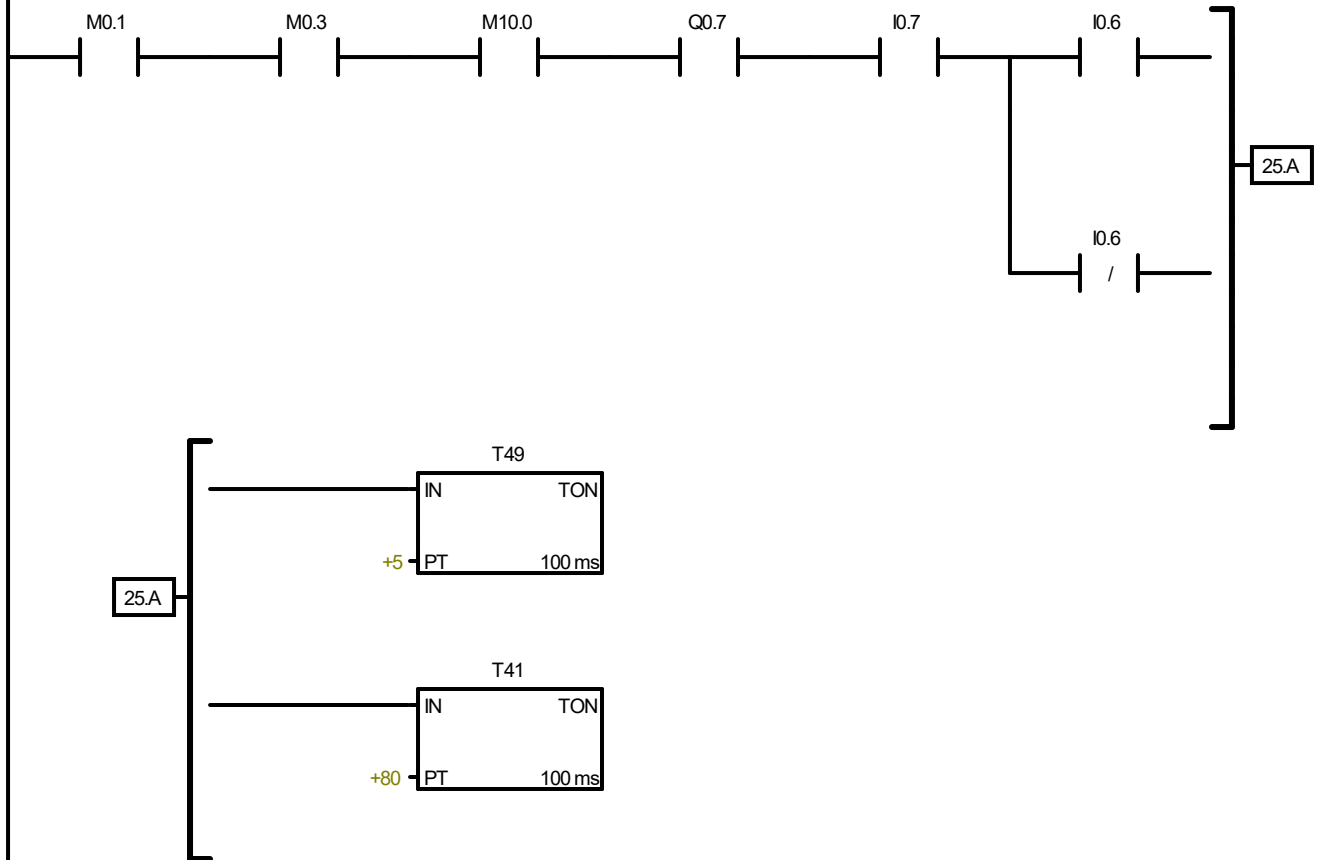
Network 27

I0.6 and I0.7 worked (horizontal piston extended all the way), horizontal piston creeps back

```
   M0.1        M0.3        M10.0       Q0.4        Q0.7        I0.6              ┐
───┤ ├─────────┤ ├─────────┤ ├─────────┤/├─────────┤/├─────────┤ ├──────────┌──────┐
                                                                             │ 27.A │
                                                                             └──────┘
                                                                                  ┘

                      I0.7        Q0.6
         ┌──────┐┌─────┤ ├────────( S )
         │ 27.A ││              1
         └──────┘│              Q0.5
                 │       ┌────────( S )
                 └───────┘       1
```
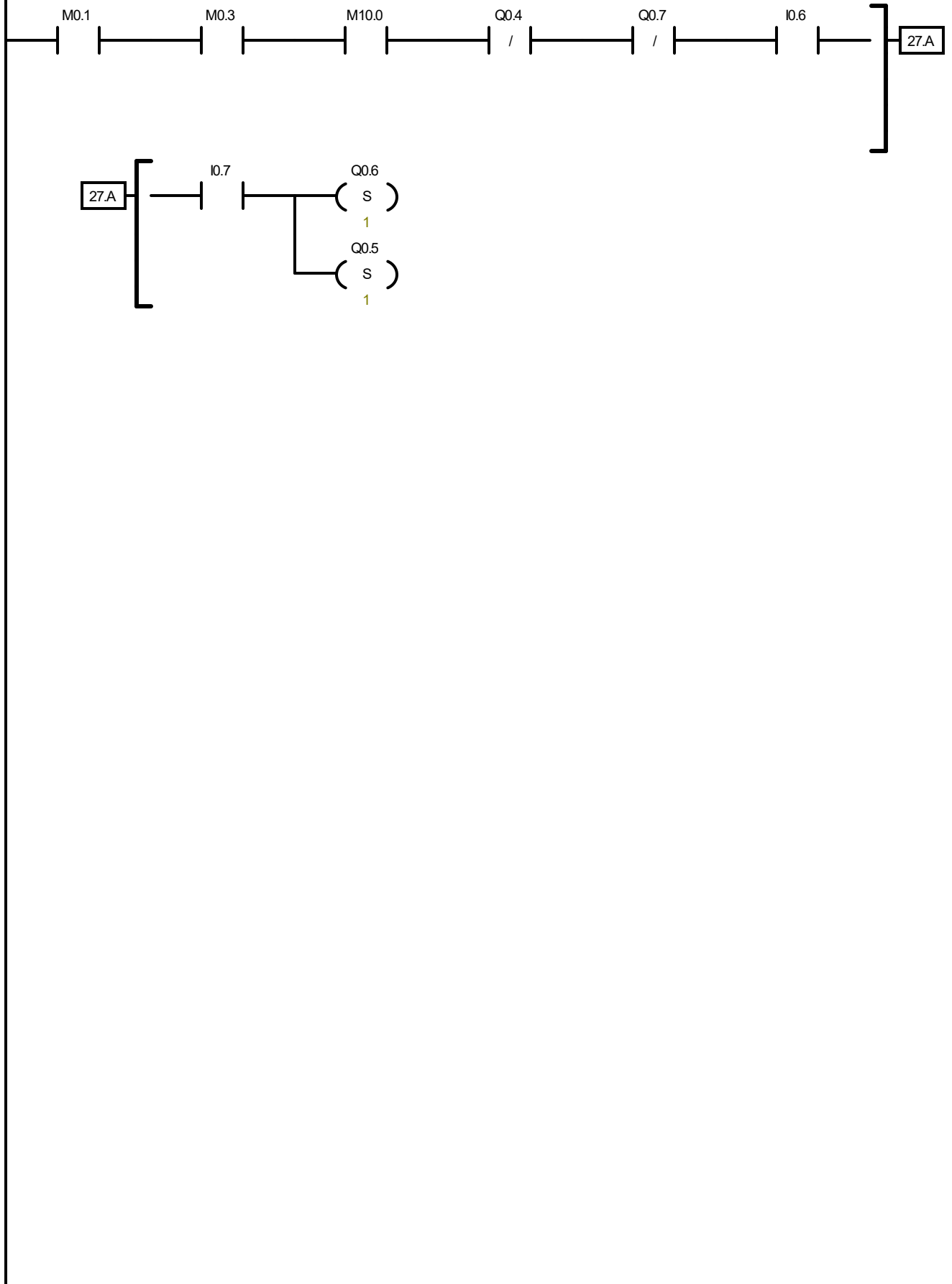
Network 28

The horizontal piston retracted, the vertical piston rises, the collet undenches.

M0.1	M0.3	M10.0	I0.4	I0.5	I0.6

28.A

28.A

I0.7

Q0.5
(R)
1

Q0.6
(R)
1

Q1.0
(R)
1

M10.0
(R)
1

VW10
◁
2

```
        ADD_I
     EN      ENO
  1 —IN1     OUT—VW10
VW10—IN2
```