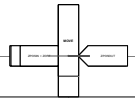
```
       VAR_IN_OUT
SEQCUR : INT;
   END_VAR

       VAR_INPUT
XPOSIN : INT;
YPOSIN : INT;
ZPOSIN : INT;
XPOSACT : INT;
YPOSACT : INT;
ZPOSACT : INT;
   END_VAR

       VAR_OUTPUT
XPOSOUT : INT;
YPOSOUT : INT;
ZPOSOUT : INT;
   END_VAR

       VAR_EXTERNAL
XOFF : INT;
YOFF : INT;
ZOFF : INT;
   END_VAR
```



Project : clock	
FUNCTION BLOCK : StepperSEQ	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:2 of 2

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 450;
 4 YPOSOUT := YPOS0 + 450;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 2505;
17 YPOSOUT := YPOS0 + 450;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 2505;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25 IF (curSeq = 23) THEN
26 XPOSOUT := XPOS0 + 450;
27 YPOSOUT := YPOS0 + 1520;
28 END_IF;
29
30 IF (curSeq = 24) THEN
31 XPOSOUT := XPOS0 + 450;
32 YPOSOUT := YPOS0 + 550;
33 END_IF;
34
35
36
37 //Move to next sequence if current sequence reaches its requested position.
38 //Might need another condition so CURSEQ doesn't keep incrementing
39 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
40 curSeq := curSeq + 1;
41 END_IF;
42
43
44 //End of engrave sequence looking for 100
45 //23 is a placeholder for last sequence
46 IF(curSeq > 24) THEN
47 curSeq := 100;
48 LASERPWM := 0.0;
49
50 END_IF;
51
52
```

	Project : clock	
	FUNCTION BLOCK : Engrave0	
	Release : clock	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:1 of 1

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 768;
 4 YPOSOUT := YPOS0 + 1303;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 985;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 2405;
22 YPOSOUT := YPOS0 + 985;
23 END_IF;
24
25 IF (curSeq = 23) THEN
26 XPOSOUT := XPOS0 + 2405;
27 YPOSOUT := YPOS0 + 1520;
28 END_IF;
29
30 IF (curSeq = 24) THEN
31 XPOSOUT := XPOS0 + 2505;
32 YPOSOUT := YPOS0 + 1520;
33 END_IF;
34
35 IF (curSeq = 25) THEN
36 XPOSOUT := XPOS0 + 2505;
37 YPOSOUT := YPOS0 + 450;
38 END_IF;
39
40
41
42 //Move to next sequence if current sequence reaches its requested position.
43 //Might need another condition so CURSEQ doesn't keep incrementing
44 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
45 curSeq := curSeq + 1;
46 END_IF;
47
48
49 //End of engrave sequence looking for 100
50 //23 is a placeholder for last sequence
51 IF(curSeq > 25) THEN
52 curSeq := 100;
53 LASERPWM := 0.0;
54 END_IF;
55
56
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 900;
 4 YPOSOUT := YPOS0 + 1520;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 1520;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 450;
22 YPOSOUT := YPOS0 + 450;
23 END_IF;
24
25 IF (curSeq = 23) THEN
26 XPOSOUT := XPOS0 + 1480;
27 YPOSOUT := YPOS0 + 450;
28 END_IF;
29
30 IF (curSeq = 24) THEN
31 XPOSOUT := XPOS0 + 1480;
32 YPOSOUT := YPOS0 + 1520;
33 END_IF;
34
35 IF (curSeq = 25) THEN
36 XPOSOUT := XPOS0 + 2505;
37 YPOSOUT := YPOS0 + 1520;
38 END_IF;
39
40 IF (curSeq = 26) THEN
41 XPOSOUT := XPOS0 + 2505;
42 YPOSOUT := YPOS0 + 450;
43 END_IF;
44
45
46
47 //Move to next sequence if current sequence reaches its requested position.
48 //Might need another condition so CURSEQ doesn't keep incrementing
49 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
50 curSeq := curSeq + 1;
51 END_IF;
52
53
54 //End of engrave sequence looking for 100
55 //23 is a placeholder for last sequence
56 IF(curSeq > 26) THEN
57 curSeq := 100;
58 LASERPWM := 0.0;
59 END_IF;
60
61
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2
 3 IF (curSeq = 20) THEN
 4 XPOSOUT := XPOS0 + 450;
 5 YPOSOUT := YPOS0 + 1520;
 6 END_IF;
 7
 8
 9 //Fire laser while moving through sequence
10 IF (curSeq > 20) AND (curSeq < 100) THEN
11 LASERPWM := 0.8;
12 ELSE
13 LASERPWM := 0.0;
14 END_IF;
15
16 IF (curSeq = 21) THEN
17 XPOSOUT := XPOS0 + 450;
18 YPOSOUT := YPOS0 + 450;
19 END_IF;
20
21 IF (curSeq = 22) THEN
22 XPOSOUT := XPOS0 + 1475;
23 YPOSOUT := YPOS0 + 450;
24 END_IF;
25
26 IF (curSeq = 23) THEN
27 XPOSOUT := XPOS0 + 1475;
28 YPOSOUT := YPOS0 + 1520;
29 END_IF;
30
31 IF (curSeq = 24) THEN
32 XPOSOUT := XPOS0 + 1575;
33 YPOSOUT := YPOS0 + 1520;
34 END_IF;
35
36 IF (curSeq = 25) THEN
37 XPOSOUT := XPOS0 + 1575;
38 YPOSOUT := YPOS0 + 450;
39 END_IF;
40
41 IF (curSeq = 26) THEN
42 XPOSOUT := XPOS0 + 2505;
43 YPOSOUT := YPOS0 + 450;
44 END_IF;
45
46 IF (curSeq = 27) THEN
47 XPOSOUT := XPOS0 + 2505;
48 YPOSOUT := YPOS0 + 1520;
49 END_IF;
50
51
52 //Move to next sequence if current sequence reaches its requested position.
53 //Might need another condition so CURSEQ doesn't keep incrementing
54 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
55 curSeq := curSeq + 1;
56 END_IF;
57
58
59 //End of engrave sequence looking for 100
60 //23 is a placeholder for last sequence
61 IF(curSeq > 27) THEN
62 curSeq := 100;
63 LASERPWM := 0.0;
64 END_IF;
65
66
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2
 3 IF (curSeq = 20) THEN
 4 XPOSOUT := XPOS0 + 1412;
 5 YPOSOUT := YPOS0 + 450;
 6 END_IF;
 7
 8
 9 //Fire laser while moving through sequence
10 IF (curSeq > 20) AND (curSeq < 100) THEN
11 LASERPWM := 0.8;
12 ELSE
13 LASERPWM := 0.0;
14 END_IF;
15
16 IF (curSeq = 21) THEN
17 XPOSOUT := XPOS0 + 1412;
18 YPOSOUT := YPOS0 + 1520;
19 END_IF;
20
21 IF (curSeq = 22) THEN
22 XPOSOUT := XPOS0 + 450;
23 YPOSOUT := YPOS0 + 741;
24 END_IF;
25
26 IF (curSeq = 23) THEN
27 XPOSOUT := XPOS0 + 2505;
28 YPOSOUT := YPOS0 + 741;
29 END_IF;
30
31
32
33 //Move to next sequence if current sequence reaches its requested position.
34 //Might need another condition so CURSEQ doesn't keep incrementing
35 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
36 curSeq := curSeq + 1;
37 END_IF;
38
39
40 //End of engrave sequence looking for 100
41 //23 is a placeholder for last sequence
42 IF(curSeq > 23) THEN
43 curSeq := 100;
44 LASERPWM := 0.0;
45 END_IF;
46
47
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 450;
 4 YPOSOUT := YPOS0 + 450;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 1520;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 1480;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25 IF (curSeq = 23) THEN
26 XPOSOUT := XPOS0 + 1480;
27 YPOSOUT := YPOS0 + 450;
28 END_IF;
29
30 IF (curSeq = 24) THEN
31 XPOSOUT := XPOS0 + 2505;
32 YPOSOUT := YPOS0 + 450;
33 END_IF;
34
35 IF (curSeq = 25) THEN
36 XPOSOUT := XPOS0 + 2505;
37 YPOSOUT := YPOS0 + 1520;
38 END_IF;
39
40
41
42 //Move to next sequence if current sequence reaches its requested position.
43 //Might need another condition so CURSEQ doesn't keep incrementing
44 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
45 curSeq := curSeq + 1;
46 END_IF;
47
48
49 //End of engrave sequence looking for 100
50 //23 is a placeholder for last sequence
51 IF(curSeq > 25) THEN
52 curSeq := 100;
53 LASERPWM := 0.0;
54 END_IF;
55
56
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 450;
 4 YPOSOUT := YPOS0 + 450;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 1520;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 1475;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25 IF (curSeq = 23) THEN
26 XPOSOUT := XPOS0 + 1475;
27 YPOSOUT := YPOS0 + 450;
28 END_IF;
29
30 IF (curSeq = 24) THEN
31 XPOSOUT := XPOS0 + 2505;
32 YPOSOUT := YPOS0 + 450;
33 END_IF;
34
35 IF (curSeq = 25) THEN
36 XPOSOUT := XPOS0 + 2505;
37 YPOSOUT := YPOS0 + 1520;
38 END_IF;
39
40 IF (curSeq = 26) THEN
41 XPOSOUT := XPOS0 + 1575;
42 YPOSOUT := YPOS0 + 1520;
43 END_IF;
44
45
46 //Move to next sequence if current sequence reaches its requested position.
47 //Might need another condition so CURSEQ doesn't keep incrementing
48 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
49 curSeq := curSeq + 1;
50 END_IF;
51
52
53 //End of engrave sequence looking for 100
54 IF(curSeq > 26) THEN
55 curSeq := 100;
56 LASERPWM := 0.0;
57 END_IF;
58
59
```

```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 450;
 4 YPOSOUT := YPOS0 + 1520;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 450;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 2505;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25
26
27 //Move to next sequence if current sequence reaches its requested position.
28 //Might need another condition so CURSEQ doesn't keep incrementing
29 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
30 curSeq := curSeq + 1;
31 END_IF;
32
33
34 //End of engrave sequence looking for 100
35 IF(curSeq > 22) THEN
36 curSeq := 100;
37 LASERPWM := 0.0;
38 END_IF;
39
40
```

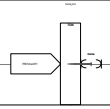
```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 450;
 4 YPOSOUT := YPOS0 + 450;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 450;
17 YPOSOUT := YPOS0 + 1520;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 1430;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25 IF (curSeq = 22) THEN
26 XPOSOUT := XPOS0 + 1430;
27 YPOSOUT := YPOS0 + 550;
28 END_IF;
29
30 IF (curSeq = 23) THEN
31 XPOSOUT := XPOS0 + 1530;
32 YPOSOUT := YPOS0 + 550;
33 END_IF;
34
35 IF (curSeq = 24) THEN
36 XPOSOUT := XPOS0 + 1530;
37 YPOSOUT := YPOS0 + 1520;
38 END_IF;
39
40 IF (curSeq = 25) THEN
41 XPOSOUT := XPOS0 + 2505;
42 YPOSOUT := YPOS0 + 1520;
43 END_IF;
44
45 IF (curSeq = 26) THEN
46 XPOSOUT := XPOS0 + 2505;
47 YPOSOUT := YPOS0 + 450;
48 END_IF;
49
50 IF (curSeq = 27) THEN
51 XPOSOUT := XPOS0 + 550;
52 YPOSOUT := YPOS0 + 450;
53 END_IF;
54
55
56 //Move to next sequence if current sequence reaches its requested position.
57 //Might need another condition so CURSEQ doesn't keep incrementing
58 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
59 curSeq := curSeq + 1;
60 END_IF;
61
62
63 //End of engrave sequence looking for 100
64 IF(curSeq > 27) THEN
65 curSeq := 100;
66 LASERPWM := 0.0;
67 END_IF;
68
69
```

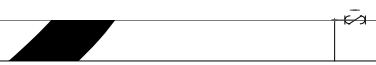
```
        VAR_INPUT
   YPOS0 : INT;
   XPOS0 : INT;
   XPOSACT : INT;
   YPOSACT : INT;
       END_VAR

        VAR_OUTPUT
   LASERPWM : REAL;
   XPOSOUT : INT;
   YPOSOUT : INT;
       END_VAR

        VAR_EXTERNAL
   curSeq : INT;
       END_VAR
```

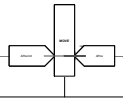
```
 1
 2 IF (curSeq = 20) THEN
 3 XPOSOUT := XPOS0 + 1475;
 4 YPOSOUT := YPOS0 + 550;
 5 END_IF;
 6
 7
 8 //Fire laser while moving through sequence
 9 IF (curSeq > 20) AND (curSeq < 100) THEN
10 LASERPWM := 0.8;
11 ELSE
12 LASERPWM := 0.0;
13 END_IF;
14
15 IF (curSeq = 21) THEN
16 XPOSOUT := XPOS0 + 1475;
17 YPOSOUT := YPOS0 + 1520;
18 END_IF;
19
20 IF (curSeq = 22) THEN
21 XPOSOUT := XPOS0 + 450;
22 YPOSOUT := YPOS0 + 1520;
23 END_IF;
24
25 IF (curSeq = 22) THEN
26 XPOSOUT := XPOS0 + 450;
27 YPOSOUT := YPOS0 + 450;
28 END_IF;
29
30 IF (curSeq = 23) THEN
31 XPOSOUT := XPOS0 + 2505;
32 YPOSOUT := YPOS0 + 450;
33 END_IF;
34
35 IF (curSeq = 24) THEN
36 XPOSOUT := XPOS0 + 2505;
37 YPOSOUT := YPOS0 + 1520;
38 END_IF;
39
40
41
42 //Move to next sequence if current sequence reaches its requested position.
43 //Might need another condition so CURSEQ doesn't keep incrementing
44 IF (XPOSOUT = XPOSACT) AND (YPOSOUT = YPOSACT) THEN
45 curSeq := curSeq + 1;
46 END_IF;
47
48
49 //End of engrave sequence looking for 100
50 IF(curSeq > 24) THEN
51 curSeq := 100;
52 LASERPWM := 0.0;
53 END_IF;
54
55
```

```
       VAR
home_tim : TON;
ZPosInit : INT := 12000;
XPosInit : INT := 1000;
YPosInit : INT := 8000;
pick : INT := 0;
place : INT := 2;
XSpeedInit : INT := 750;
YSpeedInit : INT := 750;
ZSpeedInit : INT := 400;
APosInit : INT := 0;
ASpeedInit : INT := 1500;
laserPWR : REAL := 0;
fireSol0 : BOOL;
   END_VAR
```

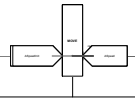


	Project : clock	
	PROGRAM : main	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:2 of 8

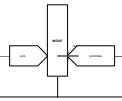




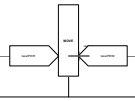
Project : clock	
PROGRAM : main	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:4 of 8



	Project : clock	
	PROGRAM : main	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:5 of 8

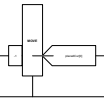


	Project : clock	
	PROGRAM : main	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:7 of 8

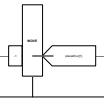


Project : clock	
PROGRAM : main	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:8 of 8

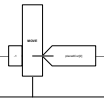
```
       VAR
XSpeedInit : INT := 200;
YSpeedInit : INT := 200;
ZSpeedInit : INT := 200;
ASpeedInit : INT := 1500;
   END_VAR
```



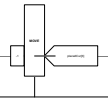
	Project : clock	
	PROGRAM : init	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:1 of 5



Project : clock	
PROGRAM : init	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:2 of 5



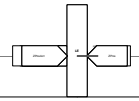
Project : clock	
PROGRAM : init	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:3 of 5

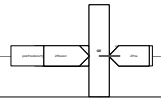


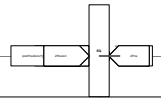
Project : clock	
PROGRAM : init	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:4 of 5

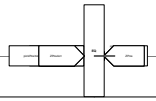
PROGRAM Pick_SEQ

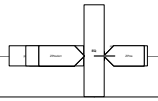
```
       VAR
POS0 : INT := 4000;
SPEEDY : INT := 450;
POS1 : INT := 12000;
step0 : StepperSEQ;
step1 : StepperSEQ;
step2 : StepperSEQ;
step3 : StepperSEQ;
step4 : StepperSEQ;
pickOffsetY : INT := 2100;
disableA : TON;
timEnableA : BOOL;
   END_VAR
```

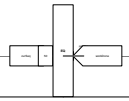


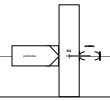


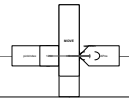


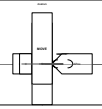




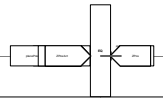


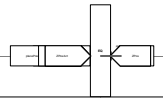


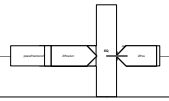


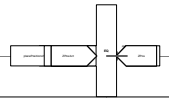


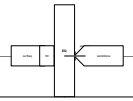
```
       VAR
pushClearanceX : INT := 17000;
placeHeight : INT := 9500;
pushDistance : INT := 300;
step0 : StepperSEQ;
step1 : StepperSEQ;
step2 : StepperSEQ;
step3 : StepperSEQ;
step4 : StepperSEQ;
   END_VAR
```



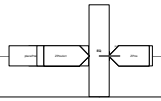


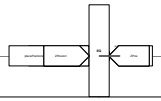


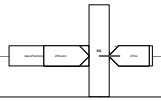




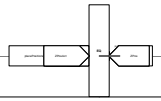
```
       VAR
step0 : StepperSEQ;
step1 : StepperSEQ;
step2 : StepperSEQ;
step3 : StepperSEQ;
step4 : StepperSEQ;
step5 : StepperSEQ;
step6 : StepperSEQ;
solTim : TON;
solDur : INT := 750;
test1 : BOOL;
solTim1 : TOF;
solMS : INT := 0;
   END_VAR
```



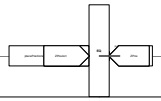


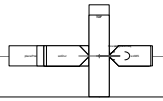


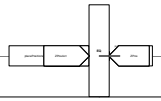
	Project : clock	
	PROGRAM : Push_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:4 of 11

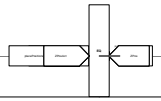


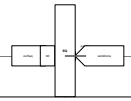
	Project : clock	
	PROGRAM : Push_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:5 of 11

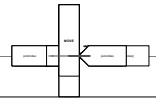






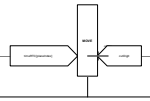




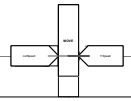


Project : clock	
PROGRAM : Push_SEQ	
Release :	Ver :1.00
Author :	Date:12/7/2023
Note :	Page:11 of 11

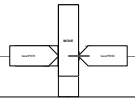
```
       VAR
cnt0 : CTD;
laserPWR : REAL := 10.0;
step0 : StepperSEQ;
step1 : StepperSEQ;
step2 : StepperSEQ;
   END_VAR
```

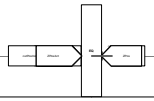


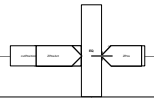
	Project : clock	
	PROGRAM : Cut_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:2 of 9

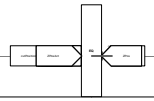


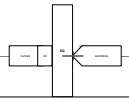
	Project : clock	
	PROGRAM : Cut_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:3 of 9

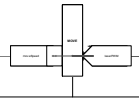






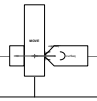




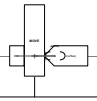


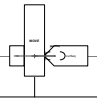
```
VAR
START_PB : BOOL;
PB_Timer : TON;
END_VAR
```

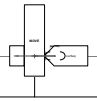
	Project : clock	
	PROGRAM : Sched	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:1 of 6



	Project : clock	
	PROGRAM : Sched	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:3 of 6

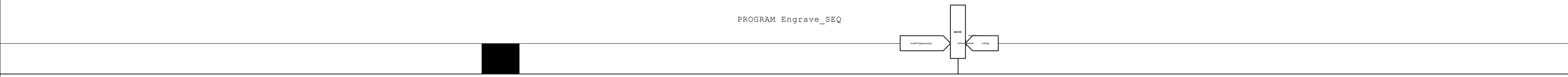


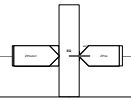


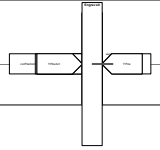


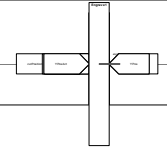
```
       VAR
eng1 : Engrave1;
eng2 : Engrave2;
eng3 : Engrave3;
eng4 : Engrave4;
eng5 : Engrave5;
eng6 : Engrave6;
eng8 : Engrave8;
eng9 : Engrave9;
eng0 : Engrave0;
eng7 : Engrave7;
step0 : StepperSEQ;
   END_VAR
```

PROGRAM Engrave_SEQ

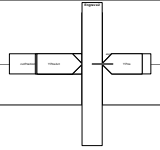




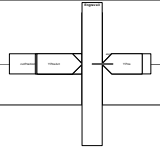

Engrave
Initial
Step1
Step2

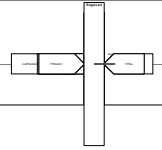


	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:5 of 15

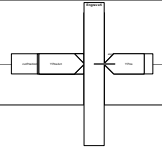


	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:6 of 15

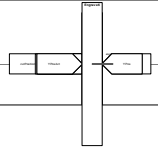




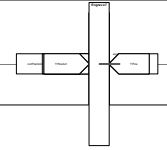
	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:8 of 15



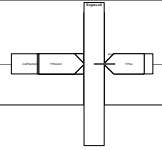
	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:9 of 15



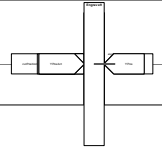
	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:10 of 15



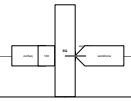
	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:11 of 15



	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:12 of 15



	Project : clock	
	PROGRAM : Engrave_SEQ	
	Release :	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:13 of 15



```
 1
 2 timeRTC[0] := minute MOD 10;
 3 timeRTC[1] := minute / 10;
 4
 5 timeRTC[2] := hour MOD 10;
 6 timeRTC[3] := hour / 10;
 7
 8 /* placedCur[3] is hourl and also most significant.
 9 If time changes, reset placedCur[x] to -1 and drop piece. */
10 IF(placedCur[3] = -1) THEN
11     placeIndex := 3;
12
13 ELSIF(placedCur[2] = -1) THEN
14     placeIndex := 2;
15
16 ELSIF(placedCur[1] = -1) THEN
17     placeIndex := 1;
18
19 ELSIF(placedCur[0] = -1) THEN
20     placeIndex := 0;
21
22 END_IF;
23
24 //set placedCur[x] to -1 when time changes, and not in motion.
25
```

	Project : clock	
	PROGRAM : TimeGetter	
	Release : clock	Ver :1.00
	Author :	Date:12/7/2023
	Note :	Page:1 of 1

```
        VAR_GLOBAL
cnt : INT;
pickSeq : BOOL := 0;
curSeq : INT := 10;
auto : BOOL;
manMode : BOOL;
pickIndex : INT := 0;
placePositionsY : ARRAY[0..3] OF INT := [7200, 10200, 13650, 16650];
placeIndex : INT;
placeSeq : BOOL;
laserSeq : INT;
pickPositionX : INT := 7975;
placeClearZ : INT := 13600;
workDone : BOOL := 0;
pushSeq : BOOL;
cutPositionsY : ARRAY[0..9] OF INT := [20970, 19000, 17030, 15060, 13090, 11120, 9150, 7180, 5210, 3240];
cutBackX : INT := 15600;
cutFrontX : INT := 18500;
cutSeq : BOOL := 0;
moveSpeed : INT := 375;
min0 : INT := 0;
min1 : INT := 0;
hour0 : INT := 0;
hour1 : INT := 0;
placedCur : ARRAY[0..3] OF INT;
timeReal : ARRAY[0..3] OF INT;
timeRTC : ARRAY[0..3] OF INT;
Solenoids AT %MX3.2 : ARRAY[0..3] OF BOOL;
cutDigit : INT;
engraveSeq : BOOL;
Sol1 AT %MX3.2 : BOOL;
Sol2 AT %MX3.3 : BOOL;
Sol3 AT %MX3.4 : BOOL;
EnableXYZ AT %MX3.0 : BOOL;
EnableA AT %MX3.1 : BOOL;
Sol4 AT %MX3.5 : BOOL;
XHome AT %IX0.0 : BOOL;
YHome AT %IX0.1 : BOOL;
ZHome AT %IX0.2 : BOOL;
home2 : BOOL;
laserPWM AT %QD1.1 : REAL;
    END_VAR


        VAR_GLOBAL CONSTANT
ZTop : INT := 14800;
XOFF : INT := 0;
YOFF : INT := 0;
ZOFF : INT := 0;
pickPositionsY : ARRAY[0..9] OF INT := [20900, 18930, 16960, 14990, 13020, 11050, 9080, 7100, 5140, 3600];
pickClearanceZ : INT := 10000;
placePositionX : INT := 19400;
PBTimeOff : INT := 200;
pushClearanceX : INT := 16350;
    END_VAR
```

	Project : clock	
	VARIABLES :	
	Release :	Ver :1.00
	Author :	Date:07/12/2023
	Note :	Page:1 of 1