SERVICE MANUAL

Feeder, ironer, folder and stacker
All versions

04102003GB

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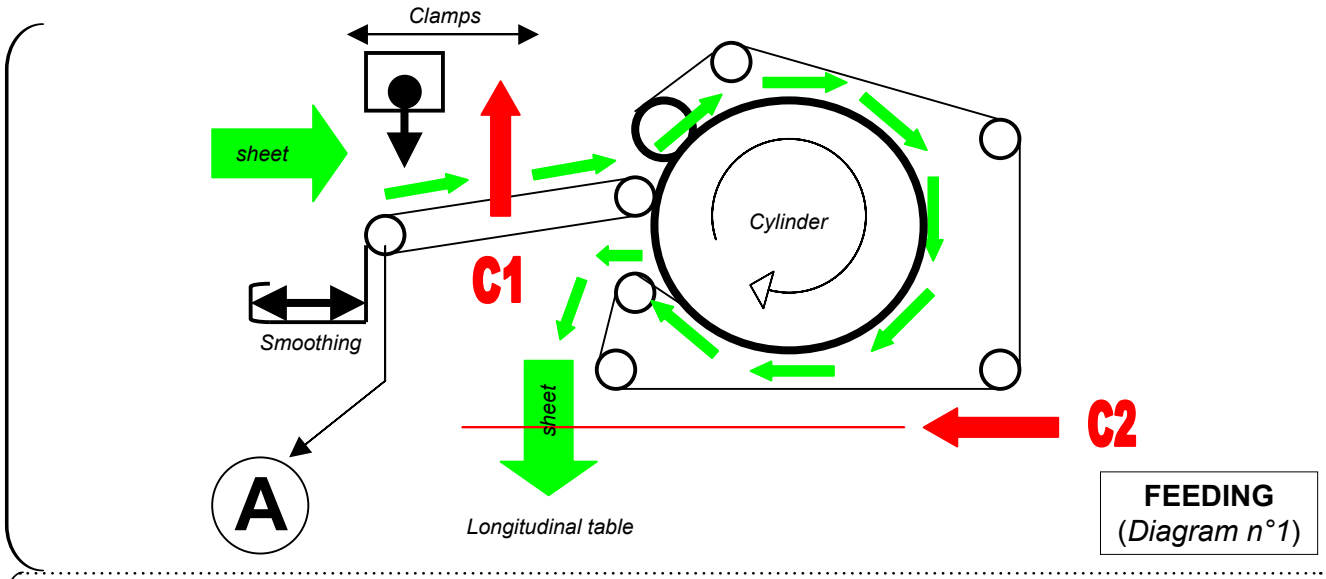
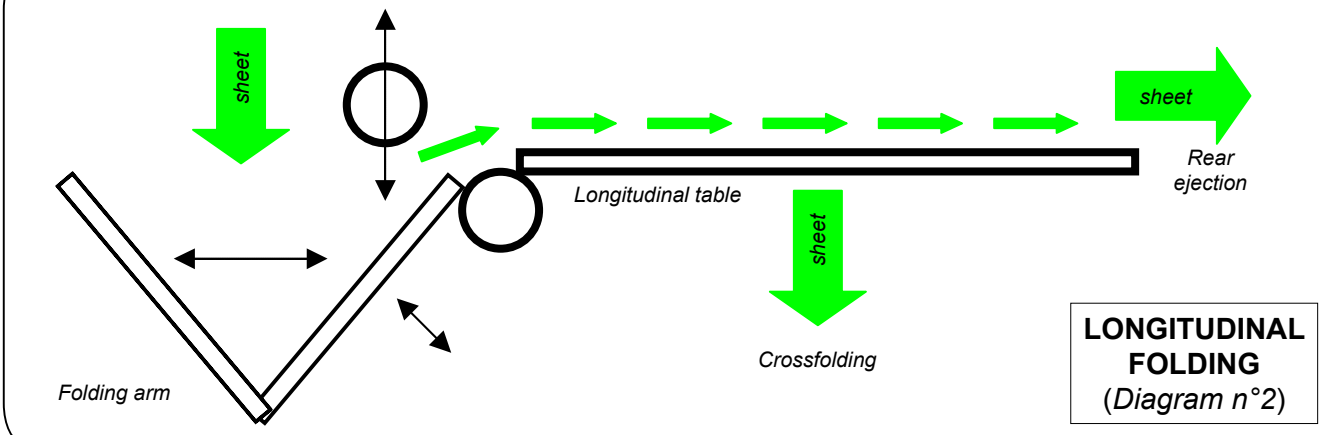
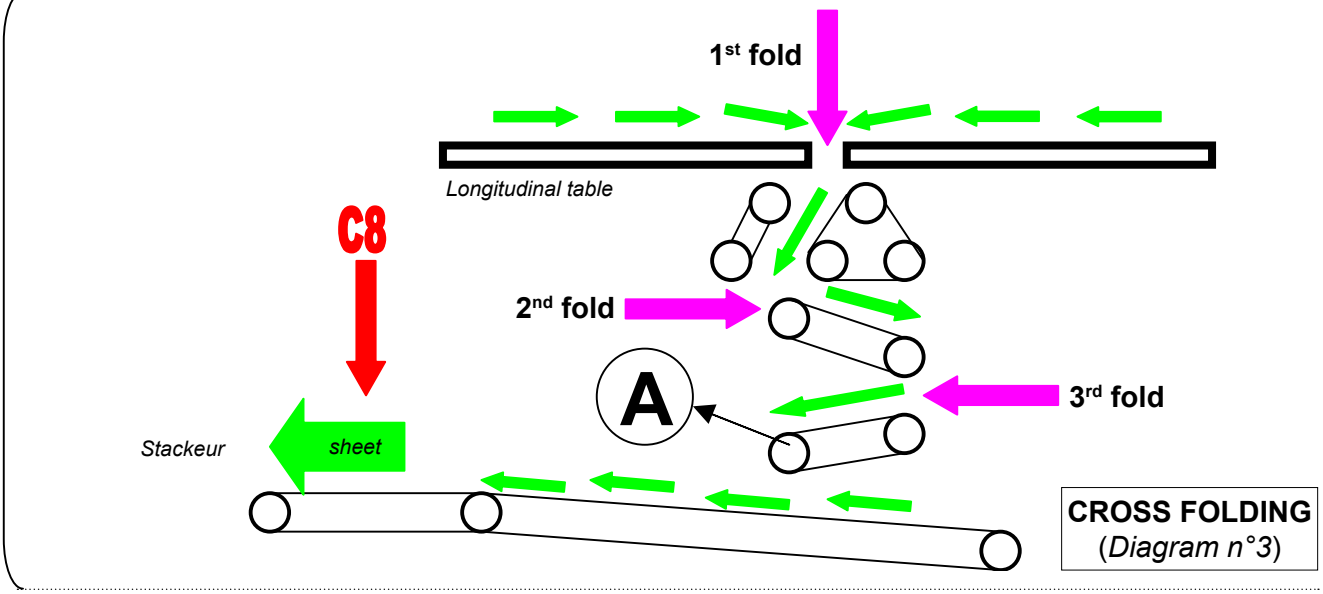
Synoptic diagram



FEEDING
(*Diagram n°1*)



LONGITUDINAL FOLDING
(*Diagram n°2*)



CROSS FOLDING
(*Diagram n°3*)

FEEDING : *diagram n°1*

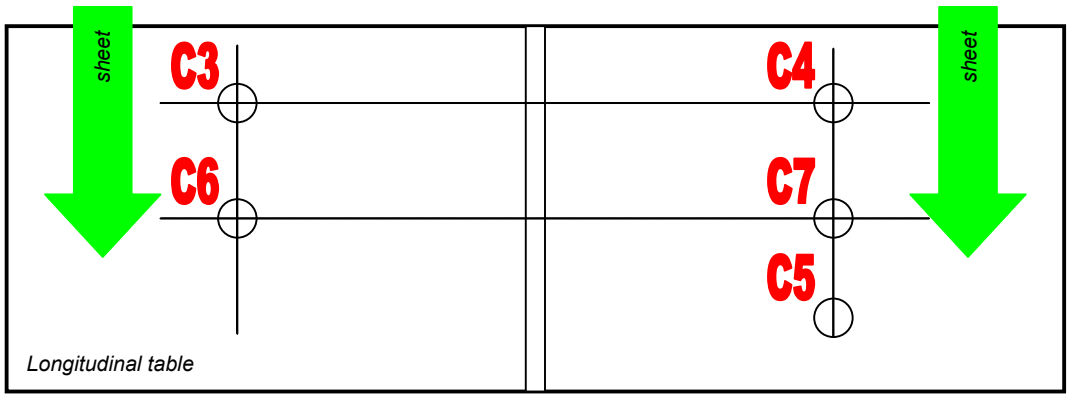
- initial position «feeding position»
- automatic feeding button = ON
- Smoothing = ON
- C1 = ON ⇨ attendre que C1 désactivée
  C1 = OFF ⇨ space, move, unlocking of feeding clamps
- C1 activated
- Return to initial position

LONGITUDINAL FOLDING : *diagram n°2*

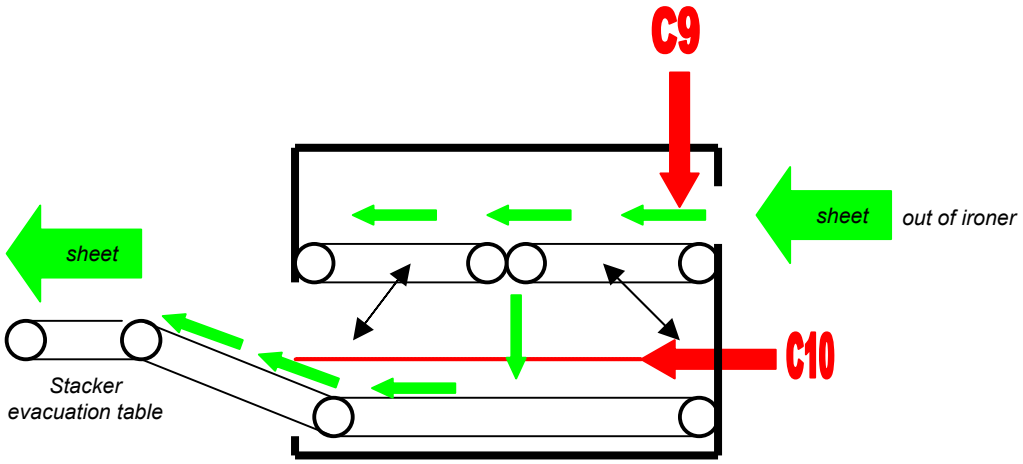
- Folding arm = rear position
- C2 = ON ⇨ 1st fold counter = ON
- Folding arm = front position
- 2nd & 3rd folds counter = ON
- Folding arm = rear position
- C2 = OFF (the end of sheet) ⇨ Longitudinal table = ON
  C2 = ON ⇨ 4th & 5th folds counter = ON
- Folding arm = front position
- 6th & 7th fold counter = ON
- Folding arm = rear position
- C2 = OFF ⇨ Longitudinal table = ON
  C2 = ON ⇨ 8th & 9th folds counter = ON
- Folding arm = front position
- C2 = OFF
- Folding arm = rear position
- Longitudinal table = ON

CROSS FOLDING : *diagram n°3*

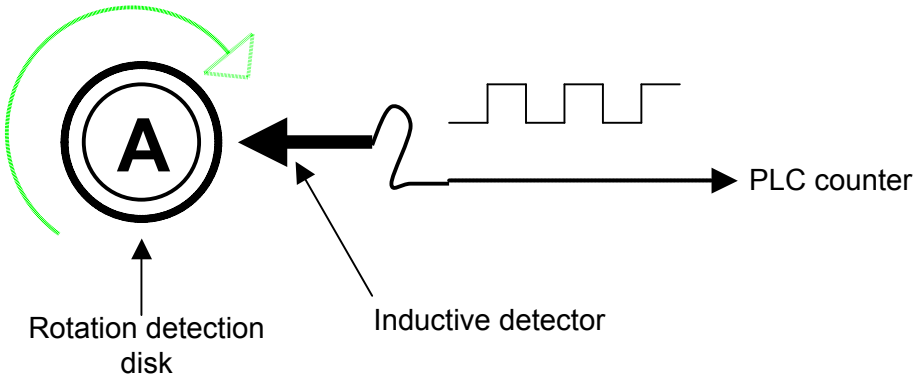
- Longitudinal table = ON
- C3/C4 = ON (longitudinal fold OK)
- C3/C4 =OFF & C5 = ON ⇨ Longitudinal table = OFF
- 1st fold
- C6/C7 = ON ⇨ 2nd fold counter = ON
- 2nd fold
- Reset of 2nd fold counter
- C6/C7 = ON ⇨ 3rd fold = ON
- 3rd fold
- Reset of 3rd fold counter
- Evacuation to the stacker



CROSSFOLDING SAFETY
(*Diagram n°3 bis*)



STACKER
(*Diagram n°4*)



(*Diagram A*)

CROSSFOLDING SAFETY : *diagram n°3 & n°3 bis*

• 1st safety : C6/C7 must be activated during less 5 seconds maxi. otherwise the croosfolding blocks.

• 2nd safety : C8 must be activated during less 25 secondes max. after the 1st fold otherwise the croosfolding blocks.

STACKER : *diagram n°4*

• Flap closed

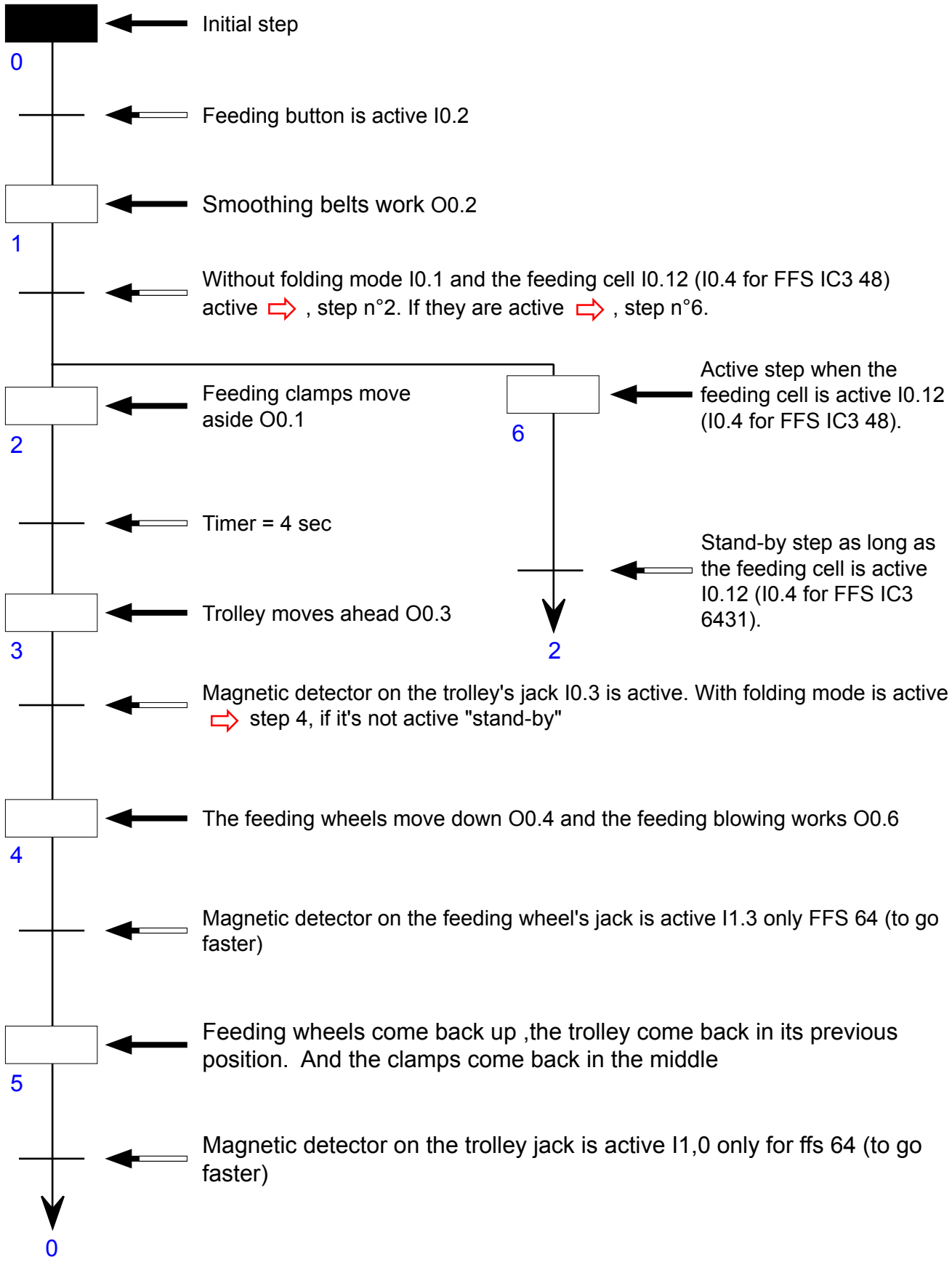
• C8 = ON ⇨ Stacker = ON

• C9 = ON ⇨ centring of sheet

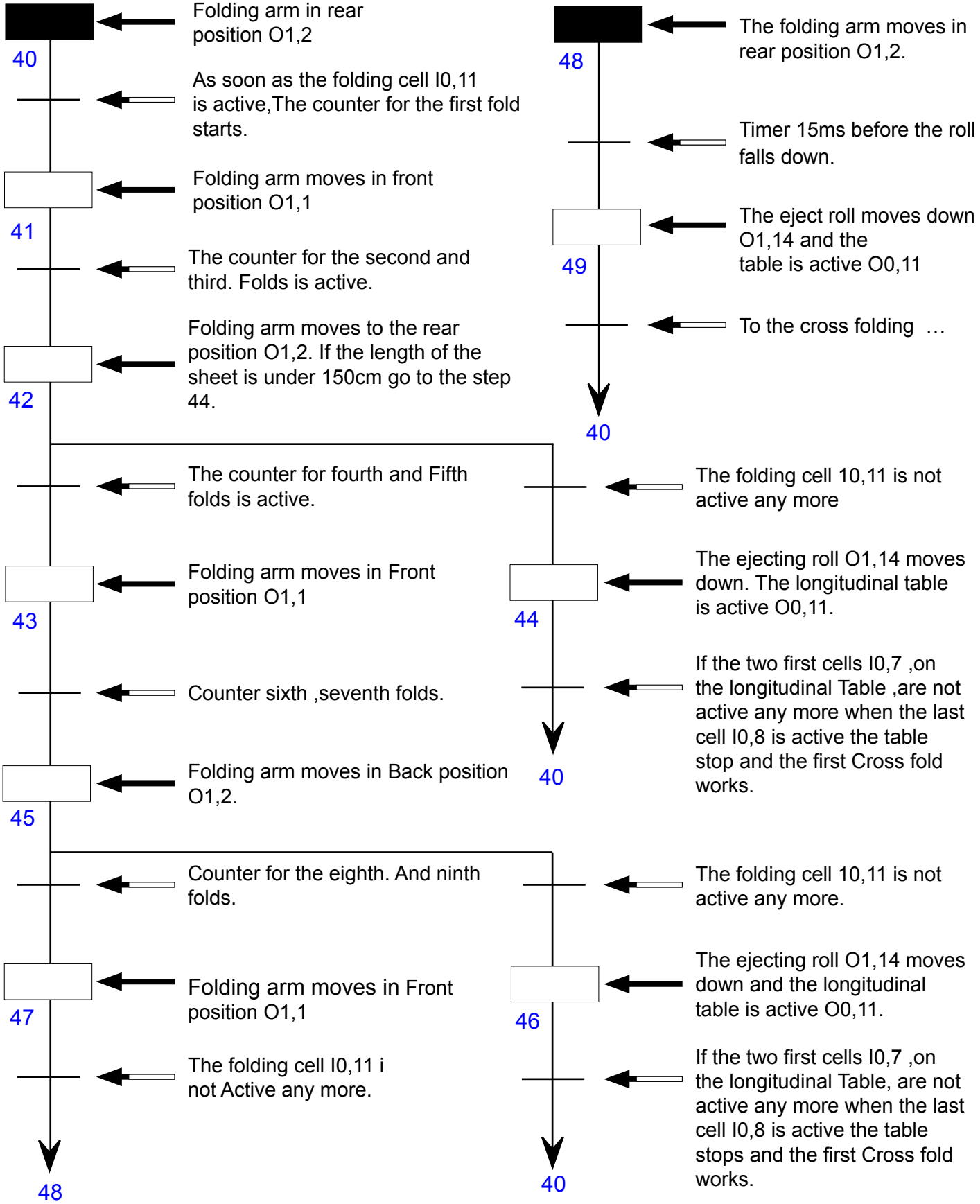
• Lenght of sheet > 30 cm ⇨ Evacuation of sheet on the side
Lenght of sheet < 30 cm ⇨ Flap opened

• C10 = ON ⇨ Full stacker indicator = ON

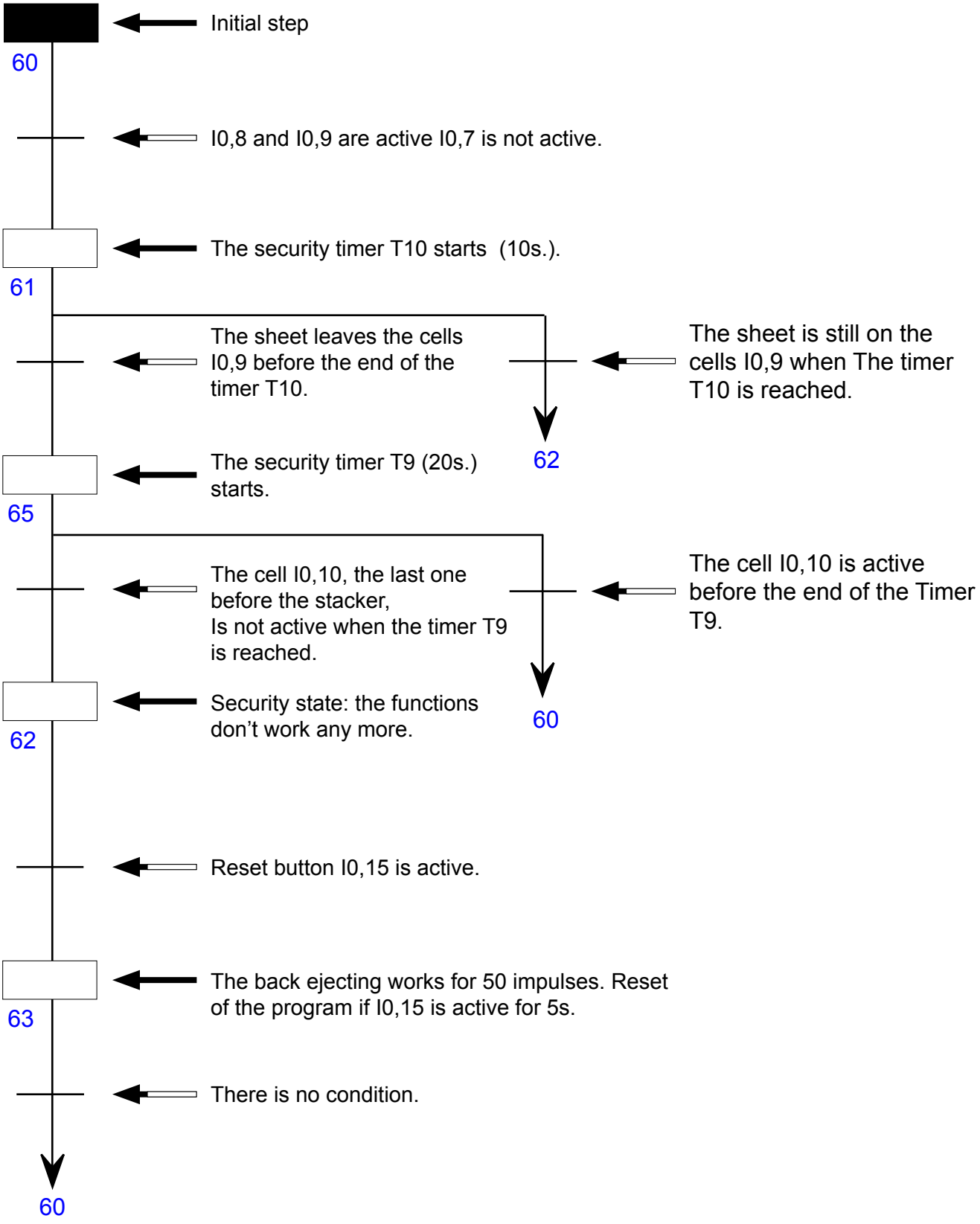
Feeding system chart



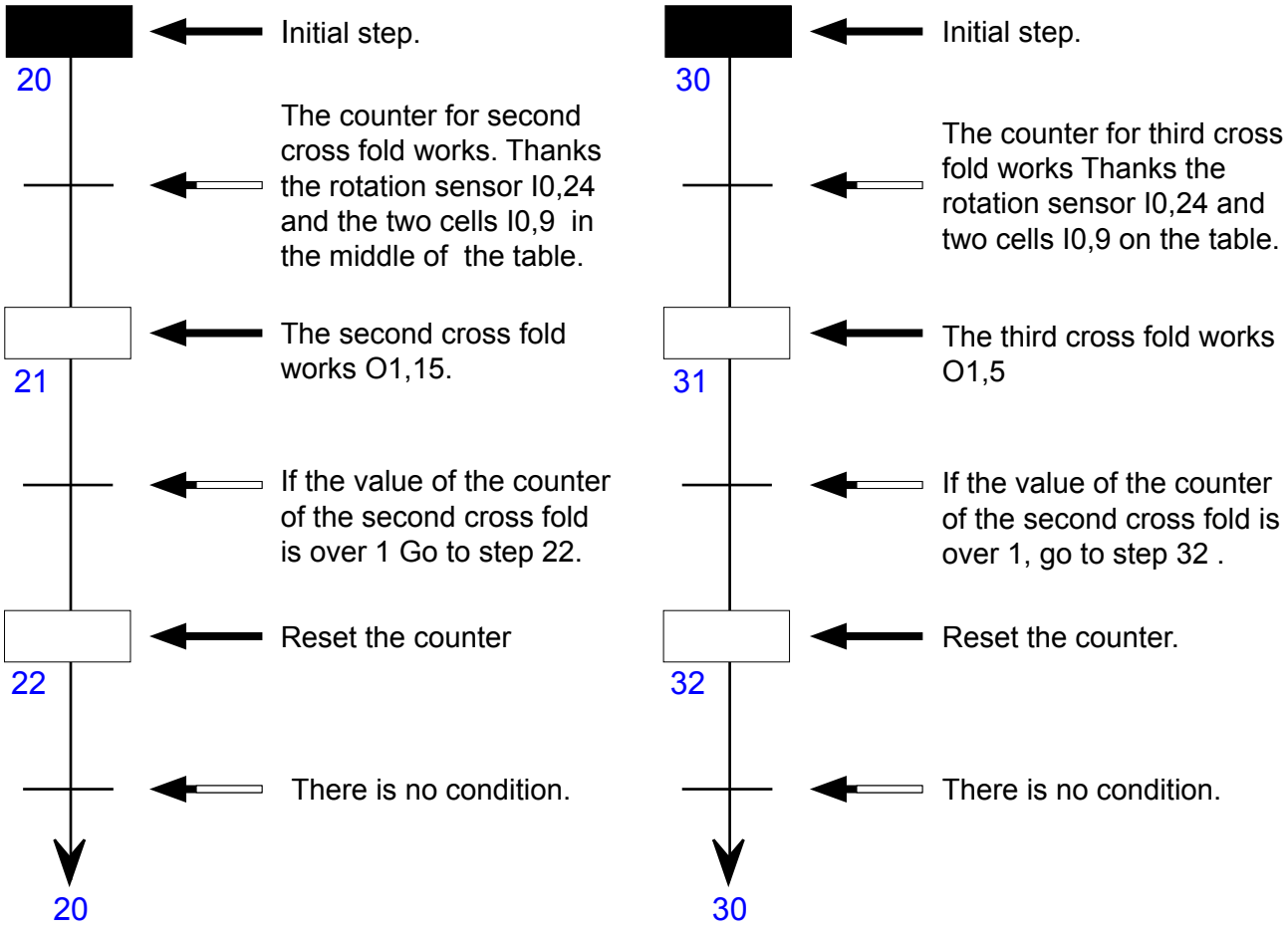
Length folding system chart



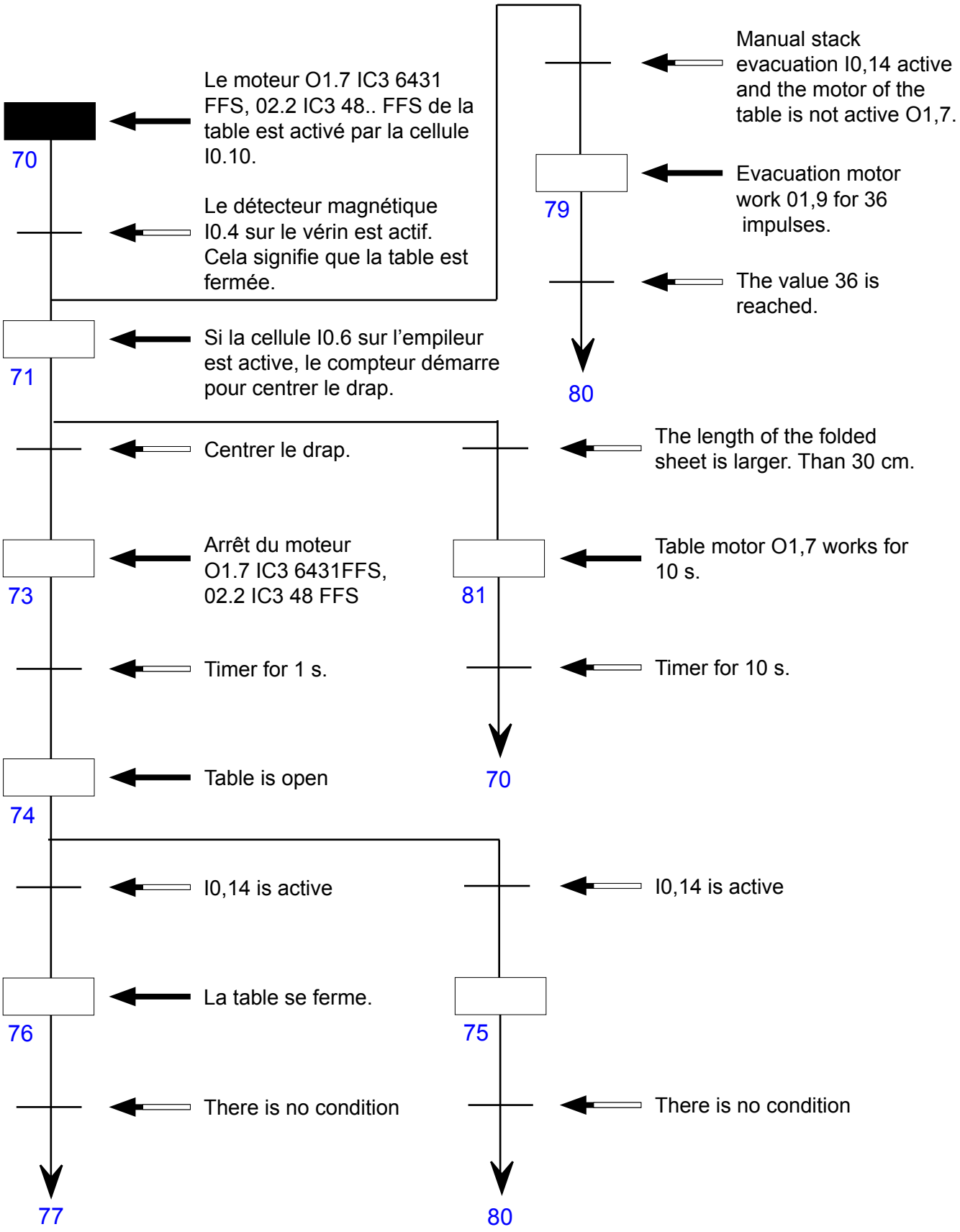
The chart of the cross folding security



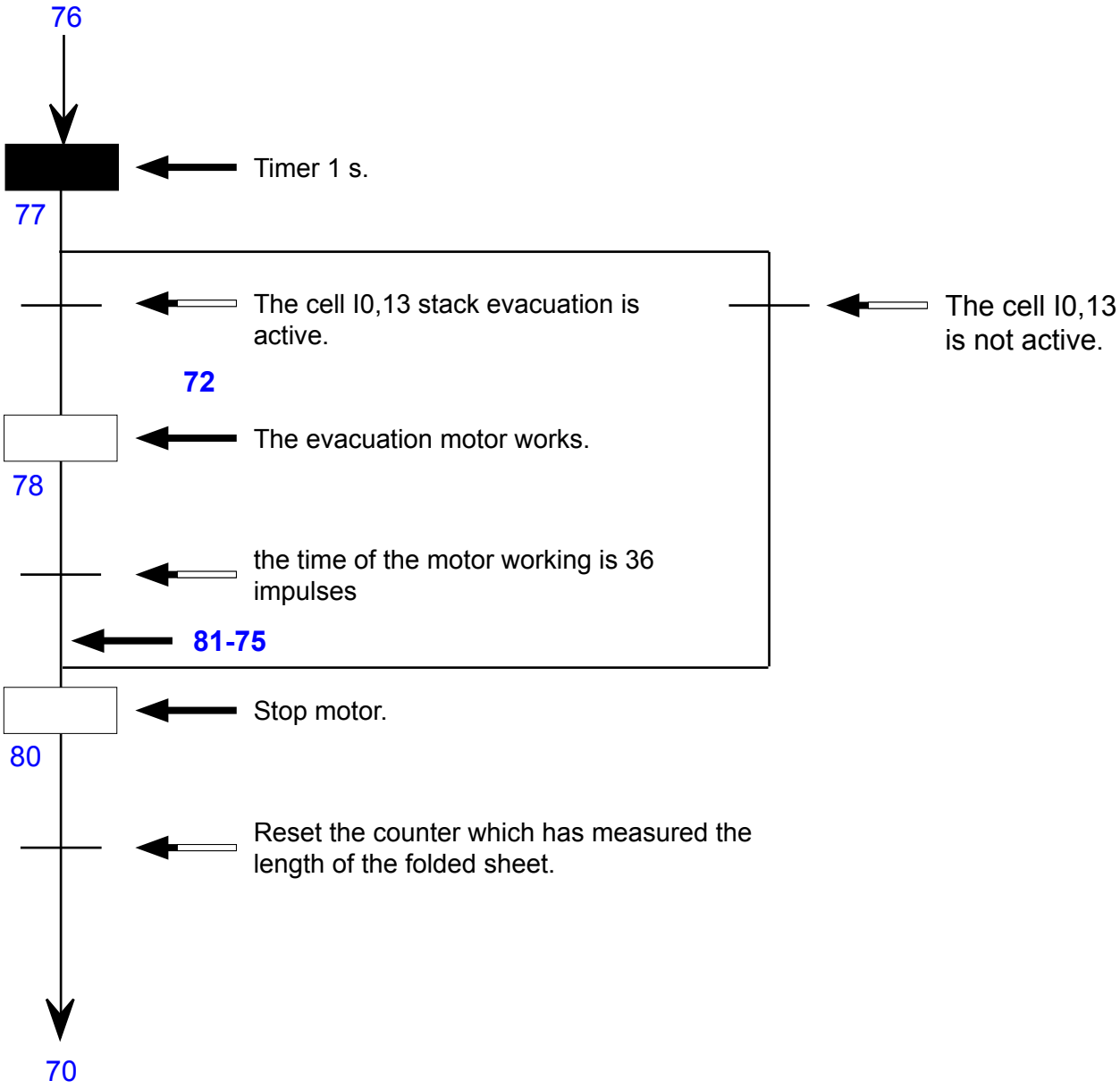
Cross folding system chart



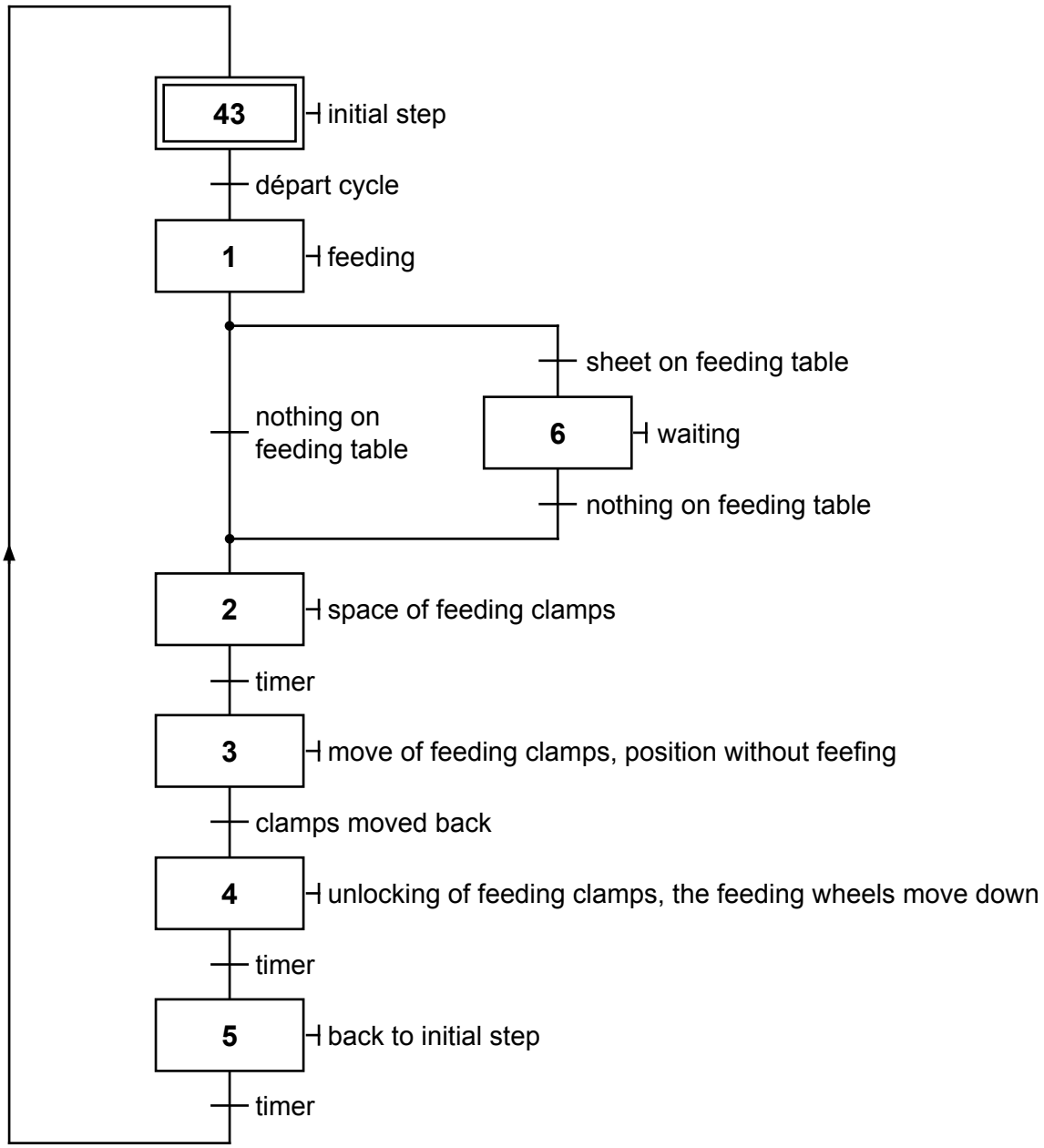
Stacker chart



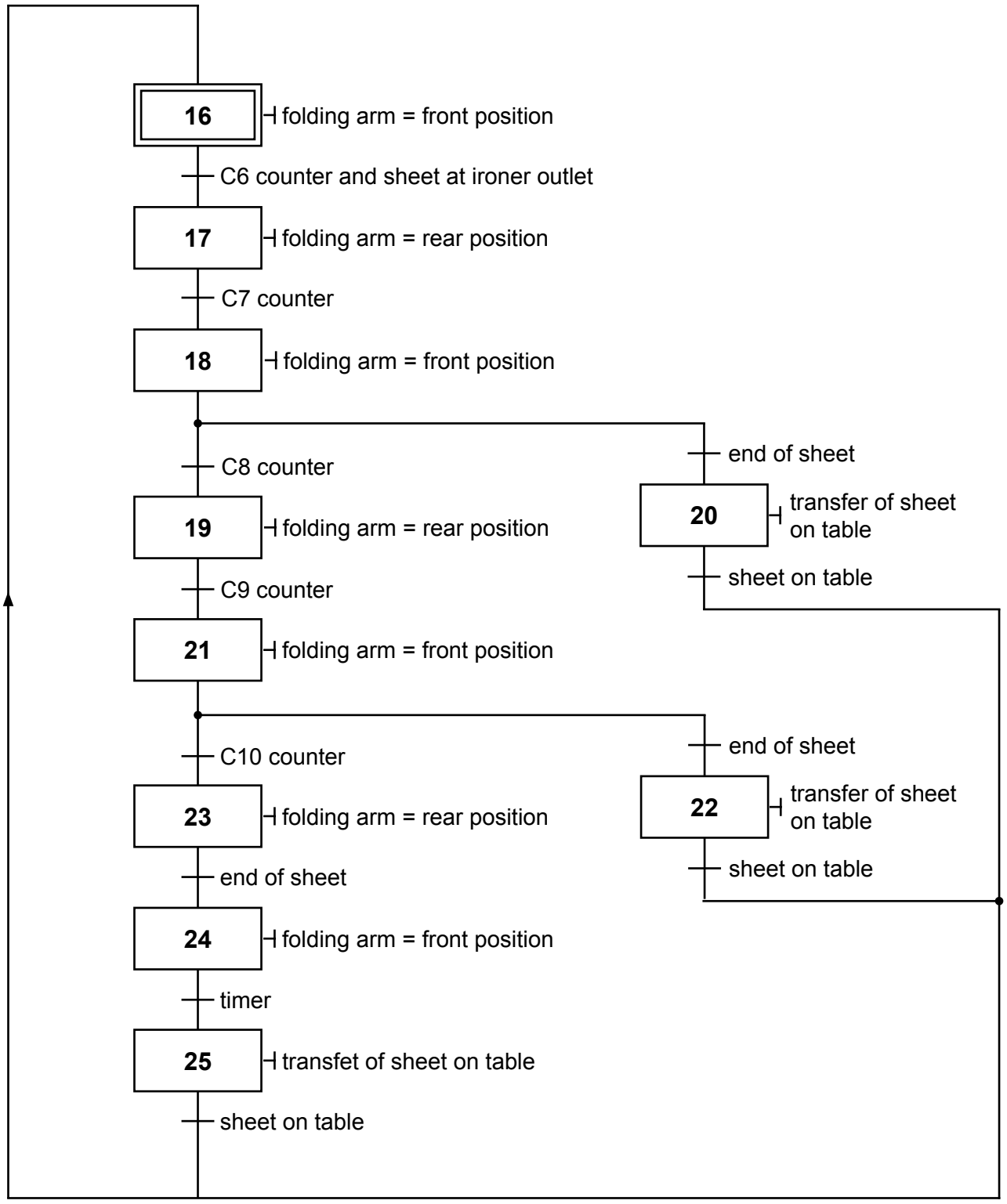
Continuation of the stacker chartCHART



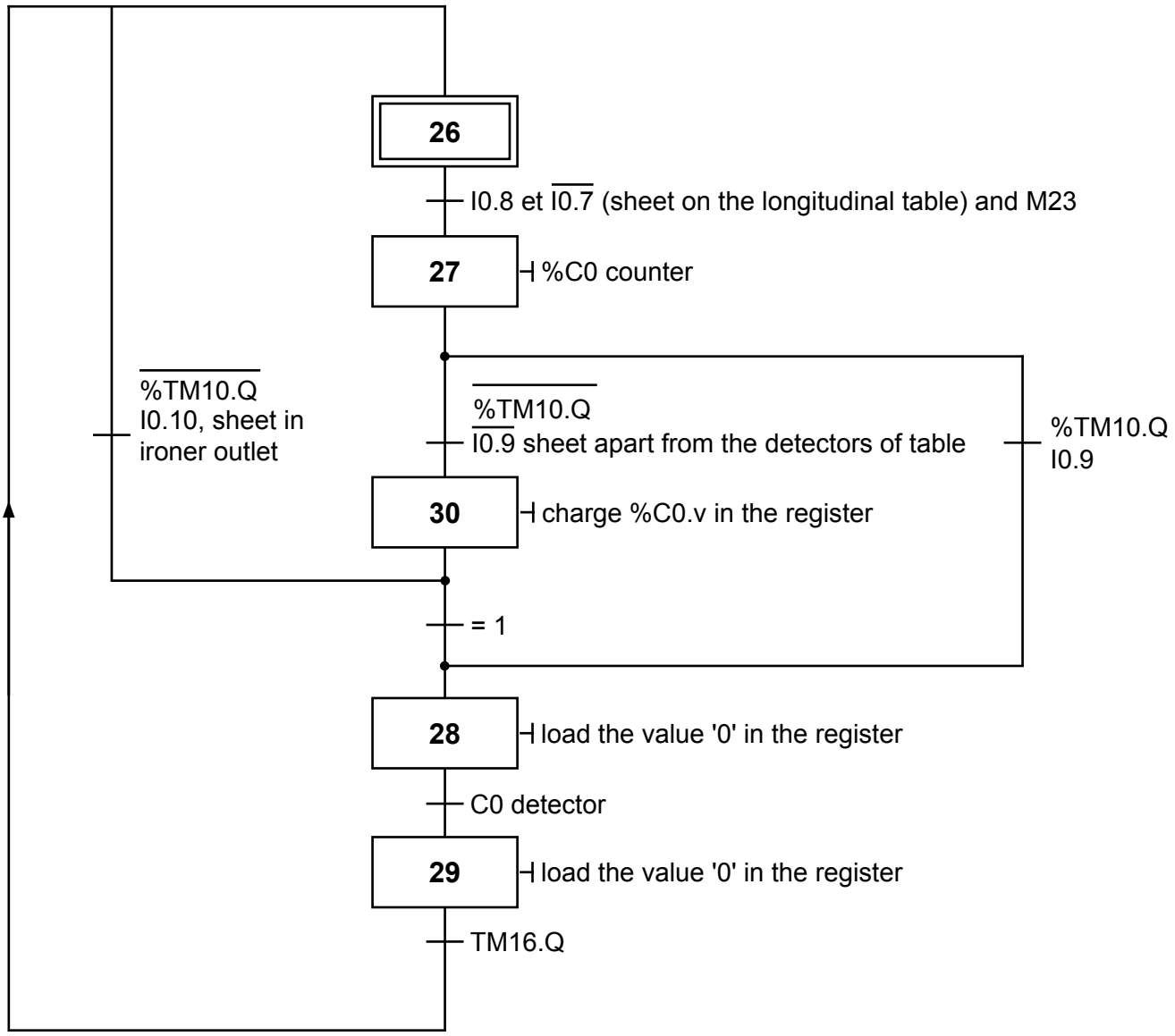
Feeding


43
initial step
départ cycle
1
feeding
sheet on feeding table
nothing on
feeding table
6
waiting
nothing on feeding table
2
space of feeding clamps
timer
3
move of feeding clamps, position without feefing
clamps moved back
4
unlocking of feeding clamps, the feeding wheels move down
timer
5
back to initial step
timer

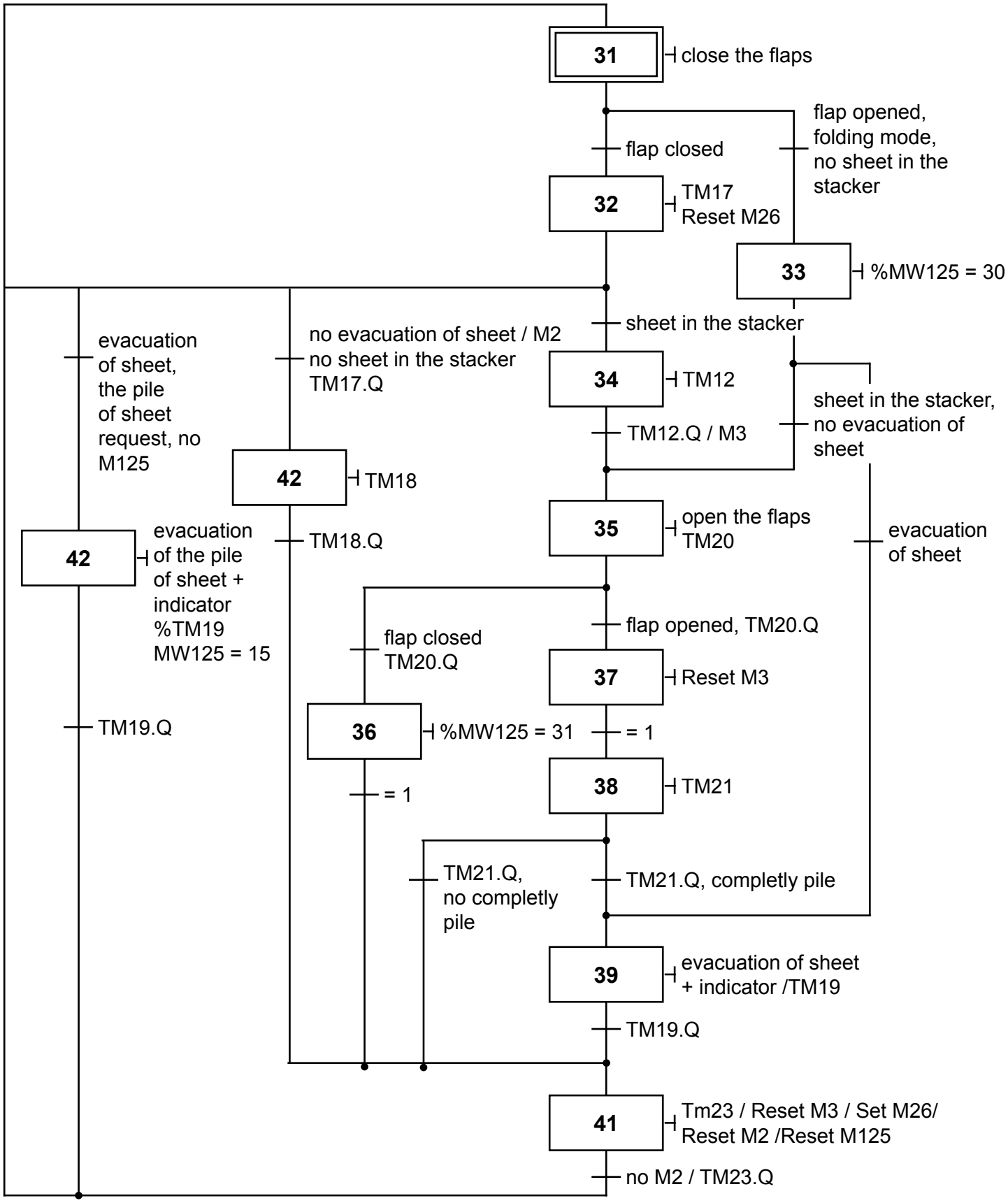
Length folding



Cross folding



Stacker


31
close the flaps
flap opened, folding mode, no sheet in the stacker
flap closed
32
TM17
Reset M26
33
%MW125 = 30
sheet in the stacker
evacuation of sheet, the pile of sheet request, no M125
no evacuation of sheet / M2
no sheet in the stacker
TM17.Q
34
TM12
TM12.Q / M3
sheet in the stacker, no evacuation of sheet
42
TM18
TM18.Q
35
open the flaps
TM20
evacuation of sheet
42
evacuation of the pile of sheet + indicator %TM19 MW125 = 15
flap opened, TM20.Q
flap closed
TM20.Q
37
Reset M3
TM19.Q
36
%MW125 = 31
= 1
= 1
38
TM21
TM21.Q, no completly pile
TM21.Q, completly pile
39
evacuation of sheet + indicator /TM19
TM19.Q
41
Tm23 / Reset M3 / Set M26/ Reset M2 /Reset M125
no M2 / TM23.Q

Installing process :

PROCESS TO INSTALL THE SOFTWARE PL7.2.17

1. Installing of the Interface disk :

- By DOS, insert the disk and type.
- A:\INSTALL ↵
- Select INSTALL ↵ and follow the instructions.
- Select AUTOMATIC INSTALL ↵
- Select MANUAL LOADING
- The PC ask if you want a control : choose NO CONTROL
- Take away the disk and type on the keys CTRL+ALT+SUPPR to restart the PC

2. Modification of the files COMMAND.COM :

- By windows clank on START (on bottom left of the screen) and RUN
- Type SYSEDIT and OK
- Select the file AUTOEXE.BAT and modify the line **C:\DOS\COMMAND.COM DOS** must be replace by WINDOWS
- Select the file CONFIG.SYS and modify the line. **SHELL:C:\DOS\COMMAND.COM\P\E:512** DOS must be replaced by WINDOWS
- Restart the PC to go in DOS mode back.

3. Installation of the PL7.2 DOS disk :

- By DOS insert the second disk PL7.2 DOS
- Type A:\INSTALL
- The PC copies all files.
- Choose CONTROL OF THE INSTALLATION
- End of the installation and by C:\ type WIN.

4. Create a shortcut to launch the program :

- By windows clank on EXPLORER
- Double clank on XDOSSYS and EXE
- Clank once on TE and clank the right button of the mouse ,select CREATE SHORTEN
- Transfer the shortcut to the DESK and give it a name ex :FFS.

5. Launching of the program :

- Double clank on the FFS icon ,the screen will display a line PROGRAMMER
- Type on the F key and NEW ,choose TSX17 ↵ enter to create the PL7.2.17 environment.

PC Programming for FFS

1. - Cut the power of the FFS and take the EEPROM away.
- Behind the EEPROM ,put the switch on **WORK** position.
- Back the EEPROM on the PLC and switch on the power of the machine.
- Plug the PC on the PLC and switch on the power.
- Launch the program.

2. - Select the **PL7 2 17** line and push on **ENTER** ↵.
- To read the TSX 17 program, push on **F1** (**TSX Memory**) key then on ⇩to select the TSX memory.

3. - Save the original program before doing modification :
- Select **TRANSFER** line, choose **TSX to disk**, push on **F1** and give a name (7 letters maxi), go to **TSX to disk** push ENTER and wait until the transfer is finished. Now the program of the machine is on your hard disk. Type **FIN** or **END** to come back to the initial window.

4. - To measure up the length of the sheets, select the line **ADJUSTMENT** and push ↵ ENTER.
- Push **F1** (**DAT**) key and **type W0** or **W1**, then press the key ENTER ↵.
- To go backward, push **END** key.

5. - To modify **CW** select the line: **CONSTANTE** and ENTER ↵ Push on **F1** (**CW1**) key to select the **CW**, type the CW number and ENTER ↵. **Push F6 (MOD)** to modify the value.
- Afterward push ENTER ↵ twice.

6. - Before transferring the program to the **EEPROM**, push **F6** (**STOP**) to get the PLC in STOP mode.
- To transfer to the EEPROM select the line: **TRANSFER** ↵.
- Choose line **N°2** and **ENTER** ↵.
- Then choose line **N°1** and **ENTER** ↵.
- Select the **TSX** ⇨ **to BACKUP** line and ENTER ↵.
- Wait during a few seconds and push on **ESC** key. If a message **ERREUR COMMUNICATION** appears, push again **ENTER** key.
- Push **F6** (**RUN**) to get back the PLC in **RUN** mode.

7. - Switch the FFS, take away the EEPROM from the TSX.
- Put the switch on **MASTER** position.
- Put back the EEPROM on the PLC.

FOLDING PARAMETERS ADJUSTMENT

IC3 48..FFS	Adjusting constants						4 folds		
	CWX W11	CWX W12 CW4	CWX W13 CW5	CWX W14 CW6	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm	1st fold	2nd & 3rd folds	4th folds						
900 < long. ≤ 950	CW 10 15	CW 11 50	25/30						
900 < long. ≤ 1000	CW 12 15	CW 13 55	25/30						
1000 < long. ≤ 1050	CW 14 15	CW 15 60	25/30						
1050 < long. ≤ 1100	CW 16 15	CW 17 65	25/30						
1100 < long. ≤ 1150	CW 18 15	CW 19 70	25/30						
1150 < long. ≤ 1200	CW 20 20	CW 21 70	25/30						
1200 < long. ≤ 1250	CW 25 25	CW 23 70	25/30						
1250 < long. ≤ 1300	CW 24 30	CW 25 70	25/30						
1300 < long. ≤ 1350	CW 26 30	CW 27 75	25/30						
1350 < long. ≤ 1400	CW 28 32	CW 29 78	25/30						
1400 < long. ≤ 1450	CW 30 35	CW 31 78	25/30						
1450 < long. ≤ 1500	CW 32 35	CW 33 80	CW 34						

IC3 48..FFS	Adjusting constants						6 advanced folds		
	CWX W11	CWX W12	CWX W13	CWX W14	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm		1st fold	2nd & 3rd folds	4th & 5th folds	6th fold				
1500 < long. ≤ 1550		CW 35 15	CW 36 51	CW 37 61	25/30				
1550 < long. ≤ 1600		CW 38 15	CW 39 56	CW 40 61	25/30				
1600 < long. ≤ 1650		CW 41 15	CW 42 60	CW 43 60	25/30				
1650 < long. ≤ 1700		CW 44 15	CW 45 62	CW 46 62	25/30				
1700 < long. ≤ 1750		CW 47 15	CW 48 64	CW 49 64	25/30				
1750 < long. ≤ 1800		CW 50 15	CW 51 66	CW 52 66	25/30				
1800 < long. ≤ 1850		CW 53 15	CW 54 48	CW 55 68	25/30				
1850 < long. ≤ 1900		CW 56 15	CW 57 68	CW 58 68	25/30				
1900 < long. ≤ 1950		CW 59 15	CW 60 68	CW 61 68	25/30				

IC3 48..FFS	Adjusting constants						6 standards folds		
	CWX W11	CWX W12 CW4	CWX W13 CW5	CWX W14 CW6	CWX W15 CW7	CWX CW8	CWX	CWX	CWX
Position of the folding arm	1st fold	2nd & 3rd folds	4th & 5th folds	6th & 7th folds	8th fold				
1950 < long. ≤ 2000	CW 161 30	CW 65 67	CW 66 67	25/30					
2000 < long. ≤ 2050	CW 161 30	CW 67 70	CW 68 70	25/30					
2050 < long. ≤ 2100	CW 161 30	CW 69 72	CW 70 72	25/30					
2100 < long. ≤ 2150	CW 161 30	CW 17 65	CW 72 75	CW73					
2150 < long. ≤ 2200	CW 161 30	CW 74 75	CW 75 80	CW76					
2200 < long. ≤ 2250	CW 161 30	CW 77 80	CW 78 80	CW79					

IC3 48..FFS	Adjusting constants						8 folds		
	CWX W11	CWX W12 CW4	CWX W13 CW5	CWX W14 CW6	CWX W15 CW7	CWX CW8	CWX CW9	CWX	CWX
Position of the folding arm	1st fold	2nd & 3rd folds	4th & 5th folds	6th & 7th folds	8th fold				
2250 < long. ≤ 2300	CW 161 30	CW 80 70	CW 81 30	CW 82 70	25/30	1er pli anticipé			
2300 < long. ≤ 2350	CW 161 30	CW 83 70	CW 84 35	CW 85 70	25/30				
2350 < long. ≤ 2400	CW 161 30	CW 86 70	CW 87 40	CW 88 70	25/30				
2400 < long. ≤ 2450	CW 161 30	CW 89 70	CW 90 45	CW 91 70	25/30				
2450 < long. ≤ 2500	CW 161 30	CW 92 70	CW 93 50	CW 94 70	25/30				
2500 < long. ≤ 2550	CW 161 30	CW 95 70	CW 96 55	CW 97 70	25/30				
2550 < long. ≤ 2600	CW 161 30	CW 98 70	CW 99 60	CW 100 70	25/30				
2600 < long. ≤ 2650	CW 161 30	CW 101 70	CW 102 65	CW 103 70	25/30				
2650 < long. ≤ 2700	CW 161 30	CW 104 70	CW 105 70	CW 106 70	25/30				
2700 < long. ≤ 2750	CW 161 30	CW 107 72	CW 108 71	CW 109 70	25/30				
2750 < long. ≤ 2800	CW 161 30	CW 110 73	CW 111 73	CW 112 74	25/30				
2800 < long. ≤ 2850	CW 161 30	CW 113 75	CW 114 75	CW 115 75	25/30				
2850 < long. ≤ 2900	CW 161 30	CW 116 77	CW 117 76	CW 118 77	CW 119	Free for 10 folds			
2900 < long. ≤ 2950	CW 161 30	CW 162 80	CW 120 72	CW 121 80	CW 122	1st & 2nd advanced folds Free for 10 folds			
2950 < long. ≤ 3000	CW 161 30	CW 162 80	CW 122 76	CW 124 80	CW 125	Free for 10 folds			
3000 < long. ≤ 3050	CW 161 30	CW 162 80	CW 128 80	CW 129 80	CW 130	Free for 10 folds			
3050 < long. ≤ 3100	CW 161 30	CW 162 80	CW 131 82	CW 132 82	CW 133	Free for 10 folds			

IC3 48..FFS	Adjusting constants						10 folds		
	CWX W11	CWX W12 CW4	CWX W13 CW5	CWX W14 CW6	CWX W15 CW7	CWX CW8	CWX CW9	CWX	CWX
Position of the folding arm	1st fold	2nd & 3rd folds	4th & 5th folds	6th & 7th folds	8th & 9th folds	10th fold			
2250 < long. ≤ 2300	CW 161 30	CW 162 80	CW 134 45	CW 135 80	25/30				
2300 < long. ≤ 2350	CW 161 30	CW 162 80	CW 137 4570	CW 138 80	25/30				
2350 < long. ≤ 2400	CW 161 30	CW 162 80	CW 140 45	CW 141 80	25/30				
2400 < long. ≤ 2450	CW 161 30	CW 162 80	CW 143 45	CW 144 80	25/30				
2450 < long. ≤ 2500	CW 161 30	CW 162 80	CW 146 45	CW 147 80	25/30				
2500 < long. ≤ 2550	CW 161 30	CW 162 80	CW 149 45	CW 150 80	25/30				
2550 < long. ≤ 2600	CW 161 30	CW 162 80	CW 163 45	CW 152 80	25/30				
2600 < long. ≤ 2650	CW 161 30	CW 162 80	CW 163 80	CW 154 80	25/30	1st, 2&3rd, 4&5th advanced folds			

IC3 6431FFS	Adjusting constants						4 folds		
	CWX W11	CWX W12	CWX W13	CWX W14	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm	1st fold	2nd & 3rd folds	4th pli						
900 < long. ≤ 950	CW 10	CW 11							
960 < long. ≤ 1000	CW 12	CW 13							
1010 < long. ≤ 1050	CW 14	CW 15							
1060 < long. ≤ 1100	CW 16	CW 17							
1110 < long. ≤ 1150	CW 18	CW 19							
1160 < long. ≤ 1200	CW 20	CW 21							
1210 < long. ≤ 1250	CW 22	CW 23							
1260 < long. ≤ 1300	CW 24	CW 25							
1320 < long. ≤ 1350	CW 26	CW 27							
1360 < long. ≤ 1400	CW 28	CW 29							
1410 < long. ≤ 1450	CW 30	CW 31							
1460 < long. ≤ 1500	CW 32	CW 33							

IC3 6431FFS	Adjusting constants						6 folds		
	CWX W11	CWX W12	CWX W13	CWX W14	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm	Front arm	1st	2nd & 3rd folds	4th & 5th folds	6th fold	fold			
1510 < long. ≤ 1550		CW 35	CW 36	CW 37					
1560 < long. ≤ 1600		CW 38	CW 39	CW 40					
1610 < long. ≤ 1650		CW 41	CW 42	CW 43					
1660 < long. ≤ 1700		CW 44	CW 45	CW 46					
1710 < long. ≤ 1750		CW 47	CW 48	CW 49					
1760 < long. ≤ 1800		CW 50	CW 51	CW 52					
1810 < long. ≤ 1850		CW 53	CW 54	CW 55					
1860 < long. ≤ 1900		CW 56	CW 57	CW 58					
1910 < long. ≤ 1950		CW 59	CW 60	CW 61					
1960 < long. ≤ 2000		CW 64	CW 65	CW 66					
2010 < long. ≤ 2050		CW 67	CW 68	CW 69					
2060 < long. ≤ 2100		CW 70	CW 71	CW 72					
2110 < long. ≤ 2150		CW 73	CW 74	CW 75					
2160 < long. ≤ 2200		CW 76	CW 77	CW 78					
2210 < long. ≤ 2250		CW 79	CW 80	CW 81					

IC3 6431FFS	Adjusting constants						8 folds		
	CWX W11	CWX W12	CWX W13	CWX W14	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm	1st fold (advanced)	2nd & 3rd folds	4th & 5th folds	6th & 7th folds	8th fold				
2260 < long. ≤ 2300	CW 161	CW 82	CW 83	CW 84					
2310 < long. ≤ 2350	CW 161	CW 85	CW 86	CW 87					
2360 < long. ≤ 2400	CW 161	CW 88	CW 89	CW 90					
2410 < long. ≤ 2450	CW 161	CW 91	CW 92	CW 93					
2460 < long. ≤ 2500	CW 161	CW 94	CW 95	CW 96					
2510 < long. ≤ 2550	CW 161	CW 97	CW 98	CW 99					
2560 < long. ≤ 2600	CW 161	CW 100	CW 101	CW 102					
2610 < long. ≤ 2650	CW 161	CW 103	CW 104	CW 104					
2660 < long. ≤ 2700	CW 161	CW 106	CW 107	CW 107					
2710 < long. ≤ 2750	CW 161	CW 109	CW 110	CW 111					
2760 < long. ≤ 2800	CW 161	CW 112	CW 113	CW 114					
2810 < long. ≤ 2850	CW 161	CW 115	CW 116	CW 117					
2860 < long. ≤ 2900	CW 161	CW 118	CW 119	CW 120					
2910 < long. ≤ 2950	CW 161	CW 162	CW 122	CW 123					
2960 < long. ≤ 3000	CW 161	CW 162	CW 125	CW 126	CW 127				
3010 < long. ≤ 3050	CW 161	CW 162	CW 128	CW 129	CW 130				
3060 < long. ≤ 3100	CW 161	CW 162	CW 131	CW 132	CW 133				

Free for 10 folds

Free for 10 folds

Free for 10 folds

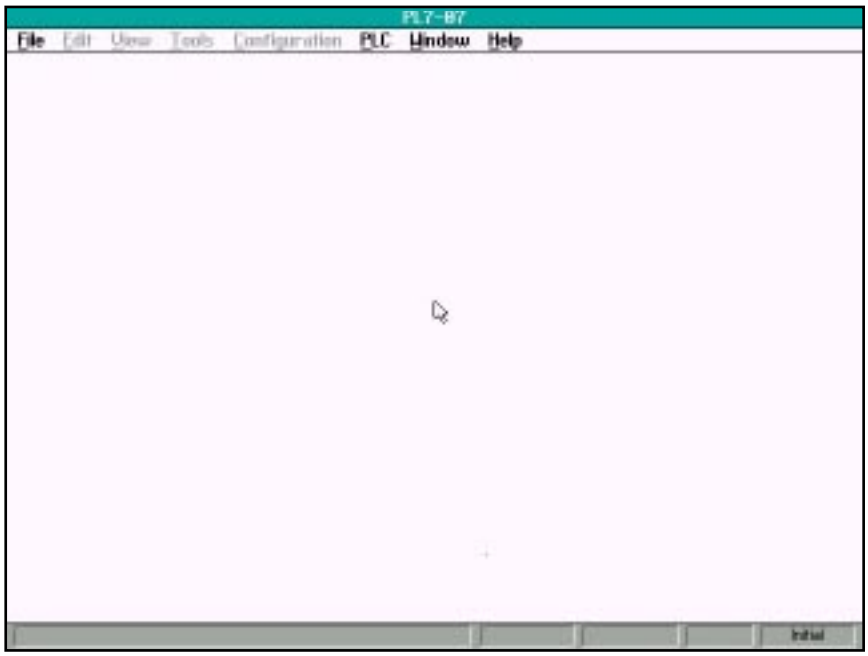
IC3 6431FFS	Adjusting constants						10 folds		
	CWX W11	CWX W12	CWX W13	CWX W14	CWX W15	CWX	CWX	CWX	CWX
Position of the folding arm	1st fold (advanced)	2nd & 3rd folds (advanced)	4th & 5th folds	6th & 7th folds	8th & 9h folds	10th fold			
3110 < long. ≤ 3150	CW 161	CW 162	CW 134	CW 135	CW 136				
3160 < long. ≤ 3200	CW 161	CW 162	CW 137	CW 138	CW 139				
3210 < long. ≤ 3250	CW 161	CW 162	CW 140	CW 141	CW 142				
3260 < long. ≤ 3300	CW 161	CW 162	CW 143	CW 144	CW 145				
3310 < long. ≤ 3350	CW 161	CW 162	CW 146	CW 147	CW 147				
3360 < long. ≤ 3400	CW 161	CW 162	CW 149	CW 150	CW 151				
3410 < long. ≤ 3450	CW 161	CW 162	CW 163	CW 152	CW 153				
3460 < long. ≤ 3500	CW 161	CW 162	CW 163	CW 154	CW 155				

IC3 48 FFS

Using the software Telemecanique PL707 on a PC

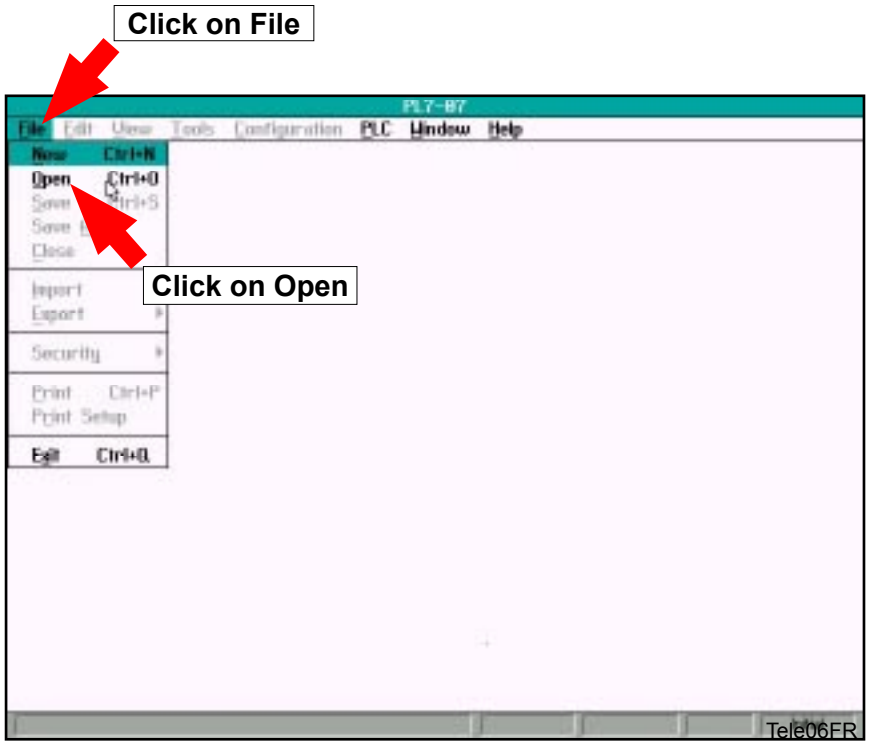
On the office, click twice on the icon PL707.

The presentation page appears on screen.



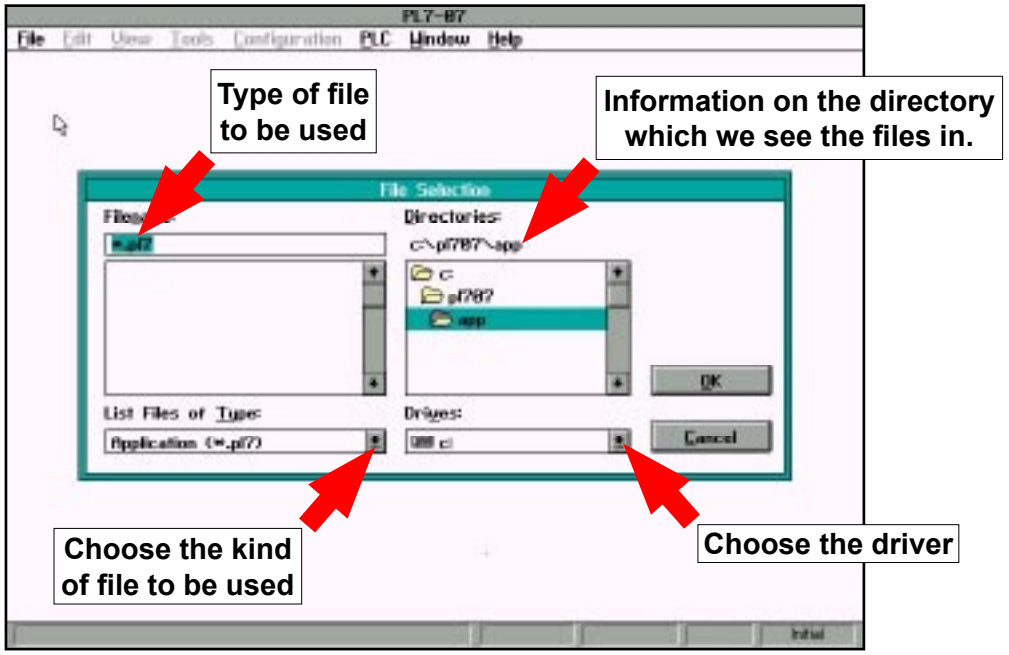
Tele05FR

Opening a file



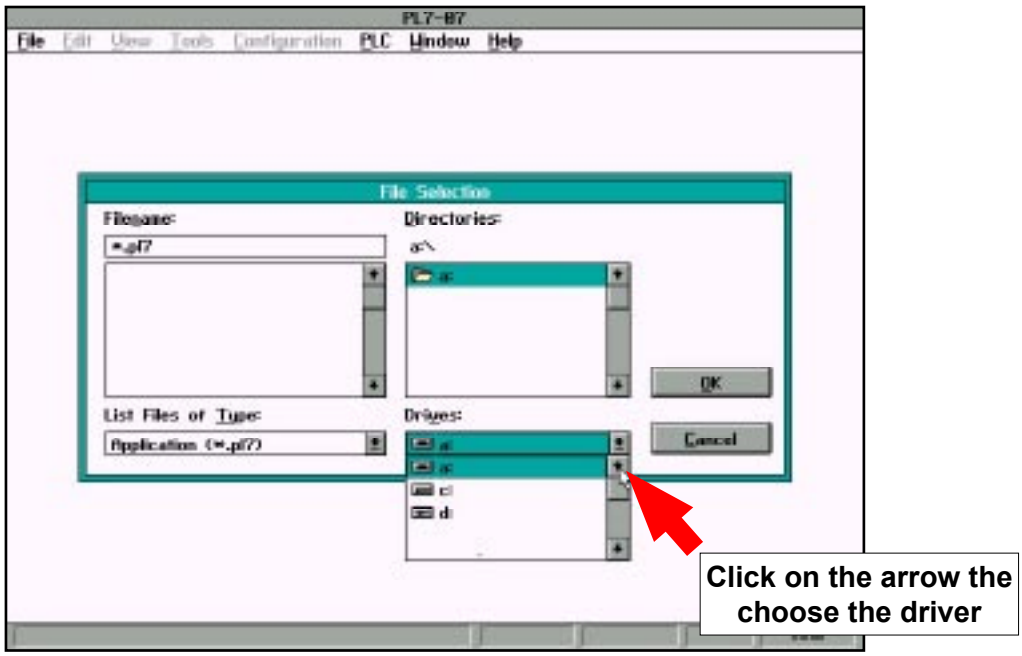
Tele06FR

The following screen appears.



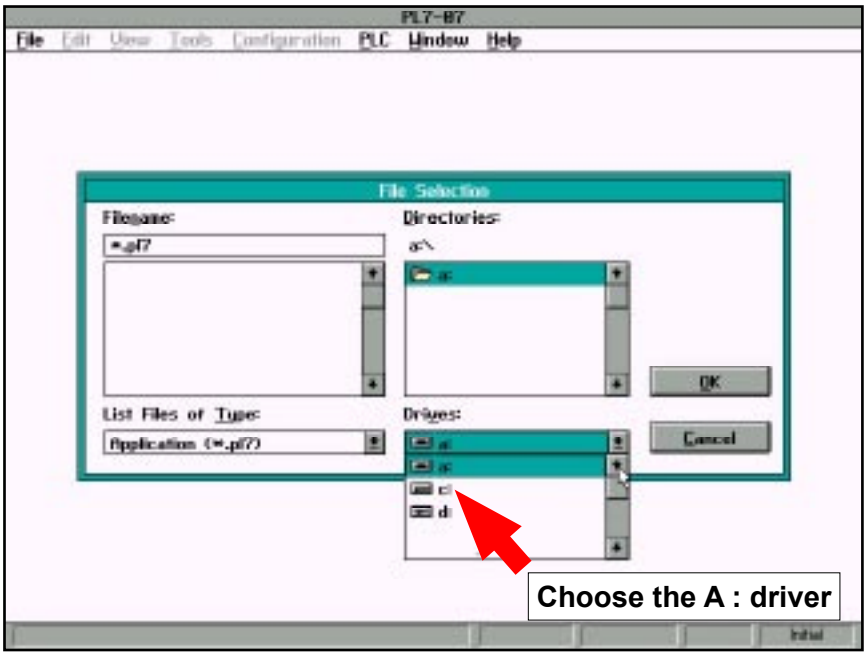
Tele07FR

Example : how to take a file from a floppy disk

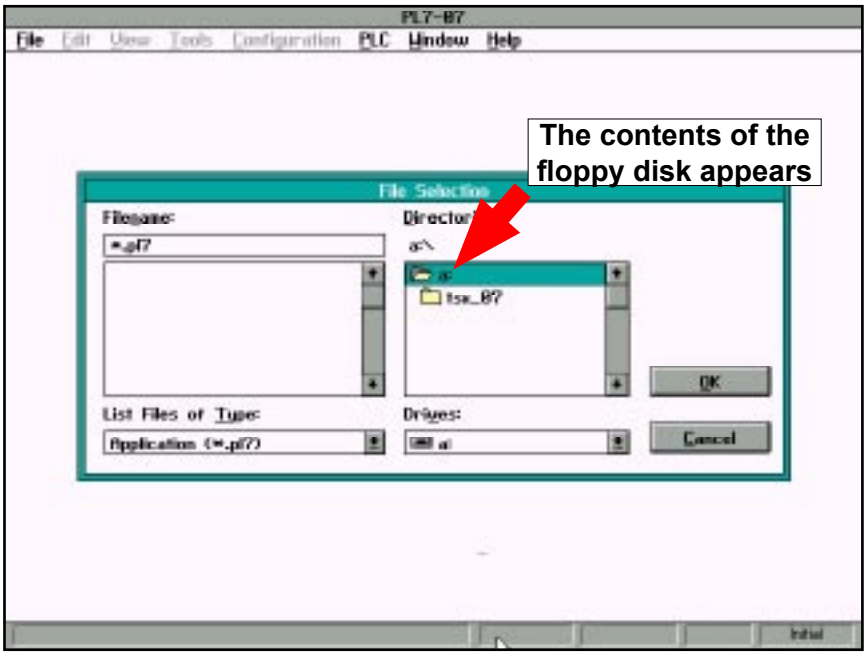


Tele09FR

Example : using a file on a floppy disk.

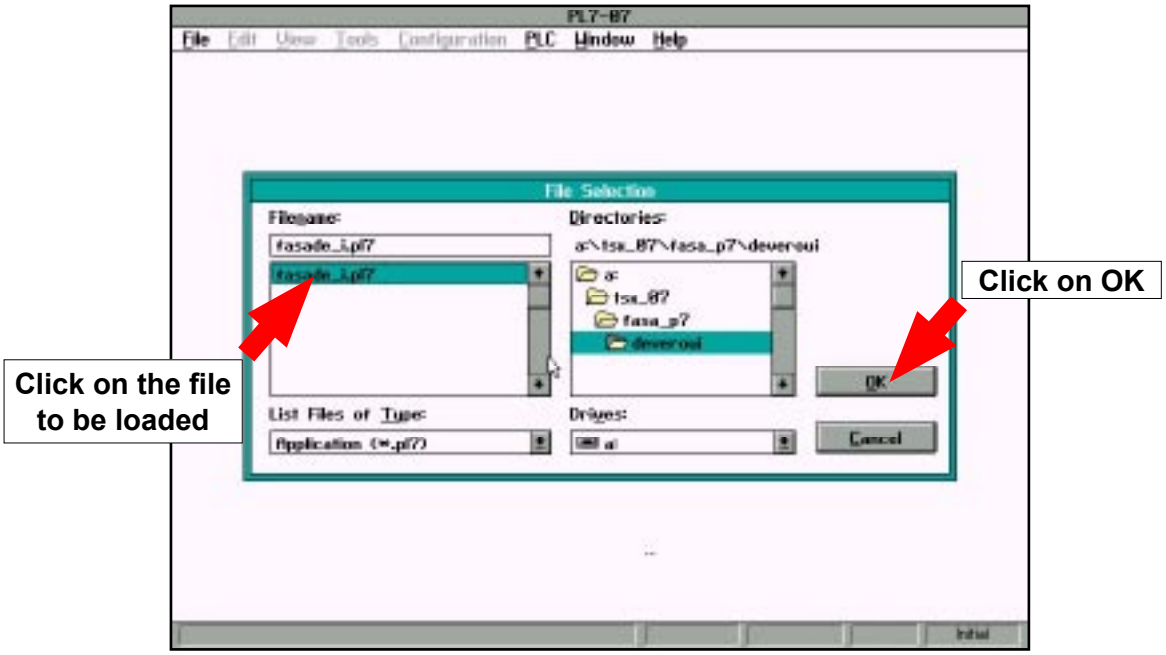


Tele09FR



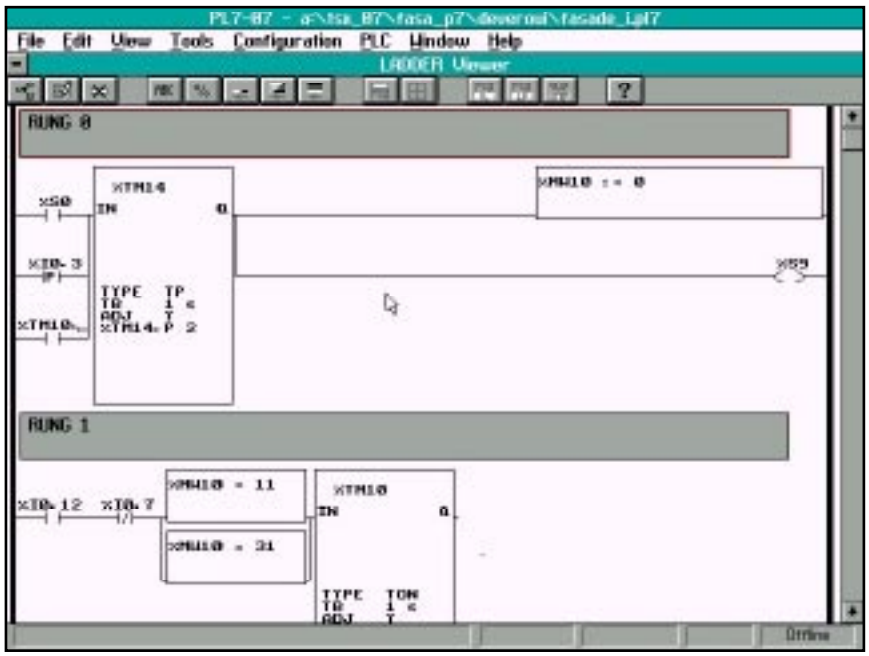
Tele10FR

Open the directory where the wished file is.



Tele11FR

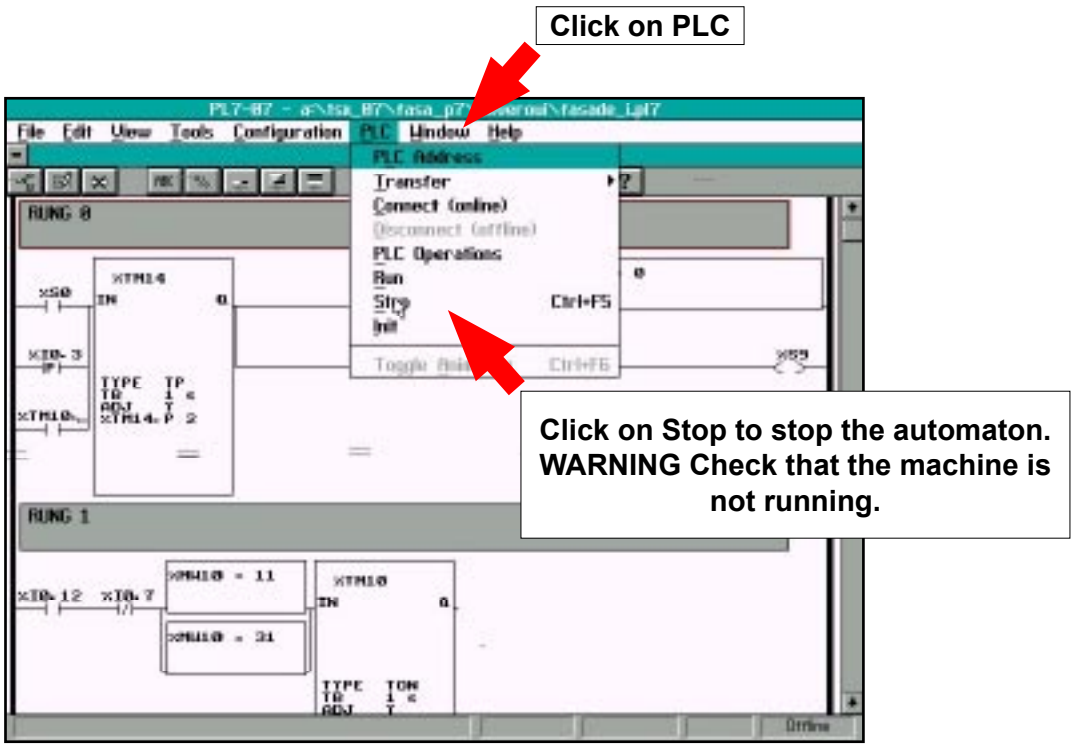
The program is displayed on screen



Tele12FR

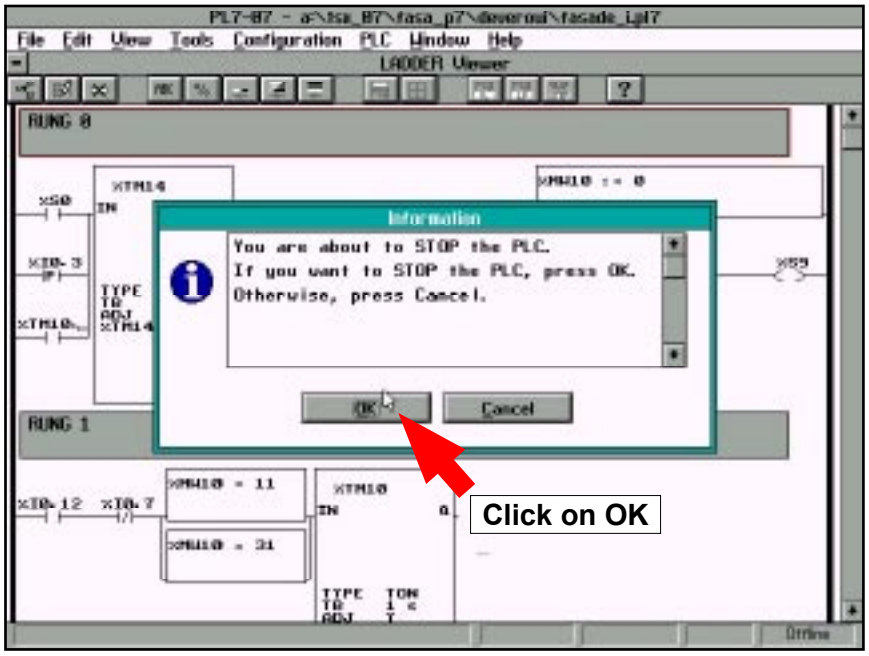
Stopping the automaton

Connect the automaton on the PC (round connector in the automaton, flat connector in the PC)



Tele20FR

The following window appears

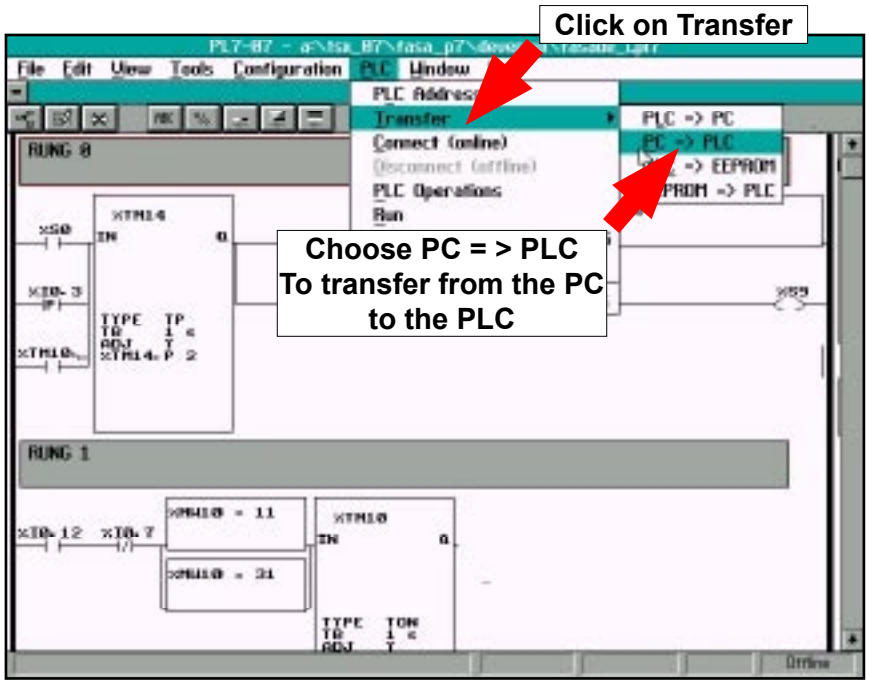


Tele22FR

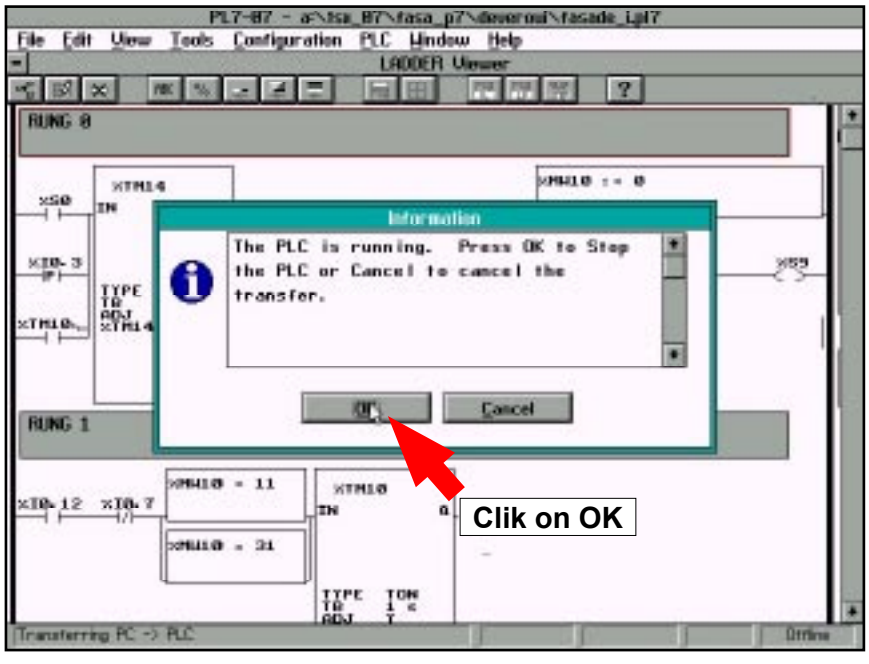
The automaton stops and the "Run" diode of the automaton is flashing.

Transfer of the file on the automaton

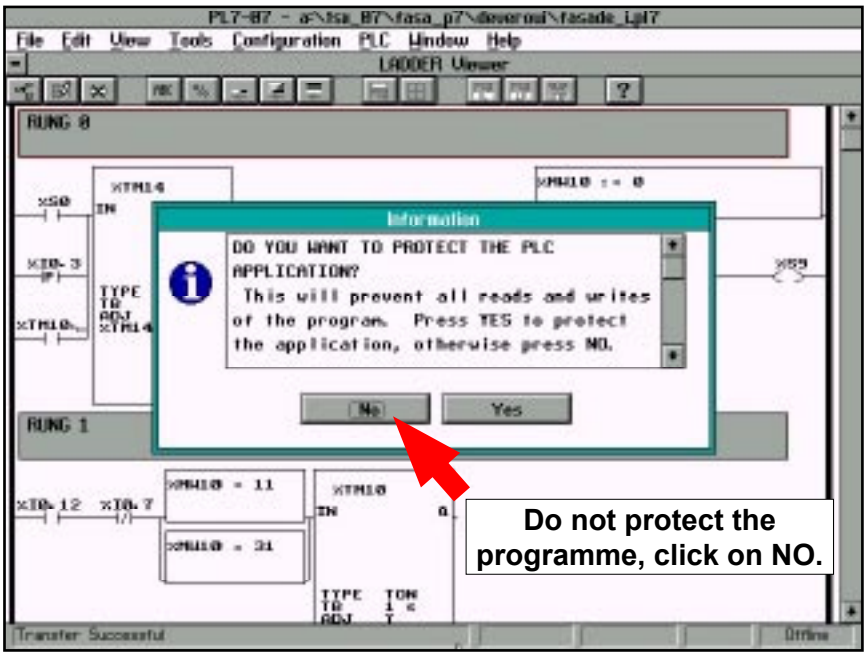
1. Transfers to the RAM



Tele15FR



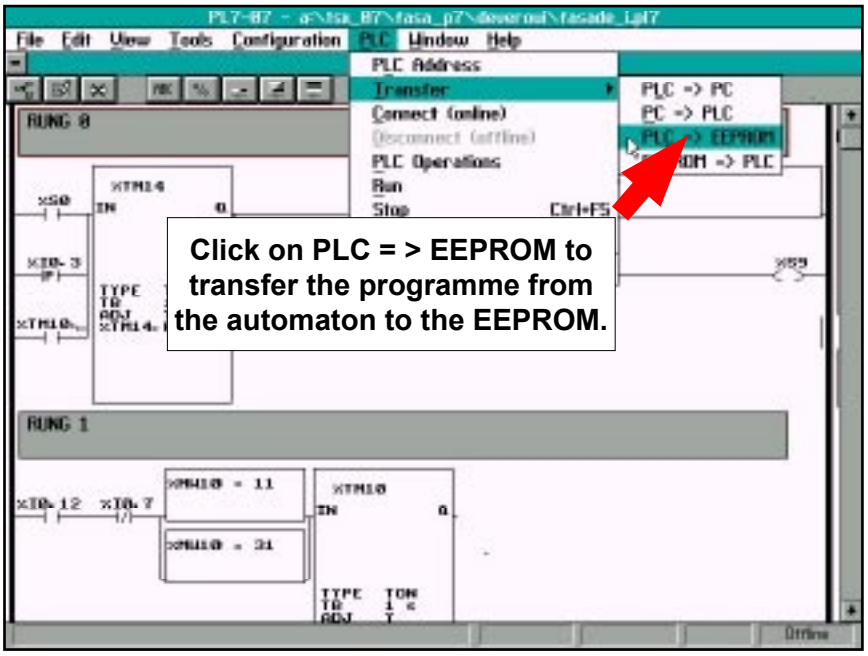
Tele16FR



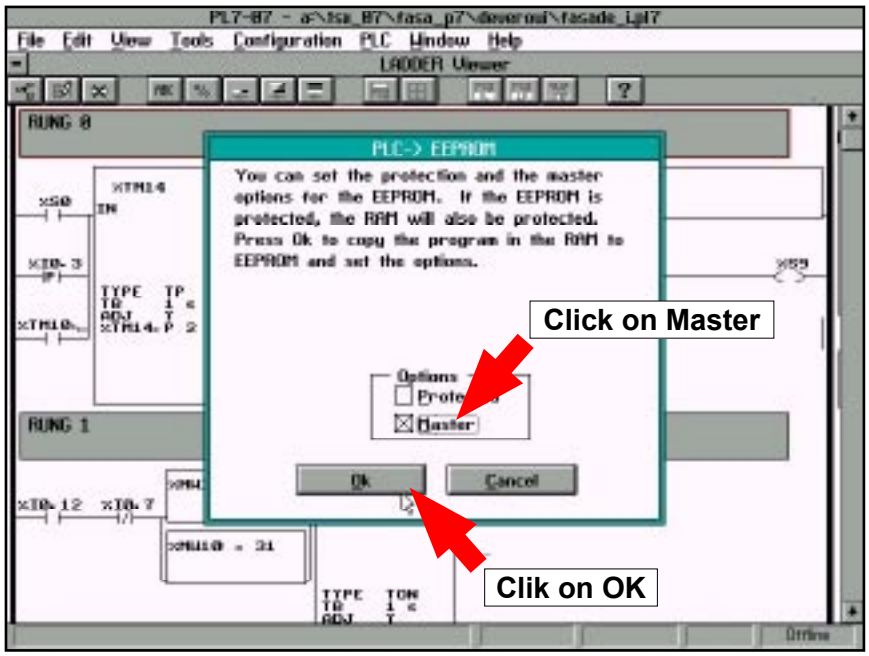
Tele17FR

The programme is saved on the automaton RAM.

2. transfers to the ROM



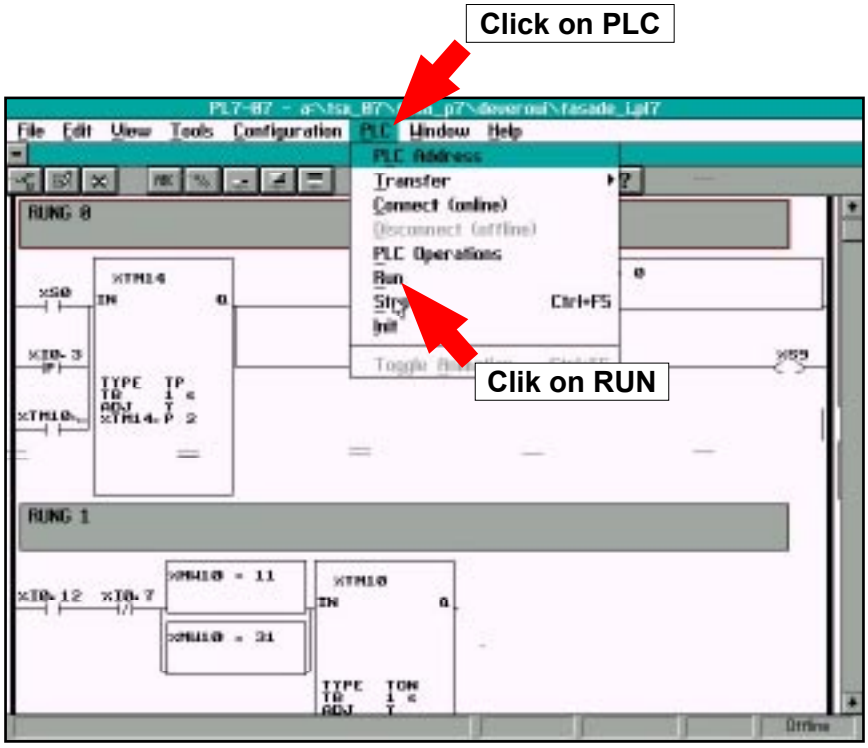
Tele18FR



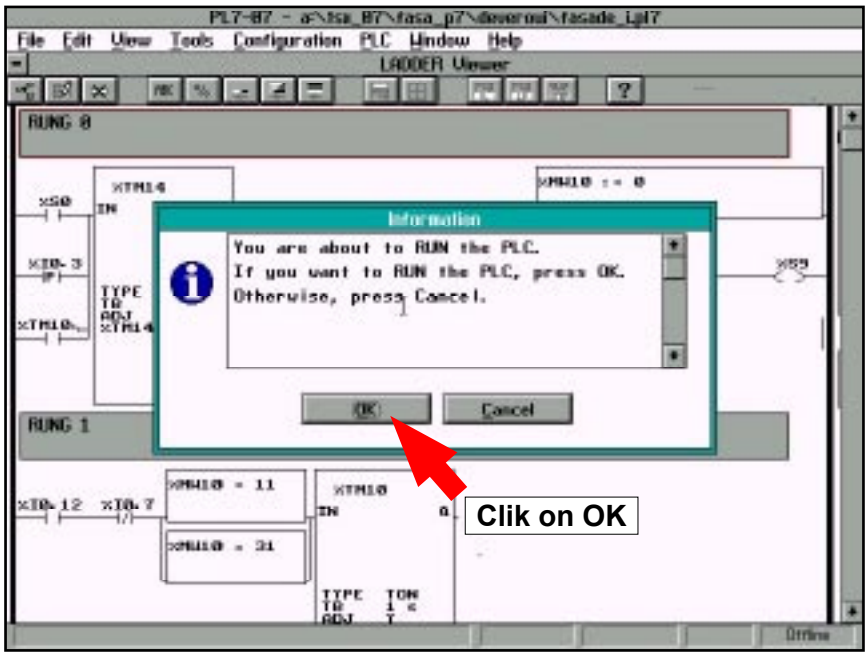
Tele19GB

The programme is saved on the EEPROM of the automaton.

Switching the automaton on.



Tele20GB



Tele21GB

The automaton starts to run and the diode RUN on the automaton keeps on lightening but it does not flash. The loading process is over.

IC3 48xx FFS

PLC PROGRAM

The PLC and their programs :

There are 3 PLC connected between them by the communication bus.

The PLC n°1 (that of bottom) is the main PLC. It contains the grafcet of the machine and the value to adjust the 1st fold and 6&7th folds.

The PLC n°2 is a extension of inputs/outputs of the PLC n°1, so there is not program in this.

The PLC n°3 contains the value to adjust the 2&3rd folds, 4&5th folds and 8&9th folds.

There are two programs of PLC : **500_1b.pl7** in the **PLC n°1** and **500_2b.pl7** in the **PLC n°3**.

To adress the PLC correctly, it is necessary to adjust the small selector (graduated from 0 to 7) on each one of them :

- PLC n°1 = position on 0,
- PLC n°2 = position on 1
- PLC n°3 = position on 5.

The adjustment of the folds :

When the result of folding is unsatisfactory, it is possible to adjust the value of folding using a PC with the PL707 application and the Telemecanique cable (TSX PCU1030 or TSX PCU1031).

The words to modify are :

- %MW11 : value in cm for the 1st fold
- %MW12 : value in cm for the 2nd and 3th folds
- %MW13 : value in cm for the 4th and 5th folds
- %MW14 : value in cm for the 6th and 7th folds
- %MW15 : value in cm for the 8th and 9th folds

The words to modify are in accordance with the length value of folding %MW1 and the table of folding on the previous page.

To modify the values of words %MW11 and %MW14, it is necessary to be connected on the PLC n°1.

To modify the values of words %MW12, %MW13 and %MW15, it is necessary to be connected on the PLC n°3.

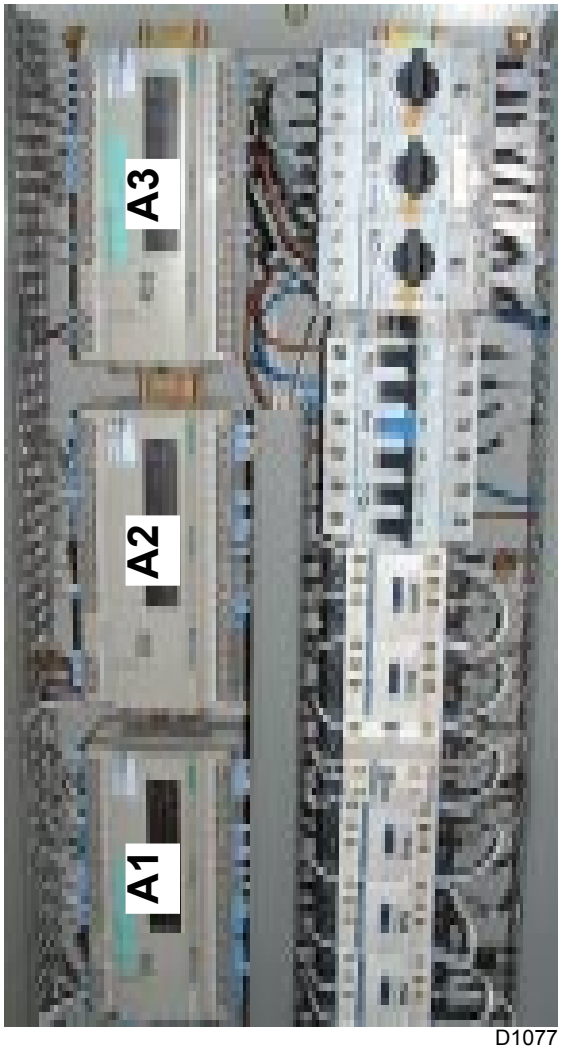
IC3 48xx FFS

Potentiometer to adjust the first fold (normal folding)

-5
0
+5

adjustment from -5cm to +5cm

Potentiometer to adjust the first fold in advance (advance folding)



D1077

Process for IC3 48xx FFS TSX 07 Automate

Programming

1/ Save the customer's program in your hard disk :

- Launch **PL707** application.
- Connect the connecting cable between the PC and the PLC n°1 or 3 according to the word which one wishes to modify.
- Select "**PLC**" and "**Transfert**", choose **AP** ⇨ **PC** and wait few seconds.
- Select "**Files**" and select "**Save As**" then type the name of the program that your wish and clic on "**OK**".

The following process mustbe done only once when you use this program the first time.

- Select "**View**", select "**Data Editor**".
- Select "**Tools**" and "**Insert**", type **%MW0** and clic on "**OK**".
- To save, clic on "**Tools**" and on "**Save Data Page As**" then give a name ex. : FFS48.dat, clic on **OK**.

2/ Measure the sheets with the PC :

- Select "**View**" select "**Data Editor**".
- Select "**Tools**", select "**Open Data Page**" and choose the file FFS48.dat
- Select "**PLC**", select "**Connect**" select "**PLC**" again, then select "**Toggle Animation**".

3/ Feed sheets and check the measures on the screen, then select the measures of the sheets which are not folded well. See the chart of the parameters to know which one you have to modify.

4/ Modifying of the parameters MW11 to MW15 :

- Select "**PLC**", select "**Stop**" and confirm by "**OK**".
- Double click in the case in the Ladder editor which corresponds to the values to modify,
- Change the value, type the value and confirm by "**OK**".
- Select "**PLC**", select "**Run**",confirm by "**OK**" and to test the modification. Until you have good result folding.

5/ When the result of folding is satisfactory and all modifications wished are done, tranfer to the "**EEPROM**" :

- Select "**PLC**", choose "**Stop**" and confirm by "**OK**".
- Select "**PLC**", choose "**Disconnect**".
- Select "**PLC**", choose "**Transfer**", and "**PLC**" ⇨ "**EEPROM**", clic on "**Master**" and confirm by "**OK**".
- Select "**PLC**", choose "**Run**", and confirm by "**OK**". Don't forget to do it.

6/ Save the finale program in the hard disk :

%MW1	%MW11 = 1st fold	%MW12 = 2 & 3rd fold	%MW13 = 4 & 5th fold	%MW14 = 6 &7th fold	%MW15 = 8 & 9th fold
90-95	15	50			
95-100	15	55			
100-105	15	60			
105-110	15	65			
110-115	15	70			
115-120	20	70			
120-125	25	70			
125-130	30	70			
130-135	30	75			
135-140	30	78			
140-145	35	78			
145-150	35	80			
150-155	0	15	51	61	
155-160	0	15	56	61	
160-165	0	15	60	60	
165-170	0	15	62	62	
170-175	0	15	64	64	
175-180	0	15	66	66	
180-185	0	20	68	68	
185-190	0	20	68	68	
190-195	0	25	68	68	
195-200	30	67	67		
200-205	30	70	70		
205-210	30	72	72		
210-215	30	75	75		
215-220	30	75	80		
220-225	30	80	80		
225-230	30	70	30	70	
230-235	30	70	35	70	
235-240	30	70	40	70	
240-245	30	70	45	70	
245-250	30	70	50	70	
250-255	30	70	55	70	
255-260	30	70	60	70	
260-265	30	70	65	70	
265-270	30	70	70	70	
270-275	30	72	71	72	
275-280	30	73	73	74	
280-285	30	75	75	75	
285-290	30	77	76	77	
290-295	30	80	72	80	
295-300	30	80	76	80	
300-305	30	80	80	80	
305-310	30	80	82	82	
310-315	30	80	45	80	45
315-320	30	80	45	80	50
320-325	30	80	45	80	55
325-330	30	80	45	80	60
330-335	30	80	45	80	65
335-340	30	80	45	80	70
340-345	30	80	45	80	75
345-350	30	80	45	80	80

IC3 48xx FFS

Inputs

E/S	Description	Composant	Address
E	Pulse counting for calculation of sheet length	I32	%I0.0
E	Folding ON/OFF switch	Control panel	%I0.1
E	Feeding ON/OFF switch	I18	%I0.2
E	Feeding strip in sheet reception position	I19	%I0.3
E	Stacker flaps in raised position	I20	%I0.4
E	Run/Stop	KM3	%I0.5
E	Sheet in stacker	C9	%I0.6
E	Transversal fold safety	C3-C4	%I0.7
E	Transversal folding	C5	%I0.8
E	Transversal sheet measurement	C6-C7	%I0.9
E	Ironer output	C8	%I0.10
E	Longitudinal folding	C2	%I0.11
E	Sheet on feeding table	C1	%I0.12
E	Pulse counting for calculation of sheet width	I25	%I0.13
E	Set / Reset push button	I22	%I1.0
E	C2 - C3 dirtying detection	C2-C3	%I1.2
E	C4 - C5 - C6 dirtying detection	C4-C5-C6	%I1.3
E	Switch Folding without feeding	I23	%I1.4
E	Omit 3rd fold switch	I23	%I1.5
E	Pulse counting for calculation of sheet width	I24	%I1.6
E	C7 - C8 - C9 dirtying detection	C7-C8-C9	%I1.7
E	Stacker pile completed	C10	%I1.8
E	Set / Reset push button	I22	%I2.1
E	Run/Stop	KM3	%I2.5

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Outputs

E/S	Description	Composant	Address
S	Positioning of reception bin when no folding	Y1	%Q0.0
S	Feeding clamp spacing	Y2	%Q0.1
S	Smoothing	KM4	%Q0.2
S	Move clamps forward / back	Y3	%Q0.3
S	Unlocking of clamps and Lowering of roller support bar	Y4	%Q0.4
S	Feeding clamp tightening	Y5	%Q0.5
S	Feeding blowing	Y6	%Q0.6
S	Rear discharge indicator lamp	H3-A4	%Q0.7
S	Front blowing	Y7	%Q0.8
S	1st fold blade + 6-6 LED	Y9-A4	%Q0.9
S	Rear blowing	Y8	%Q1.0
S	Sheet removal	KM8	%Q1.1
S	Longitudinal folding arm in forward position	Y14	%Q1.2
S	Longitudinal folding arm backward position	Y14	%Q1.3
S	Lift pressure roller	Y10	%Q1.4
S	Dirtying indicator lamp	H6	%Q1.5
S	Locking safety indicator	H4	%Q1.6
S	V MAX fan converter.	A7	%Q1.8
S	Remove pile	KM2	%Q2.0
S	Pile completed indicator light	H5	%Q2.1
S	Stacker belt drive	KM1	%Q2.2
S	Transverse belt drive	KM5	%Q2.3
S	Stacker table opening + counter	Y13-A4	%Q2.4
S	3rd fold blade	Y12-A4	%Q2.5
S	2nd fold blade	Y11-A4	%Q2.6

IC3 48xx FFS

Repere	Designation / Function	Folio
A	automate programmable / PLC pliage /folding	
A6	compteur à impulsions / pulse counter compteur / hour counter	14
A7	variateur de vitesse 0,37kW / converter ventilation / fan	4
A8	variateur de vitesse 0,37kW / converter mouvement / motion	4
C1	cellule photoélectrique M12 / detector M12 présence drap / sheet presence	8
C10	cellule photoélectrique / detector pile / stack	10
C2	cellule photoélectrique / detector pliage long. / lenght folding	8
C3	cellule photoélectrique / detector pliage long. / lenght folding	8
C4	cellule photoélectrique / detector pliage long. / lenght folding	8
C5	cellule photoélectrique / detector pliage trans. / cross folding	8
C6	cellule photoélectrique / detector pliage trans. / cross folding	8
C7	cellule photoélectrique / detector pliage trans. / cross folding	8
C8	cellule photoélectrique / detector sortie sech. / exit machine	8
C9	cellule photoélectrique / detector présence drap / sheet presence	7
H1	lampe néon / neon lamp manque d'air / lack of air	7
H1	corps de voyant / indicator body manque d'air / lack of air	7
H1	voyant rouge / red indicator manque d'air / lack of air	3
H2	lampe néon / neon lamp sous-tension / power on	3
H2	voyant jaune / yellow indicator sous-tension / power on	3
H2	corps de voyant / indicator body sous-tension / power on	3
H3	lampe néon / neon lamp évacuation drap / sheet evacuation	12
H3	corps de voyant / indicator body évacuation drap / sheet evacuation	12
H3	voyant jaune / yellow indicator évacuation drap / sheet evacuation	12
H4	lampe néon / neon lamp blocage / fault	13
H4	corps de voyant / indicator body blocage / fault	13
H4	voyant rouge / red indicator blocage / fault	13
H5	lampe néon / neon lamp pile term. / pile completed	14
H5	corps de voyant / indicator body pile term. / pile completed	14
H5	voyant jaune / yellow indicator pile term. / pile completed	14
H6	lampe néon / neon lamp encrassement / dirty detection	13
H6	corps de voyant / indicator body encrassement / dirty detection	13
H6	voyant rouge / red indicator encrassement / dirty detection	13
I1	ipso moteur M1 / thermal contact table empileur / stacker table	3
I3	ipso moteur M3 / thermal contact ventilateur / fan	3
I4	ipso moteur M4 / thermal contact défripage droit / right smoothing	3
I5	ipso moteur M5 / thermal contact défripage gauche / left smoothing	3
I7	ipso moteur M7 / thermal contact bras de pliage / folding arm	3
I8	ipso moteur M8 / thermal contact évacuation / ejection	3
I10	coup de poing rouge / red emergency stop arrêt d'urgence / emergency stop	3
I10	coup de poing rouge / red emergency stop arrêt d'urgence / emergency stop	3

IC3 48xx FFS

Repere	Designation / Function	Folio
I11	coup de poing rouge / red emergency stop arrêt d'urgence / emergency stop	3
I11	coup de poing rouge / red emergency stop arrêt d'urgence / emergency stop	3
I13	pressostat d'air comprimé pressostat air / air pressure	3
I14	fin de course / position switch sécurité mains/hands security	3
I15	fin de course / position switch sécurité mains/hands security	3
I18	bloc contacts O-F / O-C contact block engagement / feeding	7
I18	coup de poing jaune / yellow emergency stop engagement / feeding	7
I19	detecteur magnetique de verin / jack detector position de l'engagement / feeder position	7
I21	bouton poussoir / push button évacuation pile / pile evacuation	9
I21	bloc contacts O-F / O-C contact block évacuation pile / pile evacuation	9
I22	bouton poussoir lumineux / bright push button réinitialisation / initialization	9
I22	corps bouton poussoir lumineux / bright push button body réinitialisation / initialization	9
I23	interrupteur 3 positions / 3 positions switch avec-sans pliage / with-without folding	9
I24	corps bouton poussoir lumineux / bright push button body èjection / rear ejection	9
I25	detecteur inductif M8 / M8 detector comptage trans. / cross counter	8
I27	fin de course, / position switch bras avant / front arm position	13
I28	fin de course, / position switch bras arrière / rear arm position	13
I29	détection vitesse / speed control moteur mouvement / motion motor	5
I32	detecteur inductif M5 / M5 detector comptage long. / lengh counter	7
I33	detecteur magnetique / magnetic detector verin roulette / wheel jack	10
I38	Pressostat gaz / gas pressostat gaz Australie / Australie gas	3
I24	bouton poussoir lumineux / bright push button èjection / rear ejection	9
KA6	support relais / relay support antistatique / electrostatic	8
KA6	relais Finder / relay antistatique / electrostatic	8
KM1	contacteur 9A 230V / contactor moteur M1 / motor	14
KM2	contacteur 9A 230V / contactor moteur M2 / motor	14
KM3	contacteur 9A 230V / contactor ventilateur / fan	5
KM4	contacteur 9A 230V / contactor défrippage / smoothing	12
KM5	contacteur 9A 230V / contactor moteur M6 / motor	14
KM6	contacteur 9A 230V / contactor commande bras / arm control	13
KM7	contacteur 9A 230V / contactor commande bras / arm control	13
KM8	contacteur 9A 230V / contactor moteur M8 /motor	13
KM9	contacteur 9A 230V / contactor mouvement / motion	5
KM10	contacteur / contactor chauffage elec / electrical heating	15
KM11	contacteur / contactor chauffage elec / electrical heating	15
KM12	contacteur / contactor chauffage elec / electrical heating	15
KM13	contacteur / contactor chauffage elec / electrical heating	15
KM14	contacteur / contactor chauffage elec / electrical heating	15

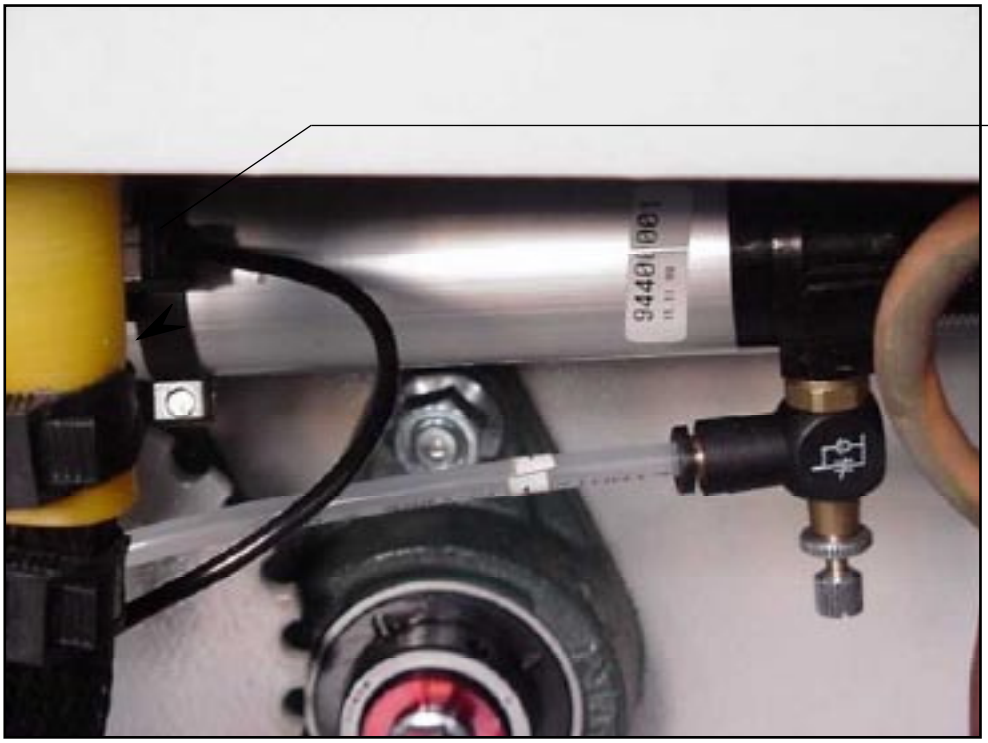
IC3 48xx FFS

Repere	Designation / Function	Folio
KM15	contacteur / contactor chauffage elec / electrical heating	15
KM16	contacteur / contactor chauffage elec / electrical heating	15
KM17	contacteur / contactor chauffage elec / electrical heating	15
M1	motoreducteur frein / break motor table / table	1
M2	motoréducteur 0.37kW / motor évacuation pile / pile evacuation	1
M3	moteur ventilateur 300W / motor ventilateur / fan	1
M3	moteur ventilateur 300W / motor ventilateur / fan	4
M4	moteur ventilateur 0.18 kW / motor défripage droit / right smoothing	1
M5	moteur ventilateur 0.18 kW / motor défripage gauche / left smoothing	1
M6	motoréducteur 0.37kW 1/60 pliage / folding	2
M7	motoreducteur frein / break motor bras de pliage / folding arm	
M8	motoreducteur frein / break motor évacuation / ejection	2
M9	motoréducteur 0.37kW / motor mouvement / motion	4
P1	potentiomètre / potentiometer réglage vitesse plastron / speed adjustment	4
Q1	disjoncteur magn-ther tri 0-6.3A / breaker empileur / stacker	1
Q2	disjoncteur magn-ther tri 0-6.3A / breaker defripage / smoothing	1
Q3	disjoncteur magn-ther tri 0-6.3A / breaker transversal / cross	2
Q4	disjoncteur 2P 0-10A / breaker mouvement / motion	4
Q5	disjoncteur 2P+N 2A / breaker secondaire / secondary	3
Q6	disjoncteur 2P 0-10A / breaker primaire / primary	3
Q7	disjoncteur 1P / breaker protection sorties automates / PLC’s outputs	3
Q8	sectionneur principal / main switch puissance / power	1
Q9	disjoncteur 2P 0-10A / breaker ventilation / fan	4
T1	transformateur 230-400/230 1000VA / transformer commande / control	3
T2	transformateur 400/24VCC 63VA / transformer alim-cellules / 24V supply power	3
T2	transformateur 230/24VCC 63VA / transformer alim-cellules / 24V supply power	3
Y1	électrovanne / électrovalve bac de reception / vat	12
Y2	électrovanne / électrovalve pinces / clambs	12
Y3	électrovanne / électrovalve avance pinces / clambs movement	12
Y4	électrovanne / électrovalve dévérouillage pinces / clambs unblocking	12
Y5	électrovanne / électrovalve rapprochement pinces / clambs drawing	12
Y6	électrovanne / électrovalve soufflage / air spray	12
Y7	électrovanne / électrovalve soufflage avant / front blow	12
Y8	électrovanne / électrovalve soufflage arrière / rear blow	13
Y9	électrovanne / électrovalve premier pli / first cross fold	12
Y10	électrovanne / électrovalve monté rouleau / roller lifting	13
Y11	électrovanne / électrovalve second pli / second cross fold	14
Y12	électrovanne / électrovalve troisième pli / third cross fold	14
Y13	électrovanne / électrovalve volet empileur / stacker opening	14

TROUBLE SHOOTING

FEEDER, IRONER, FOLDER and STACKER

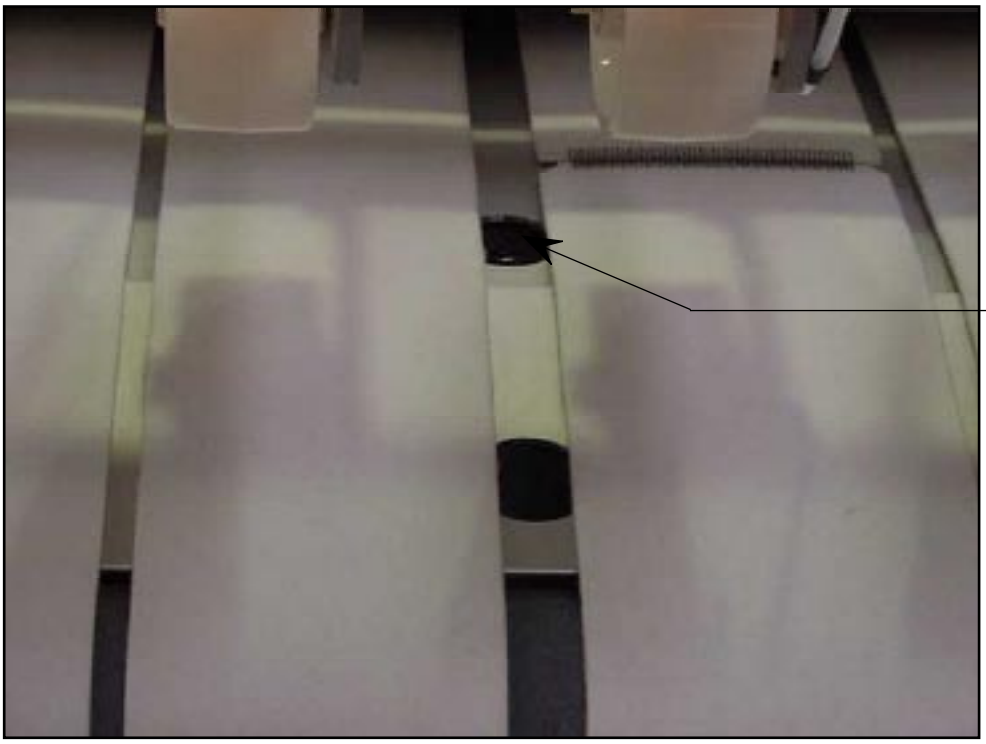
FEEDING WHEELS STAY IN UPPER POSITION AND THE FEEDING TROLLEY STAY IN FORWARD POSITION



• Check that pneumatic jack limit switch are working properly and check their connection on the PLC : I.03

TS010

SMOOTHING BELTS DON'T STOP ROTATING

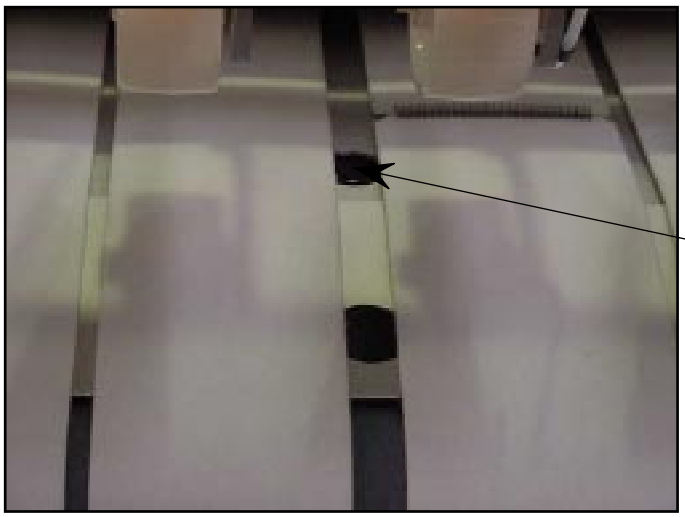


• Check feeding photocell and its connection to input on the PLC :

- I.04 for 4800
- I.12 for 6431

TS011

LENGTH FOLDING SYSTEM IS NOT RUNNING PROPERLY OR NOT RUNNING AT ALL



- Check feeding photocell and its connection to :
  - I.04 (FFS 4800)
  - I.12 (FFS 6431)

TS011

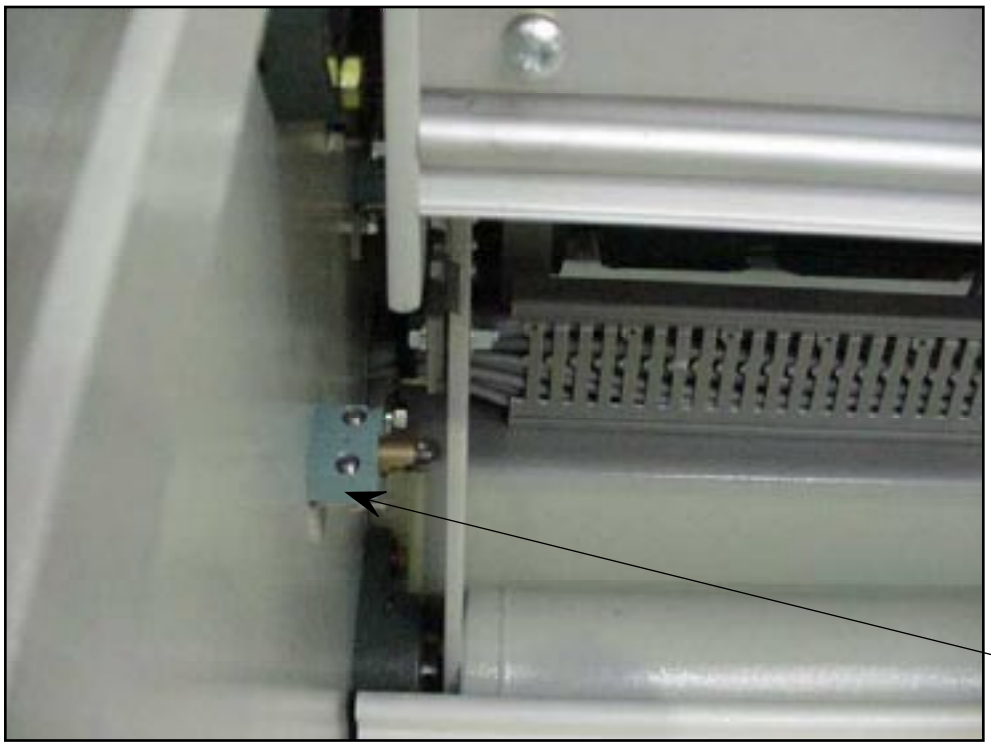
- Check rotation sensor and its connection to input 1.05 on PLC (Led must flash regularly.)

TS012

- Check length folding cell and its connection to input :
  - I.06 (FFS 4800)
  - I.11 (FFS 6431)

TS013

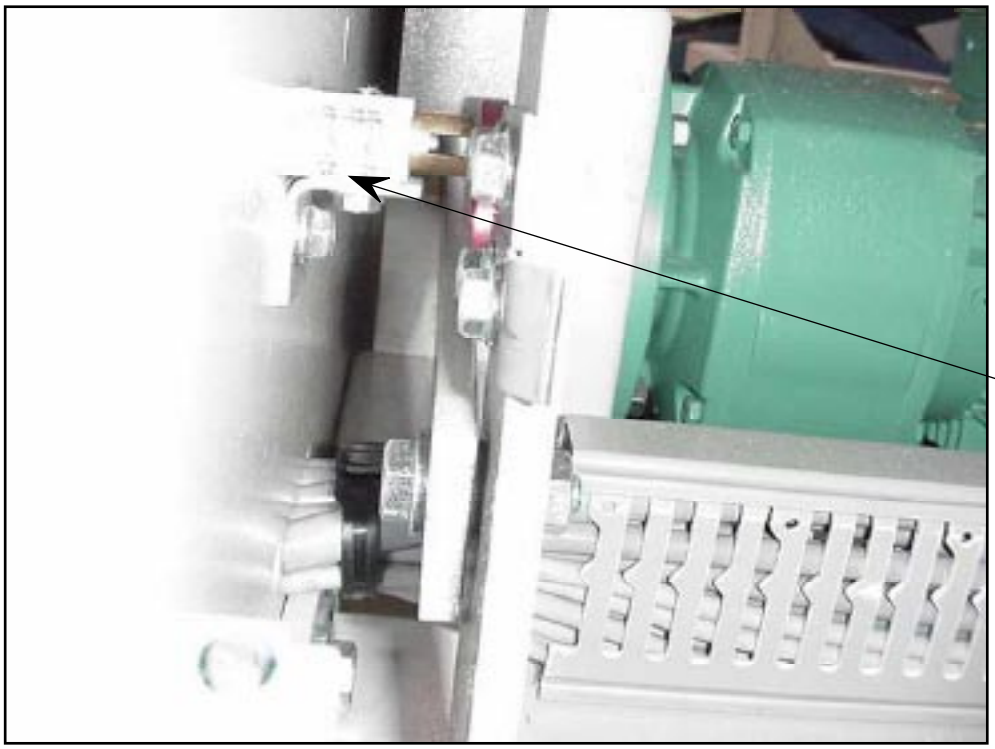
LENGTH FOLDING ARM IS MOVING CONTINUOUSLY WITHOUT STOPPING



• Check that the folding arm limit switches (front and back) are working properly (on the left side of the folding arm).

TS014

EJECTION SATELLITE ARE NOT WORKING. SHEETS STAY ON THE FOLDING ARM.



• Check back position limit switch of the folding arm is working properly. There are 2 switches, check the upper one.

TS015

EVERY SHEET IS REJECTED AT THE BACK OF THE MACHINE

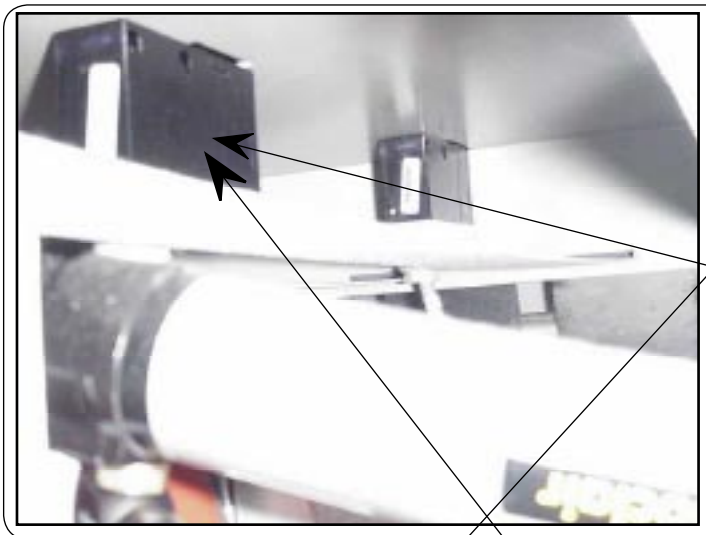
• Check as advise above

• Check the two cells of the cross folding table.

• Check their common input I.07 on the PLC

TS016

CROSS FOLDING SYSTEM IS NOT RUNNING PROPERLY

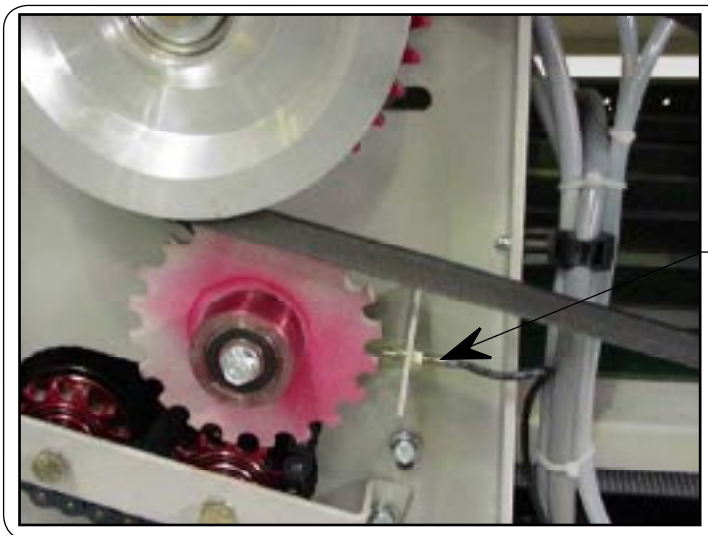


• Check following two cells on the cross folding table.

TS017

• Check their common connection on I.09 PLC input.

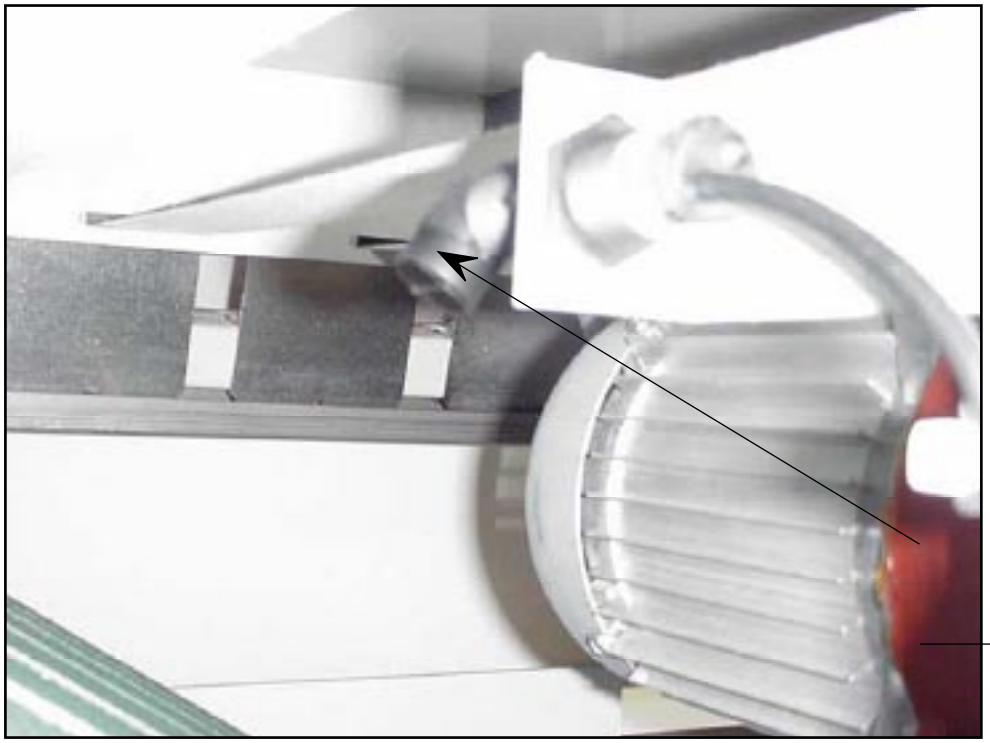
TS016



• Check rotation sensor and its connection on I.24 PLC input.

TS018

FOLDED SHEETS ARE REJECTED BY THE STACKER



• Check as advised before

• Check the cell of sheet output of the FFS machine and its connection on I.10 PLC input.

TS019

FOLDED SHEETS ARE NOT CENTERED ON THE STACKER

• Check as advised before.

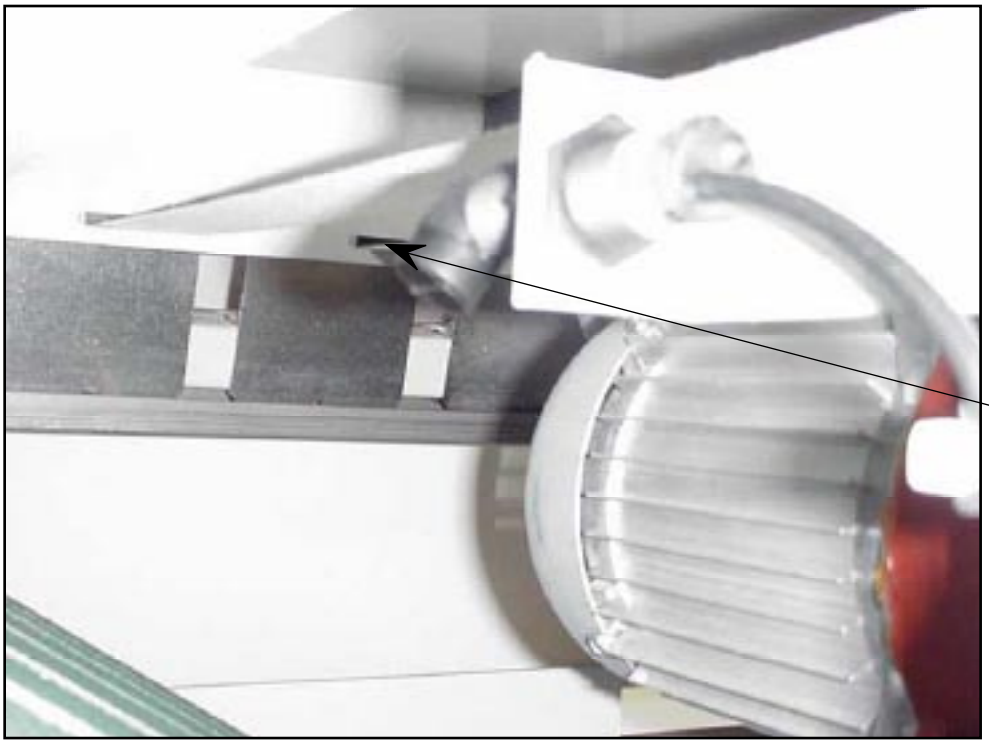
• Check the stacker photocell and its connection on :

- I.11 PLC for FFS 4800

- I.06 PLC for FFS 6431

TS020

THE STACKER IS NOT RUNNING AT ALL OR IS RUNNING STEADILY



• Check the sheet output photocell and its connection on I.10 PLC input.

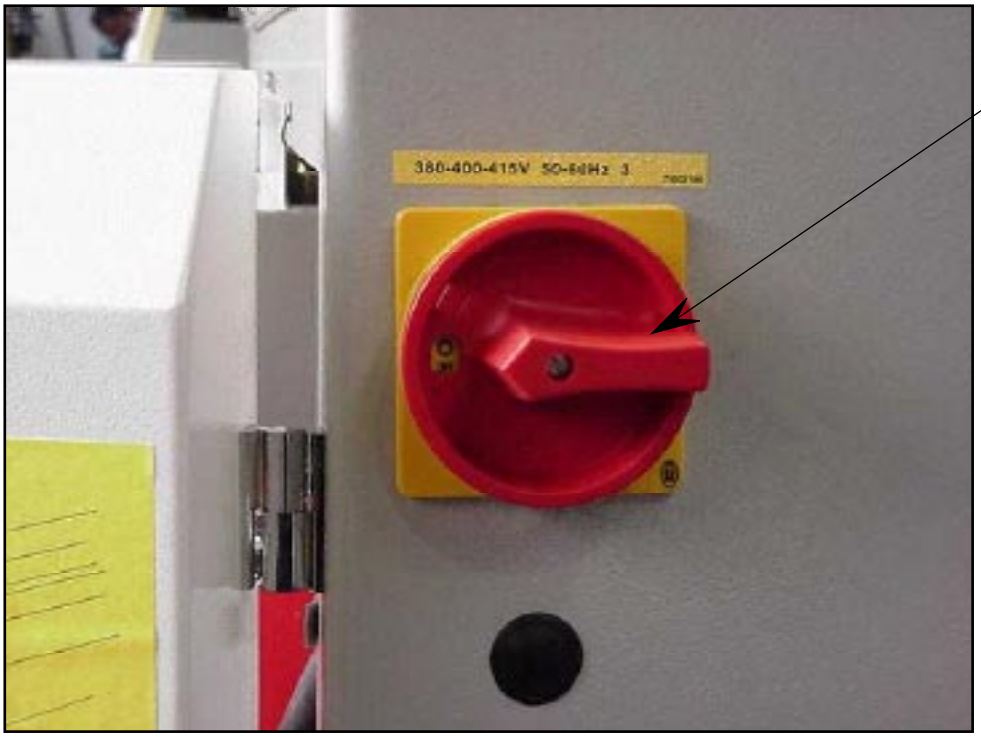
TS019

PLC IS NOT RUNNING AND CPU / PRG LED IS FLASHING

TS021

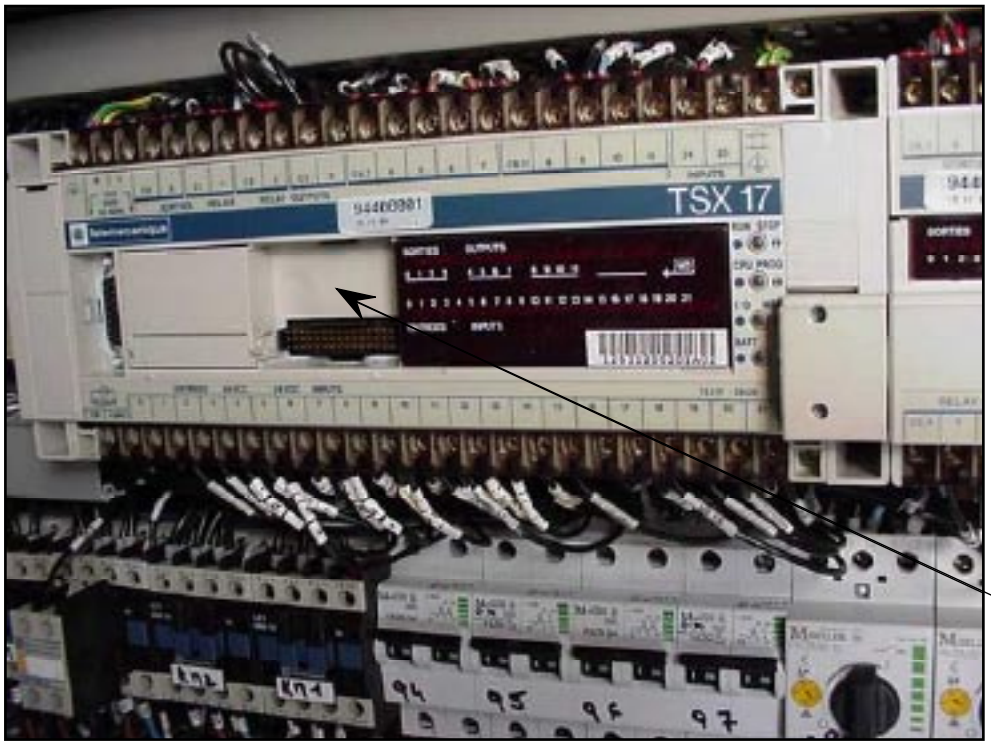
D1078

PLC IS NOT RUNNING AND CPU / PRG. LED IS FLASHING PLC HAS FALLEN IN "WATCH DOG"



- Switch off the main power supply
- Remove the Eprom out of the PLC
- Fit another Eprom loaded with any other programme

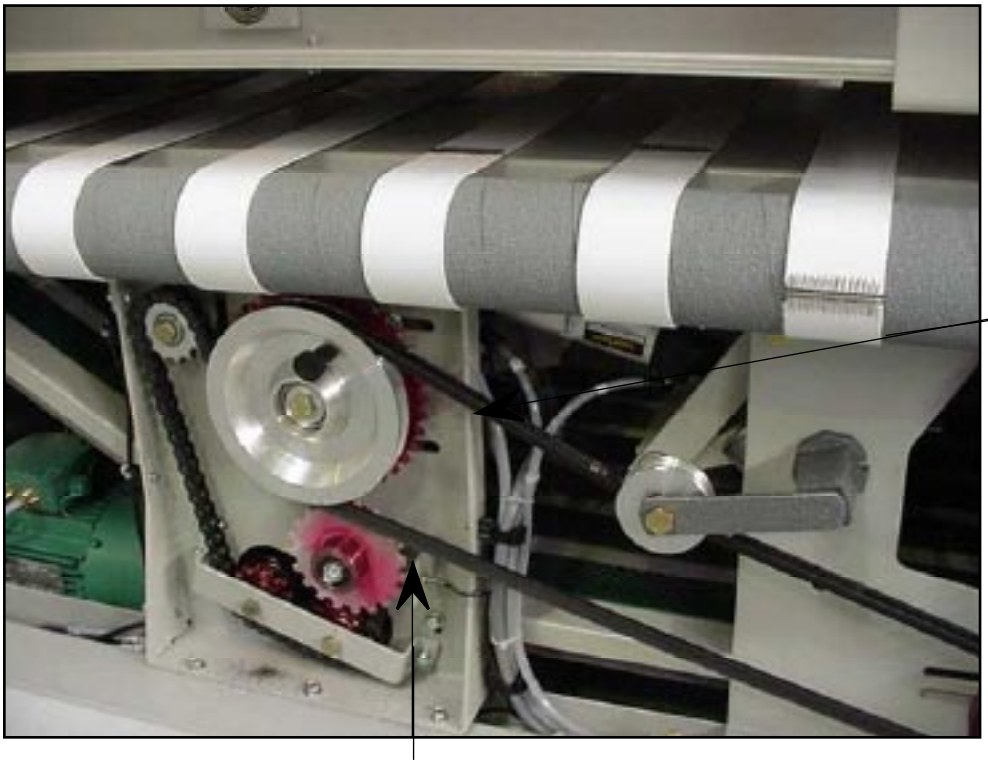
TS022



- Switch on the power supply and wait for 5 sec.
- Switch on the power supply and refit the original Eprom.

TS023

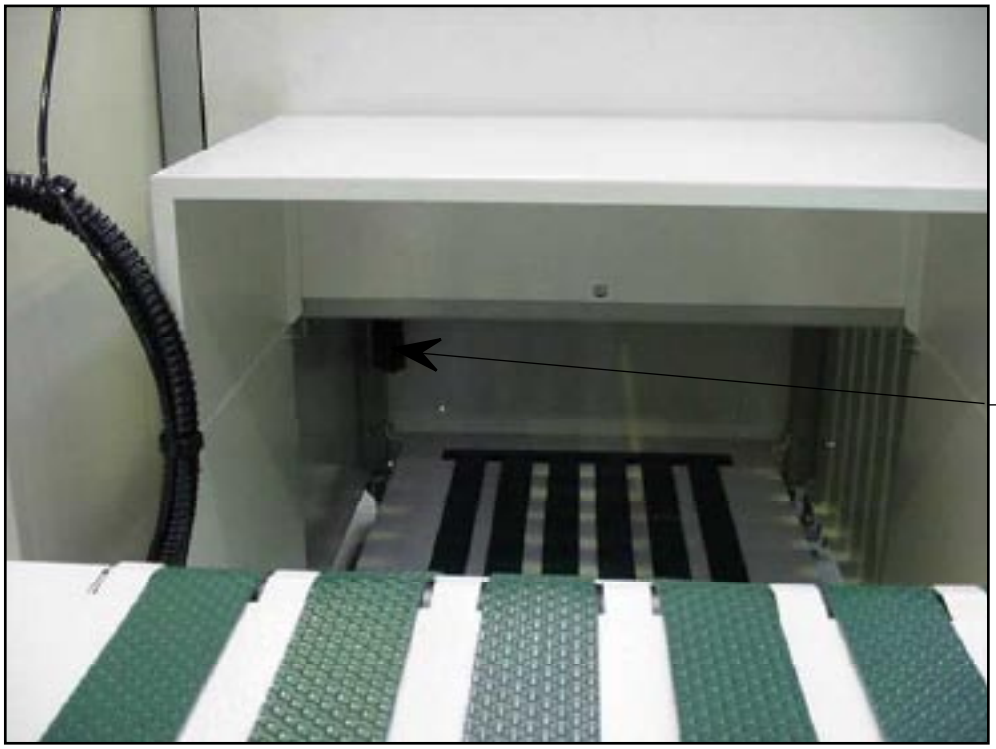
TIP



• To take a sheet out of the cross folding manually, you must turn the belt slowly to avoid the PLC falling in "watch dog". Otherwise the rotation sensor sends tops too fastly to the PLC.

TS024

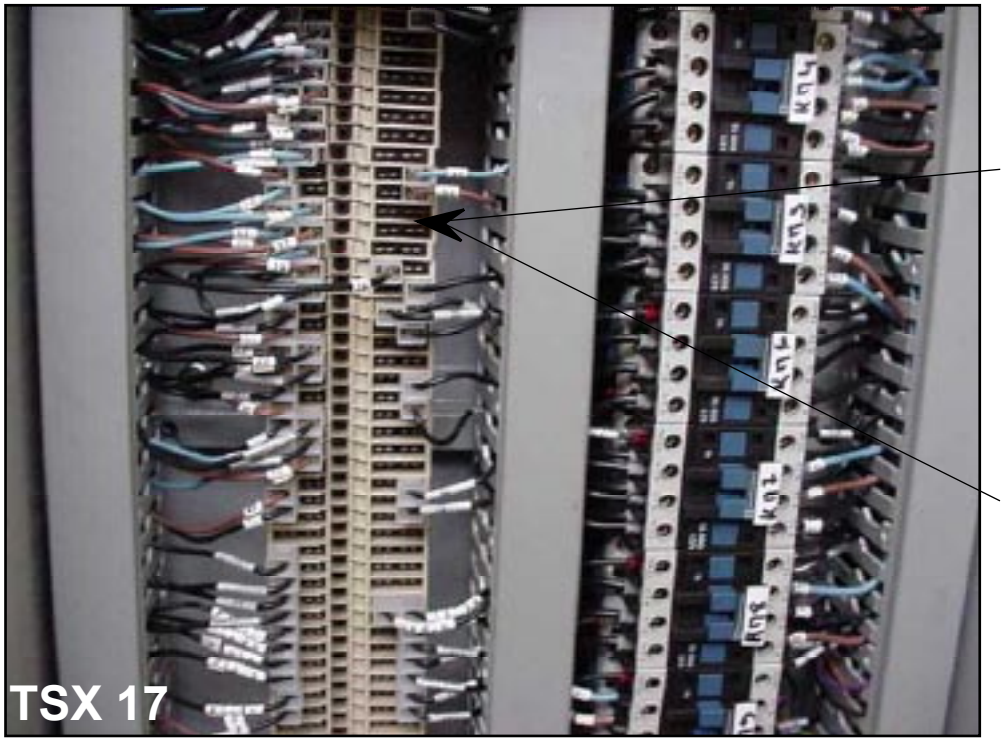
THE STACKER DOES NOT EJECT THE STACK



• Check stacker photocell and its connection to I0.13 PLC input.

TS025

THE MACHINE STOPS WITHOUT ANY OBVIOUS REASON



• Check the motor safety device and the finger protection system (shunt terminals 7 and 19 to know if safety devices are faulty)

• Remove this shunt when the problem is fixed.

TS026

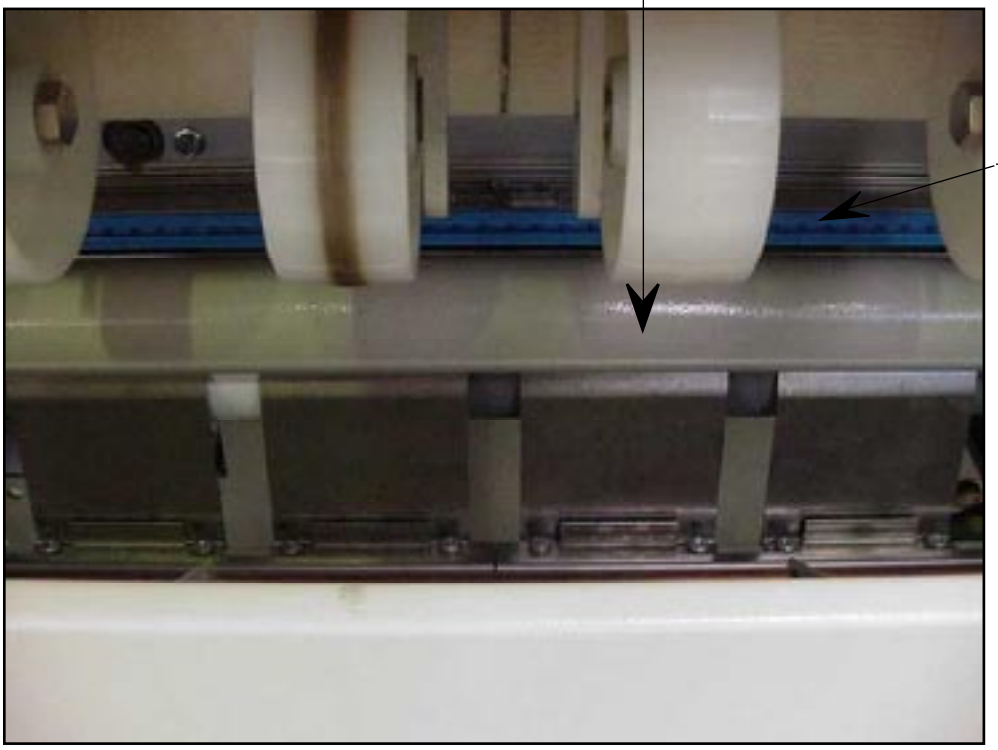
TS026

THE MACHINE STOPS WITHOUT ANY OBVIOUS REASON

- Check compressed air pressure and the air switch (shunt terminal 6 and 7 to know if those safety deviced are faulty)
- Check every emergency stop.
- Check the frequency converter.
- At last, replace the programmer.

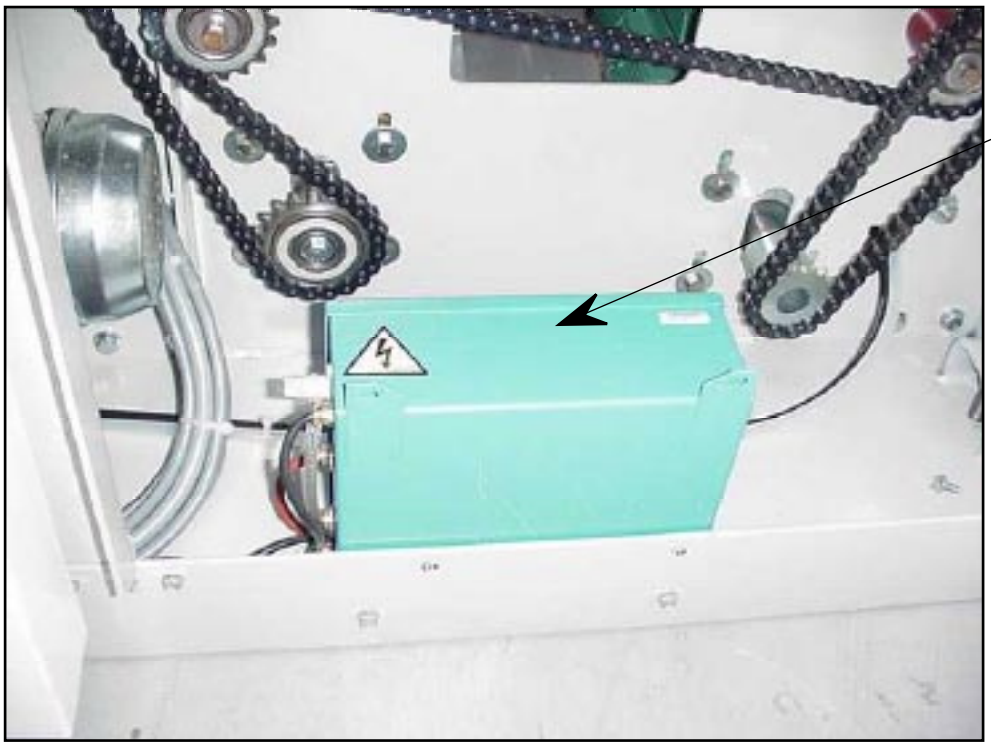
TS027

SHEETS ARE WRAPPING ONTO THE EJECTING SATELLITE



• Check that the antistatic bar is working properly.

TS028



• Check the antistatic bar generator.

• Check that the adhésive tape around the satellite is in good condition.

TS029

SHEETS ARE WRAPPING ONTO THE EJECTING SATELLITE

• Replace folding clamps near the area where the problem occures.

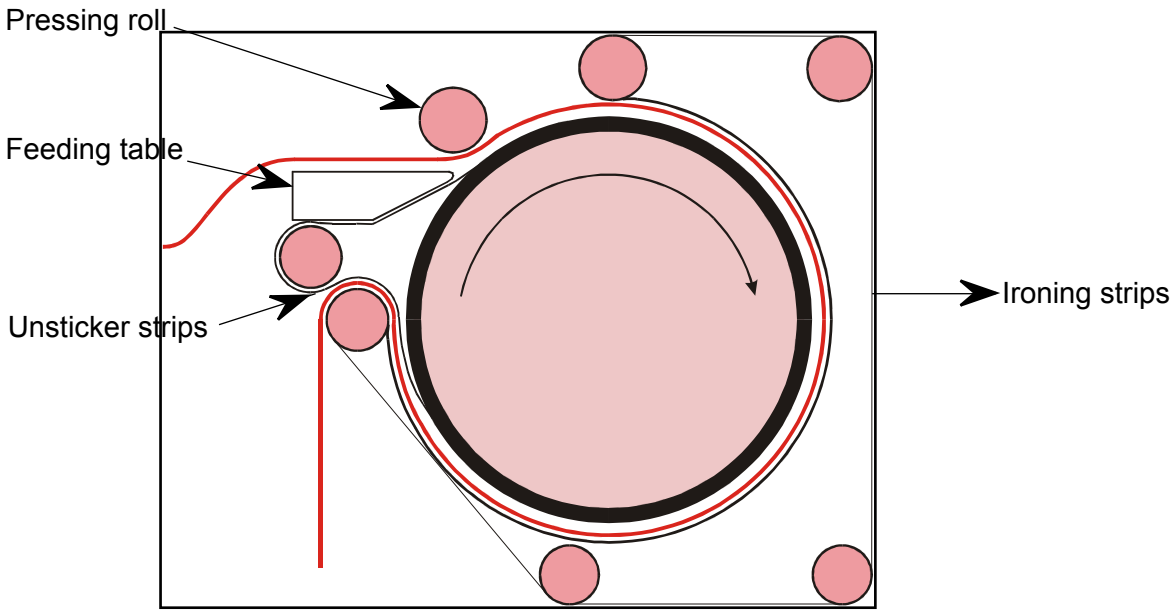
TS030

STEAM HEATED CYLINDER IS NOT DRIVEN ANY LONGER

- Lubricate the bearings of the cylinder with grease **"Mollycote 44"**
- Check the driving chains and pinions.

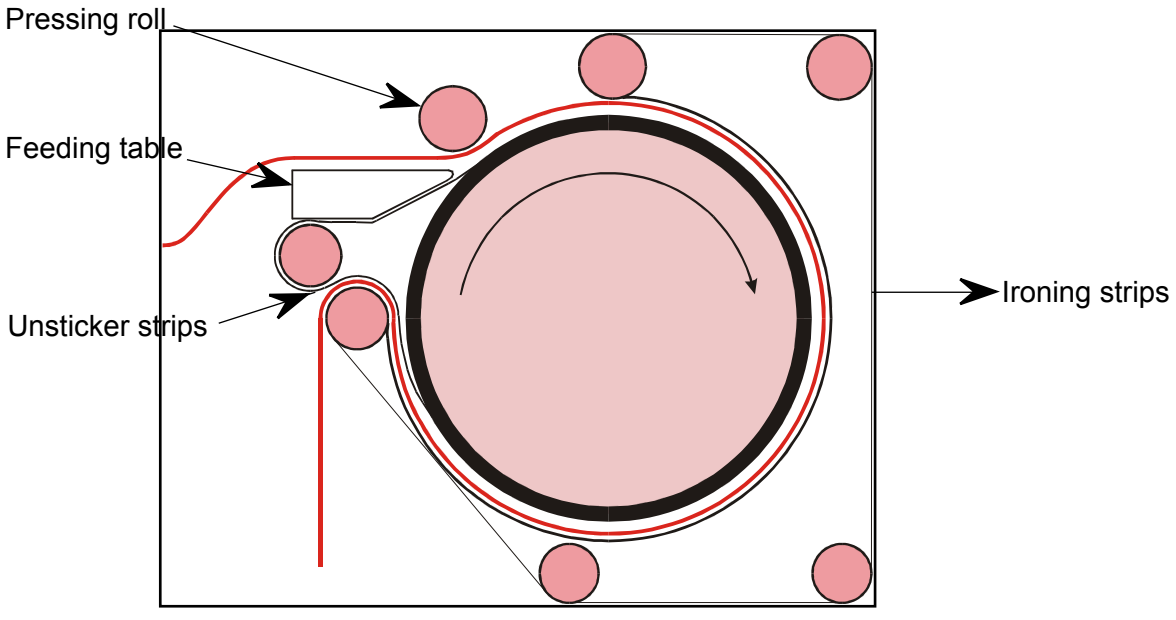
LINEN GET STICKED ON THE CYLINDER AND GOES TO UNSTICKER FINGERS

- Check the quantity of the used starch : 15 ml/kg.
- Check the sheets are dry. If not check the temperature and the residual moisture rate : 50 %.
- At a last resort, install unsticker strips around the cylinder.



LINEN BECOMES YELLOW

- Check the temperatures on the differents parts of the cylinder and the ironing speed.
- Check if the whole length of the cylinder is used.
- Check if the sheets are well rinsed (phenolphthalein). The soap quantity must be 15 g/kg by prewash and wash as well.



Installing process :

PROCESS TO LOAD PARAMETERS IN CONVERTERS

MITSUBISHI CONVERTER
Motion motor
Référence FREQUROL FR - S520S - 0,4 kW

- Turn the power off.
- Disconnect the bridge between STF and PC on the Mitsubishi.
- Turn the power on.
- Push on PU/EXT on the Mitsubishi, the led is on.
- Push on "Mode" and turn the button - or + to choose the parameter that you wish modify.
- Push on SET to see the value and turn the button to modify the value.
- Push on SET to confirm the new value.
- The parameters C are after the parameter P99.
- After the modification turn the power off and connect the bridge between STF and PC.
- When the motor is running you can see the frequence on the Mitsubishi, if you push on SET you can see the motor intensity.

Mitsubishi converter

D0838

Settings to be modified in comparison with factory settings :

MITSUBISHI CONVERTER

Feeder ironer folder and stacker

500 all heating type
motion motor
230 V

- Pr 0 = 6
- Pr 1 = 80
- Pr 7 = 1.5
- Pr 8 = 1.5
- Pr 9 = 2.1
- Pr 30 = 1
- Pr 23 = 160
- Pr 38 = 110
- Pr 66 = 1
- Pr 67 = 2
- Pr 72 = 15
- C2 = 13.5
- Pr 79 = 2

Feeder ironer folder and stacker

500 all heating type
motion motor
132 V

- Pr 0 = 6
- Pr 1 = 80
- Pr 7 = 1.5
- Pr 8 = 1.5
- Pr 9 = 3.3
- Pr 30 = 1
- Pr 19 = 132
- Pr 23 = 160
- Pr 38 = 110
- Pr 66 = 1
- Pr 67 = 2
- Pr 72 = 15
- C2 = 13.5
- Pr 79 = 2

Feeder ironer folder and stacker

631 all heating type
motion motor

- Pr 0 = 6
- Pr 1 = 80
- Pr 7 = 1.5
- Pr 8 = 1.5
- Pr 9 = 2.1
- Pr 30 = 1
- Pr 23 = 160
- Pr 38 = 105
- Pr 66 = 1
- Pr 67 = 2
- Pr 72 = 15
- C2 = 22
- Pr 79 = 2

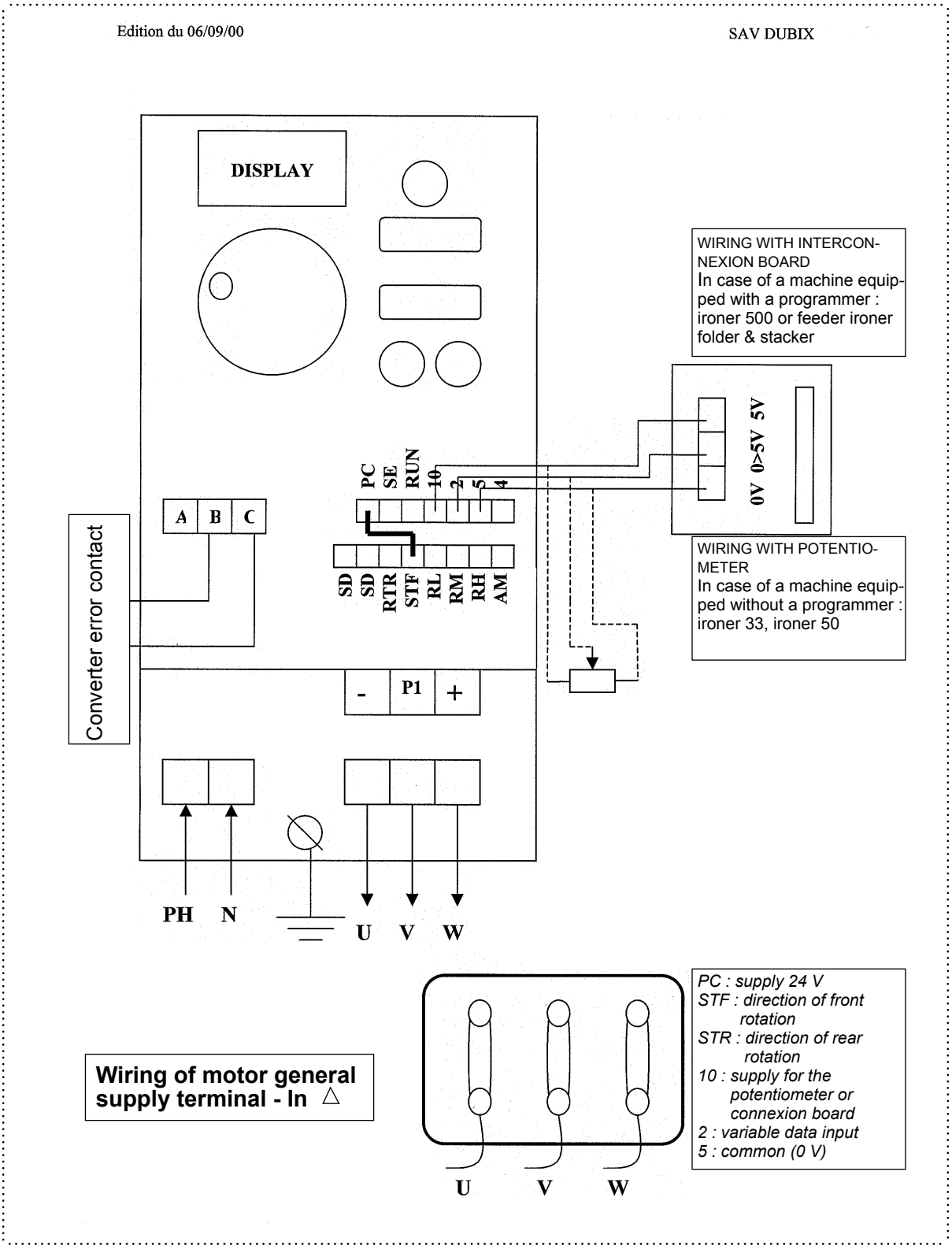
Feeder ironer folder and stacker

631 electric / steam
fan motor

- Pr 0 = 6
- Pr 1 = 65
- Pr 7 = 1.3
- Pr 8 = 1
- Pr 9 = 2.2
- Pr 30 = 1
- Pr 23 = 160
- Pr 38 = 70
- Pr 66 = 1
- Pr 67 = 2
- Pr 72 = 15
- C2 = 35
- Pr 79 = 2

Installing process

Mitsubishi motion converter wiring diagram



TELEMECANIQUE CONVERTER

Motion motor
Reference ALTIVAR 08 ATV- 08U09M2 - 0,37 kW

- Turn the power off.
- Disconnect the bridge between L11 and 15 V.
- Turn the power on.
- On the display must be RDY.
- With the ⇩ button choose the parameter that you wish to modify.
- Push on MODE to see the value.
- Push on ⇩ or ⇩ to change the value.
- Push on MODE to confirm the new value.
- After the modification turn the power off and connect the bridge between LI1 and + 15 V.

Telemecanique converter

D0840

Settings to be modified in comparison with factory settings :

TELEMECANIQUE CONVERTER

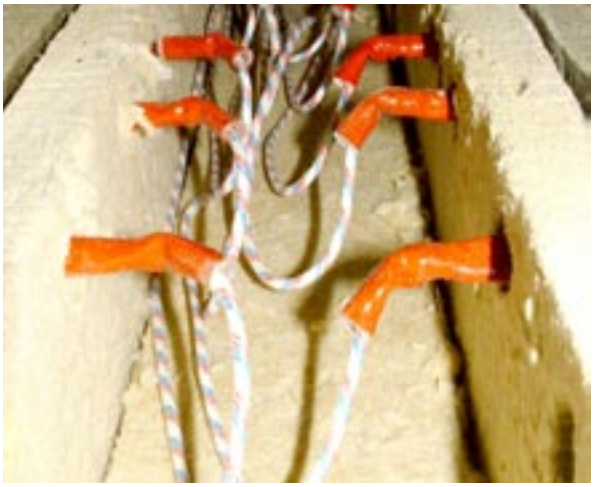
Feeder ironer folder and stacker
500 all heating type
motion motor
230 V

- ACC = 2
- DEC = 1.5
- LSP = 13.5
- HSP = 88
- itH = 2.1
- L2A = YES
- SLP = 0
- Atr = USF

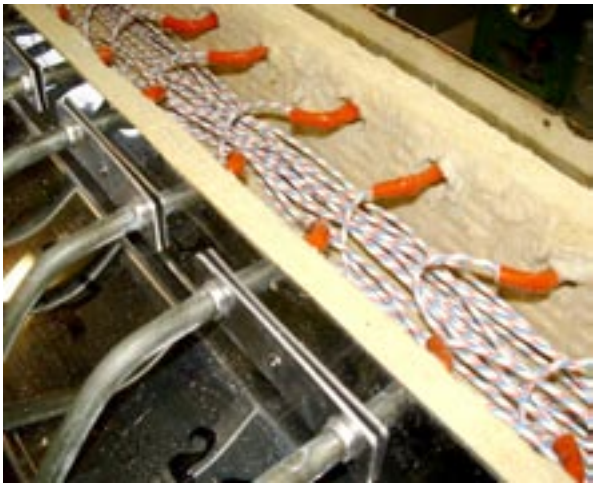
Feeder ironer folder and stacker
500 all heating type
motion motor
132 V

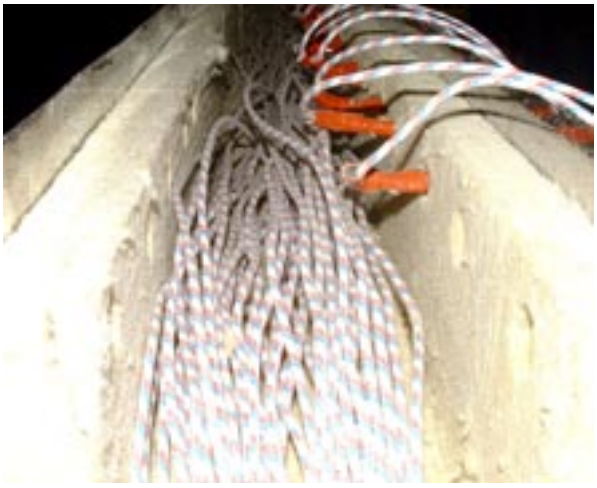
- ACC = 2
- DEC = 1.5
- LSP = 13.5
- HSP = 88
- itH = 2.1
- L2A = YES
- UnS = 132P
- SLP = 0
- Atr = USF

Installation of heating elements



Change the faulty resistance by a new





Arrange the wiring of the resistances in a homogeneous way in the tunnel created by the insulators

In order to make easier the connection, mark and attach the wires of resistances by group

Thinking of you

Electrolux

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