ROBOT FR- FROMM (New Generation)

New Electronic Robot Version 03

Electrical diagram **ELS_30.1901.03_Version.01.pdf**

Starting with serial numbers
0300001 Production code FR 270 01M040400957 (France)
0300001 Production code FR 250 01M040501162 (Sweden)

Manual for testing support

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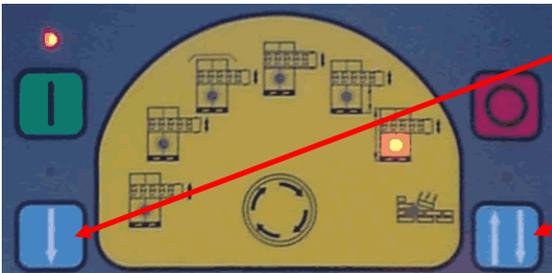19. Alarms

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1. Buzzer Trimmer from internal side … *all counterclockwise*

2. In the case of FR290 adjust the trimmer of the pre stretch board
    all clockwise.
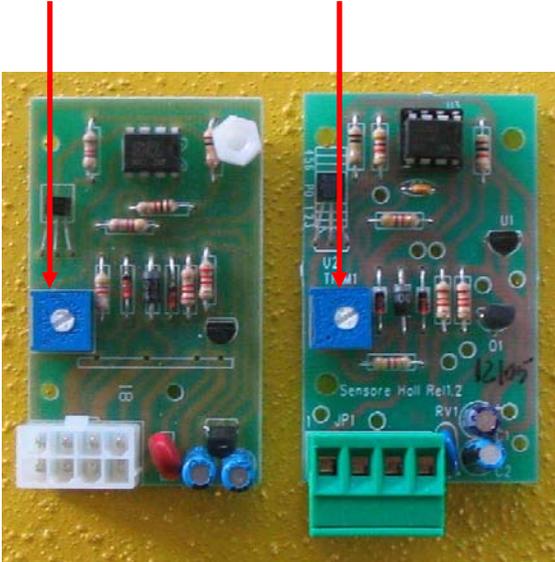
3. Plug the battery

4. Turn on the machine with the key

5. Check the correct sense of rotation of the traction and carriage motors:

Carriage:

Carriage DOWN : the carriage
MUST go down

Carriage UP/DOWN: the firts time
the carriage **MUST** go up

Traction:

Press START, wait until the 3 beeps stop. At the moment the robot starts to move press STOP,

In case the robot was moving clockwise the wiring of the traction motor is OK.

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Check to forward (green)-backward(black) buttons

Green = FORWARD
Black = Backward

6. Check the stop of the carriage, at the TOP and BOTTOM end micro switches

7. Check if the carriage stops in the correct zero position at floor level.
    If not adjust the cams inside the mast.

8. **The software is the same for ALL the ROBOTS with every possible optional,
    to "teach" to the machine witch optional are enabled you need to insert the
    CONFIGURATION parameters**
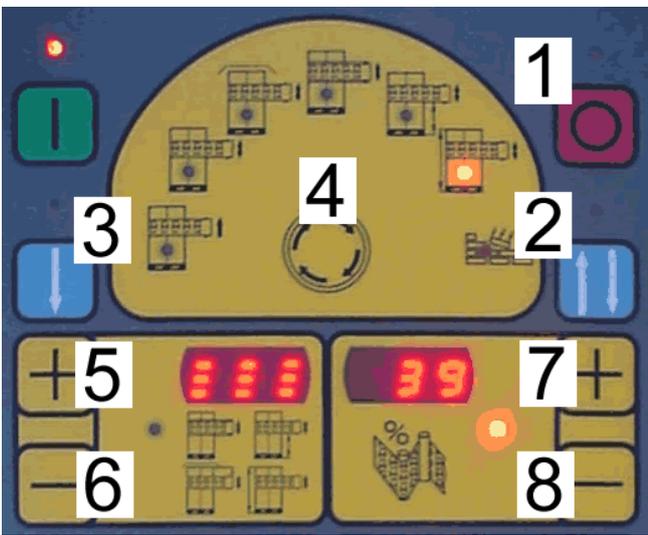
- press STOP (1) to exit from the configuration
  parameters

-To change the optional parameters 'T', press UP/DOWN (2) carriage and immediately after the button
'STOP' (1) for 5 seconds. (Keep the buttons pressed together for 5 Seconds)

then enter the password 16 - 07 on the left and right side of the display. (Buttons 5 and 6 – Buttons 7 and 8).
The procedure is the same as with the turntable versions FS250 / FS270

Then press STOP (1) again.

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Now your are abele to change the T-Parameters

T 0: Pallet perimeter	= 0 the perimeter is fixed = 50 Meters
	= 1 perimeter = F19
	(different for each cycle if T12=1)
T 1: Pre Stretch Motor Speed	= 100 default Max Pre stretch Speed
T 2: Machine supplied with cutting device	= 0 without cutting device
	= 1 with cutting device
T 3: Speed forward by handlebars in manual	= 50
T 4: Speed backward by handlebars in manual	= 30
T 5: With motorised pre stretch FR290	= 0 pre stretch without motor FR230,250,270
	= 1 pre stretch with motor (FR290)
T 6: With mechanical clutch	= 0 electromagnetic clutch (FR250.270,290)
	= 1 mechanical clutch (FR230)
T 7: Option film finished or broken	= 0 option not installed
	= 1 option installed (Only if T5=1)
T 8: Blocking of the parameter possible	= 0 not possible
	= 1 possible to block
T 9: Exhibition program	= 0 Standard Cycle
	= 33 Cycle forever (for exhibitions)
T 10: Different tension during up and during down	= 0 tension during up/down is the same
	= 1 tension is different during carriage up/down

To change the film tension during the movement of the carriage up, push the arrow up of carriage up in manual and then with the + & - of the film tension you can change the tension of the film. (The led of film tension is blinking and during this process the carriage is going up)

To change the film tension in during the movement of the carriage down, push the arrow up of carriage down and then with the + & - of the film tension you can change the tension of the film. (The led of film tension is on during this process the carriage is going down)

T 11: Sound of the beeper during the cycle	= 0 Off, 1 = On
T 12: Different parameters for every cycle	= 0 All parameters are equal
	= 1 Different parameter for every cycle
T 13: Left side password	= 22
T 14: Right side password	= 3
T 15: Default Minimum CLUTCH Voltage "note (1)"	= 0
T 16: Default Max CLUTCH Voltage „note (1)"	= 22
T 17: Default Max Traction Speed	= 100
T 18: Default Max Carriage Up Speed	= 100
T 19: Default Max Carriage Down Speed	= 100

note (1):
The value of the clutch voltage change from 0 to 100 (Can be changed with the buttons PLUS [7] and MINUS [8])
Default (Normally)   0 is for 0 VDC
                         100 is for 23 VDC

We can choose which value we would like to link to 0 and to 100 by adjusting the **T 15** and **T 16**
Example: T 15 = 2
                         T 16 = 9

Value of clutch voltage 0   -- > 2   Vdc
Value of clutch voltage 50   -- > 5,5 Vdc
Value of clutch voltage 100   -- > 9   Vdc

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9. The logic to enter or change the settings is the same as in the turntable machines FS250 / FS270. Because the Robot doesn't have the pressure plate It was not possible to use the same push buttons.

- To go to the hidden parameters 'F' press 'STOP' (1) button for 5 seconds:
    different for each cycle if t12 = 1)
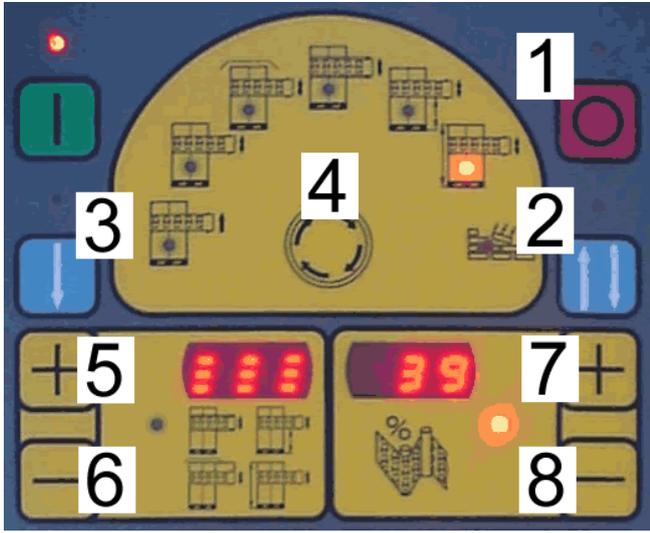
- With buttons 5 and 6 you can select the next or previous parameter.
- With buttons 7 and 8 you can change the value
- press STOP (1) to exit from the F parameters

The settings for the F parameter are: **Standard settings**

F 0:   Overlapping at the top of the pallet.   = 7
F 1:   Delay tension film at the begin (For FR250,270,290).   = 0 (0.1 seconds)
F 2:   Clutch tension (for FR290)   = 100
F 3:   Cut device excluded/included   = 0 Excluded
                                                                    = 0 Included
F 19: Pallet perimeter (if T1 = 1)   = 50 (5 meters)

10. General parameters (common to each cycle)

F 4:   Clutch voltage before the cut   = 100
F 5:   Cut time   = 7
        (It's the time the cutting unit blade is forward for cutting the film 10 = 1sec)

F 6:   Slow time   = 10 (for 250-290)
                                                                    = 0 (for 270)
        (It's the time the clutch voltage is low after the cut to allow the film to exit from the rolls 10 = 1Sec)

F 7:   Forward time   = 45(for 250-290)
                                                                    = 30(for 270)
        (It's the time for robot forward after the cut 10 =1 sec)

F 8:   Time for clutch voltage before the cut   = 5 (0,5sec)
        (it's the time the clutch voltage is F4 before the film cut 10 =1sec)

F 9:   Forward speed   = 25 (for 250-290)
                                                                    = 70 (for 270)
        (It's the speed for robot forward after the cut 0min 100 max)

F 10: Acceleration after the film cut   = 6 (for 250-290)
                                                                    = 0 (for 270)
   (Acceleration of the robot after the cut: 6 less acceleration, 0 more acceleration)

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F 11: Carriage model   = 0 (for 250-290)
                                                        = 1(for 270)
F 18: Minimum motor pre stretch speed   = 10

Press STOP (1) to exit from the F parameters

11.   Check the red emergency button (ALM 1): the machine cut the power (motors locked)

12.   Check the emergency bumper (ALM 2): the machine cut the power (motors locked)

13.   Check the sense of rotation of the pre stretch motor

14.   Check the functionality of the pre stretch board
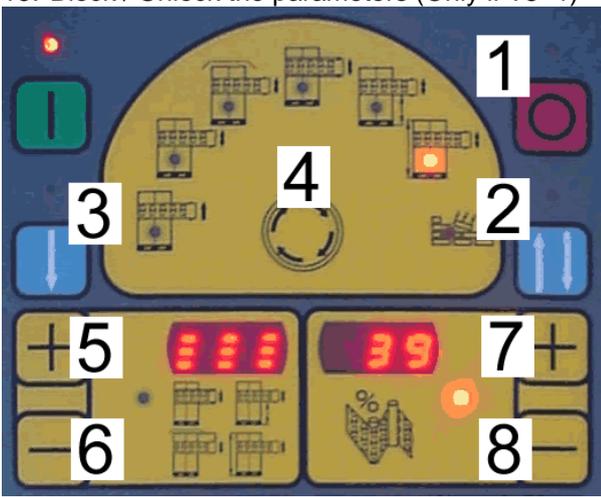
Analogue value pre stretch board
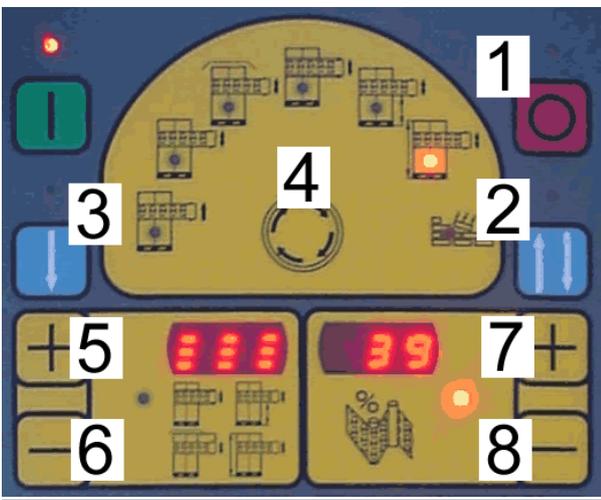
Press button SELECTION of the CYCLES (4)
for 5 seconds …the display **must** display

-       with the roll free value about 0
        (it's ok till 5)
-       with the roll pressed value about 100
        (it's ok from 95)

If you do not read these values make the
mechanical operations of the case
to exit press STOP (1)

15. Block / Unlock the parameters (Only if T8=1)

Press button SELECTION of the CYCLES (4)
for 5 seconds …the display **must** display

-       with the roll free value about 0
        (it's ok till 5)
-       with the roll pressed value about 100
        (it's ok from 95)

If you do not read these values make the
mechanical operations of the case
to exit press STOP (1)

To block the parameters
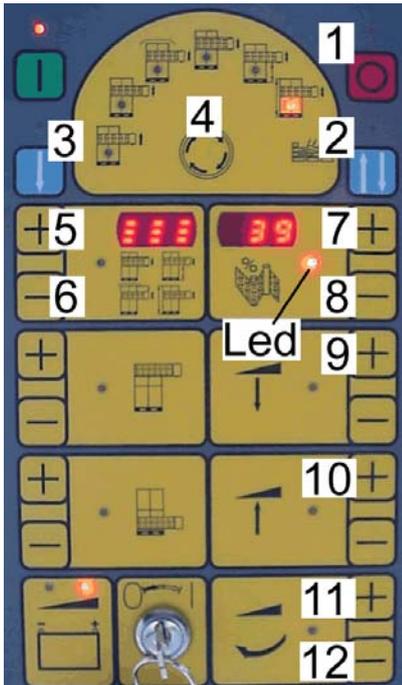Press 2 and immediately after 3. Keep the buttons pressed for 5 seconds

To Unlock the parameters
Press 2 and immediately after 3. Keep the buttons pressed for 5 seconds after this time:
-       In the display is shown left "BL" right-side "BR"
-       With buttons 5 and 6 you can change the value
-       Change the value at the left and right side, according the value written in T13 and T14
-       After inserting the correct password, press stop and the Robot is unblocked.
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16. Check the blade of the cut unit (if T2 = 1)

- ✓ Press [2] and immediately after [1] keeping pressed for 5 seconds [2] + [1]
- ✓ "0 - 0" is displayed
- ✓ With the buttons PLUS [5] and MINUS [6] write 10
- ✓ With the buttons PLUS [7] and MINUS [8] write 10
- ✓ Press [11] … blade forward
- ✓ Press [12] … blade backward
- ✓ Exit press button [4]

17. Diversified Clutch Voltage (if T 10 = 1)

- ✓ Press the button [10],   the led of speed carriage up and of clutch voltage are on
- ✓ The up clutch voltage is displayed
- ✓ With the buttons PLUS [7] and MINUS [8] change the value of the up clutch voltage
- ✓ Press the button [9],   the led of speed carriage down and of clutch voltage are on
- ✓ The down clutch voltage is displayed
- ✓ With the buttons PLUS [7] and MINUS [8] change the value of the down clutch voltage

18. Check the right operations of the clutch and of the pre stretch unit

- ✓ Put the parameter of film tension to zero,
- ✓ Insert the film spool in the carriage,
- ✓ Press Start,
- ✓ Check the right workmanship increasing the parameter of the film tension
- ✓ from 0 to 80 – 90

19. Alarms
- ✓ **ALM 1:**   EMERGENCY
- ✓ **ALM 2:**   BUMPER
- ✓ **ALM 3:**
- ✓ **ALM 4:**   CARRIAGE SENSOR
- ✓ **ALM 5:**   TRACTION SENSOR
- ✓ **ALM 6:**   FILM END OR BROKEN
- ✓ **ALM 7:**   BATTERY EMPTY

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SOFTWARE UPLOAD ROBOT VERSION 03

Upload the software with the programmer and software of the FS230 ATMEL
(FROMM 16.8234 ATMEL AVR ISN In System programmer)

Select Processor ATIMEGA128

How TO UPDATE the SOFTWARE in the new machines:

- ROBOT FROMM,

  Insert the Flat cable in the right connector and in the *serial port of your PC*

Inserire QUI il Cavetto Flat
Insert HERE the little Flat Cable
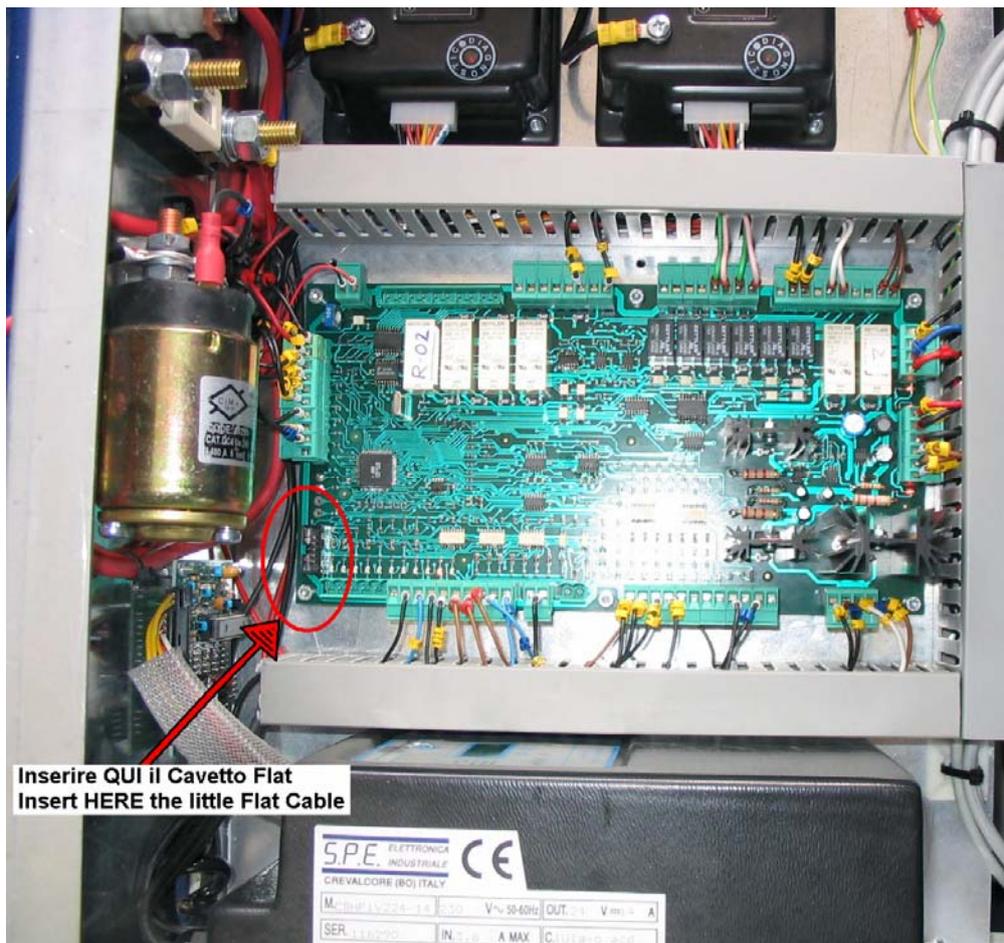
1. Execute the downloading program and select micro *"Atmega128"*

2. Load the program (FS2.1208.02.hex)

3. Update the machine
   during the updating keep the key in position ON -- > MACHINE ON

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