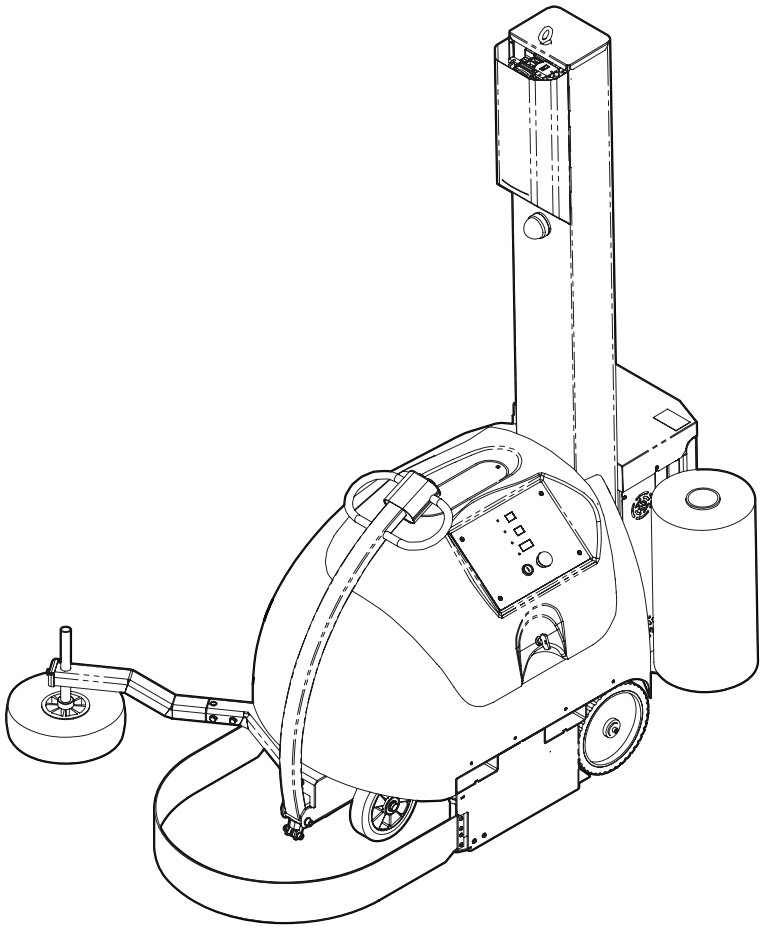
FROMM | WRAPPING SOLUTIONS

Robot - Mast

FR 330
FR 350-390-400

Operator Panel

Translation of the original instructions



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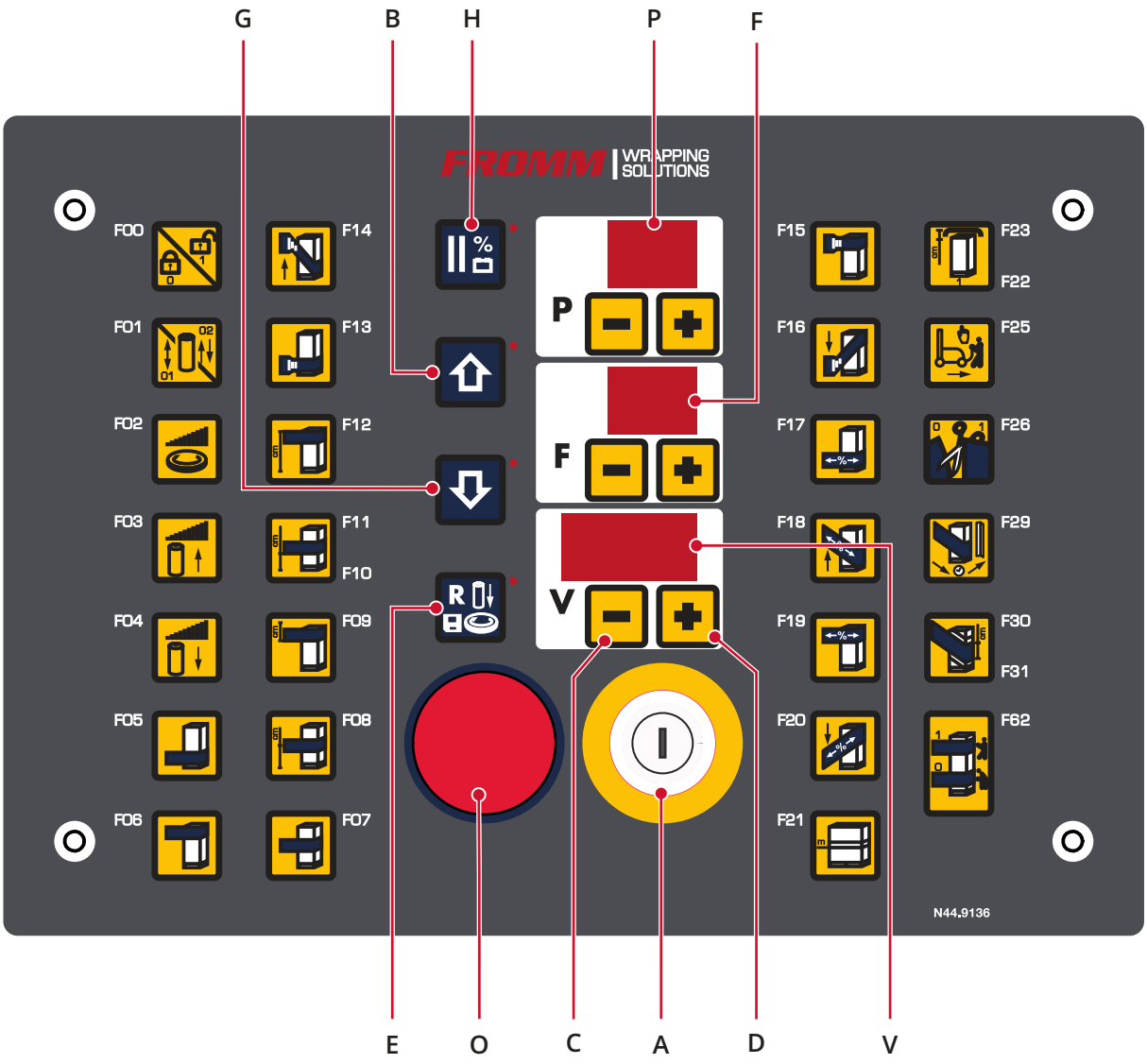
1 GENERAL CONTROLS

1.1 COMMANDS WITH BUTTONS



Picture 1

1.1.1 CONTROLS DESCRIPTION

» See Picture 1 - pag. 1

A Programmed cycle START button.

B Press and hold to lift the carriage manually.

C Decrease values button.

D Increase values button.

E **Alarm reset** (fast pressure – less than 2 second);

Saving parameters (press until the LED flashes - more than 3 seconds);

When pressed along with the **STOP** button, it stops and resets the cycle (the display **(V)** shows **INI** to show the cancellation).

F 2-digit display indicating the functions (parameters) of the selected programme;

During the cycle it shows the current operating status;

CF on the display **(V)** at the end of the cycle means the film is depleted;

AA on the display **(V)** means there is an alarm on the machine.

G Press and hold to lower the carriage manually.

H **STOP** button for cycle pause; the machine decelerates and stops; the cycle can be resumed from the same point. The display **(V)** shows the battery charge if the pushbutton is pressed when the machine is stopped. The LED flashes when the battery is in reserve.

O **EMERGENCY** push-button (or shutdown if the machine is at a standstill).

P 2-digit display showing the selected programme;

During the cycle it shows an animation of the rotation;

NOTE: the flashing display indicates that a parameter has been changed).

V 3-digit display indicating the value of the displayed function;

During the cycle or manually moving the film carriage, it indicates the current height;

The central and left points are decimal points for the values. When the right point is lit, the **V+** and **V-** keys are blocked and the parameter values cannot be changed.

1.1.2 SFERA OPERATION

» See Picture 1 - pag. 1

Loading of parameters: takes place automatically by selecting the desired programme.

Saving of parameters: if the LED of the **RESET** key **(E)** is turned off, press the **RESET** key for more than 4 seconds. This LED will start to flash rapidly to indicate that the parameters have been saved.

The program P=00 is read-only and it is configured with default values.

Up to 99 programmes can be created (based on the machine model): To copy the parameters of an existing program on a virgin program, select the program source, press and hold **RESET** and act on **P+** and **P-** buttons to select the target program. Release the **RESET** button within 4 seconds the parameters will be copied only, if held down for more than 4 seconds and then released, will be copied and saved.

NB: The virgin target programme must always be released (**F00**=1) (LED of the **RESET** key **(E)** is turned off).

Automatic opening of the program used previously.

When the machine is turned on again, the parameters from the last programme selected and started will be loaded.

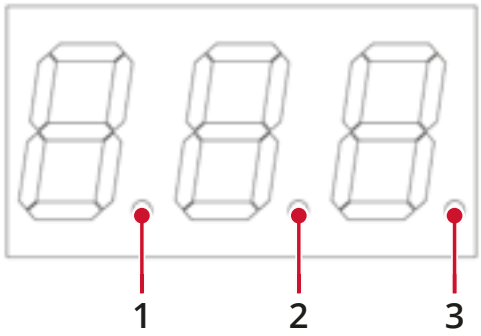
Keyboard block/ release: prevents modification of parameters by blocking the keys **V+** e **V-**; hold down at the same time **F+** and **F-** and then press **RESET** to enable / disable the block. When the active function the right LED of the display **(V)** lights up and stays lit.

The disabled/enabled status remains even after the machine has been turned off and on again.

In some models, a password is required for unlocking:

'P="PA" F="SS" V=PASSWORD to enter; acting on **V+** and **V-** it is possible to modify the value, press the RESET **(E)** key to confirm the entered password.

DISPLAY (V)



Picture 2 - DISPLAY (V)

1) indicates the decimal point (values from 0.00 to 9.99)
2) indicates the decimal point (values from 0.0 to 9.9)
3) indicates the block status of keyboard

   ON: keyboard blocked (**V+** and **V-** blocked)

   OFF: keyboard released (**V+** e **V-** sbloccati)

Signals

The LED of the **RESET** key **(E)** indicates the writing protection status of the selected programme. If turned on, it is not possible to rewrite the modified parameters. It is necessary to select the parameter **F00** on the same programme to carry out modifications and set the value 1 in the parameter, and then hold down **RESET** for at least 3 seconds. If the programme is to be saved and at the same time blocked in writing, after saving it, set 1 in parameter **F00** (padlock open) and then 0 again (padlock closed) and then hold down **RESET** for at least 3 seconds.

The LED will blink fast only pressing the **RESET** for more than 3 seconds, indicating the machine is ready to store the parameters; by depressing the **RESET** button, the parameters will be stored.

The LED will blink slow only to report the alarm status.

The LED next to the MANUAL BATTERY push-button indicates that the machine is running and flashes to indicate reserve.

The LED next to the MANUAL CARRIAGE RISE indicates the automatic command of the carriage rise.

The LED next to the MANUAL CARRIAGE DESCENT indicates the automatic command of the carriage descent.

Battery charge

» See Picture 1 - pag. 1

Press the pushbutton **(H)** when the machine is on and stopped, the display **(V)** will shows the battery charge level: maximum charge = 100; minimum charge = 0.

The LED next to the button STOP PAUSE flashes when the battery reaches a charge of 30%.

Indication of the weight of film consumed (Opt)

At the end of each cycle (or by selecting the parameter **CF** on the display **(F)**), the machine will indicate the consumption of the film in grams on the display **(V)** and showing **CF** on the display **(F)**. To obtain good precision, correctly set the thickness of the film in the parameter **F24.**

NOTE: It is also possible to order models with film consumption expressed in metres. In this case as well, to obtain good precision, correctly set the diameter of the measurement roller in the parameter **F24**.

2 FUNCTIONS

2.1 CONTROL PANEL FUNCTIONS

FR 330 FR 350 FR 390 FR 400		
X	**F00**	This parameter is used to prevent cycle parameters from being overwritten: **0** block, **1** release
X	**F01**	Set cycle: **01** up and down **02** up or down; **03** layers
X	**F02**	Robot gear rotation speed: selectable from 05 to 100
X	**F03**	Carriage up speed: selectable from 05 to 95
X	**F04**	Carriage down speed: selectable from 05 to 100
X	**F05**	Number of bottom wraps
X	**F06**	Number of top wraps
X	**F07**	Number of intermediate wraps (**F08**)
X	**F08**	Height at which wraps are performed (**F07**), referred to the centre of the film (as the roll is 50 cm high, values of less than 25 cm cannot be set) **NOTE:** the stretch is set in parameter **F32** while the pre-stretch is set in parameter **F33** (only for the PS (MPS2) carriage)
X	**F09**	Strip of film placed over the top of the product
X	**F10**	Height at which the winding cycle begins, referred to the lower edge of the roll of film
X	**F11**	Height at which the winding cycle ends, referred to the lower edge of the roll of film
X	**F12**	Height at which the carriage stop rising, referred to the upper edge of the roll of film (product presence photocell disabled)
OPT	**F13**	Tension of film during bottom wrapping: selectable from 0 to 100
OPT	**F14**	Tension of film during the ascent of the carriage: selectable from 0 to 100

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OPT	**F15**	Tension of film during top wrapping: selectable from 0 to 100
OPT	**F16**	Tension of film during the descent of the carriage: selectable from 0 to 100
OPT	**F17**	PS (MPS2) carriage only: film extension during bottom wraps: selectable from 120 to 400
OPT	**F18**	PS (MPS2) carriage only: film extension during the ascent of the carriage: selectable from 120 to 400
OPT	**F19**	PS (MPS2) carriage only: film extension during top wrapping: selectable from 120 to 400
OPT	**F20**	PS (MPS2) carriage only: film extension during the descent of the carriage: selectable from 120 to 400
OPT	**F21**	Pallet perimeter 4.0 / 99.9 - some models 0.0 = automatic
X	**F22**	Cycle with cover: enabled **1** or disabled **0**
X	**F23**	Carriage descent position with **F22** = **1** for cover
OPT	**F24**	Thickness of film being used: 10 ÷ 35 microns (Opt: for models with film consumption in metres, set the diameter of the measurement roller from 60 ÷ 120 mm)
OPT	**F25**	Robot speed in movement, in m/mm
OPT	**F26**	Cycle with cutting OPT **0** = excluded, **1** included with one blade stroke, **2** included with two blade strokes
OPT	**F27**	Cutting time after the phase: 0 ÷ 100 tenths of a second (Film cut tension)
OPT	**F28**	Film exit time after cutting: 0 ÷ 100 tenths of a second
X	**F29**	Film extraction time with light tension at the beginning of the cycle
X	**F30**	Upward cycle in steps of the roll holder carriage; **0** = disabled
X	**F31**	Number of step revs (**F30**)

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OPT	**F33**	Only PS (MPS2) carriage: lengthening of the film during the step cycle rotations and reinforcement **F8**
OPT	**F34**	Number of initial creasing rotations at the base of the product (after **F05** rotations with film open); if = **0** do not perform creasing at the base
OPT	**F35**	**0**: creasing in ascent disabled **1**: creasing complete in ascent (Opt: advanced creasing) **2**: creasing from low rotations up to the reinforcement (excluded) **F8** (Opt: advanced creasing) **3**: creasing from the reinforcement (included) at high rotations (Opt: advanced creasing) **4**: creasing only during reinforcement **F8**
OPT	**F36**	Number of creasing rotations at the top of the product (Opt: advanced creasing) before performing the creasing rotations, raise **F63** cm; if **F36** = **0**, do not perform creasing at high rotations
OPT	**F37**	**0**: creasing in descent disabled **1**: creasing complete in descent (Opt: advanced creasing) **2**: creasing from the reinforcement (included) at low rotations (Opt: advanced creasing) **3**: creasing from high rotations up to the reinforcement (excluded)
OPT	**F38**	Number of final rotations at the base of the product; if **F38** = **0**, do not perform creasing

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OPT	**F39**	Crease closing adjustment time (permits wrapping with partially closed film)
OPT	**F61**	Number of wraps at the restart of the layers cycle (optional, **F01** = **4**)
X	**F62**	Comfort height included **1**, excluded **0**
OPT	**F63**	(Opt: advanced creasing) further ascent of the carriage after the high rotations

2.2 ADDITIONAL MANUAL CONTROLS

The **(F)** display is used for showing the manual controls. To execute the manual command, use the buttons **F+** and **F-** to select the desired command and press the button indicated in the list below:

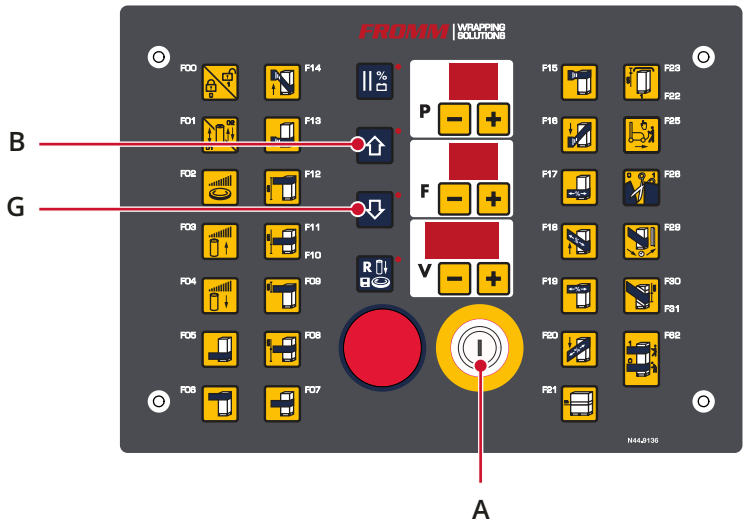
COMBINATIONS COMMANDS / BUTTONS		ACTION
C1	Button **(B)**	Carriage up
C1	Button **(G)**	Carriage down
C5	Button **(G)**	Cutting actuation
C6	Button **(B)**	Lift creasing carriage
C6	Button **(G)**	Lower creasing carriage

2.3 AUTOMATIC CYCLES

F01 = 01 - COMPLETE UP/DOWN CYCLE

Automatic cycle which wraps the pallet starting from the bottom, reaching the top and returning to the bottom.

During winding, buttons **(B)** (carriage going up) or **(G)** (carriage going down) can be pressed to stop the carriage, add extra wraps wherever required, and start it again.



Picture 3

F01 = 02 - UP ONLY OR DOWN ONLY CYCLE

DANGER

The cycle "up only or down only" is required for maximum height of the product to be wrapped at 1500 mm. Beyond this height, you must use appropriate personal protective equipment based on the risk of falling and work height exceeding 1500 mm.

Automatic cycle which wrapp the pallet starting from the bottom to reach the top or starting from the top to reach the bottom.

» See Picture 3 - pag. 11

During winding, buttons **(B)** (carriage going up) or **(G)** (carriage going down) can be pressed to stop the carriage, add extra wrapp wherever required, and start it again.

F10 - CYCLE START AT PRESET HEIGHT

Automatic cycle that wraps the pallet starting from a preset height which is set with the **F10** function.

F11 - CYCLE STOP AT PRESET HEIGHT

Automatic cycle that wraps the pallet stopping at a preset height which is set with the **F11** function.

F12 - DIFFERENT FROM 50-CYCLE WITH ALTIMETER

Automatic cycle that wraps the pallet starting from the bottom to reach a preset height (which is set with the **F12** function) and then back to the bottom again.

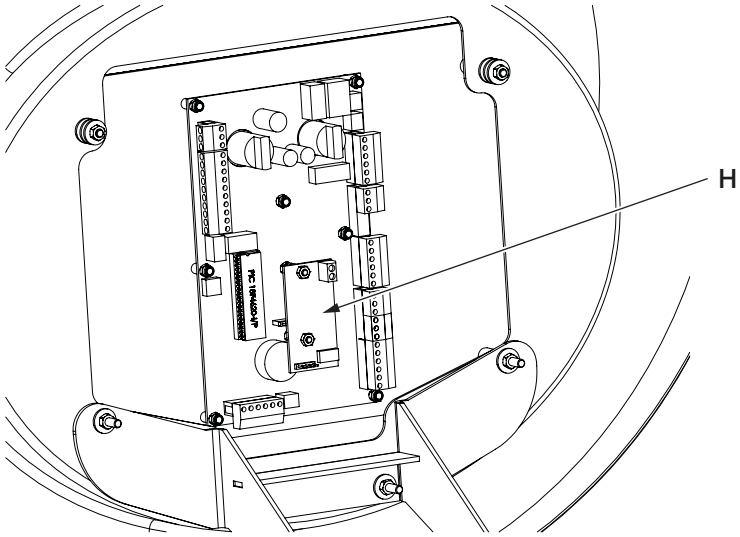
F21 = PALLET PERIMETER

The user can manually set the perimeter of the pallet with function **F21**, or enable the optional COMPASS, if present, by setting **F21** = 0.0. With this setting the machine starts and completes the cycle in the same point automatically.

The optional compass is a system that, during the winding cycle, through the use of a sensor, allows the machine to stop in the same point from which it started, regardless of the shape and size of the product to be wound.

The optional compass consists of an electronic board **(H)** that is installed on the main control board and a dedicated software installed in it.

Compass related alarms are **E17**, **E18** and **E19**.



Picture 4

F22 = 01 - COMPLETE UP/DOWN CYCLE WITH PAUSE

DANGER

The cycle "up/down with pause" is required for maximum height of the product to be wrapped at 1500 mm. Beyond this height, you must use appropriate personal protective equipment based on the risk of falling and work height exceeding 1500 mm.

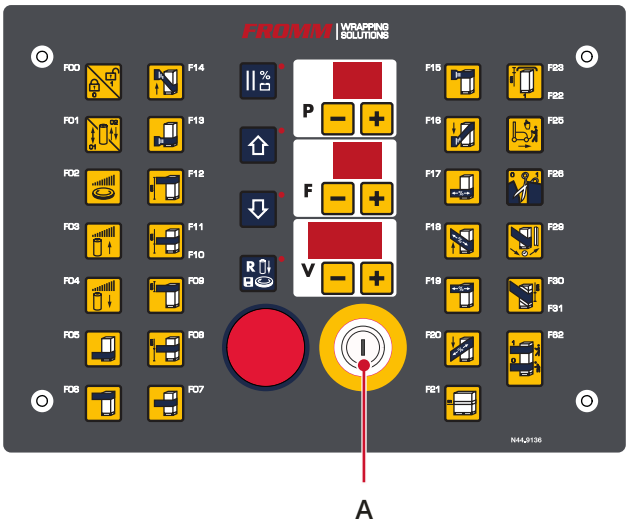
Automatic Up and Down cycle or Up only with a pause when the top of the product being wrapped is reached; before the pause the carriage can descend by a distance set with **F23**.

The machine stop and wait to restart emitting a slow intermittent signal.

To complete the paused wrapping cycle press the start cycle button **(A)**.

If the cycle set is for ascent and descent, the carriage ascends, performs the top rotations, descends toward the base, and then the cycle stops.

If the cycle set is for ascent only, the carriage ascends, performs the top rotations, and then the cycle stops.



Picture 5

F30 - AUTOMATIC OPERATING CYCLE

Automatic cycle that allows the pallet to be wrapped in steps.

The carriage ascends to the height set in **F30**, performs a number of rotations set in **F31**, and repeats until the top of the product is reached.

During the reinforcement rotations, the tension and lengthening of the film can be adjusted using the parameters set in **F32** and **F33**.

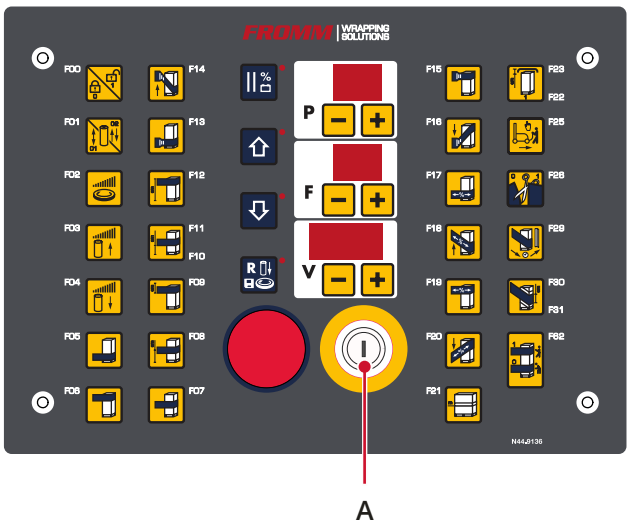
2.4 SEMIAUTOMATIC OPERATING CYCLES

F1=4 SEMIAUTOMATIC OPERATING CYCLE which allows you to wrap the pallet in layers, stopping between one layer and another.

With the film trolley completely down, the machine wraps the first layer of product and stops at the top; the winding of the various layers is started via the additional button. At this stage it is possible to add **F05** reinforcement laps at each layer.

The operator pallets a second layer and presses the additional button again like this until the last layer. At this stage it is possible to add **F61** reinforcement laps at each layer.

The operator presses button **(A)** to finish the wrapping with overflow, **F06** high turns and bandage down.



Picture 6

2.5 ALARM LIST

The display **(V)** is used to signal the alarms displayed simultaneously with the flashing of the LED next to the **RESET** button or the right LED of the display **(F)** in the models with touch screen:

Code	Description	Causes	Solutions
E01	Emergency bumper pressed	- Bumper pressed. - Bumper pin blocked. - Micro too close to the cam. - Limit switch is not pressed and the signal does not get to the card.	- Remove the obstacle. - Unlock the bumper and check the free rotation of the pins. - Remove the micro from the cam; with the pin aligned: the micro must not be pressed. - Check if the limit switch is working, if not, replace it. Check the continuity of the cable with signals on the panel P1 and 010. Replace if broken.
E02	Rotation or running anomaly, motor blocked	- The sensor does not read the petals because it is too far from the phonic wheel. - The sensor does not read the petals because the phonic wheel is broken or crooked. - The sensor does not send the signal to the card. - The motor seems to rotate at less than 500 rpm for more than 2.5 s. - The machine does not move, even with manual controls.	- Adjust the position of the sensor compared to the petals of the phonic wheel (distance < 2 mm). - Fix / replace the phonic wheel. - Check the correct operation of the sensor, bringing it close to a metallic object. If the LED lights up, replace the cable, if the sensor does not work, it needs to be replaced. - If the robot is rotating on unsuitable flooring (carpet), choose a smooth and flat floor that is not slippery. If the alarm occurs during slowing, the sensor is not reading all the petals of the phonic wheel. - The drive or inverter does not receive consent to start, check the wiring. The drive or inverter is faulty, communicate the code shown on the latter. For a DC motor, check the brushes. The motor cable is not connected well, check the wiring and tightness, even on the brake, if present. The electromechanical brake on the motor, if present, may not release. If this occurs, it must be adjusted or replaced. The motor unit may be damaged or defective; replace it.
E03	Restart after power outage.	- The card restarted. - The machine shut down and shows this warning.	- Press the RESET key. - There was a power outage and the machine shut down and then restarted: Press the RESET button (no power) or bell (touch).

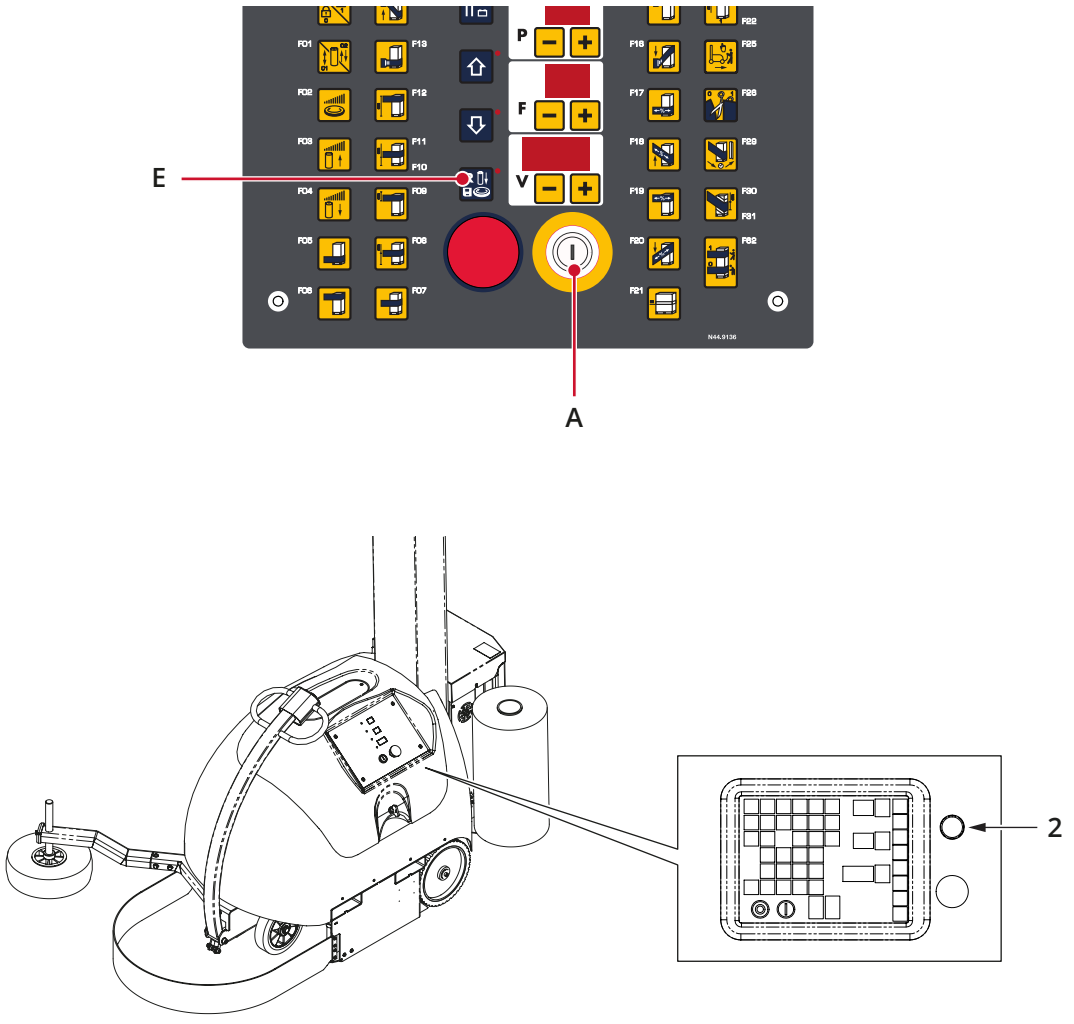
POF	Power fail	- Voltage drop detected without the card turning off completely.	- Turn the machine off and on again.
E08	Carriage ascend/descend anomaly	- The sensor does not read the petals because it is too far from the phonic wheel. - The carriage only moves in one direction. - The sensor does not send the signal to the card. - The roll holder carriage does not move, even with manual controls.	- Adjust the position of the sensor compared to the petals of the phonic wheel (distance < 2 mm). If the phonic wheel is broken or damaged, it must be replaced. - Check if the control signal reaches the drive, then verify if the status LED is lit. Check if the carriage limit switch is pressed or blocked. - Check the correct operation of the sensor, bringing it close to a metallic object. If the LED lights up, replace the cable, if the sensor does not work, it needs to be replaced. - The drive or inverter does not receive consent to start, check the wiring. The drive or inverter is faulty, communicate the code shown on the latter. For a DC motor, check the brushes. The motor cable is not connected well, check the wiring and tightness, even on the brake, if present. The motor unit may be damaged or defective; replace it. Check the battery.
E09	Stop after film breakage or film end.	- The film roll is finished. - The film flap came off or the film is broken. - The film does not come out. - The film is not properly connected to the product.	- Change the roll. - Hook the film back on the pallet. - Check the proper operation of the dancer sensor removing the film and operating it manually. If it does not work, make sure the sensor is operating properly. The film pull value is high, lower it. - If the film does not glide within the carriage for first **(x)** seconds, the alarm is triggered. Attache the film tighter.
E10	Carriage limit switch error (they are both open)	- Wiring or power outage error	- Check the limit switch wiring and power Check the carriage motor brushes.
E11	Low limit switch error: it did not close during carriage ascent	- Carriage motor blockage - Limit switch faulty or blocked.	- Check the carriage motor (motor brushes). - Unblock the sensor or replace it if faulty. Check the carriage motor brushes.
E12	High limit switch error: it did not close during carriage descent	- Carriage motor blockage - Limit switch faulty or blocked.	- Check the carriage motor (motor brushes). - Unblock the sensor or replace it if faulty.
E13	Low limit switch error: it opened during carriage ascent	- The carriage moves in the opposite direction.	- Invert the rotation direction or the limit switches are inverted.
E14	High limit switch error: it opened during carriage descent	- The carriage moves in the opposite direction.	- Invert the rotation direction or the limit switches are inverted.

E16	Emergency intervention	- Emergency button pressed. - Carriage door open.	- Unblock the button and restore the power circuit. - Close the door and restore the power circuit. If FE or FM carriage, check the bridge on the connector. Check the emergency microswitch.
E17	Compass communication timeout error - The compass is not responding	- The expansion card is not mounted correctly.	- Check the assembly as shown in the "Compass" chapter in this manual, also check that the pins are not oxidized, try to remove and reinsert the card.
E18	Compass calibration error or magnetic interference too high	- 24V power supply connection - Magnetic field interference.	- Check the wiring of the board as shown in the "Compass" chapter. - Check that there are no cables or metal bodies in the vicinity of the compass.
E19	Compass phase missing error	- Phase failure due to timeout. - Too weak magnetic field or high magnetic interference.	- Check that the robot has completed at least one revolution, otherwise the value of parameter F54 must be increased. - The perimeter of the pallet must be set manually by acting on user parameter F21.
EFA **EFF**	Memory error	- Internal error.	- Contact assistance.
EF0 **EF9**	Memory error	- Internal error.	- Contact assistance.
E20 **E29**	Memory error	- Internal error.	- Contact assistance.
E2A **E2F**	Memory error	- Internal error.	- Contact assistance.
E32	Low battery warning at rest	- The battery is discharged and the Robot is at rest.	- Recharge the battery, if the problem persists replace the battery
E33	Low traction battery warning	- The battery is discharged and the Robot is traction operated.	- Recharge the battery, if the problem persists replace the battery
E50	Error in creasing position sensors	- Both sensors are engaged.	- Check the proper electrical wiring or proper installation and mechanical operation.
E51	Creasing locked during closure	- Creasing blocked on the top sensor.	- Check motor operation. - Check electrical connection - Make sure there are no mechanical obstacles. - Check sensor operation
E52	Creasing block during opening	- Creasing blocked on the bottom sensor.	- Check motor operation. - Check electrical connection - Make sure there are no mechanical obstacles. - Check sensor operation

E53	Top limit switch error: did not engage during ascent command (creasing)	- The carriage blocked during ascent.	- Check motor operation. - Check operation of the top sensor and replace if broken. - Make sure there are no mechanical obstacles.
E54	Bottom limit switch error: did not engage during descent command (creasing)	- The carriage blocked during descent.	- Check motor operation. - Check operation of the bottom sensor and replace if broken. - Make sure there are no mechanical obstacles.
E55	Low creasing limit switch error: it closed during the ascent	- The engine runs in reverse	- Check the wiring.

2.5.1 RESTART AFTER AN ALARM OR AS RESULT OF TORN/ FINISHED FILM

- Wait until the machine has stopped and brought the trolley to the reel replacement level (alarm **E09**).
- Solve the problem that triggered the alarm or replace the reel should this be finished, attach the film to the pallet again.
- Press the **BLUE REFRESH** key **(2)**, if present.
- Reset the alarm by pressing the **RESET (E)** key located on the control panel.
- Press the **START (A)** key for 3 seconds.



Picture 7

Fromm Holding AG

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