

TECHNICAL DOCUMENTATION

- MASTERWRAP XL PLUS



TECHNICAL DOCUMENTATION

- MASTERWRAP HD XL PLUS





Norm. Tecn.
60.2.98_02_01

TECHNICAL DOCUMENTATION
MASTERWRAP XL / HD XL PLUS

Date:
March 2022

Rev.06

ENGLISH

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11/2021	04	Instructions for the opening of the electrical panel (for Masterwrap XL)	Baldinini Fabrizio		
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OPERATOR PANEL

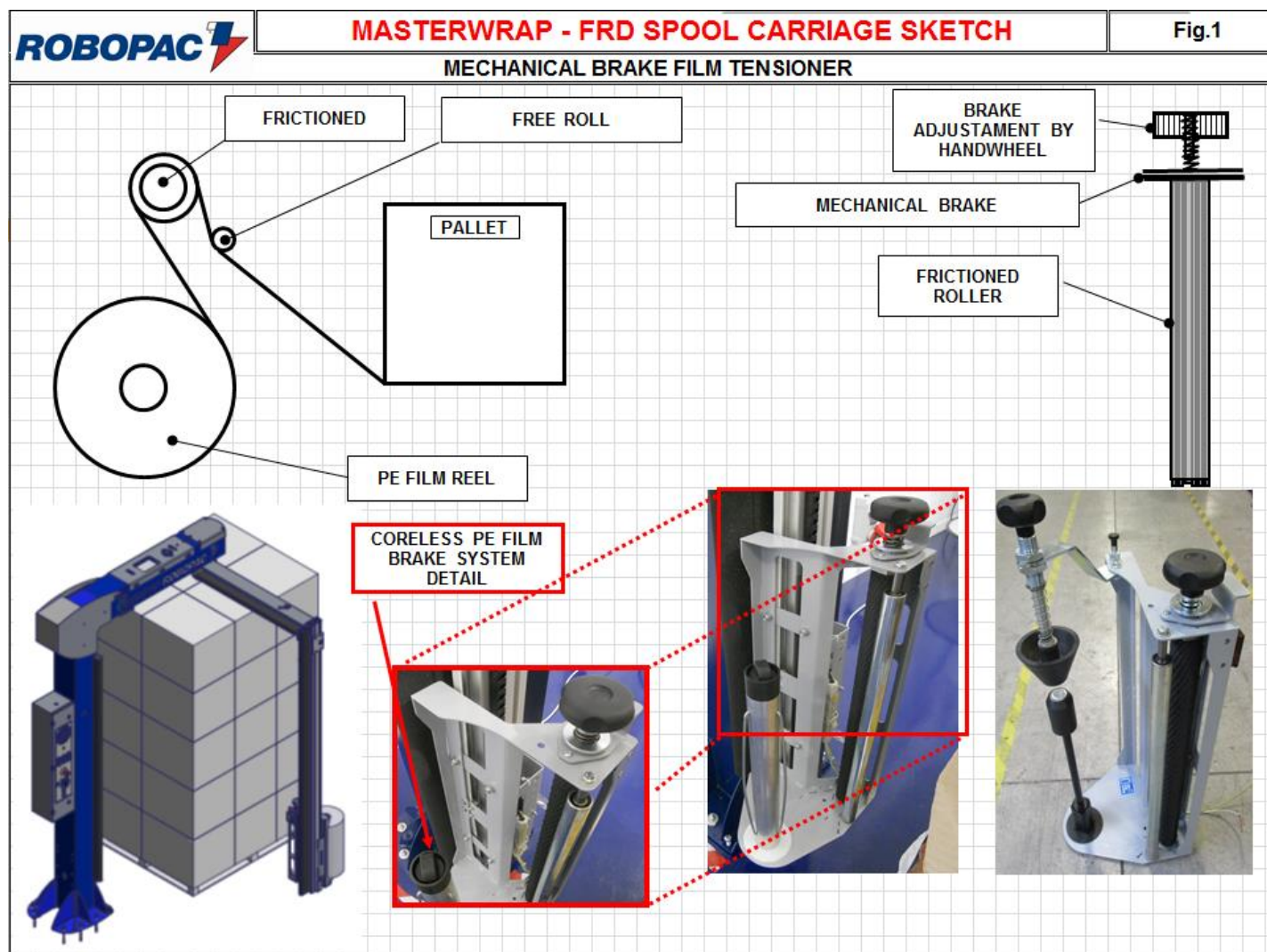
MASTERWRAP XL PLUS

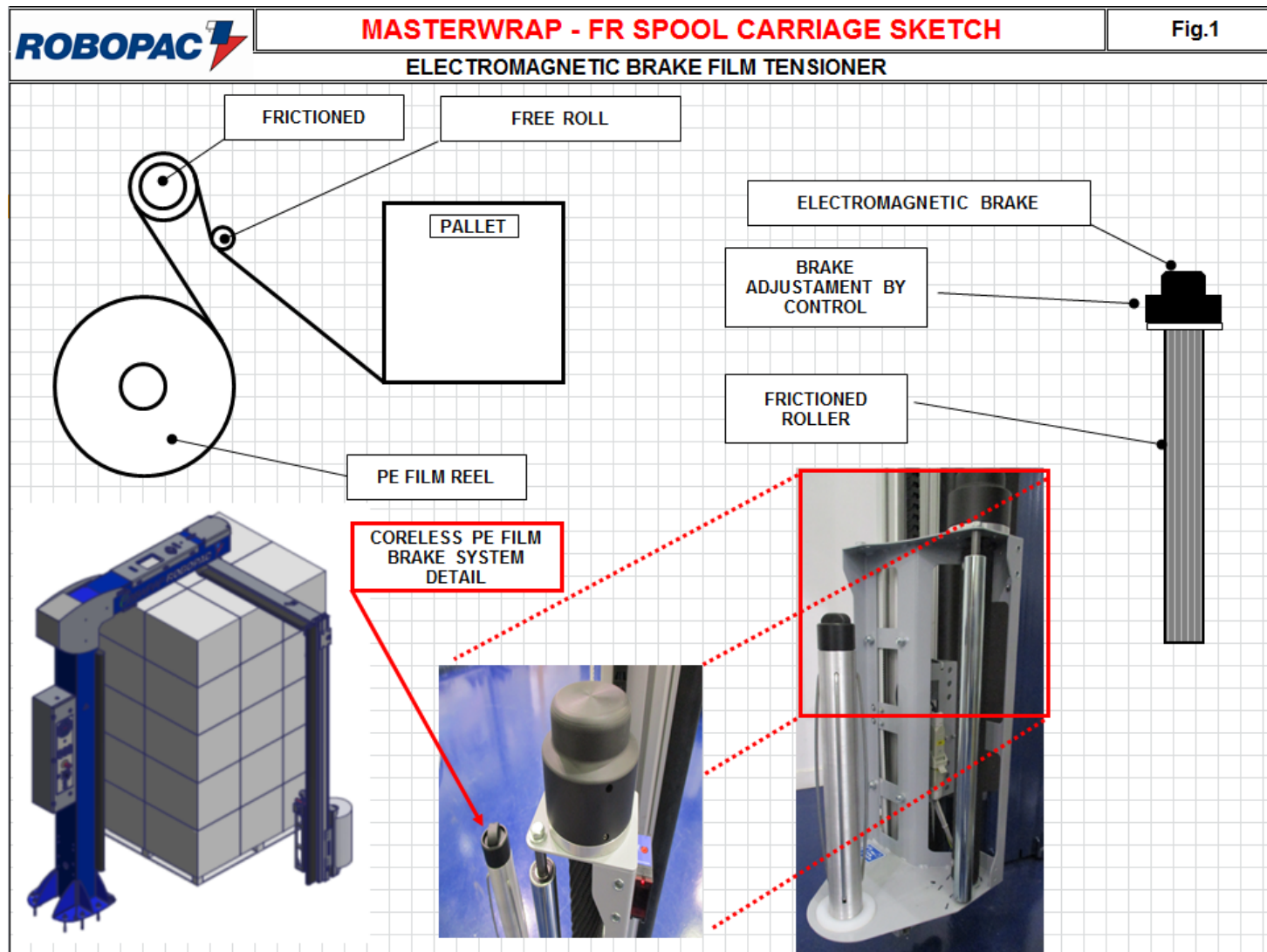


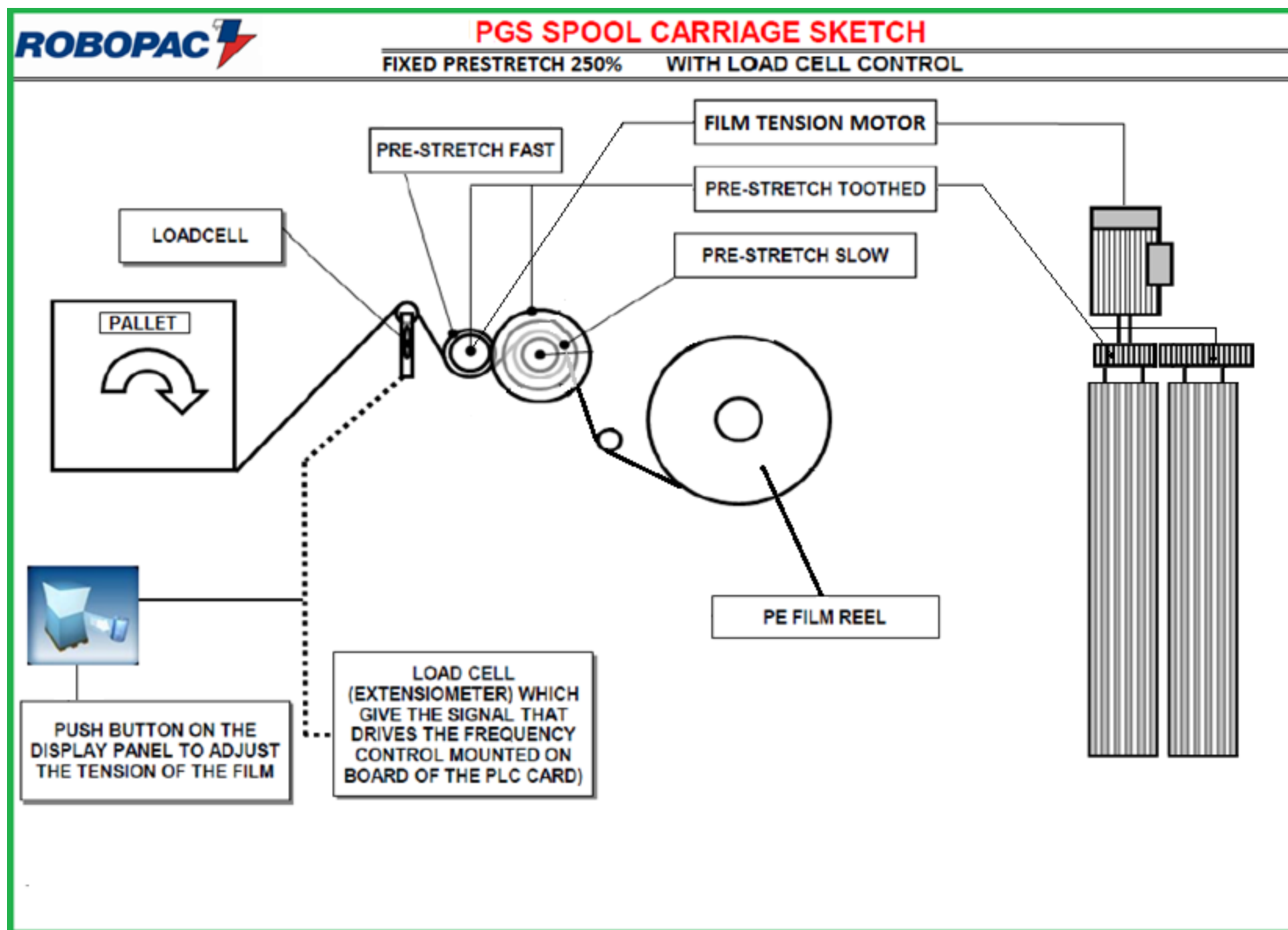
MASTERWRAP HD XL PLUS



CARRIAGES DESCRIPTION







MASTERWRAP XL PLUS OPERATOR PANEL DESCRIPTION

		“Stop cycle” button It is used to stop the automatic wrapping Cycle
		“Start cycle” push-button It is used to start the automatic wrapping cycle
		“Reset” push-button It is used to reset the machine before restarting after an emergency stop or to restart it after stopping with power supply cut-off.
		Selector with emergency suspension key and manual release It is used to temporarily suspend the carriage emergency. Turn the key to position I on the right (with the action maintained), pressing the JOG raises the carriage. Turn the key to position I on the left to release the arm rotation motor brake
		DISPLAY control panel It is used to select the cycle, to select the working parameters and to manage the other functions (see use and maintenance manual)
		JOG Button / Selector multi-function It is used to use the DISPLAY control panel
		“USB” Port It is used to download / upgrade the software on the cards
		Main switch Turn main switch on I (ON) to turn on electric power supply
		Emergency stop push-button

MASTERWRAP HD XL PLUS OPERATOR PANEL DESCRIPTION



“Stop cycle” button
It is used to stop the automatic wrapping Cycle



“Start cycle” push-button
It is used to start the automatic wrapping cycle



“Reset” push-button
It is used to reset the machine before restarting after an emergency stop or to restart it after stopping with power supply cut-off.



Manual release key selector
It is used to release the arm rotation motor brake



DISPLAY control panel
It is used to select the cycle, to select the working parameters and to manage the other functions (see use and maintenance manual)



JOG Button / Selector multi-function
It is used to use the DISPLAY control panel



Emergency stop push-button

MASTERWRAP XL PLUS OPERATOR PANEL DESCRIPTION

The part numbers are for information only.
Always check and verify the codes on the
wiring diagram supplied with the machine.

U4005 – JOG Little card
Code 1430300125

U4002 – Display
Code 1430300288

SA1007 – 3 positions selector

S1002 - STOP (n.c.)

S1000 – START (n.o.)

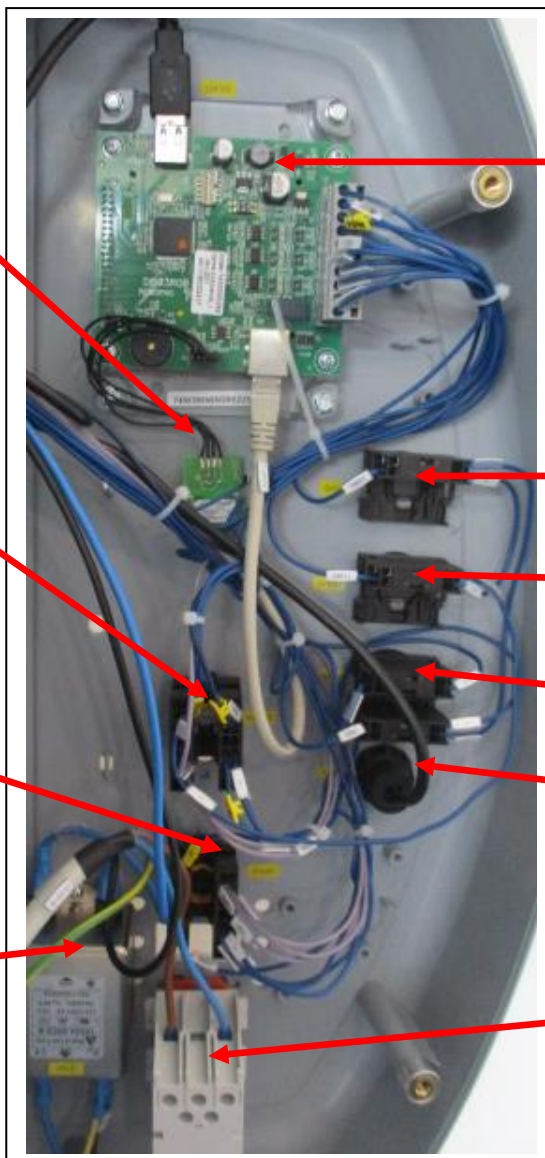
S1004 - RESET (n.o)

S1005 – EMERGENCY (n.c.)

X2006 – USB port

Z101 – LINE Filter

QS101 - ON / OFF Main Switch

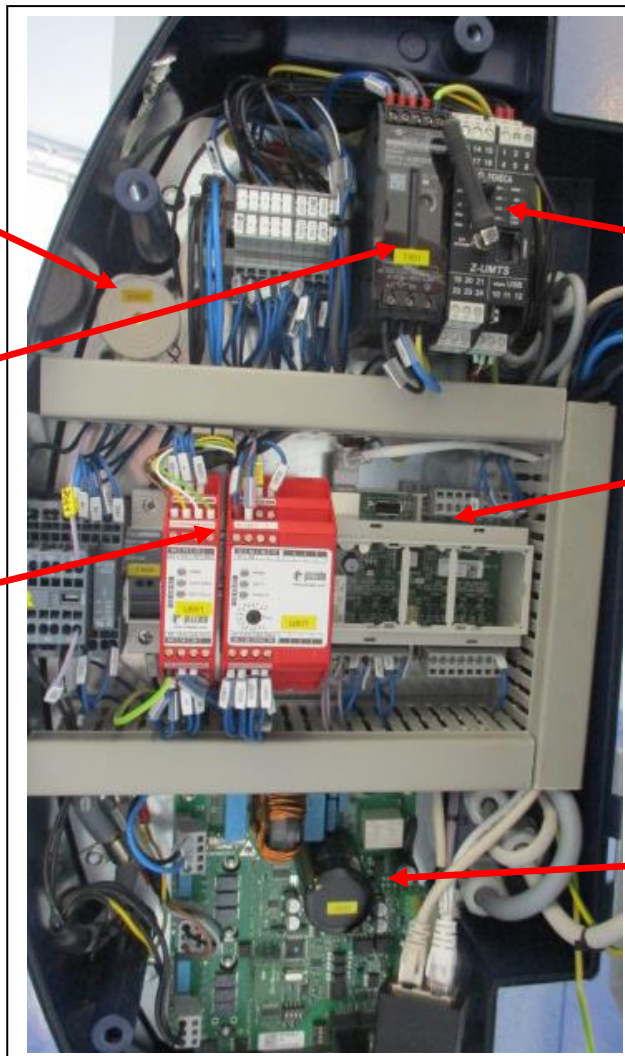


MASTERWRAP XL PLUS ELECTRICAL BOX LAYOUT AND DESCRIPTION

H3000 - Buzzer
Code 0530300000

T501 – Power supply
Code 00L0354044

U651- Security Module
Code 00L0197053
U801- Security Module
Code 00L0197073



The part numbers are for information only.
Always check and verify the codes on the
wiring diagram supplied with the machine.

U30 – R-connect Module

U553 - Card PLC PLC03ROB
Code 1430300289

U201 – Inverter Card INV01ROB_2
Code 1430300271

MASTERWRAP HD XL PLUS OPERATOR PANEL DESCRIPTION

The part numbers are for information only.
Always check and verify the codes on the wiring
diagram supplied with the machine.

U4005 – JOGLittle Card
Code 1430300125

U4002 – Display
Code 1430300318

S1004 - RESET (n.o)

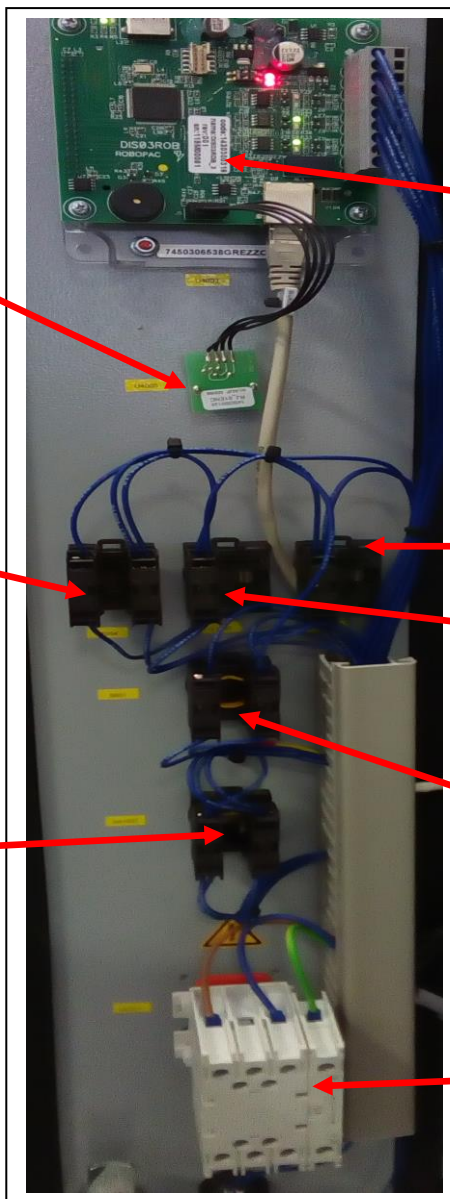
S1002 - STOP (n.c.)

S1000 – START (n.o.)

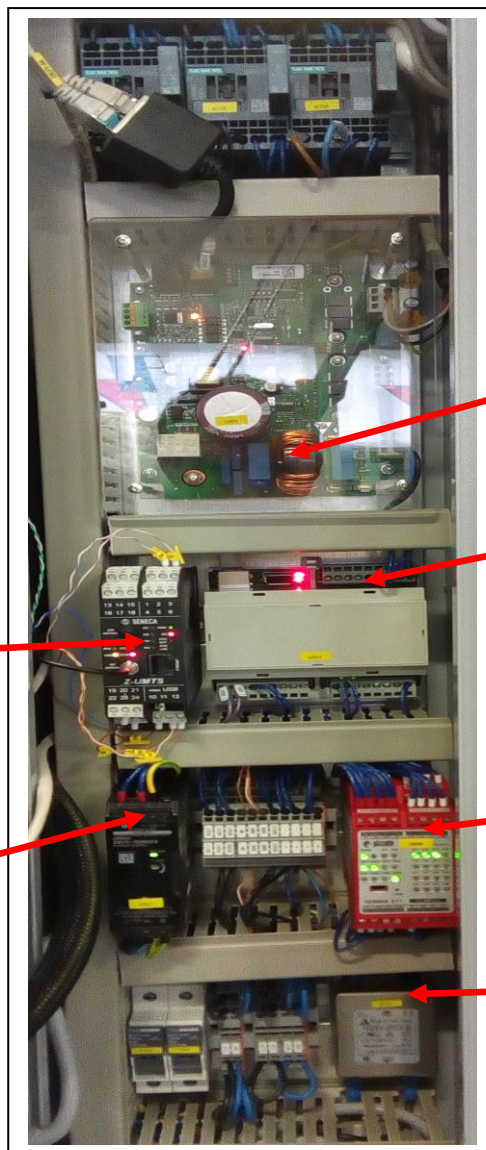
SA1007 – 3 positions selector

S1005 – EMERGENCY (n.c.)

QS101 - ON / OFF Main Switch
Code 00L0523082



MASTERWRAP HD XL PLUS LAYOUT E DESCRIZIONE QUADRO ELETTRICO



The part numbers are for information only.
Always check and verify the codes on the wiring
diagram supplied with the machine.

U30 – R-connect Module

U501 – Power Supply
Code 00L0354044

U201 – Inverter card INV01ROB_2
Code 1430300271

U553 - PLC card PLC03ROB
Code 1430300289

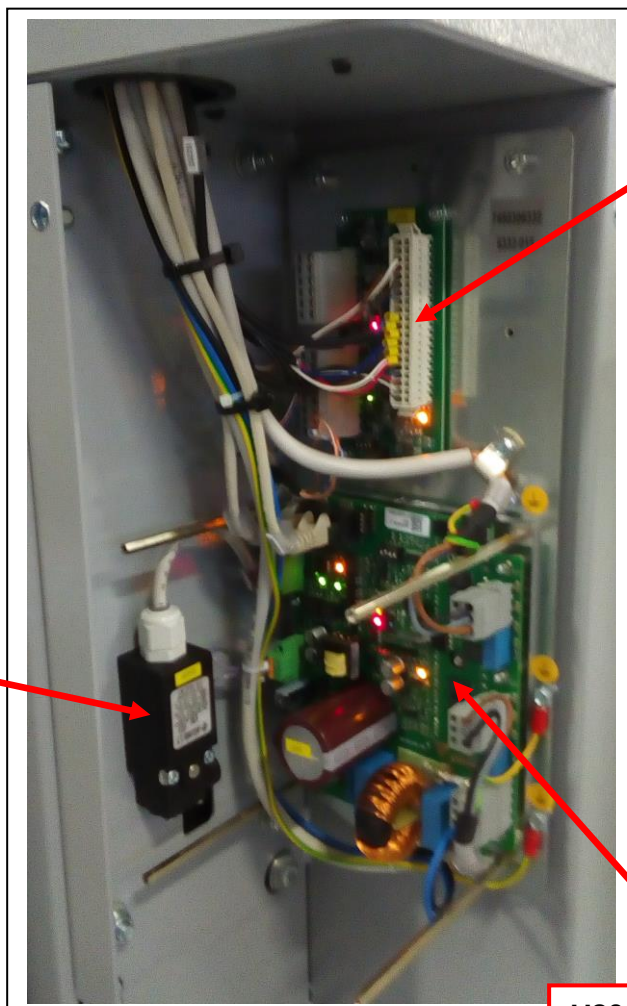
U651- Security Module
Code 00L0197053
U801- Sicurity Module
Code 00L0197073

Z101 – LINE Filter
Code 00L0430751

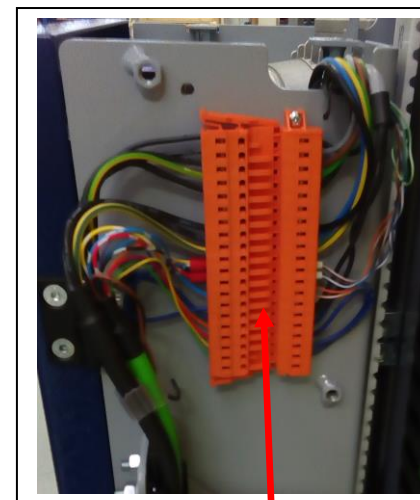
DETTAGLIO CARRELLO PGS

The part numbers are for information only.
Always check and verify the codes on the wiring
diagram supplied with the machine.

SQ206 - Microswitch
Code 0001309638

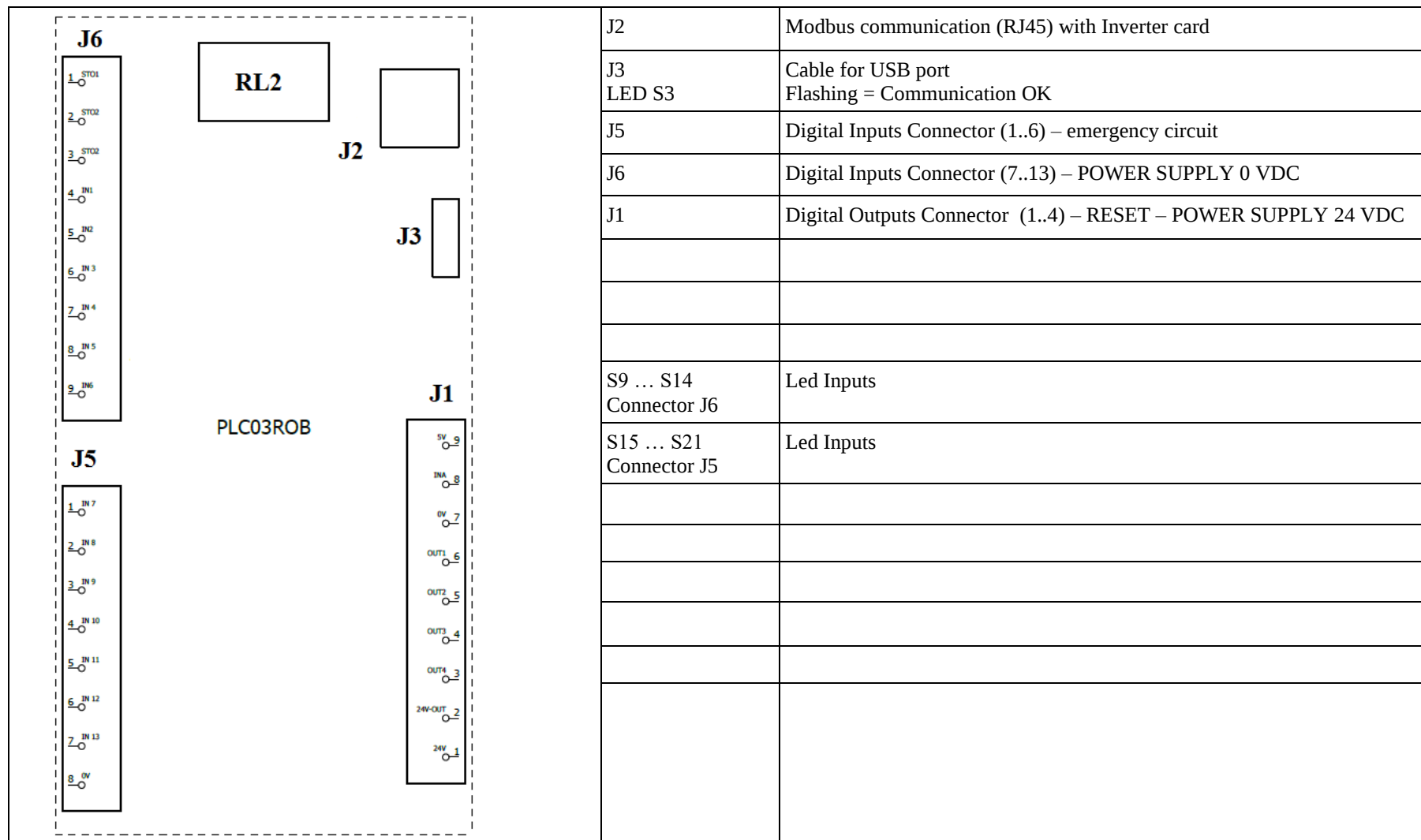


U572 – Expansion Card PRES04_ROB
code 1430300291



X2005 – Carriage connettor

U301 – Inverter Card INV01ROB_2
Code 1430300271



I/O DESCRIPTION (INPITS/OUTPUTS) (PLC03ROB (U553))**Inputs State Plc card (U553)**

Connector	Input	Led	Input meaning	State	Led Status
J5	IN7	S15	Arm in phase sensor	N.O.	Sensor active = led ON
J5	IN12	S20	Film unrolling sensor (Optional) Not in PGS	N.C.	Sensor active = led ON
J6	IN6	S14	Product height photocell Not in PGS	N.O.	Product detected = led ON

Outputs State Plc card (U553)

Connector	Output	Led	Output meaning
J1	OUT1	S8	Reserve
J1	OUT2	S9	Clutch Not in PGS
J1	OUT3	S10	Rotation motor brake
J1	OUT4	S11	Reserve



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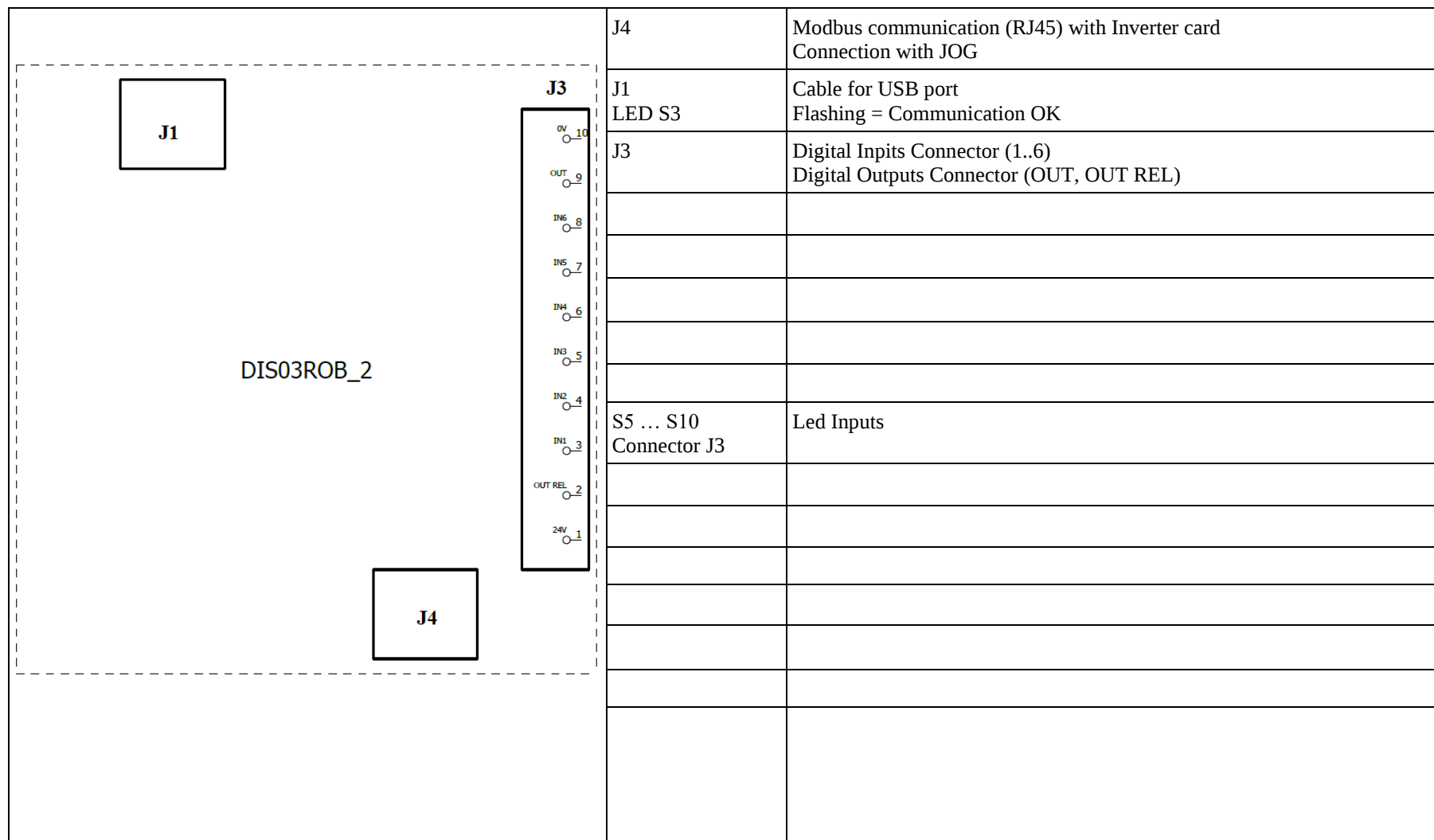
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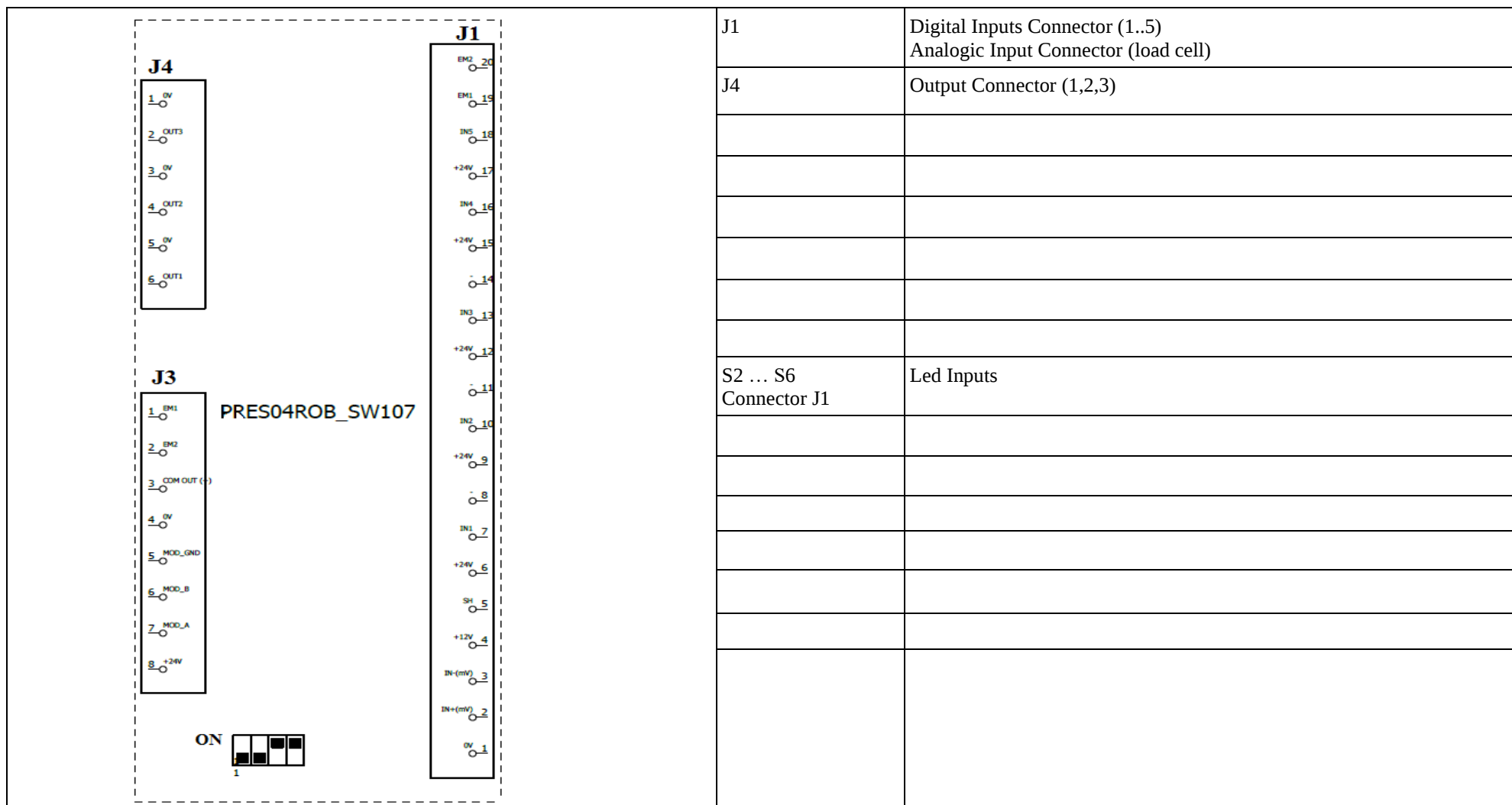
Panel Card – DIS03ROB_2 (U4002) - – CODE 1430300288



I/O DESCRIPTION (INPUTS/OUTPUTS) (DIS03ROB_2 (U4002))**Display card inputs state (U4002)**

Connector	Input	Led	Input meaning	State	Led Status
J1	IN1	S10	Start Button	N.O.	Pressed button = led ON
J1	IN2	S9	Stop Button	N.C.	Pressed button = led OFF
J1	IN3	S8	Reset Button	N.O.	Pressed button = led ON
J1	IN4	S7	Emergency button	N.C.	Pressed button = led OFF
J1	IN5	S6	Motor brake unlock	N.O.	Pressed selector = led ON
J1	IN6	S6	Carriage security bypass (Optional)	N.O.	Pressed seletcor = led ON

FILM Tension Card – PRES04ROB_SW107 (U572) -- CODE 1430300291 – only on PGS --





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I/O DESCRIPTION (INPUTS/OUTPUTS) (PRES04ROB_SW107 (U572))

Expansion card inputs state (U572)

Connector	Input	Led	Input meaning	State	Led Status
J1	IN1	S6	Fotocellula altezza prodotto	N.O.	Product detected = led ON
J1	IN2	S4	Film unrolling sensor (Optional)	N.C.	Sensor active = led ON
J1	IN4	S3	Carriage carter micro	N.C.	Micro pressed = led OFF
J1	IN5	S2	Unrolling film button	N.O.	Button pressed = led ON
J1	Pin 1 Pin 2 Pin 3 Pin 4 Pin 5		Load Cell		

Inverter Card INV01ROB_2 – CODE 1430300271

Inverter Card in MASTERWRAP FRD or FR (U201)

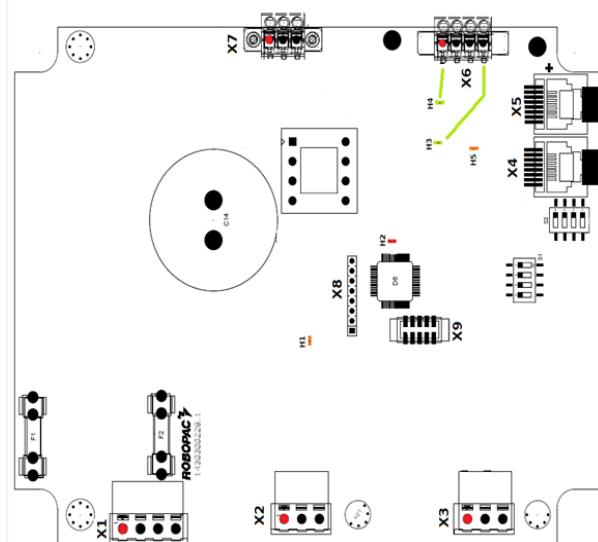
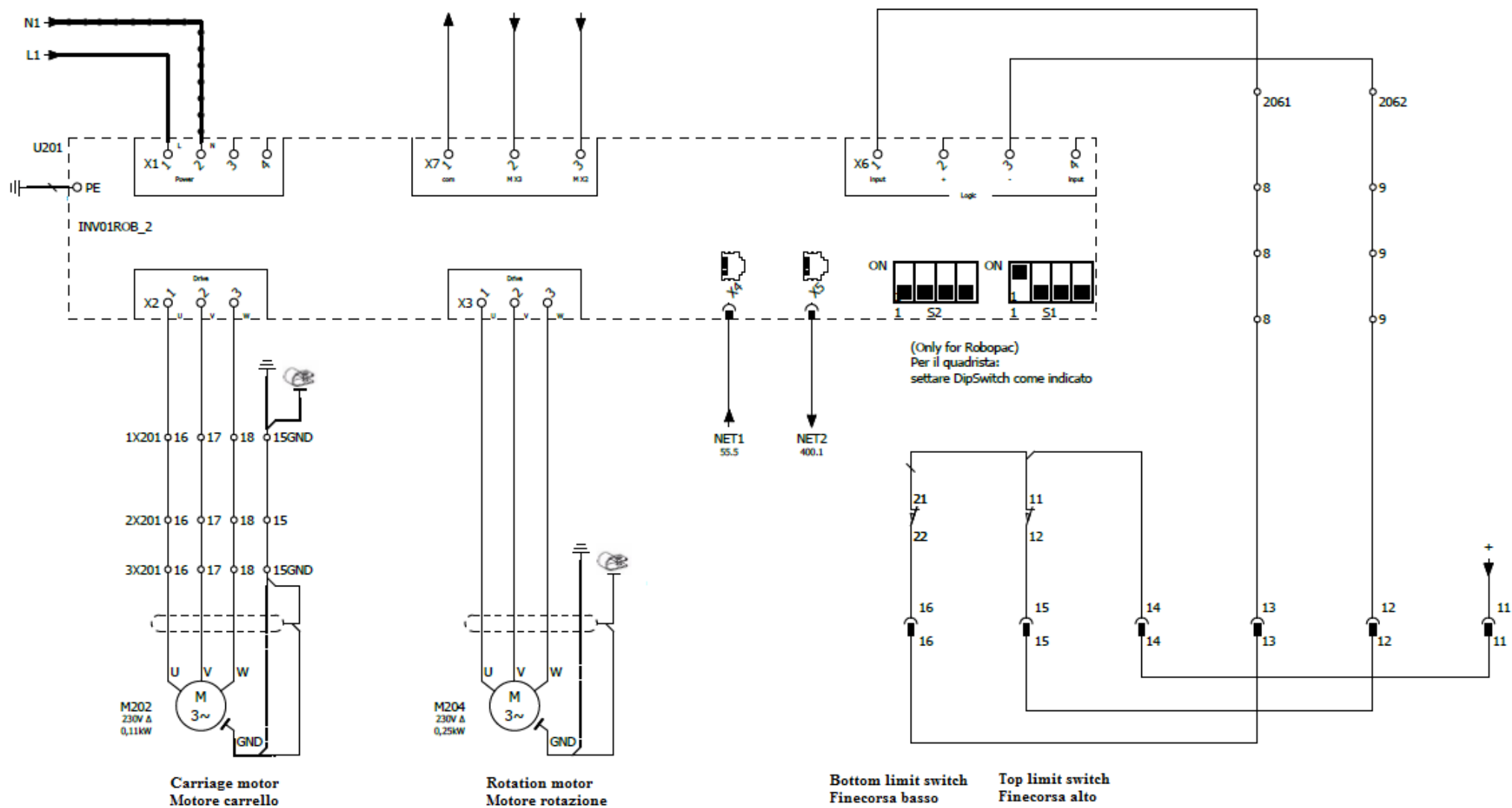


Table description: status input (U201) Table Rotation Motor and Carriage Lift Motor.

LED Number	Input description	Led Status	Contact Type
H1	230 VAC Power	ON	
H2	Error Led	1 regular blink	
H3	Input 1 on X6 – TOP MICRO	Carriare up = Led OFF	N.C.
H4	Input 4 on X6 – BOTTOM MICRO	Carriage down = Led OFF	N.C.
H5	24V Modbus Power	ON	

Table description (U201): X1 – X2 – X3 – X4 – X5 – X6 – X7 – X8 – X9 Connectors

Connector Number	Description
X1	230 VAC – Card Power Supply
X2	Motor 2 – Carriage Lift
X3	Motor 1 – Table Rotation
X4	Communication Out
X5	Communication In
X6	Digital Inputs
X7	Driver Enable
X8	SD for SW update
X9	Debug



Inverter Card in MASTERWRAP PGS

Inverter Card for ARM ROTATION (U201)

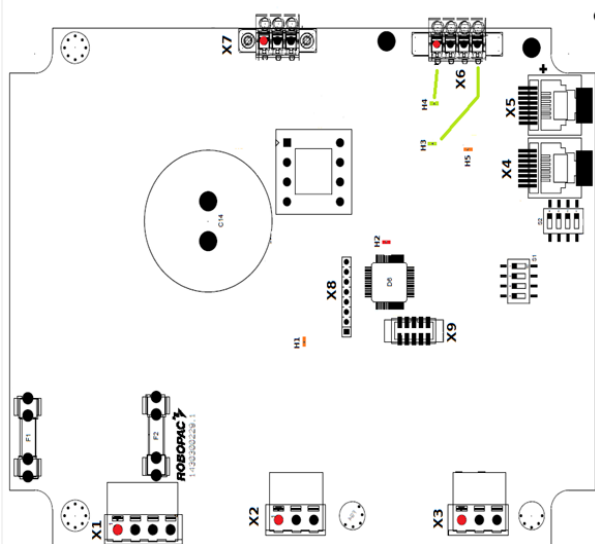
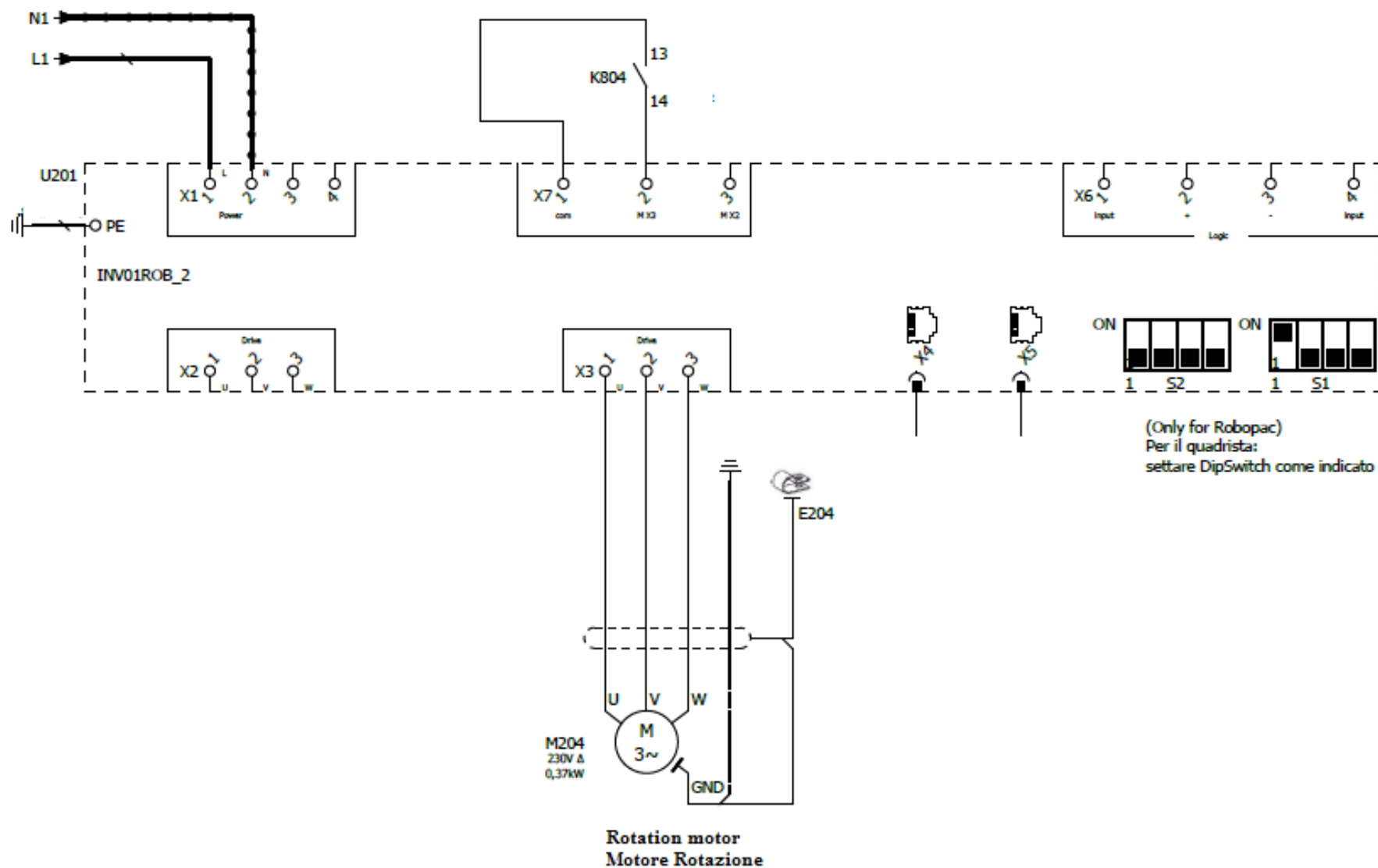


Table description status input (U201) Rotation Motor.

LED Number	Input description	Led Status	Contact Type
H1	230 VAC Power	ON	
H2	Error Led	1 regular blink	
H3	Input 1 on X6	N/A	
H4	Input 3 on X6	N/A	
H5	24V Modbus Power	ON	

Table description (U201): X1 – X2 – X3 – X4 – X5 – X6 – X7 – X8 – X9 Connectors

Connector Number	Description
X1	230 VAC – Card Power Supply
X2	Motor 2 – Free
X3	Motor 1 – Arm Rotation
X4	Communication with PLC
X5	Communication with DISPLAY
X6	Digital Inputs
X7	Driver Enable
X8	SD for SW update
X9	Debug



Inverter Card for CARRIAGE and FILM TENSION (U301)

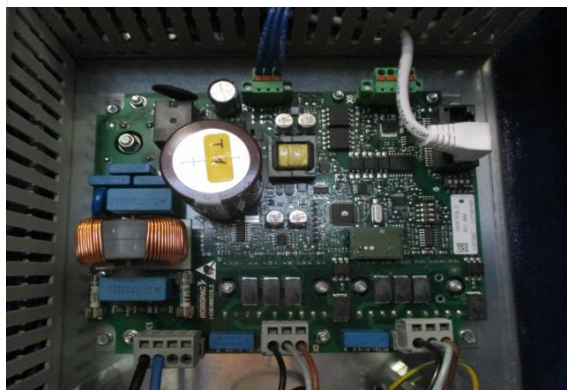
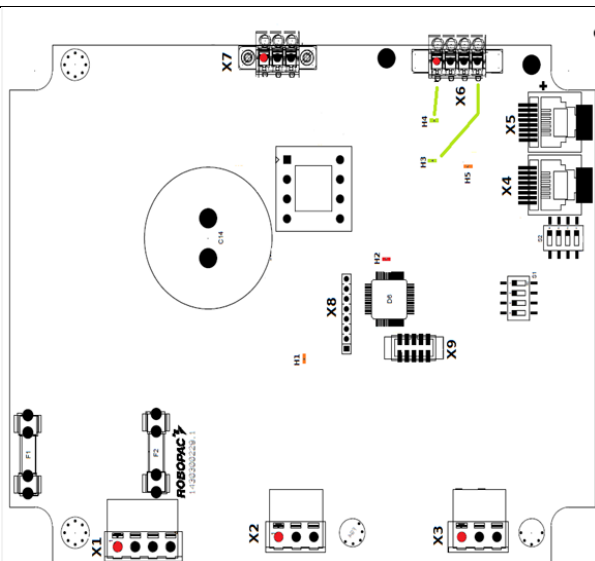
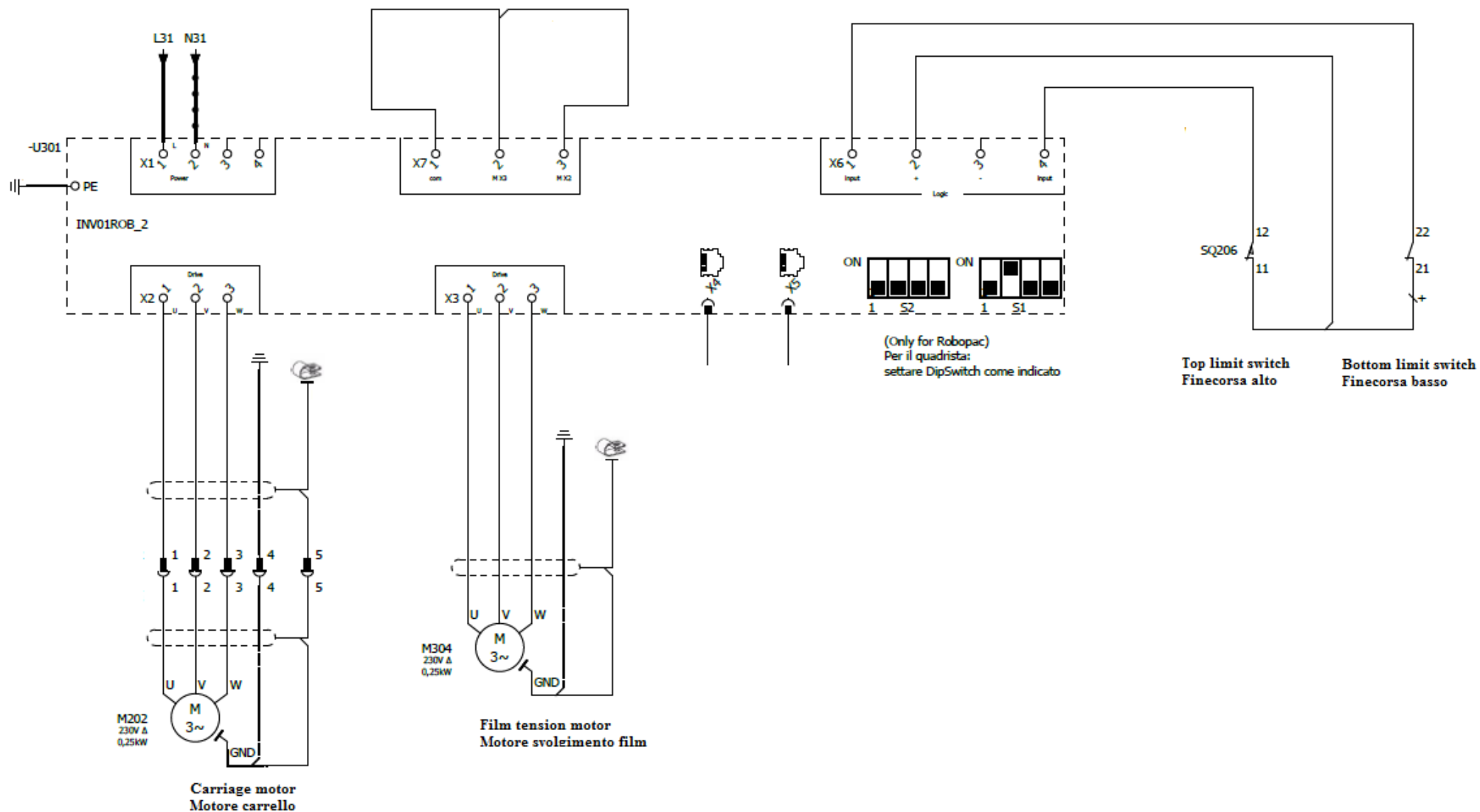


Table description status input (U301) Carriage Motor and Film Unrolling Motor.

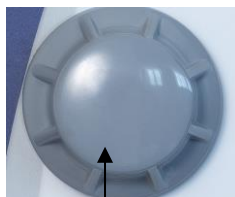
LED Number	Input description	Led Status	Contact Type
H1	230 VAC Power	ON	
H2	Error Led	1 regular blink	
H3	Input 1 on X6 – TOP MICRO	Carriage up = Led OFF	N.C.
H4	Input 4 on X6 – BOTTOM MICRO	Carriage down = Led OFF	N.C.
H5	24V Modbus Power	ON	

Table description (U301): X1 – X2 – X3 – X4 – X5 – X6 – X7 – X8 – X9 Connectors

Connector Number	Description
X1	230 VAC – Card Power Supply
X2	Motor 2 – Carriage
X3	Motor 1 – Film Unrolling
X4	Communication with PLC
X5	Communication with DISPLAY
X6	Digital Inputs
X7	Driver Enable
X8	SD for SW update
X9	Debug



OPERATOR PANEL DESCRIPTION



Push button / JOG multi-function

	Active cycle number
	Recipe selection
	Arm rotation speed setting
	Roll-Holder carriage Up / Down speed setting
	Photocell delay
	Manual controls
	Film tension settings - only version FR - (Bottom turns – Ascent – Top turns - Descent).
	Menu other
	Setting of the reinforcement turn number
	Setting of the bottom and top turn number
	Entering the “Settings Menu”
	Machine reset



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LIST OF RECIPES DATA

Parameter	Min. – Max.	Step	Unit of measure
Arm rotation speed	7 – 11	1	RPM
Up-ward spool carriage speed	2,6 – 6,0	0.1	m/min
Down-ward spool carriage speed	2,6 – 6,0	0.1	m/min
Bottom over wraps	0 – 10	1	Rounds
Top over wraps	0 – 10	1	Rounds
Product detection photocell delay time	0 – 50	1	Cm
Altimeter	55 – 240	1	Cm
Offset from the ground	0 – 115	1	Cm
Over wraps rounds	1 – 10	1	Rounds
Height of Over wraps rounds	5 – 115	1	Cm
Carriage position after packing cycle complete	0 – 150	10	Cm
FRD CARRIAGE			
Parameter	Min –Max.	Step	Unit of measure
Film tension (mechanical)	--	--	--
FR CARRIAGE			
Parameter	Min –Max.	Step	Unit of measure
Film tension (adjustable) – Down Position Carriage	0-100	1	(%)
Film tension (adjustable) – Lift Carriage	0-100	1	(%)
Film tension (adjustable) – Top Position Carriage	0-100	1	(%)
Film tension (adjustable) – Lower Carriage	0-100	1	(%)
PGS CARRIAGE			
Parameter	Min –Max.	Step	Unit of measure
Fixed pre-stretch (mechanic)	--	--	--

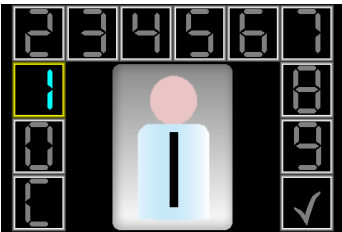
ACCESS TO SERVICE PAGES

Turn the JOG till the Setting icon and press the JOG.



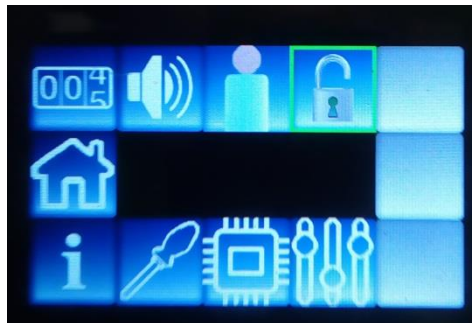
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OPERATOR PANEL PASSWORD USE

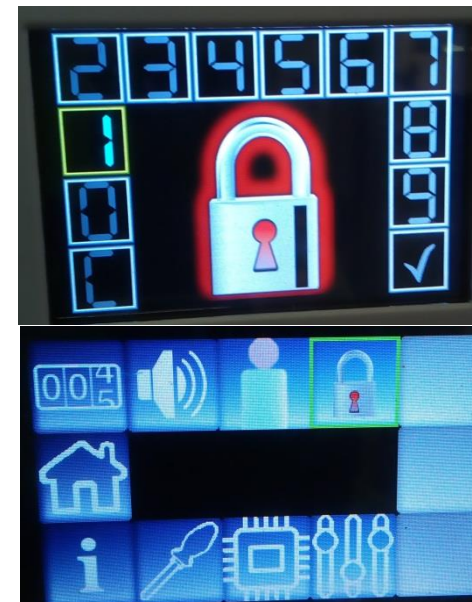
From Setting menu, turn till the icon 'Login' identified by a shape: if the shape is empty no login has been done. Machine responsible: Insert password 1111 Service: user 'SERVICE' Insert password 6161 Robopac: user 'ROBOPAC' Robopac password needed	
	 ResponsIble  Service  Robopac
To insert the password turn the JOG to select the number, press to enter it. With C the number is deleted, with the V the number is saved. If the password is correct one of the icon above described will be showed (responsible or service)	

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KEYBOARD LOCK FUNCTION

Turn on the machine	
Press the RESET button	
Turn the JOG till the Settings icon and press the JOG. 	
Turn the JOG till the LOCK icon and press the JOG. NO PASSWORD NEEDED at the moment 	
Insert the LOCK password to LOCK parameters Default LOCK password is 9999 It's possible to change THIS PASSWORD (see below)	

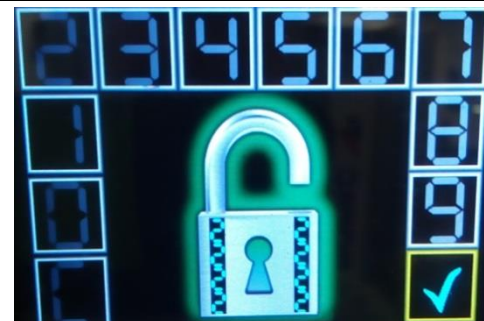
Now working parameters are LOCKED



To UNLOCK working parameters repeat the procedure above

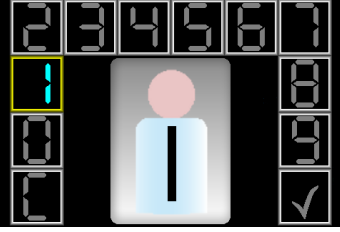
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PARAMETERS LOCK PASSWORD CHANGE

Turn on the machine	
Press the RESET button	
Turn the JOG till the Settings icon and press the JOG. 	
Enter with the customer responsible password 1111. 	
Turn the JOG till the TWO KEYS icon and press the JOG. 	
Insert the new LOCK password for TWICE and confirm with the V mark --- often we set this lock/unlock password to 1111 ---	

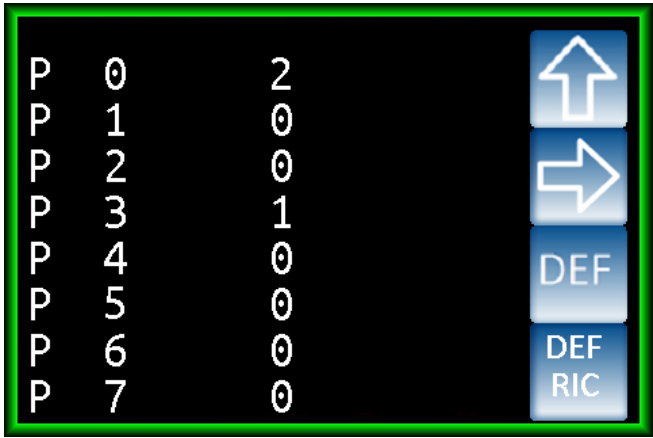
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RESET OF THE PARAMETERS LOCK – UNLOCK PASSWORD TO 9999

In the case the parameters are locked and the parameters lock-unlock password is LOST	
Turn the JOG till the Setting icon and press the JOG. 	
Select the password access icon 	
Insert the SPECIAL reset PASSWORD 6778 and confirm with the symbol V. Now the parameters lock–unlock password has been reset to the value 9999.	

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MACHINE CONFIGURATION ACCESS PROCEDURE AND INTERNAL PARAMETER LIST

Turn on the machine	
Press the RESET button	
The HOME page is displayed, Turn the JOG till the Settings icon and press the JOG.	
	
enter with service password 6161	
	
Turn the JOG till the Parameters icon and press the JOG.	
	
To set the default parameters, select the voice 'DEF' of the menu and press the JOG twice. Modify any parameters based on machine configuration. Turn the jog till the parameter to modify, press to select. The pane changes from yellow to flashing red, rotate to change the value. Press to return to the selection. Select the up arrow and press the jog to come back to the Settings menu. The parameters on the display are WITHOUT point/comma	

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MACHINE CONFIGURATION AND INTERNAL PARAMETERS LIST

It is possible to change the parameter values by inserting a text file named "DATA.TXT" inside a USB key. Then insert the key into the USB port on the electric box when the machine is off and turn on the machine.

At this point the parameters inside the machine will be updated.

Syntax of the file DATA.TXT:

The text file "DATA.TXT" must be written following the syntax:

"P[Machine parameter index]=[Parameter value];"

or,

"T[Rotation motor parameter index]=[Parameter value];"

or,

"C[Carriage motor parameter index]=[Parameter value];"

or,

"R[Index of the recipe number (from 0 to 6)][Index of the recipe field]=[Value];"

Esempi:

Examples:

P1=1; *(will set parameter 1 to 1)*

P2 = 0 ; *(will set parameter 2 to 2)*

T4 = 200; *(will set parameter 4 of the rotation motor to 200)*

R210 = 0 ; *(will set to 0 the tenth value of the recipe 3)*

NOTE:

- Only the parameters indicated in the DATA.TXT file will be modified. The others will remain unchanged
- In addition to the text file method in the USB pen, it is possible to change the values of the machine parameters from the display, entering the display pages of the counters
- The values of the machine parameters, motors and recipes can be changed simultaneously

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CONFIGURATION PARAMETERS LIST

Note: before to make a “Parameters Default” we need to set the value of the parameter “P1” (Carriage Type).

PARAMETER	RANGE	DEFAULT	DESCRIPTION
P1	1-4	1	Carriage Type 1 = CFG_XL_FR 2 = CFG_HD_FRD 3 = CFG_HD_FR 4 = CFG_HD_PGS
P2	0-3	0	FILM BRAKE Alarm On 0 = No Alarm 1 = Alarm with load cell 2 = Alarm with R-connect roll
P3	0-1	0	Enable U.S.A. DISPLAY 0 = Metric System 1 = Imperial System
P4	0-1	0	Enable FREEZER Machine 0 = Disable 1 = Enable
P5	0-1	0	Home Page 0 = PAG_HOME 1 = PAG_RECEIPE
P6	0-100	65	Kp
P7	0-100	40	kI
P8	0-100	21	Minimum Tension
P9	0-100	14	Load cell delta
P10	0-1	0	PALLET START Alarm Enable 0 = Disable 1 = Enable
P11	0-100	55	Pwm Clutch [(tension*pwm)/100] 55 = XL_FR 40 = HD_FR
P12	0-1	0	Carriage Emergency Enable and Carriage Emergency Release Selector Enable 0 = Disable 1 = Enable
P13	0-1	0	Enable Cut Enable the cutting function
P14	0-200	30	Cutting Tail Length Length of the film that comes out after cutting (delay between the exit of the punch and the block of the rollers)
P15	0-360	30	Cutting In Angle of the arm in which to release the punch (ideal is after an edge of the pallet) expressed in tenths of a degree
P16	0-360	50	Cut Out It is only used to leave an action range to activate the cutting function (modify only if P15 is changed)
P17 – P24	-	-	Free
From here, the parameters are changeable only with ROBOPAC password			
P25	0-60	0	RESTART Enable (Seconds of pause between two cycles)
P26	0-1	0	SIMULATION Enable
P27	0-1	0	GRAPHIC Enable
P28 – P32	-	-	Free



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Motor Parameters List

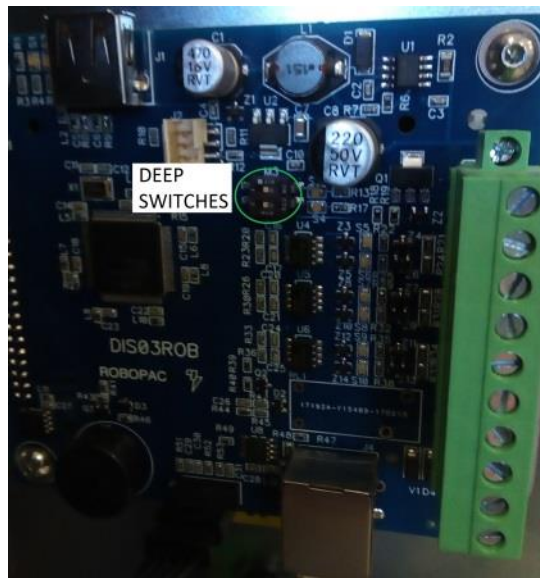
To edit the parameters in the list below, we suggest you contact a Robopac technician

PARAMETER	DESCRIPTION	VALUE	DEFAULT		
			1 (TABLE)	2 (CARRIAGE)	3 (FILM DRIVE)
1	FW version				
2	Bootloader version				
3	Minimum frequency	0-20 (Hz)	0	0	0
4	Maximum frequency	0-100 (Hz)	100	100	100
5	Acceleration	0-999 (Hz/sec)	12	200	200
6	Deceleration	0-999 (Hz/sec)	17	200	200
7	Maximum current	0-10 (A)	7	5	5
8	Average current	0-100 (dA)	50	25	25
9	Rated frequency	0-100 (Hz)	50	50	72
10	Boost voltage	0-100 (%)	20	20	5
11	Point 1 frequency	0-100 (Hz)	10	10	10
12	Point 1 voltage	0-100 (%)	25	16	20
13	Motor type	0-5	0	0	0
14	Positioning on	0-1	0	0	0
15	I Max Low Frequency	0-100	50	25	25
16	Feedback Value	0-6	0	0	0
17	Early low speed	0-999	100	0	0
18	Low speed value	0-999 (dHz)	50	50	50
19	Fast deceleration (Hz/sec)	0-999 (Hz/sec)	150	65	65
20	Communication Timeout	0-100 (ms)	30	30	30

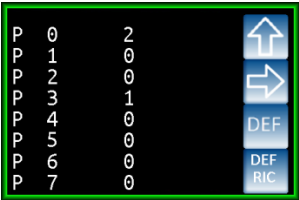
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PROCEDURE TO MODIFY NON-CORRECT INTERNAL PARAMETERS

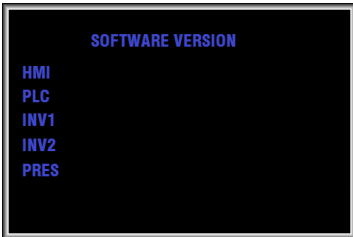
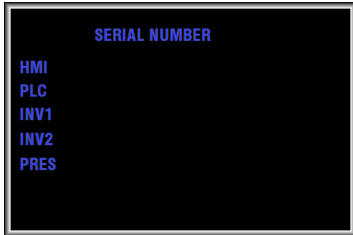
In the case of setting=internal parameters not correct and/or of blocking alarm
(ex. with communication with film tension card) it's possible to modify the parameters with an emergency procedure

1	Set the DIP SWITCH 2 on ON of th panel card	
2	Turn on the machine	
3	The HOME page is displayed, the display is locked (purple border on the home page), the communication with the PLC is absent to allow the parameters to be changed	

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4	Turn the JOG till the Setting icon and press the JOG.	
5	enter with the service password 6161	
6	Turn the JOG till the Parameters icon and press the JOG.	
7	Modify the parameters following the machine configuration.	
8	Turn off the machine and set the dip-switch 2 on OFF	

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SW / HW INFORMATION From the 'Settings' menu, rotate the jog up to the 'Info' icon, then press JOG 		
The first page indicates the software versions of the various cards installed on the machine (in case of FRD, only HMI, PLC and INV1) Wait some seconds and all will be displayed on the screen		
Rotate the jog to the left to display the second page, which contains the serial number of the various cards installed on the machine (in case of FRD, only HMI, PLC and INV1) Wait some seconds and all will be displayed on the screen		

RESETTING THE CYCLE COUNTER

From the 'Settings' menu, rotate the jog up to the 'Counters' icon and press the JOG.



On the first row the partial wrapped pallets number is displayed (P), on the second row the total number (T) and on the third the machine working hours number (H).

Additional data if R-Connect connected

FILM dm = Counter (in decimeters) of the film used by the machine

FILM g/5m = Definition of the specific film weight used (grams for 5 m of film)

To reset the values (as user "Responsible" or "Service") is only possible to reset P, as "Robopac" is possible to reset T and H, press and keep pressed the JOG, si resettano anche i contatori R-Connect e messo a default il valore FILM g/5m

If present, the data FILM g/5m can be changed (user 'Responsible' or more) by turning the jog

To exit from the page, press the JOG.



ELECTRONIC CARDS STATUS

From the 'Settings' menu, rotate the jog up to the CHIP icon and press the JOG.



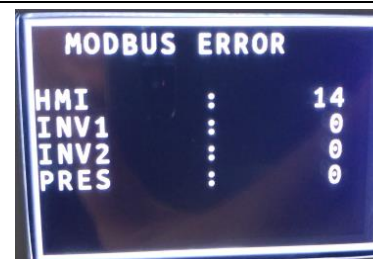
The first pages indicated the status of digital inputs and of the digital outputs of the following electronic cards:

HMI
PLC
PRES



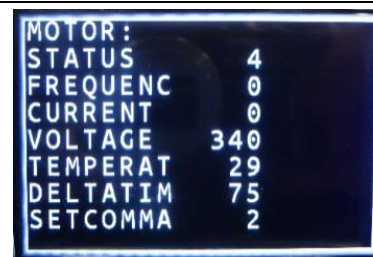
Press the jog to enter into the page with modbus communication errors counters

HMI
Inverter 1
Inverter 2
PRES03ROB



Press the jog to enter into following page showing the state of the 3 motors (turn the jog to select the motor 1 = Table, 2= Carriage, 3=Film Tension) with :

Status register
Current speed [dHz]
Instantaneous current [A]
DC bus voltage [V]
Driver temperature [°C]
Communication time [ms]
Running command



R-CONNECT (Optional)

Page with display of the status of the R-Connect device.

SW : firmware version of the Seneca device

dB : GSM signal intensity (-100dB low -80dB very good)

n TX: number of trasmissions made

n Rx: number of on hold trasmissions requests (polling increased)

UTC (T): Seneca device clock, it shows day – hour of the last transmission

Check the fields Sw and dB to be different from zero.

With user SERVICE or ROBOPAC is possible to make the connection test of the device with the web portal.

Turn the jog to display TEST, at this point press the jog, now WAIT will be showed.

4 traffic lights will be displayed, these will become from red to green (max 1 minute)

showing the executed steps:

taking charge of the test - sending request - received request -

test closure

With 4 green traffic lights the comunication of the device with the web portal is OK

To exit keep pressed the jog

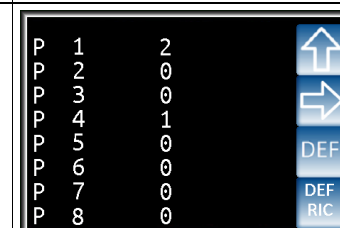


RECEIPES DEFAULT

From the machine parameters page, selecti the symbol “DEF RIC” and press the jog 2 times.

The “DEF Recipe OK” will be displayed.

Select the top arrow and press the jog to go back to setting menu.



PROCEDURE FOR REPLACING, LOADING SOFTWARE AND CALIBRATION OF ELECTRONIC CARDS PLC AND PANEL CARDS

The card that must be programmed in case of replacement are the PLC and the PANEL.
Should the PLC and / or PANEL need to be replaced or perform a software update follow the instructions below
The software will be downloaded at the same time both on the PLC and on the PANEL

USB pen and correct software needed



MASTERWRAP XL



MASTERWRAP HD

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- Make sure the DIS03ROB board is not powered (*machine off*)
- Insert the USB stick prepared previously into the USB pen on the electric box (Masterwrap XL) or on the back of the DIS03ROB board (Masterwrap HD)
- Power the machine by operating the main power switch
- Wait for the display to start

- At the "UPDATE SOFTWARE" request, rotate the JOG until "YES" is selected
- Confirm by pressing the JOG

- At the "UPDATE IMAGE" request, rotate the JOG until "YES" is selected
- Confirm by pressing the JOG



- At the "UPDATE Config" request, rotate the JOG until "YES" is selected
- Confirm by pressing the JOG

- At the end of the software loading phase, switch off the machine
- Remove the USB stick

- Turn on the machine and wait for the RESET screen.
- At this point the software loading procedure is complete



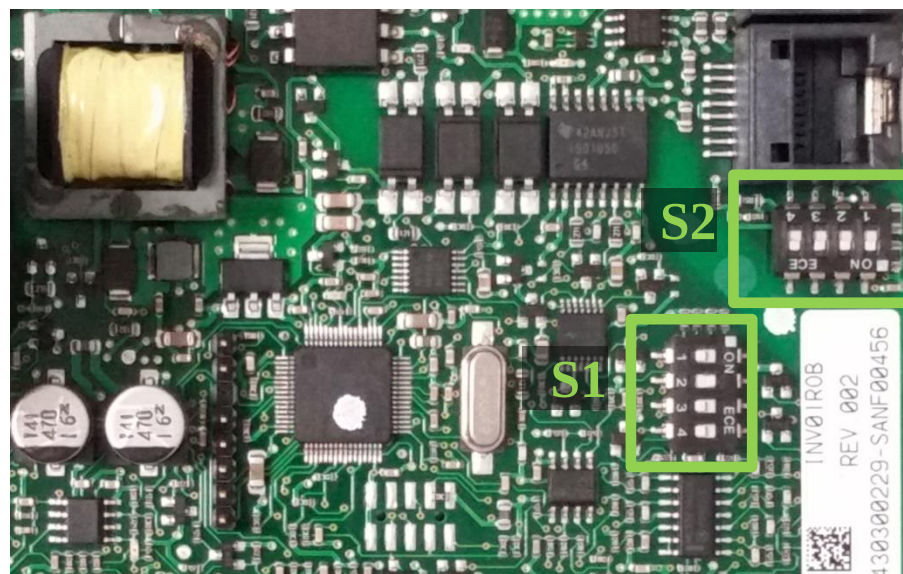
INVERTER CARDS

INVERTER CARD- MASTERWRAP XL (U201)

This electronic card is provided as spare part COMPLETE with software.

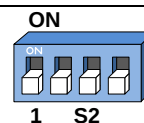
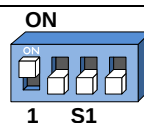


- Switch off the machine.
- Mount mechanically the new card in place of the faulty card.
- Wire electrically the new card.
- Place the S1 and S2 switches of the card as follows:



Inverter Card U201

- Arm Rotazione Motor
- Up / Down Carriage Motor



Motors parameters default

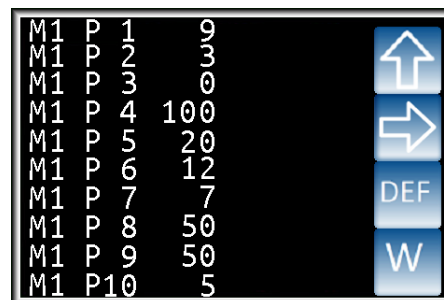
When you replace the inverter card we need to make the default of the motor parameters

- Switch on the machine
- Insert the SERVICE password 6161
- Set the card configuration using the following procedure:

Turn the JOG till the Motor icon and press the JOG.



To set default parameters, select 'DEF' from menu and press the JOG.
Each motor has 20 parameters.
MOT 1 → Table
MOT 2 → Carriage
MOT 3 → Film tension
At the end of the modifications (or DEF) select the write 'W' button to write the parameters and press the JOG.
Wait that OK is displayed near the button W.
At the end select the exit arrow (up arrow) to go back to 'Setting' menu.

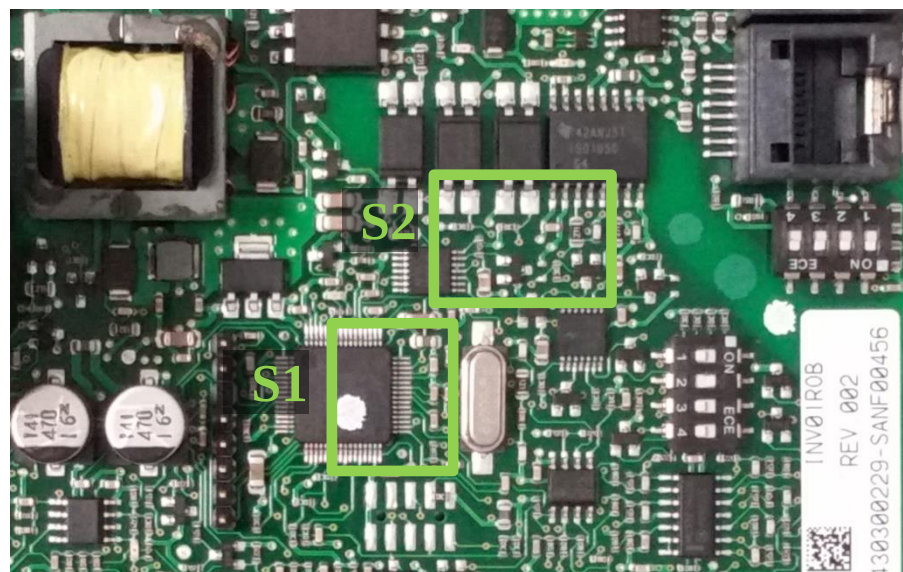


INVERTER CARDS – MASTERWRAP HD XL (U201, U301)

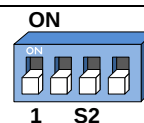
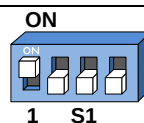
This electronic cards are provided as spare part COMPLETE with software.



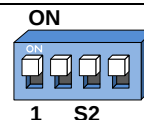
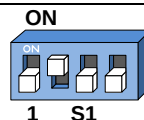
- Switch off the machine.
- Mount mechanically the new card in place of the faulty card.
- Wire electrically the new card.
- Place the S1 and S2 switches of the card as follows:



Inverter Card U201
- Arm Rotation Motor



Inverter Card U301
- Up / Down Carriage Motor
- Film Tension Motor



Motor parameters default

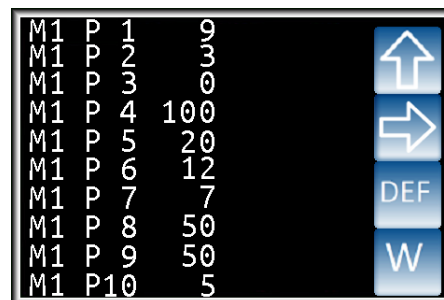
When you replace one (or two) inverter card we need to make the default of the motor parameters

- Switch on the machine
- Insert the SERVICE password 6161
- Set the card configuration using the following procedure:

Turn the JOG till the Motor icon and press the JOG.



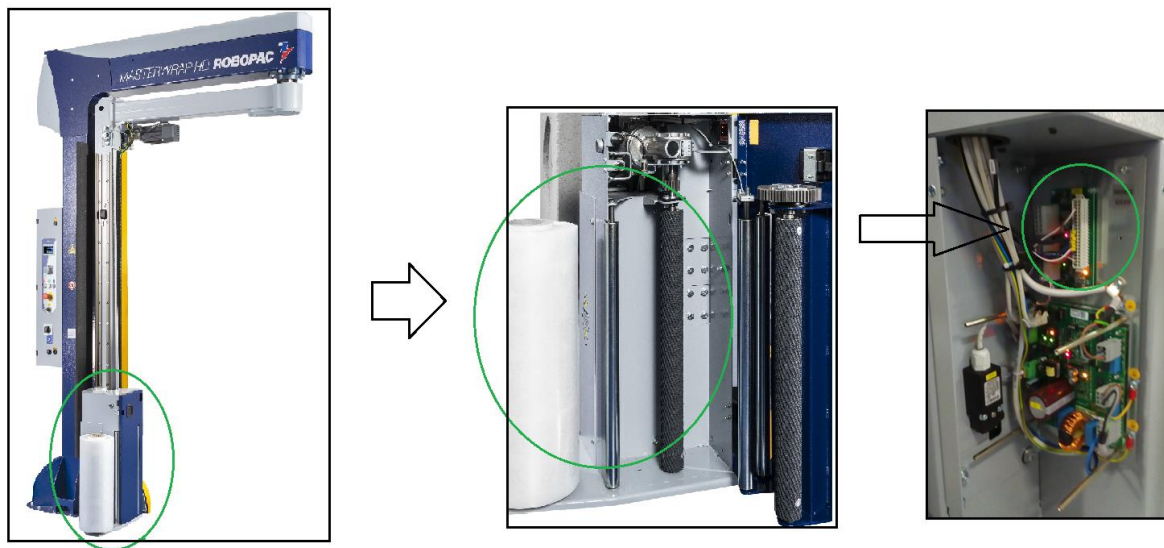
To set default parameters, select 'DEF' from menu and press the JOG.
Each motor has 20 parameters.
MOT 1 → Table
MOT 2 → Carriage
MOT 3 → Film tension
At the end of the modifications (or DEF) select the write 'W' button to write the parameters and press the JOG.
Wait that OK is displayed near the button W.
At the end select the exit arrow (up arrow) to go back to 'Setting' menu.



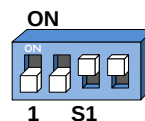
EXPANSION CARD (U572)

New Installation on the carriage of the PGS version machines.

This electronic card is provided as spare part COMPLETE with software



- Switch off the machine.
- Mount mechanically the new card in place of the faulty card.
- Wire electrically the new card.
- Place the S1 switches of the card as follows:



- Switch on the machine.
- Remove the film from the last carriage reel (the one connected to the load cell)

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- Calibrate the load cell by following the procedure below:

LOAD CELL CALIBRATION (Only PGS)	
Enter with password Responsible or Service From the Setting menu, turn the JOG till the icon "Load cell" and press the JOG. 	
Release the film output roll where the load cell is present. Kepp pressed the JOG till the beep, when released the OFFSET value is updated. The new OFFSET value is about 10 units higher than the current CELL value. N.B. Values of CELL between OFFSET – 35 and OFFSET + 15 are acceptable.	

ELECTRICAL AND MECHANICAL SETTINGS ON MASTERWRAP

UP-WARD AND DOWN-WARD MECHANICAL SWITCH TO LIMIT THE CARRIAGE MOVEMENT

MASTERWRAP XL



The pictures on the side, shown the top and bottom position cam and the mechanical switch which limit the movement of the PE film spool carriage for top and bottom high.

MASTERWRAP HD



The pictures on the side, shown the top and bottom position cam and the mechanical switch which limit the movement of the PE film spool carriage for top and bottom high.

CARRIAGE CONNECTOR AND PHOTOCELL



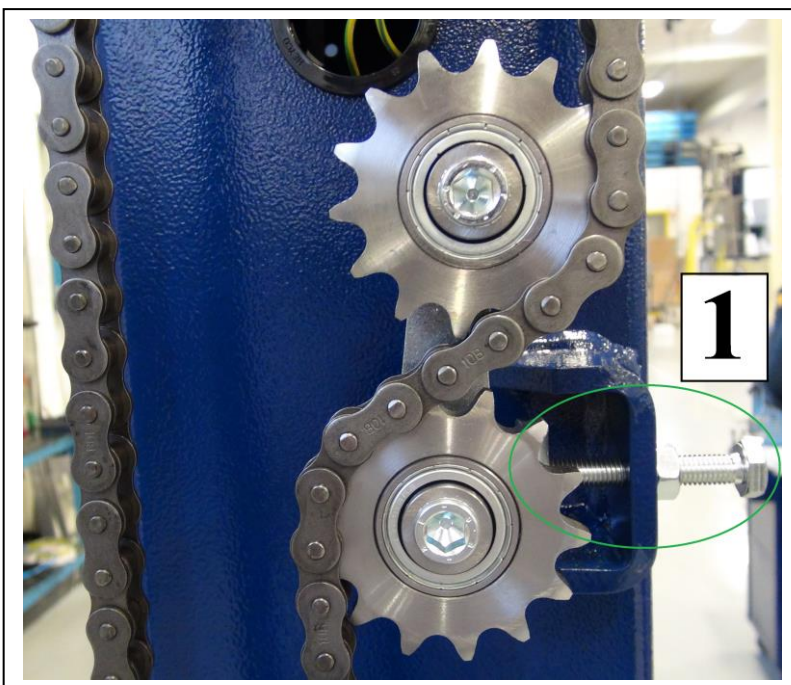
The GENERIC photo alongside shows the connector for the electrical wiring of the spool carriage



The GENERICA photo alongside shows the photocell for detecting the maximum height of the product to be packaged. The photocell is equipped with a trimmer for adjusting the sensitivity (reading distance).

CHAIN TENSION ADJUSTMENT

To tension the rotation chain in MASTERWRAP HD act on the screw [1]



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The rotation chain must have a contained free movement in order to limit the freedom of movement of the rotating arm when the brake is operating.

To verify the correct tension of the arm rotation chain, proceed as follows:

- Make sure the machine is switched off, with the rotating arm stationary
- Place a long strip of paper scotch approximately 250 mm around the fixed mast on the opposite side of the control panel, about 1.5 m high.



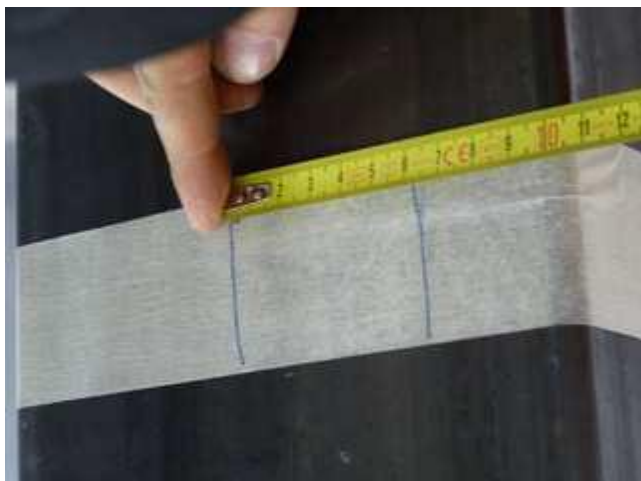
- Go to the side of the rotating arm where the carriage is fixed
- Place a marker on the aluminum profile on the carriage mounting side, at the height of the previously placed scotch strip

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- Pull the rotating arm, turning it counter-clockwise to the normal working direction, until the end of stroke and keeping it in tension. Be careful not to exceed by force.
- While holding the marker resting on the profile, make a vertical stroke on the scotch strip.
- Push the rotating arm, turning it in the normal working direction, until possible end and keep it in tension. Be careful not to exceed by force.
- While holding the marker resting on the profile, make a vertical stroke on the scotch strip.
- Measure with the meter the distance between the two markers drawn on the scotch.

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The distance between the two should be 45mm +/- 15mm

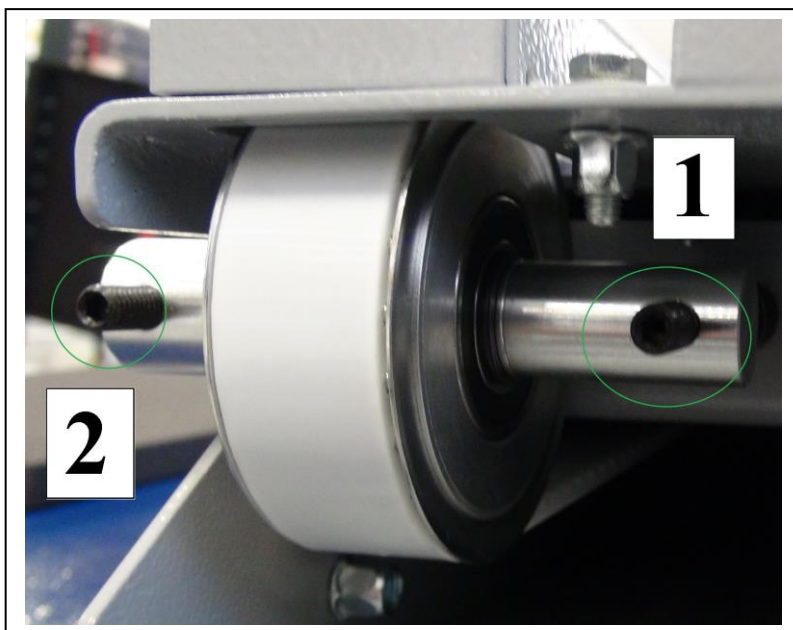
If the distance does not fall within the required values, you must adjust the chain again.

Do as follows:

- Loosen the 6 mounting screws on the motor support plate, located on the sides of the fixed arm.
- If the previously detected free movement was excessive, tighten the free movement adjustment screw set to above the fixed arm.
- If the free movement was too low, loosen the free movement screw above the fixed arm and adjust the sheet to the screw itself.
- Tighten the 6 mounting screws on the motor support plate.
- Re-test the correct tension check described at the top of the page.

CARRIAGE BELT TENSION

To tension the carriage belt in MASTERWRAP HD, use grains [1] and [2]



PRODUCT HEIGHT DETECTION PHOTOCELL CALIBRATION

STANDARD PHOTOCELL

Adjust the sensitivity of the photocell to the pallet center; approximately position the trimmer at 2 o'clock (looking at the photocell from behind so as to read the word DL).

PHOTOCELL FOR BLACK PRODUCTS S62

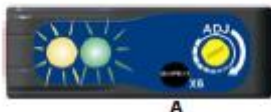
Suppression distance setting

1. Object detection

Position object to detect in front of the sensor at the distance required.
Turn distance adjustment trimmer (ADJ) to minimum: yellow LED OFF and green LED ON.



Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON. Object detection condition (A status of position indicator)



2. Background suppression

Remove object and ensure that the background is in front of the sensor: yellow LED OFF and green LED ON.



Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON: background detection condition (B status of position indicator).



The trimmer reaches maximum level with yellow LED OFF if the background is outside the operating range.

Rotate trimmer in an anticlockwise direction until yellow LED turns OFF and green LED ON: condition where background is outside operating range (C status of position indicator).



3. Setting and control

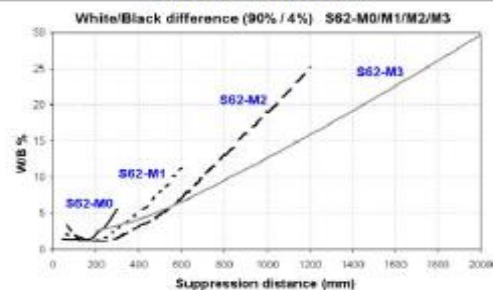
Rotate trimmer in an anticlockwise direction until the indicator reaches an intermediate point between position A and C.



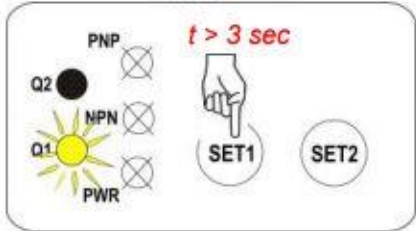
If position A and C are close to each other, leave trimmer on position C. The sensor is now ready to function correctly and in stable conditions:



DETECTION DIAGRAM

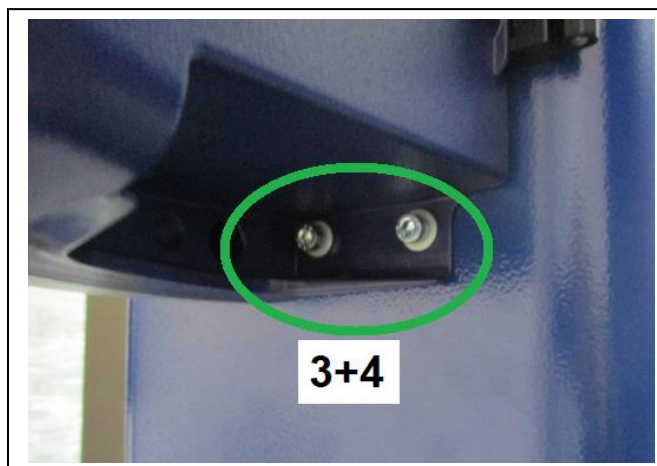
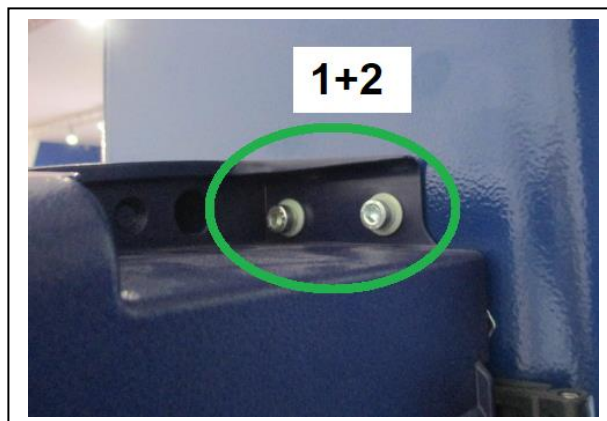


PHOTOCELL FOR BLACK PRODUCTS S65

	Place the target at the center of the pallet
Teach-In 	Keep pressed the Set1 button for more than 3 seconds, till led Q1 flashing
	Release the button, target detected

INSTRUCTIONS for the OPENING of the ELECTRICAL PANEL (Masterwrap Plus XL)

Unscrew the 4 screws that connect the panel to the mast,
1+2 and then 3+4

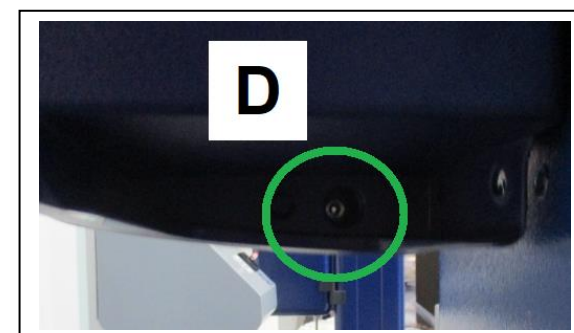
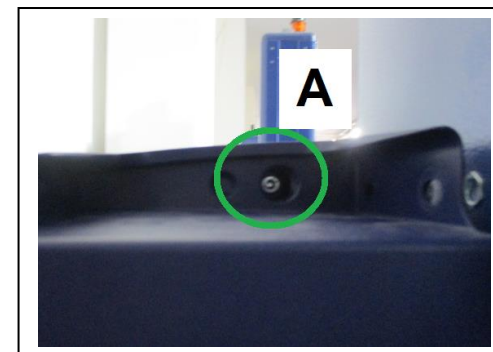
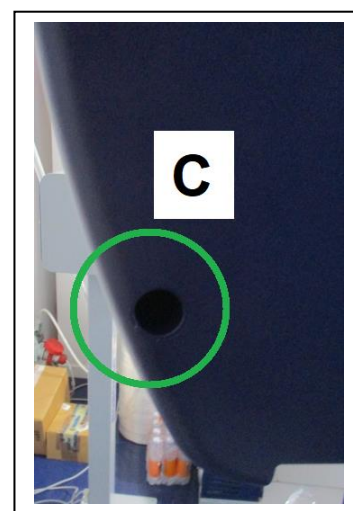
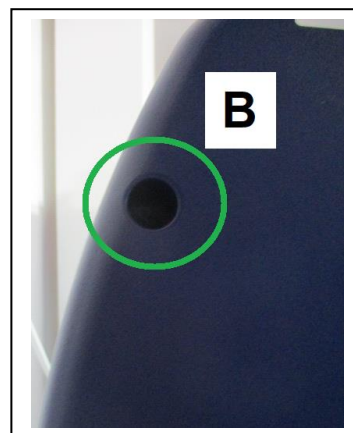
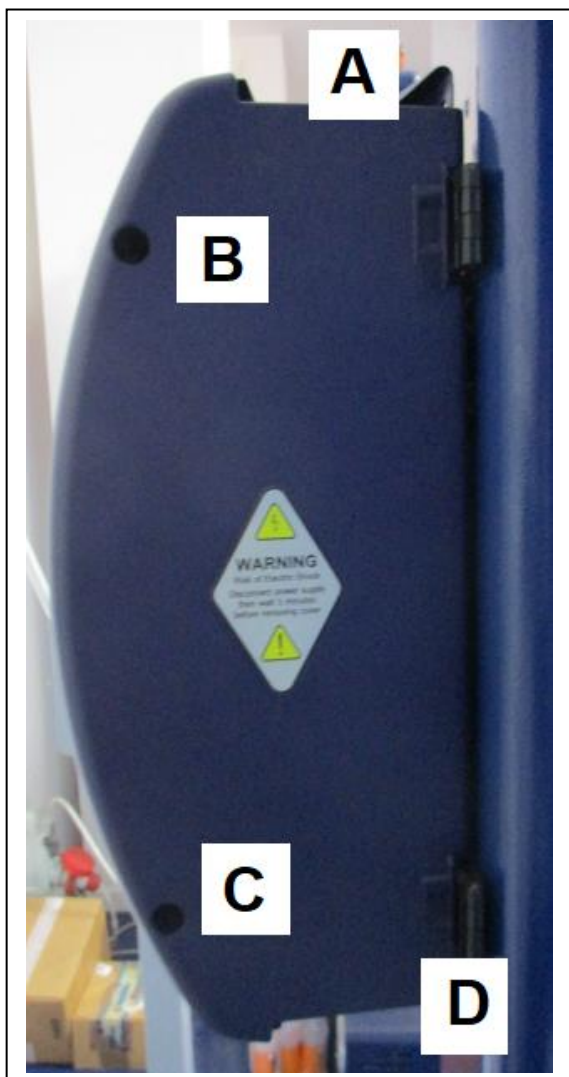


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now the electrical panel can rotate ...



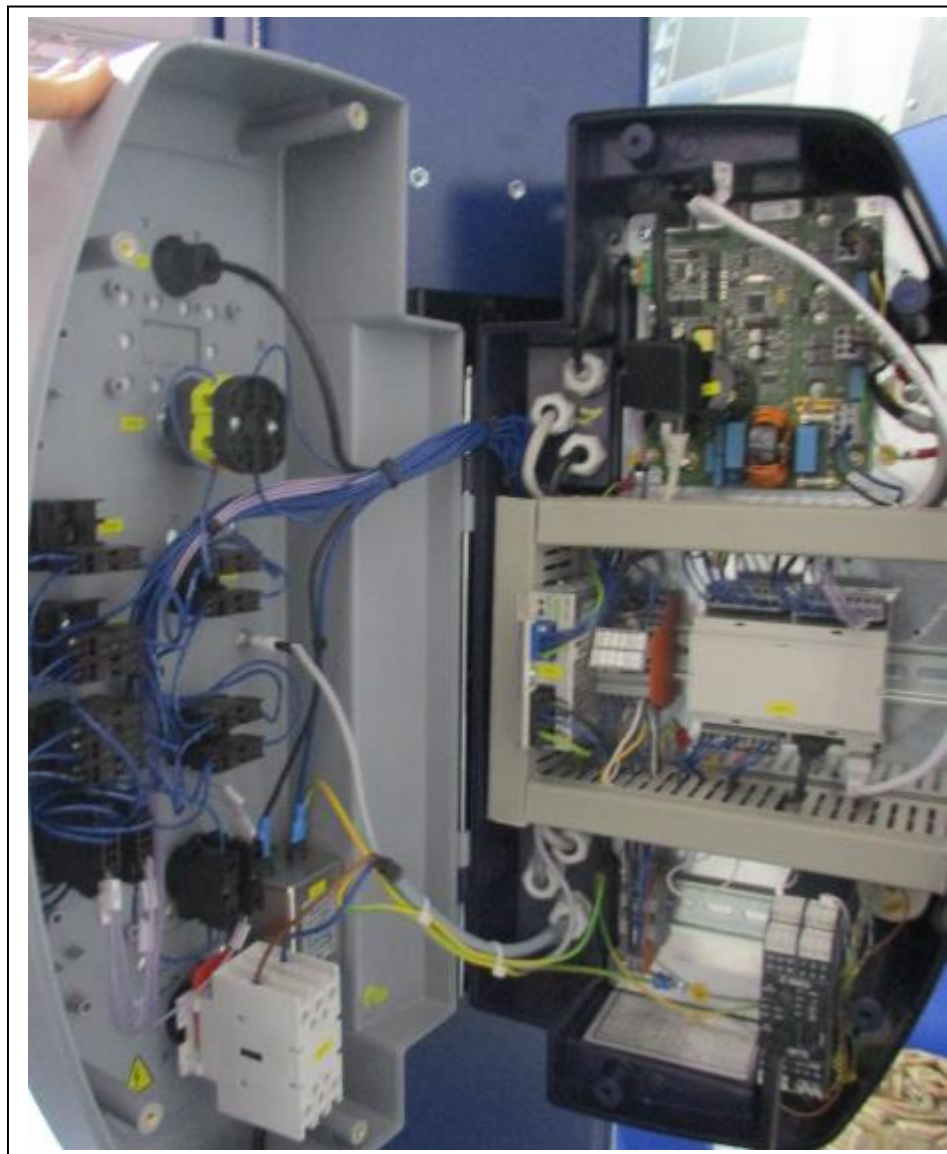
Unscrew the 4 screws that close the electrical panel,
A, B, C and D



now it is possible to open the electrical panel



... to close the panel, insert in the order
the screws A, B, C, D, 1+2, 3+4



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ALARM LIST AND TROUBLESHOOTING

Alarm code	Alarm description	Troubleshooting	Cause of the fault	Solution
E01	Emergency push button pressed	Check the electrical contact of the emergency push button	The electrical contact is damaged or the wiring is interrupted	Replaced the electric contact or restore the electrical wiring
E02	Carriage emergency alarm	Carriage emergency alarm.	Impedance interposed between the floor and the carriage	If it is not possible to manually remove the obstruction, turn the key and manually activate the carriage ascent.
		Check the condition of the limit switch connected to the emergency plate.	The safety switch connected to the metal plate is faulty.	Replace the mechanical limit switch
E04	Protections alarm	OPTIONAL		
E05	Carriage cover open	The PGS micro emergency carriage detects the opening of the carriage cover that opens to insert the film	The carter is open	Chiudere il carter carrello
			Mechanical micro switch problem	Check / Adjust the microswitch
			The PRES04ROB expansion board (U572) does not see the IN4 input (Led S3), only on the PGS carriage	Check the microswitch connection
				Replace the microswitch
				Replace expansion card

E06	Bumper alarm	Check that safety bumper works properly	The safety bumper is mechanical damaged or electrically interrupted	Replaced the safety bumper or restore the electrical wiring
		Check the appropriate functioning of the safety module U600	Safety module is defective	Replace safety module.
E09	Suspended Emergency Alarm	Start machine was pressed in manual release mode	Start was pressed with the machine in carriage release or rotation release mode	Exit the manual unlock mode (carriage or rotation) and press Start
E31	Rotation motor inverter Alarm	Disconnect the rotation arm motor from the inverter card and start a packing cycle.	If the alarm message disappears there is a fault of the rotation arm motor	Replace rotation arm motor
			If the alarm message doesn't disappear, there is a fault on the inverter card.	Replace inverter card.
		Check the gearbox connected to the rotation arm motor	Possible fault of the gearbox	Replace the gearbox
E32	Carriage motor inverter Alarm	Disconnect carriage motor from the inverter card and start a packing cycle.	If the alarm message disappears there is a fault of the carriage motor	Replace the carriage motor
			If the alarm message doesn't disappear, there is a fault on the inverter card.	Replace inverter card.
		Check the gearbox connected to the carriage motor	Possible fault of the gearbox	Replace the gearbox

E33	Film Tension motor inverter Alarm	Disconnect film tension motor from the inverter card and start a packing cycle.	If the alarm message disappears there is a fault of the film tension motor	Replace the film tension motor
			If the alarm message doesn't disappear, there is a fault on the inverter card.	Replace inverter card.
		Check the gearbox connected to the carriage motor	Possible fault of the gearbox	Replace the gearbox
E60	Film break alarm	Film not applied to the pallet or film ended.		Replace the film spool, or apply again the film to the pallet and press START.
		Check the correct operation of the film consumption sensor	The film consumption sensor is not sending the signal to the PLC card.	Check the connections and / or replace the film consumption sensor.
			The film consumption sensor works correctly.	Replace the PLC card
		Check the correct functioning of the load cell (extensometer).	The load cell does not send the signal to the signal amplifier board.	Replace the load cell (extensometer).
			The load cell is working properly.	Replace the cell signal amplifier board or the film tension inverter card

E61	Arm rotation Alarm	Check revolution counter sensor position (the alarm appears with there is no PLC input signal for at least 2 arm revolutions)	Incorrect sensor position.	Correctly reposition the sensor
		Check correct sensor operations	Possible sensor and relevant wiring fault	Replace the sensor
		Check input IN7 (Led S15) on the PLC card.	Possible PLC board fault	Replace the PLC board.
E64	Carriage speed alarm	The carriage is not working at the set speed or the carriage is blocked. Check the correct functioning of the up / down carriage	Possible failure of the carriage up / down motor or failure of the relative wiring.	Replacing the motor, restore the wiring.
		Check carriage up-down motor connection and connection to U201 board.	Possible failure of the U201 board.	Replace the U201 board.
E74	Pallet start alarm	If the pallet start parameter is enabled, the machine cycle does not start if the photocell does not see the product while the START button is pressed		Placet the pallet e restart the cycle

E83	Communication Alarm	Check the connections between the PLC the display, the inverter cards (in the case PGS they are 2) and the little card connected to the load cell mounted on the carriage.	Possible failure of a communication cable	Replace connection cable.
			Possible communication hub failure	Replace the connection hub.
		If necessary, try again by connecting one device at a time.	Possible failure of one inverter card (they are 2 in the case PGS).	Replace the inverter card
			Possible panel card failure	Replace the panel card
			Possible failure of the PLC card	Replace the PLC card.
			Possible failure of the little card connected to the load cell and mounted on the carriage.	Replace the little card mounted on the carriage.
E98	Carriage Bypass Alarm	The carriage emergency has been bypassed	Unlock selector problem	Check the connection and integrity of the selector
			Unlock the carriage in manual	Release the release selector
E99	ECO cycle alarm	Error in the realization of the ECO cycle	You have exceeded 30 movements in the realization of the ECO cycle	Create the ECO cycle with less than 30 movements

The carriage remains still (does not lift or lower)	Check the mechanical high and low limit stop	The mechanical limit stop is defective.	Replace defective mechanical limit stop.
	Make sure the high and low position limit stop correctly sends the signal to the inverter card.	Possible high and low mechanical limit stop electrical fault or wires disconnected	Replace the mechanical limit stop or restore wiring
	Check inverter card operating conditions	Possible inverter card fault	Replace the inverter card.
The film breaks during the packaging of the product, or is not properly applied to the pallet (too tight or too slow)	Check that the film is correctly applied on the carriage and in particular that it "adheres" to the last roller	Incorrect insertion of the film on the spool carriage	Load the film correctly on the machine and make sure to apply it according to the path indicated in the machine manual.
	Visually check the condition of the rollers	The rollers are dirty and mark the film	Clean with pressurized air (do not use thinners)
The carriage does not goes up during working cycle	The phase sensor is not working	--- > go to alarm E61	
	The photocell is not working correctly	The photocell does not "sees" the pallet	Adjust the photocell
		The PLC card (U553) does not see the input IN6 (Led S14) in FRD and FR. The Film TENSION card (U572) does not see the input IN1 (Led S6)	Restore and fix the photocell – card connections
			Replace the photocell
			Replace the PLC card
	Check not to have the top microswitch activated	Mechanical problem with the microswitch	Adjust / replace the micro
		Electrical problem with the microswitch	Check the connection
			Replace microswitch
			Replace the PLC card

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DETAILED INVERTER CARDS ALARMS CODES

In the case of inverter E31, E32, E33 alarm, usually a label is displayed next to the alarm number as on the below example



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following the table below:

Label	Alarm Description
V Logic	Inverter Logic Control Voltage
Driver E	Signal Driver Enable Missing (E31 -> Rotatio Motor, E32 -> Carriage Lifting Motor, E33 -> Stretch Motor)
Over V	Internal DC BUS OverVoltage
Under V	Internal DC BUS UnderVoltage
OverHeat	Inverter Overtemperature
Phase	Phase Fail. (Current is widely different on one of the three phases)
Max I	Overcurrent. (Output current higher than value set into parameter for almost 1 second)
HW Max I	Istantaneous Overcurrent. > 8 A