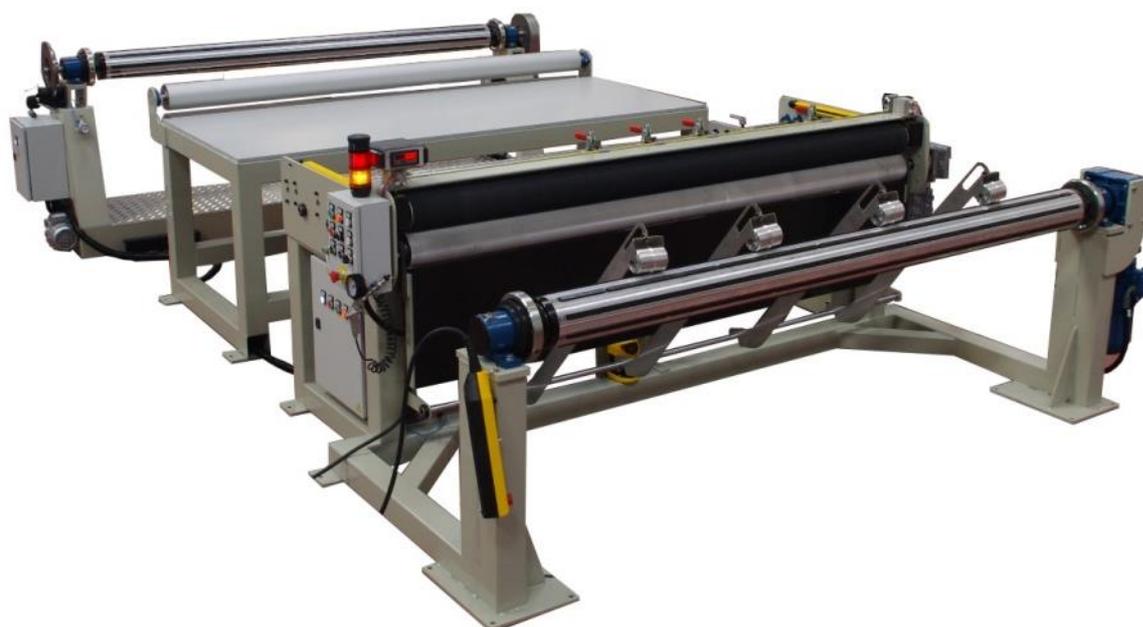


## **(Original) Use and maintenance manual**

**Type: Belt slitter 2200mm**  
**Model: LS-200**



### **IMPORTANT**

Read this user manual and follow the instructions and warnings before operating this device.

Any modification or transformation performed on this machine may cause loss of the manufacturer's guarantee and liability.

This manual must always remain near to the machine and visible to all the operating and maintenance staff, for any future consultation, forming part of the equipment.

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- **CE Declaration of conformity:**

WE DECLARE, under our responsibility, that the machine:

- Type: Slitter
- Brand: ERM Engineering
- Model: LS-200
- Serial No.: xxxxxx
- Manufacturer date: 2021

Inspired by the directives of the Official Journal of the European Communities:

**2006/42/CE Machinery Directive**

**2014/35/UE Low Voltage Directive**

**2014/30/UE Electromagnetic Compatibility Directive**

Complies with the design and construction specifications of the European Standards on General Machine Safety:

**EN 349 - EN 614-1 - EN 614-2 - EN 12100 - EN 11161-1 - EN 1005-1 - EN 1005-2 - EN 1005-3 - EN 1005-4 - EN 13849-1 - EN 13849-2 - EN 894-3 - EN 13857 - EN 60204-1 - EN 14118 - EN 14120**

General Manager: Eduardo Ramos Martínez



ermengineering  
belting fabrication equipment

Arenys de Munt (Barcelona)-SPAIN

Date: 2021/08

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- **Description:**

Lengthwise cutter for conveyor belt slabs with traction rollers and static blades.

Unwinder with disc brake and pneumatic clamp with pressure regulator to control unwinding tension, unwinder carriage lateral displacement controlled by motor driven screw-thread.

Slab bearing pneumatic shaft held by folding safety chucks, with motor clutched to recover the material once it is cut and/or protection packaging for the surplus slab, with speed control and turning direction inverter.

Bench to inspect the material placed between the unwinder and cutting head, for checking during the cutting process, with aluminium rollers at the end to help the belt entry and keep it on the checking plane, regardless of the slab diameter.

Cutting head with guide plates at both sides, adjustable to the band width by ball screws driven by independent motors.

Contact wheel length measuring device with the belt placed on the belt transport rotating bars. These bars keep the belt constantly tense to avoid distortion or wrinkles, to ensure the greatest precision of the cutting measurements.

Pressure lever activated manual locking blade holder, fixed to linear sliding skids, with required measurement setting control, based on self-retracting metal metric tape measure reading.

Sandwich type traction rollers with double rod pneumatic cylinder pressure, height regulated by knurled control, driven by an adjustable speed motor.

Hand cutting bench, folding by manually activated pneumatic lever valve, to make the starting cut in the first stretch of the belt.

Motorised expansion axle to wind the cut belt, housed in folding safety chucks and driven by variable speed motor activated by electric pedal or mobile control switch.

- **Technical characteristics:**

- **Measurements (length x width x height):** 4920 x 3140 x 1140 mm.
- **Weight:** 2510 Kg
- **Voltage:** 3 x 400 // (3x230 under demand)
- **Power:** 4.2kW
- **Minimum air pressure:** 6 bar.
- **Max. belt width:** 2200 mm.
- **Max. belt thickness:** 10 mm.
- **Max. slab weight:** 1800 Kg.
- **Max. slab diameter:** 1300 mm.
- **Max. cutting speed:** 20 Mt / min.

- Location of the manufacturer's plate.



Winder reducer motor of 2.2 Kw, with built in brake, inverter controlled with potentiometer speed regulator, turning direction selection control, with safety beacon disconnection system.

Mobile tracks with independent guides in left side.

Motorised traction rollers with reducer motor of 0.75 Kw, controlled by inverter with speed regulator on potentiometer.

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Unwinder reducer motor of 0.75 Kw, with pneumatic clutch activated by electro-valve and controlled by inverter with potentiometer speed adjuster, with turning direction selection control and driven by B-10 chain.

Reducer motor of 0.37 Kw for lateral displacement of the unwinder, with screw-thread drive, controlled by safety run end contact switches with a correction scope of 350 mm.

Changeable blades easily accessed by hexagonal M-7 screw.

- **Standard equipment:**

- 2 slab bearing pneumatic shafts, diameter 148mm
- 2 inflation guns for pneumatic shafts
- 3 arms of cutting separator pulleys of different diameters
- 5 heads with cutting blades
- Belt inspection bench
- Folding cutting bench
- Motorised unwinder set with opposing brake
- Cutting head with independent motorised tracks
- 2 sets of folding safety chucks
- Motorised traction rollers
- CE safety scanner system on the winder

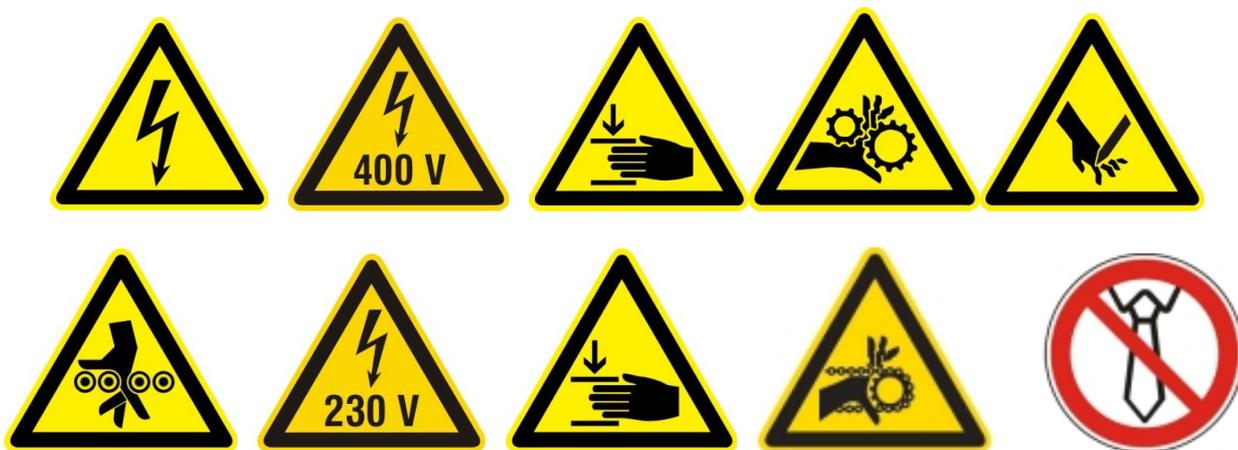
- **Warnings and safety:**

- ERM Engineering recommends the users of this machine to fully read this user's manual prior to its use to guarantee safe work.
- It also advises and recommends equipment not being used by unqualified staff who has not received prior training from ERM Engineering.
- A copy of this manual delivered along with the machine must always remain at hand during its use, both for the production operators as well as the maintenance managers.

**NOTE: ERM Engineering shall not be held liable under any case for damage caused by undue or improper use of this equipment.**

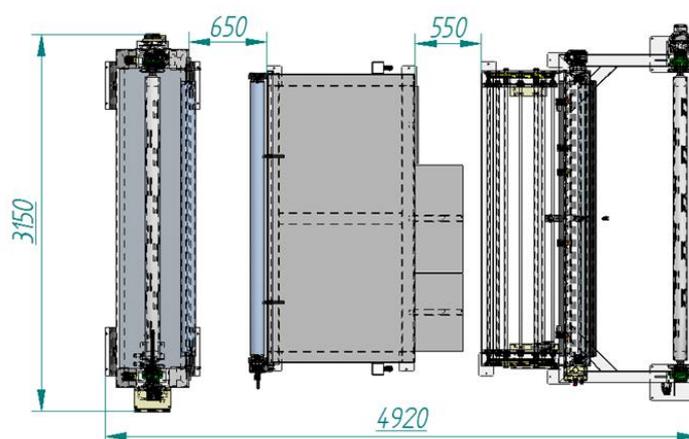
- Any repairs or modification of the machine performed by personnel not qualified by ERM Engineering, or use of non-original spare parts provided by persons unrelated to the company, shall give rise to loss of the manufacturer's guarantee.

- During use of the machinery and industrial use, people are subject to the risk of damage or injury by mechanical elements in linear or gyrating movement, high voltage electric components and static components under high temperature, due to which, during design and construction of its equipment, ERM Engineering has aimed to reduce and minimise those risks by including protection devices and safety systems based on the European Community Council Directives.
- Pay special attention to the following danger, prohibition and obligation signs located at different places on the machinery:



- **Installation and start-up**

Place the machine in the space assigned according to the measurements on the drawing, taking the manoeuvring space for the fork-lift truck within the slab loading and unloading red striped zones into account, according to its measurements.



and

## Placement levelling

1<sup>o</sup> Place the cutter in a place that allows personal passage and access to the site opposite the control switches, leaving a minimum free distance of 1 metre.

Space the distances between the three components (unwinder, bench and cutting head) with the measurements of the previous plane, centring the axles and taking the centre of the bench as the reference).

Once the three elements are set, check the distance between the unwinder and winder axles at both ends, to guarantee straight belt cutting and uniform tension across the whole width.

Drill the ground through the leg holes using a 14mm bit and insert the metal fixing plugs provided by the manufacturer.

Before proceeding to tighten the bolts in the plugs, use a level to check that the three components are perfectly level on the 2 plane axes. If that is not the case, place the necessary packing under the legs on the ground to correct possible irregularities in it.

Remove the aluminium grid cover (base or ground) of the unwinder, to proceed to attach the centre setting displacement stand.

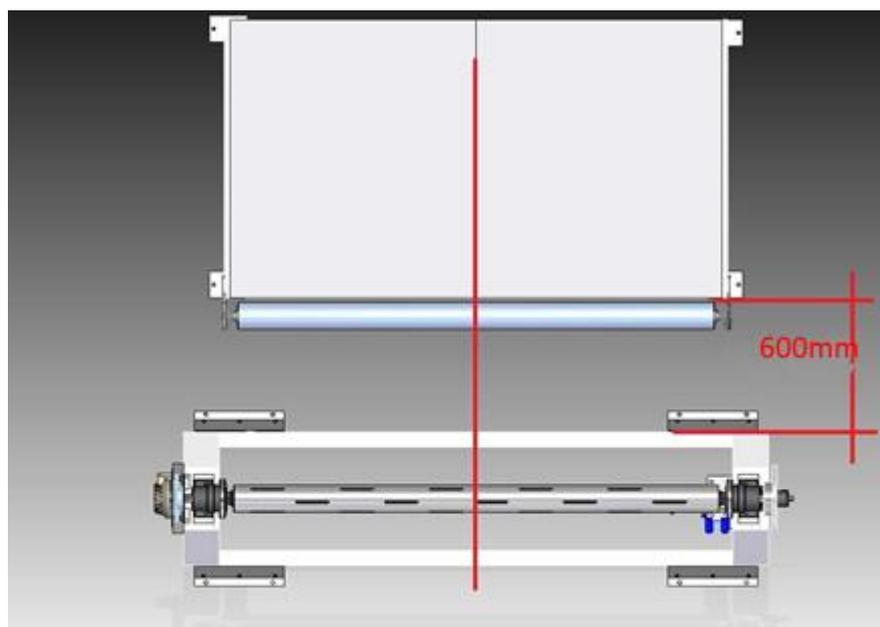
Drill the four holes in this stand and, after bolting, replace the aluminium cover or floor plate.



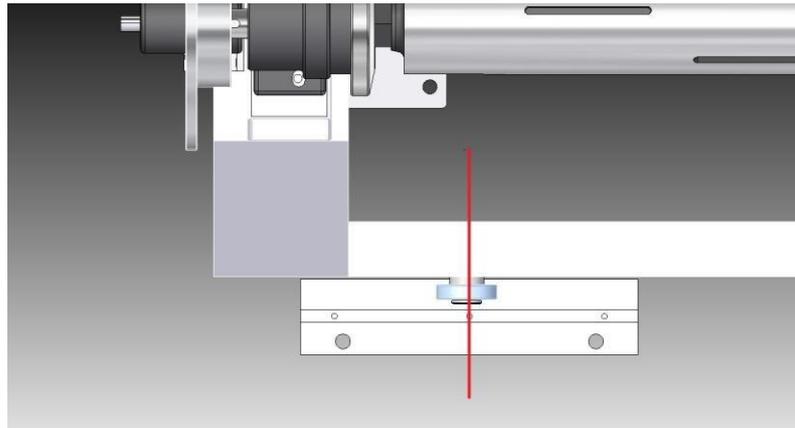
2º- Place the table unit at 540mm distance to slitter head and centring in the middle line and check the level.

Fix on floor with 4 screws

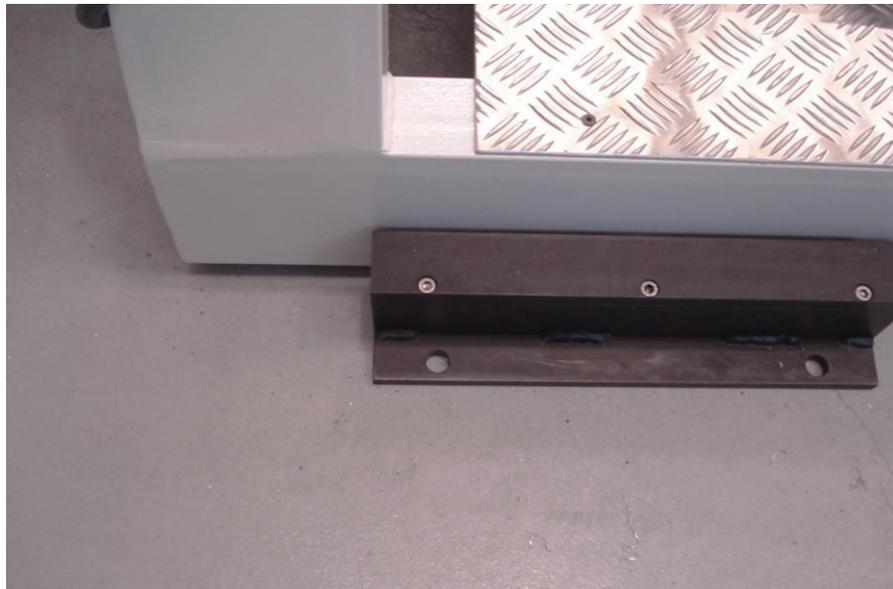
3º- Place the unwinder with the control box in the same side like slitter control box at 600mm to the table and also centring to this table frame. Check the level also.



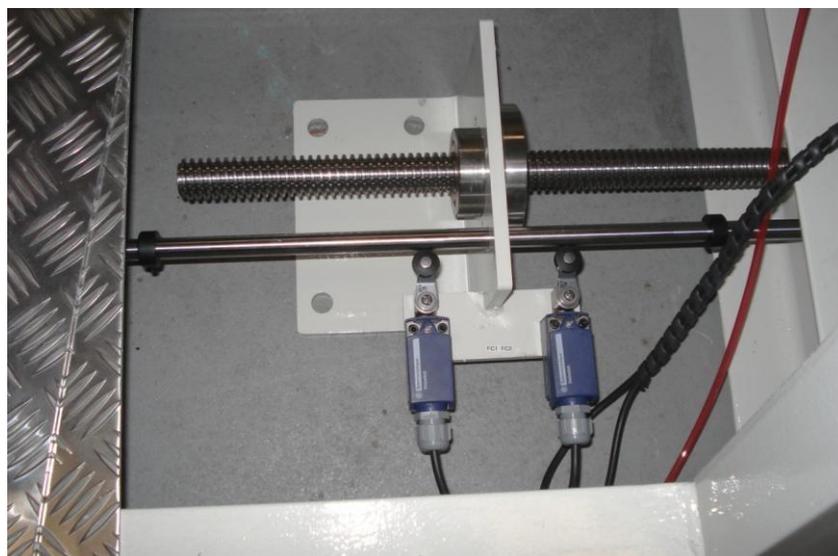
Introduce the 4 rails under bearings and complete centre in the middle.



After check the level, fix on floor.



4º Introduce the tracking system in the shaft until half of the length screw.



Fix the nut with 4 allen M-8 and fix the white plate on floor with 4 screws.

---

**NOTE: Do not close the cover until test the correct turn of motor (Phases test)**

5º Introduce the electrical and air cable inside the table tube.



And connect to the slitter control box.



## Electrical connections

Connect the electric supply cable of the CONTROL BOX 1 (FIGURE 1) to the 3 x 400V grid and the relevant earth socket.



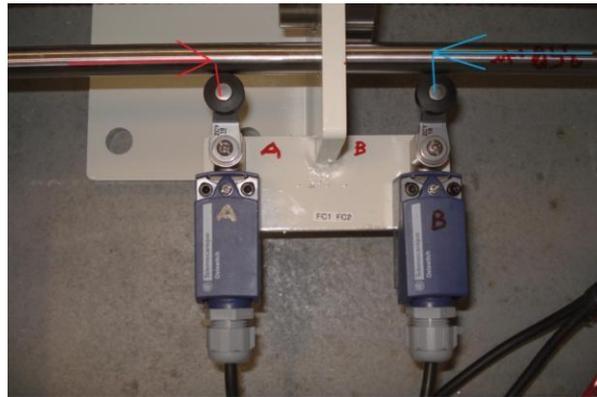
**NOTE: We recommend running this power cord through a protected conduit, so it is not an obstacle that may cause tripping or falling.**

Once the power supply is connected, RESET with orange button to restart the electrical system, check that all the STOP EMERGENCY is unlocked.



**NOTE:**  
**Every time turn on the machine or after press emergency button, you must RESET yellow button.**

Test the phase connection that all the end switches of unwinder work well and change this phase if will be necessary.



**WARNING: Wrong connection of the phases may cause damage to the guide and centring device threads, as the run ends will not act correctly.**

### **Air supply connection**

Supply the machine with compressed air at a pressure between 8 and 6 bar, connecting the 6 mm diameter blue hose to the grid.



Connection between the unwinder CONTROL BOX 3 and the General Electric panel CONTROL BOX 2.

Run the power cord with the 10 pole plug through the structure of the inspection bench leg as far as the general board socket.

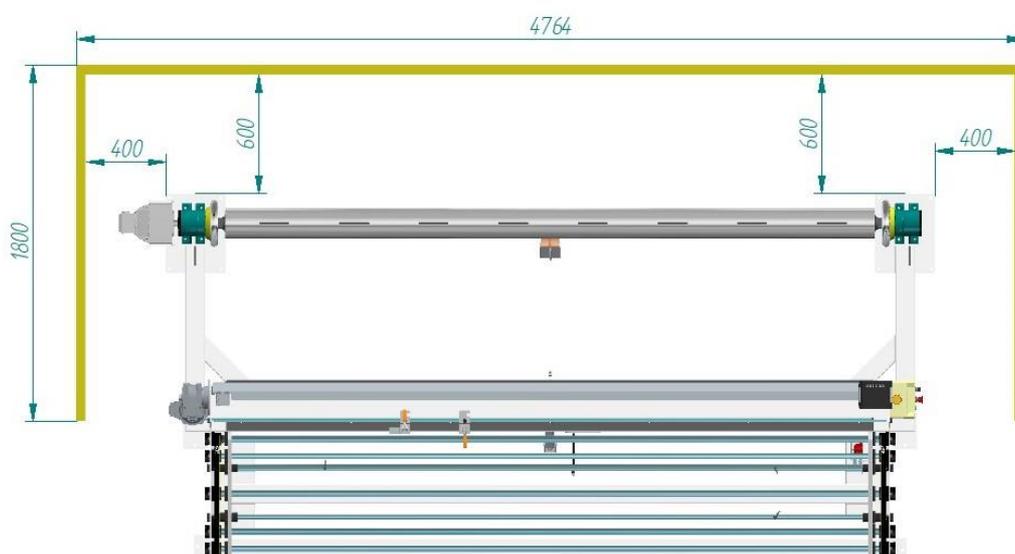


The compressed air unwinder must also be provided compressed air through the black tube, as shown in the photo.



Check that all the elements of the machine work correctly under vacuum, prior to their use.

We recommend to pint with yellow lines on floor to determinate the safety area controlled by scanner.



- **Operation**

- Place the pneumatic shaft inside the slab to be cut, ensuring the measurement of the surplus shaft is spread at both ends. We may then load the slab on the unwinder carriage and once it is inside, close the safety chucks.



- Inflate the pneumatic shaft to a pressure of 5 bar, using the inflation gun.

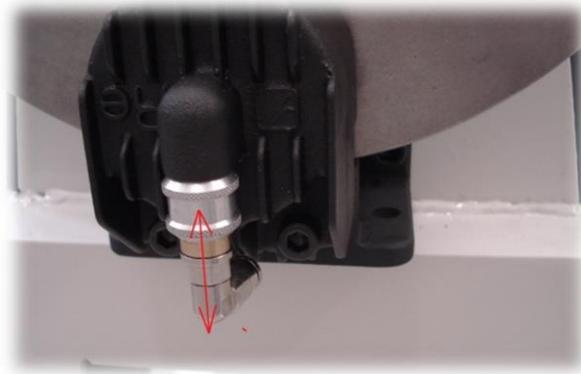


- Always check that the sidewise displacement of the unwinder is at the middle of its range, to ensure it may act in both directions for centring.



- Unwrap the slab and free the end in order to proceed to run the belt through the cutter, placing the belt between the top and bottom rollers of the bench.

**NOTE: According to the weight of the slab, it may be run through by releasing the brake runner valve and pulling on the belt by hand, or by adjusting the potentiometer to a slow speed.**



- Once the end of the belt reaches the cutting head, activate the braking valve again.
- Adjust the braking pressure using the pressure adjuster.



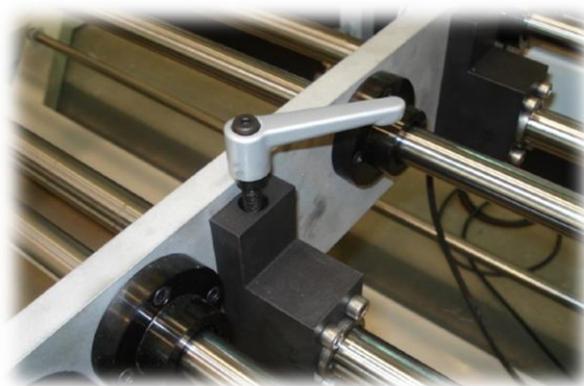
If this has been released, we may stop the unwinder motor using the red stop push button on the general panel.



- Place the end of the belt between the passage rollers, just as shown in the photo.



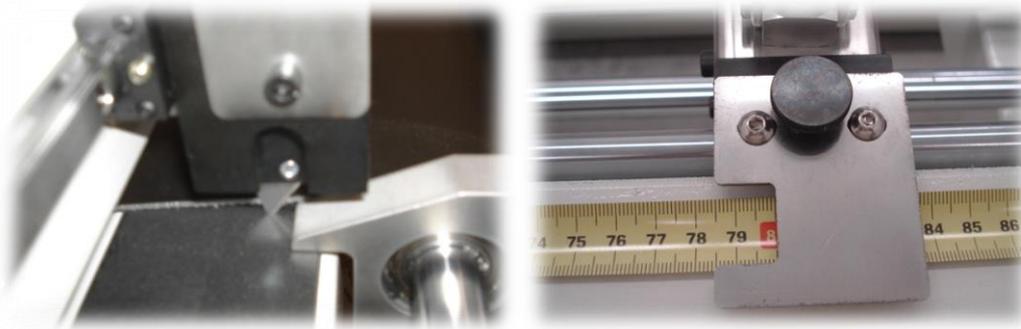
If necessary, open and adjust the guides loosen the guides handle.



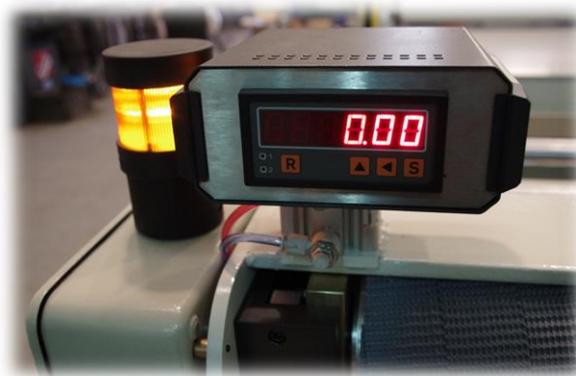
- When the end of the belt is between the traction rollers and well centred by the adjusted guides, we close the top pressure roller using the push button on the control panel. This operation is only possible when motor selector is in position M-2.



- Adjust the blades to the required measurement, taking the first blade as 0 reference, placing it just tangential to the left side of the belt.



- Set the measuring tape to zero by pressing the R button on its front panel.



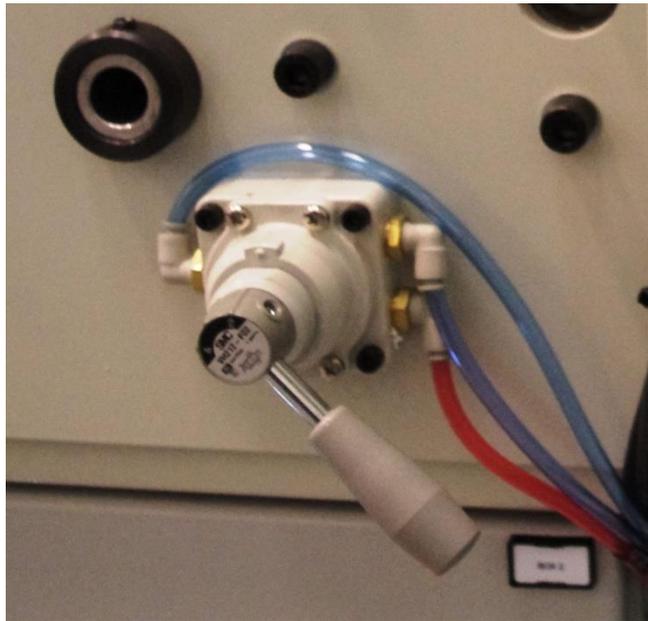
- Select the roller motor using the control M, in the M2 position.



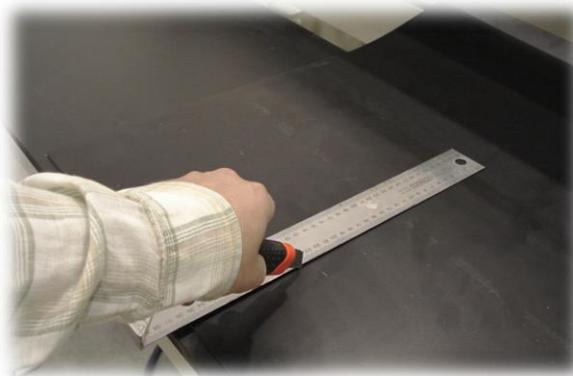
- Re-start the safety barrier of guide area with RESET button:



- Move the belt forward about 300 mm using the electric pedal or green button START.
- Raise the folding cutting bench using the lever valve and activate the driving motor at a slow speed, until the belt reaches the end of the bench.



- Proceed to manually cut the first uncut centimeters and lower the folding bench again.



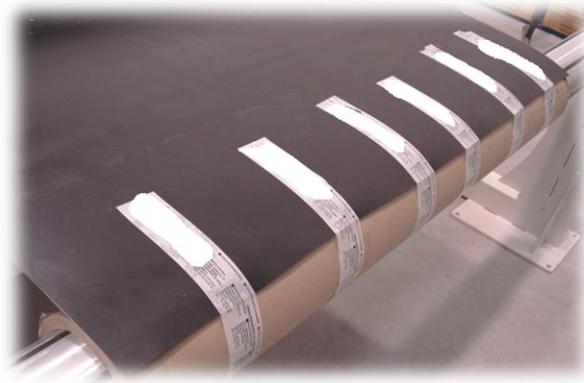
**NOTE: We may choose the cut by winding the belt on the winder axle, or cut with the traction rollers, allowing the belt to fall on the ground.**

**In either case, electric pedal action is performed at a limited speed for the operator's safety.**

**To cut at another desired speed, we must leave the scanner safety area and use the remote control after replacing the scanner area**

- Cut the necessary cardboard mandrels to the widths to be wound and put them onto the pneumatic shaft already placed on the safety chucks of the winder, placing a separation disk between each mandrel.
- Perfectly centre the mandrels with the ends of cut belt and proceed to inflate the pneumatic shaft to hold the mandrels.

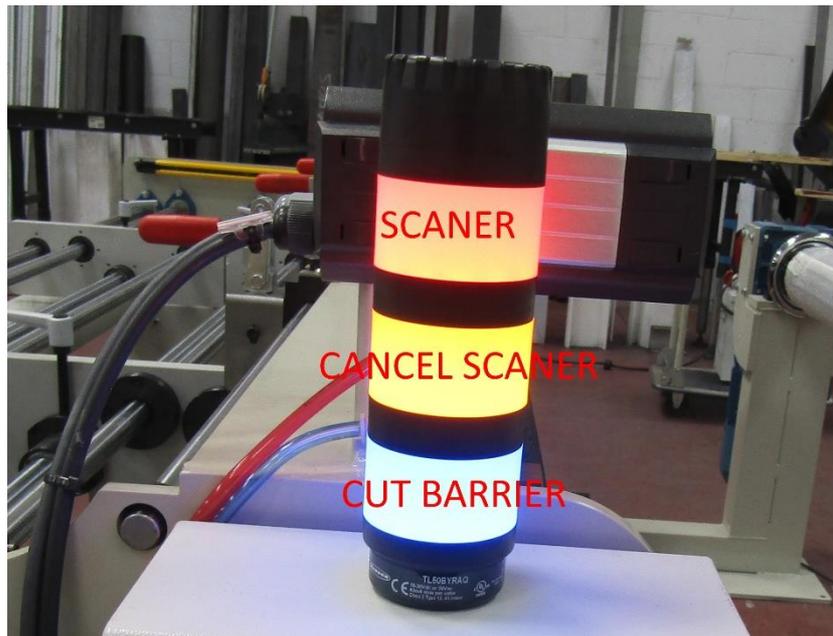
- Fix the ends of the belt to the cardboard mandrels using adhesive tape or metal staples, trying to ensure all the pieces have the same tension.



- Activate the winder motor with selector motor in M-1 position and feet pedal for 2 or 3 turns in order to tense the material along the whole machine; move the unwinding carriage if necessary, to align the two ends of the material.
- Leave the inside of the safety zone protected by beacons and reactivate the safety system using the automatic reactivation, you can see in the orange button located on the remote control.



To use the winder motor, is necessary that two safety systems (scanner and barrier) must be activated.



- Start the winder motor or rollers using the remote control, controlling the cutting speed using the control potentiometer and adjusting the braking la pressure using the pressure adjuster until reaching the desired length measurement.
- Unlock the blades from the belt and move the belt forward using the pedal until the end of the longitudinal cut is seen over the end of the rollers.
- Raise the cutting table to manually perform the transversal cut.
- Recover the belt spread out using the unwinder motor and proceed to pack the surplus slab using the unwinder controls.



- Start the winder motor or rollers using the remote control, controlling the cutting speed using the control potentiometer and adjusting the braking la pressure using the pressure adjuster until reaching the desired length measurement.

- 
- Unlock the blades from the belt and move the belt forward using the pedal until the end of the longitudinal cut is seen over the end of the rollers.
  - Raise the cutting table to manually perform the transversal cut.
  - Recover the belt spread out using the unwinder motor and proceed to pack the surplus slab using the unwinder controls.

- **Maintenance and care**

- Always keep the belt passage bars clean. Use alcohol or methanol to clean them.
- Clean and keep the mobile guide screw-threads lubricated with machine oil.
- Protect the pneumatic shafts from blows by using the axle bearing carriages to prevent particles that might cause damage to the air chamber and pressure loss from entering.
- Place the heavy slabs softly on the rotation chucks, avoiding knocking the closing elements, to thus maintain the shaft ends intact and facilitate their introduction and extraction.
- Do not use too long pins or staples to fix the belt ends to the cardboard mandrel. These may cause scratching or pitting of the aluminium body of the shafts, that may occasionally cause severe injuries.
- Check and replace the blades periodically, to obtain a clean cut with the least friction.
- Check the screw-thread drive chains and unwinder drive monthly.
- Always adjust and limit the unwinder braking pressure for the different materials, in order to avoid excess exertion on the mechanical elements and maintain the correct cutting length measurement.
- Replace the bottom nylon blade rest plate when necessary due to excessive wear.
- Avoid loading very heavy narrow slabs in the centre of the axles in order to prevent them bending or breaking.

- **Electrical drawings:**

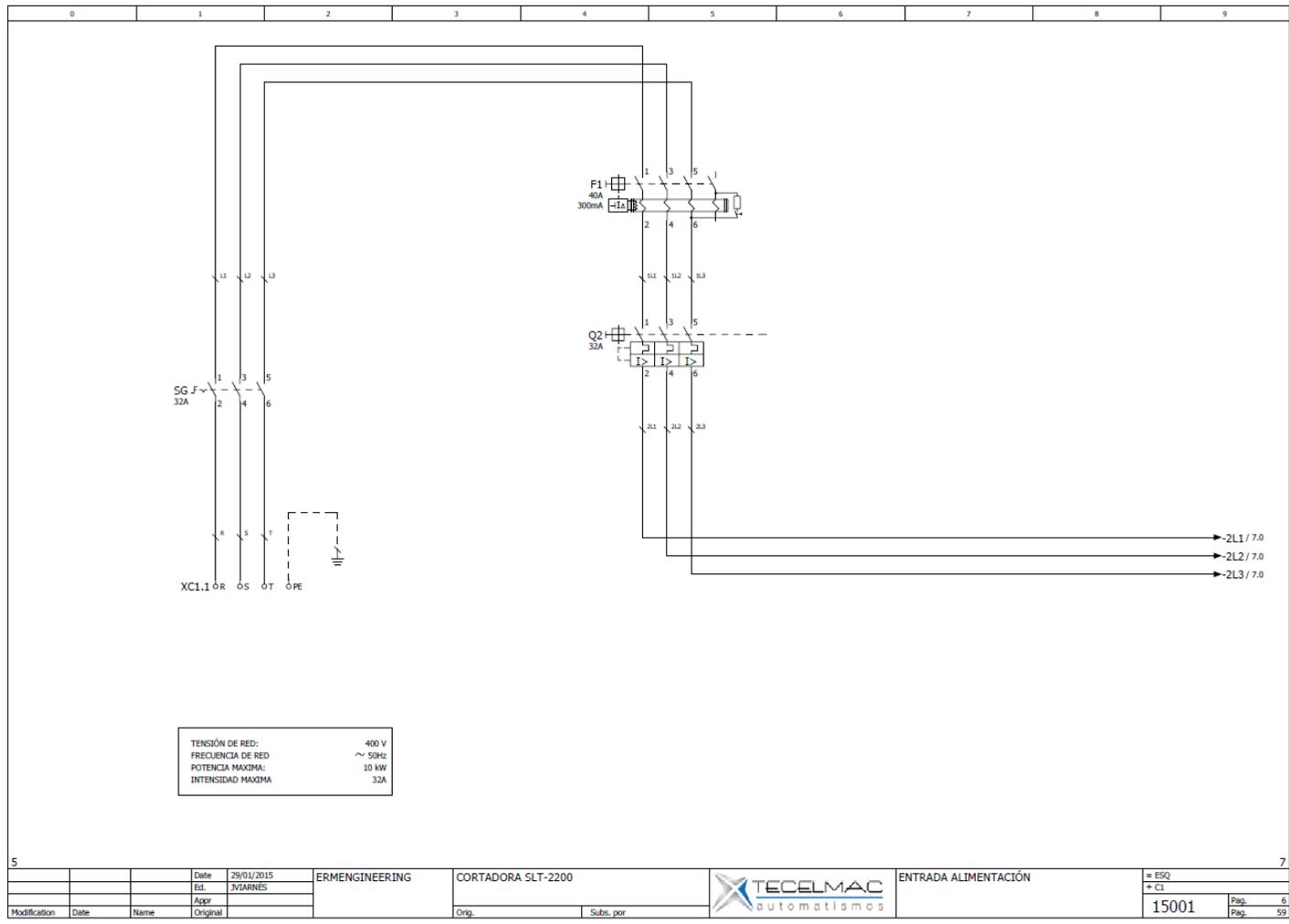
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# Use and maintenance manual

Belt slitter

Model: LS-200

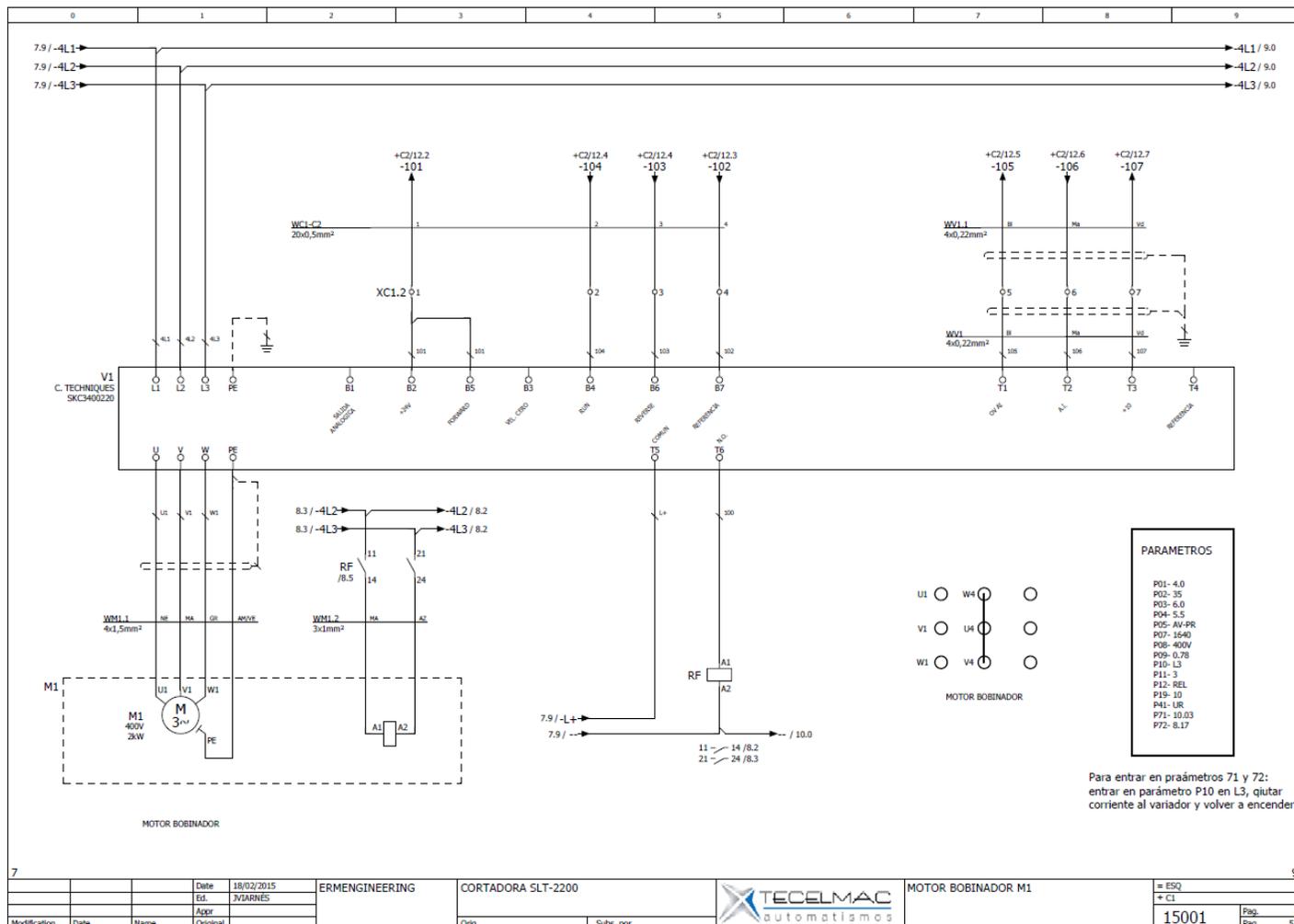




# Use and maintenance manual

Belt splitter

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**Use and maintenance manual**

Belt splitter

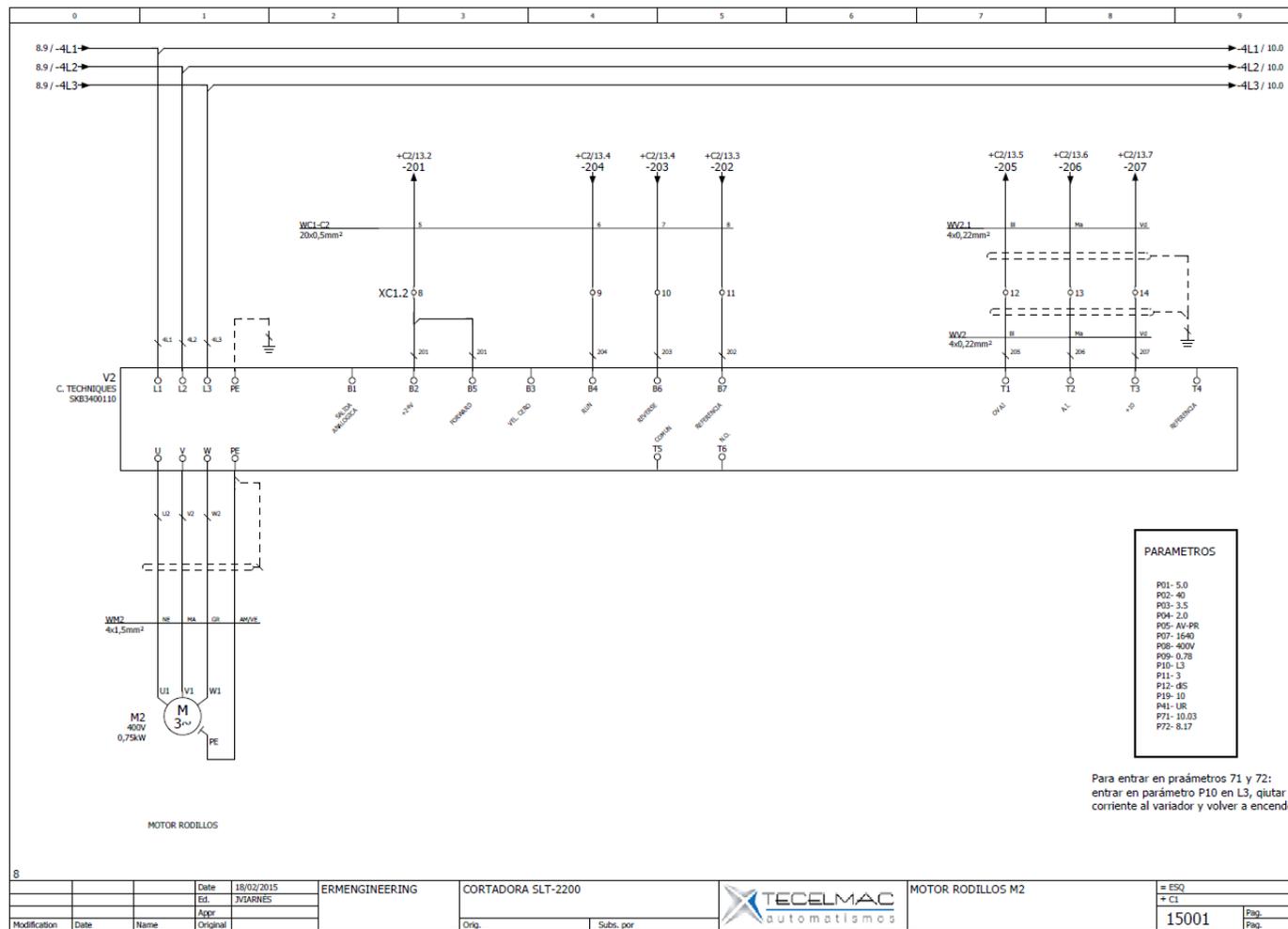
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# Use and maintenance manual

Belt splitter

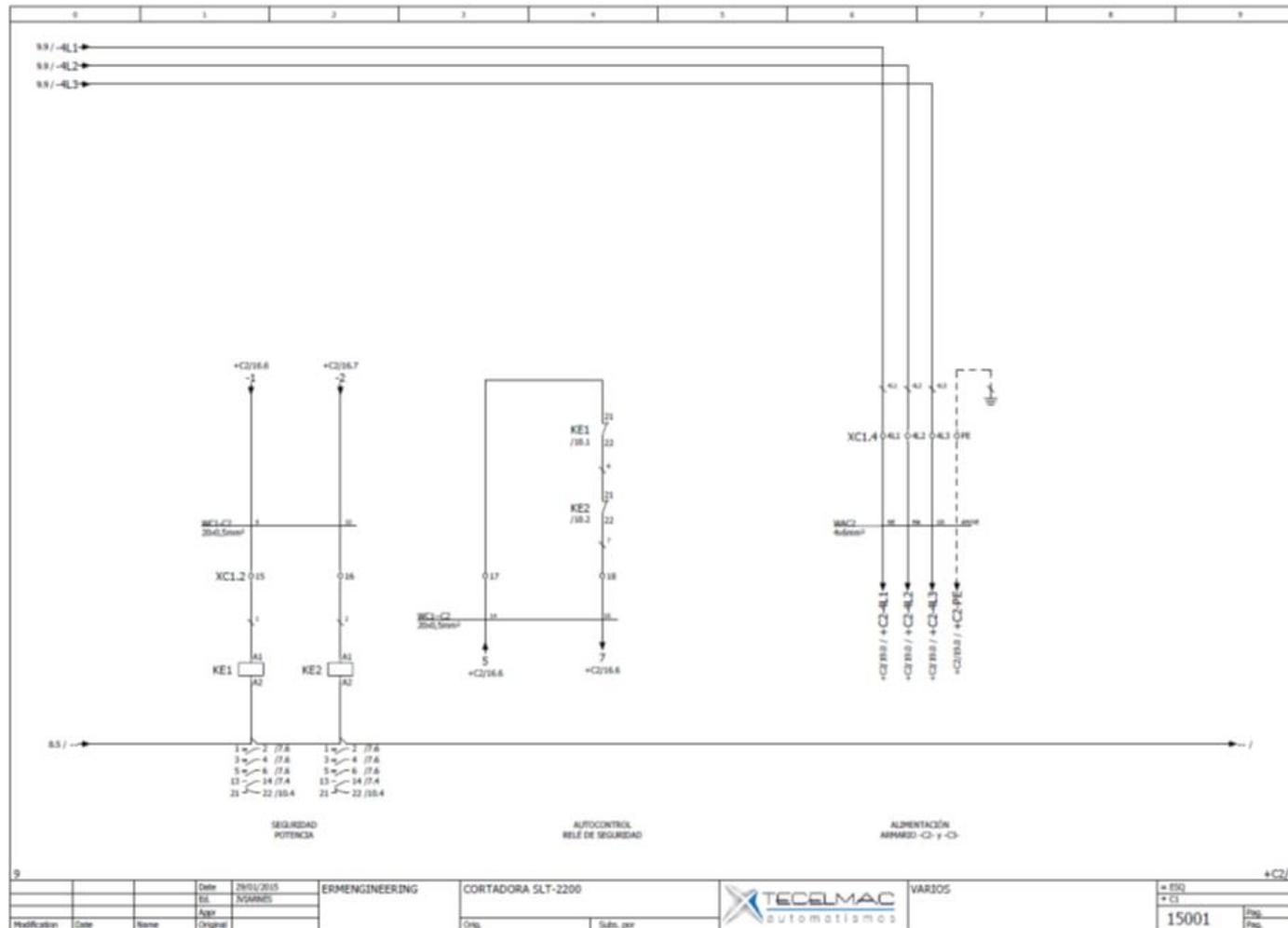
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# Use and maintenance manual

Belt slitter

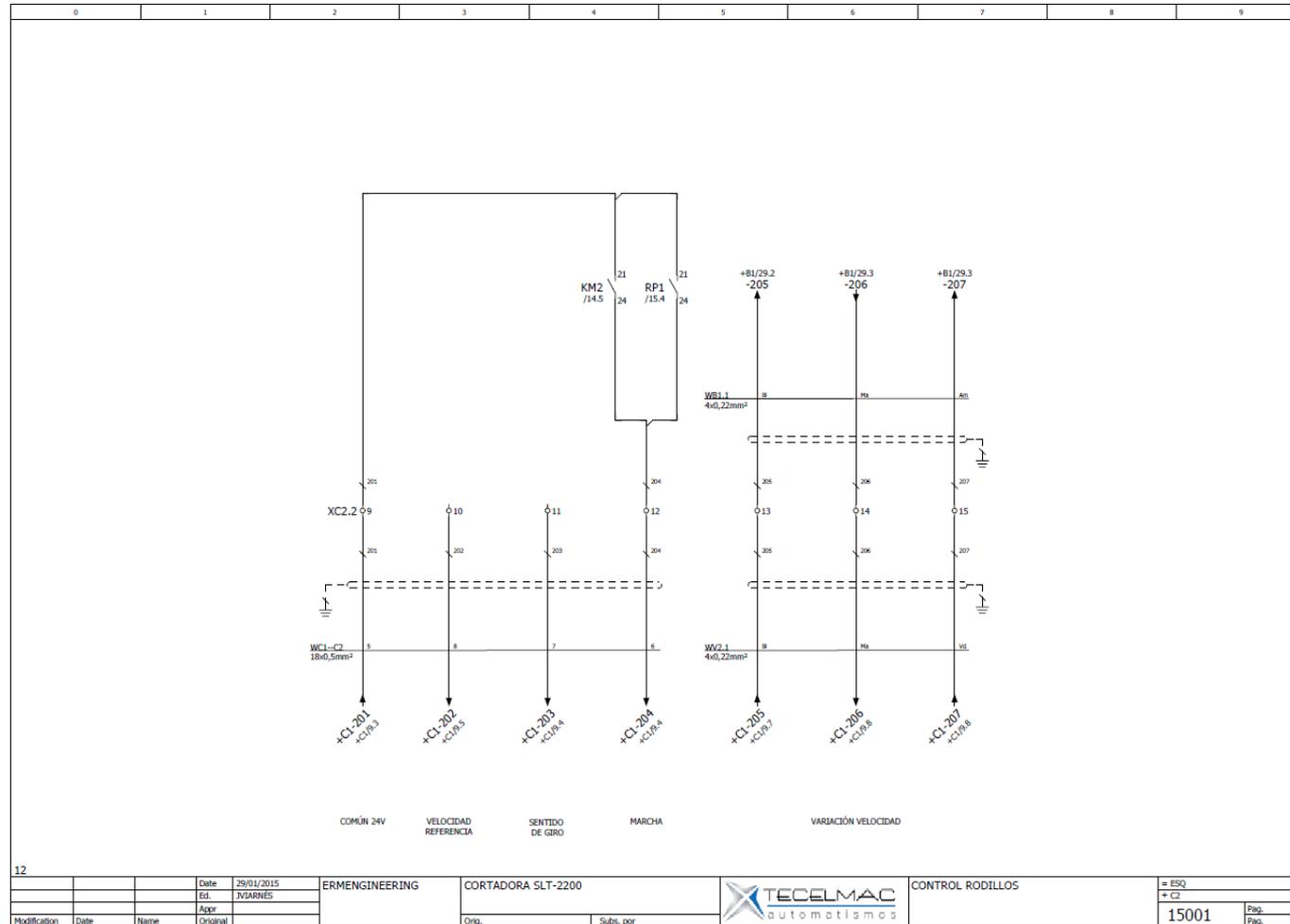
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# Use and maintenance manual

Belt splitter

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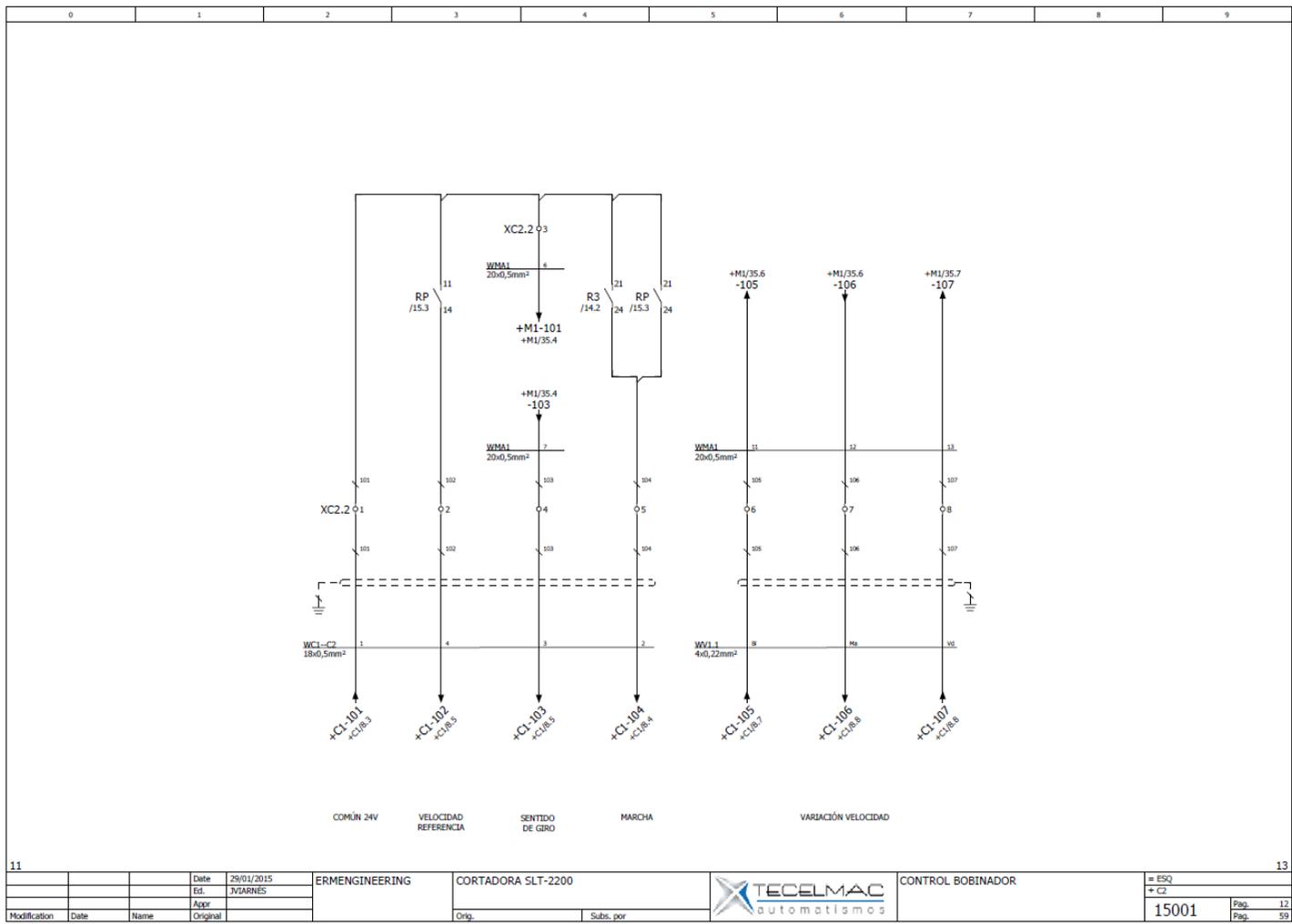




# Use and maintenance manual

Belt splitter

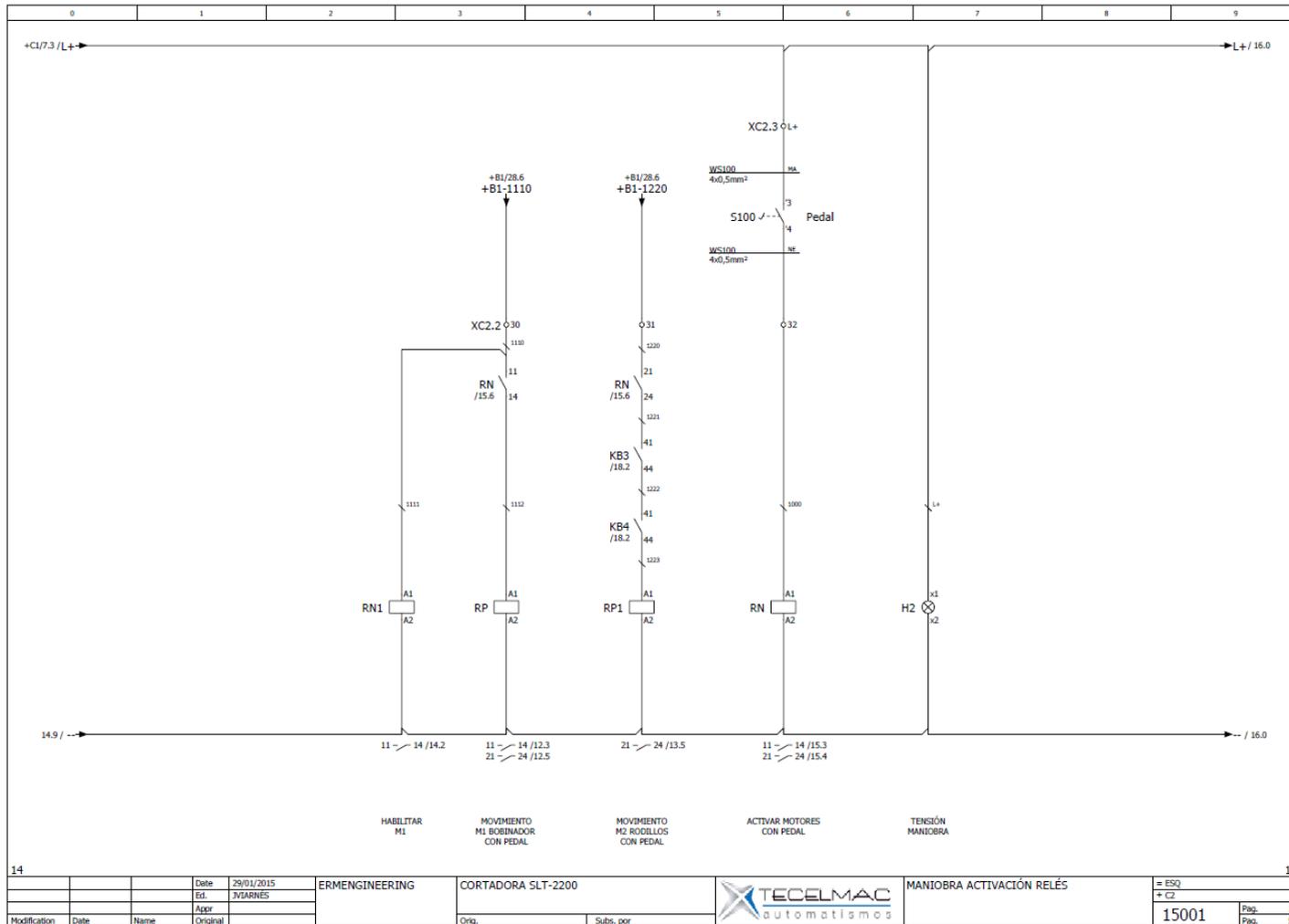
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# Use and maintenance manual

Belt splitter

Model: LS-200



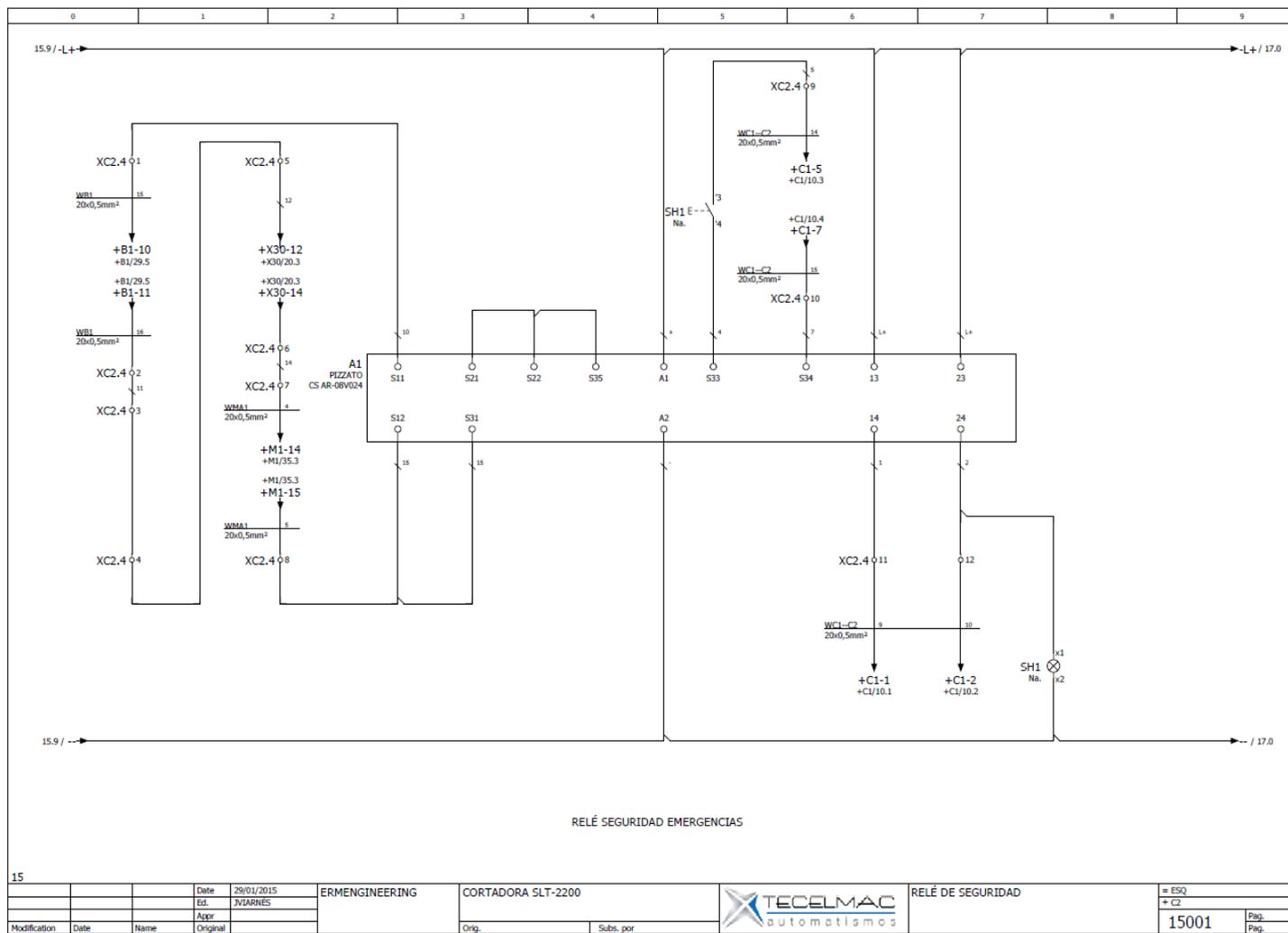




# Use and maintenance manual

Belt splitter

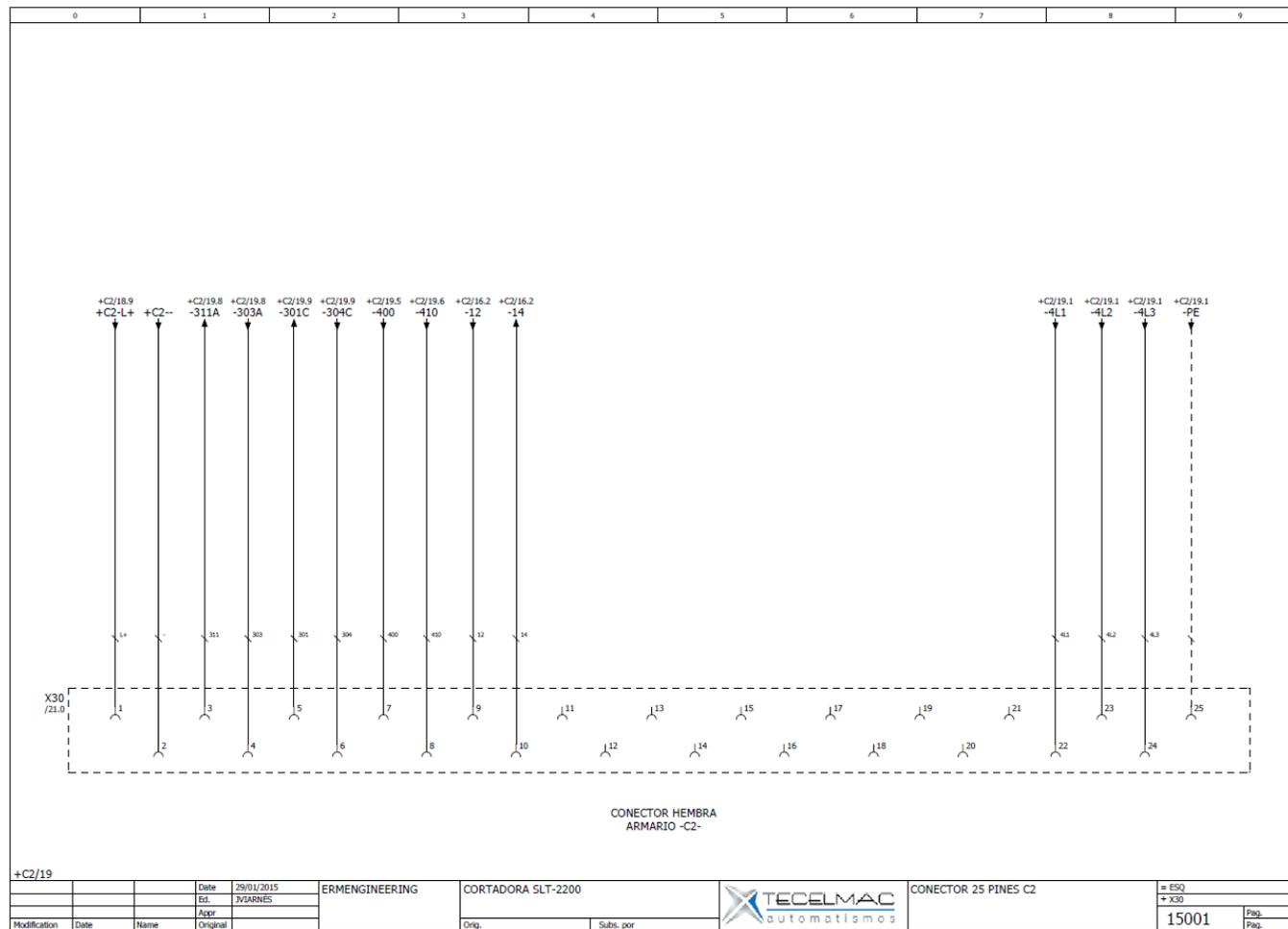
Model: LS-200



**Use and maintenance manual**

Belt splitter

Model: LS-200

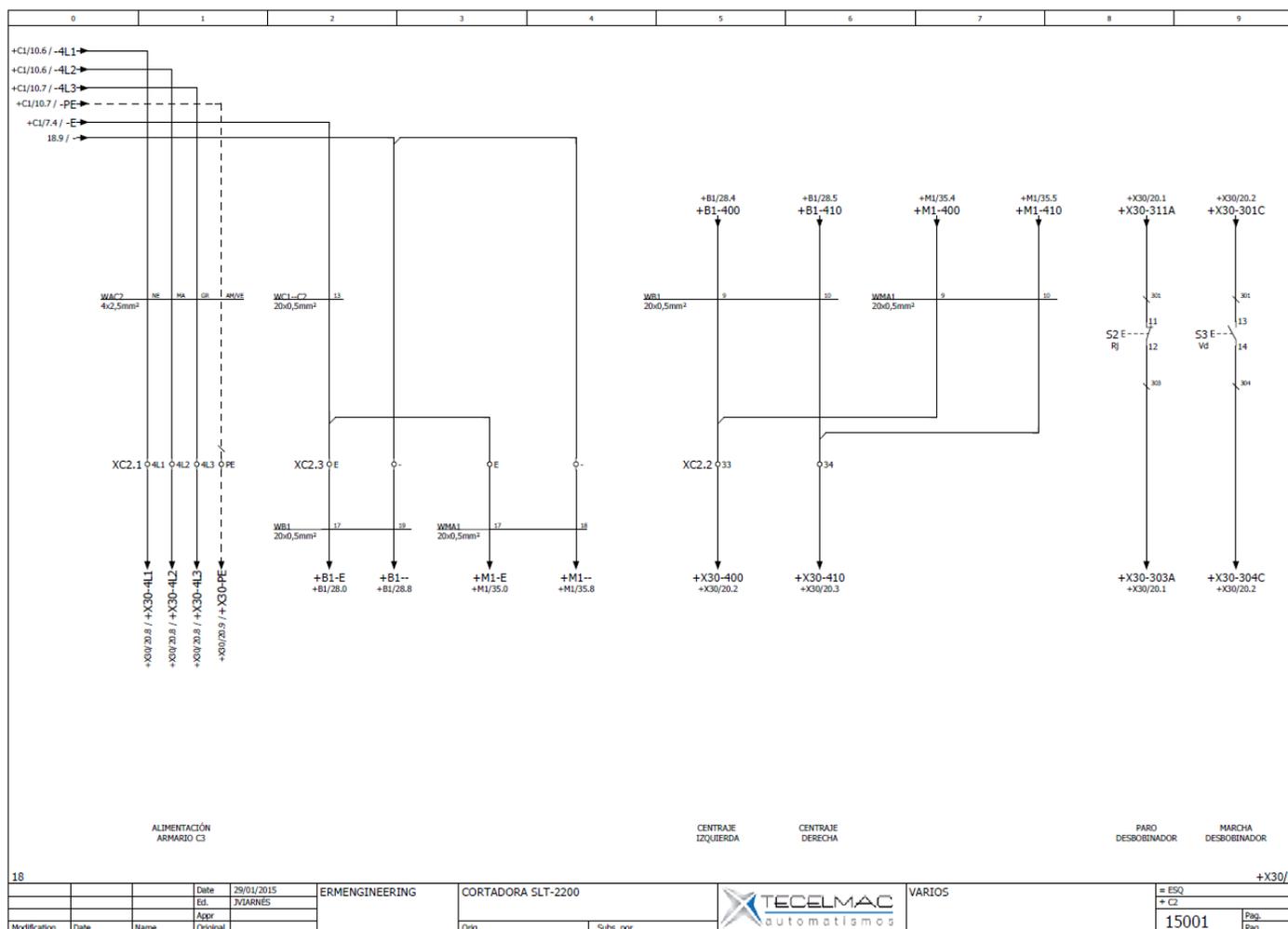


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# Use and maintenance manual

Belt slitter

Model: LS-200





**Use and maintenance manual**

Belt splitter

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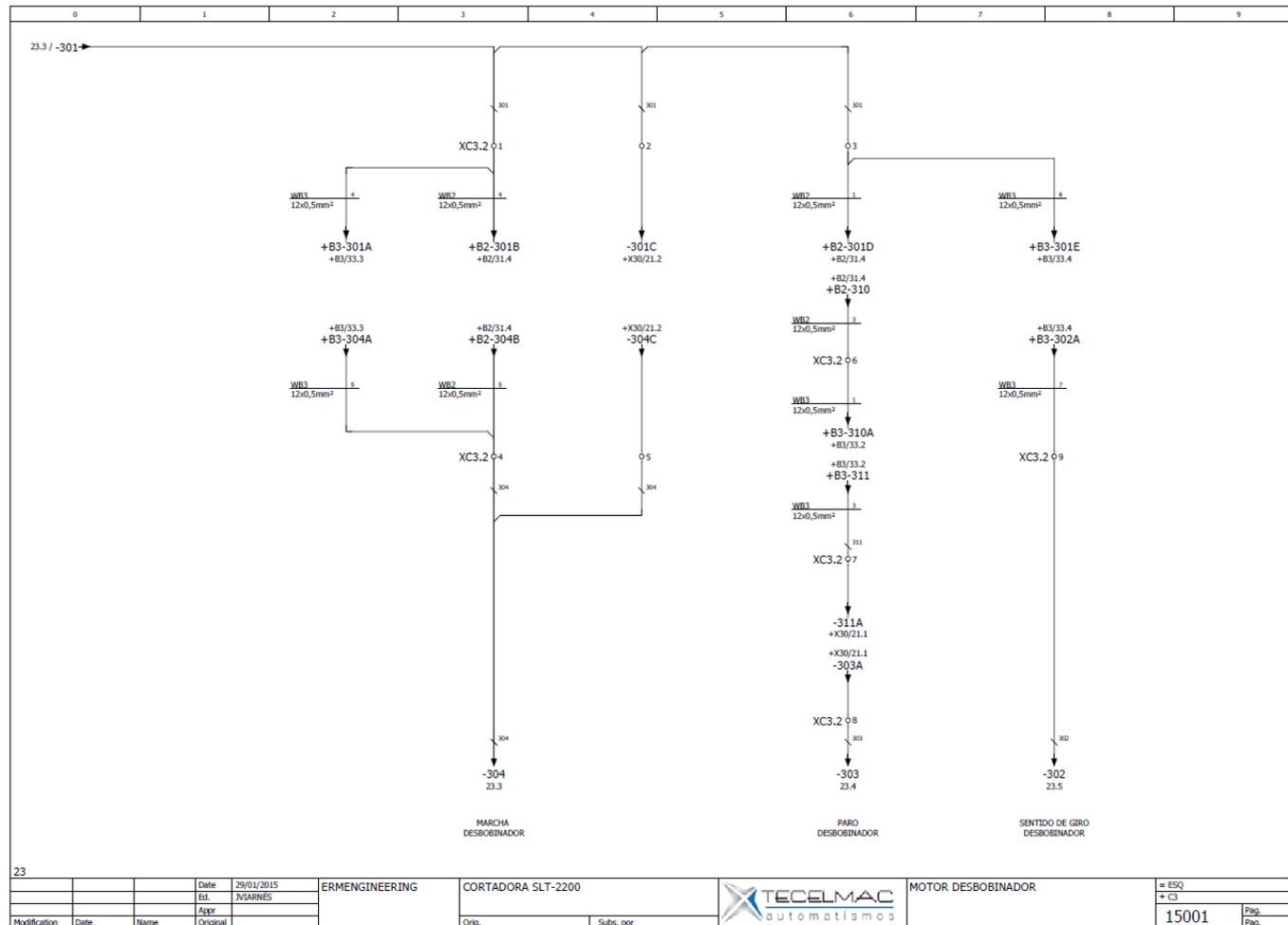
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# Use and maintenance manual

Belt splitter

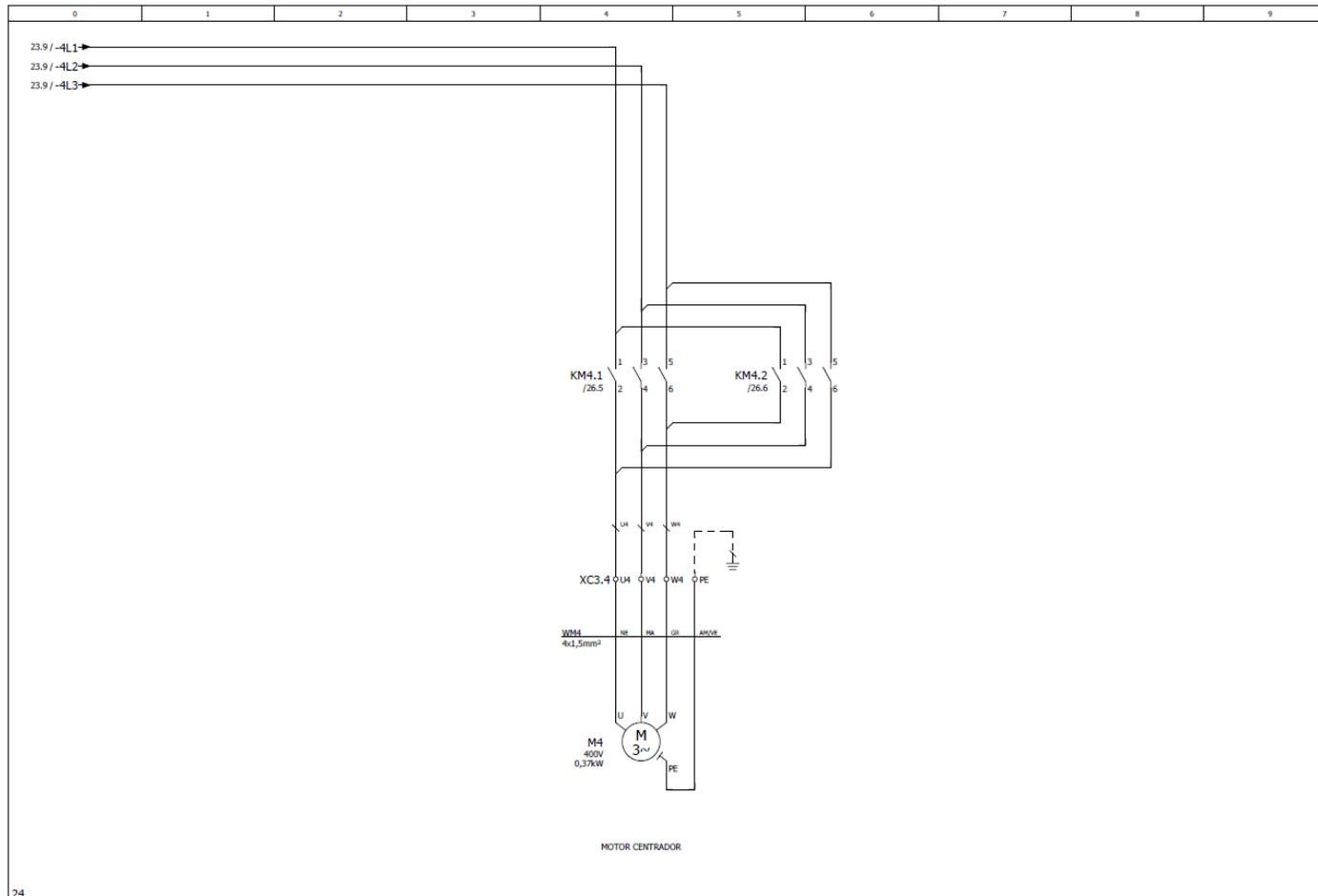
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# Use and maintenance manual

Belt splitter

Model: LS-200

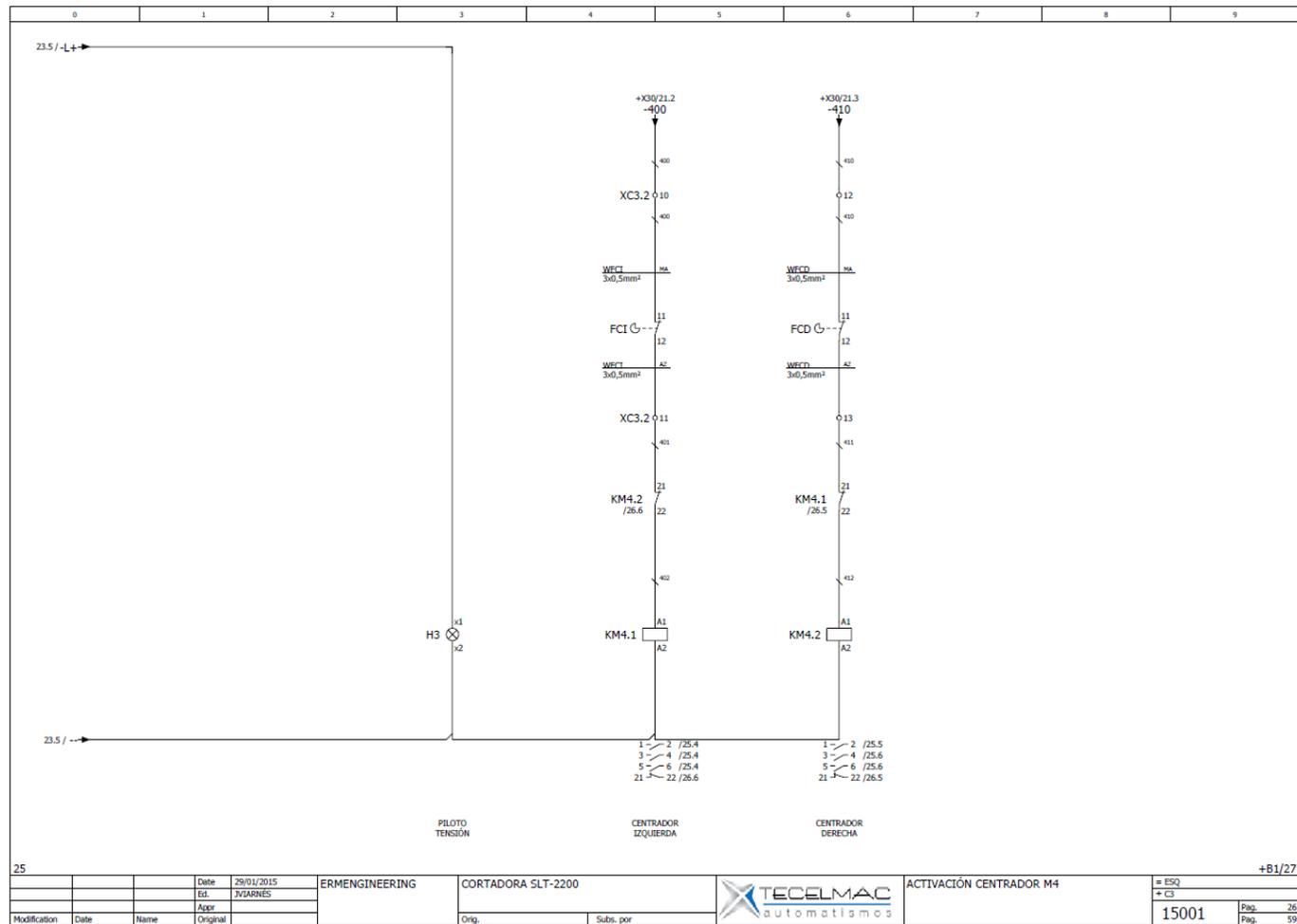


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# Use and maintenance manual

Belt splitter

Model: LS-200



**Use and maintenance manual**

Belt slitter

Model: LS-200

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# Use and maintenance manual

Belt splitter

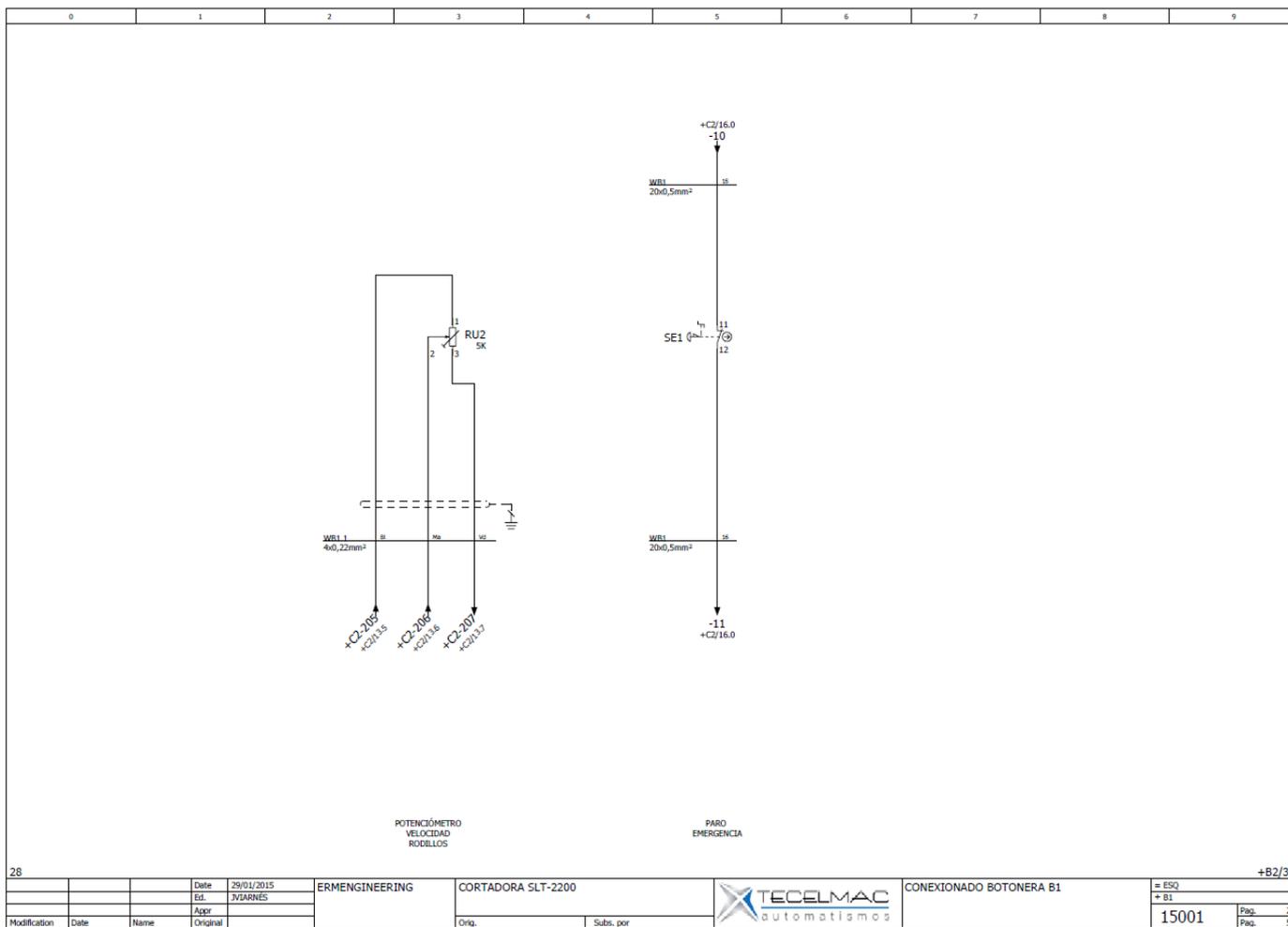
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Modification	Date	Name	Original		Orig.	Subs. por			15001	Pag. 30 Pag. 59

# Use and maintenance manual

Belt splitter

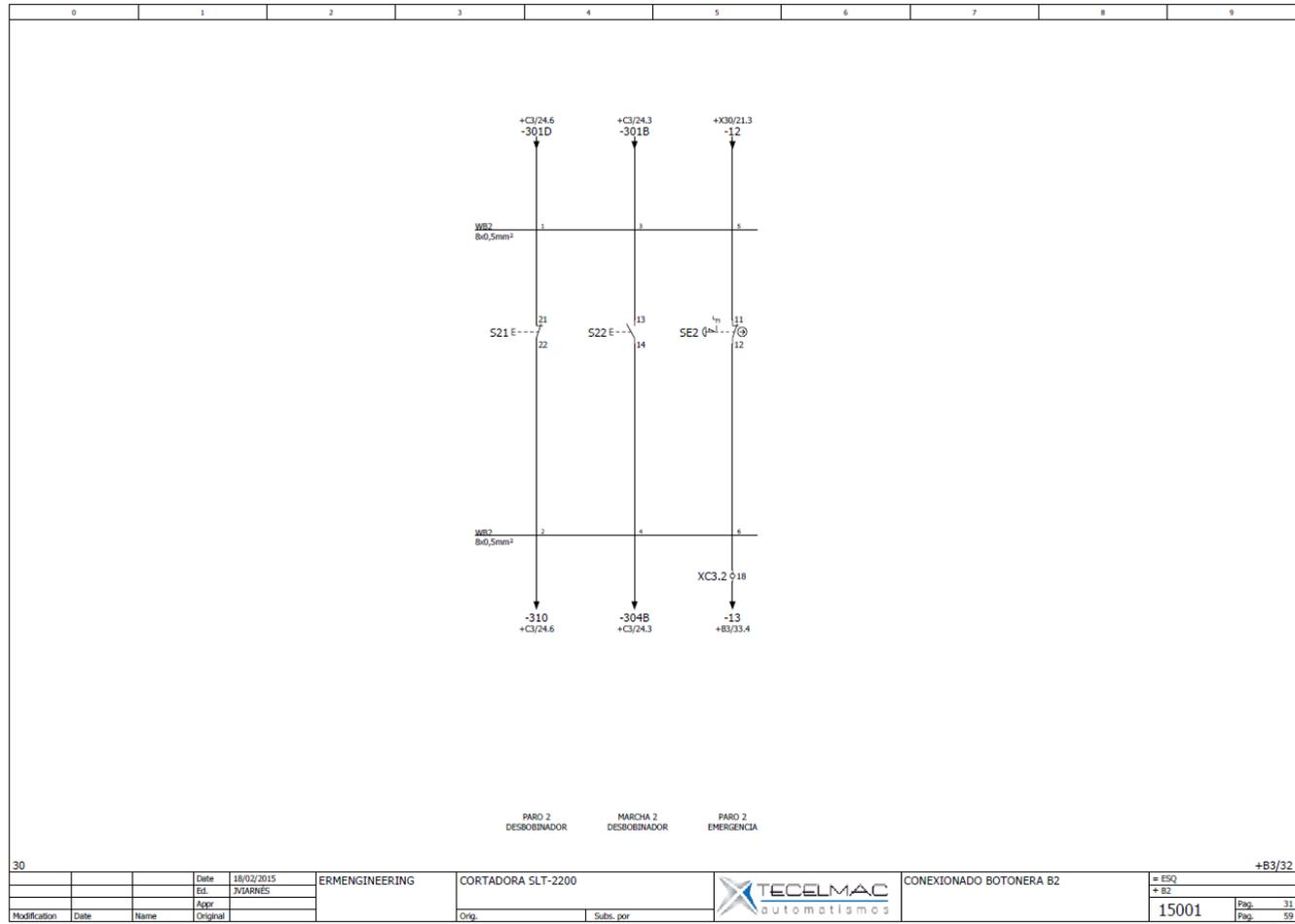
Model: LS-200



# Use and maintenance manual

Belt splitter

Model: LS-200

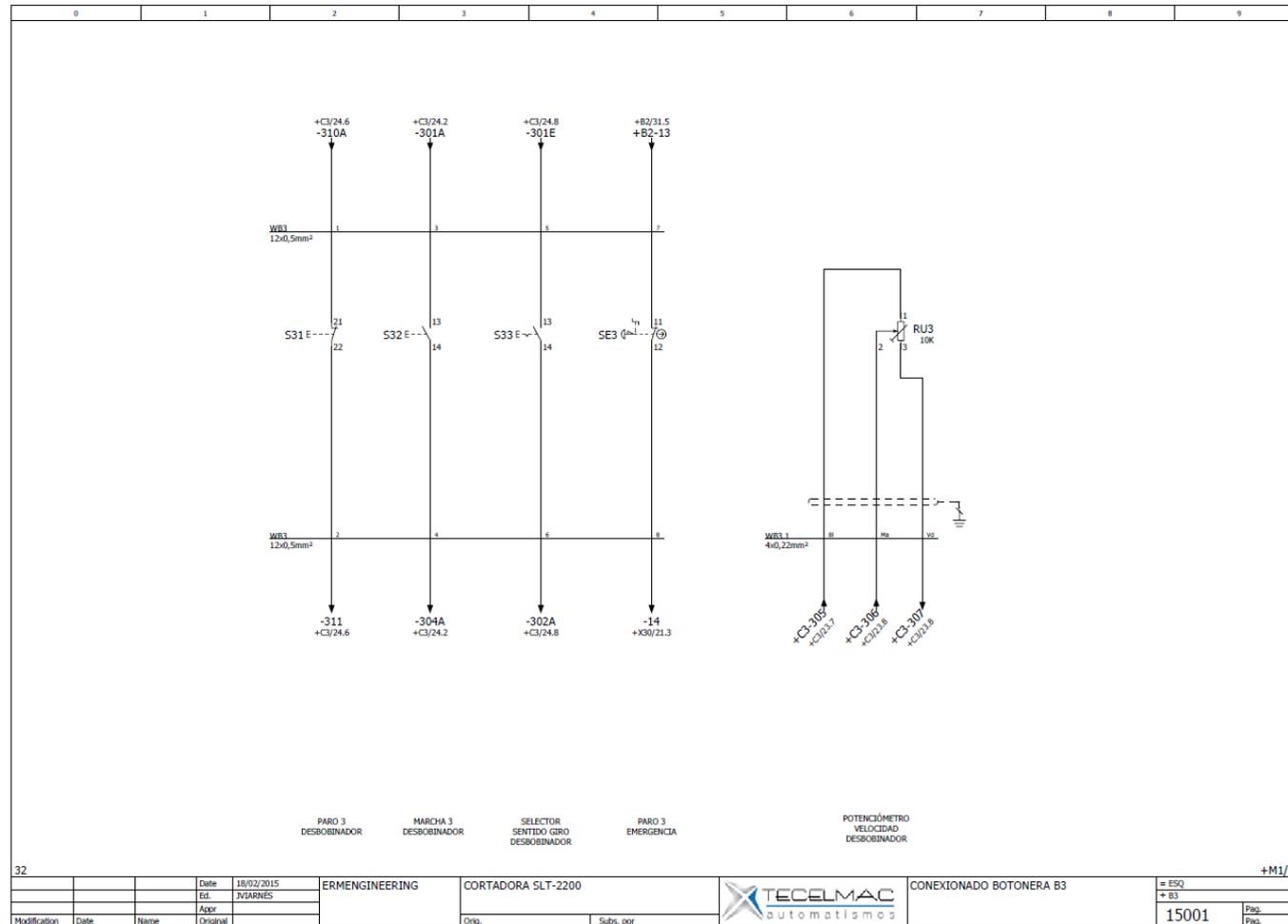


**Use and maintenance manual**

Belt slitter

Model: LS-200

0	1	2	3	4	5	6	7	8	9	
<p>BOTONERA -B3-</p>										
+B2/31										
		Date	21/01/2015	ERMENGINEERING	CORTADORA SLT-2200		PORTADA BOTONERA B3	= ESQ		33
		Ed.	3/2015					+ B3		
		Appr						15001	32	
Modification	Date	Name	Original	Orig.	Subs_por			15001	59	

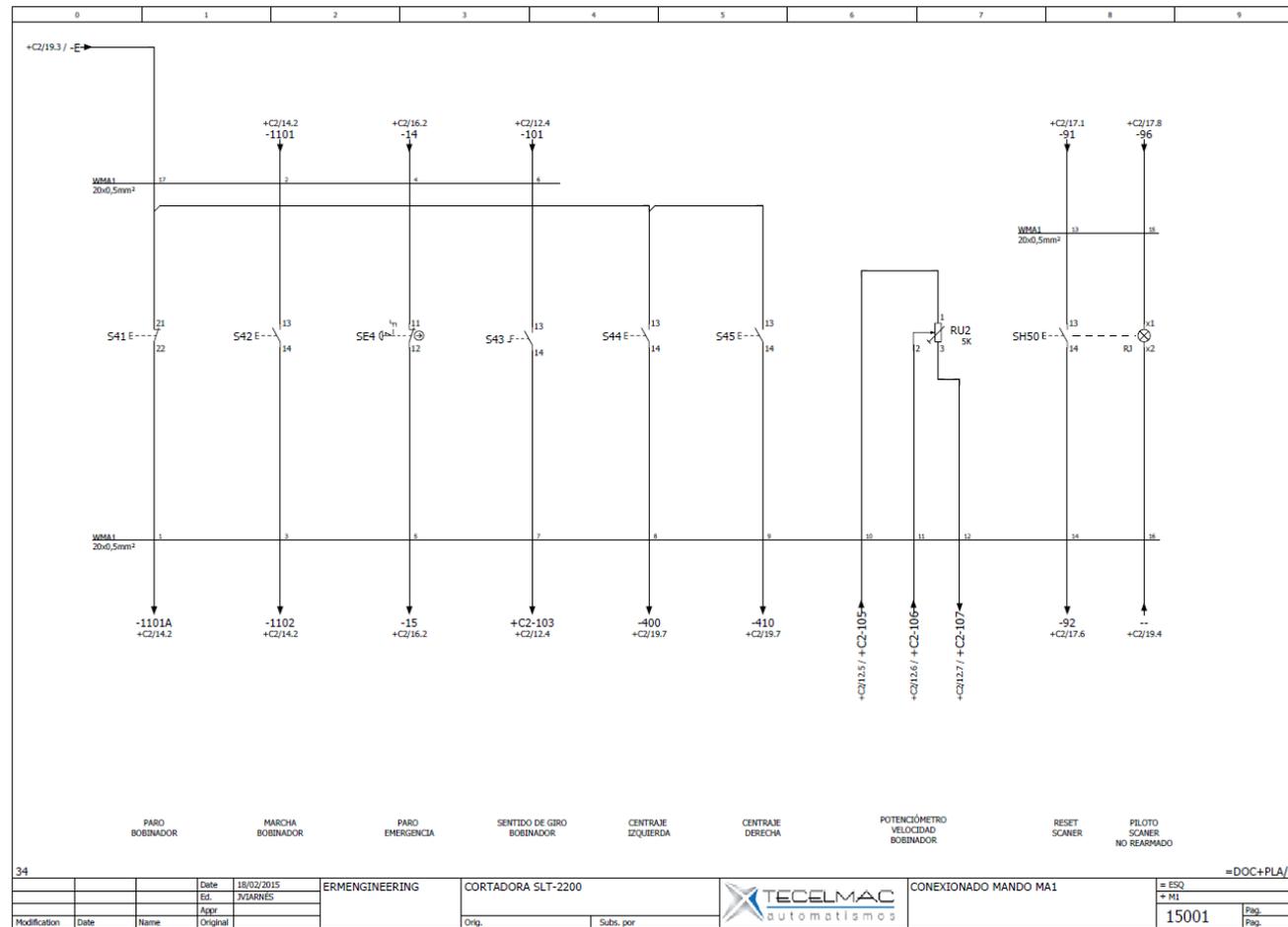


0	1	2	3	4	5	6	7	8	9	
<div style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 20px 0;"> <p style="font-size: 24px; margin: 0;">MANDO DE CONTROL -M1-</p> </div>										
+B3/33			Date: 21/01/2015		ERMENGINEERING		CORTADORA SLT-2200		35	
			Est. VIARNES						= ESQ	
			Appr						+ M1	
Modification		Date	Name	Original	Orig.	Subs. por			15001	Pag. 34
										Pag. 59

# Use and maintenance manual

Belt splitter

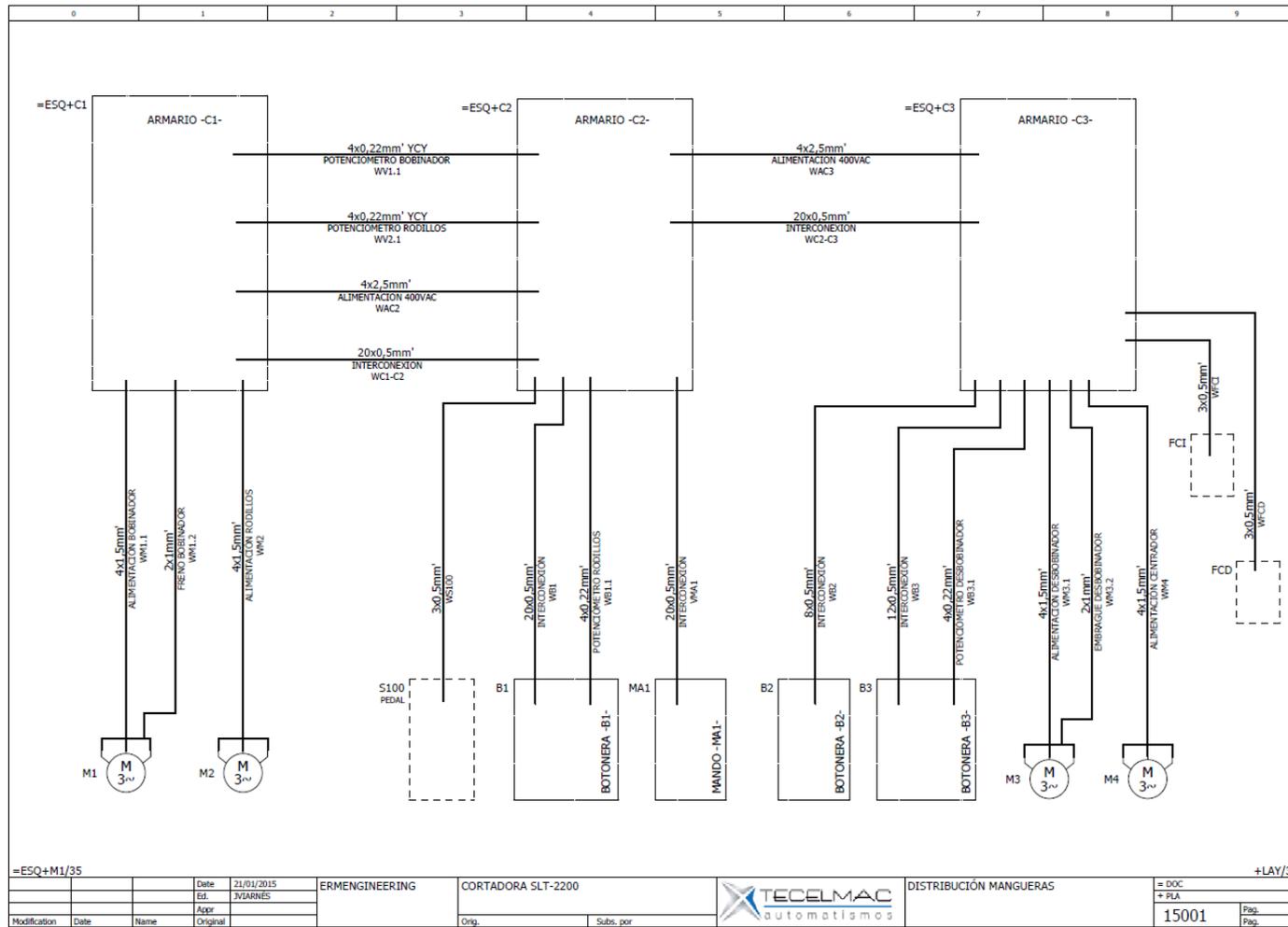
Model: LS-200



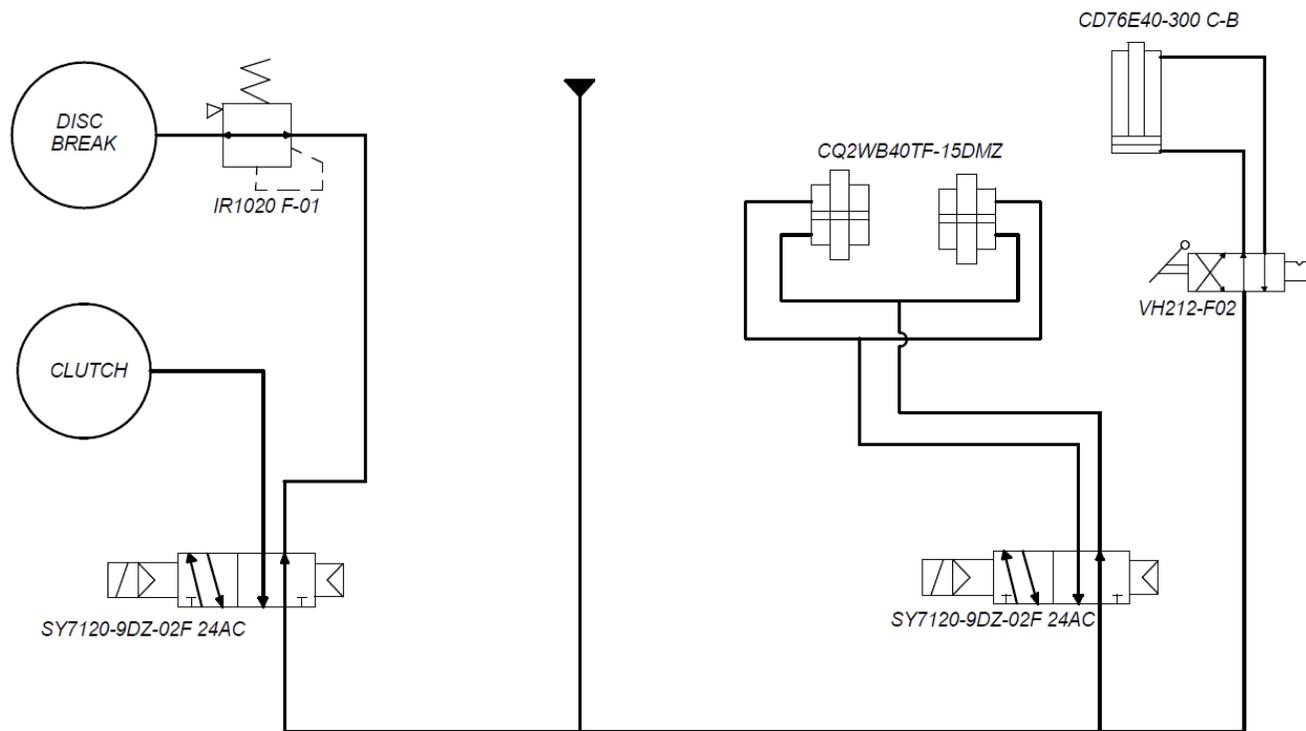
# Use and maintenance manual

Belt slitter

Model: LS-200



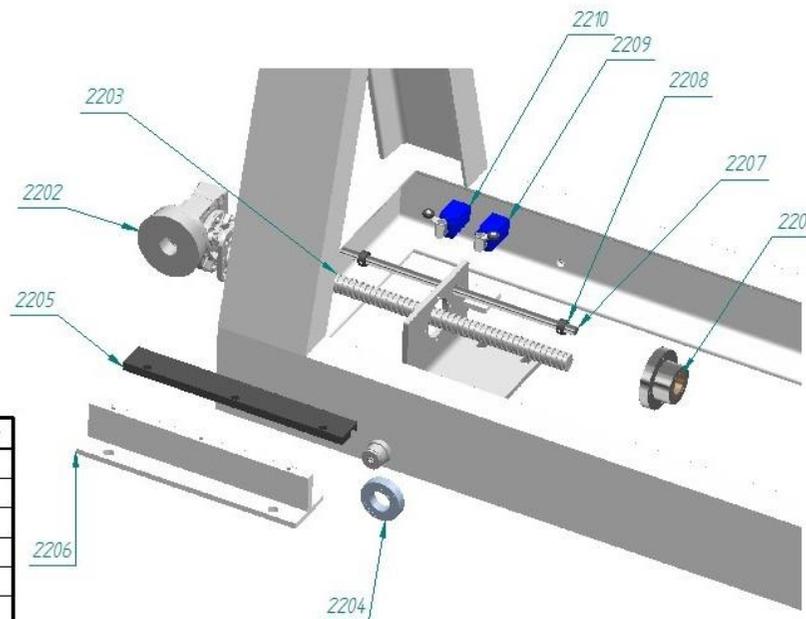
- **Pneumatic drawing:**



Nombre: ESQUEMA NEUMATICO SLT-2200		
Nº Ref:	Material:	Unid:
Acabado:	Fecha: 27/09/2010	

- **Spare parts:**

Part N°	Name	Quantity
2201	BRIDA HUSILLO.par	1
2202	MOTOR HUSILLO.par	1
2203	HUSILLO CENTRADO.par	1
2204	Bearing_DN_625_L_1989_6207_RS_v650.par	4
2205	Tapa Carril.par	4
2206	Carril centrador.par	4
2207	Barra Finales Carrera.par	1
2208	Ring_DN_705_A15_v650.par	2
2209	Micro 2.asm	1
2210	Micro.asm	1



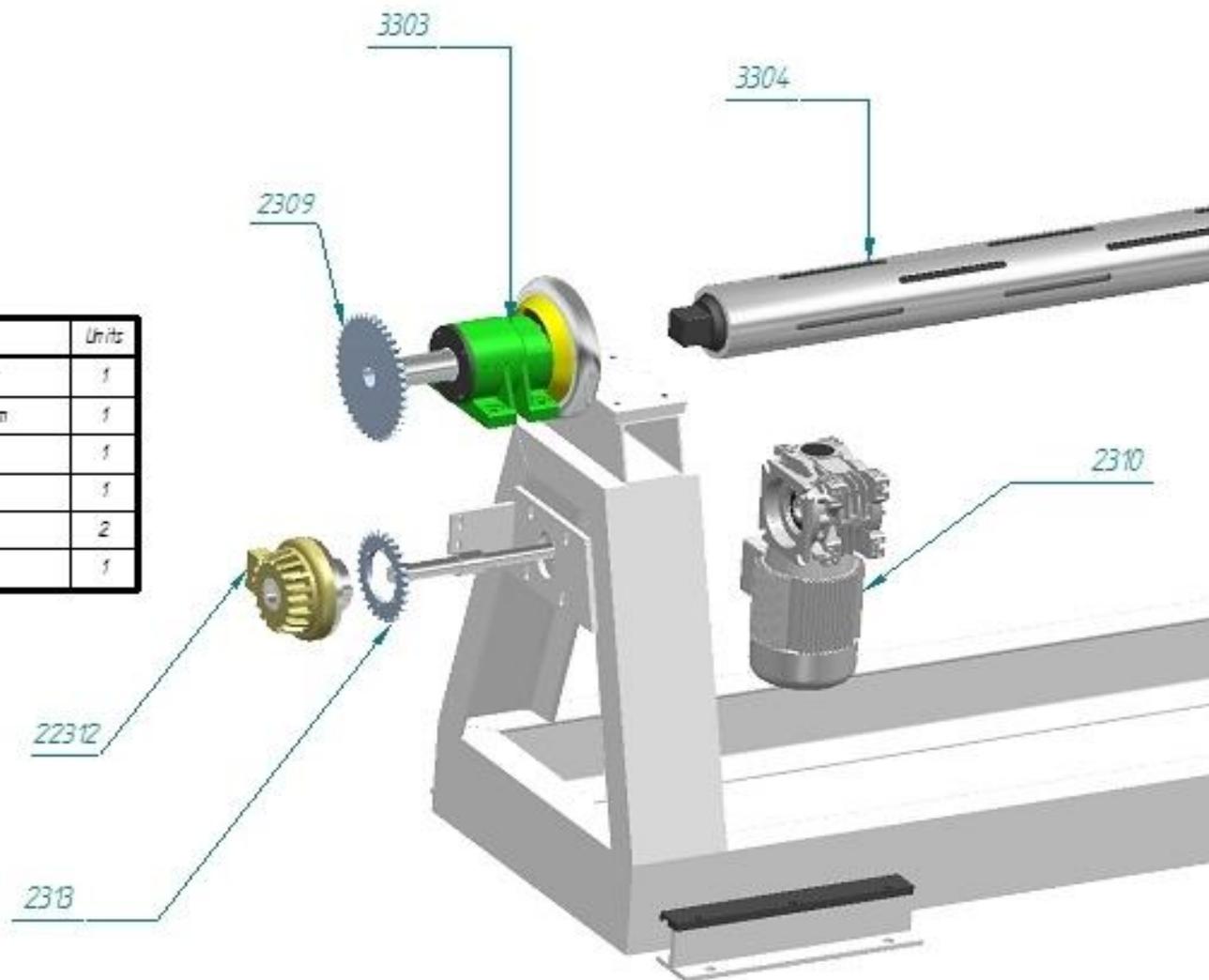


# Use and maintenance manual

Belt splitter

Model: LS-200

Number	Name	Units
2309	PIÑON Z40 5,80400 GRANCE.par	1
2310	Conjunto Motor desbrindad.asm	1
2311	Eje embrage	1
23B	Corona z28 3/8	1
3303	Guitín serie 150	2
3304	Eje expansion 3mt	1

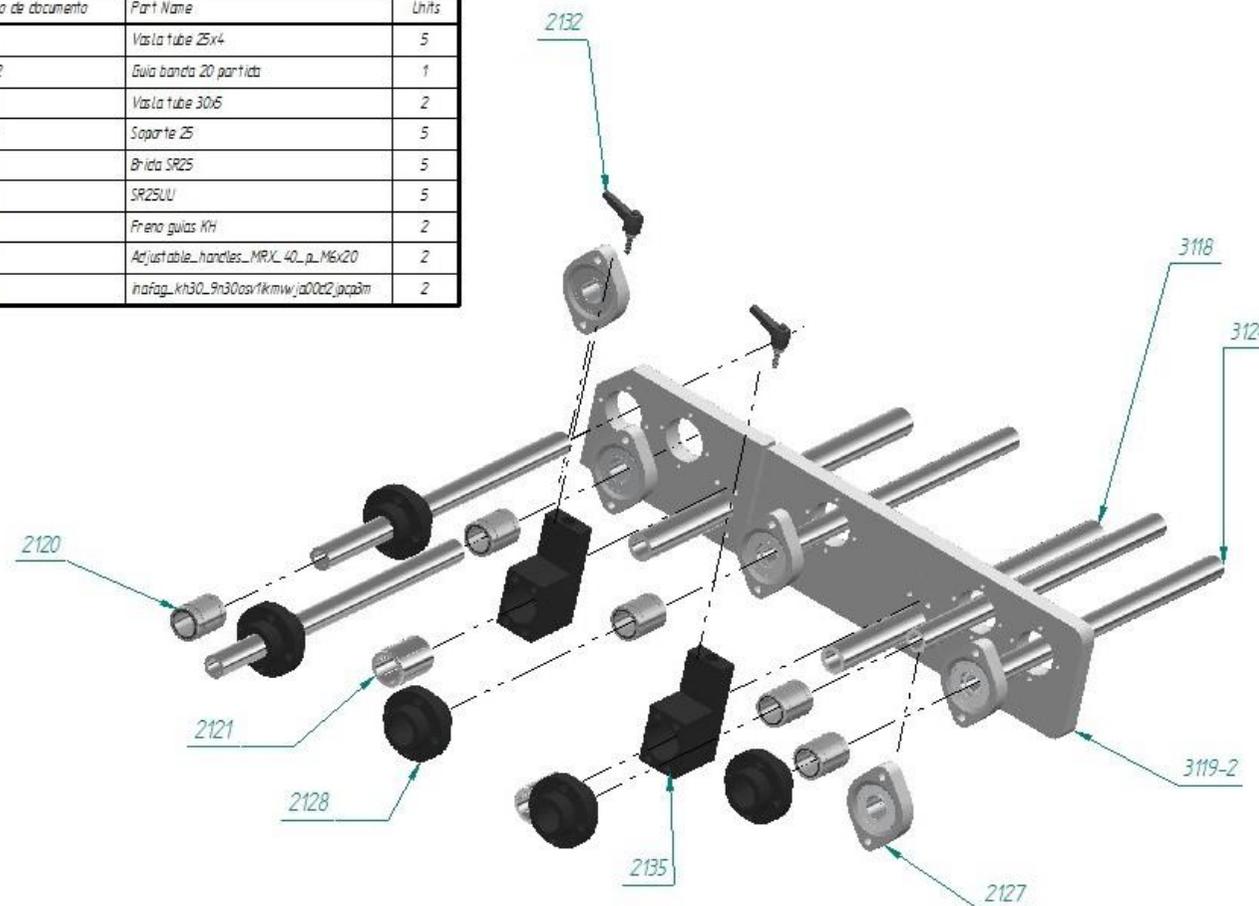


# Use and maintenance manual

Belt splitter

Model: LS-200

Número de documento	Part Name	Units
3124	Vasla tube 25x4	5
3119-2	Guia banda 20 partida	1
3118	Vasla tube 30x6	2
2127	Soporte 25	5
2128	Brida SR25	5
2120	SR25LU	5
2135	Freno guías KH	2
2132	Adjustable_handles_MRX_40_p_M6x20	2
2121	Infag_kh30_9h30osv1krmw_ja00c2_jacqm	2

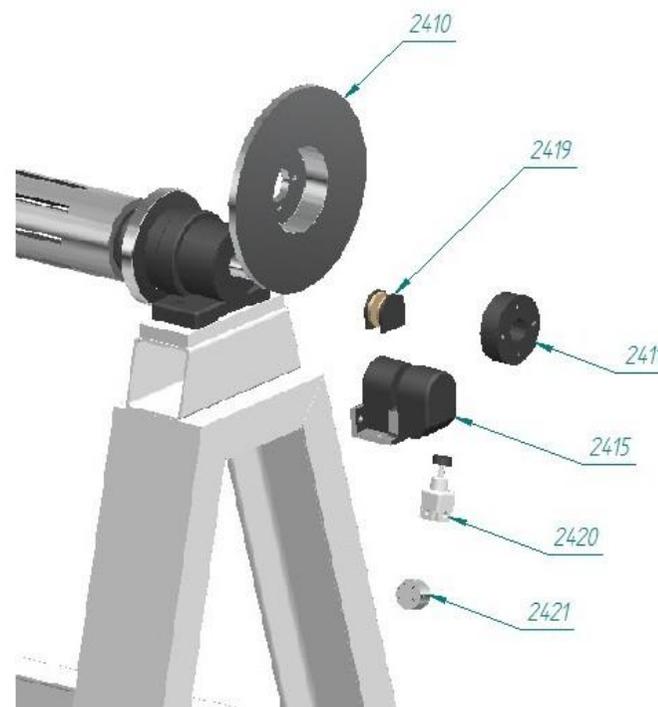


## Use and maintenance manual

Belt splitter

Model: LS-200

Part N°	Name	Quantity
2410	Disco PK300.par	1
2411	Brida Disco.par	1
2415	Caliper CX.par	1
2419	Pastilla frenopar	2
2420	R1000_F01.par	1
2421	G43_2_01.par	1

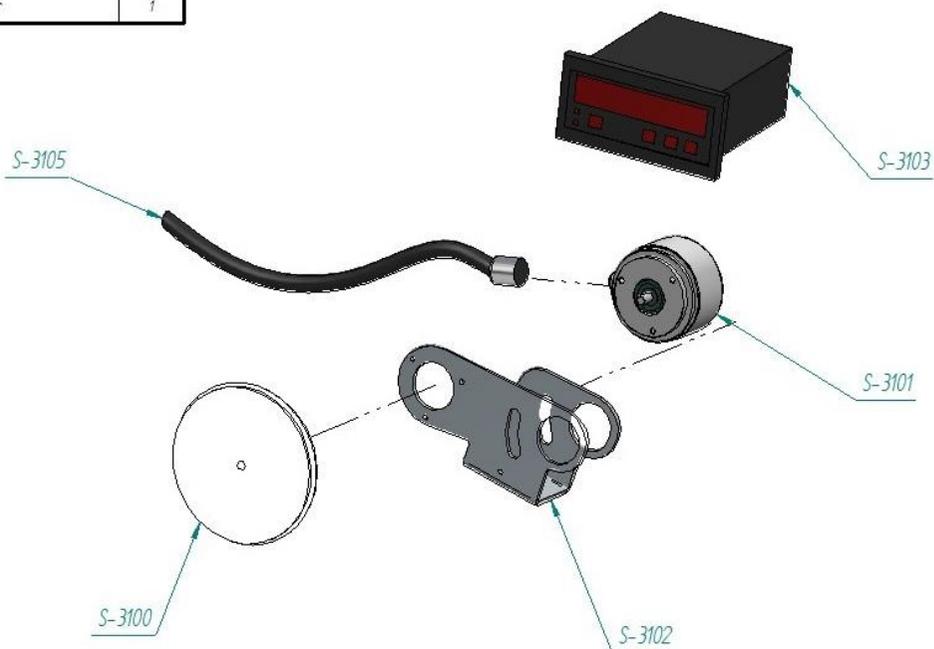


# Use and maintenance manual

Belt splitter

Model: LS-200

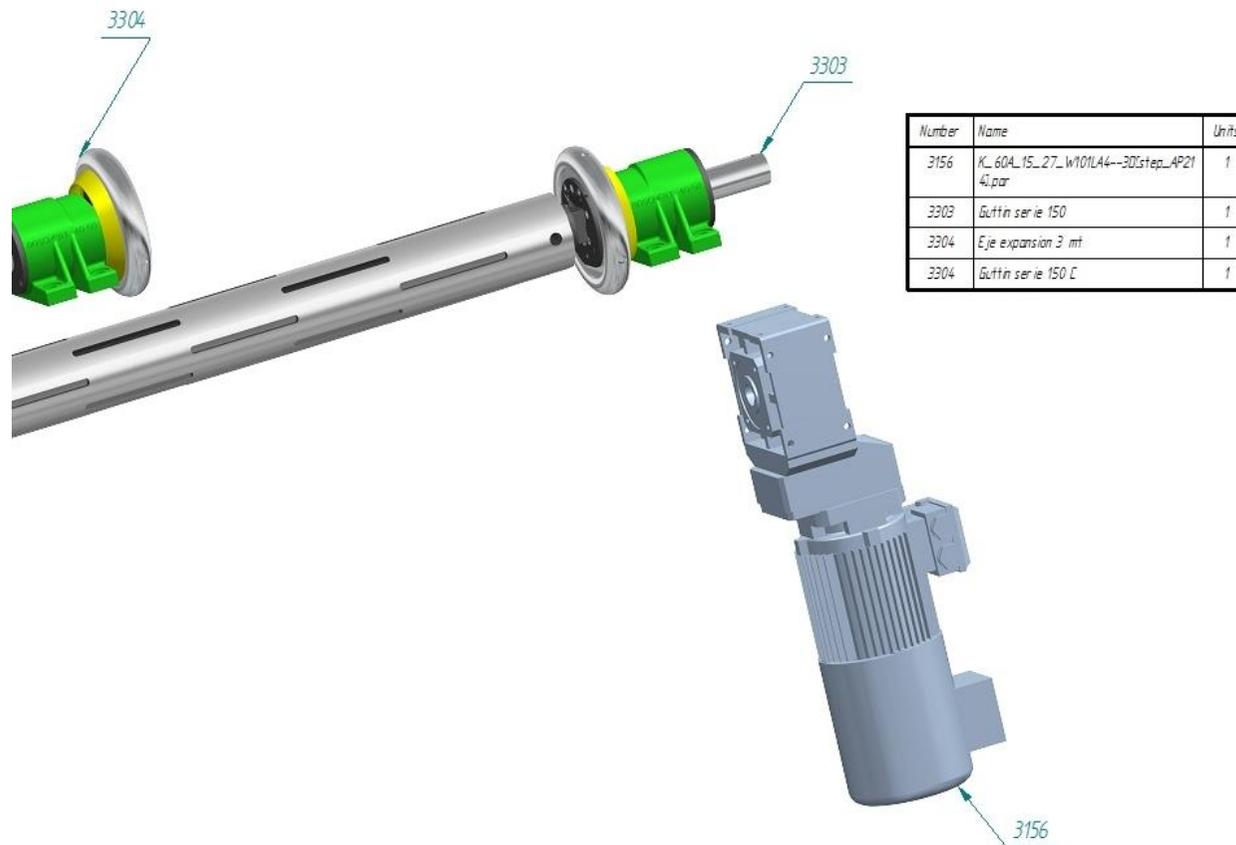
Número de documento	Part Name	Units
S-3101	SICK_DFS60B_SPC10000	1
S-3100	Rueda encoder	1
S-3102	Base encoder	1
S-3103	Totalizador	1
S-3105	Cable encoder	1



# Use and maintenance manual

Belt splitter

Model: LS-200

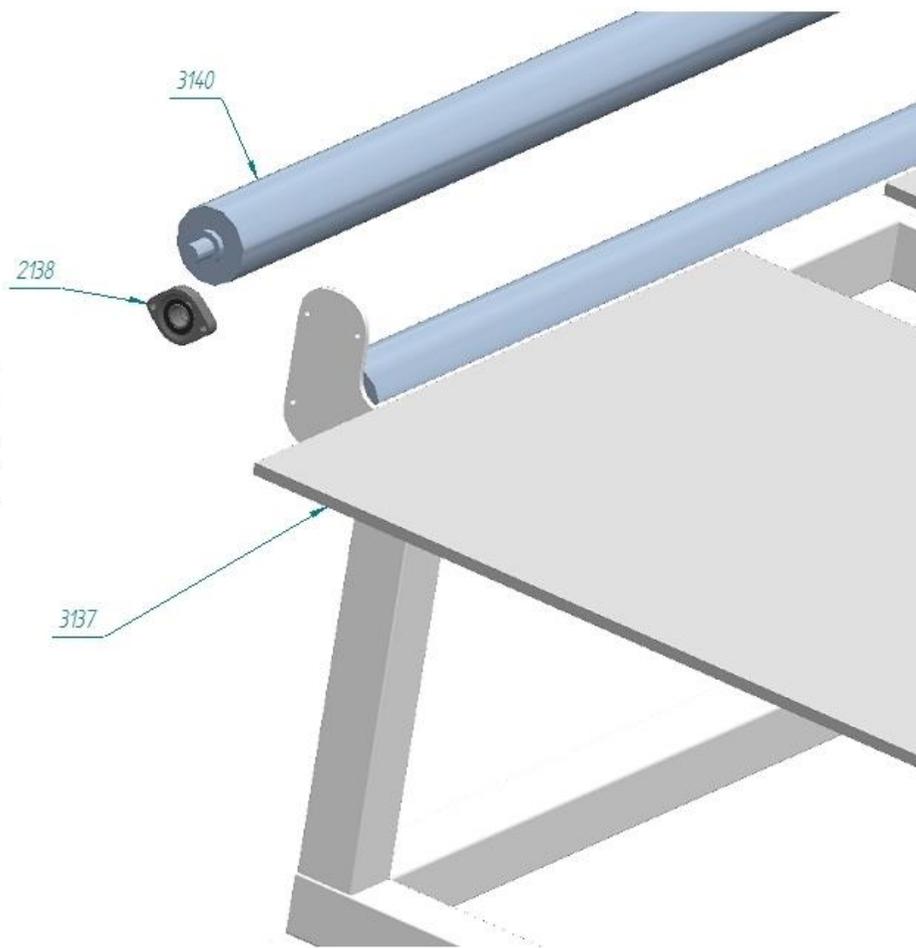


# Use and maintenance manual

Belt splitter

Model: LS-200

Part N°	Name	Quantity
2138	SOPORTE 30,par	4
3137	Tablero mesa grande,par	2
3140	Rodillo mesa,par	2

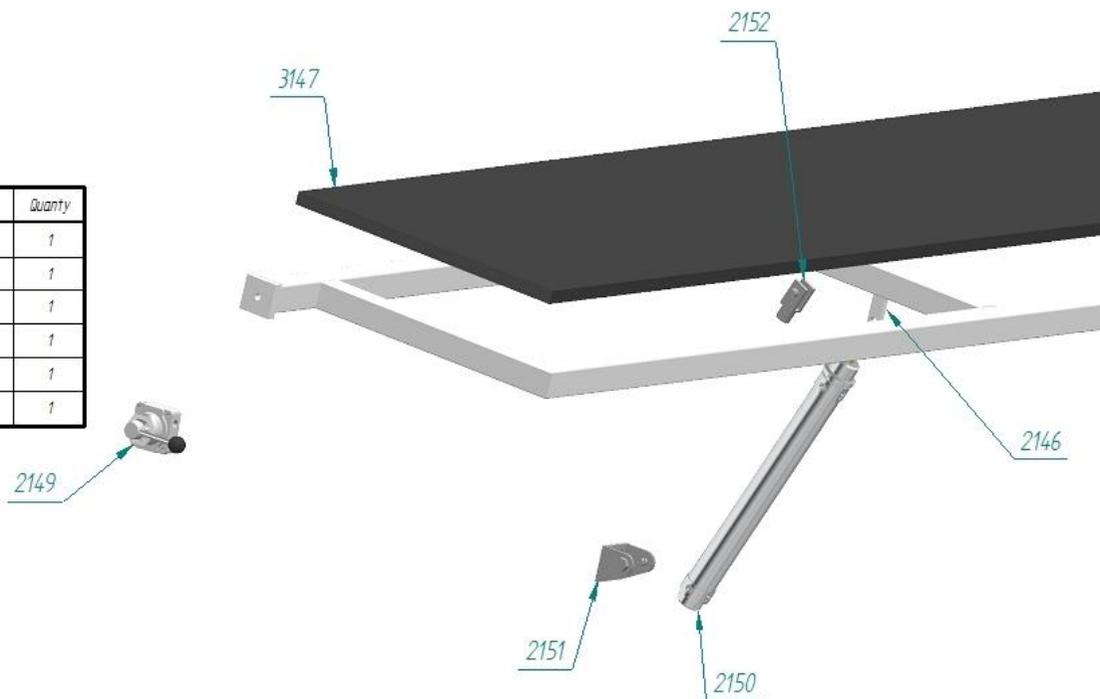


# Use and maintenance manual

Belt splitter

Model: LS-200

Part N°	Name	Quanti
2146	Para Clevis.par	1
2149	VH212_02.par	1
2150	body_A_C76E40_300.par	1
2151	CLEVIS_40.par	1
2152	GKM12_24A.par	1
3147	TABLERO ABATIBLE.par	1

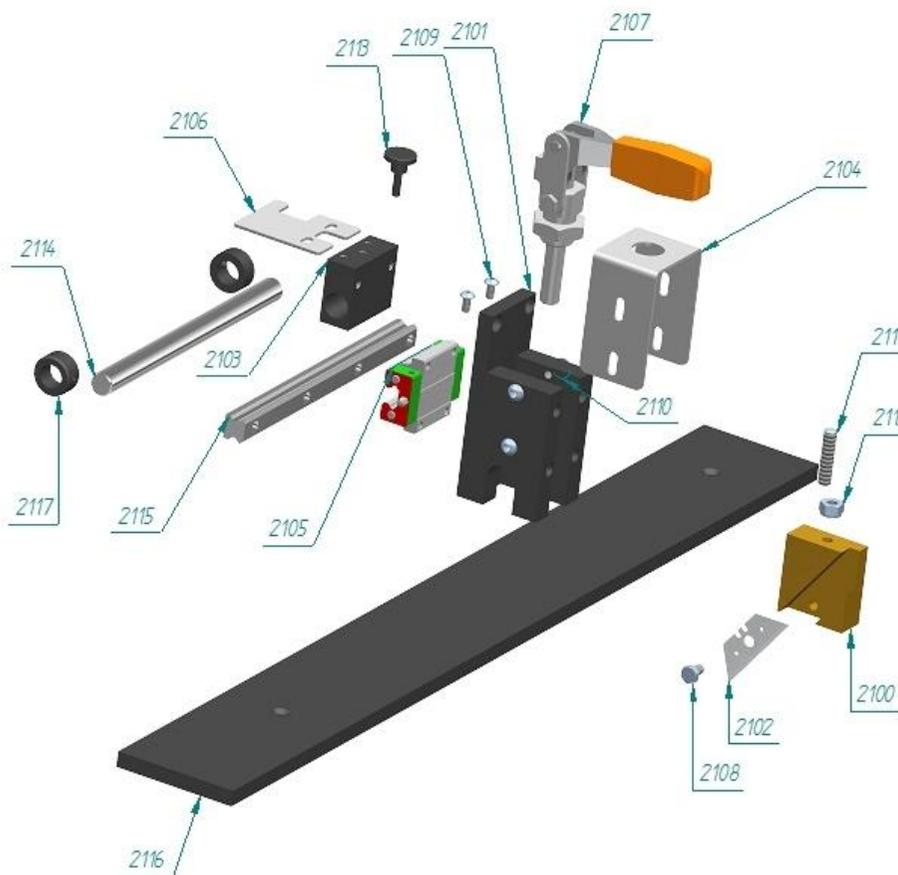


# Use and maintenance manual

Belt slitter

Model: LS-200

Part N°	Name	Quantity
2100	POR TA CUCHILLA.par	1
2102	Martor 42063	1
2103	FRENO CABEZAL.par	1
2104	TAPA BRIDA ARTICULADA.psm	1
2105	Patín Hivinh 15.par	1
2106	Señal Metro.psm	1
2107	gr_843_1_165_as_0_0.psm	1
2108	Screw_DIN_933_M7x12.par	1
2109	Screw_ISO_7380_M5x10.par	2
2110	Screw_ISO_7380_M6x10.par	4
2111	Screw_DIN_913_1980_M8x35.par	1
2112	Nut_DIN_980_M8_19.00.par	1
2113	eln_464_m5_16.par	1
2114	Vasla freno.par	1
2115	GUIA 16x200.par	1
2116	NYLON 1650X110X10.par	1
2117	gr_705_15_e.par	2



# Use and maintenance manual

Belt slitter

Model: LS-200

Número de documento	Part Name	Units
3164	RODILLO SUPERIOR 2200	1
2167	Dado rodillo superior	2
6007	6007 35-62-14	4
2164	Eje rodillo superior corte	1
2170	michavd_chailly_A1-329-30-1	2
2166	michavd_chailly_A1-57-20-20_500	2
2169	C02850-200MZ	2
2168	Guiado rodillo	2

