

(Original) Use and maintenance manual

Type: Unwinder device 3100mm
Model: UU-300



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: Unwinder unit
- Brand: ERM Engineering
- Model: UU-300
- 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

- **Description:**

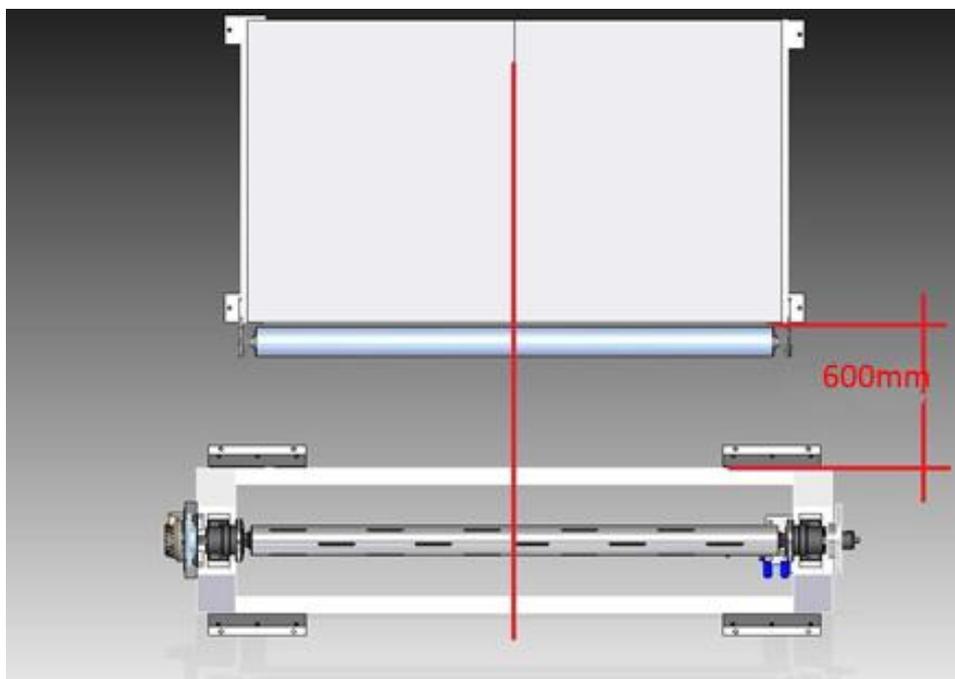
Motorised expansion axle 148mm. diameter to wind and unwind the cut belt, housed in folding safety chucks and driven by variable speed motor.

- **Technical characteristics:**

Dimensions (cm.)	368 x 70 x 140 (l x w x h)
Weight	693 Kg
Shaft Diameter	148 mm.
Max. Slab weight	2800 Kg.
Max. Belt Width	3200 mm.
Voltage	3x400 v.
Max. slab diameter	1300 mm.
Max. cutting speed	20 Mt / min.
Power	800 w

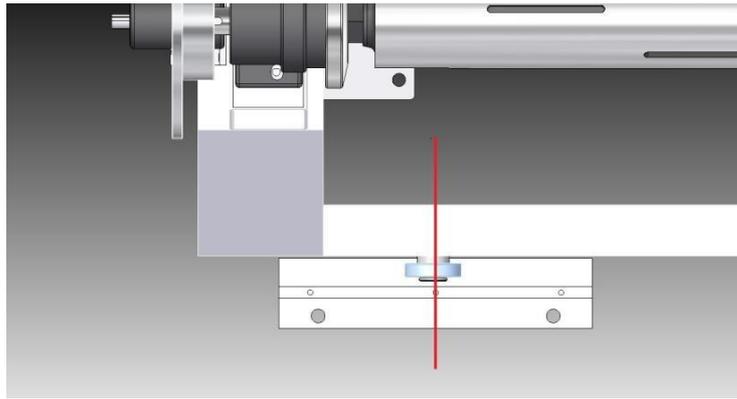
- **Installation and connection:**

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



Measure the distance between shaft edges and slitter rollers to keep the parallel geometry.

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

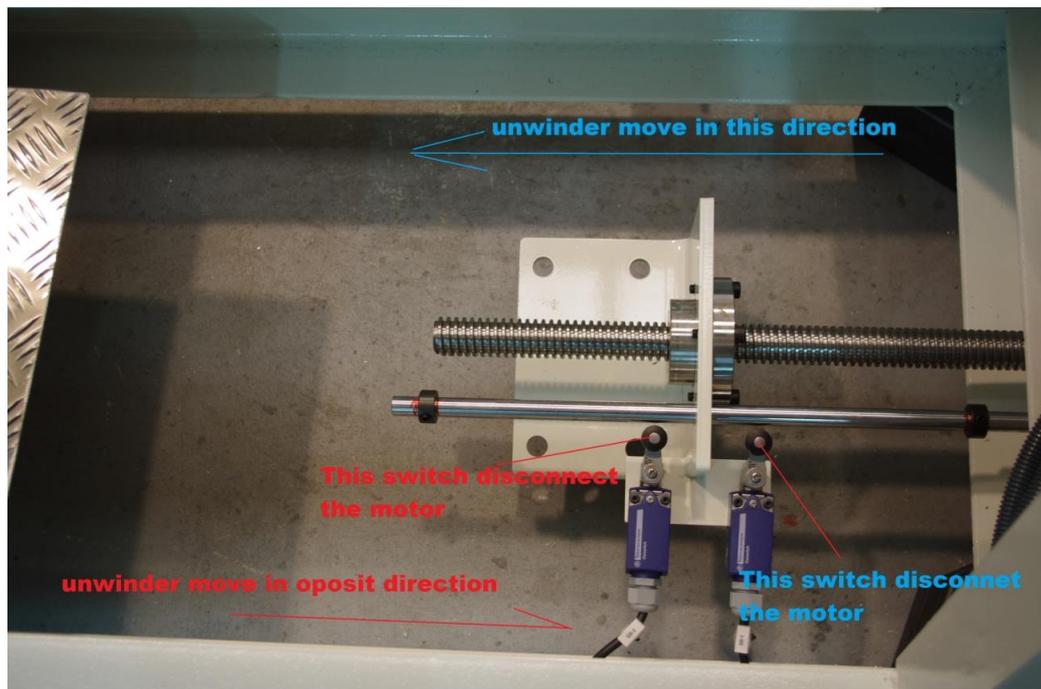


After checking the level, fix on floor with steel bolts 14/16mm:



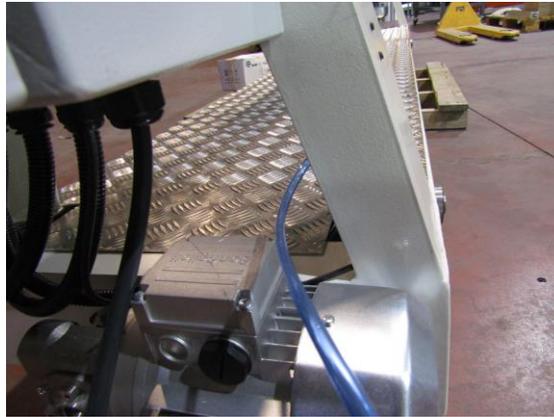
Introduce the tracking system in the shaft until half of the length screw, and fix on floor with 4 steel bolts.

And pay attention at the ends stops of unwinder are working well or wrong direction.



If this is wrong, change two phases in power supply cable.

Connect the power cable to 3x400V and connect the air tube at minimum 6 bar pressure.



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

Once the power supply is connected, turn on the general switch and 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 (orange button).

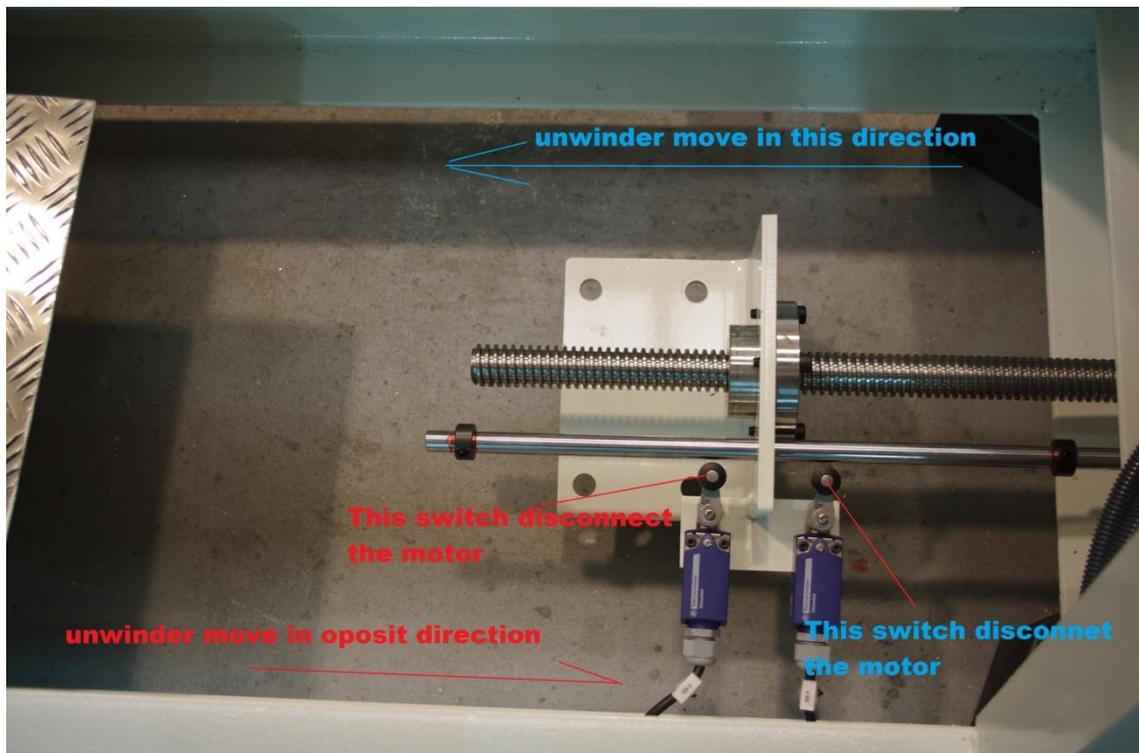
Test the phase connection that all the end switches of unwinder work well and change this phase if will be necessary:

Press buttons left or right and check that switches end of stroke is working right.



Introduce the tracking system in the shaft until half of the length screw, and fix on floor with 4 steel bolts:

And pay attention at the ends stops of unwinder are working well or wrong direction.



If this is wrong, change two phases in power supply cable.

WARNING: Wrong connection of the phases may cause damage to the guide and centring device threads, as the run ends will no act correctly.

- **Using instructions:**

Load the slab cardboard mandrels 150mm. internal diameter, perfectly centre the mandrels with the shaft.

Inflate the pneumatic shaft to a pressure between 3 and 5 bar, using the inflation gun.



When you use this device as UNWINDER, control always the brake pressure with the pressure regulator.



When you use this device as WINDER, control always control the speed winding with potentiometer.



Also, you can choice forward or reverse turn direction of shaft motor.

- **Expanding shaft indications:**

1 Basics

This user manual describes the technical data and function of the 180 PSW-F Expanding Shafts. The user manual gives detailed instructions for your safety and smooth and lasting operation. Therefore, please read this manual carefully and follow the instructions given!

2 Safety instructions

The basic prerequisite for safe handling and smooth operation of these Expanding Shafts is an awareness of the basic safety instructions and the safety provisions. This user manual, particularly the safety instructions, must be followed by all persons who work with the Expanding Shafts. Moreover, the regulations and provisions for prevention of accidents that apply to the place of use must be observed.

2.1 Operator Obligations

The operator must not allow persons to work on the Expanding Shafts unless they are familiar with the basic provisions on occupational safety and prevention of accidents and have been trained in the handling of the Expanding Shafts, and have read and understood the safety chapter and the warnings in this user manual and have confirmed this with their signature.

At regular intervals, the operator will check that staff are working in line with the safety provisions.

2.2 Staff Obligations

All persons that are tasked to work on the Expanding Shafts must observe the basic provisions on occupational safety and accident prevention and have read the safety chapter and the warnings in this user manual and confirmed that they will observe the same before starting work.

2.3 Dangers in Dealing with the Expanding Shafts

The PSW-F Expanding Shafts are built according to the latest technology and the recognised safety regulations. Nevertheless, use may result in danger to the life and limb of the user or third parties, or impairments to the Expanding Shafts or to other material assets. The Expanding Shafts must only be used for the proper application in a safe and technically sound condition.

Faults that could impair safety must be remedied immediately.

2.4 Proper Use

The PSW-F Expanding Shafts are only intended to be used to coil or uncoil suitable rolls at coiling stations. Other or deviating use is improper. 1 BD Wickeltechnik GmbH is not liable for any damage that results from improper use. Proper use also includes following the instructions in the user manual and complying with inspection and maintenance work.

2.5 Warranty and Liability

In principle, our "general terms and conditions of sale and delivery" apply, which are available to the operator. All claims for liability and guarantee with personal injuries or damage to property are excluded if these result from one or more of the following causes:

Improper use of the Expanding Shafts

Improper fitting, start-up, servicing and maintenance of the Expanding Shafts Operation of the

Expanding Shafts with improperly applied or faulty safety and protection equipment for the plant

Non-compliance with the instructions in the user manual with regard to transport, fitting, start-up, operation, maintenance and set-up of the Expanding Shafts

Independent structural changes to the Expanding Shafts

Independent changes to the max. permissible roll weight and the max. permissible torque

Substandard monitoring of parts in the Expanding Shafts that are subject to wear

Improperly performed repairs

Disaster situations that have been caused by foreign objects or are beyond control.

3 Safety Provisions

3.1 Liability Declaration

The following terms and symbols are used for risks in this user manual:

DANGER! This instruction means directly threatening danger to people's life and health. Non-compliance with these instructions will result in severe effects to health, up to life-threatening injuries.

WARNING!

This instruction means possibly threatening danger to people's life and health. Non-compliance with these instructions may result in severe effects to health, up to life-threatening injuries.

ATTENTION!

This instruction means a possibly dangerous situation.

Non-compliance with these instructions may lead to light injuries or to material damage.

CAUTION!

This instruction is an important prerequisite for proper use of the Expanding Shafts. Non-compliance with these instructions may lead to faults on the Expanding Shafts or in the adjacent area.

3.2 Protective Equipment

IBD Expanding Shafts are constructed in such a way that they fulfil the applicable safety and health requirements and, therefore, do not have special protective equipment.

Safety shoes must be worn when working with or on the Expanding Shafts as personal protective equipment.

Further protective equipment and fittings may be required depending on the specific conditions, for example requirements of the coiling station or the material to be coiled. Please read the section on materials in the user manual.

3.3 Informal Safety Measures

The user manual must always be stored where the Expanding Shafts are used. In addition to the user manual the general and local regulations on accident prevention and environmental protection must be provided and observed.

3.4 Staff Training

Only trained and instructed staff may work with or on the Expanding Shafts. Staff responsibilities for installation, start-up, servicing, maintenance, and repair must be clearly specified.

Staff in training may only work on or with the Expanding Shafts under the supervision of an experienced person.

3.5 Safety Measures during Operation

Only operate Expanding Shafts when all safety equipment for the plant where the Expanding Shafts are installed is working properly.

Before switching on the drive ensure that nobody will be endangered by the running Expanding Shafts.

-The Expanding Shafts must be checked at least once per shift for any visible external damage.

3.6 Maintenance, Servicing and Remedying Faults

Perform the prescribed adjustments, maintenance and inspection work within the time limits.

Inform operating staff before starting maintenance and servicing work. Secure all plant parts and operating media up and downstream of the Expanding Shafts, such as pressurised air and hydraulics, against unauthorised start-up.

Disconnect the plant from the power supply for all maintenance, inspection and repair work and ensure the main switch cannot be reconnected:

-Close the main switch and remove the key

-Attach a warning sign to prevent reconnection Check that screws are fastened tightly.

Check that safety equipment is working after completion of the maintenance work.

3.7 Structural Changes to the Expanding Shafts

Undertake no changes, fittings or rebuilds to the Expanding Shafts without the approval of IBD Wickeltechnik GmbH.

-All rebuilding measures must be confirmed in writing by IBD Wickeltechnik GmbH.

Replace coiling shaft parts immediately that are not in good condition. Only use original replacement parts. We cannot guarantee that externally procured parts have been constructed to meet safety requirements and operational demands.

3.8 Cleaning the Expanding Shafts and Disposal

Handle and dispose of substances and materials used properly, particularly lubricants and solvents.

3.9 Noise from the Expanding Shafts

-The continuous sound level emitted by the Expanding Shafts is less than 70 dB[A].

-A higher sound level may be emitted by the plant depending on the local conditions in which the Expanding Shafts are installed, which may cause hearing difficulties. In this event, the operating staff must be issued with appropriate protective equipment.

3.10 Copyright

The copyright to this user manual remains with IBD Wickeltechnik GmbH. This user manual is only intended for the operator and his staff. It contains provisions and instructions that may neither be wholly nor partially duplicated divulged or otherwise communicated.

Non-compliance will result in damage compensation.

4 Product Details

IBD Expanding Shafts are operated with pressurised air. The pressurised air expands a flexible hose, which pushes the clamping strips from the shaft and, in so doing, tensions the rolls [the casing]. The release is affected by discharging the pressurised air, which relaxes the hose again. Safe and smooth operation can only be guaranteed on adherence to the technical data and limit values. Please take the technical details from the enclosed data sheet.

5 Installation and Start-Up

WARNING!

The Expanding Shafts may only be installed by qualified personnel! Use suitable lifting equipment if necessary!

DANGER!

The Expanding Shafts may only be installed on machines and equipment, which correspond to the specified technical data! Observe the permissible roll weight.

Ensure that the machine cannot be switched on during installation. Check that the Expanding Shafts have been installed correctly.

WARNING!

If rolls are not fully tensioned they produce an irregular run. There is a risk that the roll will disconnect from the shaft.

Check that the roll is tightly tensioned and is running around in standby and on the test run.

Check that the roll is secure after a reasonable period.

6 Operation

Expanding Shafts are easy-to-operate devices that represents clear assistance. For your safety, the safety of others and for smooth operation please observe the following instructions:

DANGER!

Do not tension any rolls and coils that are irregular! Any imbalance in the roll leads to high loads on the Expanding Shafts depending on the speed. This can break the Expanding Shafts even though the permissible overall weight has not been exceeded.

DANGER!

Wear protective glasses when working with pressurised air!

6.1 Tensioning a core

Check whether the inner diameter of the core casing is permitted for the shaft.

Place the core on the supporting tube of the Expanding Shaft.

Place the right filling gun on the filling valve and fill the expansion hose to a pressure of at least 6 bar.

Filling the shaft depends on the length and diameter of the shaft.

- The pressure in the shaft can be checked using the manometer on the filling gun.

6.2 Releasing the roll

Ensure the roll cannot fall off.

Let the pressurised air out from the Expanding Shaft by opening the filling valve. The filling gun or suitable tool may be used for this purpose.

7 Servicing

IBD Expanding Shafts are built with care and will work smoothly with the necessary care. However, as with all mechanical-pneumatic components, they also require a little care as described in this chapter.

7.1 Maintenance

The Expanding Shafts must be cleaned and inspected at least after 5000 operating hours. This may require the Expanding Shafts to be dismantled.

Dismantling the Coiling Station

DANGER!

The expansion unit of the Expanding Shafts is under pneumatic pressure. To avoid injury, ensure that the pressure is completely released from the roll shaft.

Ensure that the machine cannot be switched on during dismantling. Secure the roll shaft against falling with a suitable lifting device or similar.

Dismantling the Expanding Shaft PSW-F ...

The following dismantling instructions relate to the attached explosion diagram

-Let out the pressurised air by opening the filling valve. The filling gun or a suitable tool can be used for this purpose.

-Unscrew the filling valve [item 4] from the bearing pins [item 11] and replace if necessary.

-Twist the M8 headless screws [item 13] out of the supporting tube [item 1] and remove the bearing pins [item 51]. Insert an M10 threaded bar into the pins to remove the bearing pins and pull out the pins with a shock lug.

-Once the bearing pins are cleaned the o-rings (item 14] can be checked and replaced with new ones if required.

-In order to remove the clamping pieces (item 7 + 8] together with the retention spring (item 9] from the groove, the M6 headless screws (item 11 + 12] must first be removed.

-You can now remove the clamping strip (item 3] from the groove and replace if necessary.

-Remove the back clamping pieces (item 7 + 8] from the groove as described above and pull out the flat hose (item 2] together with the protective belt (item 10]. If the hose or the protective belt are damaged they should be replaced with new ones.

Inspection

Check all parts for sound condition. Replace defect parts. Remove any sharp edges created during operation.

Cleaning and Lubrication

Clean all parts thoroughly with a lint-free cloth and greaseless agent and regrease the bearing pins and seals well. Recommended lubricant: Turmogrease LT 182 from Lubcon.

Assembly

Assembly of the roll shaft is affected in reverse order. You must ensure that all screws have locking devices (Loctite 243] and the air diffuser (item 6] is inserted cleanly into the borings on the supporting tube.

7.2 Replacement Parts List

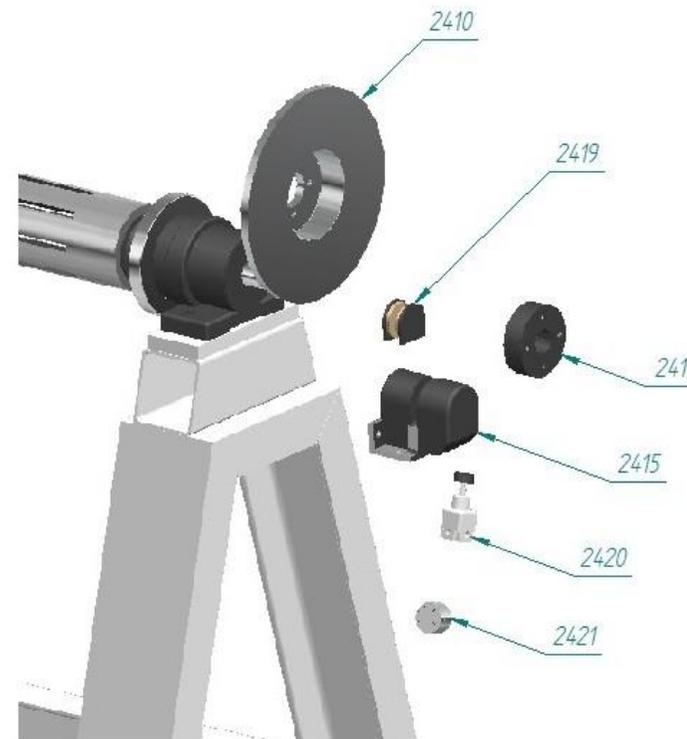
see enclosed piece list and construction diagram

8 Disposal

The cleaning agent and lubricant used must be disposed of in accordance with the information on the data sheet. The Expanding Shafts may only be manufactured from uncritical materials. They can be disposed of or recycled easily.

- **Spare parts:**

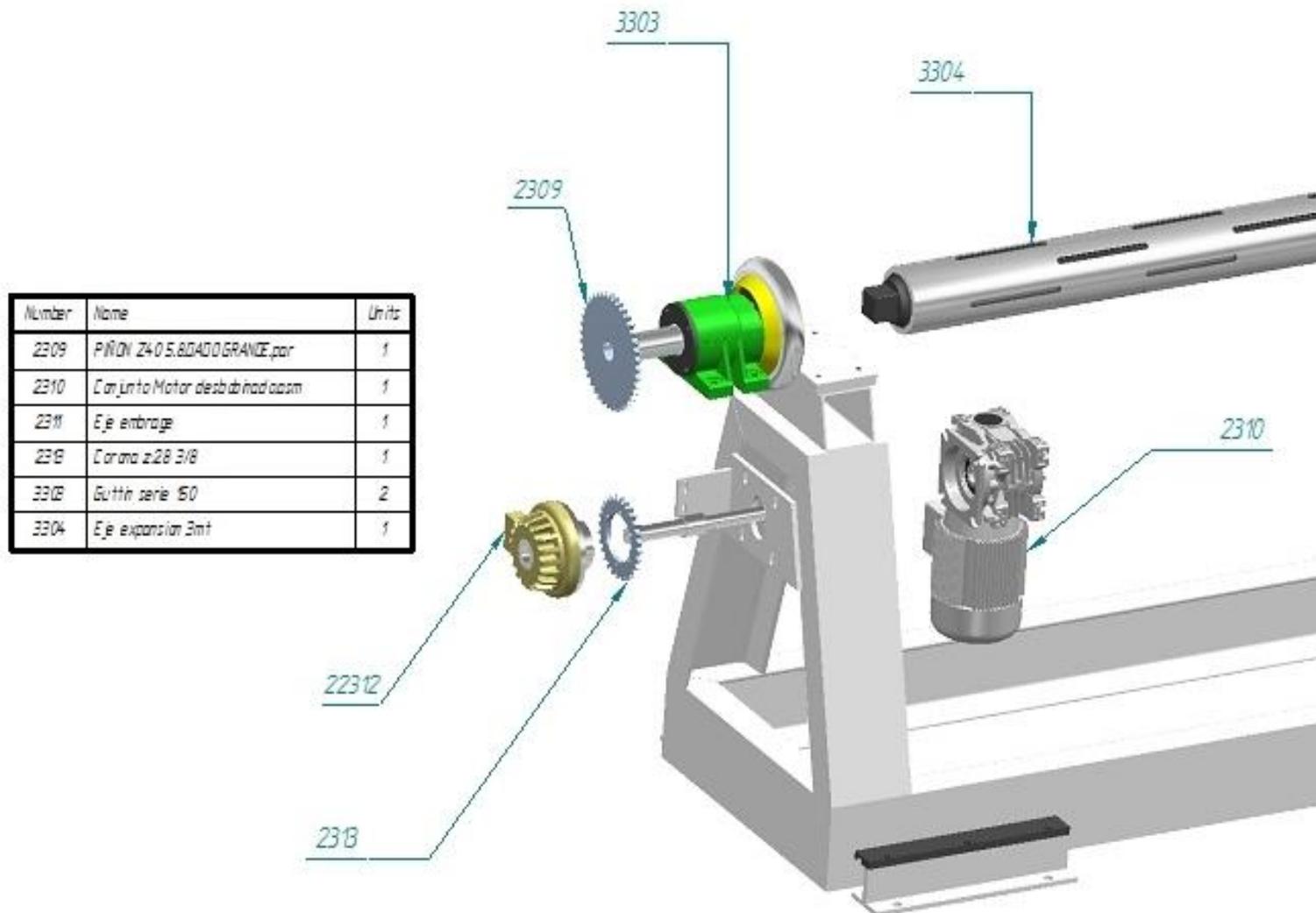
Part N°	Name	Quantity
240	Disco P1300.par	1
2411	Brida Disco.par	1
2415	Caliper DX.par	1
2419	Pastilla frenopar	2
2420	R1000_F01.par	1
2421	G43_2_01.par	1

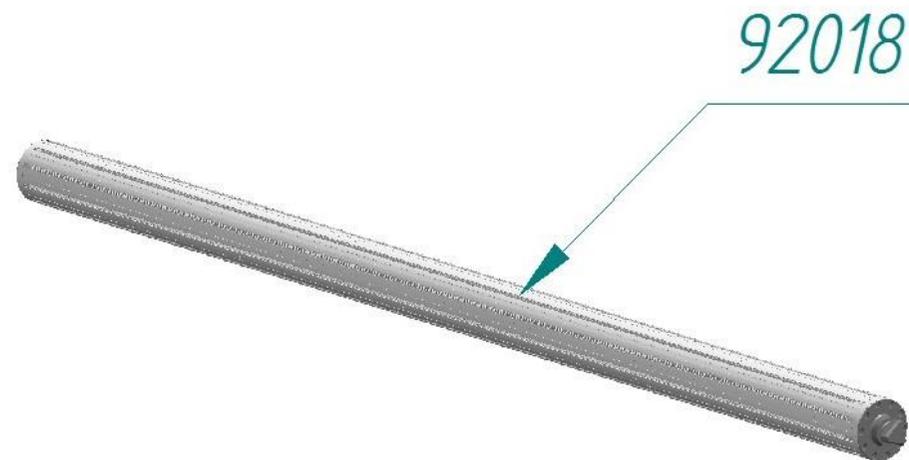


Use and maintenance manual

Unwinder unit

Model: UU-300

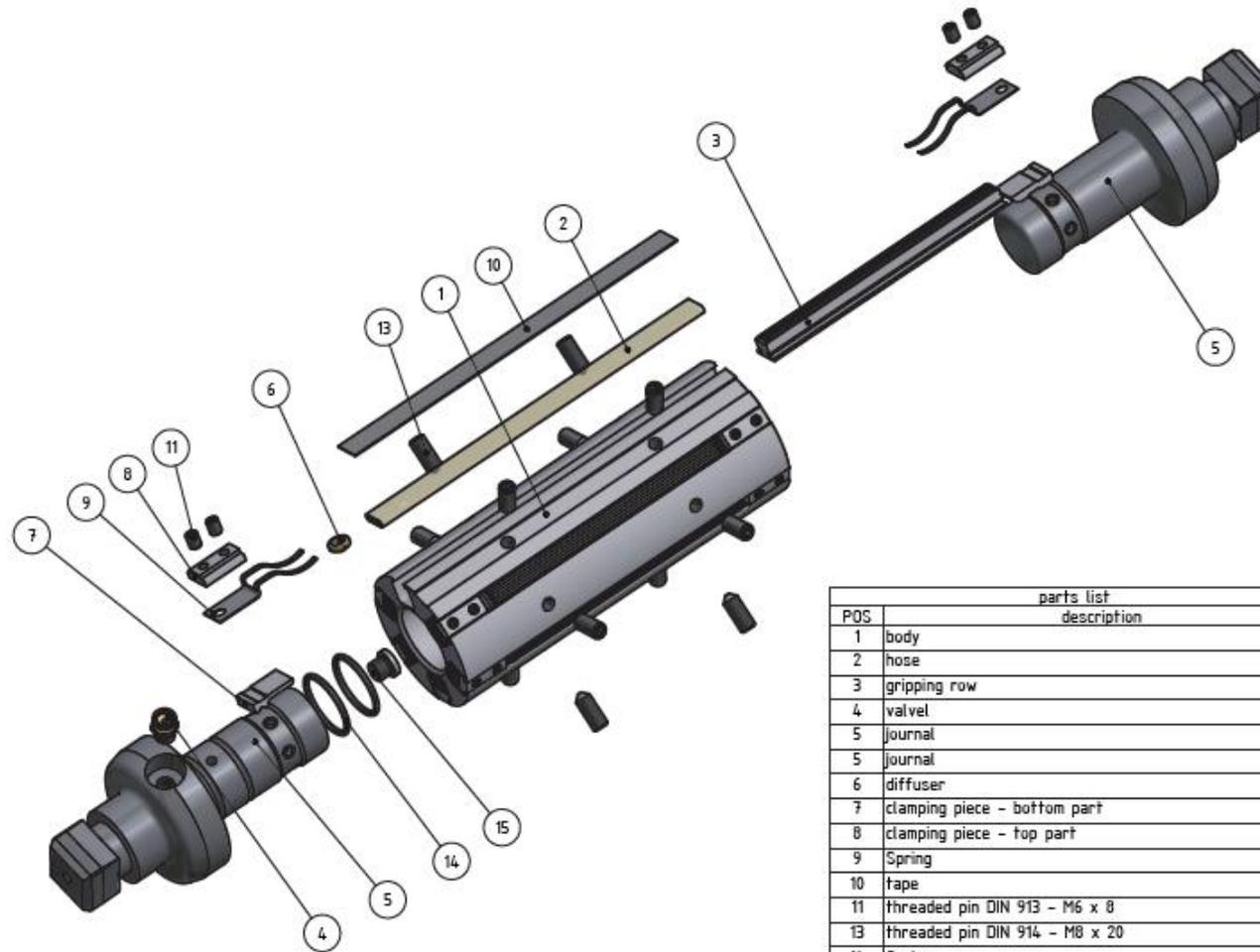




Use and maintenance manual

Unwinder unit

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parts list	
POS	description
1	body
2	hose
3	gripping row
4	valvel
5	journal
5	journal
6	diffuser
7	clamping piece - bottom part
8	clamping piece - top part
9	Spring
10	tape
11	threaded pin DIN 913 - M6 x 8
13	threaded pin DIN 914 - M8 x 20
14	O-ring
15	locking screw M10x1

- Electrical drawings

		Automatismos Tecelmac S.L. C/ Travessera de Can Pàmies, 4-6. Pol. Ind. Molí de Les Planes 08470, Sant Celoni (Barcelona) Telf. : 93.848.73.69 Mail: tecelmac@tecelmac.com							
CLIENTE : ERMENGINEERING DENOM. INSTALACIÓN : DESBOBINADOR NUM. PROYECTO : 20063									
FABRICANTE : ERMENGINEERING TIPO ESQUEMAS : ELÉCTRICOS NORMATIVA : DIN FORMATO-VERSIÓN : EPLAN P8 LUGAR INSTALACIÓN : ARENYS DE MUNT RESPONSABLE PROYECTO : J.S.P.		CARACTERÍSTICAS TÉCNICAS TENSIÓN DE ALIMENTACIÓN : 400V 3F+PE TENSIÓN DE MANDO : 24VDC POTENCIA : 4 kW							
FECHA REALIZACIÓN : 28/01/2020 ELABORADO POR : BPUIG		CANTIDAD TOTAL PÁGINAS : 24							
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Unwinder unit

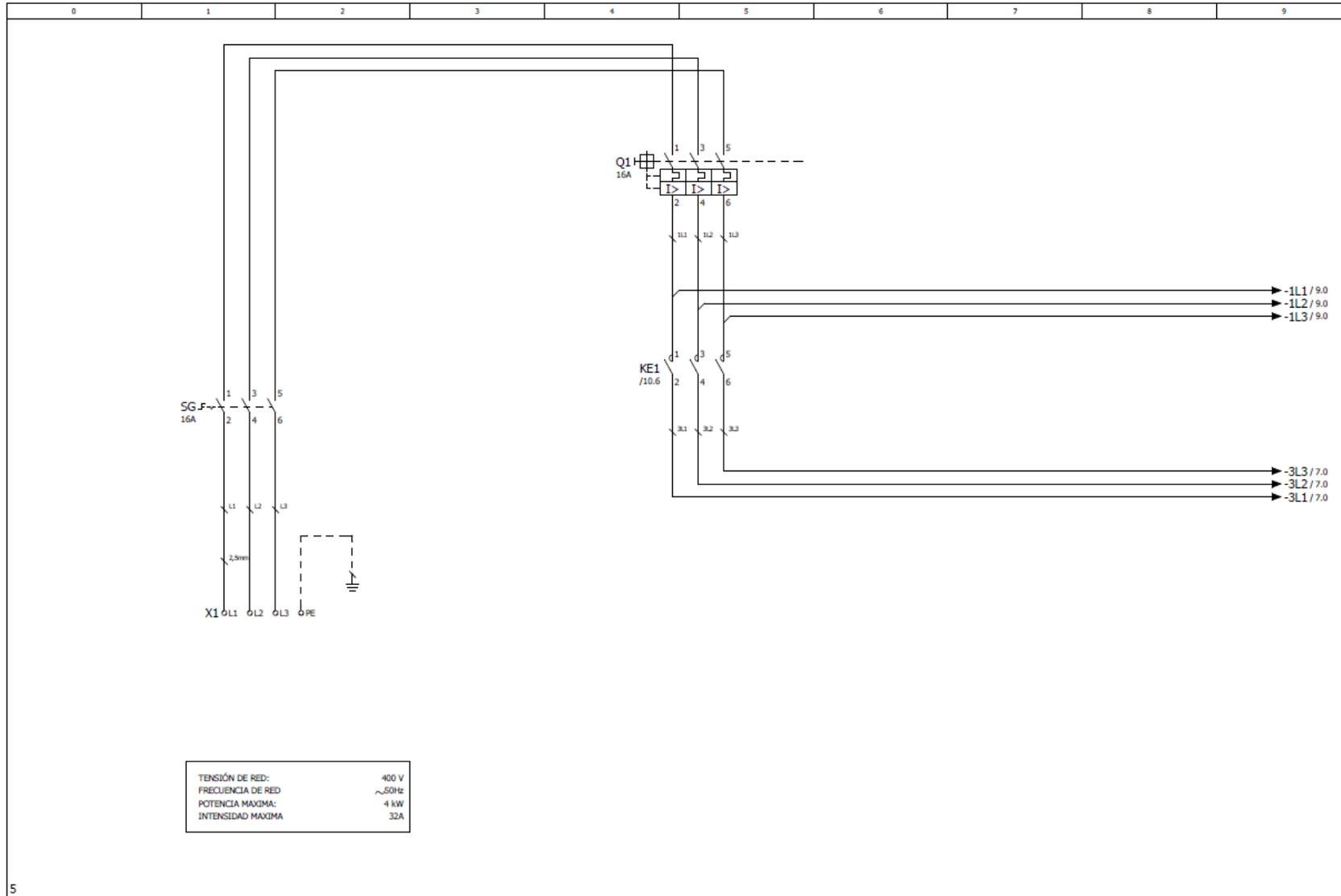
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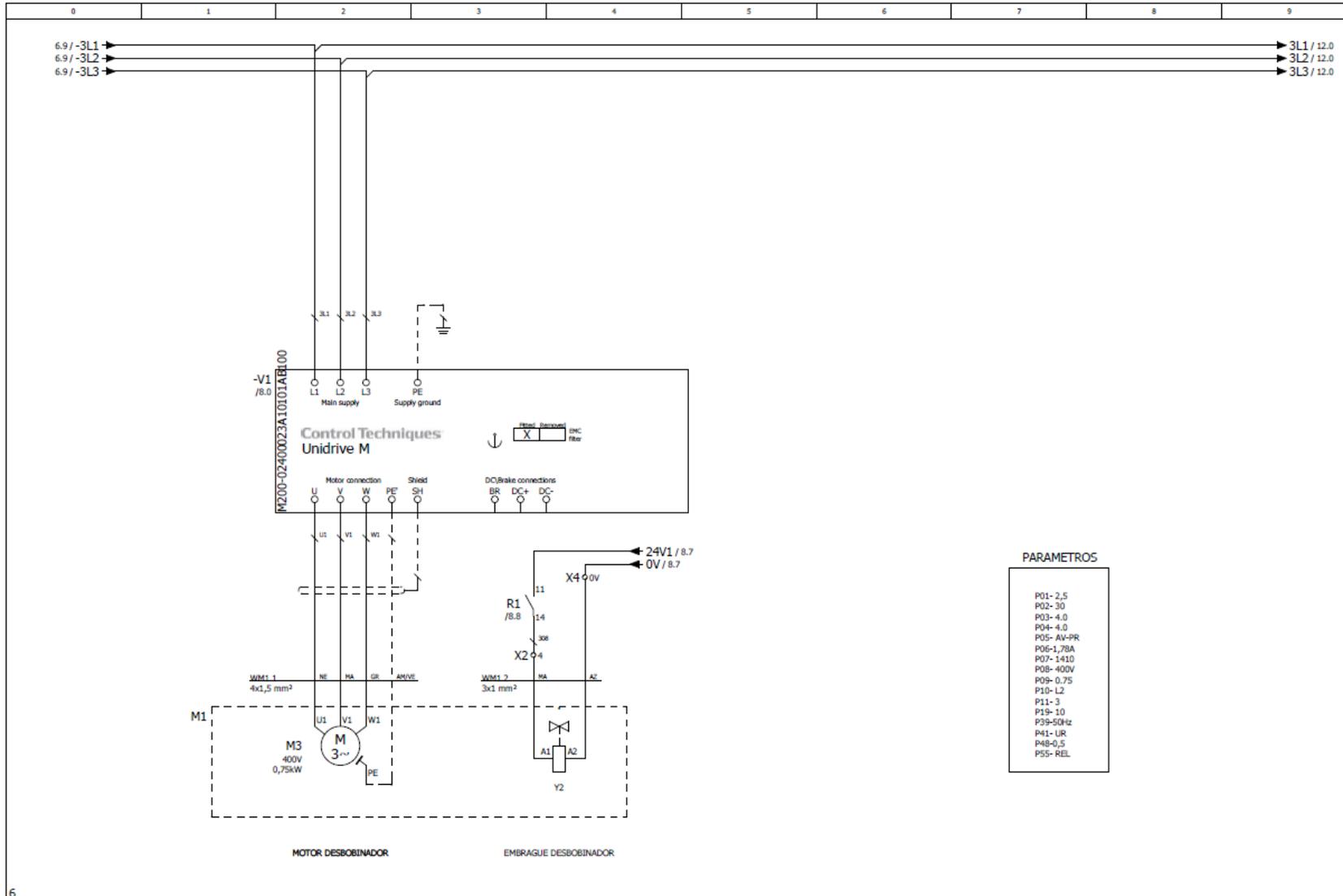


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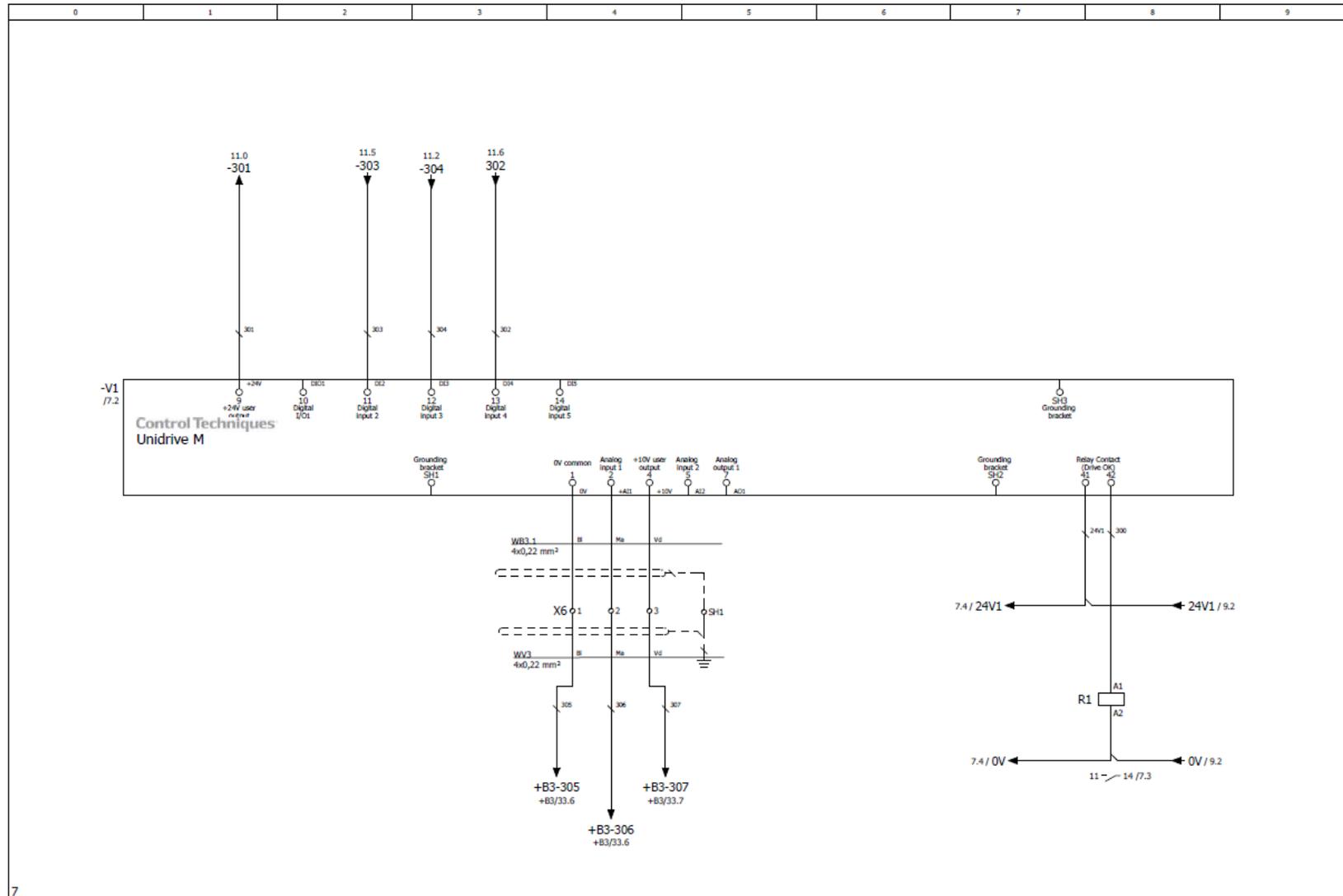


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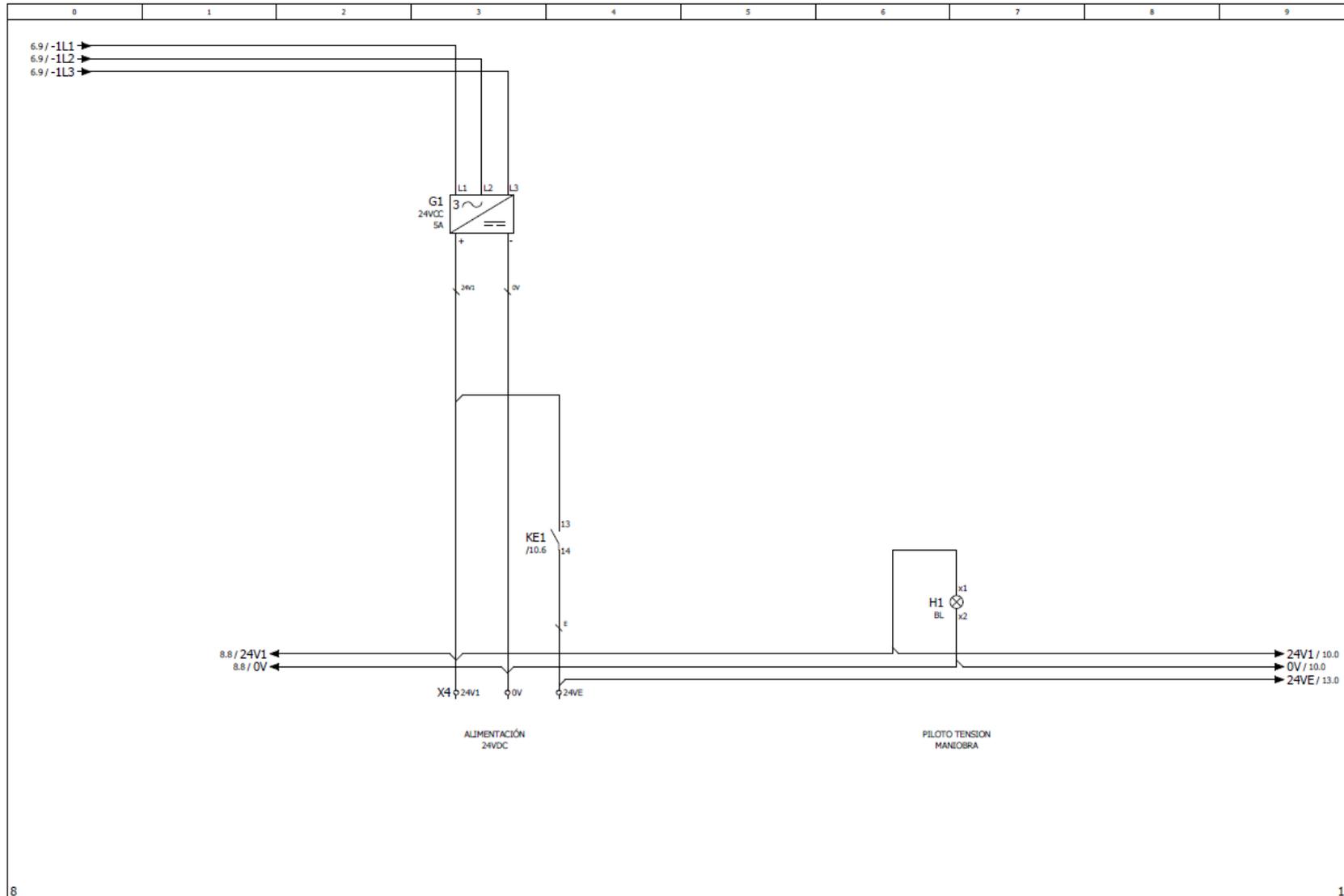


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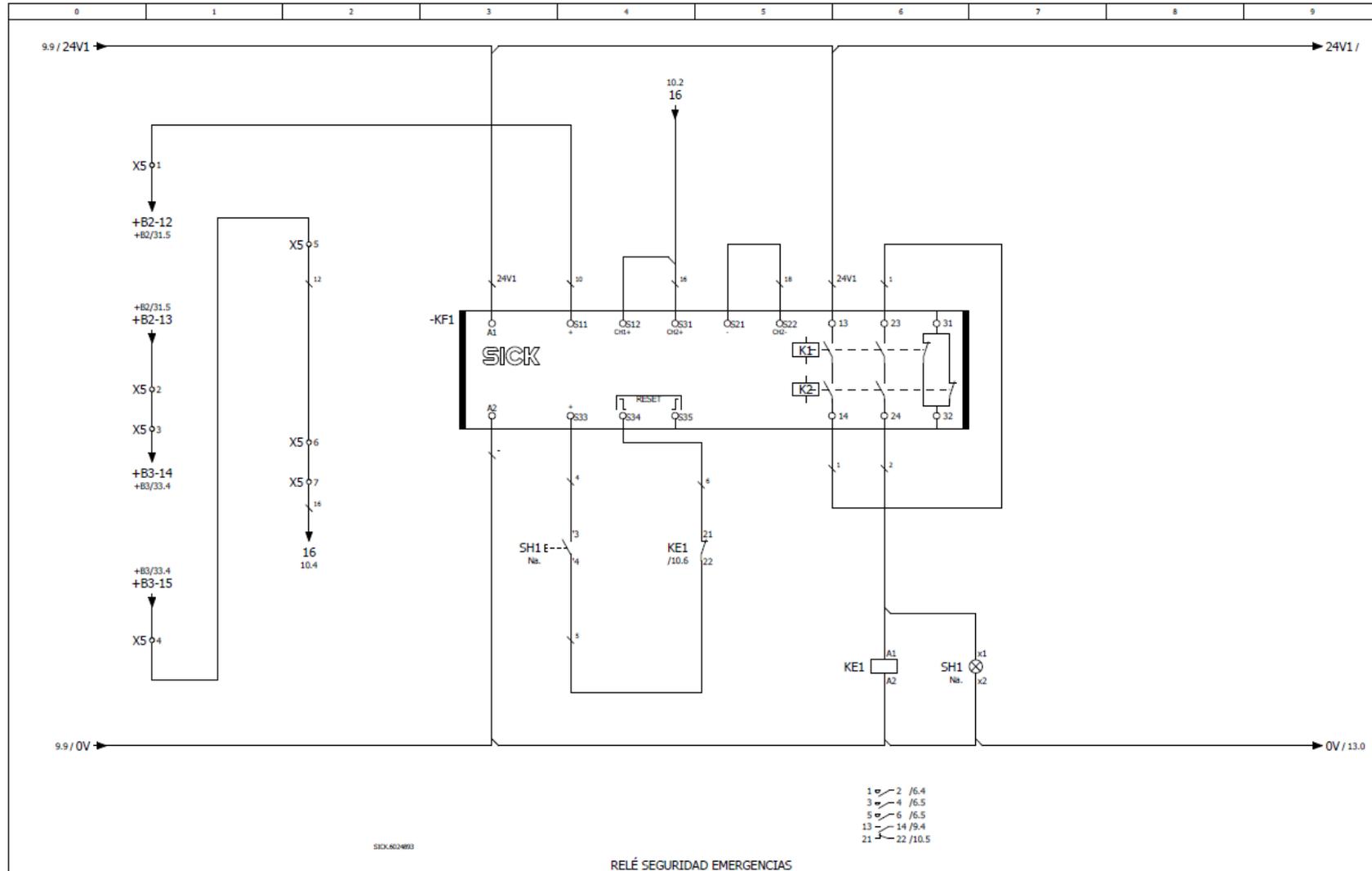


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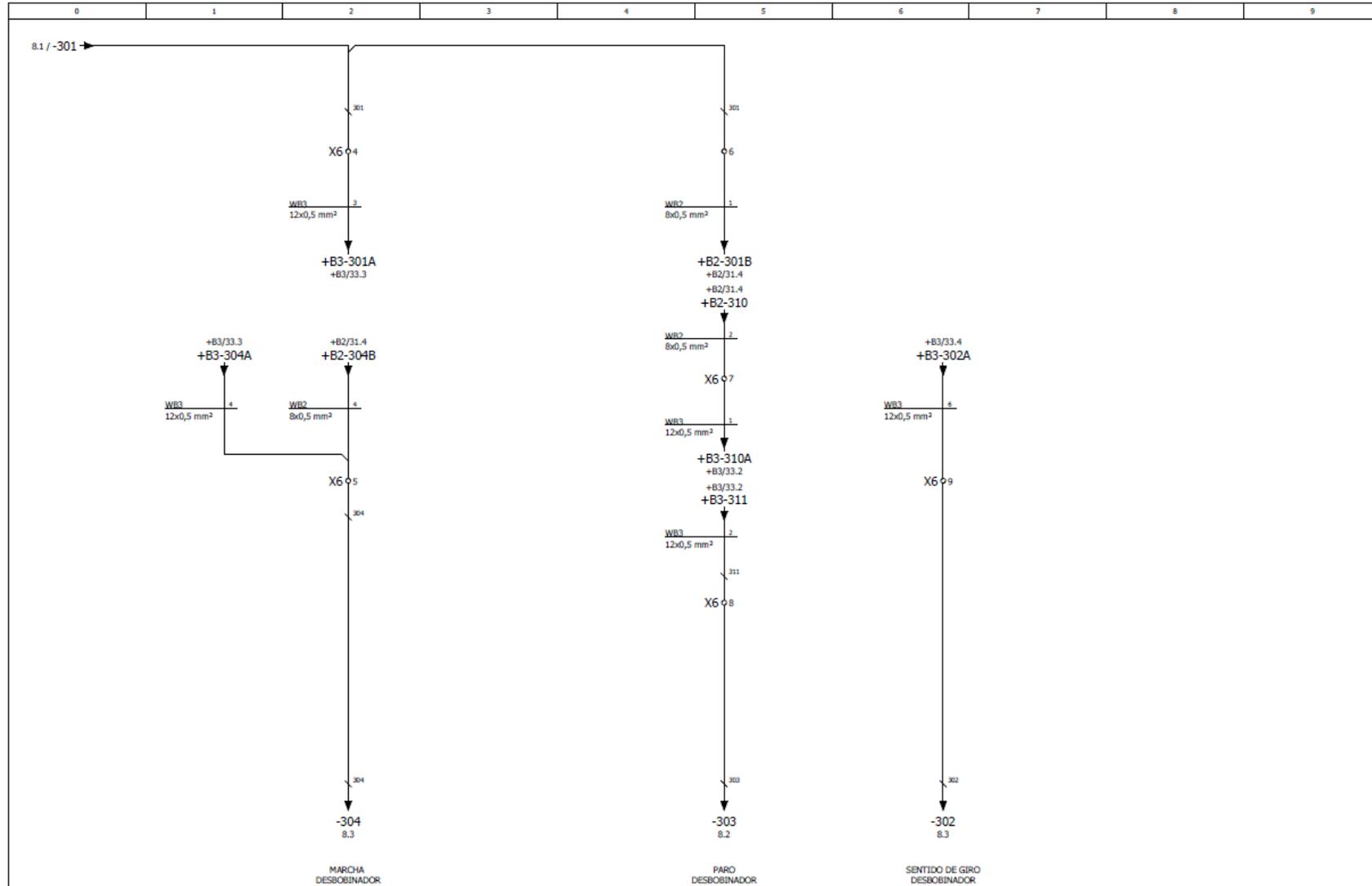


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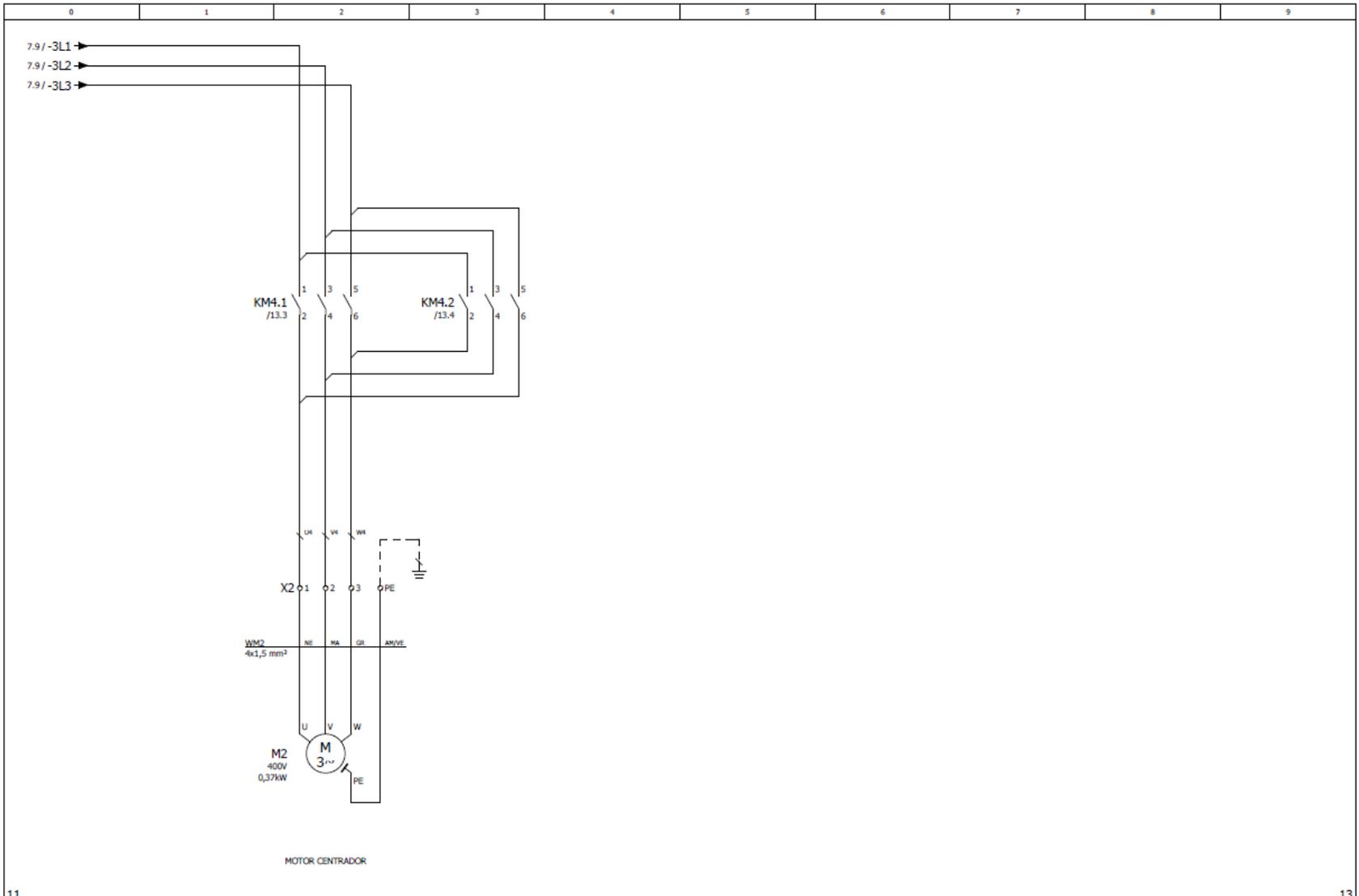
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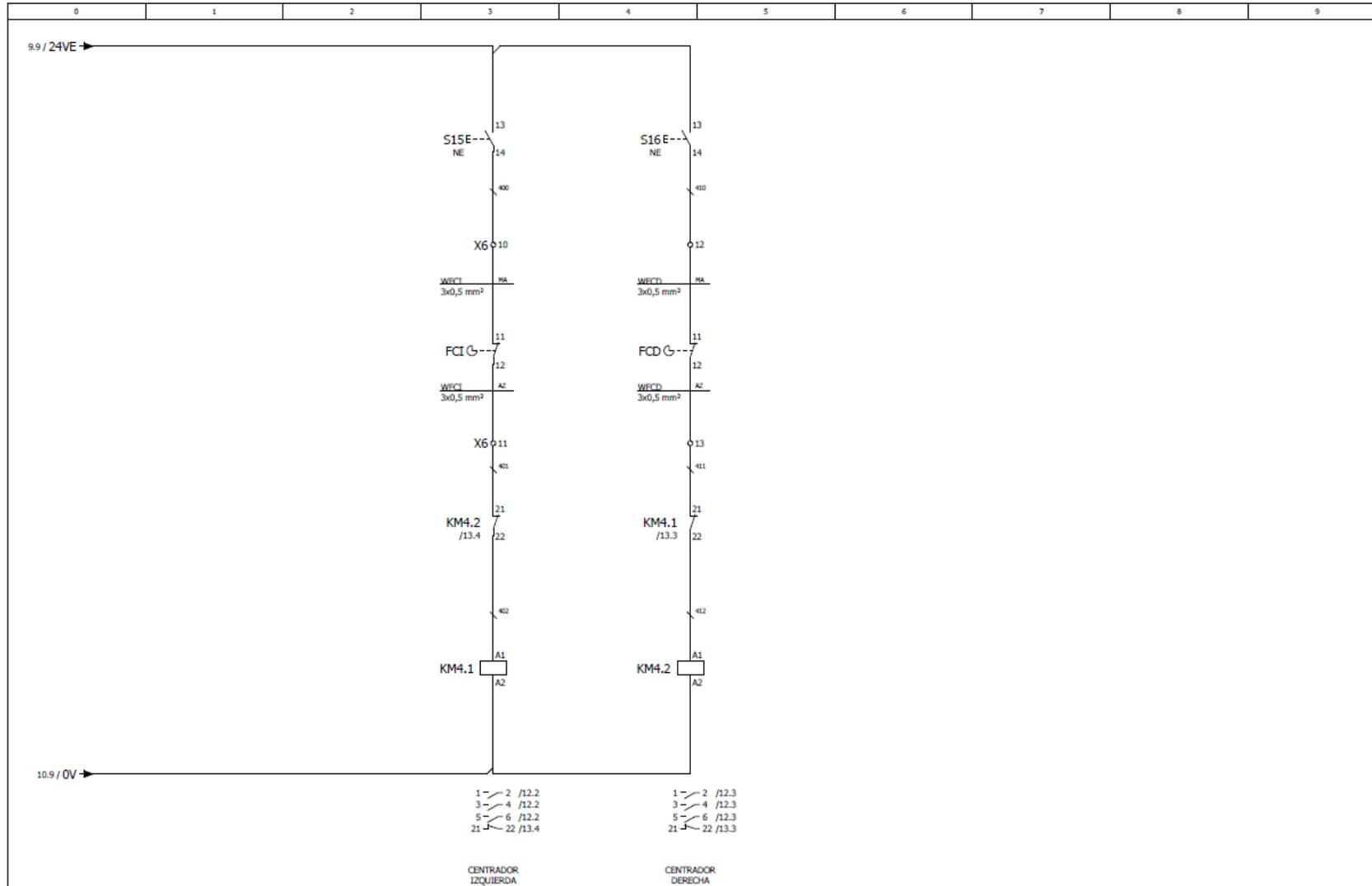
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Unwinder unit

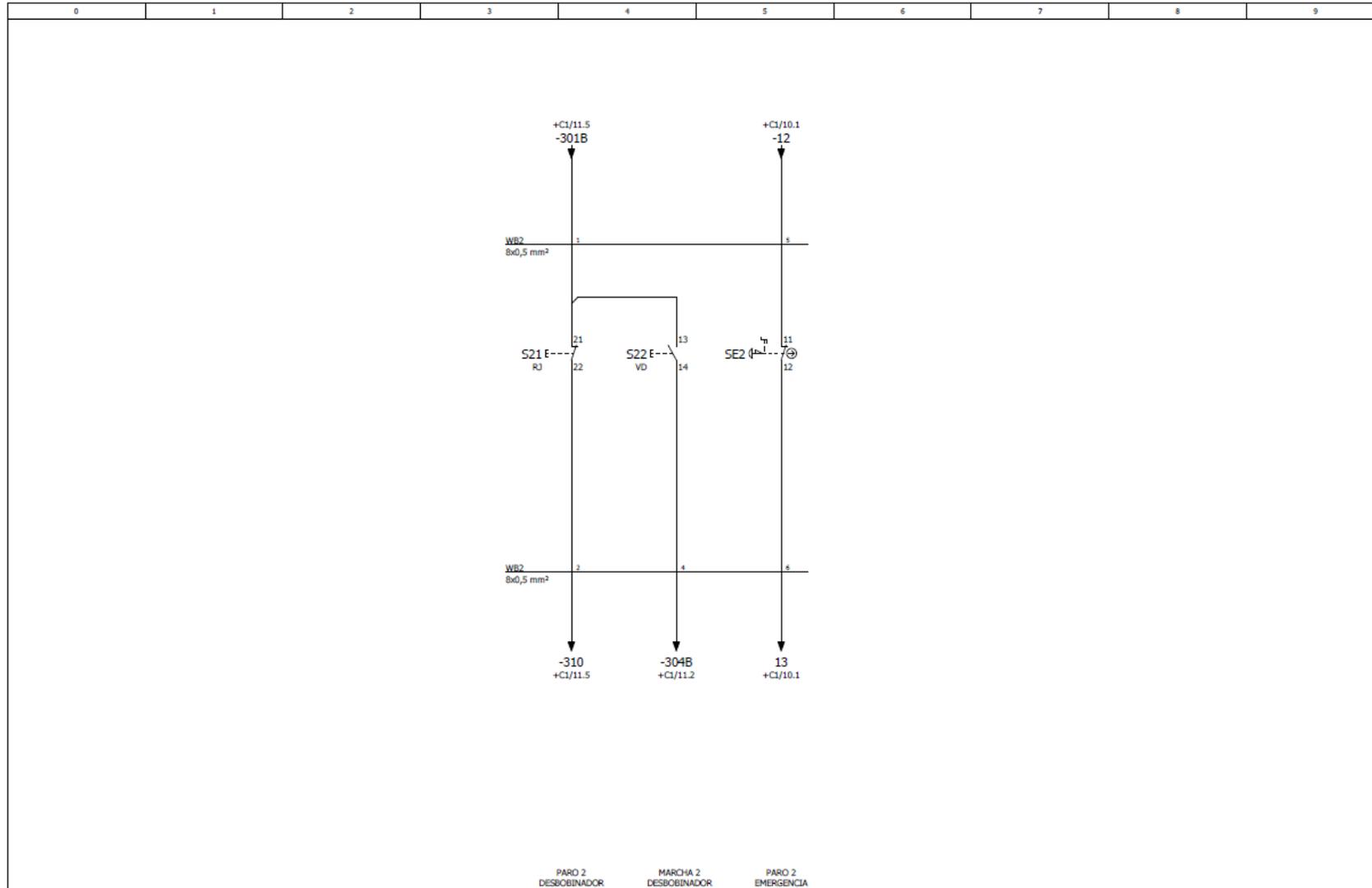
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+C1/13										
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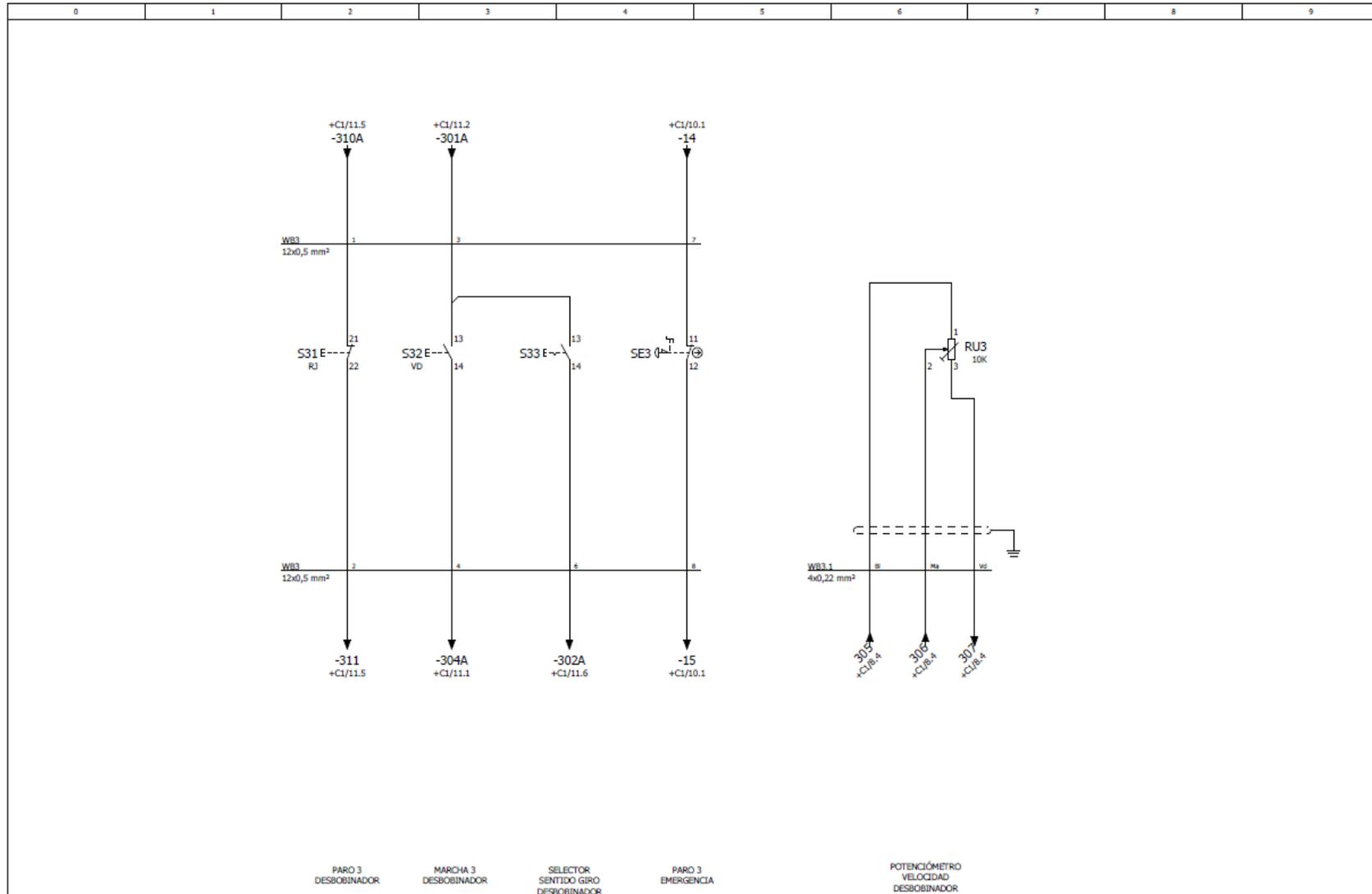
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<p>BOTONERA -B3-</p>											
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33											
Customer	Location	ARENYS DE MUNT	Creation date	28/01/2020			Page	PORTADA BOTONERA B3	Project Nº	= ESQ	
	Country	Deutschland	Edited by				Project description		20063	Page	32
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	Version		Mod. date	30/01/2020							

Use and maintenance manual

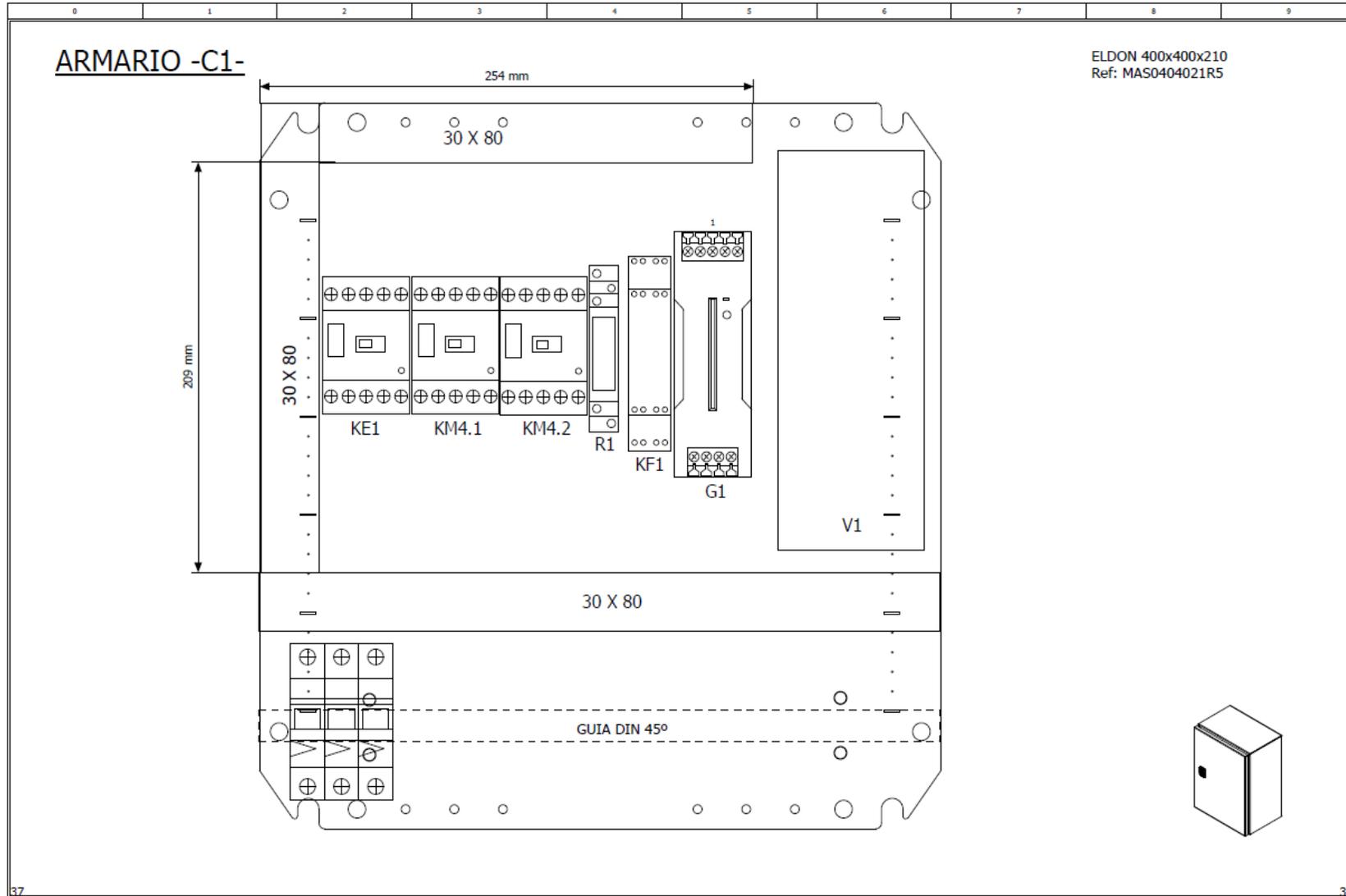
Unwinder unit

Model: UU-300



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Customer	Location	ARENYS DE MUNT	Creation date	28/01/2020	Page	CONEXIONADO BOTONERA B3		Project Nº	= ESQ
ermengineering belting fabrication equipment	Country	Deutschland	Edited by		Project description	DESBOBINADOR		20063	+ B3
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ermengineering belting fabrication equipment	Country	Deutschland	Edited by		Project description	DESBOBINADOR	20063	+ LAY	
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