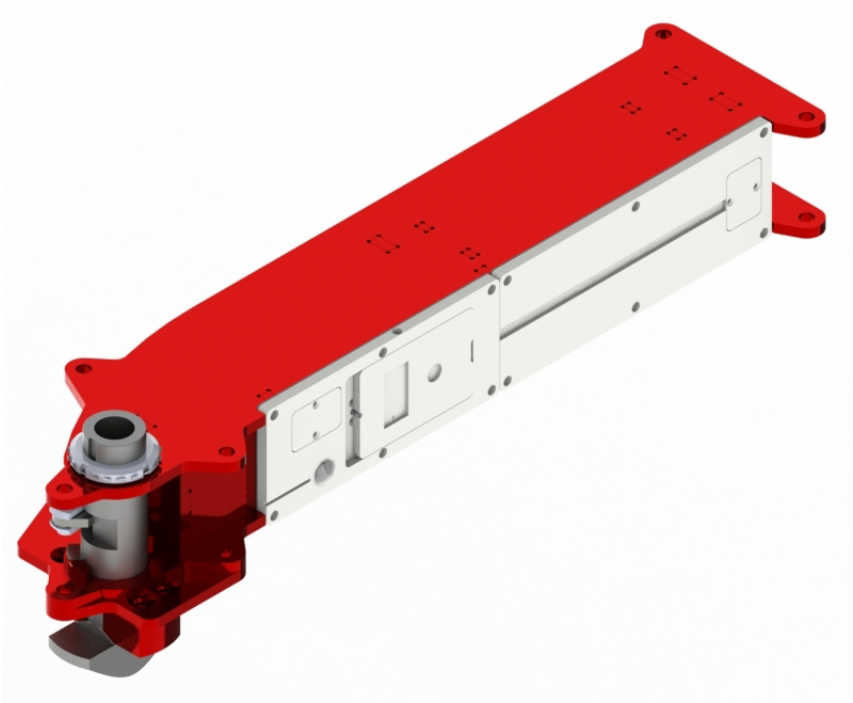
HOOKS TANIA VERDU, S.L.
Pol. Ind. de Raos, Ed. Puerta de Santander s/n
39011 Santander (CANTABRIA)

HTV automatic safety hooks

USER'S MANUAL

NICO AUTOMATIC TWISTLOCK



This User's Manual is given to the user by HOOKS TANIA VERDU, S.L. and is supplied together with the NICO AUTOMATIC TWISTLOCK, on the undertaking by the user that it will be read and understood by all workers before performing any operations with the NICO AUTOMATIC TWISTLOCK	
MANUFACTURER'S SIGNATURE/STAMP	**USER'S SIGNATURE/STAMP**

TABLE OF CONTENTS

1. INTRODUCTION

Please note that the primary objective of the advice contained in the following pages is the safety of all those who work with or find themselves in the operational area close to the NICO Automatic TwistLock, as well as providing a detailed explanation of its correct use and handling.

For the above reasons, we strongly urge you to carefully read this manual which will provide useful advice about the proper use and maintenance of the NICO Automatic TwistLock.

WARNING! DO NOT ATTEMPT TO USE OR OPERATE THE NICO AUTOMATIC TWISTLOCK BEFORE READING THIS MANUAL.

This instruction manual should be considered an integral part of the equipment and must be kept close by at all times. Please ensure it is kept in good condition.

This equipment must be handled, serviced and repaired only by those who are familiar with and aware of the specific dangers and risks that may be involved and who have a detailed understanding of the safety standards required.

The manufacturer is not responsible for any consequences that may result from modifications made to this lifting accessory without the express and written authorisation of the manufacturer, or in the case of improper use of the equipment.

2. INTRODUCTION TO THE COMPANY

HOOKS TANIA VERDU, S.L. (HTV) places special emphasis on the quality of its products and, for this reason, bases its commercial strategy on practical demonstrations leading to the establishment of fruitful and rewarding relationships with its clients.

With a view to facilitating as close a connection as possible between market and product, company vehicles are used as technical-commercial mobile units. This ensures the work of HTV technicians is fast and efficient, and allows the creation of client-based routes for equipment maintenance and updating, as well as providing equipment rental services.

MAIN DATA OF THE COMPANY

Name of the company:	HOOKS TANIA VERDU, S.L.
Address:	Pol. Ind. de Raos, Ed. Puerta de Santander s/n 39011 Santander (CANTABRIA)
Tax Identification Number:	B25775248
Telephone:	+34 942 356 394
Email:	info@hookshtv.com
Website	www.hookshtv.com

3. IDENTIFICATION OF THE EQUIPMENT

An identification plate can be found on the back of the casing with the following information:

- MÁQUINA / ACCESORIO: indicates this is an automatic TwistLock.
- MODELO: indicates the automatic 8 tonne TwistLock model.
- CARGA MÁXIMA: shows the maximum lifting capacity of the equipment.
- Nº DE SERIE: indicates the serial number of the equipment, with a unique number being assigned by the manufacturer to each separate device to ensure traceability.
- AÑO: shows the year of manufacture.

4. INTENDED USE

The NICO Automatic TwistLock is a lifting accessory that has been designed and manufactured for coupling to a lifting device, as described in section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**.

When the NICO Automatic TwistLock has been coupled to a load-lifting device, its intended use is the manipulation of loads coupled in turn to the NICO Automatic TwistLock, as described in section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**.

The loads coupled to the NICO Automatic TwistLock must not exceed those indicated in section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**. In addition, the NICO Automatic TwistLock must not be used outside the operational working range of -20ºC to + 85ºC, nor can it be used in explosive atmospheres.

The slings, chains, shackles, eyebolts, cables, hooks, etc., used to raise the lifting accessory must have a working coefficient equal to or higher than 4.

4.1. NON-INTENDED AND INCORRECT USE

The NICO Automatic TwistLock must not be used for the following purposes or under the following conditions:

- To lift people or animals.
- By a worker who has not fully read and understood this User's Manual and the manual of the load-lifting device to which it is coupled.
- If the safety systems have been interfered with.
- If the equipment has not been subjected to proper maintenance and servicing.
- If the load exceeds the limits as determined for the load-lifting device and/or the load-lifting accessory.
- If any component has been modified, damaged or is missing.

If this NICO device is used for any purpose other than that for which it was designed, or if the instructions in this User's Manual are not strictly adhered to, the terms of the warranty will be null and void and the user will be solely responsible for any consequences resulting from its improper and/or non-intended use.

5. CHARACTERISTICS OF THE NICO AUTOMATIC TWISTLOCK

5.1. GENERAL DESCRIPTION OF THE NICO AUTOMATIC TWISTLOCK

The NOA automatic shackle is a load-lifting accessory which has been designed to move loads with a lifting device capable of supporting and lifting such loads.

The lifting capacity of the NOA Automatic Shackle depends on the model, configuration and the method employed in its use (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.** for more information).

The NICO Automatic TwistLock is coupled in the **upper coupling area** to an **authorised shackle** which in turn is coupled to the corresponding load-lifting device by means of lifting accessories. The load to be handled is attached in **the lower coupling area of the TwistLock pin** (see

Figure 1 – Coupling areas areas).

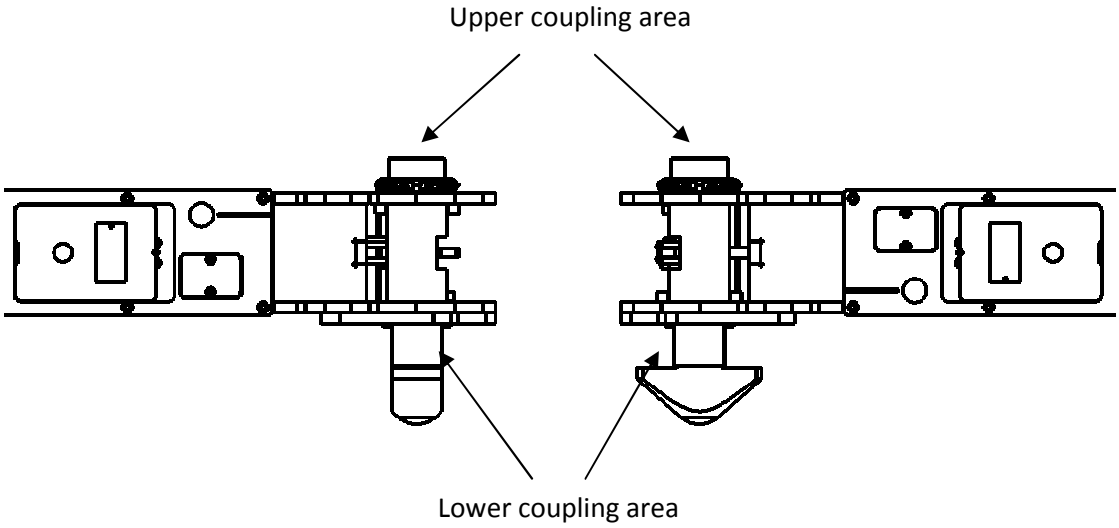
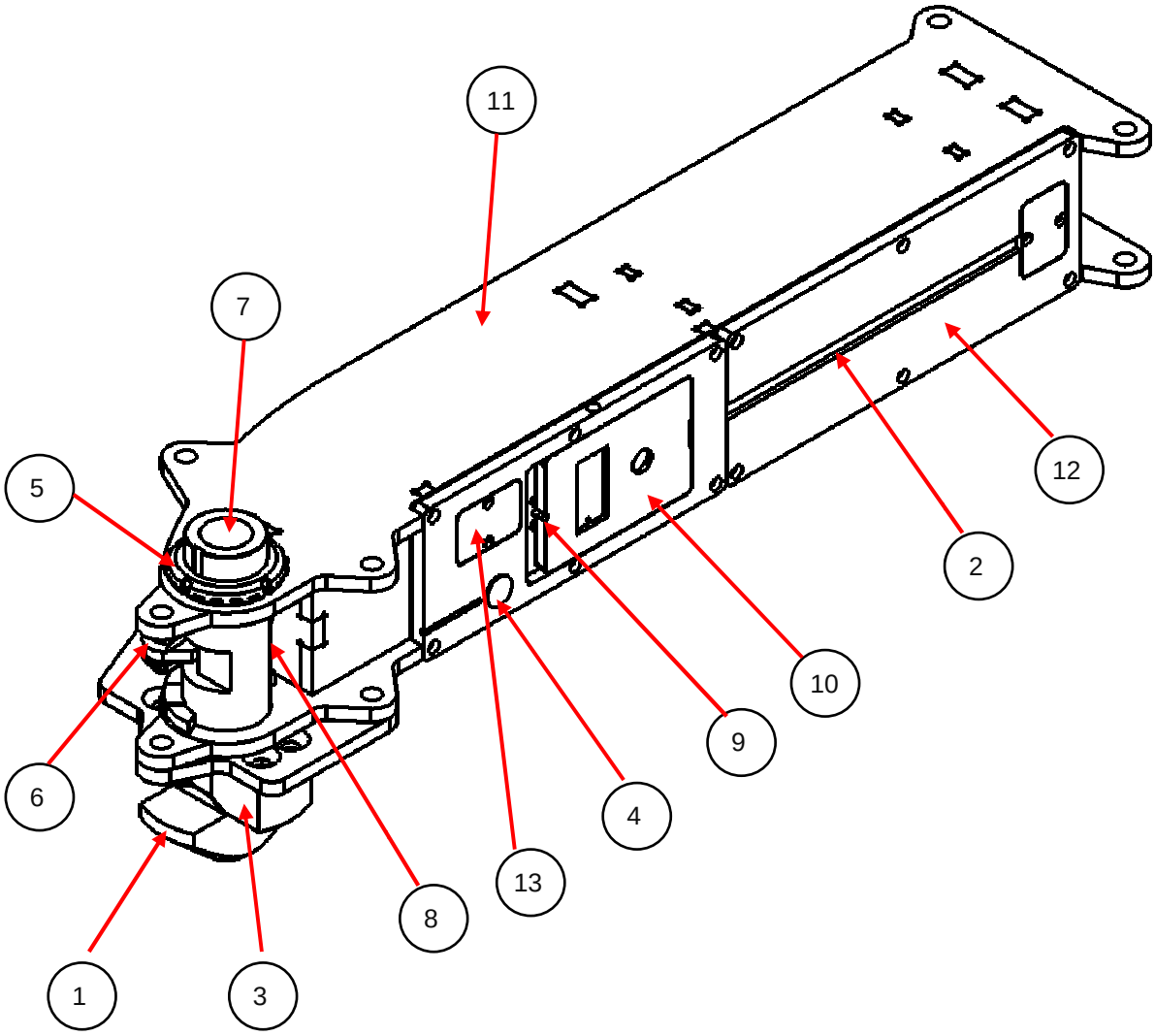


Figure 1 – Coupling areas

The load is attached through the action of the pneumatically driven pin of the NICO device, while the load to be handled necessarily requires corner fittings for shipping containers which comply with ISO 1161, such that the TwistLock can fully engage with the corner fitting.

The NICO Automatic TwistLock has LED signalling lights which inform the operator of the position of the pin (open / intermediate position / closed), preventing the risk of using the equipment when the pin is located in an intermediate position or its position is unknown to the operator.

5.2. MAIN PARTS



1.- TwistLock
2.- LED lighting
3.- TwistLock extractor
4.- Manual twist operation button
5.- Restraining nut
6.- Piston clevis
7.- Eye bolt support
8.- Pneumatic piston
9.- Battery
10.- Battery positioner
11.- Casing
12.- Pneumatic components cover
13.- Manual valve

5.3. GENERAL DIMENSIONS AND WEIGHT

The general dimensions of the NICO Automatic TwistLock are shown below and expressed in millimetres:

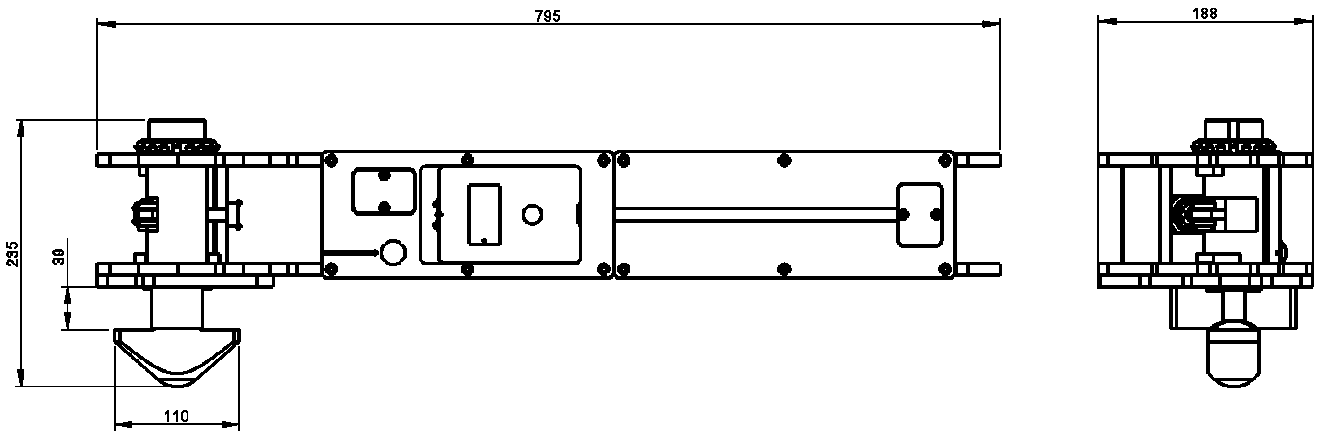


Figure 2 – Right hand

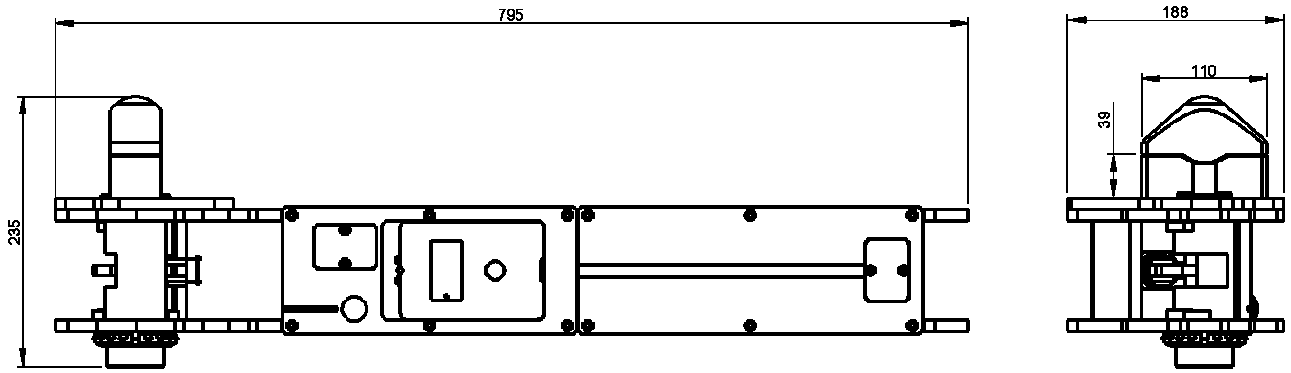


Figure 3 – Left hand

As this NICO device weighs approximately **40 kg**, appropriate means must be used at all times for its transportation.

5.4. LIFTING CAPACITY

This device has been designed strictly for use in a vertical position.

The NICO Automatic TwistLock has been designed to bear a vertical load of **8 Tonnes**. Verification is given in this Technical File of the articles which are applicable to the NICO Automatic TwistLock and which form part of the following Standards:

UNE-EN 13155. Cranes. Safety. Non-fixed load lifting attachments.

UNE 58132-3. Lifting appliances. Rules for the design. Part 3: Calculation of structures and joints

UNE-EN 1677-1. Components for slings. Safety. Part 1: Forged steel components, Grade 8.

UNE 58112-1. Cranes and lifting appliances. Classification. Part 1: General.

The user must verify prior to use of the NICO Automatic TwistLock that the mounted shackle complies with at least the same load requirements as those for the NICO Automatic TwistLock.

The load capacities indicated are defined for a working temperature range of between -20ºC and + 85ºC. Should operation of the device be required outside the above temperature range, please contact HOOKS TANIA VERDU, S.L.

To ensure user safety, the NICO devices have been subjected to static tests with a minimum coefficient of 1.5.

6. SAFETY

6.1. GENERAL SAFETY RULES

Always remember that load lifting operations are complex by nature, and that safety guidelines cannot cover all eventualities given the high number of variables involved. All safety measures and rules are designed to avoid personal injury and material damage.

All workers who use this equipment must comply with the following general safety rules:

1. Before using the equipment, make sure you have read and understood this manual and that any other person under your charge has also read it.

2. Do not omit any sections of this manual and pay special attention to those sections which contain a warning sign. Non-observance of such warnings is a common cause of accidents.

3. The operator should have a good understanding of the method used for load-lifting and of the risks that its use implies.

4. Before conducting any load-lifting operation, examine the load that is to be lifted and determine its weight and dimensions, whether it contains any type of hazardous or dangerous material and where the load will be placed.

5. DO NOT lift, bear the weight of or transport people and/or animals using NICO equipment.

6. The NICO equipment must be coupled to a load-lifting device by means of a shackle with a load capacity equal to or higher than that of the load to be lifted.

7. Ensure that the NICO Automatic TwistLock, load-lifting device and lifting accessories have sufficient lifting capacity for the load in question, and check that all the equipment is in good working condition.

8. Decide on the access routes to deposit the load and check that they are properly prepared. Make sure that the load is free to move and that no obstacles are in the way.

9. During the lifting operation, maintain good communication with those responsible for signalling.

10. The NICO equipment and the load-lifting device must be handled gently, and in a controlled and safe manner.

11. Exercise your right to refuse to use the equipment if you have concerns about its condition, the weight of the load, the height that the load has to be lifted when considering the capacity of the load-lifting device, etc.

12. Use appropriate individual protective equipment for each task.

13. Wear suitable clothing and avoid loose-fitting clothes; use safety footwear, a safety hat and safety gloves to handle any part of the NICO equipment or load-lifting machinery to which it is coupled.

14. Never perform, for any reason, repair or maintenance operations when the NICO equipment is coupled to a load-lifting device or when electrical components are connected.

15. Please read carefully all plates and pictograms. Make sure they are legible and in good condition.

16. Since the weight of the NICO equipment is over 25 kg, do not attempt to lift or transport it manually. Instead, use appropriate tools and machinery for its transport.

6.2. MEANING OF THE SAFETY WARNINGS

The NICO Automatic TwistLock has various labels and plates to inform the user of the obligations and precautions that must be taken into consideration. The Tables below explain the meaning of each label and pictogram. Also shown are the pictograms for worker safety when the equipment is in use. Workers should use the individual protective equipment as described below.

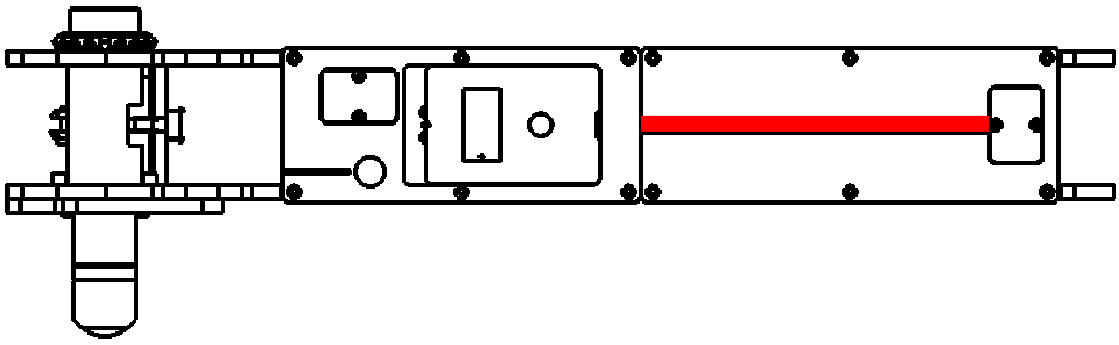
Ensure that the labels and plates are kept in good condition. If they are damaged or become illegible, please contact HOOKS TANIA VERDU, S.L. and they will be replaced immediately.

PICTOGRAM		MEANING
PERSONAL PROTECTIVE EQUIPMENT		Gloves must be worn when working with this equipment
		Safety footwear must be worn when using this equipment.
		A safety helmet must be worn if you are in the proximity of the load-lifting device coupled to the NICO Automatic TwistLock when it is in use.

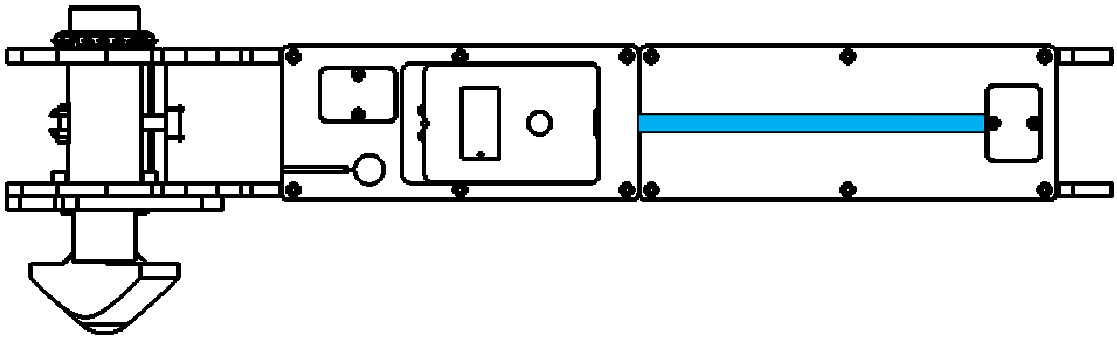
PICTOGRAM / PLATE		MEANING
SAFETY IN THE WORK ENVIRONMENT		The User's Manual must be carefully read and understood before beginning to work with the machine to reduce potential risks.
		Ensure that a safe distance is kept between any workers and the equipment when in use, especially during the lifting and uncoupling of loads, due to the risk of a fall or impact with the load or the equipment itself. This pictogram must be clearly visible.

In addition, the NICO Automatic TwistLock has a three-colour LED system which indicates to the user the position of the pin during load coupling and uncoupling operations.

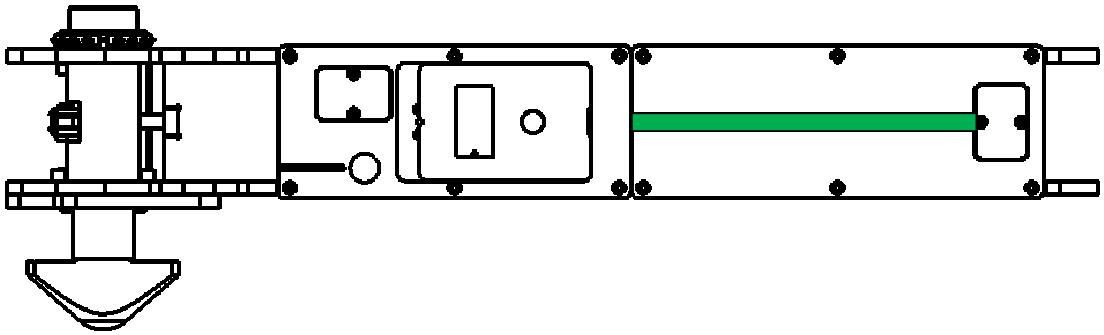
When the LEDs are green the pin is closed (at an angle of 90º with respect to the hole of the container corner fitting), when the LEDs are blue it indicates that the pin is in motion (in an intermediate position in the process of being opened/closed) and when the LEDs are red the pin is open (aligned with the hole of the container corner fitting).

OPEN PIN


MOVING PIN



CLOSED PIN



7. TRANSPORT OF THE EQUIPMENT

In order to transport the NICO equipment it should be placed vertically inside the original case in which it was delivered (*Figure 4*).

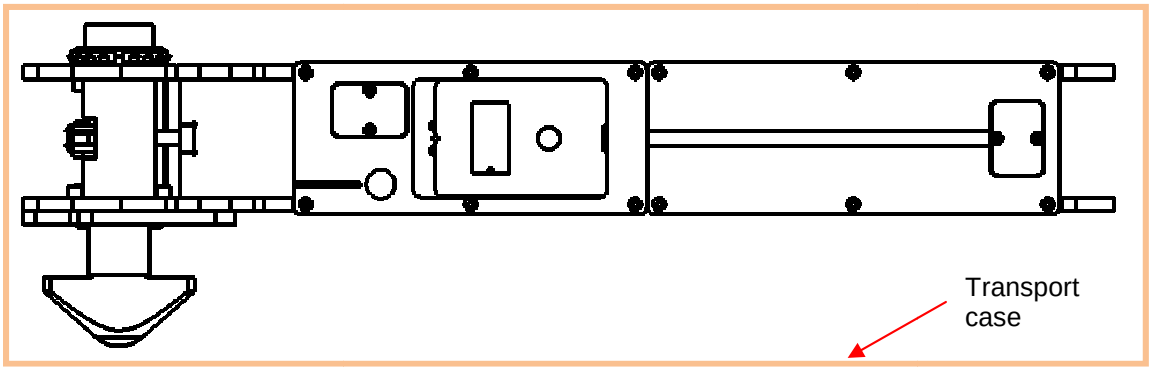


Figure 4

Under exceptional circumstances, when the equipment has to be moved and the original case is not available, it should be placed on a flat, stable surface and be fastened to it via the 4 screw holes (*Figure 5*):

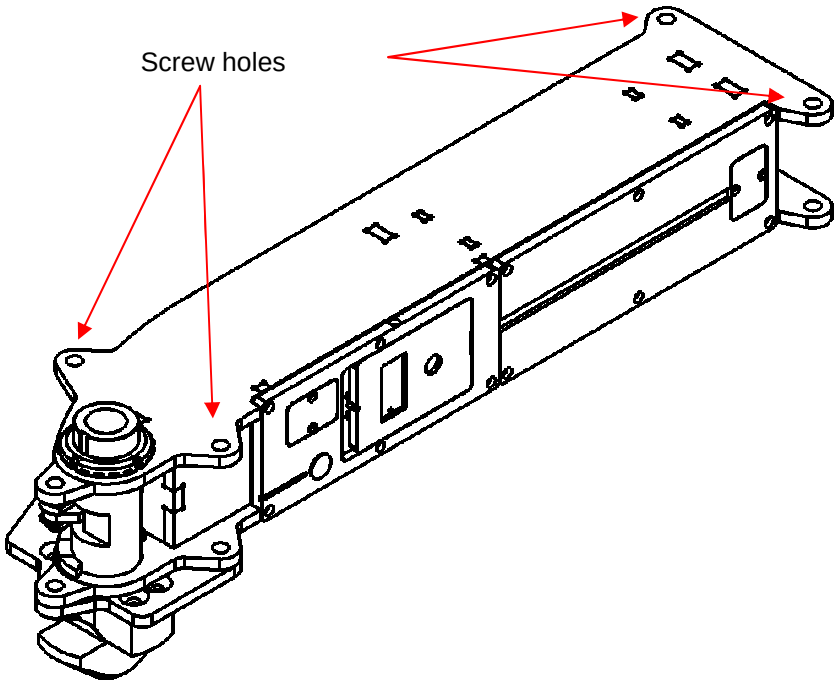


Figure 5

NEVER place NICO equipment on top of other NICO equipment unless they are in their respective protective cases. Only in this way can the stability and integrity of the various NICO devices be ensured to avoid damage caused by falls or impacts.

8. OPERATION OF THE EQUIPMENT

Before considering how the equipment is operated, please read the following sections carefully to avoid unnecessary risks.

8.1. BEFORE BEGINNING TO WORK

Before beginning to work with the equipment, you must:

1. Read this User's Manual, as well as that of the load-lifting device to which the NICO Automatic TwistLock will be coupled and any manual for accessories that are used s.

2. Make sure that everybody near the equipment is aware of the operations about to take place and the specific nature of the load-lifting action.

3. Check the general integrity of the structure of the equipment and its correct operation, especially the coupling points.

4. Check that eye bolt and shackle are appropriate for use with the load and the NICO device, and check that the lifting capacities of the load-lifting device and any accessories used are sufficient for the load in question.

5. Given the weight of the NICO equipment, do not attempt manual handling or transport. Use appropriate tools and machinery for its transport.

6. Check that the operator of the load-lifting device has the corresponding permit for its use and is situated in a position that does not entail any risk of crushing by the load.

7. Ensure personal protection by using the appropriate Personal Protective Equipment (PPE) as described in this Manual. Failing to observe this advice increases any risk that results from the use and/or maintenance of the equipment.

8.2. INSTALLING, RECHARGING AND REPLACING THE BATTERY

The battery is activated by connecting and disconnecting the charger supplied with the equipment.

Once the battery has been charged, it is ready to be installed in the NICO Automatic TwistLock, as explained below:

1. Insert the battery in the device (*Figure 6 – Insert battery*).

2. Slide the battery into position, until the positioner holds it in place (*Figure 7 – Slide battery*).

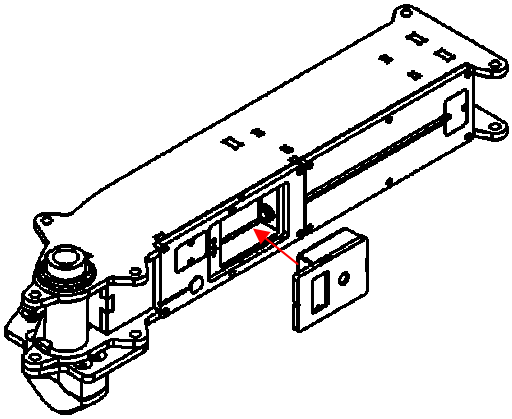


Figure 6 – Insert battery

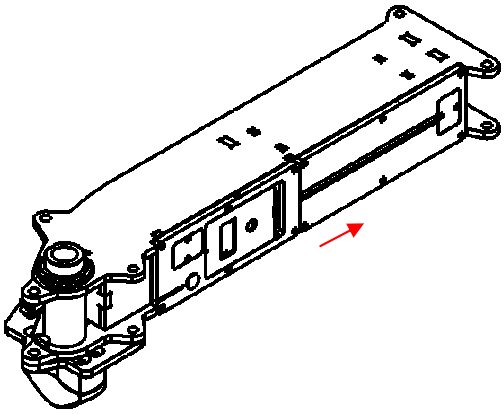


Figure 7 – Slide battery

To remove the battery perform the same operation in reverse after first pressing the battery positioner (*Figure 8 – Battery positioner*).

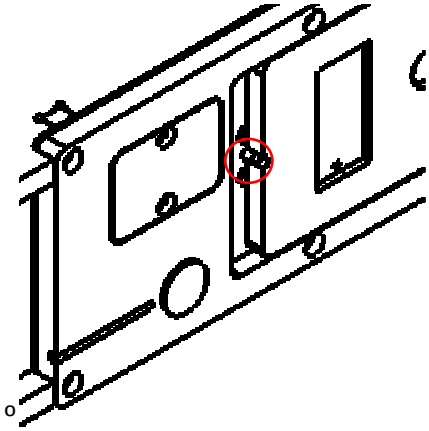


Figure 8 – Battery positioner

The battery has a charge indicator, which can be consulted by pressing a button next to the LED indicators which will then show the present battery charge level (*Figure 9 –*).

Figure 9 – Battery level

8.3. LEFT- AND RIGHT-HAND-SIDE OPERATION

This lifting accessory has been designed to allow it to work with the TwistLock pin to the right or to the left so it can be attached to any of the corner fittings of the cage or container.

Following is a description of the process required to change from left to right-hand-side operation or vice-versa. The process basically involves removing the TwistLock pin and refitting it in the opposite direction:

Firstly, remove the KM pin used to hold the TwistLock pin in place:

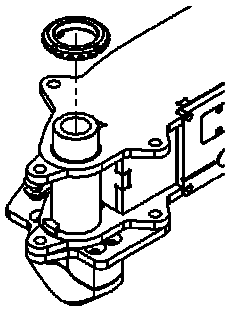


Figure 10 – Removal of KM nut.

Remove the pin which connects the clevis of the pneumatic cylinder to the TwistLock pin:

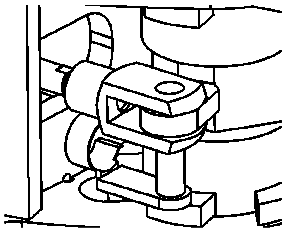


Figure 11 – Detail of cylinder clevis connection.

Remove the 4 Allen screws which hold in place the guider for the TwistLock pin, and remove the pin and guider:

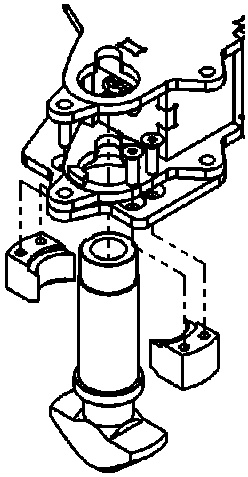


Figure 12 – Remove TwistLock pin

Reassemble the TwistLock pin inserting it the other way round and reversing the procedure described above:

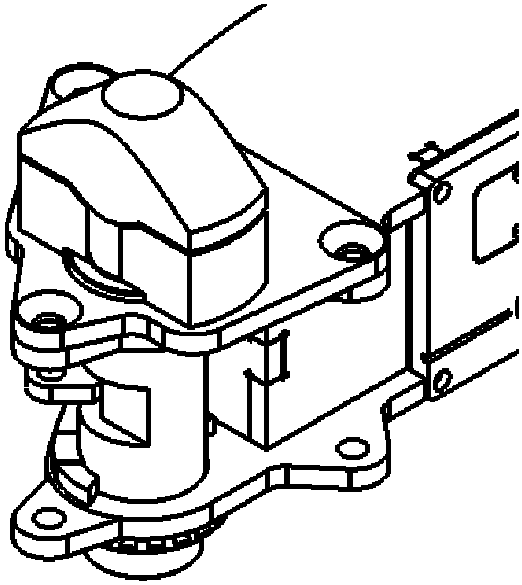


Figure 13 – Reassembly of Twistlock pin

This procedure must only be carried out by appropriately trained workers.
When carrying out this procedure it should be remembered that the KM nut has a self-locking washer which must be reinstalled.

8.4. REMOTE CONTROL

The equipment can be remote controlled from a maximum distance of 300 m under optimal conditions. The presence of objects between the remote control and the equipment may reduce this maximum distance.

8.4.1. JOINT CONFIGURATION OF REMOTE CONTROL AND NICO AUTOMATIC TWISTLOCK

It is possible to separately operate **two different groups** of NICO equipment (code *GROUP*) using the same remote control, in such a way that one set of various NICO Automatic TwistLocks (Group 1) can be controlled independently from another set of various NICO Automatic TwistLocks (Group 2).

EQUIP CODE: Equipment code, which must be the same as that of the transmitter control.

GROUP: Code of the group to which the receiver of the corresponding NICO Automatic TwistLock belongs.

8.4.1.1. CONFIGURATION OF THE NICO AUTOMATIC TWISTLOCK

Follow the instructions below to configure the NICO Automatic TwistLock:

1. Unscrew and remove the *Equip Code* cover located on the rear cover (*Figure 14 and Figure 15*).

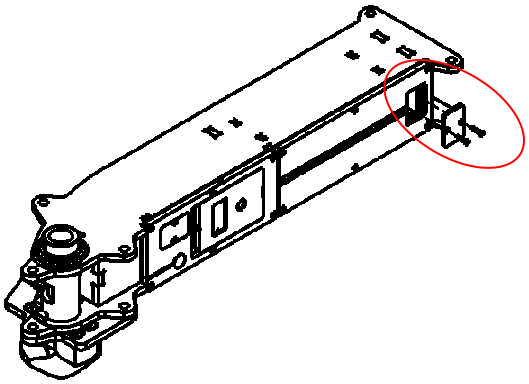


Figure 14

Figure 15

2. Configure the *EQUIP CODE* using a combination of positions that must coincide with the combination used with the remote control (*Figure 16 – NICO EQUIP CODE).*

3. Configure the *GROUP* code position, which defines the group to which that particular device belongs (*F Figure 17 – GROUP).*

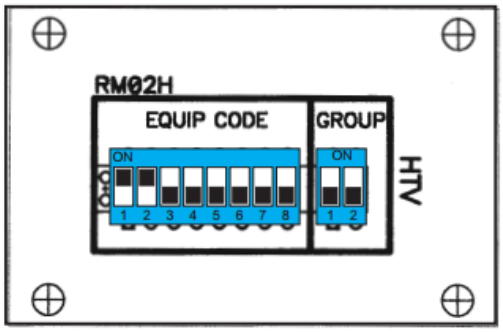
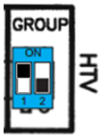


Figure 16 – NICO EQUIP CODE ICO

POSICIÓN GROUP	GRUPO
	GRUPO 1
	GRUPO 2

F

Figure 17 – GROUP

Note that that if there are several TwistLocks with the same combination, a single command from a remote control with that combination will perform the same action for all the TwistLocks at the same time.

8.4.2. CONFIGURATION OF HTV REMOTE CONTROL

Follow the instructions below to configure the NICO Automatic TwistLock remote control device:

1. Unscrew and remove the rear cover of the remote control device (*Figure 19 – Rear cover)*

2. Configure the *EQUIP CODE* (*Figure 18 – EQUIP CODE)* so that the combination of the switches matches that of the corresponding NICO equipment (see previous section: *CONFIGURATION OF THE NICO AUTOMATIC TWISTLOCK*).

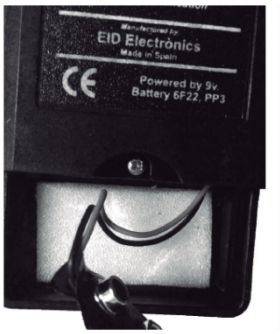


Figure 19 – Rear cover

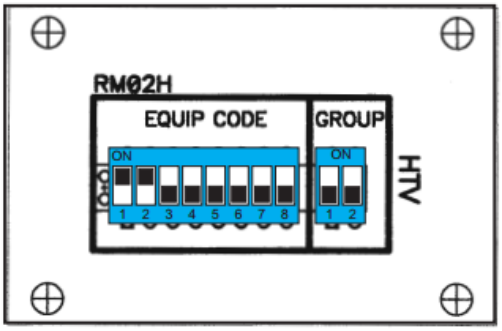


Figure 18 – EQUIP CODE CONTROL

8.4.3. CHANGING THE REMOTE CONTROL BATTERY

The control uses as power supply a universal 9V PP3 battery.

To change the HTV control battery, simply remove the lower rear cover and replace the battery (*Figure 20 – battery*).

Figure 20 – Control battery

8.4.4. OPERATION BY REMOTE CONTROL

The control has eight buttons for separate control of the Group 1 TwistLocks or the Group 2 TwistLocks or joint control of the Group 1 and 2 TwistLocks at the same time (see *8.4.1 JOINT CONFIGURATION OF REMOTE CONTROL AND NICO AUTOMATIC TWISTLOCK*for further information).

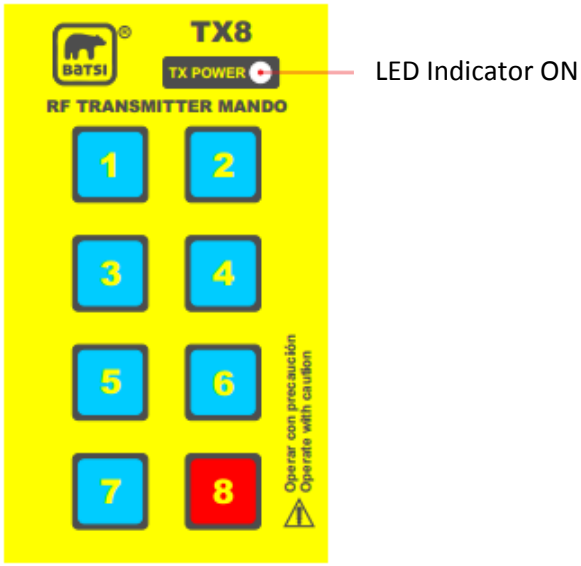


Figure 21 - Remote control transmitter

Description of the function of each button:

1. Open TwistLocks group 1
2. Close TwistLocks group 1
3. Open TwistLocks group 2
4. Close TwistLocks group 2
5. General OFF TwistLocks
6. General OFF TwistLocks
7. Open TwistLocks group 1 & 2 (ALL)
8. Close TwistLocks group 1 & 2 (ALL)

Note that that if there are several TwistLocks with the same combination, a single command from a remote control with that combination will perform the same action for all the TwistLocks at the same time.

8.5. COUPLING THE NICO AUTOMATIC TWISTLOCK TO A LOAD-LIFTING DEVICE

The NICO Automatic TwistLock must be coupled to a load-lifting device using accessories situated in the upper coupling area (see

Figure 1 – Coupling areas areas in section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**).

The accessories must be adapted to the dimensions of the coupling area of the NICO equipment (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**).

Note: Generally, a shackle will be used to couple the NICO equipment with the sling/chain of the load-lifting device (*Figure 22 - NICO with eyebolt and shackle cáncamo y grillete and shackle*).

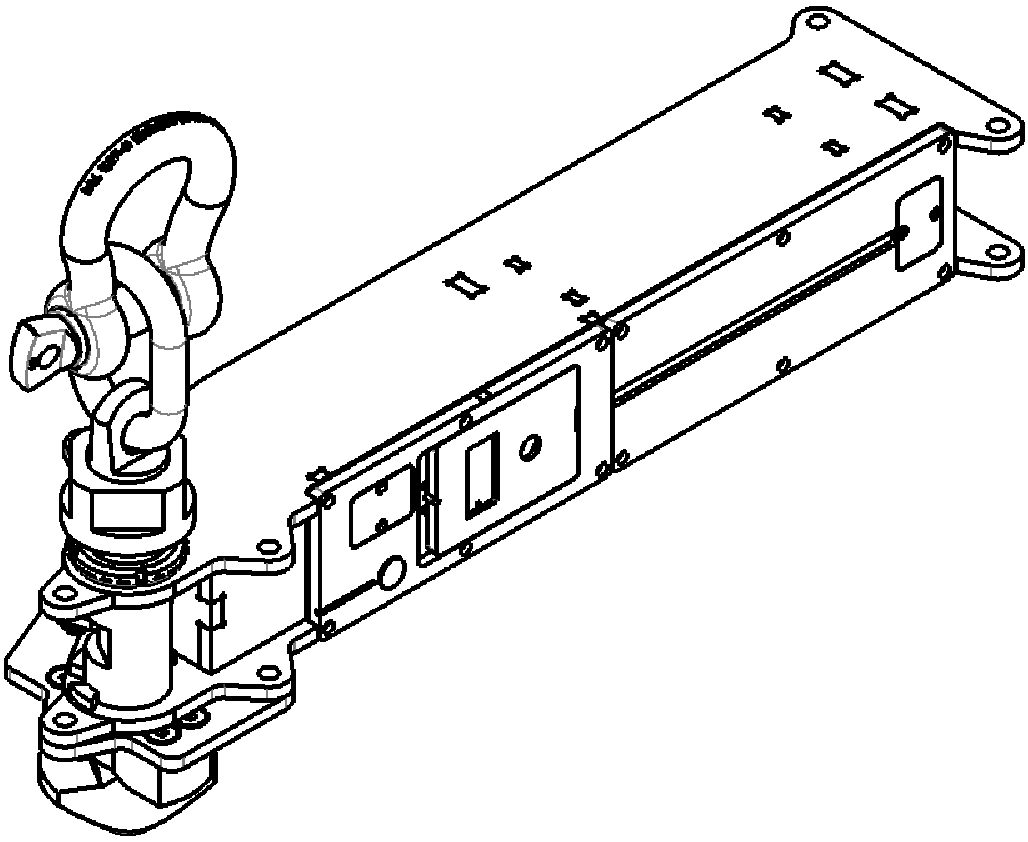


Figure 22 - NICO with eyebolt and shackle

Check that the load-lifting device and accessories have a lifting capacity equal to or higher than the load to be lifted.

8.6. COUPLING THE LOAD TO THE NICO AUTOMATIC TWISTLOCK

When the NICO Automatic TwistLock has been coupled to the load-lifting device, the load can be engaged by manual control of the buttons which determine the position of the pin, or by remote control.

If several NICO Automatic TwistLocks are being used for the same load, pay special attention to the working angle (see section **¡Error! No se encuentra el origen de la referencia.**) and ensure that the load is uniformly distributed among all the equipment in use.

NOTE: When the pin is in the open position (aligned with the hole of the corner casting) the LED lights will be red; when the pin is in motion in an intermediate position, the LED lights will be blue and when the pin is fully closed (perpendicular to the hole of the corner casting), the LED lights will be green (section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.** for further information).

It is **TOTALLY PROHIBITED** to conduct lifting operations if the LEDs are not green.

8.6.1. MANUAL COUPLING OF THE LOAD

Follow the instructions below for manual engagement of the load to the NICO Automatic TwistLock:

1. Position the NICO device above the corresponding corner casting and, after ensuring the TwistLock pin can turn freely **in the ISO corner casting,** manual operation can be performed by pressing the push button located on the battery casing (*Figure 23* –). When the pin has fully turned and the LEDs are green, the load can be safely lifted.

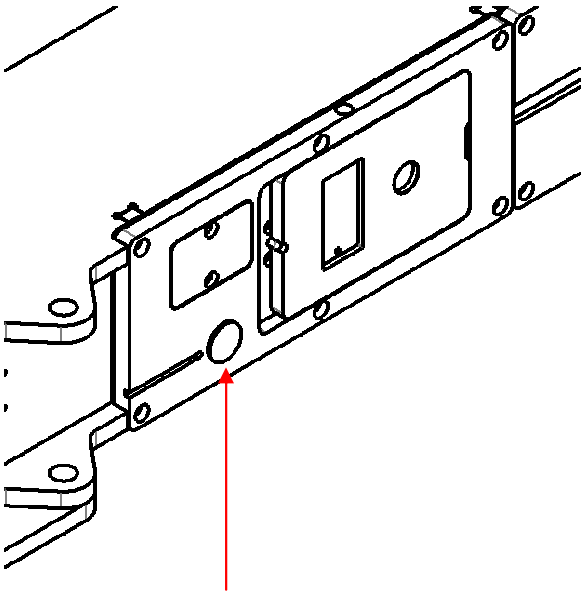


Figure 23 – Manual push button

8.6.2. COUPLING THE LOAD BY REMOTE CONTROL

Follow the instructions below to couple the load to the NOA shackle by remote control NICO Automatic TwistLock:

1. Make sure the pin is in open position (LEDs red) and manoeuvre the load-lifting device so that the TwistLock pin can freely turn in the ISO corner casting. Press the Close button of the remote control device which corresponds to the TwistLock group (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**) to turn the pin so that it is now positioned perpendicular to the upper slot of the ISO corner casting. When the pin is in the closed position, the LEDs will turn green.

WARNING: To avoid being hit by the moving parts of the NICO Automatic TwistLock, under no circumstances should anybody approach or interfere with the equipment during a remote control load engagement process.

8.7. MOVING THE LOAD

Once the load has been coupled to the NICO Automatic TwistLock (green LEDs), make sure the load is moved as smoothly and in as controlled a manner as possible, avoiding any swinging motion that could cause the load to strike something or even disengage it. Plan the moves that the set of loads as a whole will take to avoid the possibility of impacts with people or other objects.

WARNING: Users who are in the proximity of the machine must be warned of the pre-planned path the load will use. Under no circumstances should anybody, including the load-lifting device operator, position themselves below the load.

If several NICO Automatic TwistLocks are being used for the same load, pay special attention to the work angles (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**) and ensure that the load is uniformly distributed among all the equipment in use.

Take extra care when working close to electricity cables. Maintain a safe distance to avoid any contact with them. Bear in mind the possible risk of unexpected/unforeseen movements of the load.

Note: When the equipment is in operation and to avoid overheating of the compressor motor, a timer is activated which allows a maximum operating time of eight seconds and eight seconds of rest in order to avoid possible overheating of the compressor motor.

NEVER carry out movements if the NICO Automatic TwistLock is coupled to a load and the LEDs are off or blue.

8.8. RELEASING THE LOAD FROM THE NICO AUTOMATIC TWISTLOCK

To disengage the load from the NICO Automatic TwistLock, use the reverse procedure to the coupling process. This can be done manually using the push button on the battery casing or by remote control.

VERY IMPORTANT: When the load is being disengaged from the NICO Automatic TwistLock, check that the load is on a firm and horizontal surface to ensure load stability.

Note: When the pin is fully open (parallel to the slot of the ISO corner casting) the LEDs will be red (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**).

8.8.1. MANUAL UNCOUPLING OF THE LOAD

Once the load has been placed in the position where it is to be released and is no longer exerting force on the NICO Automatic TwistLock, use the reverse procedure to the manual load engagement process and press the push button on the battery casing (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**) so that the pin turns allowing the load to be released.

8.8.2. RELEASE OF THE LOAD BY REMOTE CONTROL

Once the load has been placed in the position where it is to be released and is no longer exerting force on the NICO Automatic TwistLock, use the opposite procedure to the remote control load engagement process (see **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**), pressing the corresponding 'Unlock' remote control button (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**), allowing release of the load.

8.9. UNCOUPLING THE NICO AUTOMATIC TWISTLOCK FROM THE LOAD-LIFTING DEVICE

To uncouple the NICO Automatic TwistLock from the load-lifting device, position it on a flat and stable surface of sufficient strength to support its weight and disengage the accessory attaching the shackle to the load-lifting device.

VERY IMPORTANT: When uncoupling the NICO Automatic TwistLock from the load-lifting device, the equipment must be free of any load.

9. MAINTENANCE

Proper maintenance can extend the useful life of the NICO Automatic TwistLock. An explanation is given below of how to ensure the equipment is properly and safely maintained.

Maintenance work must be performed on a regular basis by qualified personnel with the appropriate know-how, always ensuring that all precautions are taken to avoid unnecessary risks.

Maintenance work must be carried out as described below. Non-observance of this is sufficient reason for the guarantee to be declared null and void.

Non-observance of the appropriate maintenance procedures could result in the defective operation of the product, damage to the equipment and serious injury to its users.

10. GENERAL RULES FOR MAINTENANCE

1. Ensure that you fully understand the maintenance procedure before initiating any work.

2. Conduct maintenance operations after cleaning all the parts of the equipment.

3. Always conduct maintenance operations with the equipment uncoupled from any load-lifting device, and remove the battery to disconnect the electricity supply and pneumatic circuit pressure. NEVER perform maintenance work or make adjustments when the equipment is in use.

4. Maintenance work can be dangerous, so closely observe all related safety regulations.

5. The installation, repair or replacement of any part must only be performed by a qualified technician.

6. Only use replacement parts recommended by the manufacturer.

7. Maintain all parts in good condition and ensure they are properly installed. Repair any damage immediately, replacing any worn or broken parts.

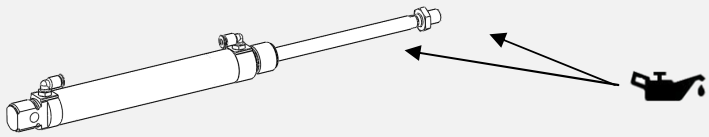
8. When replacing any component, whether it be a screw, nut or commercial product, use another of the same characteristics. If in doubt, please contact HOOKS TANIA VERDU, S.L.

9. Place the equipment on a horizontal and stable surface, and use whenever possible the support specifically designed for maintenance work and supplied together with the equipment.

11. PREVENTATIVE MAINTENANCE AND SERVICING

Periodical servicing should be performed to verify the integrity of the equipment. These servicing operations should be recorded (see section **¡Error! No se encuentra el origen de la referencia. ¡Error! No se encuentra el origen de la referencia.**).

A description of the maintenance and servicing operations that need to be performed to ensure the correct operation of the equipment is provided below.

MAINTENANCE POINTS		
No.	**ACTION**	**PERIOD OF TIME**
1	Check the general condition of the equipment for signs of knocks, cracks or fatigue, paying special attention to the pin and casing.	1000 h
2	Check that the surface of the piston rod of the pneumatic piston, the piston rod seal and cylinder lining are in good condition and that there is no significant amount of air leakage. Any damage or corrosion that appears in these components could increase friction and give rise to dangerous conditions. Please contact HOOKS TANIA VERDU, S.L if any such defect is observed to order a suitable replacement part.	500 h
3	Check the condition and connections of the different pneumatic components, compressor, valves, filters, pressure switch, hoses, adapters... (see section *16 SCHEMATIC REPRESENTATION OF PNEUMATIC CIRCUIT*). If any component appears damaged or worn, please contact HOOKS TANIA VERDU, S.L. to order a suitable replacement part.	500 h
4	Apply lubricant regularly to the piston rod and the pneumatic cylinder seals. 	500 h
5	Check that the seals of the protective casing of the NICO Automatic TwistLock are in good condition, replacing them if necessary.	1000 h
6	Check the condition of all electrical components and connections, ensuring there is no damage, breakage or wearing of any component or wiring. If a bad connection is observed, fix it and connect it correctly. If a cable is not in good condition, replace it.	500 h
7	Check no water droplets are inside the casing which could cause the equipment to malfunction.	500 h
8	Regularly check and, if necessary, tighten the different screws of the equipment, especially the external screws which are more susceptible to loosening as a result of knocks/vibrations because of the use of the equipment.	2 months
9	Check the condition of the paintwork and apply anticorrosive paint when and where necessary.	1 month

The following is a potential breakdown/malfunction checklist supplied by the manufacturer:

No.	BREAKDOWN/MALFUNCTION	POSSIBLE CAUSES	SOLUTION
1	The TwistLock pin does not turn	Dead or incorrectly installed equipment battery	Charge and install the battery following the instructions in this Manual.
		Failure in the electrical circuit or of an electrical component.	Contact the technical team of HOOKS TANIA VERDU, S.L.
		Failure in the pneumatic circuit.	Contact the technical team of HOOKS TANIA VERDU, S.L.
2	LED lights do not work	Dead or incorrectly installed equipment battery.	Charge and install the battery following the instructions in this Manual.
		Failure in the electrical circuit or of an electrical component.	Contact the technical team of HOOKS TANIA VERDU, S.L.
3	Remote control does not work	Dead or incorrectly installed equipment battery.	Charge and install the battery following the instructions in this Manual.
		Dead or incorrectly installed remote control battery.	Replace and install the battery as described in section *8.4.3 CHANGING THE REMOTE CONTROL BATTERY*
		Failure in the electrical circuit or of an electrical component.	Contact the technical team of HOOKS TANIA VERDU, S.L.
		Incorrect joint configuration of the equipment and remote control.	Jointly configure the remote control and the equipment as described in section *8.4.1 JOINT CONFIGURATION OF REMOTE CONTROL AND NICO AUTOMATIC TWISTLOCK.*

12. CLEANING

To ensure a long working life of the equipment, remember that clean equipment is safe, clean equipment is ready to be used and clean equipment is long-lasting.

It is recommended to clean the equipment after each workday. Use compressed air and a dry cloth.

Take special care **to eliminate any water droplets** after the cleaning process to minimize the possibility of damage to the electrical circuits of the equipment.

REMEMBER: proper maintenance of the equipment will ensure its correct performance and a long working life.

After each cleaning, lubricate the different mechanical components when the equipment needs to be used again.

13. STORAGE

Follow the instructions below to ensure the equipment is correctly stored and remains in good condition if it is not going to used for a long period:

1. Thoroughly clean the equipment...
   1.1. Externally
   1.2. The various components.
2. Clean the areas which are difficult to access and which tend not to be regularly cleaned.
3. Use anticorrosive paint on areas where the paint has worn away.
4. Store in a clean and dry warehouse.
5. Use a cover to avoid the accumulation of dust.

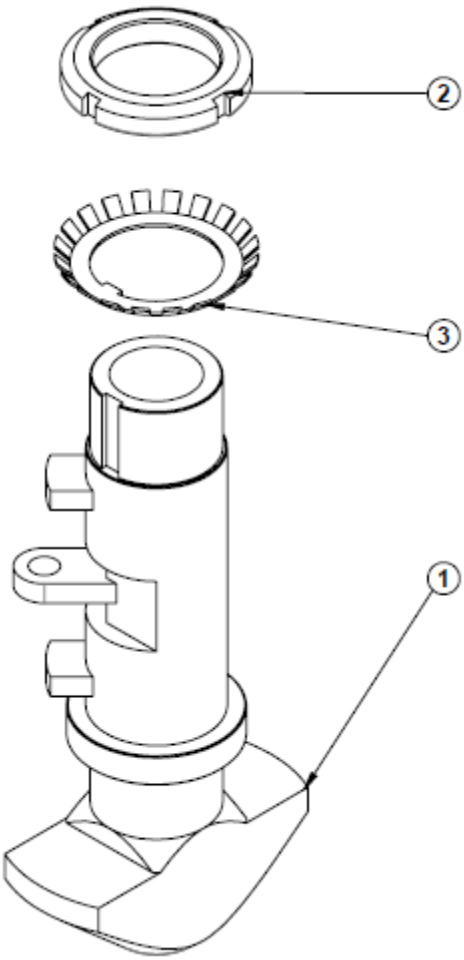
13.1. PREPARATION OF THE EQUIPMENT FOR USE AFTER STORAGE

Follow the instructions below to prepare the equipment for use after a long period of storage.

1. Remove the dust protection cover.
2. Perform a visual and general examination of all parts.
3. Clean.
4. Check the correct operation of the different components as described in this Manual.

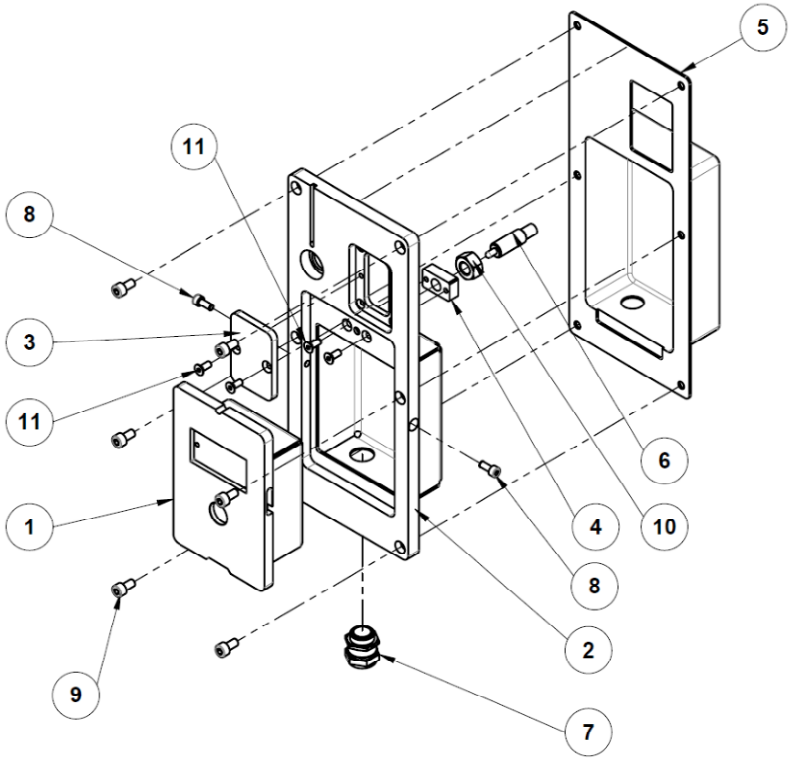
14. PARTS LIST

14.1. TWISTLOCK PIN



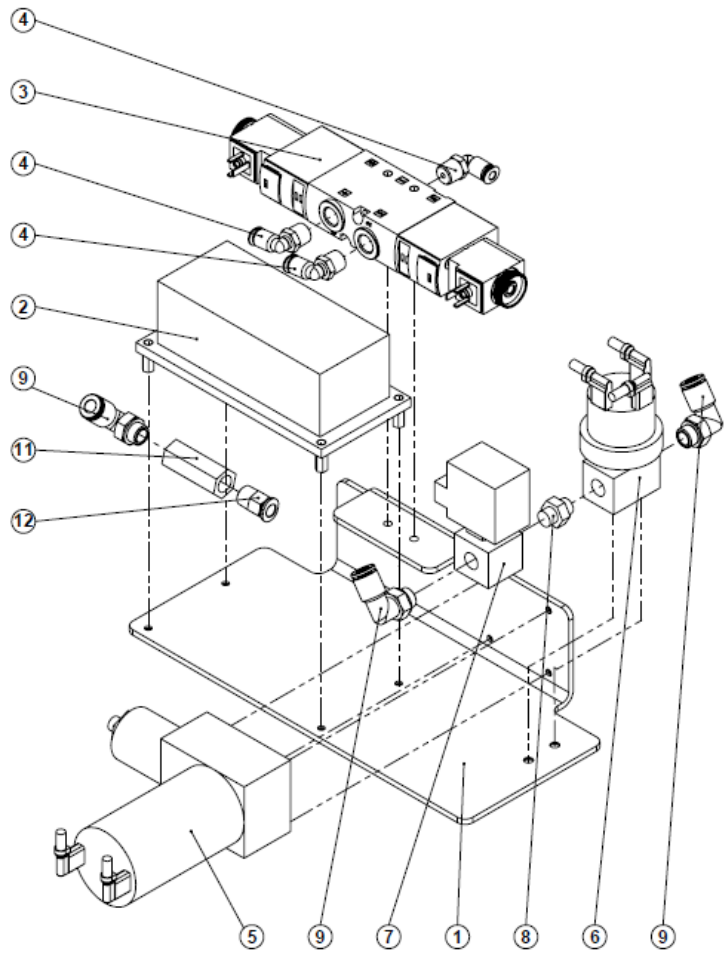
POSITION	CODE	AMOUNT	DESCRIPTION
1	043S00034	1	TWISTLOCK PIN ASSEMBLY
2	KM10	1	KM10 GROOVED NUT
3	W10	1	W10 RETAINER WASHER

14.2. BATTERY



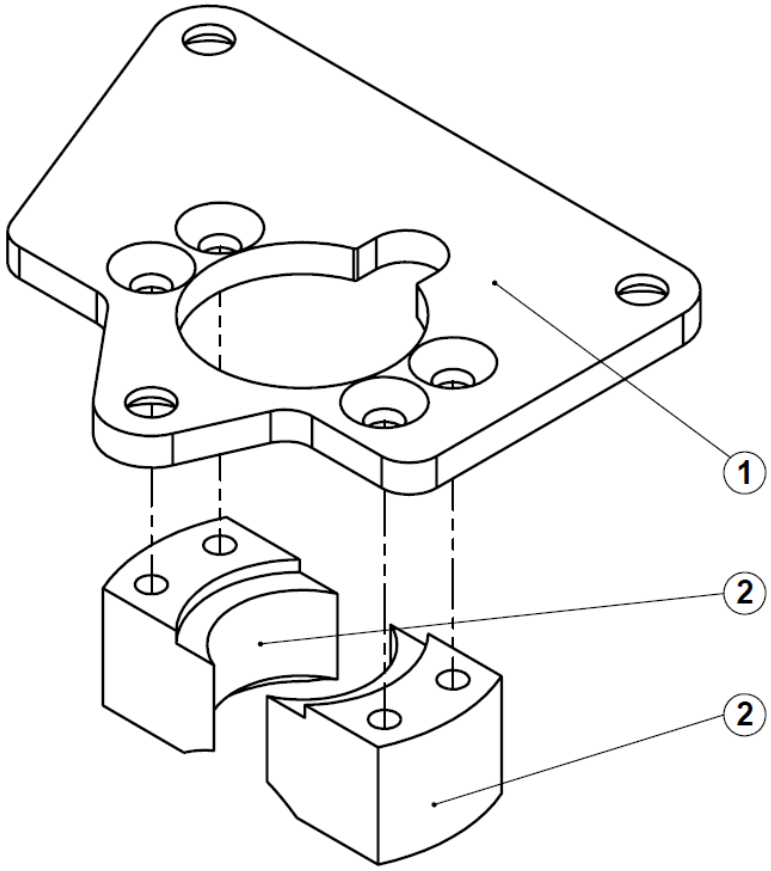
POSITION	CODE	AMOUNT	DESCRIPTION
1	043M00013	1	BATTERY ASSEMBLY
2	043S00012	1	SCREW-IN COVER ASSEMBLY
3	043P00008	1	CIRCUIT BOARD COVER
4	043P00070	1	SPACER
5	043P00147	1	BATTERY RUBBER INSULATION
6	2207.408	1	HALDER EH 2207 POSITIONER
7	M16 Ø 7 - 11	1	GLAND BUSHING
8	DIN 912 M4 x 10 --- 10C	2	ALLEN SCREW
9	DIN 912 M5 x 10 --- 10C	6	ALLEN SCREW
10	DIN 934 - M10 - D – C	1	HEXAGONAL NUT
11	DIN 7991 - M4 x 10 -10C	4	COUNTERSINK ALLEN SCREW

14.3. MAINBOARD



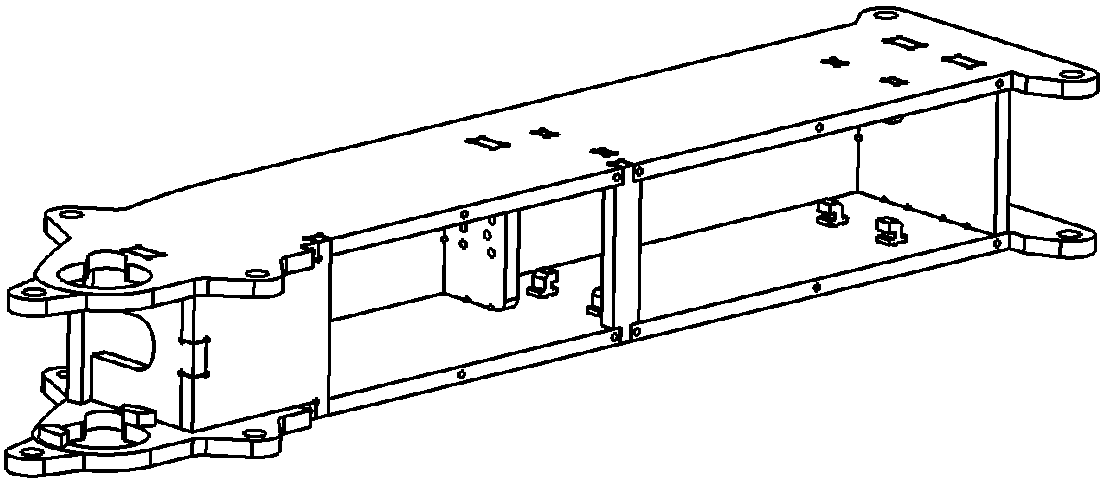
POSITION	CODE	AMOUNT	DESCRIPTION
1	043P00196	1	BASEPLATE
2	650156D	1	BATSI ELECTRONIC BOARD
3	AIGNEP 01VS150002	1	ELECTROPNEUMATIC VALVE
4	L- 4 mm - R1/8	3	L-SHAPED ADAPTER
5	1070346	1	JOHNSON COMPRESSOR
6	25.049	1	XP600 PRESSURESTAT
7	619010/470-HL	1	FLO CONTROL
8	M 1/8 - M 1/8	1	STRAIGHT ADAPTER
9	L-6 mm-R 1/8	3	L-SHAPED ADAPTER
10	TERMINAL 6.3W FLAG	5	TERMINAL 6.3Wx0.8Tmm
11	RETAINING VALVE	1	RETAINING VALVE
12	153307	1	U-SHAPED ADAPTER

14.4. TWISTLOCK EXTRACTOR ASSEMBLY



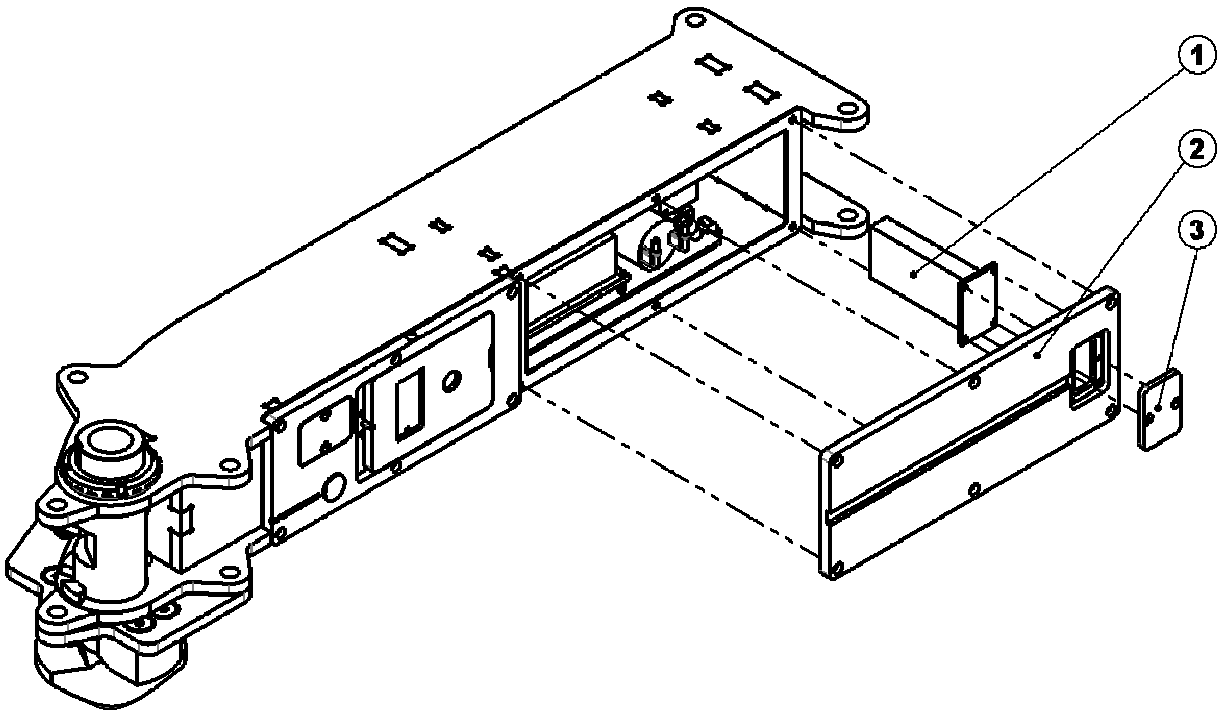
POSITION	CODE	AMOUNT	DESCRIPTION
1	043P00211	1	RIGHT-HAND SIDE TWISTLOCK EXTRACTOR SUPPORT
	043P00213	1	LEFT-HAND SIDE TWISTLOCK EXTRACTOR SUPPORT
2	043P00212	2	TWISTLOCK EXTRACTOR

14.5. CHASSIS ASSEMBLY



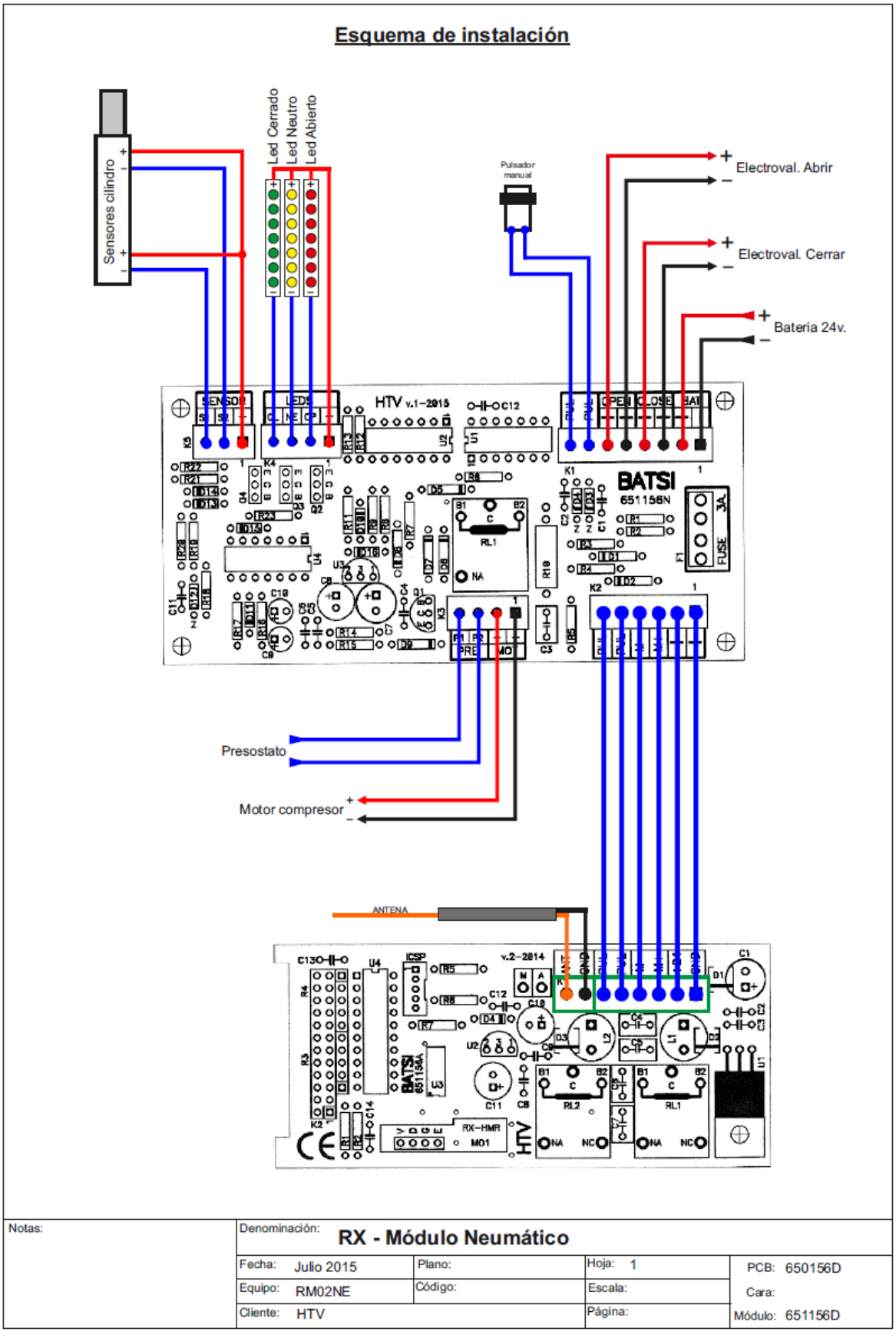
POSITION	CODE	AMOUNT	DESCRIPTION
1	043S00033	1	NICO AUTOMATIC TWISTLOCK CHASSIS ASSEMBLY

14.6. REAR BOARD COVER ASSEMBLY

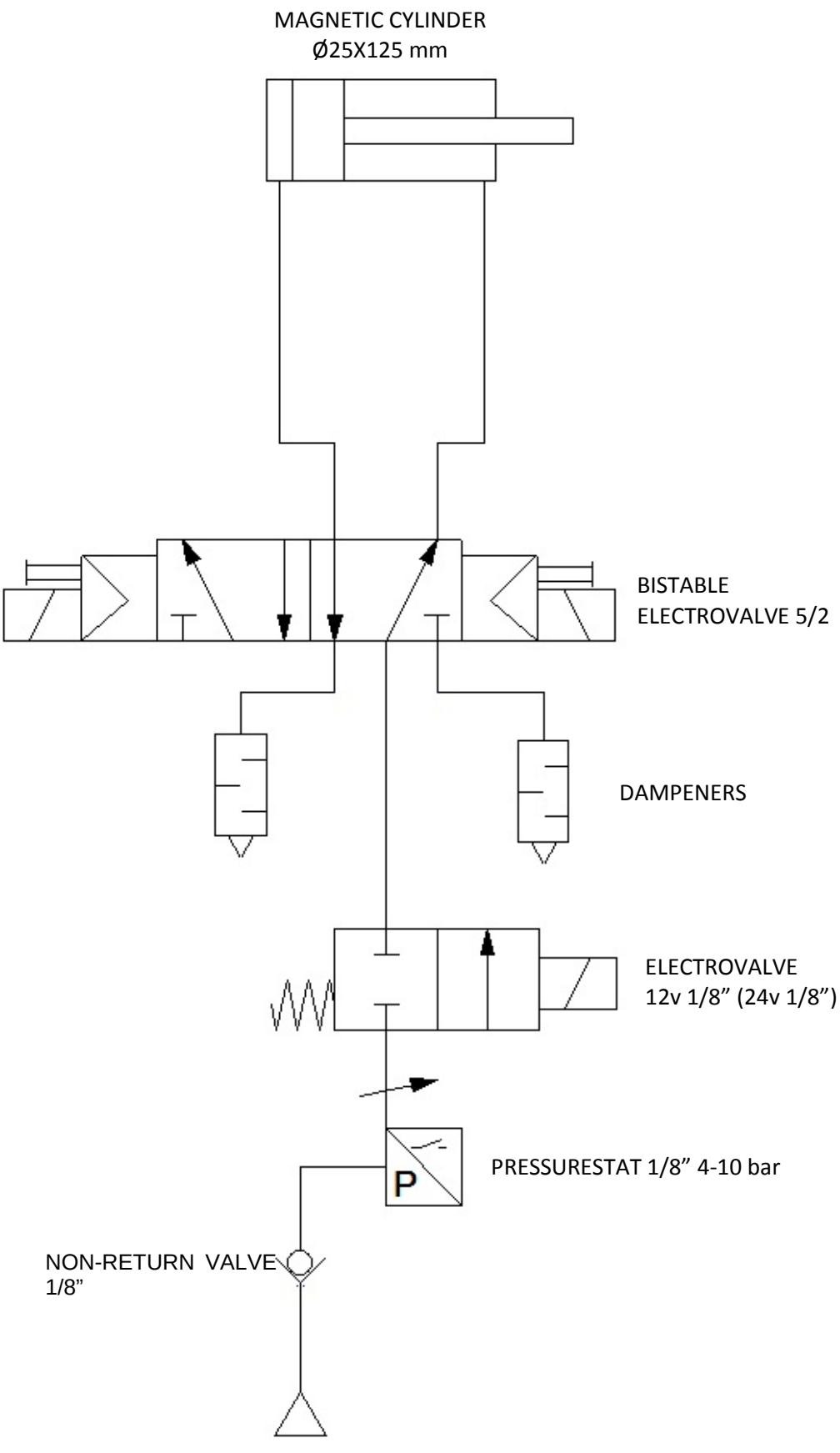


POSITION	CODE	AMOUNT	DESCRIPTION
1	043P00167	1	BATSI ELECTRONIC BOARD
2	043P00198	1	PLATE FRONT COVER
3	043P00008	1	ELECTRONIC BOARD COVER

15. ELECTRONIC CIRCUIT DIAGRAM



16. SCHEMATIC REPRESENTATION OF PNEUMATIC CIRCUIT



17. WARRANTY

HTV Products are guaranteed for two years (extendable to 5 years, please contact HOOKS TANIA VERDU, S.L. for more information), provided the instructions of this User's Manual are followed.

Batteries and maintenance operations are not covered by this warranty.

The warranty will be null and void in the event of non-compliance with the servicing and maintenance schedule, modification of any component or the improper use of the equipment.

18. MAINTENANCE CHECKSHEET

Warranty starting date: _____ of _____ in the year 201__

DATE:	MODEL:	SERIAL NUMBER:	PROPERTY OF:	REVIEWED BY:

19. CE DECLARATION OF CONFORMITY