INSTRUCTION MANUAL

T 12-ING-02-1019

PORTABLE CRANE PPM 2.X WTG GEWE

GEWE

1. Aim

The purpose of this document is to outline safe practices in the use of the element named "HOIST PORTABLE PPM 2.X GEWE WTG." Against the efforts and the conditions under its applicable within current legislation that applies.

It is noteworthy that the use of work equipment requires specific training, since it is necessary to be physically fit and have read and understand this manual, as detailed below.

The owner and the user or job personnel should be responsible, adopting good practices described in this manual. Therefore, the information contained herein must be made known to the staff responsible for handling, to be understood in its entirety.

The work shall be carried out by qualified personnel increased 18 designated by management of the company owning the useful.

The operator must be in perfect physical and mental condition prohibiting the use for people under the influence of alcohol, drugs or medication that could cause danger to themselves or others.

Do not use the tool if it is not in perfect condition.

The company that owns the tool is responsible for implementing and enforcing security requirements and other measures included in this Manual; and transmit this information to the operators responsible for handling and people affected.

The operator, in its functions, is responsible for ensuring compliance with safety standards while handling the team that has been entrusted to them.

2. Background

The element has been designed and manufactured by TESICNOR S.L, who review the manufacturing along all phases. He has made the documentation to marking CE according to royal decree 1644/2008.

In this document techniques are established to ensure safety in its application throughout all stages of life: manufacturing, assembly, installation, use, maintenance,

3. Reference standard

EUROPEAN DIRECTIVES

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery.

Directive 89/654/EEC of 30 November 1989 concerning the minimum safety and health requirements for the workplace.

ROYAL DECREES

Royal Decree 1644/1992, of October 10, laying down the rules for the market and putting into service of machinery.

Royal Decree 1215/1997, of July 18, laying down minimum safety and health requirements for the use by workers of the teams.

Royal Decree 486/1997 concerning the minimum safety and health requirements for the workplace.

Royal Decree 1801/2003 general security of industrial products.

REFERENCE STANDARD

UNE-EN ISO 12100:2012 Safety of machinery. General principles for design. Risk assessment and risk reduction. (ISO 12100:2010).

UNE-ENV 1993-1-1:2006 Eurocode 3. Design of steel structures. EN 10025-1:2004 Hot rolled products of structural steels.

UNE-EN 10219- Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions.

UNE-EN 10219-2 Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 2: Tolerances, dimensions and sectional properties.

UNE EN 1993-1-10 Eurocode 3: Design of steel structures - Part 1-10: Material toughness and through-thickness properties

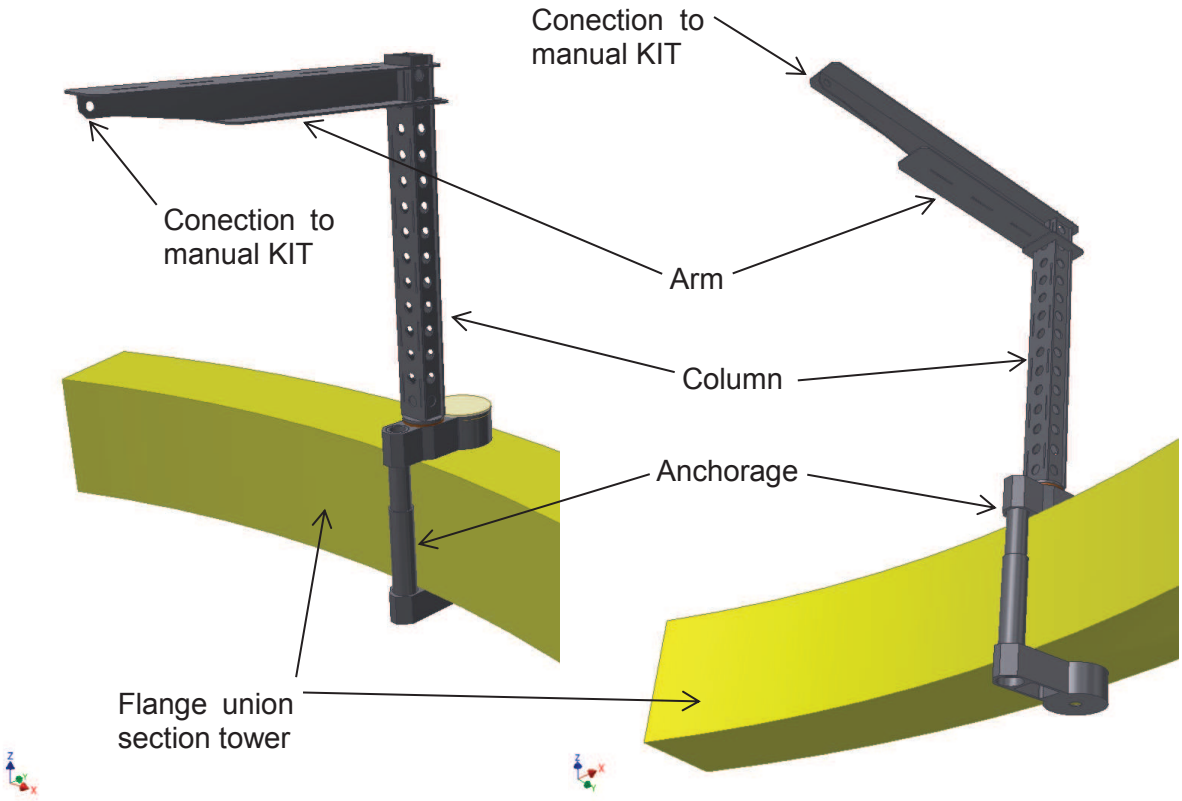
UNE-EN 50308. Wind turbines - Protective measures - Requirements for design, operation and maintenance.

UNE EN 1993-1-1 Eurocode 3: Design of steel structures - Part 1-1: General rules and rules for buildings.

UNE-EN 1993-1-10 Eurocode 3: Design of steel structures - Part 1-10: Material toughness and through-thickness properties.

4. Descripción

It is a portable structure to fixing in flange wind turbine, to connect a manual hoist and use to lift maximum loads of 100 kg, according to directive 2006/42/EC transposed by Royal Decree 1644/2008.



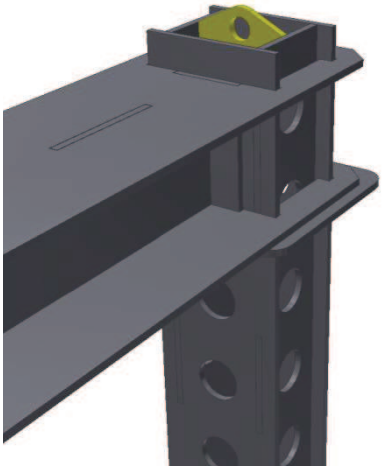
The toolkit is composed by the next elements:

1. Anchorage: It is assembled on the bolt of flange in section tower and tightening the flange. The clamping element against the flange is made by the action of a spindle.

lo

2. Column: The column is inserted into the anchor allowing relative rotation between both elements.

3. Arm: It is inserted into the upper end of the post being prevented relative rotation between both elements. At the end of the arm has a hole for connecting the manual KIT for lifting loads.

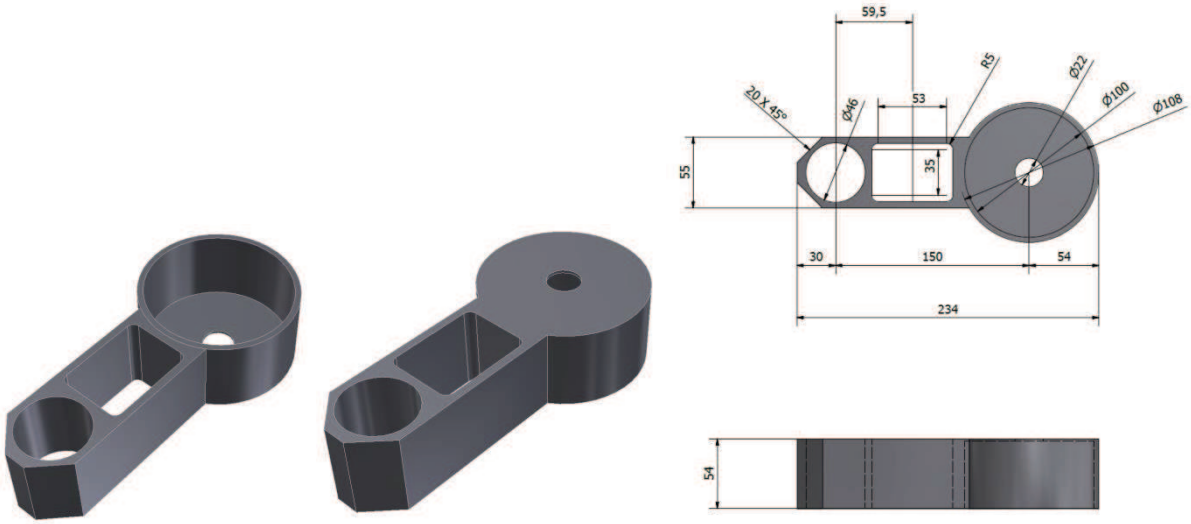


4. Lug for connecting security system. This lug is used to connect the end of the post to a fixed anchor point above, using a sling, tow ...

The three main components are:

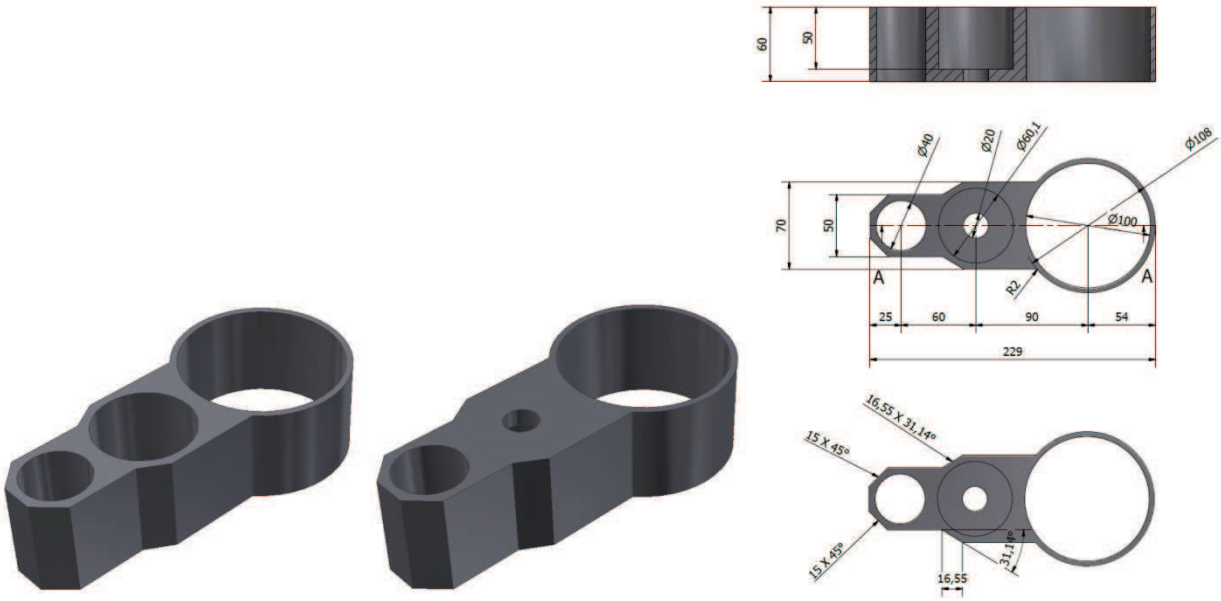
Components lower anchorage on flange:

Lower Clamp: Piece made with steel F111



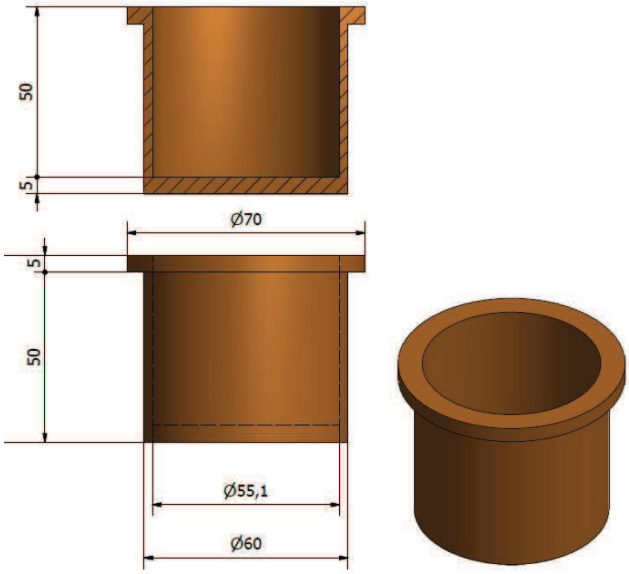
Detail 3D and 2D “Lower clamp”

Upper Clamp: Piece made with steel F111



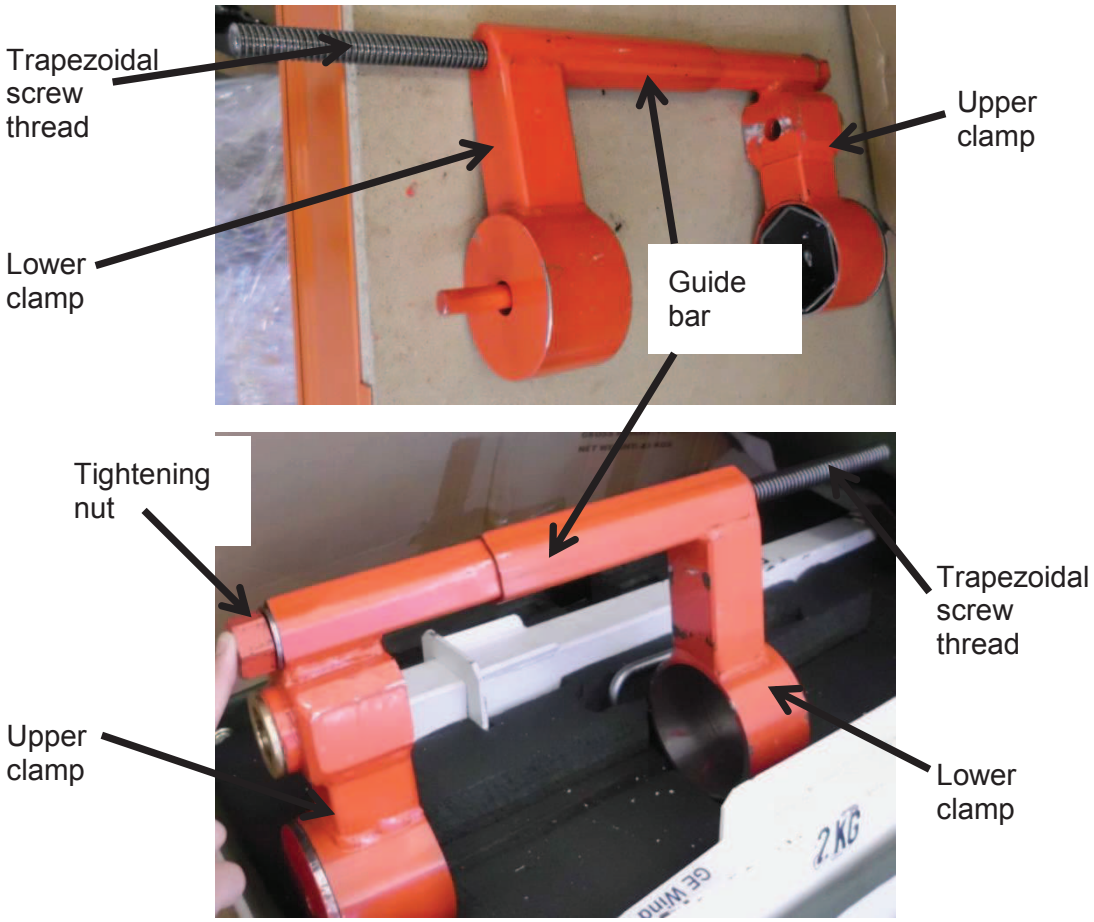
Detail 3D and 2D “Upper clamp”

Giro bushing: Piece made with bronze



Detail 3D and 2D “Giro bushing”

Trapezoidal thread spindle bar and guide bar



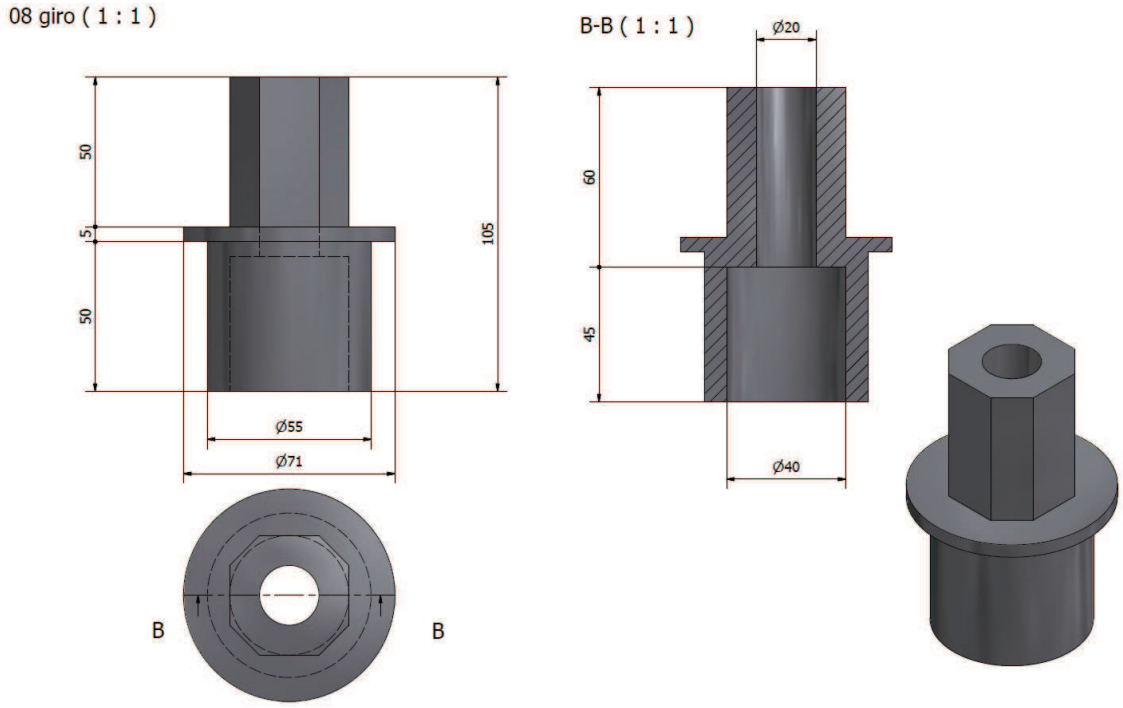
Mast Components:

Formed by a single indivisible component. It is a welded assembly consisting of plates 3 mm thick, laser cut on S700MC steel, and welded on the workshop.

At the top of the pole is arranged to support the stop arm and a lug for connecting the security system.

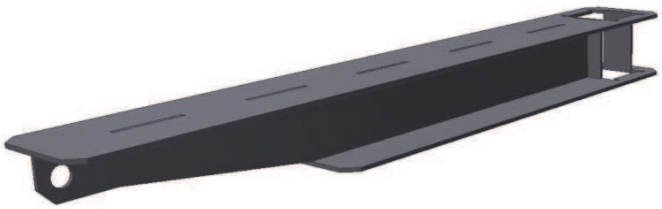
At the lower end of the piece has "spin" that is inserted into the bronze bushing lower anchor.

Giro: Piece made with steel F111

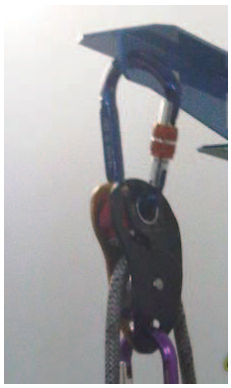


Detail 3D and 2D “Giro”

Arm components:



Formed by a single indivisible component. It is a welded assembly consisting of plates 3 mm thick, laser cut on S700MC steel, and welded on the workshop.



At the end of the arm a carabiner minimum capacity of 100 kg and CE marked for mooring the "Manual Lifting Kit" is connected.

The material employed in the manufacturing of the toolkit are the next:

- Steel S700MC in column and arm
- Steel F111 in anchorage

The calculations were made with steel S355JR.

5. Identification and CE marking

The tool should have placed the CE marking plate with the following data:

- Denomination: POLIPASTO PORTATIL PPM 2.X WTG GEWE
- Manufacturer: TESICNOR S.L
- Reference: T 12-ING-02-1019
- Date manufacturing: ABRIL 2014
- W.L.L: 100 Kg / 1 KN
- Total weight: 13 kg
- Anchorage weight: 6 kg
- Column weight: 4,5 kg
- Arm weight: 2,5 kg

6. Declaration "CE"

MANUFACTURER: TESICNOR S.L
ADDRESS: POLIGONO INDUSTRIAL MOCHOLI, NAVE 13E. CP: 31110
CITY: NOAIN, NAVARRA
COUNTRY: ESPAÑA

Along with this we declare:

The design, construction and commissioning outstanding version of "HOIST PORTABLE PPM 2.X WTG GEWE" 100 kg load capacity; according to the drawings and accompanying documents, corresponding to the main rules outlined below.

This certificate completely loses its validity if changes or added items without prior approval from us.

Similarly not valid when the elements are not used correctly, as indicated in the instruction manual.

The toolkit is designed and manufactured in accordance with the following standards:

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery.

Directive 89/654/EEC of 30 November 1989 concerning the minimum safety and health requirements for the workplace.

Taking into consideration the following harmonized standards:

UNE-EN 12100:2012	Safety of machinery. General principles for design. Risk assessment and risk reduction. (ISO 12100:2010).
EAE	Instrucción de acero estructural

Date manufacturing: ABRIL 2014

Serial number: T 12-ING-02-1019/00

Rodrigo Gómez Rández
Director Técnico
TESICNOR

In Noain to April 28, 2014

TESICNOR
TÉCNICAS Y SERVICIOS DE INGENIERÍA Y CONTROL DEL NORTE, S.L.
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31110 NOAIN (Navarra)
E-mail: tesicnor@tesicnor.com

7. Safety devices

They have employed the European directives and harmonized standards indicated to evaluate the list of significant hazards.

Have complied with the requirements set by these rules, indicating the particulars of each case by the work environment.

Following are details regarding the same.

Mechanical construction and stability:

Design in accordance with regulations, calculated to ensure stability. Calculate foreseeable forces and adequate structural material.

You must ensure proper connection between the flange and the clamping member; Mooring and carabiner with chain hoist.

Lighting devices:

None provided any means of lighting.

Because the intended use indoors, it depends on the lighting of the wind turbine, suspending the activities if there is not enough light to safely operate.

Check that will not cause glare or create annoying shadows, in which case it shall cease the use of the whole.

The device and its elements are painted and identified so that in the absence of light refract position. The tool is painted yellow and has luminescent bands.

Use extreme caution when handling the various elements as improper handling could cause an accident or injury.

8. Evaluation risks

In addition to other personal protective equipment required by the environment, were employed:


Mandatory use of gloves. Category I.


Mandatory use of safety boots. Category II.


Mandatory use of head protection. Category II.


Mandatory safety harness.

We suggest you use clothes with high visibility reflective elements.

List applicable risks

- Overexertion
- Colision against moving objets
- Colision against stationary objets
- Struck by objets and/or tolos or machines
- Falling objets in handling
- Different levels drop people
- Persons falling same level
- Falling objets detached
- Falling objets by crash

Ratio	Probability (P)	Impact ©
1	Extremely improbable	Incident
2	Improbable	Accident with low less than 15 days. Damage < 300 €
3	Probably	Accident with low until 2 months. Damage betwen 300 € and 6.000 €
4	Very probably	Accident with low more 2 months. Damage betwen 6.000 € and 60.000 €
5	Extremely probably	Disablility or death. Damage more than 60.000 €

Multiply the ratios for Probability (P) and Consequences © and consult the following table of Risk ®, R = P x C:

	C	1	2	3	4	5
P						
1		1	2	3	4	5
2		2	4	6	8	10
3		3	6	9	12	15
4		4	8	12	16	20
5		5	10	15	20	25

Identified risk:	overexertion
Possible damage:	Serious personal injury
Probability (P):	3
Impact (C):	2
R=PxC	6
Clasification:	Tolerable risk
Preventive:	Avoid inadequated postures The maximum weight is recommended not to exceed 25 kg. However, if the exposed population are women, young or older, or if you want to protect the majority of the population, should not handle loads exceeding 15 kg When these values are exceeded weight, preventive measures must be taken so that the worker does not handle the load, or get manipulated the weight is less. Among other measures, depending on the specific situation, you could take any of the following: • Use mechanical helps. • Up the load with 2 persons.

Identified risk:	Collision with moving objects
Possible damage:	Serious personal injury
Probability (P):	3
Impact (C):	2
R=PxC	6
Clasification:	Tolerable risk
Preventive:	Prior to the commencement of work shall be conditioned workplace, removing objects that interfere with the activity and / or signaling fixed objects that might interfere. Be planned prior to execution, the journey made by analyzing the interference with objects in the installation. Obligatory use: • Safety shell • Safety boots

Identified risk :	Collision against stationary objects
Possible damage :	Serious personal injury
Probability (P):	3
Impact (C):	2
R=PxC	6
Clasification:	Tolerable risk
Preventive:	Prior to the commencement of work shall be conditioned workplace, removing objects that interfere with the activity and / or signaling fixed objects that might interfere. Be planned prior to execution, the journey made by analyzing the interference with objects in the installation. Obligatory use: • Safety shell • Safety boots

Identified risk:	Struck by object or tools or machines
Possible damage:	Serious personal injury
Probability (P):	2
Impact (C):	4
R=PxC	8
Clasification:	Tolerable risk
Preventive:	Prior to the commencement of work shall be conditioned workplace, removing objects that interfere with the activity and / or signaling fixed objects that might interfere. Be planned prior to execution, the journey made by analyzing the interference with objects in the installation. Obligatory use: • Safety shell • Safety boots

Identified risk:	Falling objects in handling
Possibles damage:	Serious personal injury
Probability (P):	3
Impact (C):	2
R=PxC	6
Clasification:	Tolerable risk
Preventive:	Do not stand in the range of suspended loads It will ensure that the objects to be lifted, are properly restrained, not slip or move uncontrollably. Look the load during handling No walk under suspended load Do not exceded the maximum load Do not accompany the load by hand Avoid placed in áreas susceptible to falling objects Obligatory use: • Safety shell. • Safety boots. • Safety gloves.

Identified risk:	Fall of people at differents levels
Possibles damage:	Serious personal injury
Probability (P):	2
Impact (C):	4
R=PxC	8
Clasification:	Tolerable risk
Preventive:	It is obliged to use safety boots to prevent slipping. It will be require the proper use of the harness and two lanyards for the rise, so that at all times it is secured to a point of the structure. Do not exceed occupancy limits specified in this manual. Always be anchored to the safety points indicated in this manual. Obligatory use: • Safety shell. • Safety boots. • Safety gloves. • Safety harness. • Double rope • Stirrup

Identified risk:	Fall of people at same level
Possible damage:	Serious personal injury
Probability (P):	2
Impact (C):	3
R=PxC	6
Clasification:	Tolerable risk
Preventive:	It is obliged to use safety boots to prevent slipping. Clean and tidy work area Prior to the start of work, be conditioned workplace, removing objects that interfere with the activity of assembly and / or signaling fixed objects that might interfere. Obligatory use: • Safety shell • Safety boots • Safety gloves

Identified risk:	Falling object detached
Possible damage:	Serious personal injury
Probability (P):	1
Impact (C):	5
R=PxC	5
Clasification:	Tolerable risk
Preventive:	Do not exceded the maximun load Avoid placed in áreas susceptible to crashes Obligatory use: • Safety shell. • Safety boots.

Identified risk:	Falling objects by crash
Possible damage:	Serious personal injury
Probability (P):	1
Impact (C):	5
R=PxC	5
Clasification:	Tolerable risk
Preventive:	Do not exceded the maximun load Avoid placed in áreas susceptible to crashes Obligatory use: • Safety shell. • Safety boots.

9. Assembly toolkit

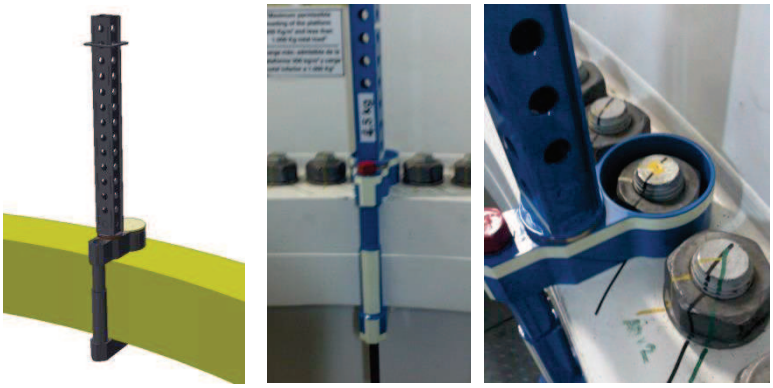
The assembly is done manually. Before starting the work is essential:

- Close the hatch to avoid accidental falling objects.
- Limitation and signaling work area warning of the danger.

¡¡¡Risk of falling objets!!! Close the hatch to avoid accidental falling objects.

Basically is done in three phases:

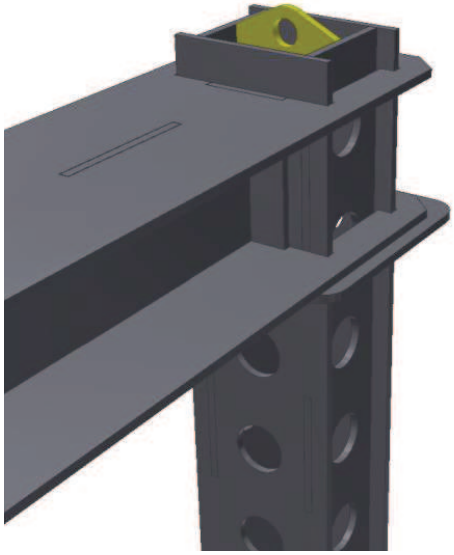
1. Anchor assembly: The anchor is connected to the turbine flange at its upper end to the bolt head and the lower part to the nut part. The clamping force is applied by hand to achieve a tight contact between flange and support.

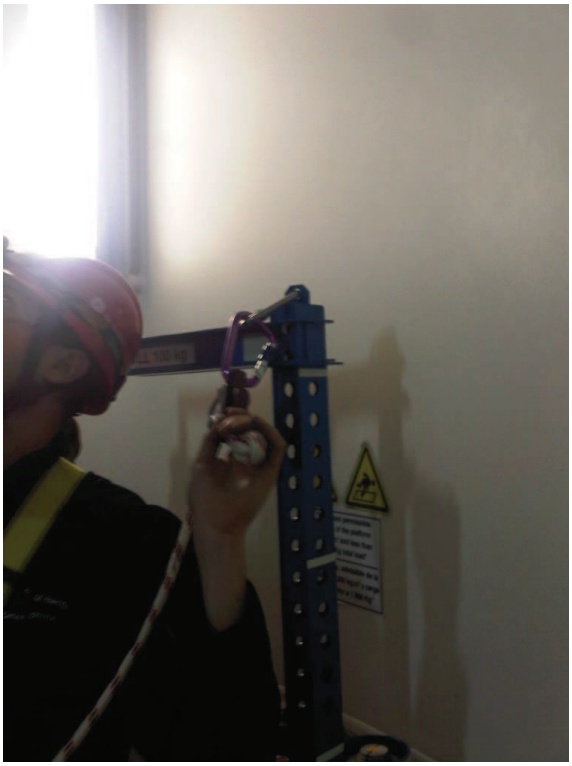


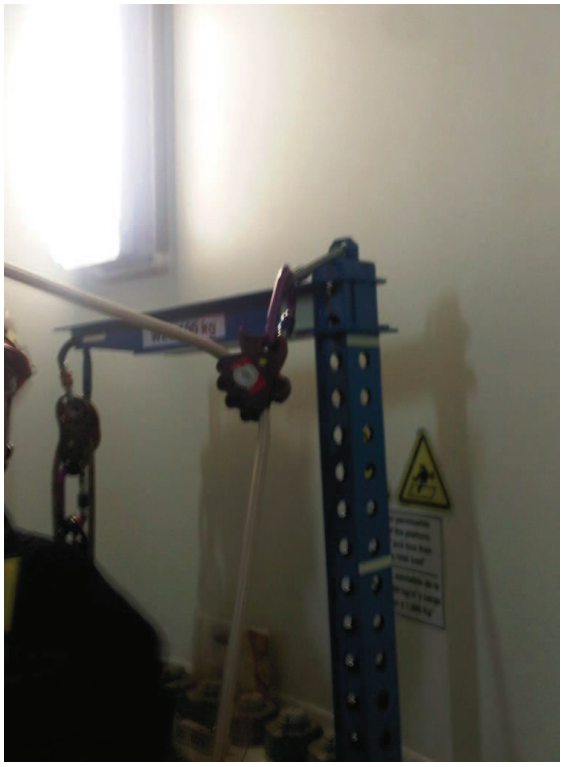
2. Column assembly: Once fixed the lower anchorage, the column is mounted on a corresponding connection point, allowing the relative rotation between both elements.

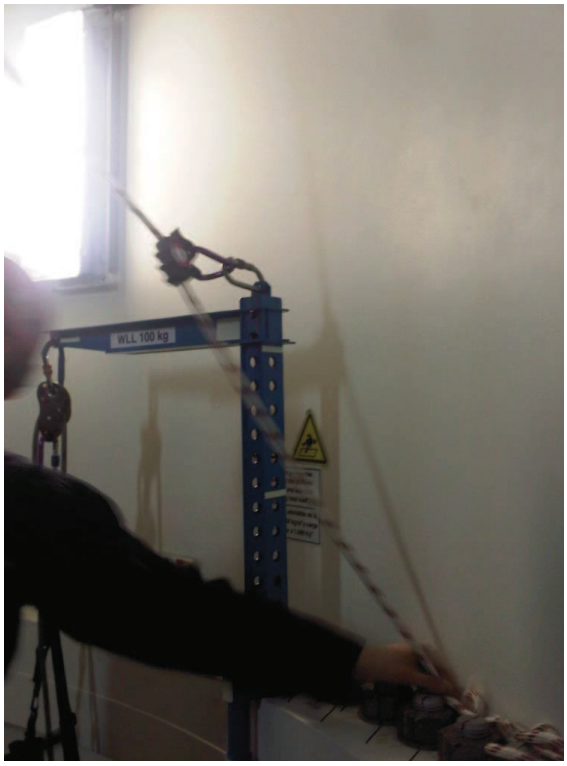
3. Arm assembly: Once assembled the column, the arm is inserted into the upper end into contact with the stop located on the mast.

4. Hoist Assembly. Once the tool is installed, is connected to the end of arm manual chain block.








WLL 100 kg


5. Installation of "Lifting Kit Manual". Once the tool is installed, is connected to the end of the arm and the carabiner "Lifting Kit Manual".



The máximum load to manipualte is 100 Kg.

Herein means that the tool is subject to daily operational checks in order to verify correct operation.

10. Disassembly toolkit

The assembly is done manually. Before starting the work is essential:

- Close the hatch to avoid accidental falling objects.
- Limitation and signaling work area warning of the danger.

¡¡¡Risk of falling objets!!! Close the hatch to avoid accidental falling objects.

The disassembly of the equipment is done manually and in reverse order of the assembly:

1. Hoist dissassembly.
2. Arm dissassembly.
3. Column dissassembly.
4. Anchorage dissassembly.

11. Toolkit operation

Once the tool firmly fixed to the flange and the tool kit, it must be operated on "Manual Lifting Kit" to communicate the necessary energy and raise the maximum load of 100 kg.

It is prohibited to load balance or hitting.

12. Description the workplace

The assembly is done manually. Before starting the work is essential:

- Close the hatch to avoid accidental falling objects.
- Limitation and signaling work area warning of the danger.

¡¡¡Risk of falling objets!!! Close the hatch to avoid accidental falling objects.

The workplace always be located outside the range of suspended loads or moving.

At no time operators must be in the range of suspended loads.

When the hatch is open, the operator on the platform must be attached to two fixed points:



Routinely one operator handles the manipulation of the tool.

Criteria should be designated communication between the person who is next to the hoist and other person that will handle the load. Walkie-talkies were used for clear, concise communication and does not admit any doubt. Whenever you go to lift a load, the estrobador who will indicate the start time of the maneuver.

Prohibited be placed under suspended loads.

If loads with a geometry or other features that prevent proper handling by a single operator the presence of one or more other workers to assist in the operation will be required.

When any operation must ensure the stability of elements that are manipulated so that there is no risk of unexpected movements thereof.

At no time during the work or operators or third parties shall be in the range of useful and cargo handled.

At all times the operator / operators Handlers maintain a clear and possible misinterpretations communication warning well in advance of their movements to other operators. Similarly should unequivocally be interconnected.

During handling operators must carry at least the following personal protective equipment, in addition to those required by the work environment.

Obligatory use of gloves. Category I.

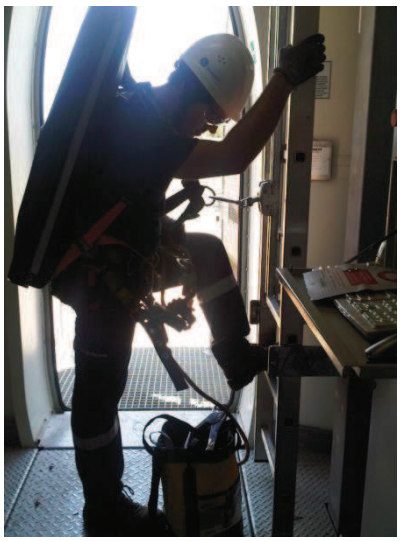
Obligatory use of safety boots. Category II.

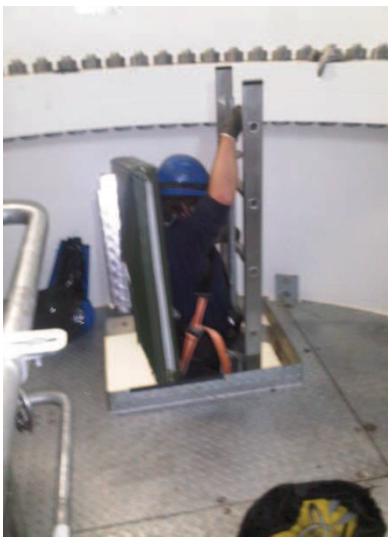
Obligatory use of head protection. Category II.

Obligatory use of security arnes

13. Transport toolkit

Due to the size and mass of useful, all the transport operations, assembly and disassembly are performed manually. The tool has bag for storage and transport.





14. Storage

At the end use, the tool should be dismantled and stored in your bag for storage / transport, so as to protect them from the weather and any other type of aggression (shock, vibration, extreme temperatures or corrosive environments ...) that impairs or alter mechanical properties of the materials.

If you have coverage (plastic) shall provide adequate ventilation to avoid condensation that can cause corrosion.

15. Useful life

In the maintenance plan it recorded the deterioration of each of the components of the tooling. Generally, if the wear of any component is greater than 10%, this component must be replaced.

16. Malfunctions

If the failure or malfunction of any component affecting the security is detected, the tool should not be used.

Signs indicating "NOT USE" to be easily visible shall be provided.

A competent technician will analyze the state of the tool and give a diagnosis and the actions to follow.

17. Treatment of waste

The tool should be treated, processed and recovered mostly as scrap steel.

18. Commissioning

Before the first use should be followed the manufacturer's instructions.

It must also overcome a first review under the attached registration form.

If problems are discovered, not be used until qualified and competent technical fix them.

The correct status of the tool is visually checked before each use.

Before operation must have been performed all maintenance and revision set forth in this manual.

It shall ensure the absence of corrosion, which can significantly affect the strength and life of the product.

Similarly it is important that you are clean, free of dust and foreign matter that may mask defects.

19. Maintenance

According to Royal Decree 1215/1997, the employer must ensure that proper maintenance of work equipment are maintained under conditions that ensure the safety and health of workers.

All maintenance operations must be carried out with helpful detained without charge.

Herein means that the tool is subject to daily operational checks in order to verify correct operation.

The following types of maintenance should be performed:

Preventive: performed by competent personnel in order to reduce the likelihood of damage or failure, being planned according to the following criteria:

- *Previous operations:* must be cleaned of dust, spills and other foreign elements. The presence of CE marking plate shall be checked.
- *Welding:* weekly check its correct state, no cracks, deformation or oxidation, by visual inspection by the operator in charge of its operation. At the annual inspection correct condition shall be verified by a thorough review, and may be completed by a sufficiently effective method (ultrasonic, dye penetrant or other technique), enabling its true state.
- Chassis: be verified once each shift, before the first cycle its condition looking for oxidations, deformations, ...

Basically they will perform a visual and performance on all elements control once every day before first use; or failing that, at the beginning of each shift.

When there is any deficiency shall be recorded on the review sheet.

Corrective: it is done when it has already happened the breakdown or failure; in order to restore the set to an acceptable state of use.

Any problems due to a collision or overload should be studied by competent technical personnel assess the extent of the damage. For the duration of the evaluation will be used must be clearly marked by a sign and notifying affected workers.

All corrective maintenance must be recorded on the record sheet attached inspections.

To service it is necessary that they are clean, free of elements that can cover or mask them.

Annually the manufacturer conduct a complete review of all elements proving that has not undergone any change or damage that prevent longer perform their work safely and quality as attached in Annex 1.

The review will be done by a sufficiently effective method that allows to know the real state of the whole, mainly the brunt elements.

In case of replacement of any item should be made with another of similar size and equal or superior mechanical properties.

If the tool displays any damage raising doubts about its resistance operations stop until they are assessed and resolved by competent technical personnel.

The main aging factors should be taken into account:

- Corrosión.
- Accidents occurring at any stage (construction, installation, removal ...).
- Overloads.
- The adequacy and maintenance periods.

20. User modes prohibited

Never use:

- Overcoming the maximum working load of 100 kg
- No signaling work zone warning of the danger of falling objects detached.
- Without closing the access door during the installation of the equipment.
- Without personal protective equipment (helmet, boots, gloves, harness and double out)
- Without being anchored the operator to two fixed points PPM platform at all times (during assembly, lifting and removal of the equipment)
- Without having carried out the maintenance and the revisions described in this manual.
- To carry a load over people.
- With components without marking CE.
- Forcing the tool.
- If not seated perfectly.

Is prohibited:

- Modify the tool.
- Working with helpful if anything is raising doubts about their strength until they are evaluated and resolved by competent technical personnel.
- Use elements not put the work environment.
- Handle recklessly or distracted useful.
- The presence of people and objects in the space evolution of suspended loads.
- Hitting the tool.
- Abandon suspended load.

No use different elements than those specified in this manual.

No changes affecting the original design, as it can adversely affect the safety of persons and / or equipment will be made.

It is forbidden to overload the tool.

In general, all modes are prohibited from use not expressly specified in this manual.

They will no longer be used if damage, malfunction or other circumstances that endanger the safety of its operation, the operators who handle or another occur.

Any anomaly detected by the operator concerning their safety or the equipment must be immediately reported and corrected before continuing the work.

21. Check list maintenance and assembly

In the following pages you can see the sheets to register the revisions:

- Check list initial review
- Check list preventive maintenance
- Check list anual maintenance
- Check list assembly

Check list - Initial review

MAINTENANCE CHECK-LIST										
Description: POLIPASTO PORTATIL PPM 2.X WTG GEWE					**Reference:** T12-ING-02-1019					
Tools: Flexometro, calibre, liquidos penetrantes, medidor de espesores de pintura					**Manufacturing date:**					
	DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:	
	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK
Review before first use:	**TOOLKIT LEADER:**		**TOOLKIT LEADER:**		**TOOLKIT LEADER:**		**TOOLKIT LEADER:**		**TOOLKIT LEADER:**	
There is user manual										
There is declaration CE										
Retains the plate and CE marking										
Dimensional control of bronze bushing corresponds with construction plans										
Dimensional control of "Giro" corresponds with construction plans										
Dimensional control of mast corresponds with construction plans										
Dimensional control of arm corresponds with construction plans										
It has double safety system for mounting the arm.										
The carabiner tie for Manual Lifting Kit has a capacity of 100 kg and has CE										
Observations:										

Check list - Preventive maintenance

MAINTENANCE CHECK-LIST										
Description: POLIPASTO PORTATIL PPM 2.X WTG GEWE					**Reference:** T12-ING-02-1019					
Tools: Flexometro, calibre, liquidos penetrantes, medidor de espesores de pintura					**Manufacturing date:**					
	DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:	
	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK
Preventive maintenance to be performed before assembly	**USER NAME:**		**USER NAME:**		**USER NAME:**		**USER NAME:**		**USER NAME:**	
There is user manual										
There is declaration CE										
Retains the plate and CE marking										
Wear equal to or less 10% bronze bushing										
Wear equal to or less 10% "giro"										
Wear equal to or less 10% between adjustment arm and post										
Without appreciable deformations in arm										
Without appreciable deformations in mast										
Double safety system in proper condition										
Transport bag correct state										
Observations:										

Check list - Anual maintenance

MAINTENANCE CHECK-LIST										
Description: POLIPASTO PORTATIL PPM 2.X WTG GEWE					**Reference:** T12-ING-02-1019					
Tools: Flexometro, calibre, liquidos penetrantes, medidor de espesores de pintura					**Manufacturing date:**					
	DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:		DATE REVISION:	
	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK
Annual maintenance	**MANUFACTURER: TESICNOR S.L**		**MANUFACTURER: TESICNOR S.L**		**MANUFACTURER: TESICNOR S.L**		**MANUFACTURER: TESICNOR S.L**		**MANUFACTURER: TESICNOR S.L**	
There is user manual										
There is declaration CE										
Retains the plate and CE marking										
Wear equal to or less 10% bronze bushing										
Wear equal to or less 10% "giro"										
Wear equal to or less 10% between adjustment arm and post										
Without appreciable deformations in arm										
Without appreciable deformations in mast										
Double safety system in proper condition										
Weld Inspection Penetrant or equivalent.										
There are not oxidations										
Transport bag correct state										
Observations:										

Check list - Assembly

ASSEMBLY CHECK-LIST										
Description: POLIPASTO PORTATIL PPM 2.X WTG GEWE					**Reference:** T12-ING-02-1019					
Tools to assembly: Kit de izado manual GEWE, llave dinamometrica, vaso de_____					**Date manufacturing:**					
	USER NAME:		USER NAME:		USER NAME:		USER NAME:		USER NAME:	
	DATE:		DATE:		DATE:		DATE:		DATE:	
	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK	OK	NO OK
Pre-installation checks:										
Reviews on time										
Checking the assembly:										
Correct coupling between lower clamp and bolt head flange fixing										
Correct coupling between upper clamp bolt and nut fastening flange										
After applying the clamping contact between flange and support safe										
Once applied tightening, checking correct anchoring and mooring between bottom flange. The fixing is firm and resistant										
When you insert the mast, there is no gaps between "giro" and bronze bushing										
When you insert the arm, there is no gaps between mast and arm. The arm sits perfectly on top of the arm										
Correct fixing carabiner on the end of arm										
Correct connection of the double security arm										
Observations:										