

USE AND MAINTENANCE MANUAL

CLAMP-NJ

Translation of original user manual

This use and maintenance manual has been issued according to the standard **UNI ISO 12100-2:2009**

Conforming to with machinery directive **2006/42/EC**

Conforming to that required by standard **UNI EN 13155:2009 type C**

Standards of reference:

UNI EN ISO 12100-1	Safety of the machinery – Basic concepts general principles for design – part 1: Basic terminology methodology.
UNI EN 10204	Metal products – Types of inspection documents – Applicable also on non-metal products
UNI ISO 8696-1	Lifting equipment – Design principles for loads and load combinations

- ISO International Standard
- EN European Standard
- UNI National Standard

- UNI Italian National Body of Unification
- CEN European Committee for Standardisation
- ISO International Organization for Standardization

In compliance with Common CEN/CENELEC Regulations, the national standardisation bodies of the following countries are obliged to transpose European standards:

Austria, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, the Netherlands, Poland, Portugal, United Kingdom, Czech Republic, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and Hungary.

Clamp for handling loads

Introduction

In compliance with accident-prevention standards, the company has written this instruction booklet to inform users concerning the most correct use of its concrete buckets.

It is therefore recommended to read and abide by all that is prescribed before using the equipment.

For any other loading situations not included in this booklet, abide by common safety standards.

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USING AND KEEPING THE USE AND MAINTENANCE MANUAL

- The use and maintenance manual is intended for the attention of installers, maintenance technicians and all operators who succeed one another in operating the equipment, above all the parts regarding occupational safety.
- The information contained in the manual indicates the correct use of the equipment according to the intended design and construction purposes.
- It also contains information regarding handling, installation, maintenance and overhauls, all within the limits established by the manufacturer inside the manual.
- The use and maintenance manual is an integral part of the equipment. It must be kept until its final dismantling. It must be kept in a protected place, in the vicinity of the equipment and fully available for consultation.
- Should the manual be damaged or lost, the user must request a copy from the manufacturer.
- The manufacturer reserves the right to modify the equipment and the manuals without being obliged to update previous editions.
- The user can request information and updates which, when issued, also become an integral part of the user manual.
- Should ownership of the equipment be transferred, this manual must be transferred as well, as prescribed in the machinery directive 2006/42/EC.

1.1 Cases which release the manufacturer from liability.

The manufacturer is released from all liability in the following cases:

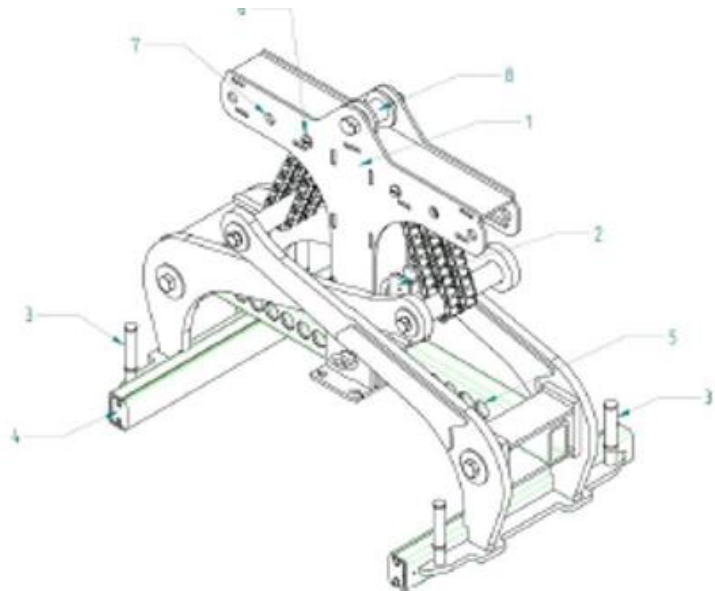
- improper use of the equipment or use by personnel not trained for professional operation;
- use contrary to specific regulations;
- incorrect installation;
- serious shortcomings in intended maintenance and overhauls;
- modifications, interventions or tampering of any type performed by unauthorised personnel.

1. DESCRIPTION OF THE CLAMPS.

Clamp: equipment used to handle loads by holding a specific part of the load. (section 3.5 UNI EN 13155).
The clamps defined as “lifting accessories” are components or equipment not connected to the machine and placed between the machine and load, or on the load to allow the gripping.
They are used to facilitate loading and unloading operations, and to make them safer, handling and installations of new concrete constructions.

This equipment features the following elements:

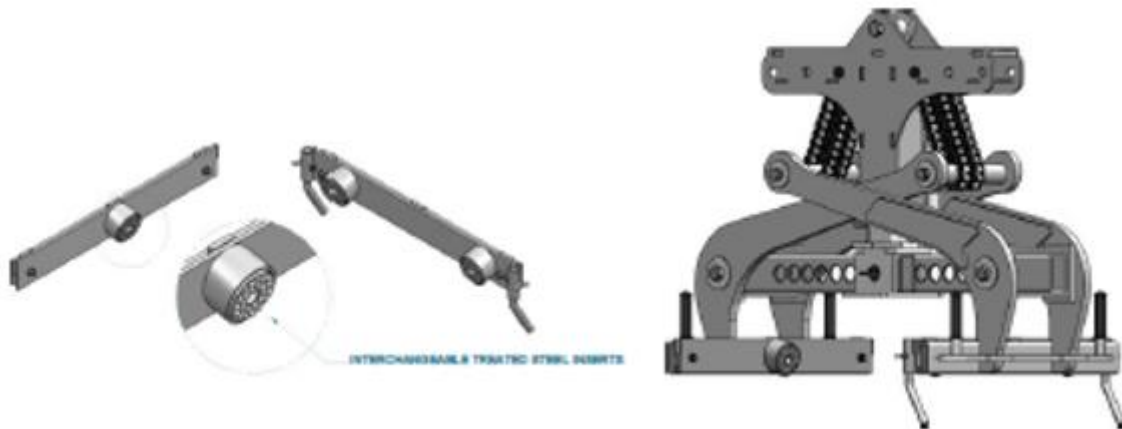
- **Adjustment system for the opening function;**
- **Hooking pin;**
- **Automatic release when passing from “full load” to “empty load”.**
- **Interchangeable rubber buffers.**



1. Position of the sticker to adjust opening;
2. Automatic release;
3. Grips;
4. Rubber buffers;
5. Adjustment of the gripping pitch;
6. Locking pin;
7. Upper side;
8. Hooking pin.

Configuration with J-bolts with steel inserts:

This conformation is required in the presence of NEW JERSEY elements, whose surfaces are slippery due to dirt or because they are wet.



Besides the serial number and year of manufacture, the identification plate of the clamps indicate also the maximum operating load and mass of the equipment without load. Which together provide the gross weight; the lifting device must be obviously suitable for manoeuvring the gross weight.

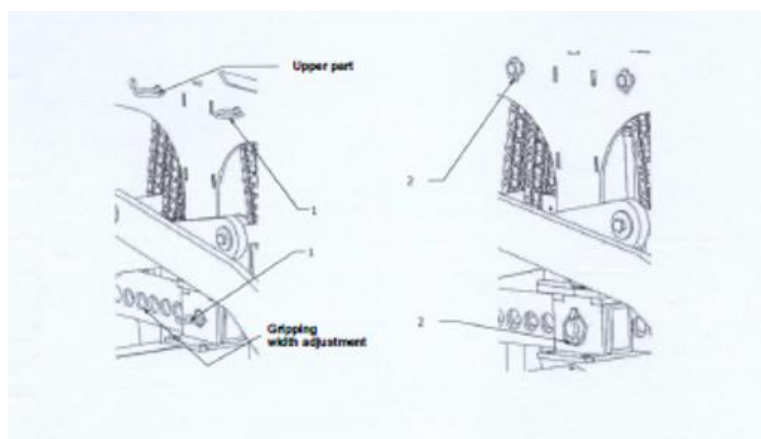
The maximum operating load is the maximum weight that ha clamp lift.

In order to prevent loas from being detached, use safety hooks with inlet closure.

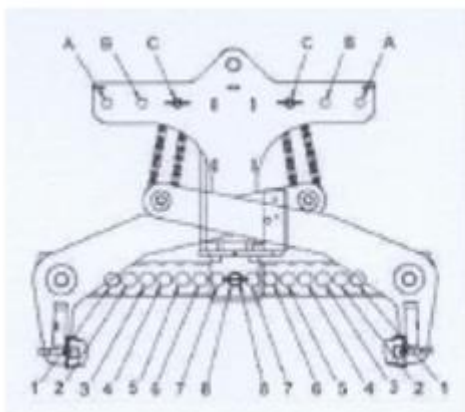
1.1 Adjustment

Before gripping and the installation of the artefact, it will be necessary to adjust the interval between grips.

- The adjustment must be carried out with thw equipment placed on the ground;
- Do not adjust the grip width on both sides simultaneously. **First carry out the adjustment on one side and then on the other;**
- Remove the safety fasteners (2) and then remove the pins with half-loop (1);
- Remove the pins with half-loop also on the top (1) and fit the adjustment holes in order to add an opening that is 5 cm larger then the width of the element to be lifted;
- Reinsert the pins with the half-loop (1), replace the safety fasteners (2);
- The adjustment of th gripping width should be carried out keeping the same symmetry on either side of the clamps.
- When regulating, be careful for hands, danger of crushing.



Adjustment table for the gripping intervals



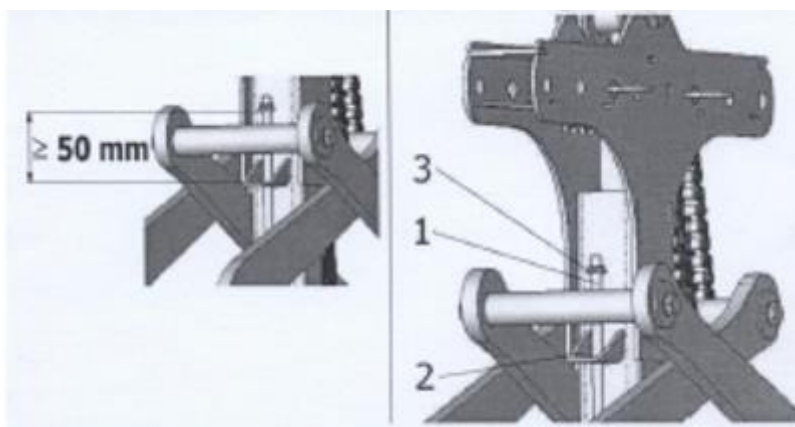
Gripping width adjustment			
Holes on the bottom left	Holes on the bottom right	Holes on the top right and left	Possible widths depending on the elements to be lifted (product size);
1	1	A	From 0 to 115 mm
2	2	A	From 115 to 225 mm
3	3	A	From 225 to 325 mm
4	4	B	From 325 to 425 mm
5	5	B	From 425 to 525 mm
6	6	B	From 525 to 625 mm
7	7	C	From 625 to 725 mm
8	8	C	From 725 to 850 mm

The adjustment of the intervals of the gripping function must always be carried out properly, otherwise there will be no guarantee of a safe grip giving rise to dangerous conditions.

For safety purposes, when adjusting the gripping width, follow the procedures below:

The nut on the threaded bar (1) during gripping (with raised artefact) must not be fully tightened down to the guide (2).

The nut (3) must keep a minimum 5 mm distance from the lower guide (2).



2. USE CONDITIONS

The "PZM-NJ" clamp is exclusively designed for the gripping, the carrying and installation of new cement artefacts, such as New Jersey and curbs whose gripping surfaces are clean and dry.

A visual and general inspection must be carried out every day before starting any type of work.

Do not use the equipment before having well understood the indications of this manual.

Verifications before use:

- Before use, always check the operation and conditions of the equipment;
- Load interval required and load centre of gravity position to prevent the load from sliding.

Verify that the material to be handled has the following requisites;

- Variable dimensions within the opening field of the clamps.
- The load weight must be within the capacity indicated in the plate applied on the fork.

Operating modes:

The clamps have been designed and manufactured to handle and install loads that require tightening in a specific point, according to the requisites indicated in section 5.2.7 UNI EN 13155.

For lifting, the personnel in charge must carry out the several manoeuvres according to the information and train received and/or experience gained throughout the years.

The following is strictly prohibited:

- **Its is forbidden to use the grippers to handling materials at a height above 1.80 and/or in ways other than as indicated.**
- **The gripping and transport of conical elements is strictly forbidden because there is a risk of falling.**

3. GENERAL SAFETY PRESCRIPTIONS

- The operators must use PPE (personal protective equipment) made available in compliance with the information and training received
- The individual contracting companies must inform, form and train workers (crane, loading and unloading operators) on the correct actions to be taken for lifting and handling the loads. Without prejudice to the obligations of training workers as crane operators, as provided for in the Legislative Decree 81/08.
- Equipment must be chosen which is compatible with one's machines; the overall weight of the suspended load must be within the nominal capacity of the crane at normal operating conditions.
- The combination of the crane with non-fixed load lifting attachments must only be activated by trained personnel in safe conditions.
- Lifting and support must be carried out in controlled conditions and under the direction of a specifically designated person.
- Operations concerning use of cranes with non-fixed load lifting attachments must be suspended in the presence of wind which exceeds a maximum speed (not allowing full control of the machine), storms, ice, snow, fog, or other adverse weather conditions which can endanger the safety of personnel.
- If more than one machine is used simultaneously at the same place, the crane operators must communicate via two-way radios, one held by the crane operator and another by the operator on the ground who performs harnessing.
- Measures must be taken to prevent workers from stopping below the suspended loads.
- It is not allowed to have the loads pass over unprotected workplaces normally occupied by workers.
- It is strictly forbidden to use the equipment before having prevented access to persons and/or animals to the work area. To this purpose, the area must be fenced off and any type of measure considered appropriate must be taken to make the activity safer.
- Make sure that the signs indicating access of unauthorised personnel to the working area forbidden and the suspended loads hazard are well visible.
- It is strictly forbidden to pass within the range of action of the equipment.
- Danger of falling material.
- Danger of crushing.
- Danger of collision.
- It is strictly forbidden to pass with the load outside of the work area.
- Any work on the equipment must be performed on the ground and in a stable position.
- The safety of the equipment is linked to the efficiency of the safety systems of the machine upon which it is installed.
- This machine must be equipped with an acoustic indicator device to warn people that the machine and equipment are in operation.

4. INSTRUCTIONS

4.1 For personnel

- High lifting operations of loads must be carried out by specialised personnel, specifically trained for these manoeuvres. The use of **productive** or temporary personnel in general must be excluded.
- It is forbidden to abandon the workplace with the removable load gripping equipment running.
- **Be careful when handling wet, frozen or dirty materials because they involve the risk of slipping during handling.**
- **Attention, under the above-mentioned conditions, it is necessary to use the clamp in the configuration with J-bolt with steel inserts.**
- During operations, it is forbidden for people to stand within the machine's radius of action. An exception is made in cases where certain types of operations are being performed, for example, positioning the clamp on the artefact to be lifted.

4.2 For transportation and deposit in warehouse

- When lifting and transporting the equipment, means suitable to the weight and clearance must be used. For lifting operations, connect to the pin on the upper side of the clamp by using the hook of the crane or chain solidly secured. The clamp must be stored carefully, making sure it is stable.

4.3 For use

- Use the clamp only to lift and handle material with the characteristics described in point 3.
- Make sure that the weight of the material to be handled falls within the capacity indicated on the clamp identification plate and, obviously, that the material and equipment falls within the capacity of the machine on which it is mounted.
- In order to use the equipment correctly, ensure that the hook of the machine is equipped with inlet closure.
- If a welded link chain is installed between the crane hook and the clamp ring, ensure that it is equipped with a ring at the upper end and with a hook with inlet closure at the lower end. Make sure that this chain is suitable for the weight of the supported load, clamp plus material, (standard UNI EN 818-4).
- For correct lifting, remember that the centre of gravity of the lifted load must coincide with that of the clamp. Failure to comply with this condition can overturn the load.
- During lifting operations and handling, avoid rough accelerations and bumps. Use progressive speeds, warning the beginning of the handling operations with the buzzer supplied with the machine.
- Avoid using equipment to rip or tow any object, as the equipment has been designed to support loads in vertical position. This manoeuvre can be dangerous.
- When using, the clamp must be held only by gripping the specific handles (if provided) with your hands.
- The J-bolt opening must be adjusted depending on the thickness **of the material to be handled**, extending or reducing the inner telescopic pipes, blocking them with the specific pin.
- The clamps must be used complying with some specific requirements: free spaces, no person in the action area, buzzer at the beginning of the operation, use of danger signs in the involved area.

The following is strictly forbidden:

- The transport of people and/or animals;
- The carriage of any other item not described in this manual;
- The gripping of items with packaging films, risk of slipping and falling of the load;
- The gripping and transport of items having sides intended for non-parallel gripping with respect to the clamp levers.

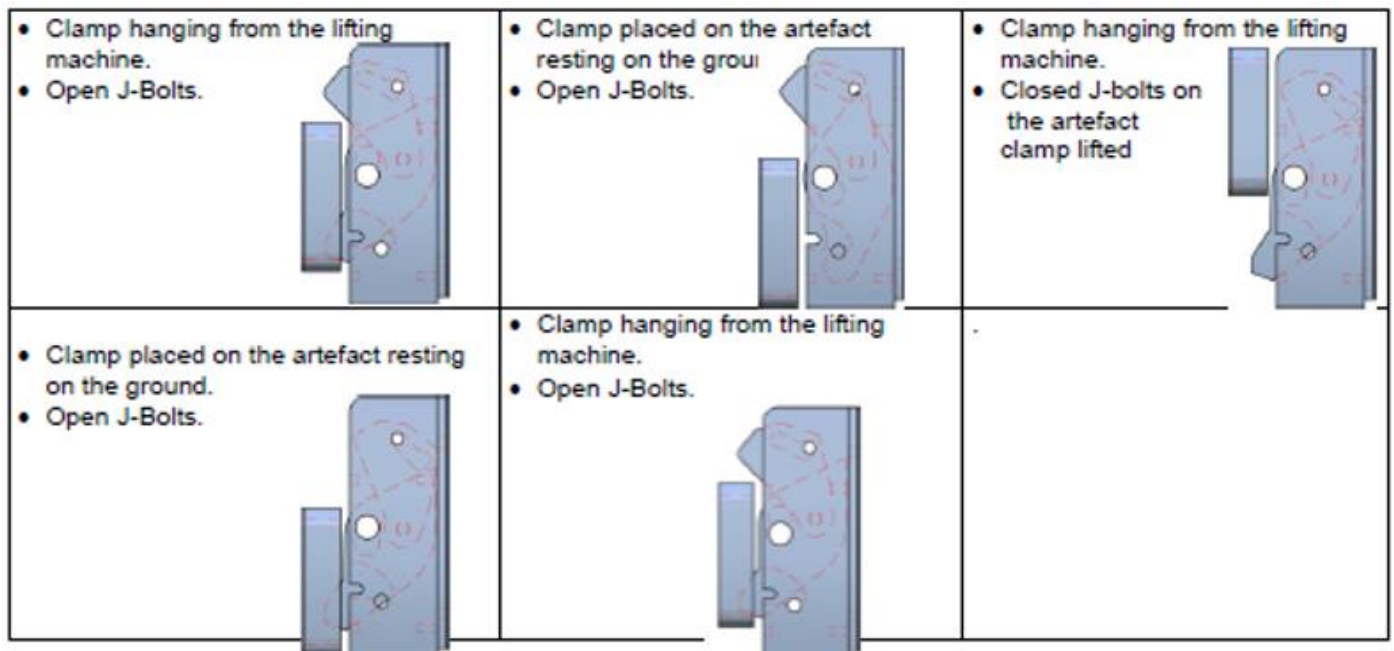
Failure to comply with the instructions described above can cause dangerous situations and/or damage the equipment, making it unsafe.

Use of the equipment automatic release system

The clamp is equipped with an automatic release device, namely, that the closing and opening of the clamp takes place when you lift or place the clamp.

1. Adjusting the gripping intervals amount with the respect to the material to be lifted;
2. Connection of the clamp to the lifting machine;
3. The positioning of the clamp on the element to be lifted;
4. When the clamp is placed on the artefact to be lifted, the automatic release device will start operating and, during the lifting phase, the J-bolts will close on the artefact;
5. Artefact transport at the place of destination;
6. When you place the artefact on the ground, the automatic release device will be activated, the J-bolts will open and the clamp can be raised.

Positions of the automatic release device



5. MAINTENANCE AND REPLACEMENT OF COMPONENTS SUBJECT TO NORMAL WEAR

- Inspections must be made by personnel previously commissioned, formed and trained concerning use of the removable equipment of load gripping (clamps) without prejudice to the obligations of training workers as crane operators, as provided for in the Legislative Decree 81/08.
- The verification that such information, formation and training has been provided must be proven by a training record, kept by the contracting company.
- All maintenance and overhauls must be carried out with the equipment resting stably on the ground.

5.1 Routine maintenance

After 25 hours of operation:

- Check the tightness of the screws

After 50 hours of operation:

- Check the tightness of the screws;
- Check the correct functioning of all the pivots, guides and pins;
- Check the state of wear of the buffers, if necessary, replace them.

It is mandatory that the clamps be inspected:

- Every time it is removed from the warehouse and every day before operating it on the worksite;
- After a repair has been performed with the intervention noted in the use and maintenance manual;
- During the service lifetime of the equipment, every six months, noting the results in the use and maintenance manual.

The equipment must be checked to make sure it is efficient; this check consists in:

- Checking that there are no cracks in the welding;
- Checking the clearance of the articulation pins, especially the alignment of the levers;
- Checking that the metallic structure has no breakage and/or deformations;
- Checking the conditions of the screws and the correct tightening of the nuts;
- Check the state of the chain and the release mechanism, when applicable;
- Replacing worn parts with original spare parts supplied by the manufacturer.

The automatic release device must never be greased. You can lubricate it if required.

Any faults detected must be immediately eliminated. Repairs may be performed only by people who have the necessary skills.

The use of non-original spare parts can endanger the equipment safety, as well as invalidate the EC conformity of the equipment.

5.2 Replacing parts subject to normal wear

Pins, springs and buffers in the clamps are stressed parts subject to wear over time. If defects are detected, (e.g. yield and/or deformations) due to stress or improper use, they must be replaced.

Replace pins, shackles and springs if the following is detected:

- Presence of cracks
- Presence of yield or deformations
- After 2 years from the date of purchase, due to natural wear of the parts subject to it.

The replaced parts must be disposed of as special waste.

The manufacturer declines all responsibility when the clamps are used without fully respecting safety standards. The instructions provided in this publication are not valid when the regulations of the bodies in charge are more restrictive and rigorous.

5.3 Storage

The equipment must be rest stably on the floor, and be stored in a dry place away from dangerous substances that may damage its components (e.g acids, alkaline solutions and solvents).

5.4 Indications for rental

In case you rent the equipment, it is mandatory to provide the user instructions In user's language.

6. Use limits

The equipment has been designed and dimensioned to perform 20.000 lifting cycles. When this limit has been reached, it must be overhauled at our workshop and replaced if necessary.

The wear of the clamp is subject to various situations (such as storage, careful use, etc) and therefore the lifting cycles also depend on the circumstances above.

7. Warranty

The company guarantees its device for a maximum period of 12 months from the date of delivery regarding material or construction defects.

Upon receiving the goods, check:

- The data provided on the packing slip (addressee, type of goods, number of packages);
- That the goods received are without any type of damage.

IN THE EVENT OF FAULTS, IMMEDIATELY NOTIFY THE CARRIER, WRITING A CLAIM ON THE PACKING SLIP, AND NOTIFY THE COMPANY WITHIN EIGHT DAYS FROM THE RECEPTION OF THE GOODS.

Should manufacturing defects be found, the purchaser has the obligation of reporting this to the company within 8 days from the date of reception. The company shall take care of resolving the problem as quickly as possible free of charge. Parts damaged due to carelessness or negligence in use, inappropriate maintenance, improper use or normal wear, defects caused by tampering, damage caused by transportation, by failure to comply with the information contained in this manual and by other circumstance which cannot be blamed on manufacturing defects are excluded from the warranty.

The clamp, subject to be repaired under warranty or not, must be accompanied by a copy of the invoice and by the use and maintenance manual.

Manufactured by:

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