

USE AND MAINTENANCE MANUAL BUCKETS FOR INERT MATERIAL AND DEBRIS

This use and maintenance manual was edited according to the standard **UNI ISO 12100-2:2009**

Standards of reference

- UNI EN ISO 12100-1 Safety of machinery – basic concepts, general principles for design –
Part 1: basic terminology, methodology
- EN 10204:2005 Metallic products - Types of inspection documents – Also applicable to non-metallic products
- UNI ISO 8686-1 Cranes - Design principles for loads and load combinations

- ISO International standard
- EN European standard
- UNI National standard
- CEN European standardisation committee
- ISO International standardisation organisation
- UNI Italian national unification body

- ASME American Society of Mechanical Engineers
- ANSI American National Standards Institute

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.

Introduction

In compliance with accident-prevention standards, the company BOSCARO S.r.l. has written this instruction booklet to inform users concerning the most correct use of its debris 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.

INDEX

1. USING AND KEEPING THE USE AND MAINTENANCE MANUAL 1.1. Cases which release the manufacturer from liability	5. INSTRUCTIONS 5.1. For personnel 5.2. For transportation and deposit in warehouse 5.3. For use
2. DESCRIPTION OF BUCKETS	6. MAINTENANCE 6.1. Routine maintenance
3. USE	7. OPERATING LIMITS
4. GENERAL SAFETY PRESCRIPTIONS	8. WARRANTY

1. 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.

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.

The manufacturer declines all liability when the debris buckets are used without fully respecting safety standards.

2. DESCRIPTION OF DEBRIS BUCKETS

Debris buckets are devices intended for loading debris, earth, sand, gravel and other loose material. They are used on construction sites in general, such as for excavating foundations, transporting debris and restructuring. The structure of the debris buckets has been inspected for loads of these materials with a specific maximum weight of 1600 Kg/Mc.

Example of manual unloading debris buckets.



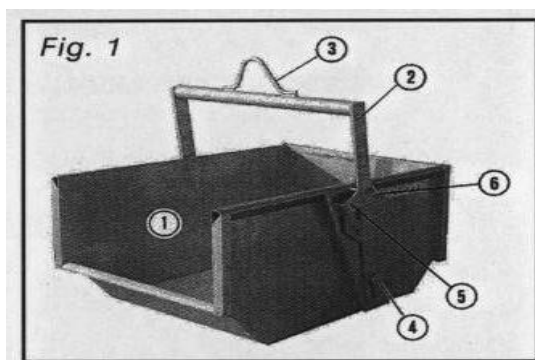
The automatic unloading bucket avoids manual intervention of the operator, with the bucket tipping and returning automatically without anyone near the dump site.

Example of automatic unloading debris buckets.



COMPONENTS OF AUTOMATIC UNLOADING BUCKET (FIG. 1)

- 1. Tank
- 2. Arch
- 3. Lifting attachment
- 4. Rotation pin
- 5. Arch hook – hook stop
- 6. Manual safety lock



3. USE

LOADING

Proceed as follows:

- 1. With the bucket resting on the ground, hitch the hook of the crane to the appropriate attachment for lifting;
- 2. Transfer the bucket to the working zone to be filled;
- 3. Lift the bucket making sure that the hooks of the arch enter the relative hook stop and move it to the unloading zone.

UNLOADING

Proceed as follows:

- 1. Place the bucket in the unloading zone, the relative arch hooks will be released from the hook stop and the arch will be free to turn on the rotation pin;

2. Lift the bucket slowly making sure that the arch hooks do not enter the stops; the bucket will turn on the rotation pins and empty the material;
3. After it has been unloaded, just move the bucket back to the working zone and place it on the ground, ready to be reused.

MECHANICAL SAFETY LOCK

The mechanical safety lock on the buckets allows to block the unloading function.

1. With the bucket resting on the ground, lift the arch vertically;
2. Move the manual lock towards the outside of the tank; in this case, while lifting, the hooks of the arch will always enter the hook stops and the bucket will not be able to turn on the pins and therefore to unload;
3. To release it, place the bucket on the ground and turn the manual lock towards inside the tank

4. GENERAL SAFETY PRESCRIPTIONS

- ◆ The crane used must comply with standards concerning its specific use and receive the intended maintenance.
- ◆ 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 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.

5. INSTRUCTIONS

5.1 For personnel

- ◆ The operators must use the 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) concerning the correct actions to be taken for lifting and high-level handling of loads. Without prejudice to the obligations of training workers as crane operators, as provided for in the Legislative Decree 81/08.
- Lifting loads on high must be performed by specialised and instructed personnel according to the standard UNI ISO 9926-1. They must also be in possession of the physical and aptitude requirements. The use of productive or temporary personnel in general must be excluded.
- It is forbidden to abandon the workplace with the equipment running.
- The crane operator must not modify the bucket for any reason whatsoever. The manufacturer declines all liability for accidents and/or damage which should occur for this reason.
- The crane operator must not perform operations or interventions upon his own initiative for which he does not have the required skills.

- The crane operator must immediately report any faults or problems found on the bucket to the safety manager or foreman.

5.2. For transportation and deposit in warehouse

- When lifting and transporting the equipment, means suitable to the weight and clearance must be used.
- To lift the equipment, use the hook of the crane or a chain firmly connected to it to hitch to the attachment above the arch of the bucket.
- The bucket must be stored carefully, making sure it is stable.
- In all cases, the employer shall undertake so that his personnel is equipped with all the personal protective equipment before using the bucket.

5.3. For use

- Use the equipment exclusively to lift and handle material with the characteristics described in point 3.
- Make sure that the weight of the material to be handled is within the capacity indicated on the bucket's identification plate and, obviously, that the material and the equipment are within the capacity of the crane.
- For buckets which unload material by means of mechanical unhooking, check the efficiency of the closing (lever block) before beginning loading.
- **Important** The operator must make sure that the bucket is securely fastened to the crane. To correctly use the bucket, a chain with welded links must be placed between the hook of the crane and the bucket, with the top and bottom link provided with a hook with a closing clamp. Make sure that this chain is suitable for the weight of the supported load, bucket plus material, (standard UNI EN 818-4).

The buckets must be used while respecting the rules which this operation requires: free clearance space, **no one inside the area of action**, acoustic alarm at the start of the manoeuvre, installation of danger signs.

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

6. MAINTENANCE OF COMPONENTS SUBJECT TO NORMAL WEAR

- Inspections must be made by personnel previously commissioned, formed and trained concerning use of the equipment, 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.

DPR 547/55 recommends that the efficiency and proper maintenance of the materials making up these accessories be checked at least every three months.

We also recall that, based on that shown above, if a reduction of over 10% in the cross-section of the elements making up the accessories is detected, that accessory must be replaced. It must also be replaced in the presence of straining effects, which have permanently caused the elastic limit of the material to be exceeded.

6.1. Routine maintenance

It is mandatory that the bucket 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 three 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 play of the joint pins;
- checking that the metallic structure has no breakage and/or deformations;
- verifying the conditions of the screws and the correct tightening of the nuts where present.

Should any faults be found, contact the manufacturing company to overhaul the equipment. Operations performed incorrectly make the equipment dangerous. The forks must be repaired and overhauled by our specialised personnel on our site. The use of non-original spare parts can endanger the safety of the equipment, as well as invalidate the manufacturer warranty.

7. OPERATING 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 bucket is subject to various situations (such as storage, careful use, etc.) and therefore the lifting cycles also depend on the circumstances mentioned above.

8. WARRANTY

The Boscaro 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:

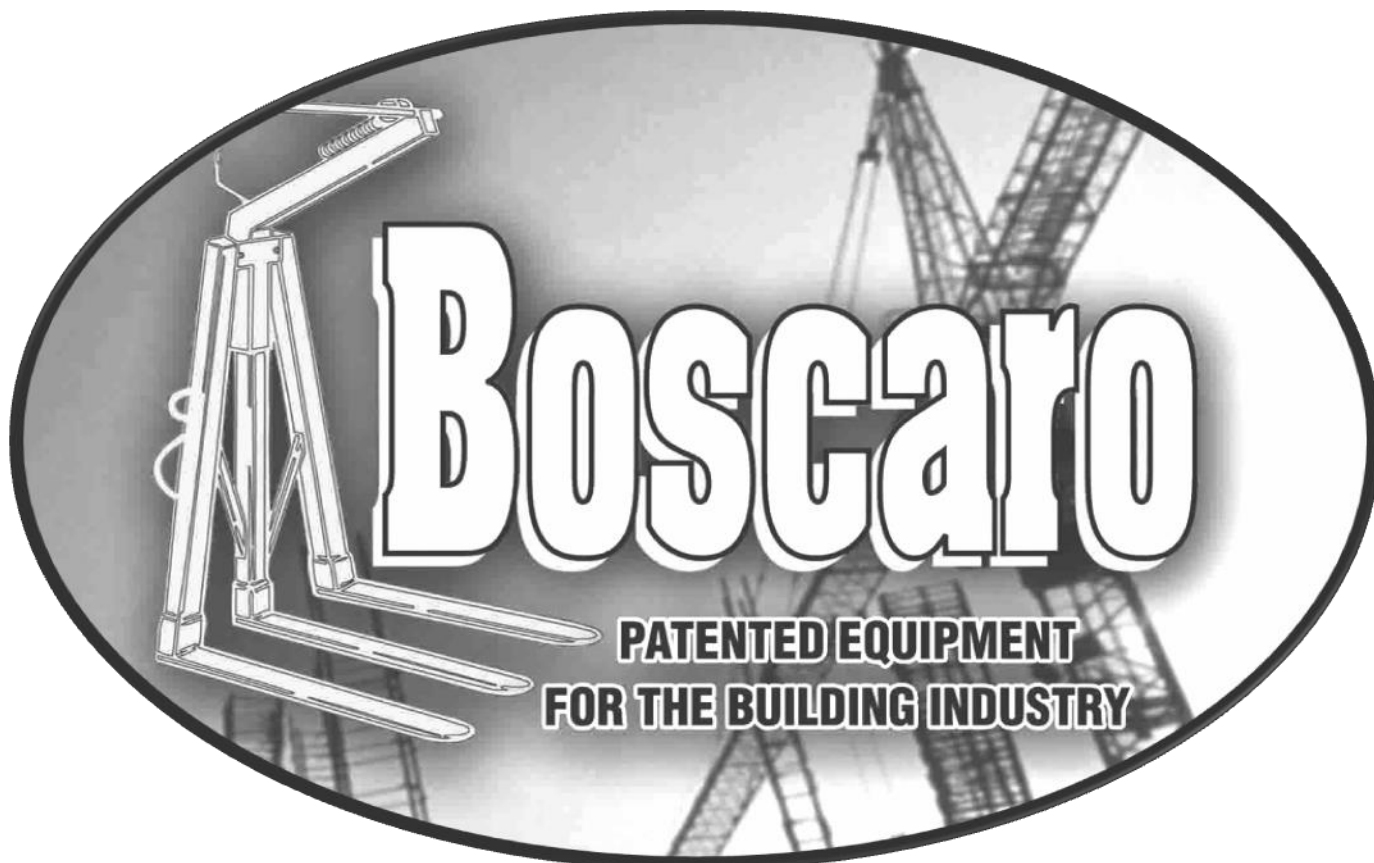
- The data provided on the packing slip (addressee, type of goods, number of packages);
- That the goods received are without any type of damage.

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

Should manufacturing defects be found, the purchaser has the obligation of reporting this to Boscaro s.r.l. within 8 days from the date of reception. Boscaro s.r.l. 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 any other circumstance which cannot be blamed on manufacturing defects are excluded from the warranty.

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



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