Use and servicing handbook

for clamshell bucket

BMV 2/500

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DICHIARAZIONE CE DI CONFORMITA'
EC DECLARATION OF CONFORMITY
DECLARATION CE DE CONFORMITE
KONFORMITÄTSERKLÄRUNG

Tipo A secondo All. II della Dir. 2006/42/CE – rif. art.2 par. a) primo trattino
UNI EN ISO 12100: "Sicurezza del macchinario - Principi generali di progettazione - Valutazione del rischio e riduzione del rischio".

Con la presente dichiariamo sotto la nostra responsabilità che la macchina sotto indicata è conforme ai requisiti di sicurezza previsti dalla Direttiva 2006/42/CE ("Macchine"). La Persona autorizzata a costituire il fascicolo tecnico è l'ing. Paolo Piccinelli c/o Idrobenne s.r.l.

Herewith we declare that the following attachment complies with the health and safety requirements of Directive 2006/42/CE ("Machinery"). The person authorised to compile the technical file is eng. Paolo Piccinelli c/o Idrobenne s.r.l.

Nous déclarons sous notre responsabilité que la machine susmentionné est conforme aux Directive 2006/42/CE (Machines). La personne autorisée à constituer le dossier technique est Paolo Piccinelli c/o Idrobenne s.r.l..

Hiermit erklären wir, unter unsere Verantwortung, dass das untere Hydraulikzubehör den Sicherheit - und Schutz Haupterfordernisse der 2006/42/CE (Maschinen) Weisungen entspricht. Die Person berechtigt die technischen Unterlagen zusammenzustellen ist Herr Ing. Paolo Piccinelli c/o Idrobenne s.r.l.

CLAMSHELL BUCKET

BMV - 2/500

Serial number: B 24.01.04

Lifting capacity: daN 1.500

Isorella, 18 January, 2024

dott. Francesco Piccinelli
(Legal representative)

Idrobenne s.r.l. - via 1 maggio, 1-9 - 25010 Isorella (Brescia) Italy

DESCRIPTION OF THE EQUIPMENT

Clamshell buckets model **BMV-2** are gripping devices with two synchro-mesh closing scoops operated by dual double-acting hydraulic cylinder, mounting a safety-blocking valve, with only one hydraulic circuit.

Setting in motion of the equipment by driving gear of the operating machine on which the attachment is installed.

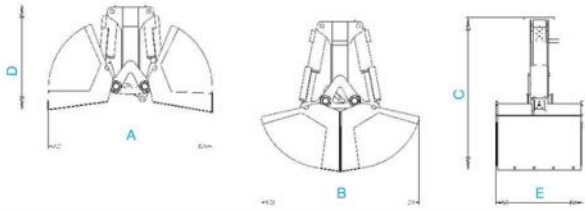
Clamshell bucket with two vertical cylinders, suitable for digging

- Cylinders geometry grants very good digging capabilities.
- Sturdy and reliable design.
- Hydraulic or mechanical rotation available on demand.
- Cutting edges made of ITAR 7 anti-wear steel.

BMV-2/350

Model	Cap. l.	Weight Kg	Max load DaN	Max BAR	A mm	B mm	C mm	D mm	E mm
BMV - 2/200-S	175	240	1500	250	1340	1230	1170	940	270
BMV - 2/250	250	260	1500	250	1340	1230	1170	940	520
BMV - 2/350	350	280	1500	250	1340	1230	1170	940	670
BMV - 2/500	500	300	1500	250	1340	1230	1170	940	800

Technical Data



Hydraulic setting for tool: BMV 2/500

***Clamshell bucket*:**

Operating pressure: 180-200 Bar

Max pressure: 220 Bar

Oil flow: 60 - 80 l/min

Hydraulic rotator (model GRI 5 T/SF):

Operating pressure: 180-200 Bar

Max pressure: 320 Bar

Oil flow: 15 - 40 l/min

HYDRAULIC PRESSURE: it generates the force of the cylinders (and rotation).

- An excessive pressure may cause oil leaks, pipe bursting, premature wear, structural failure of cylinders and grapple.

HYDRAULIC FLOW: it affects the speed of the attachment.

- Over-flowing may cause cylinders damage and structural damage to the unit. Most of this damage occurs during grapple's opening because less fluid is being displaced when the cylinder is retracted, so the cylinder is retracted at too high a speed. On units that have mechanical stops, an excessive speed causes the stops to impact violently. Repeated over-impacting causes early wear on pivot points and leads to stress cracks in the structure of the unit.

If a unit is being over-flowed at high pressure, the above-mentioned problems are multiplied.

It must be verified that the hydraulic pressure and flow of the machine are not higher than indicated. Should not be possible to tune the oil distributor of the operating machine, a pressure reduction valve and / or flow control valve must be installed.

SECTION I

GENERAL SAFETY REQUIREMENTS FOR HYDRAULIC LIFTING AND HANDLING ATTACHMENTS

Prior to the putting into service of the accessory device, be sure to read and understand these safety instructions.

Ignoring the safety instructions can result in accidents, malfunctions and invalidate the warranty.

1. General safety and injury prevention overview

1.1 General safety prescriptions

Mounting, putting into service and maintenance of the product may only be performed by persons authorized and trained. These people must also have read and understood the **safety instructions** and the **instructions for use** of the device accessory. Failure to observe this information can:

- **Cause the fall of the accessory device and / or loads lifted**.
- Result in periods of downtime due to malfunctions
- Lead to invalidation of the warranty

1.2 Prior to putting into service

- Make sure there are no leaks of hydraulic oil.
- Do not use an accessory device that has obvious defects.
- Before any use, check the safety devices.

1.3 During operation

- Use the accessory are in accordance with the intended use.
- Make sure that there are no persons in the danger zone, within a radius of 10 m away from the equipment
- Keep monitored and protected workspace.

Raise and secure loads safely.

- Use only accessory and additional devices from original manufacturer.
- Securely attach additional devices and accessories.
- Comply with the maximum capacity of both the main attachment and the extra equipment and accessories.

1.4 After operation

- Check for any visible damage to the accessory device.
- Check the condition of the parts subject to wear.
- Check the correct tightness of the threaded couplings.

1.5 Maintenance and lubrication

- Carry out maintenance work only when the machine is switched off and in a stable position.
- Perform maintenance and lubrication accordance with the intervals specified in the instructions for use.

2. Obligations

2.1 Obligations of the manufacturer

The delivered accessory device meets the safety standards in force and the relevant European Union directives (see also Declaration of Conformity). Its operation is safe when used as intended, according to the appropriate security and safety standards and descriptions in the instructions for use.
However, there are residual risks:

- During assembly / disassembly,
- During the commissioning / decommissioning,
- During operation,
- During the maintenance / cleaning.

Please note here that all users who work with or on the accessory device were informed of the dangers to
- If you ignore these residual risks,
- In the event of non-compliance with safety instructions
- In the case of work performed improperly
- In the case of use different from the intended use of the device

2.2 Obligations of the operator

To use the accessory there are different operating environments:
- Installation / modification / removal
- Putting into service/dismissing
- Maintenance and cleaning

Each of the listed operating areas require specific knowledge on processes and residual risks associated with them.

The operator is responsible for allowing the intervention on the accessory only to people who are aware of the basic guidelines for workplace safety and injury prevention and have been instructed by qualified personnel.

2.2.1 Important activities

Establish the responsibilities of the persons involved in the installation, modification, disassembly, operation and maintenance. People must be trained to intervene on or with the accessory device only under the supervision of a qualified technician. Integrate these directions with instructions for the observance of special corporate regulations, eg. work organization, operational processes, staff employed (including supervision requirements and notification). Check at regular intervals that the people who perform actions comply with the safety instructions. Take steps to ensure that the equipment is operated only if it is in a safe condition and working. Where appropriate, make available to the individual personal accident prevention gear.

2.3 Important indications

In addition to these indications, pay attention to all the general regulations in force, legal and otherwise binding rules on workplace safety, accident prevention and environmental protection. During the loading of vehicles and trailers, observe the permissible total weight (see the registration certificate). Do not perform any action that could jeopardize safety.

2.4 Safety devices
Safety devices such as load relief valve, pressure relief valve and non-return valve are set at the time of delivery, to ensure safe operation of the accessory device.

WARNING

The safety devices must not under any circumstances be manipulated or taken out of service.

3 . Operating conditions

The functionality and security are guaranteed only
- In the case of ambient temperatures between -20 ° and +40 ° C
- With wind speeds below 40 km / h
- Freshwater
Stop operation if they exceed those limits.
Do not operate in salt water or in acid or caustic environments .

4 . Structural modifications and welding operations

Arbitrary changes to the accessory device will result in forfeiture of any right to warranty and liability claims , since they involve property damage and reduction of operational safety. Do not make any structural changes to the accessory or changes to the settings or components . The welding operations can be performed only after the authorization of the producer and the receipt of welding instructions and specifications for the materials used.

5. Personal Protection

5.1 Safety instructions for different activities

5.1.1 Installation, modification and removal
Switch off the engine of the machine and operate the control on the hydraulic distributor for opening and closing until the pressure in the hydraulic hoses is not reset.
Make sure that the accessory device is placed on a solid surface and in stable position. Apply appropriate warning signs to prevent accidental start-up of the accessory. Run the installation, modification or removal of the accessory device in accordance with these safety instructions and the instructions for use.

5.1.2 Putting into service and operation

Make sure to avoid creating a hazard to people or the environment.
Before putting into service , check the following:
- The functionality of the accessory device and the machine.
- That equipment and all components for dirt , wear, deformation, damage and corrosion that could compromise safety.
- That all components are in place and properly secured .
- Maintenance of hydraulic hoses and connections.
- That the bolts and the main link and the other bearing housings are properly

lubricated.
Make sure that the field of use of the accessory device , eg . power lines are free of current or tubes are empty , etc. . Before starting work , plan the procedure and follow it methodically . If necessary, gather information or take advice from experienced staff. Do not operate an accessory device whose functionality and safety are not secure . Make sure that the ground on which is located the machine can support its weight.

5.1.3 Decommissioning

An accessory off the ground may fall after the decommissioning of the machine due to the decrease in oil pressure. Place the attachment on a horizontal and stable base or on a pallet. Ensure safe positioning of the accessory device so that it remains stable when the hydraulic system pressure is reduced. Switch off the drive of the machine and operate all the hydraulic controls in both directions, until the hydraulic pressure is reduced to zero.

5.1.4 Cleaning, maintenance and repair

Put out of service as described above and turn off all hydraulic, pneumatic and electrical systems connected to the accessory device. Perform cleaning and maintenance in accordance with these instructions and descriptions contained in the instruction manual.

WARNING

The warranty is void if you install non original Idrobenne spare parts. There is the risk of functional reduction and reduced safety.
For repairs it is necessary to use only replacement parts specified by the manufacturer to ensure safety and functionality. An exception is given by the replacement of sub- standard, such as screws and hydraulic fittings .

5.2 Safety instructions for specific hazards

5.2.1 Hazards caused by mechanical movements

Risk of injury or death in the event of a break or work in the danger zone of the accessory device (minimum distance 10 m) or as a result of the lifting, of opening and closing and other unexpected movements .
- Make sure that the machine is not in operation.
- Apply the warning signs and limit the danger zone.
- Attach the accessory device to prevent any movement .

During the work on the unit , use individual safety equipment , eg . helmet , goggles or face shield , protective clothing and gloves and safety shoes.

5.2.2 Hazards caused by hot components

Hydraulic oil can reach, during normal operation, a temperature of 80 ° C.
Already after a short period of operation, the hydraulic lines or other parts of the device can be hot. Even after long pauses is possible that they are still hot.
- Check the temperature before contact.
- Allow to cool adequately the hydraulic components of the device and oil.
- Carefully remove the hydraulic fittings

- Wear suitable Safety equipment (see chapter 5.2.1).

5.2.3 hazards caused by pressurized components
Make sure that the hydraulic connections and pipelines have been installed correctly. Perform maintenance on hoses and hydraulic components at predefined intervals as indicated in the maintenance procedures described in the instructions for use.

CAUTION

Even after you turn off the hydraulic power supply and try to reset oil pressure, it can still be present in the hoses or in the components of the hydraulic system a residual pressure.
- Before maintenance or repair, be sure that the oil pressure in the hydraulic system has fallen to zero.
- Carefully remove the fittings
- Wear suitable Safety equipment (see chapter 5.2.1).

5.3 Hazards caused by the concatenation of unfortunate events
During any intervention and the accessory device, there are unpredictable serious residual risks, which can only be addressed through a systematic planning of the work, an approach that takes into account any hazards, experience, etc.

5.4 Hazards caused by mechanical faults
After that a fault is detected, it is no longer possible to ensure a safe operation.
- Immediately stop using the accessory
- Make sure the machine is not in operation and secure to prevent re-ignition.
- Put the machine into operation only when the problem has been solved

Possible faults that may occur during operations with the accessory device:
- Damage or cracks on the structural components
- Faulty bearing housings
- Defective hydraulic lines or safety equipment
- Loose bolts
- Bolted links not tight enough
- Sealing problems on hydraulic components or their connections
- Unusual noises
- Movements that are too fast or too slow
- Functional errors of command
- Overheating of the hydraulic components

6. protection of equipment

6.1 Important storage instructions
- Operate the attachment only within the limit values defined in the specifications.
- Pay particular attention to the indications concerning the maximum operating pressure.
- Clean and lubricate the accessory device before you turn it off for a long time.
- Store in a clean, dry place.
- Before putting the device into operation after a long rest, check the status of

operational safety.

6.2 Transport

During transport, the accessory must be positioned and secured to prevent independent movements of its mobile parts. Place the accessory on a solid load platform and secure it firmly against falls or reversal.

7. General and final notes

Due to constant technical development the content of this manual may not fully correspond to the layout of the equipment, it may also content unintentional errors. Therefore, this manual cannot be used for juridical purposes.

SECTION II

INDICATIONS AND PRECAUTIONS FOR USE AND MAINTENANCE

1. General safety regulations

It is strictly forbidden to stay within or to pass through the field of action of the operating machinery on which the attachment is mounted
Keep a safe distance of at least 10 m. from the tool when in use

- Danger of falling tools
- Danger of collision
- Danger of crushing
- Danger of shearing

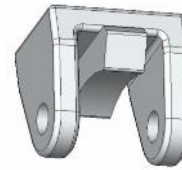
The use of the equipment in free admittance areas is not allowed
Safety norms of the operating machine apply to the equipment too; in case of discrepancy adopt the most restrictive ones.
It is forbidden to go with hanging cargoes over people or things.
Any intervention on the equipment must be carried out with operating machine idle in steady position and with engine switched off.
The equipment can be used only by suitably trained and qualified staff, capable to comply with all necessary safety rules.
All possible overhauling or changes have to be carried out by skilled staff only and have to be authorized by the maker of the operating machine and of the equipment.

2. Putting into service—Installation

Before proceeding with installation and putting into service, check the integrity and oil tight of pipes and hydraulic hose-lines. Should the operating machine not be fitted with all necessary hydraulic circuits, ask maker's advice about required modifications.
Check that **feed oil pressure** and **oil flow** are **within the range indicated by the manufacturer** (see product sheet and page 4 of this manual), **otherwise it is mandatory to adjust the parameters of the operating machine**.
The equipment must be installed in such a way, so to swing both lengthwise and crosswise in relation to the machine's lifting boom.
In presence of a Hydraulic rotator, the connection to the hydraulic system must be performed in accordance with the symbols on the rotator.
Always check that the oil system is free from impurities.

ATTENTION:
the attachment must be connected to the boom by a **cardan suspension link** (universal joint).
*

ATTENTION:
when GRI 4T/SF and GRI 5T/SF rotators are mounted, in order to prevent any damage to the hydraulic rotator, the lower part of the suspension link must be realized with a **mechanical stop** like shown on the right:



***Only attachments clearly so designed and after specific approval given by the manufacturer may be mounted directly on the machine's arm or quick coupler (so-called rigid mounting). E.g. SG, DG and GRP product lines.**

3. Correct use and prohibitions

Polyp grabs are conceived for handling bulk materials, such as metal scrap, old glass, old paper, rubbish. Solid blocks can be handled only if tines are able to embrace at least 2/3 of total volume. All tines must grip the object.

Clamshell buckets are meant to handle bulk materials such as gravel, mould, coal, sand, snow. Timber and log grabs are intended for handling round wood and similar cylindrical objects. Sorting- and demolition grabs are intended for various operations, such as waste sorting and light demolition work. Kerb stone grabs, grabs for rails and other tools are intended for handling specific materials.

- Do not cause excessive swinging during lifting and handling operations
- Do not charge transverse loads by knocking with violence against other objects
- Do not use the equipment, both when open or closed, to hit, to push or to compact materials
- Do not lift overloads as for the equipment's lifting capacity

- Do not weigh heavily on the equipment with the operating machine
- Do not use the tool to wrench nor drag objects on the ground
- Do not leave the operating machine with hanging loads
- Do not rotate the equipment when it is standing on the ground or while gripping or digging: the hydraulic rotator must be only operated for positioning the equipment when it is hanging free.

WARNING : Any uses other than as specified are misuse of the product and can lead to operational disturbances and loss of warranty.

4. General maintenance

4.1 Staff training

All interventions have to be carried out with the equipment steady on the ground, with the operating machine inactive, with its engine switched off, and after discharging the residual oil pressure into the hydraulic circuit.

General maintenance interventions do not require special skills, as they involve simple operations like greasing pins and bushings, tightening bolts or oil couplings, replacing flexible pipes and seal kits.

It is necessary to observe some precautions and to use the correct tools when dismounting hydraulic cylinders and replacing seals. These operations must be carried out by medium-trained personnel. The maintenance of cylinders is normally scheduled every 12 months; in case of early wearing of the seals it is recommended to contact the dealer or the manufacturer, as there could be some problems like dirt into the hydraulic fluid.

Interventions on hydraulic rotator must be carried out by the manufacturer or by specifically trained personnel. If rotator is not disassembled in the proper way, it will be impossible to put it together again.

4.2 Spare parts

USE IDROBENNE® ORIGINAL SPARE PARTS ONLY!

When ordering spare parts please quote order number, quantity and serial number of the attachment. Serial number can be found on delivery note, invoices, CE Declaration of conformity and on the metal plate which is fixed on every attachment. Serial number is also stamped directly in the main body of each equipment.

4.3 Maintenance schedule

Regular maintenance is essential to avoid downtime and to prolong the life of the attachment. The following scheme covers all the general maintenance interventions that can be performed directly by the user. In case of a general inspection or a more complex repair, it is always recommended to take contact whether with the dealer or the manufacturer's after-sale service.

4.4 Summery scheme

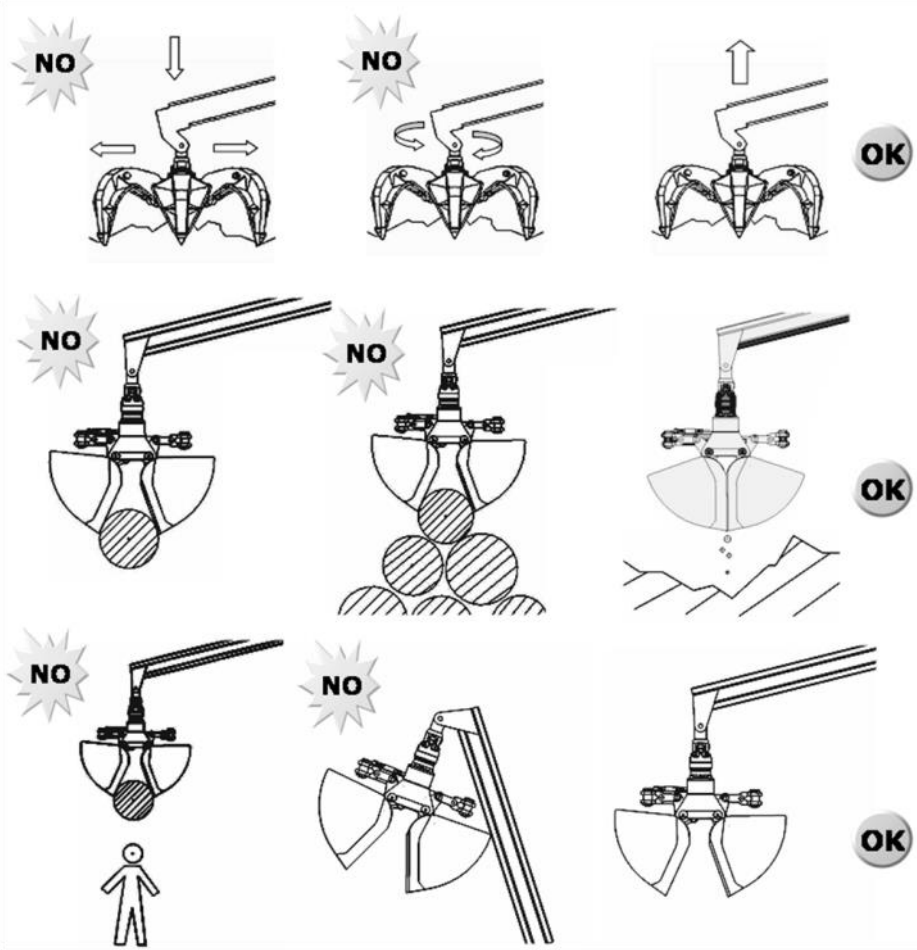
MAINTENANCE SCHEDULE			
Time gap	**Operation**	**Operator's qualification**	**Spare parts and materials**
After the **first 8 hours**	Verify the tightening of bolts, nuts and couplings	None	=
Every **30 hours**	Grease all junction points	None	Hi-performance lithium grease
Every **100 hours**	Verify the tightening of bolts, nuts and couplings	None	=
	Verify hydraulic hoses and connections	Hydraulic Engineer	=
Every **1000 hours**	Complete oil change	Hydraulic Engineer	HLP 46 hydraulic oil or similar
Every **1500 hours or once per year**	Replacement of hydraulic hoses	Hydraulic Engineer	Flexible hoses class R2T minimum (300bar operating pressure)
	Replacement of cylinder seals	Hydraulic Engineer	Seal kit
Every **18 months**	General inspection	Dealer or manufacturer	=
Note	When attachment is used in an aggressive environment (acid or caustic fluid or material, dust, chemical components, etc.) it is strictly necessary to make maintenance operation more frequent.		
	Standard tools are not suitable to operate under **marine water**. When the attachment is provided of special "marine water kit", it is nevertheless necessary to clean the same with freshwater and to grease every pivot points with special lithium grease at the end of every working shift. This operation prevents corrosion, reduces extraordinary maintenance and extends the overall working life of the equipment. Any damage caused by corrosion due to lack of maintenance is not covered by warranty.		

5. Warranty terms

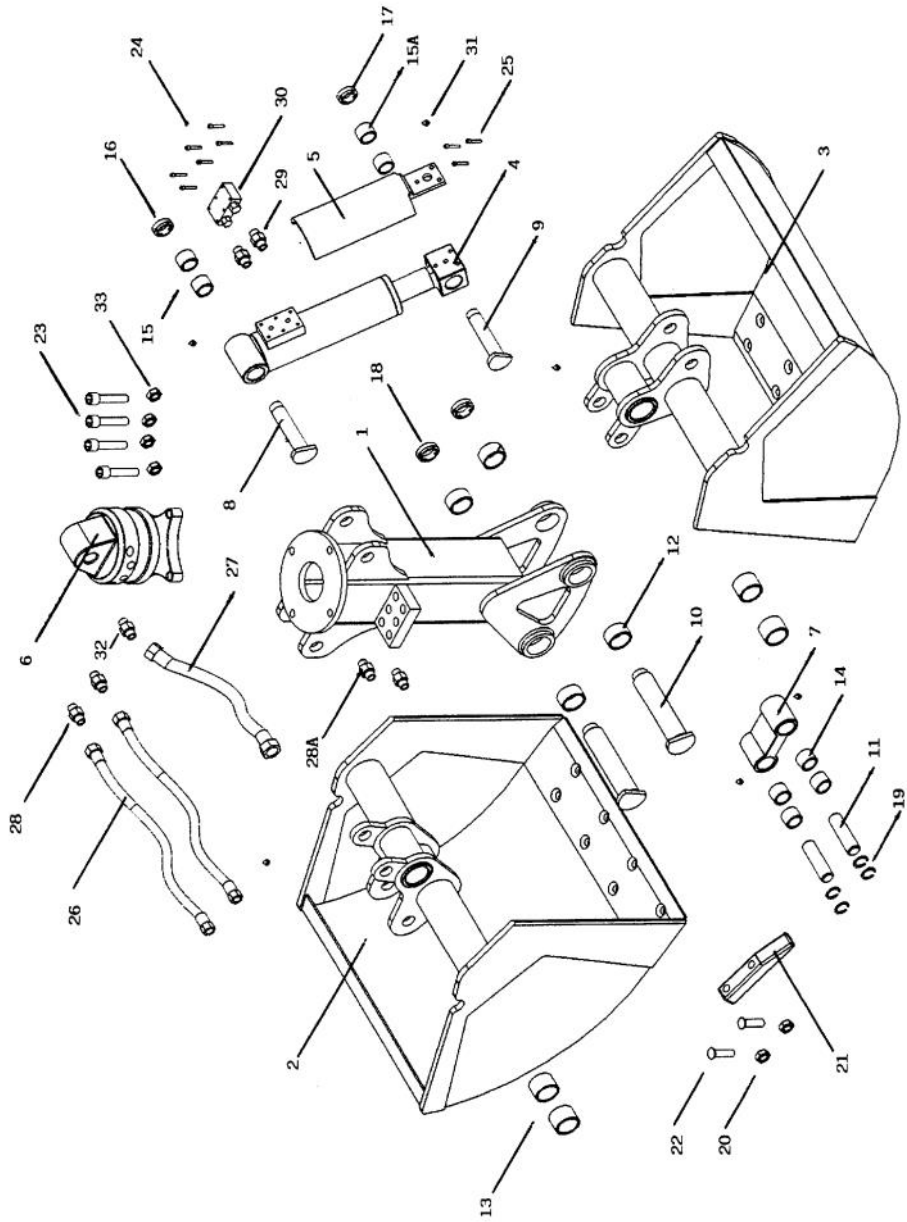
Idrobenne warrants that the products are free from defects in materials and workmanship. The product warranty is strictly limited to defects in material and manufacturing and does not include damages caused by incorrect mounting, misuse, abuse or overloading. The warranty covers repair or replacement of defective parts. The products shall not be returned without prior notice and Idrobenne's written approval. The product warranty is 12 months from delivery date to end customer, but shall never exceed 18 months from the date on which the goods have been delivered by Idrobenne. Normal wear of parts is never covered by warranty, even during the warranty period. The warranty is not valid if the products have been repaired, altered or dismantled, even partly.
Travel costs and costs of mounting are not covered by this warranty.
The warranty does not cover secondary damage.
For full warranty conditions please contact our offices at info@idrobenne.com

6. Cases in which the manufacturer may refuse any liability:

- Improper use of equipment
- Utilization by people without any adequate professional knowledge
- Employments contrary to law regulations
- Lack of service and maintenance
- Wrong or faulty installation
- Use of non-original spare parts
- Unauthorized modification of the equipment, dismantling or repair without manufacturer's authorization
- Partial or complete failure to observe the prescriptions of this booklet
- Faults resulting from the incorrect coupling between the attachment and the carrier machine: Idrobenne provides a general indication of the compatibility of an hydraulic tool with a specific class of operating machines, but the suitability of the specific coupling must be assessed at the act of installation, under the direct responsibility of the installer and/or the user. Therefore, Idrobenne accepts no responsibility whatsoever deriving from an incorrect combination between a specific Idrobenne product and a specific operating machine.



It's strictly forbidden to stay within or to walk through the field of action of the machine on which the attachment is mounted. Keep a safe distance of at least 10 meters.



Indicare sempre il numero di matricola! – Please always indicate the grab's serial number!
Merci d'indiquer le numero de matricule! – Bei Ersatzteilbestellung ist die Seriennummer anzugeben!

Spare Parts List **BMV 2/500**

Ps.	Cod.	Qt	Descrizione	Description	Désignation	Benennung
01	124	1	Corpo	Body	Corps	Körper
02	252	1	Valva biella alta	Clamshell with upper connection	Coquille avec attache supérieur	Schale mit Oben Anschluss
03	253	1	Valva biella bassa	Clamshell with lower connection	Coquille avec attache inférieur	Schale mit Unten Anschluss
04	319	2	Cilindro	Cylinder	Vérin	Zylinder
05	1101	2	Parastelo	Ram protection	Protection pour tige	Kolbenstangeschütz
06	1509	1	Rotatore idraulico	Hydraulic rotator	Rotateur hydraulique	Drehmotor
07	701	1	Biella	Connecting-rod	Bielle	Pleuelstange
08	417	2	Spina cilindro	Cylinder pin	Axe pour vérin	Bolzen für Zylinder
09	418	2	Spina valva	Clamshell pin	Axe pour coquille	Bolzen für Schale
10	416	2	Spina corpo	Main body pin	Axe pour corps	Bolzen f. Körper
11	419	2	Spina biella	Connecting-rod pin	Axe pour bielle	Bolzen für Pleuelstange
12	472	4	Boccola corpo	Body bush	Bague pour corps	Buchse für Körper
13	473	4	Boccola valva	Clamshell bush	Bague pour coquille	Buchse für Schale
14	468	4	Boccola biella	Connecting-rod bush	Bague pour bielle	Buchse für Pleuelstange
15	468	4	Boccola cilindro	Cylinder bush	Bague pour vérin	Buchse für Zyl.
15 A	468	4	Boccola stelo	Ram bush	Bague pour tige	Buchse für Kolbenstange
16	510	2	Ghiera cilindro	Cylinder ring-nut	Frette pour vérin	Zwinge für Zylinder
17	510	2	Ghiera valva	Clamshell ring-nut	Frette pour coquille	Zwinge für Schale
18	511	2	Ghiera corpo	Body ring-nut	Frette pour corps	Zwinge für Körper
19	802	4	Anello elastico	“Seeger” Ring	Anneau “Seeger”	“Seeger” Ring
20	503	6	Dado dente	Digging tooth nut	Ecrou pour dent	Mutter für Zahn
21	1106	3	Dente da scavo	Digging tooth	Dent	Zahn für Graben
22	626	6	Vite dente	Digging tooth bolt	Vis pour dent	Schraube für Zahn
23	622	4	Vite rotatore	Rotator bolt	Vis fixage rotateur	Drehmotorschr.
24	618	12	Vite valvola	Valve bolt	Vis pour soupape	Ventilschrauben
25	601	6	Vite parastelo	Protection bolt	Vis pour protection	Schrauben
26	10183	4	Tubo cilindro	Cylinder hose line	Tuyau flexible p. vérin	Zylinderschlauche
27	10184	2	Tubo rotatore	Rotator hose line	Tuyau p. rotateur	Drehmotorschlauche
28	1092	4	Nipplo cilindro	Cylinder fitting	Téton pour vérin	Nippel für Zylinder
28A	1059	2	Nipplo corpo	Body fitting	Téton pour corps	Nippel für Körper
29	1095	4	Nipplo valvola	Valve fitting	Téton pour soupape	Nippel für Ventile
30	1093	2	Valvola	Safety valve	Soupape de sûreté	Nippel für Ventile
31	807	8	Ingrassatore	Grease nipple	Graisseur	Schmierer
32	1092	2	Nipplo rotatore	Rotator fitting	Téton pour rotateur	Drehmotor
33	503	4	Dado rotatore	Rotator nut	Ecrou pour rotateur	Drehmotormutter
	10194	2	Kit guarniz.cil.	Cylinder seal kit	Pochette des joints	Dichtsatz

Warranty claim form

1. Applicant:	Company	
	Person in charge	
	e-mail/tel.	
2. End User:	Name	
	e-mail/tel.	
3. Attachment:	Model	Serial number
4. Operating machine:	A) Truck crane: Model	Oil press. BAR
	ton/meters	Oil flow lit./min.
	B) Excavator: Model	Oil press. BAR
	Oper. weight	Oil flow lit./min.
		Oil temp. °C
	C) Other: description:	Oil press. BAR
		Oil flow lit./min.
		Oil temp. °C
5. Application: (kind of job)		
6. Description of problem / failure:		

Attached videos:

Attached images:

Please send pictures of the complete item, together with a picture of the tool on the operating machine. In case of a rotator, please supply photo of both rotator and complete product, if zoomed in for a shot, please ensure overall shot is also supplied.

Date _____ Signature _____

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