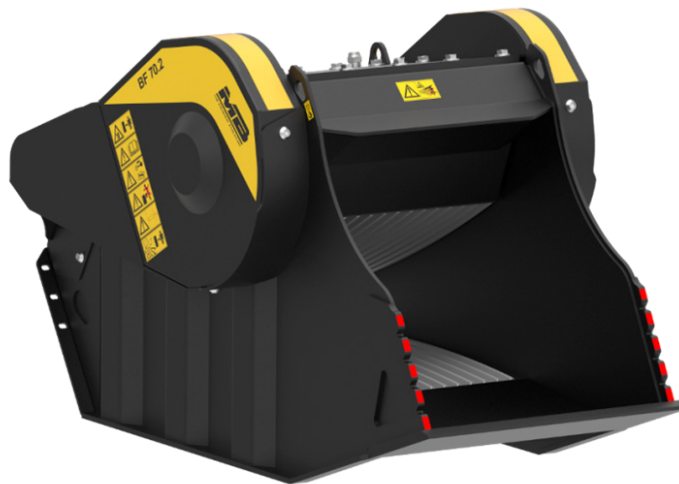


***THE CRUSHING EVOLUTION***

## USE AND MAINTENANCE MANUAL



**MB-C50 S4  
BF80.3 S4  
BF120.4 S4**

**BF60.1 S4  
BF90.3 S4  
BF120.4 S4 HD**

**BF70.2 S4  
BF90.3 S4 HD  
BF135.8**

**SERVICE  
ONLINE ▼**





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## INTRODUCTION

---

Dear Customer,

Thank you for choosing a MB S.p.A product, we are pleased to provide you with this manual to help you work with the MB Crusher Bucket in the safest and most productive manner possible.

We kindly suggest you to read this technical information very carefully, and provide it to the people who will use the Bucket Crusher, as well as to those who will service it.

The information contained in this manual is **MB S.p.A.**'s reserved property and refers in particular to the Bucket Crusher, identified as:

Model:           **MB-C50 S4**  
                      **BF60.1 S4**  
                      **BF70.2 S4**  
                      **BF80.3 S4**  
                      **BF90.3 S4**  
                      **BF90.3 S4 HD**  
                      **BF120.4 S4**  
                      **BF120.4 S4 HD**  
                      **BF135.8**

Serial number:

Year of manufacturing:

Manual Identification Data

Revision:       16/00   of       01/2020

Our sales and technical offices are able to provide you with any additional clarification or information you may require, regarding the Bucket Crusher you purchased.



## 1 GENERAL INFORMATION

### 1.1 MANUFACTURER'S IDENTIFICATION DATA

The Bucket Crusher, model MB-C50 S4 - BF60.1 S4 - BF70.2 S4 - BF80.3 S4 - BF90.3 S4 - BF90.3 S4 HD - BF120.4 S4 - BF120.4 S4 HD - BF135.8 is manufactured exclusively by:

Manufacturer: **MB S.p.A.**

Address: Via Astico, 30/A- 36030 FARA VICENTINO (VI) - Italy.

Telephone: +39 0445308148

Telefax: +39 0445308179

e-mail: [info@mbcrusher.com](mailto:info@mbcrusher.com)

### 1.2 TECHNICAL SUPPORT

The official contacts to liaise with the after sales department and obtain all kinds of information regarding use, maintenance and spare parts purchase are as follows

**E-mail: [mbservice@mbcrusher.com](mailto:mbservice@mbcrusher.com)**

**Phone: +39 (0) 445850425**

**Fax: +39 (0) 445850335**

The customer can also address his enquiries to our wide dealer network and authorized workshops closer to his facilities. Specifying model and serial number of the concerned unit.

Online assistance is also available on our B2B portal. A tailor made multi-medial platform specially developed to provide immediate response to most needs. Thanks to an easy and intuitive online browsing platform the customer has access to useful documents and contents, such as:

- Specific FAQ for each MB item
  - Tutorial videos (installation and maintenance)
  - Spare parts chart
  - Technical forms
  - Exploded views, technical drawings
  - Marketing section with plenty of photos and videos
- This service is **FREE OF CHARGE** and constantly updated  
Start to explore with the QR Code below.

In case you have not been assigned credentials, do not hesitate to ask for them to [mbservice@mbcrusher.com](mailto:mbservice@mbcrusher.com)



#### ATTENTION!

All kind of interventions not carried out by MB authorized personnel will result in immediate warranty void.



#### ATTENTION !

The customer is mandatory asked to purchase only genuine original parts. Assembly of unofficial components result in warranty void.

# DECLARATION **CE** OF CONFORMITY

(Annex II, Point A)

**The company:** MB S.p.A.  
Via Astico, 30/A  
36030 - Fara Vicentino (VI)  
Tel. +39 0445300972

Represented by Mr. Guido Azzolin, born in Thiene on 23/05/1970, in his capacity as acting Chief Executive Officer / Managing Director.  
The person authorised to draw up the technical brief is Sig. Azzolin Diego, in his capacity as owner of MB S.p.A., at the production facility in Via Astico 30, 36030 Fara Vicentino, Italy.

**DECLARES**  
**under its own liability that the interchangeable equipment**

**CRUSHER**

FUNCTION: crushing and reduction of inert demolition material

**MODEL:** **BF60.1 S4**

**SERIAL N°:** **20651**

complies with the Machinery Directive 2006/42/EC and Directive PED 2014/68/EU (art. 4 par. 3).

It also declares that

**- the following technical standards have been applied:**





- **EN 12100:2010**

Fara Vicentino, 10/06/2020

**GUIDO AZZOLIN**  
(CEO / Managing Director)

### 1.3 MACHINE IDENTIFICATION AND CE MARKING

The machine identification data, the CE trademarks and the TUV trademark are located on a plate that is fastened by metal rivets to the load bearing structure.

		<b>MB S.p.A.</b> Via Astico 30/A, 36030 Fara Vicentino (VI) Italy Tel. 0445 308148 Fax. 0445 308179 N° EP 1 532 321				
<small>COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV "ISO 9001:2008"</small>		<b>BENNA FRANTOIO</b>				
MODEL	<input type="text"/>					
SERIAL NUMBER N°	<input type="text"/>					
CONSTRUCTION YEAR	<input type="text"/>					
HYDRAULIC SYSTEM MAX PRESSURE	<input type="text"/>				Bar	
WEIGHT	<input type="text"/>				Kg	

### 1.4 NORMATIVE REFERENCES

The machine has been built in compliance with the provision of the Community Directives and Project Rules, pertinent and applicable from the moment of its insertion on the market.

List of the applied Community Directives:

- Directive 2006/42/EC
- D. Lgs 17 (20/01/2010): within Italian borders

List of some of the applied Project Rules:

- UNI EN ISO 12100:2010

List of regulations concerning pressure equipment:

- Directive PED 2014/68/EU (article 4 subparagraph 3)

### 1.5 WARRANTY

**MB S.p.A. provides customers with an 12-month Warranty starting from the invoicing date.**

MB S.p.A. provides customers with a 12-month warranty beginning on the invoicing date.

MB S.p.A. guarantees this product to be free from defective workmanship and/or materials. If a component is found to be defective, faulty workmanship or materials, a replacement component will be supplied by any authorized MB S.p.A. workshop without charge. All faults covered by the warranty must be promptly reported to the MB SERVICE by e-mail [mbservice@mbcrusher.com](mailto:mbservice@mbcrusher.com).

For all the warranty interventions the following conditions are to be strictly followed.

In the absence of correct and complete maintenance, indicated in chapter 6 of this manual, no damage to the equipment shall be covered by warranty.

- Transport costs from and to MB S.p.A. and/or Your authorized workshop/dealers shall be borne by the applicant.
- All labour costs to perform repairs will be borne by the applicant.
- All travel costs related to any requests for technical operations made to the parent company are the sole responsibility of the applicant, and requests for technical interventions at the home site will be fully charged to the petitioner.
- MB S.p.A. reserves the right to decide whether to replace a component proven to be faulty with another equal one ensuing prior assessment by the manufacturer.
- Any accidental damage to the machine must be repaired using original MB spare parts. The use of non-original parts compromises/nullifies the warranty.
- Machine damage caused by transportation and/or handling are not included in the warranty.

- Damage to the crusher bucket caused by the work vehicle operator who has not complied with the prohibitions enforced in chapter 2 of this manual are not included in the warranty.
- Damage to the crusher bucket caused by the incorrect setting of the hydraulic system of the operating machine connected to the bucket are not included in the warranty.
- Damage to the crusher bucket attributed to malfunctioning of the work vehicle are not included in the warranty.
- For all that is not mentioned, the Use and Maintenance Manual delivered together with the crusher bucket will prevail.

The manufacturer reserves the right to make changes, adaptations and improvements without having an obligation to the user or the owner.

**Naturally the Bucket must not be subject to improper use, must not be modified and must be correctly serviced, more information on paragraph 2.2 of this Use and Maintenance Manual**

- In particular, it is forbidden to crush flammable material, explosive material or material that can generate flammable, explosive, toxic or harmful powders.
- It is forbidden to use the Bucket Crusher in potentially explosive atmospheres.
- It is forbidden to crush material and rock using the outside of the bucket like a hammer.
- It is forbidden to work with the Bucket immersed in liquid.
- It is forbidden to handle material using the outside of the Bucket, apart from the front blade.
- It is forbidden to use the Bucket to dig in muddy soil or perform any operations on material other than crushing.
- It is forbidden to use the arm of the Bucket as a lever to move the excavator sideways.
- It is forbidden to use the Bucket on excavators with hydraulic systems that do not satisfy the flow and pressure requirements indicated by MB S.p.A. (see table of chapter 3).
- It is forbidden to crush material at temperatures higher than 100°C or lower than -20°C.
- When working, never operate with the excavator engine idling. Always rev the engine so that the hydraulic fluid can circulate at suitable pressures.
- The Crusher Bucket is used for the crushing and volumetric reduction of inert materials coming from demolitions. With regards to this, it should be noted that the crushing of hard materials such as granite or porphyry is allowed, but the size should not exceed 50% than the opening of crusher bucket; nevertheless, please be aware of the fact that the jaws and all the other consumable components will wear out much more quickly; moreover, in order to ensure long life to the jaws, it is recommended to avoid crushing damp materials. For the demolition of semi-hard materials, the size should not exceed 70% than the opening of the crusher bucket. In case the indications provided above are not complied with, significant problems will occur with the locking wedges and on the entire part adjacent to the jaws. Also, if said materials are crushed in a continuous manner, the overall frame of the crusher bucket will be subjected to considerable fatigue.

The manufacturer reserves the right to make changes, adaptations and improvements without having an obligation to the user or the owner.

**In these cases, MB S.p.A. declines all liability.**

**Scheduled maintenance work must have been performed on the Bucket as indicated in the table of chapter 6 in this manual.**

**Scheduled maintenance work must have been performed on the Bucket components subject to wear as indicated in the table of chapter 6 in this manual.**

- Components subject to wear and marked with the letter \* in the attached “periodic replacement of components” diagram, are replaced at the user’s expense as the fact that they are worn does not mean the product is defective.

This manual was written in compliance with the instructions contained in:

- Directive 2006/42/EC and, within Italian borders, D.Lgs 27 Jan 2010 - Nr. 17
- UNI EN ISO 12100:2010
- Directive PED 2014/68/EU (article 4 subparagraph 3)

## **1.6 STRUCTURE OF THE MANUAL**

---

### **1.6.1 PURPOSE OF THE MANUAL**

The purpose of this manual is to provide the customer with all the information necessary not only to use the machine properly, but also to be able to manage it in the safest and most autonomous way possible.

### **1.6.2 IMPORTANCE OF THE MANUAL**

The manual contains important safety information; it describes methods for carrying out particular operations that, if not carried out, could cause damages to people, property and equipment. You could also find other useful information, that will improve your knowledge about the machine, as well as how to install and service it.

The Manual:

- Is an integral part of the machine supply;
- Is an essential instrument for machine use, running and maintenance;
- Must be kept in good conditions for the entire life of the machine, and may be eliminated only after the machine has been scrapped;
- Must be updated every time that manual update documentation is provided;
- Must be provided to the machine purchaser, if it is sold to another user;
- Reflects the technical status at the moment that the machine is sold.

### **1.6.3 CONTENT OF THE MANUAL**

This manual provides all the necessary information to install and service the Bucket Crusher machine. We request you to follow the instructions, in order to obtain optimal performances and a correct machine functioning.

Instructions contained in the manual:

- General information;
- Safety regarding the machine use;
- Machine description;
- Machine transport;
- Machine functioning;
- Machine maintenance;
- Machine demolition.

### **1.6.4 ADDRESSEES**

This manual is directed towards:

- The transport workers;
- Workers employed in the installation, for connecting the machine to the auxiliary services (hydraulic);
- The responsible for functional test and personnel training;
- The machine operator;
- Maintenance people;
- The responsible for final demolition;
- Operators in charge of staff security.

This manual must be kept by the assigned person in a suitable location, so that it is always available for consultation, and maintained in good conditions.

In case of loss or deterioration, the replacing documentation must be required directly to:

**MB S.p.A.**  
Via Astico 30  
36030 - FARA VICENTINO (VI) - ITALY

---

### WARNING !



It is mandatory that this manual is read before starting with any operation.  
The guarantee of the machine's correct functioning depends on the right application of all the instructions contained in this manual.

---

#### 1.6.5 RESPONSIBILITY OF THE USER

The instructions provided in this manual do not replace, but integrate the obligations within the current legislation, concerning safety and accident prevention regulations.

With reference to what stated in this manual, **MB S.p.A.** declines all liability in case of:

- adverse use from national safety or accident prevention laws;
- incorrect preparation of the structures where the machine will be placed;
- failed or incorrect observation of the instructions provided in the manual;
- unauthorized changes on the machine;
- exceptional events.

The manual reflects the machine construction at the moment it is placed on the market. It is an integral part of it, and it complies with all laws, directives and standards that were effective at that time; it cannot be considered inadequate only due to successive updates based on new laws or new experiences. Any manual supplements, that the manufacturer considers appropriate to send to the users, must be kept together with the manual, as integral parts of it.

#### 1.6.6 CONSERVATION OF THE MANUAL

It is obligatory to keep this manual and all its attached publications in an easily and accessible location near the machine, known to all users (operators responsible for running the machine and personnel responsible for servicing it).

Therefore:

- operators and maintenance people must be able to find it quickly at any moment;
- in case of loss or destruction, both for the manual and its attached publications, the customer may request a copy to **MB S.p.A.**;
- it must be kept, and follow the machine until its final demolition.

#### 1.6.7 SYMBOLS AND DEFINITIONS USED IN THE MANUAL

The following symbols are used in the manual to point out particularly important information:



#### ATTENTION - DANGER

Signal of elevated danger: it indicates the extreme importance of the instructions to which it refers, and it is reported where there are dangers for the safety and health of the exposed people.



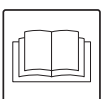
#### INFORMATION AND PRECAUTIONS

Useful instructions and recommendations: general useful information and instructions, to be observed and not disregarded, for all operators working with the machine.



#### OPERATING INSTRUCTIONS

Indicating a particular operating sequence.



#### INSTRUCTION MANUAL

Read carefully the information contained in the instruction manual.



#### PERIODIC MAINTENANCE

In the relevant maintenance section it signals the periodic replacement of a component

## 2 SAFETY REGARDING THE MACHINE

### 2.1 GENERAL SAFETY WARNINGS

In order to guarantee maximum operating reliability and safety, **MB S.p.A.** has carefully selected the material and the components to use in the construction of its machines, inspecting them regularly prior to delivery.

A good performance in the course of time depends also on a correct use and suitable maintenance, according to the instructions contained in this manual.

Trained people must regularly perform the required maintenance, inspection and overhaul operations in order to prevent breakdowns or accidents.

Operating anomalies are due, in most cases, to an incorrect maintenance.



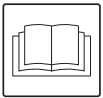
**In case of doubt regarding the functioning, stop the machine immediately!**

The machine has been built according to the current technical level and the known technical safety rules in force.

The operator's failure to observe the safety instructions, or his imprudence in using the machine, could cause serious accidents to the operator himself or to other people, animals, or could also cause machine breakages or damage other properties.

For this reason, it must be kept in mind that the machine's safety devices guarantee protection against accidents only if used correctly, and according to the safety instructions described in this manual.

**BEFORE USING THE MACHINE, IT IS OBLIGATORY TO READ CAREFULLY THE SAFETY, USE, MAINTENANCE AND INTERVENTION INSTRUCTIONS, TO PROTECT ONE'S OWN AND OTHER PEOPLE'S SAFETY.**



#### **DANGER !**

**Be very careful and use maximum care when using the machine, as imprudence is the most frequent cause of accidents. The machine must be used by a competent adult.**



#### **ATTENTION !**

Before connecting the Bucket Crusher to the excavator, make sure that it is suitable to support all its foreseen characteristics and functions.

#### 2.1.1 ESSENTIAL CHARACTERISTICS OF THE MACHINE TOOL

Before you connect the crusher bucket to the operating machine and start it up, it is recommended to make sure that the basic requirements described here below are present in order to operate safely, safeguarding people's health.

- The final user has to make sure that the total weight of the load (bucket weight + weight of loaded material + coupling + any optional accessories) does not exceed the arm lifting capacity of the operating machine indicated in its manual; this check must be carried out for all positions with which you can operate.
- The final user has to verify that the overturning capacity of the work machine is suited for using the crusher bucket; this check must be carried out for all positions with which you can operate.
- To verify if your operating machines satisfies the minimum requirements, it is very important to contact the manufacturer/dealer.
- Driving the work machine for the purpose of starting the equipment must be carried out exclusively by a competent and skilled adult, duly trained in driving site equipment.
- The activation command of the bucket can be a switch or a pedal, as long as it maintained action. To start the bucket, it is mandatory to keep the command pushed, to stop the bucket it is enough to release the command.
- The machine must be equipped with an emergency stop command capable of stopping all crusher bucket movements as quickly as possible.



- Make sure the operator has fully understood the meaning of all commands and their operation.
- The operator has to be familiar with and apply the safety conditions for using the machine in the workplace, in compliance with the laws in force in the user's country.
- In reference to: right side, left side, front part and rear part, this refers to the view from the driver's seat of the excavator.
- The operator has to be familiar with and properly interpret all indications contained in the instructions manual and the signs affixed to the machine: this will help prevent damage to people, property and the operating machine.
- Absolutely comply with the instructions contained in the Operating and Maintenance Manual, and with general EC accident-prevention standards, as well as with the standards in force in the user's country.
- Always use the personal protection equipment required by directives EEC 89/686 and EEC 89/656; moreover, always do as instructed in the manual and according to the laws of the country where the machine is operating.
- Carefully read all the information printed on the adhesive labels concerning safety affixed to the machine.
- The operator has to avoid using the Crusher Bucket under unsuitable conditions or when under the influence of alcohol or drugs.
- It is important to organize the work site so as to carry out the lowest number of operations, consistent with the job to be carried out.
- In order to safeguard the workers' health and safety, it is advisable to set up the work site so as to be able to position the excavator at a higher level compared to the material to be crushed; by doing so, the load radius is reduced and you avoid reaching the maximum working radius configuration.
- For use on excavators, it is recommended to refrain from carrying out the bucket loading phase with the carriage positioned sideways (see figure below on the right). The carriage positioned sideways is less stable compared to the carriage being positioned straight (see figure below on the left).



- For installation on wheeled excavators, it is mandatory to secure the stabilizers or the blade (if equipped) to the ground before you hook up and lift the equipment.
- For installation on operating machines other than wheeled or tracked excavators, please keep in mind all the indications provided here above and below for proper operation and to safeguard workers' health and safety.

**VERY IMPORTANT**

**REQUISITES OF EXCAVATOR**

The weight of the work vehicle upon which the Bucket Crusher is installed, in order to maintain good stability and therefore manoeuvrability, is the following:

MODEL	MB-C50 S4	BF60.1 S4	BF70.2 S4	BF80.3 S4	BF90.3 S4	BF120.4 S4	BF135.8
WEIGHT EXCAVATOR	5-8 ton	≥ 8 ton	≥ 14 ton	≥ 18,5 ton	≥ 21 ton	≥ 30 ton	≥ 43 ton

**CAUTION!**

Please note that the weights considered above are intended for standard excavators. For operating machines having the weight defined in the table regardless, but with no-standard arms adapted to specific applications, it is mandatory to check the nominal loads in the user manual of the operating machine.





---

**ATTENTION !**

---

Before setting the machine tool, make sure that no one is near it or in its working range.

---

- For safety reasons, keep children, people and animals away from the heavy machinery while using the MB Crusher Bucket.
  - For your safety, it is highly recommended to not climb on top of the Crusher Bucket.
  - For your safety, it is highly recommended to not stand or be near the Crusher Bucket while it is functioning.
- 



---

**DANGER !**

---

If the machine jams, before carrying out any operation, turn the machine tool off and secure it (excavator, etc...).

---



---

**ATTENTION !**

---

The machine must not be used in case of anomalies. All liabilities are declined in case of injuries to people and/or properties, if the operator uses the machine with anomalies.

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## **2.2 INTENDED USE**

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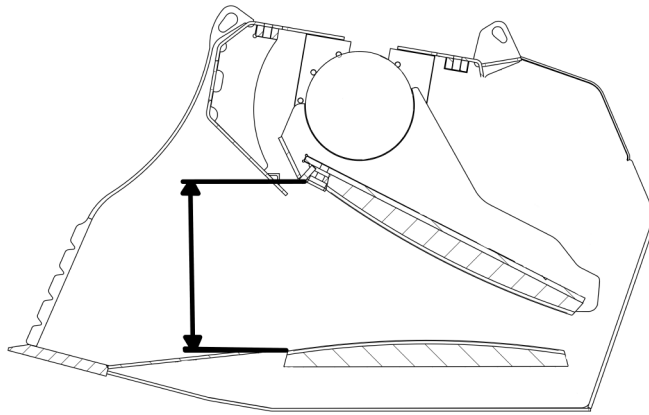
The crusher bucket (commercially known as Eco-Crusher) is an interchangeable piece of equipment that changes the function of a machine; it is sold to be assembled on a set of different machines (excavators or similar equipment), as long as they meet the minimum requirements in terms of weight and characteristics of the hydraulic system. It is designed to crush inert materials and/or demolition residue; the minimum specific requirements are detailed in chapter 3.

It is intended exclusively for professional use, as there are no other foreseen or foreseeable situations that may vaguely suggest the use of the machine for non-professional applications; since this is a piece of equipment which, in terms of intended use and construction, can only function when coupled to an operating machine, it is expected that the machine be used only by professionally competent and specifically authorized operators.

The Crusher Bucket does not require the presence and/or the assistance of additional people, other than the operator, to operate it. For safety reasons, it is highly recommended to reduce the number of people around the Crusher Bucket while it is in operation to prevent potential exposure to risks and/or dangers. Maintenance must be carried out as described in the Operating and Maintenance Manual, and only by skilled personnel. The specific requirements are listed on chapter 6.

In case it is necessary for other people to be working or standing in proximity of the equipment while it is operating, defining the dangerous zone as the zone in which there may be dust generated by the processing activities, other people's exposure to risks and/or dangers can be limited through the use of PPE (face masks, specific filters, helmets, etc.) and according to the laws of the country where the machine is operating. The Crusher Bucket is used for the crushing and volumetric reduction of inert materials resulting from demolition jobs and operations. It should be noted that crushing hard materials, such as granite or porphyry, is allowed, but the material size should not exceed 50% than the opening of crusher bucket; nevertheless, please be aware of the fact that the jaws and all the other consumable components will wear out much sooner; moreover, in order to ensure your jaws a longer life span, it is recommended to avoid crushing damp materials.

For the demolition of semi-hard materials, the size should not exceed 70% than the opening of the crusher bucket. In case the indications provided above are not complied with, significant problems will occur with the locking wedges and on the entire part adjacent to the jaws. Also, if said materials are crushed in a continuous manner, the overall frame of the crusher bucket will be subjected to considerable fatigue.



### 2.3 UNINTENDED USE

---

The crusher bucket is not prepared for other purposes not listed in paragraph 2.2.

Uses and/or jobs other than the ones for which the equipment was built are not foreseen:

either as instinctive reactions in connection with possible malfunctions/breakdowns/accidents or other operating anomalies (no anomaly can generate abnormal situations that cannot be dealt with by simply cutting off power to the machine);

or as a consequence of negligent use of the machine by an incompetent or inadequate person (the equipment depends on a main work machine whose use must be considered subject to authorization due to the use, for example, of an ignition key).

In particular, it is forbidden to crush flammable or explosive materials or materials that may generate flammable, explosive, toxic or harmful dust.

**Furthermore, the equipment is NOT intended for the following uses:**

- Direct extraction or excavation
- As something to lean the operating machine against
- With temperatures above 80°C or below -20°C
- To crush materials which temperature is higher of 60° C or lower than -20°C.
- Crushing material that contains transmission metal
- Crushing metal slugs / foundry scraps
- Crushing materials of which chemical composition comprehends a percentage of metal greater than 20% of the overall chemical composition
- To transport people, animals or objects
- In the presence of flammable or explosive materials or materials that may generate flammable, explosive, toxic or harmful dust
- For lifting operations

**The following is also forbidden:**

- Approaching the crusher bucket while it is working
- Climbing onto the frame of the equipment
- Carrying out any type of job on the crusher bucket while it is working
- Carrying out any type of operation that may jeopardize the operator's safety or the safety of people or property located nearby
- Using the Crusher Bucket in potentially explosive atmospheres
- Crush materials and various rocks with the outer part of the case, in other words as a hammer
- Operating with the Bucket submersed in liquids
- Using the Bucket to move material using the external parts of the case other than the front cutter
- Using the Bucket as leverage through the arm for the lateral movements of the excavator
- Using the Bucket to hit rocks and stones to make them smaller
- Stopping with the rear of the bucket on the ground
- Knocking the Crusher Bucket to the ground
- It is forbidden to use the Crusher Bucket on excavators with hydraulic systems that do not satisfy the flow and pressure requirements indicated, hydraulic specifications are in the use and maintenance manual









**ATTENTION !**

**MB S.p.A.** does not take on any liability in case of damages to people and/or properties, due to unforeseen uses of the Bucket Crusher, by the customer or a third part.

## 2.4 USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

Before the operator, designated by the employer (customer) to use this machine, begins with starting, using, servicing or making other interventions on it, he **must** wear all the personal protective equipment (PPE), necessary to guarantee his protection, according to what is foreseen by the general accident prevention laws in force in the Country in which the machine is used.

Some of the personal protective equipment that the operator must use are listed below:

	Use protective garments
	Use protective footwear
	Use protective gloves
	Use protective glasses
	Use protective headsets
	Use protective helmet



**ATTENTION !**

**MB S.p.A.** declines all liability for any accidents that may occur to the operator, due to the lack of use of the personal protective equipment.

## 2.5 ADHESIVE SAFETY LABELS

Adhesive safety labels are applied to the Bucket Crusher.

**All the adhesive safety labels listed here below must be always in perfect conditions and well visible.**

### INFORMATION !



Before using the machine, the operator must read the information in the instruction manual regarding the area pointed out by the label. It is obligatory to replace the damaged labels, requesting them to **MB S.p.A.**









### ATTENTION !



The operator must know and comply with the contents of the adhesive labels applied to the Bucket Crusher. Failed observation could in fact cause serious accidents.

The adhesive labels applied on the Bucket Crusher are arranged as shown in the figures here below, using the progressive numbers indicated in the label key as a reference. For every label, a code is provided for reordering.

The safety labels are represented and explained in the following table:

	<b>1. ATTENTION:</b> It is forbidden to approach or stand near the Bucket Crusher. Crushing hazard.
	<b>2. ATTENTION:</b> It is forbidden for the operator or other people to climb the Bucket Crusher.
	<b>3. ATTENTION:</b> Before using the Bucket Crusher, read the manual in order to adequately understand the instructions and its functioning. The Bucket Crusher must be used only by a competent adult. Pay attention and take care when using the machine, as imprudence is the most frequent cause of accidents.
	<b>4. ATTENTION:</b> It is forbidden to start and use the machine without the safety protections.
	<b>5. ATTENTION:</b> Turn the machine's motor off and remove the keys from the panel before working on the Bucket Crusher.
	<b>6. ATTENTION - RESIDUAL RISK:</b> It is forbidden to go near jaws while the machine is working and feeding hoses are connected.
	<b>7. ATTENTION:</b> Lifting hook
	<b>8. ATTENTION:</b> It is forbidden to approach or stop near the Bucket Crusher. Danger of object expulsion.

(the images are as example)  
REAR SIDE



RIGHT SIDE



LEFT SIDE



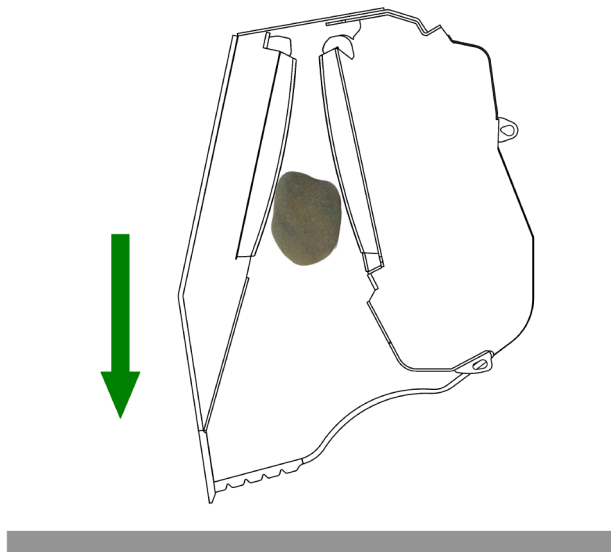
## 2.6 ADDITIONAL SAFETY DIRECTIVES

### 2.6.1 PROCEDURE FOR UNBLOCKING THE MATERIAL

If material gets jammed inside the bucket crusher and blocks it, position the bucket crusher vertically with the blade facing downwards and lightly strike the ground until the jammed material falls out of the mouth (see figure). The operator must never personally and/or manually remove any pieces of material jammed inside the bucket. MB declines all liability if the above is not observed.

If the Bucket Crusher jams, proceed as follows:

- Stop the jaw movement;
- Position the Bucket Crusher so that the loading entrance faces downward;
- Unload the material contained in the Bucket Crusher;
- Move the jaw slowly;
- If necessary, shake the Bucket Crusher slightly, to its stop position.



#### ATTENTION !

If the machine jams, it is severely forbidden to bang the Bucket Crusher horizontally on the ground or against the objects. In case of damages caused by this operation, the manufacturer refuses all liability.



### 2.6.2 RESIDUAL RISKS

In case of any residual risks, despite following all protective measures integrated in the project, all protections and added protective measures, must be foreseen and provided with due warning signs. If this concerns the bucket's jaws, the part that bears the most work weight; it can't be protected or covered with anything to prevent overall impact between the jaw surface and the material that is being processed.



Please consider that a part from the operator who uses the excavator, nobody else is supposed to be in the crushing area of the machine.

All residual risks are marked in the Use and Maintenance manual supplied together with the machine.

#### Risk estimation

**Damage entity:** Serious

**Probability:** Remote

#### Risk evaluation:

Negligible risk

In order to avoid damages to persons or things, connected to the residual risk, it is important the machine is used by trained personnel, who will have to read this Use and Maintenance Manual, paying attention to all safety labels (paragraph 2.5). The user, in case of maintenance on the jaws, has to make sure the machine is not working and feeding pipes are not connected.



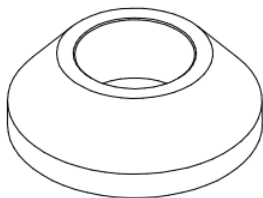
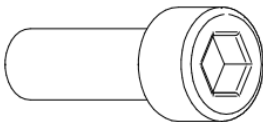
### 2.6.3 STANDARD EQUIPMENT - KIT BOLTS - STANDARD EQUIPMENT BAG

Following Directive 2006/42/EC, all the protection cases need a minimum of 2 bolts for the fixing. Despite this, there is no risk of the protection case moving even with just one bolt (the bolt has to be correctly fixed with the right key provided with the equipment). To further assist our customers and to ensure a secure operation, every bucket has been equipped with a screw kit (see the table below), assembled with the standard equipment, so the substitution of the screw is immediate in case of loss or damage. It is important to replace any damaged or malfunctioning components immediately.

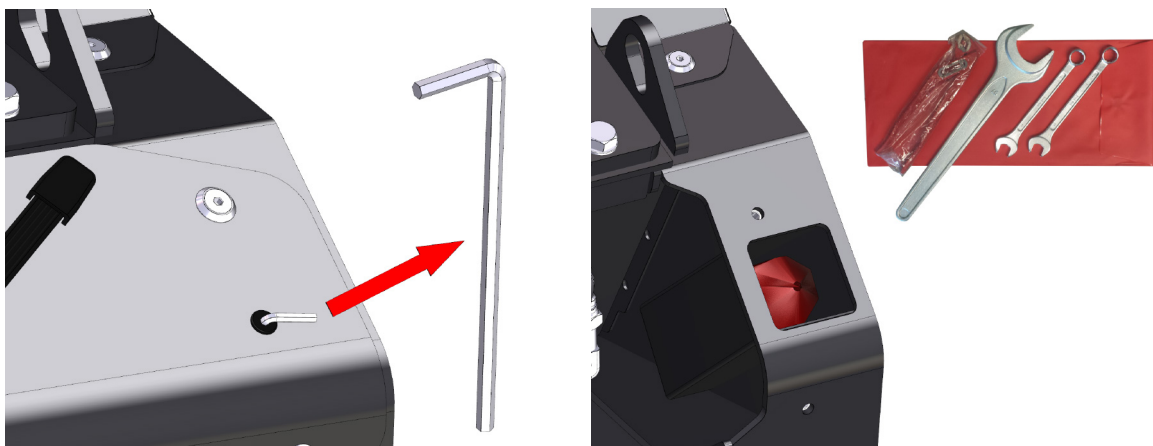


#### ATTENTION !

Before you proceed with removing any protection case, it is necessary to check that the work machine is switched off and the oil supply hoses are disconnected.

Cod. KBDM2006TCEI	
<p><b>10 X</b> <b>107001002</b></p>	
<p><b>10 X</b> <b>102103001</b></p>	

MB S.p.A. is always available to supply you with spare parts, bolts and crankcase screws. The bolts generally used for clamping are available for commercial purchase in your country. The keys and wrenches necessary for the periodical maintenance are supplied as standard equipment. In particular, for the BF60.1 S4 - BF70.2 S4 - BF80.3 S4 - BF90.3 S4 - BF120.4 S4, the necessary Allen key to open the rear protection is located externally (see image on the left). The other wrenches are in a bag, positioned in a specific compartment (see image on the right). For all other buckets, the standard equipment bag is located in the rear motor compartment.

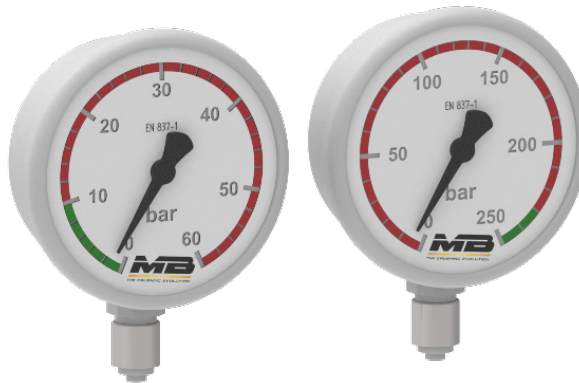




In order to help carry out a correct and professional installation with hydraulic settings in compliance with chapter 3 of this manual, MB supplies, as standard equipment, a pair of pressure gauges:

- 1- low pressure - pressure gauge with green hose with scale 0-60 bar (0-860 psi) for return pressure
- 2- high pressure -pressure gauge with red hose with scale 0-250 bar (0-3625 psi) for supply pressure

They are stored inside the rear compartment, next to the hydraulic box. In the MB-C50 S4 for lack of space the pressure gauges are shipped inside the crushing mouth.



#### 2.6.4 STABILITY OF THE SYSTEM “WORKING MACHINE AND BUCKET CRUSHER”

Make sure the load capacity of the operating arm of the working machine is greater than the fully laden weight (own weight plus the weight of the loaded material) of the bucket crusher.

MODEL	MB-C50 S4	BF60.1 S4	BF70.2 S4	BF80.3 S4	BF90.3 S4	BF120.4 S4	BF135.8
EXCAVATOR OPERATING WEIGHT	5-8 ton	≥ 8 ton	≥ 14 ton	≥ 18,5 ton	≥ 21 ton	≥ 30 ton	≥ 43 ton

#### ATTENTION!



Please be noticed that the weights indicated above are intended for standard hosting machines. Other hosting machines with operating weight as per above chart but equipped with special out of standard booms and sticks for specific applications may not be suitable. It is mandatory requested to check the load capacity in the hosting machine use and maintenance manual.

### 3 TECHNICAL DESCRIPTION OF THE BUCKET CRUSHER

#### 3.1 TECHNICAL DATA CRUSHER BUCKETS

DESCRIPTION	U.M.	MB-C50 S4	BF60.1 S4	BF70.2 S4
Length +/- 3 %	mm / in	1240 / 50	1745 / 70	2000 / 80
Width +/- 3 %	mm / in	1000 / 40	1000 / 40	1150 / 45
Height (without hanger bracket) +/- 3 %	mm / in	770 / 30	1100 / 43	1195 / 47
Capacity +/- 20 %	CBM / gal	0,13 / 35	0,45 / 120	0,65 / 172
Mass (empty without hanger bracket) +/- 5 %	Ton / lb	0,75 / 1653	1,65 / 3640	2,30 / 5070
Minimum AUX line flow	lpm / gpm	90 / 25	120 / 32	150 / 40
Maximum AUX line flow	lpm / gpm	120 / 32	150 / 40	200 / 53
Pressure in the delivery system	bar / psi	200-250/2900-3626	230-280/3336-4061	230-280/3336-4061
Return pressure precautionary limit +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145
Return pressure precautionary limit with drain +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145

DESCRIPTION	U.M.	BF80.3 S4	BF90.3 S4	BF90.3 S4 HD
Length +/- 3 %	mm / in	1970 / 78	2185 / 86	2185 / 86
Width +/- 3 %	mm / in	1330 / 53	1340 / 54	1340 / 54
Height (without hanger bracket) +/- 3 %	mm / in	1325 / 52	1390 / 55	1390 / 55
Capacity +/- 20 %	CBM / gal	0,70 / 185	0,85 / 185	0,85 / 185
Mass (empty without hanger bracket) +/- 5 %	Ton / lb	3,00 / 6615	3,50 / 7720	4,10 / 9050
Minimum AUX line flow	lpm / gpm	150 / 40	180 / 50	180 / 50
Maximum AUX line flow	lpm / gpm	220 / 60	220 / 60	220 / 60
Pressure in the delivery system	bar / psi	230-280/3336-4061	230-280/3336-4061	230-280/3336-4061
Return pressure precautionary limit +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145
Return pressure precautionary limit with drain +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145

DESCRIPTION	U.M.	BF120.4 S4	BF120.4 S4 HD	BF 135.8
Length +/- 3 %	mm / in	2150 / 85	2150 / 85	2930 / 115
Width +/- 3 %	mm / in	1620 / 63	1620 / 63	1880 / 75
Height (without hanger bracket) +/- 3 %	mm / in	1390 / 55	1390 / 55	1700 / 67
Capacity +/- 20 %	CBM / gal	1,05 / 280	1,05 / 280	1,85 / 490
Mass (empty without hanger bracket) +/- 5 %	Ton / lb	4,80 / 10580	5,40 / 11905	7,50 / 16535
Minimum AUX line flow	lpm / gpm	180 / 50	180 / 50	320 / 85
Maximum AUX line flow	lpm / gpm	250 / 66	250 / 66	360 / 95
Pressure in the delivery system	bar / psi	230-280/3336-4061	230-280/3336-4061	230-280/3336-4061
Return pressure precautionary limit +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145
Return pressure precautionary limit with drain +/- 10 %*	bar / psi	10 / 145	10 / 145	10 / 145

### 3.1.1 OIL SPECIFICATIONS

Viscosity at 100°C	mm <sup>2</sup> /s 6,8
Viscosity at 40°C	mm <sup>2</sup> /s 45
Viscosity index	100
Flashpoint OC	212°C
Pour point	-27°C
Volumetric mass at 15°C	0,880 Kg/l
Filter porosity	Max 3 micron

#### CAUTION!



The hydraulic force generated by the load-bearing machine is translated into effectiveness of the kinematic movement. The incorrect hydraulic setting, whether higher or lower than the values indicated in the above table, causes serious malfunctions and structural damage/stress.

#### CAUTION!



The minimum pressure and flow rate values must be simultaneously present in the auxiliary system. The lack of one or the other value determines, in addition to a performance lower than the potential of the equipment, malfunctions and even serious structural damage.

#### ATTENTION!



The minimum pressure and flow rate values must be simultaneously present in the auxiliary system. The lack of one or the other value determines, in addition to a performance lower than the potential of the equipment, malfunctions and even serious structural damage.

#### INFORMATION



The correct way to measure the flow coming from the operating machine is to use a flow meter connected to the IN & OUT pipes coming from it. Depending on the model, the flow meter is also able to check the pressure combined with the flow supplied.

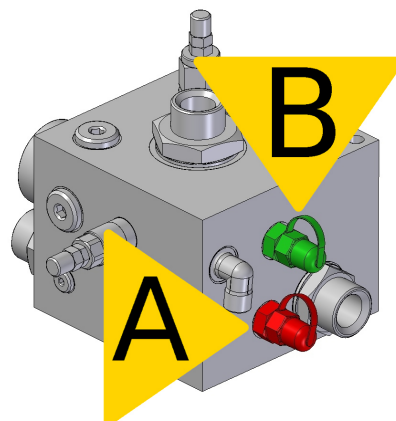
#### INFORMATION



The original flow-meter can be supplied by MB S.p.A. address your request for get one to [mbservice@mbcrusher.com](mailto:mbservice@mbcrusher.com).

Delivery and return pressures on the bucket can be measured by connecting the pressure gauges supplied as standard with the equipment (or other of suitable scale) to the pressure testers on the hydraulic unit located inside the rear compartment.

**A:** POINT OF CONNECTION DELIVERY PRESSURE  
**B:** POINT OF CONNECTION RETURN PRESSURE



### 3.1.2 DISTANCE BETWEEN THE JAWS

MODEL	OPENING MOUTH		ADJUSTMENT MOUTH	
	mm / in			
	Width +/- 1 %	Height+/- 6 %	Minimum +/- 20 %	Maximum +/- 10 %
MB-C50 S4	600 / 23	250 / 9,85	15 / 0,59	98 / 3,85
BF60.1 S4	600 / 23	438 / 18	16 / 0,62	126 / 5
BF70.2 S4	750 / 30	504 / 20	18 / 0,70	129 / 5,10
BF80.3 S4	900 / 35,45	450 / 17,70	20 / 0,80	120 / 4,75
BF90.3 S4	910 / 35,85	540 / 21,25	25 / 1,00	145 / 5,70
BF90.3 S4 HD	910 / 35,85	540 / 21,25	25 / 1,00	145 / 5,70
BF120.4 S4	1195 / 47,00	540 / 21,25	25 / 1,00	145 / 5,70
BF120.4 S4 HD	1195 / 47,00	540 / 21,25	25 / 1,00	145 / 5,70
BF135.8	1350 / 53,00	600 / 23,60	40 / 1,55	150 / 5,90



#### ATTENTION !

Jaw wear will change the values indicated above.

### 3.2 EXCAVATOR'S HYDRAULIC REGULATION

The excavator must be adjusted as indicated by its manufacturing company. If these indications are not followed correctly, structural failures could occur. Please verify that:

- The carrying capacity of the arm of the operating machine is greater than or equal to the weight at full load (its own weight, plus the weight of the loaded material) of the Crusher Bucket (to prevent overturning while the arm is travelling, or rotating 360°);
- The Crusher Bucket's oil flow must be controlled with a hold-to-run control device;
- The machine must be equipped with an emergency stop control, that can stop the movement of the Bucket Crusher in the shortest period of time possible.

### 3.3 INTERFACES

In order to function, the crusher bucket requires the operator to carry out special manoeuvres. The operator interface is located directly on the machine. The attachment is operated by a switch command, or a hold-to-run pedal; the operator must keep the command pressed to run the equipment that will stop once the command is released. They are both located inside the control cab of the machine. The operator can move the attachment with a joysticks that, which depending on the type of machinery the equipment is attached to, controls the machine's arm. This movement occurs through hydraulic pistons controlled by the joysticks placed in the cab.

The machinery must be operated, for the purpose of starting the equipment, exclusively by a competent and skilled adult, duly trained in operating heavy equipment.

## 4 GENERAL DESCRIPTION

### 4.1 GENERAL DESCRIPTION



#### ATTENTION !

Make sure that the transport and handling areas cannot be accessed by unauthorized people.

The transport of the Crusher bucket is set up by MB S.p.A., which oversees the packaging and shipping phases.

In addition, the following is supplied together with the machine:

- Information kit (instruction manual, hydraulic circuit warning and CE certificate).

### 4.2 MACHINE TRANSPORT

The transport must be done by professionally qualified people.

The machine must be transported in a way that it avoids damages to persons or property.

Before handling the machine, check that:

- All protections and guards are correctly closed and secured;
- Depending on the type of transport, the attachment and its components should be protected from all possible impacts and strain.

Normally, the attachment is sent to the user by land, via truck, or by sea.

When the machine arrives, the user must:

- Inspect the Crusher Bucket upon delivery for any possible damages, breakages or substantial dents caused by the transport.
- If this occurs, it must be reported immediately to the transport company, and the clause “Accepted with reservation” must be written on the delivery note.

If there are damages, notify the transport company, via a written report within eight days from delivery. If damages caused during transport are noticed upon delivery, this must be reported promptly to MB S.p.A.

It is also necessary to check that the material received corresponds to what is listed in the detailed shipping list/ packing slip. In case of any irregularities with the content of the shipment, it must be reported promptly to MB S.p.A.

#### 4.2.1 MACHINE TRANSPORT: FASTENING

Each time the Bucket Crusher must be transported, it must be anchored to the truck's loading floor using cables that pass through the specific anchoring points, as shown in the following photos.



## 4.2.2 UNLOADING OF THE BUCKET CRUSHER



### ATTENTION !

Upon arrival to the customer site, the machine must be handled with maximum care and moved both outside and inside, with suitable means for its capacity, with regard to its own weight.



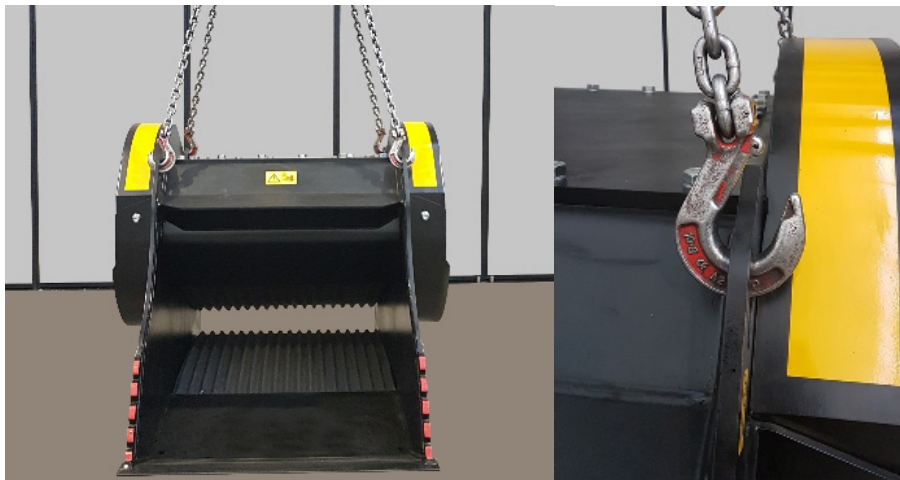
All parts of the machines, where the lifting hook can be used are properly indicated by this sticker.

### OPERATING INSTRUCTIONS

- The unloading, lifting and handling operations must be directed by a single responsible person, and be carried out by suitably instructed, qualified people. They must wear the proper accident prevention protections, and have suitable equipment, available before proceeding with the operations.
- Before starting with these operations, identify and check the entire machine handling area, including where the transport vehicle will be parked and the installation site, in order to identify any dangerous points.
- It is forbidden to climb up the machine, to stand and/or pass under it during handling.
- It is forbidden for all unauthorized people to access the transport and handling areas.
- All operators must keep a safety distance, in order not to be hit in case the machine or its parts fall to the ground.
- The vehicle used for lifting and transport must have a carrying capacity suitable for the weight to raise.
- Check that the lifting cables are certified and have the label reporting the manufacturer and carrying capacity data.
- Inspect the cables before using them: they must not be damaged, have broken wires or signs of wear.
- Do not twist or knot the cables. Follow the instructions indicated by the manufacturer.
- The same warnings must be applied to the use of chains.

### LIFTING REGULATIONS FOR UNLOADING THE BUCKET CRUSHER

- Prepare the lifting system (travelling crane) with a length and a carrying capacity that is suitable to support the weight of the attachment.
- Proceed with balancing the attachment by moving the lifting system with short movements until an optimal stable condition is obtained.
- Lift slowly, hitching the specific lifting hooks (see following image), and move with maximum care to avoid oscillations.

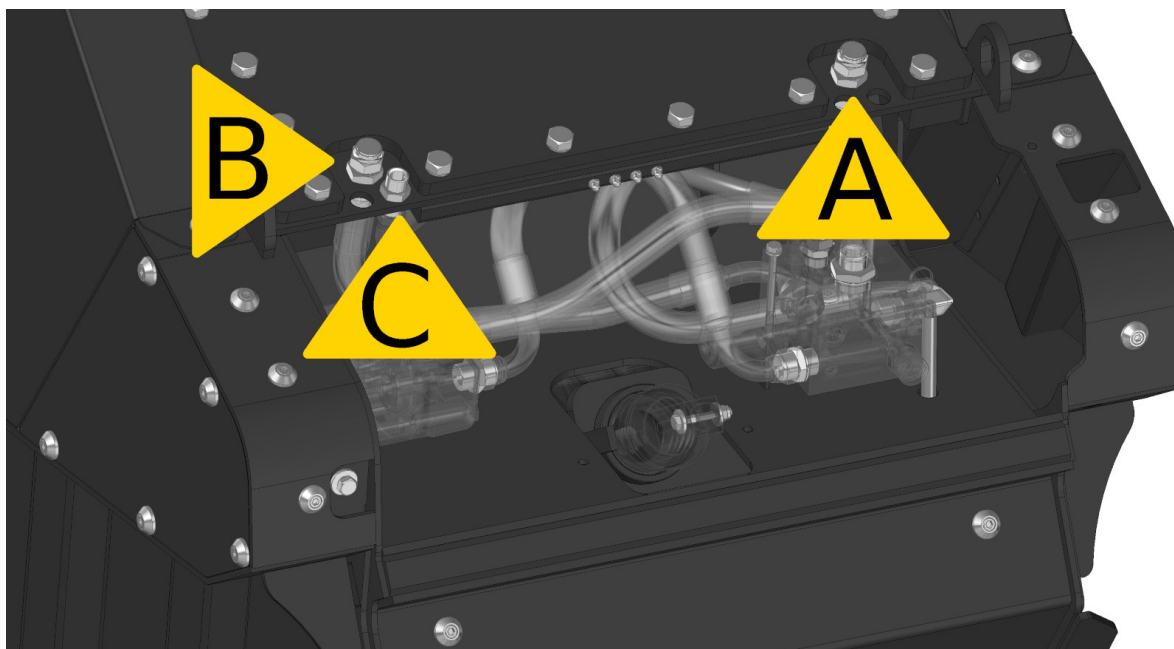




### 4.3 HYDRAULIC SYSTEM CONNECTION

The Crusher Bucket is operated by using the hydraulic circuit of the work machine it is attached to. The supply, return and, where required, draining hoses must be connected to function and operate properly. For the BF model range, the universally used threading for the fittings are British Standard Pipe Parallel (BSPP) type fittings. All the fittings are considered to be “male” type fittings. The hose coming from the heavy machinery, or excavator, must be mounted to a “female” type fitting. The specifications of the fittings on the buckets of the range are detailed below, in order to prepare the connection flexible hoses to the excavator with the correct coupling.

MODEL	INLET FITTING (A)	RETURN FITTING (B)	DRAIN FITTING (C)
MB-C50 S4	3/4" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)	1/2" (inch) gas (BSPP)
BF60.1 S4	3/4" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)	1/2" (inch) gas (BSPP)
BF70.2 S4	1" (inch) gas (BSPP)	1" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)
BF80.3 S4	1" (inch) gas (BSPP)	1" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)
BF90.3 S4 / BF90.3 S4 HD	1" (inch) gas (BSPP)	1" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)
BF120.4 S4 / BF120.4 S4 HD	1" (inch) gas (BSPP)	1" (inch) gas (BSPP)	3/4" (inch) gas (BSPP)
BF135.8	1 1/4 inch gas (BSPP)	1 1/4 inch gas (BSPP)	3/4" (inch) gas (BSPP)



#### ATTENTION!

Check that the hydraulic pipes used for the connection correspond to the characteristics required by UNI EN ISO standard 4413: 2012 standard and that in any case they have suitable flow and pressure tolerance characteristics as indicated in chapter 3.1 of this manual.

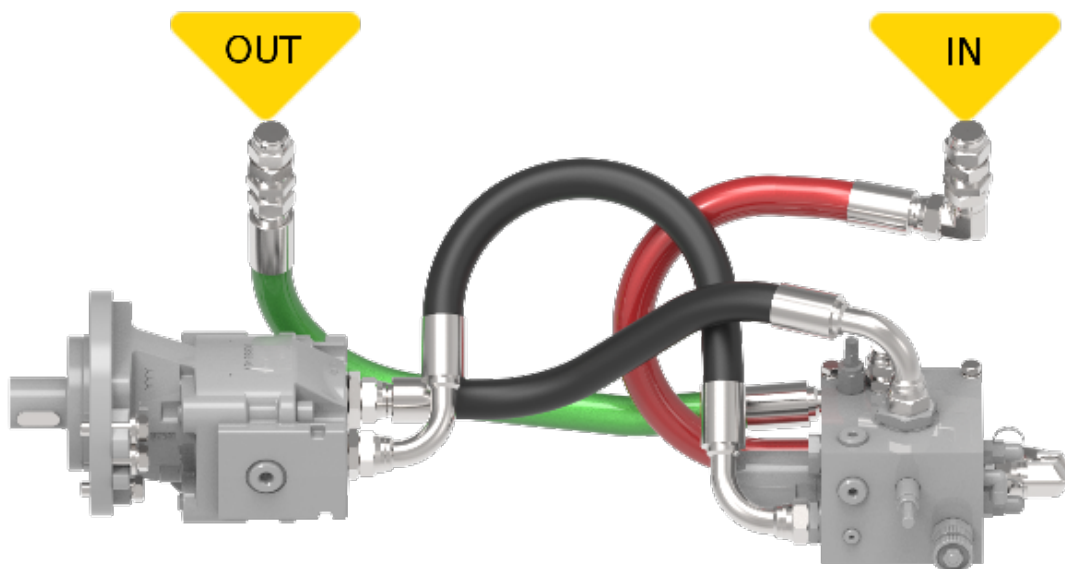


### 4.3.1 REVERSAL DELIVERY

For excavators with reverse flow, i.e. from the right side of the operating machine, the crusher bucket system must be adapted.

To do so, it is only required to swap the flexible hoses on the IN and OUT fittings as shown in the image below.

By default, the buckets are supplied with delivery from the left of the excavator cabin side. Each time the bucket is connected to an excavator, make sure the bucket system is correctly arranged.



#### CAUTION!

During the swapping operation of the flexible hoses on the IN and OUT fittings, make sure that the machine is oil free, by closing the valves that connect the flexible hoses to the excavator. In any case, collect any spills in appropriate containers.

The complete hose kit that connects the crusher bucket to the work machine can be supplied by MB S.p.A. in addition to the crusher bucket. It consist of flexible hoses equipped with the suitable fitting for the crusher bucket. Please find below a chart with the different hose kit codes for your perusal:

MODEL	HOSES KIT CODE
MB-C50 S4	220005000
BF60.1 S4	220600400
BF70.2 S4	220600400
BF80.3 S4	220252701
BF90.3 S4 / BF90.3 S4 HD	220252701
BF120.4 S4 / BF120.4 S4 HD	220252701
BF135.8	220015000

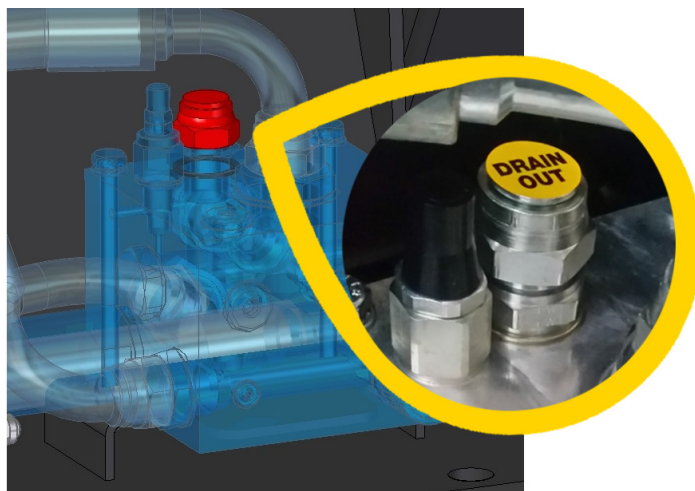
#### ATTENTION!

The fittings to the hosting machine side are different from brand, model, year of construction of the same. For this reason the hoses of the kit won't be equipped of the excavator side joint but they are going to have adequate length to allow chop and press according to the features required.

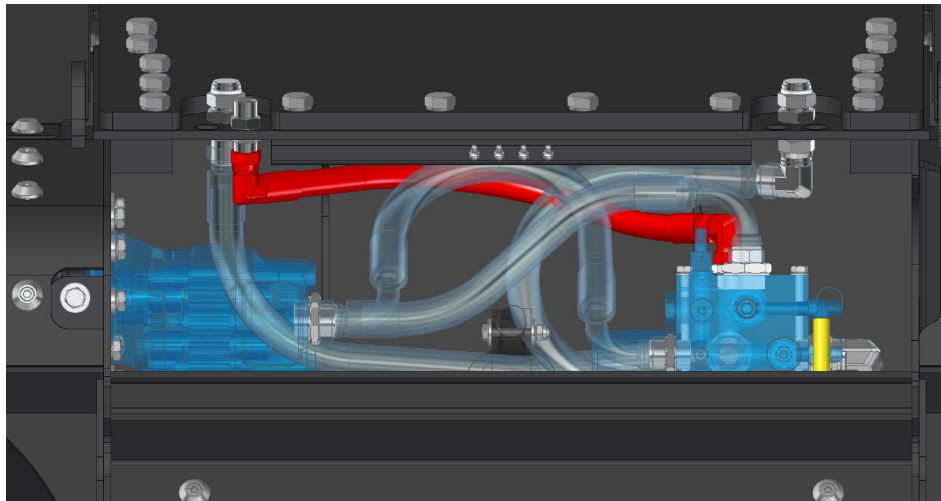


### 4.3.2 DRAINAGE PIPE INSTALLATION

The BF Crusher bucket range does not have the third line, the drainage line (if not specifically requested by the customer) mounted by default, since it is not required. However, if the counter pressure in the return line exceeds the warning levels indicated in chapter 3.1, the additional flexible hose must be connected to the appropriate fitting in the hydraulic unit located inside the rear compartment. It is clearly marked by the “DRAIN OUT” label and it is also highlighted in red in the image below. On the opposite end, the hose must be connected to the bulkhead connector and eventually connected to the machine’s tank.



Final image of the system with a drainage line.



The drainage kit may be purchased as an option. The reference coding is provided below

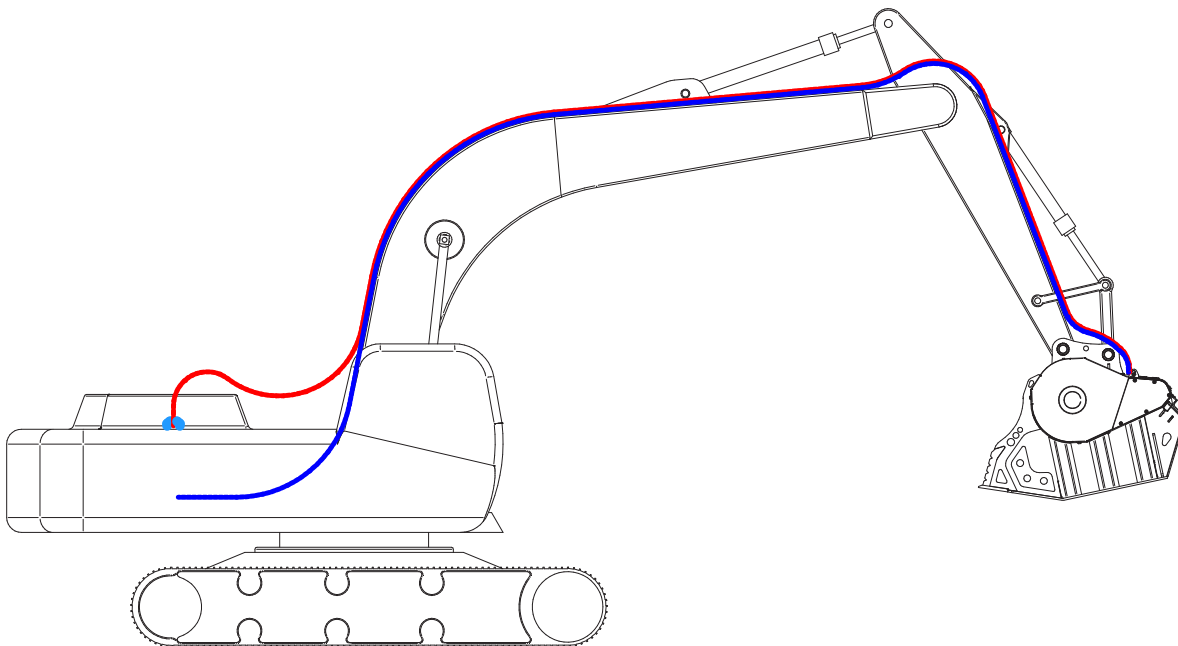
MODEL	DRAINAGE KIT CODE
MB-C50 S4	BF5000030
BF60.1 S4	BF6010054
BF 70.2 S4	BF7020058
BF 80.3 S4	BF9030085
BF 90.3 S4 / BF90.3 S4 HD	BF9030085
BF 120.4 S4 / BF120.4 S4 HD	BF1240070
BF 135.8	BF1308024

### PROPER DRAINAGE CONNECTION IMAGE::

Should the drainage system not be present on the excavator, contact the manufacturer for its arrangement.

Red = drainage line.

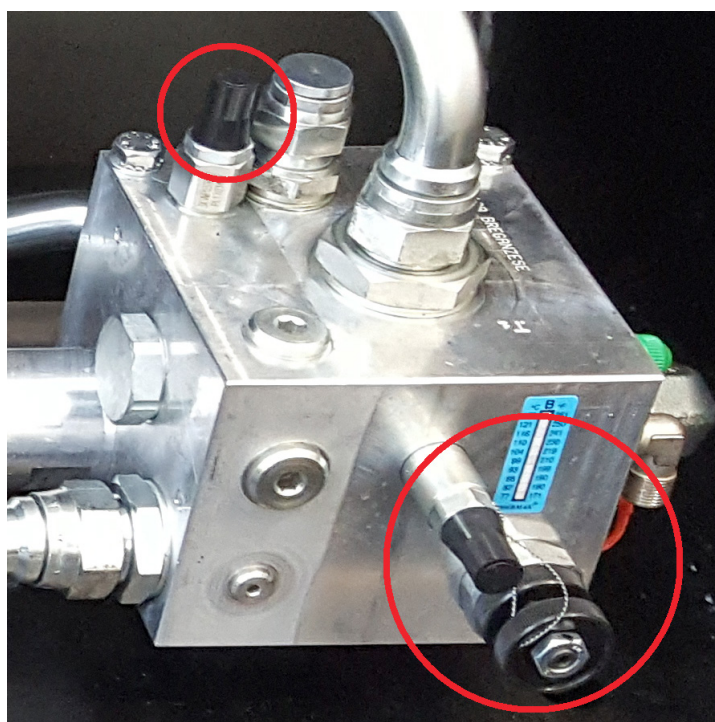
Blue = delivery/return line



### CAUTION!



To prevent tampering with the hydraulic system, the adjustment valves are factory sealed. Tampering with the safety seals is prohibited. In case of tampering MB S.p.A. reserves the right to deny any warranty coverage and shall not be liable for any failures / damage to the equipment and / or machinery to which it is connected.



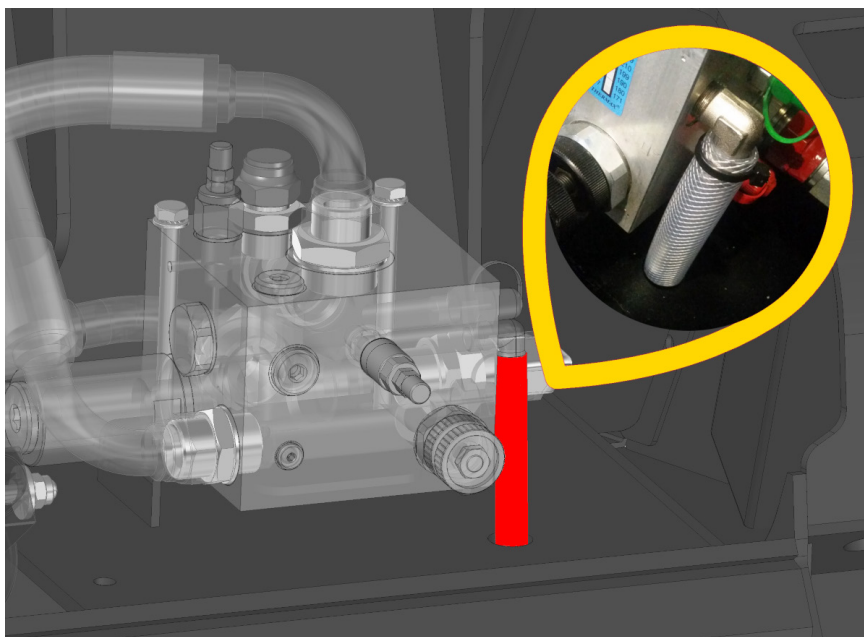
### 4.3.3 RETURN PRESSURE RELIEF VALVE

Counter pressure is a common cause of damage to the hydraulic components. For this reason MB S.p.A. equips the crusher buckets of a pressure relief valve to protect the hydraulic motor. When the safety limit is reached, the valve operates by leaking the oil through a small tube, located on the side of the valves control unit. The oil flows to the upper jaw so that the operator notices.

#### CAUTION!



The oil leak momentarily depressurizes the return arm from a high and dangerous counter pressure, signalling the problem to the operator. This operation alone is not sufficient to fully safeguard the hydraulic motor. Promptly contact the MB service department, or consult the B2B portal, to obtain information on the corrective measures to be taken.



#### INFORMATION



A high level of back-pressure in the return line is determined by the hydraulic circuit of the hosting machine. Damages resulting from the effects of back pressure are out of MB S.p.A. liability.

#### INFORMATION



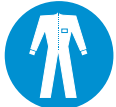
Remember to clean any oil leakages immediately in accordance with local environmental regulations. A damaged or worn motor doesn't have to necessarily be replaced. MB S.p.A. offers its customers a cost-efficient solution with a complete repair kit. The coding for this repair kit is shown below.

A damaged or worn motor must not necessarily be replaced. MB S.p.A. makes available to its customers a cost-efficient solution represented by the complete repair kit whose coding is shown below:

MODEL	GASKETS KIT CODE
MB-C50 S4	613301001C
BF60.1 S4	613301001C
BF70.2 S4	613301001C
BF80.3 S4	613351001B
BF90.3 S4 / BF90.3 S4 HD	613351001B
BF120.4 S4 / BF120.4 S4 HD	613351001B
BF135.8	613351001B

## 5 MACHINE FUNCTIONING

### 5.1 INSTALLATION



#### 1) CHECK OF THE EXCAVATOR'S CALIBRATION

CHECK THAT THE EXCAVATOR IS CORRECTLY CALIBRATED, WITH THE REQUIRED PRESSURE AND FLOW, FOLLOWING THE INSTRUCTIONS ON CHAPTER 3 (THE CALIBRATION OF THE EXCAVATOR MUST BE DONE BY THE CUSTOMER, AT HIS COST AND RESPONSIBILITY)



#### 2) GENERAL CHECK OF THE BUCKET CRUSHER

CHECK THAT THE BUCKET CRUSHER IS EQUIPPED WITH ALL THE NECESSARY THINGS, (STANDARD EQUIPMENT, ADJUSTMENT SHIMS, MAINTENANCE AND USE MANUAL)



#### 3) CHECK OF THE CONNECTION OF THE FLEXIBLE HOSES

CONNECT THE FLEXIBLE HOSES FROM THE EXCAVATOR TO THE BUCKET CRUSHER (PAY ATTENTION TO THE FEED AND RETURN HOSE)



#### 4) CHECK THE VALVE OPENING ON THE EXCAVATOR'S ARM

CHECK THAT THE VALVES ON THE EXCAVATOR'S ARM ARE OPEN



#### 5) START UP THE EMPTY BUCKET - CHECK OF THE PRESSURE ON THE RETURN LINE (green pressure test)

CHECK THE PRESSURE ON THE RETURN LINE (TEST THE PRESSURE ON THE GREEN VALVE ON THE HYDRAULIC PLANT)

#### 6) CHECK OF THE PRESSURE ON THE FEED HOSE (if possible, blocking the Bucket Crusher)

TO BE VALUED IN THE CASE THAT THE BUCKET CRUSHER DOES NOT WORK CORRECTLY

#### 7) CHECK OF THE SPRING

CHECK THE WORK AND THE CORRECT MOVEMENT OF THE SPRING

#### 8) INTENDED AND UNINTENDED USE

READ CHAPTER 2 OF THIS USE AND MAINTENANCE MANUAL

#### 8) MAINTENANCE AND PERIODICAL CHECKS

READ CHAPTER 6 OF THIS USE AND MAINTENANCE MANUAL

### 5.2 MACHINE START-UP



#### ATTENTION !

Make sure the machine that operates the Crusher Bucket, has a hydraulic circuit with a minimum load, a delivery pressure and a return back pressure, as stated in the chart in Chapter 3.



#### ATTENTION !

Make sure that the machine tool, that operates the Bucket Crusher, has a hydraulic circuit with a minimum load, a delivery pressure and a return back pressure as indicated in table of chapter 3.

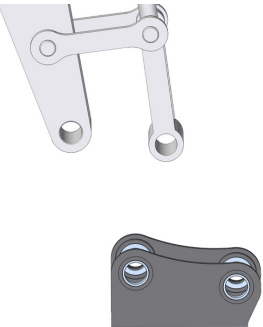
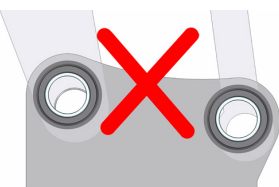
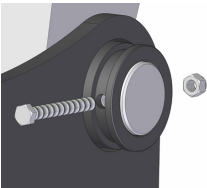
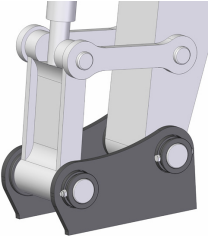


#### ATTENTION !

Except for the vehicle operator, no one else should be in its range of action.

## 5.2.1 CONNECTING THE MACHINE WITH A FIXED COUPLING



	<p>Insert the machine tool's arm between the two brackets on the Bucket Crusher, foreseen for the connection.</p>
	<p>Align the holes, on the end of the machine tool's arm, with the holes of the connection brackets.</p>
	<p>Do not misalign the pins.</p>
	<p>Insert the specific metal pins of the machine tool, normally provided, into the aligned holes.</p>
	<p>Lock the pins with the shear bolt, to prevent accidental unthreading.</p>
	<p>View of the complete fixed coupling.</p>

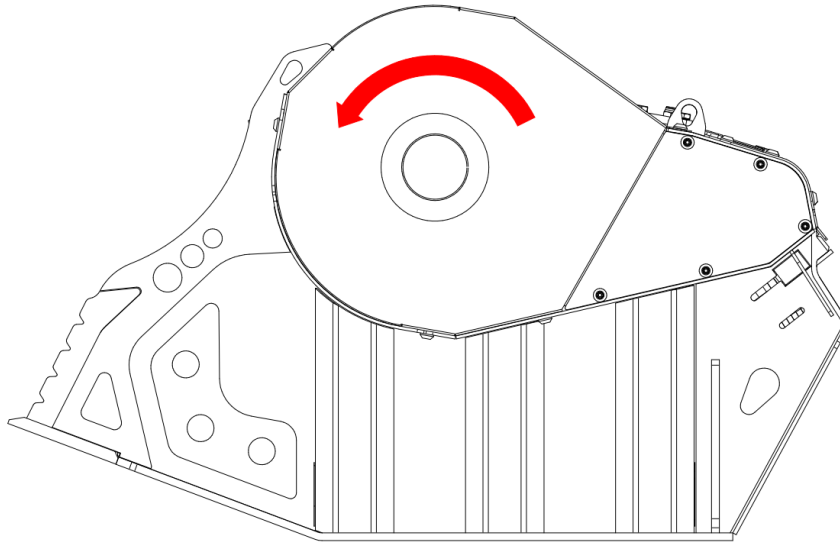
Then, connect the hydraulic hoses according to the instructions provided in chapter 4.



### IMPORTANT !

Operations of connection and disconnection have to be performed by the same machine operator.

### 5.2.2 STARTING THE BUCKET CRUSHER



- Let the motor run for a few minutes.  
During winter season, with low temperatures, leave the motor on for approximately 10 minutes, for the temperature of the hydraulic oil to increase around 40° before using the bucket.
- At this point, suspend the Crusher Bucket rotation, and begin the filling phase. Reactivate again the control in a slow and gradual manner, increasing the speed to the specified maximum RPMS.
- Then, rotate the Bucket Crusher slowly, so that the outlet faces downward, helping the crushed product to exit.
- Once the product inside the Bucket Crusher has been crushed, repeat the loading operation.

### 5.3 NOISE GENERATED BY THE EQUIPMENT

The equipment's sound power level LWA in dB(A) assessment has been evaluated by: SOVECO S.r.l. - Società veneta per l'ecologia – with the supervision of the Technical Manager. This assessment has been described in the report dated January 27, 2003, and has been signed off by the same Technical Manager.

The measurements were taken with a fully loaded machine, under normal weather conditions, without precipitation, and a microphone equipped with a wind cover.

The assessment of the sound power, generated by the source, was calculated according to the UNI EN ISO 3744.

The rating covered all the manufactured models, revealing substantially homogenous results.

The sound power level LWA in dB(A) generated by a fully loaded machine is:

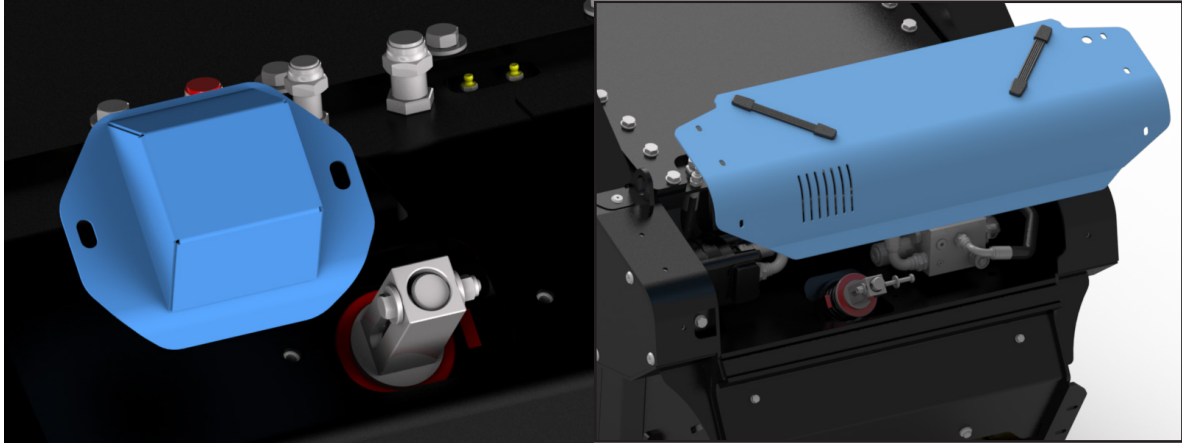
LWA = 111.3 dB(A).



## 5.4 ADJUSTMENTS ON THE MACHINE

### 5.4.1 JAW DISTANCE ADJUSTMENT

To adjust the distance between the jaws, remove the rear compartment casing. Each bucket is equipped with the matching wrenches to perform the adjustment.

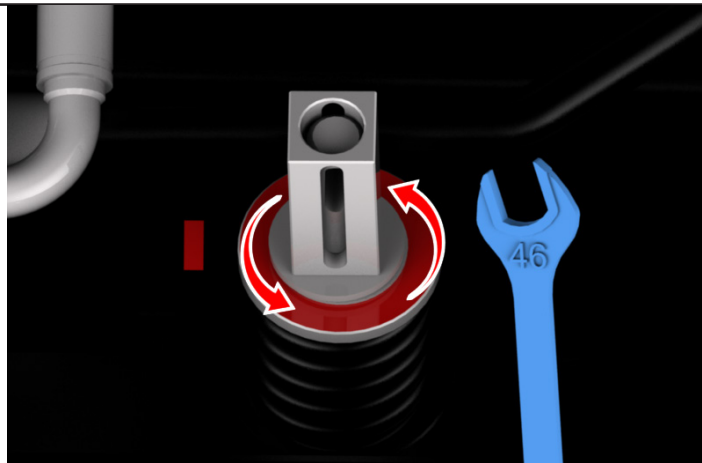


#### \*SAMPLE IMAGES

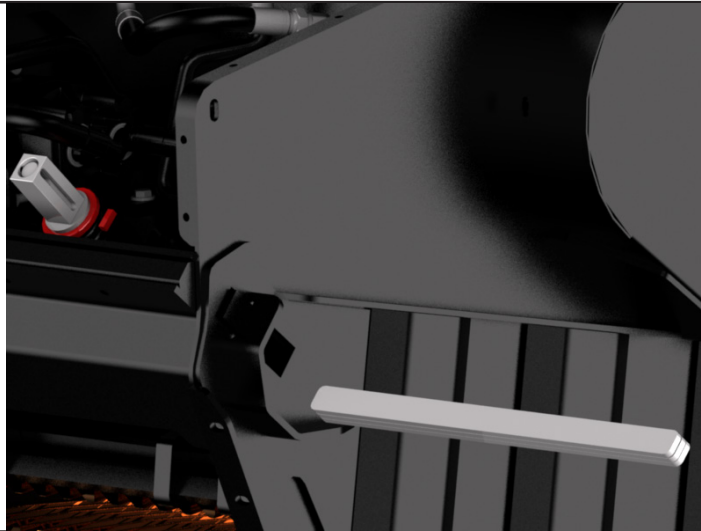
1: remove the safety screw blocking the square pipe by using the two 17 wrenches.



2: unscrew the square pipe by using the 46 wrench. In this way the upper jaw shall descend



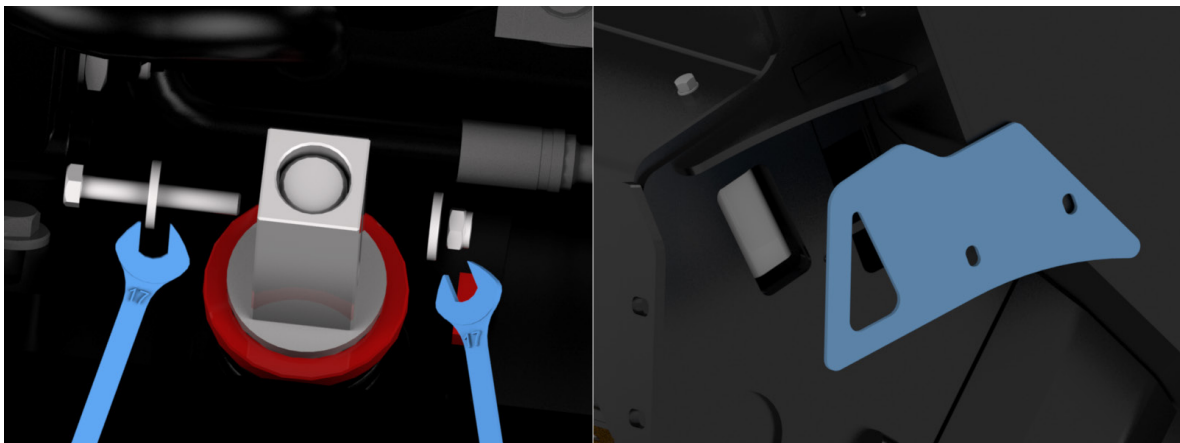
3: Thus the space where to enter the shimming bars will be created. Remove the shims from the storage compartment and enter them in the specific compartment. Insert them to decrease the size of the exiting material, vice-versa remove them to increase the size of the granulometry.



4: screw back into place the loosened square pipe. Make sure that the red perimeter is parallel to the indicator to maintain the correct spring compression.



5: reinsert the safety screw making sure that it passes through the threaded bar hole. Check that the shims are tight with the structure and close the compartment by re-tightening the casing screws.





## ADJUSTMENT SHIMS LIST

MODEL	CODE	DESCRIPTION	QTY
<b>MB-C50 S4</b>	B60001750	shim height 10 mm	6
	B50006150	shim height 5 mm	1
<b>BF60.1 S4</b>	B60021350	shim height 10 mm	7
	B60021550	shim height 5 mm	1
<b>BF70.2 S4</b>	B70052650	shim height 10 mm	7
	B70052750	shim height 5 mm	1
<b>BF80.3 S4</b>	B90018850	shim height 15 mm	5
	B90075850	shim height 8 mm	2
<b>BF90.3 S4</b>	B90018850	shim height 15 mm	5
	B90075850	shim height 8 mm	2
<b>BF120.4 S4</b>	B12019050	shim height 15 mm	5
	B12030650	shim height 8 mm	2
<b>BF135.8</b>	B13503250	shim height 15 mm	9



### INFO!

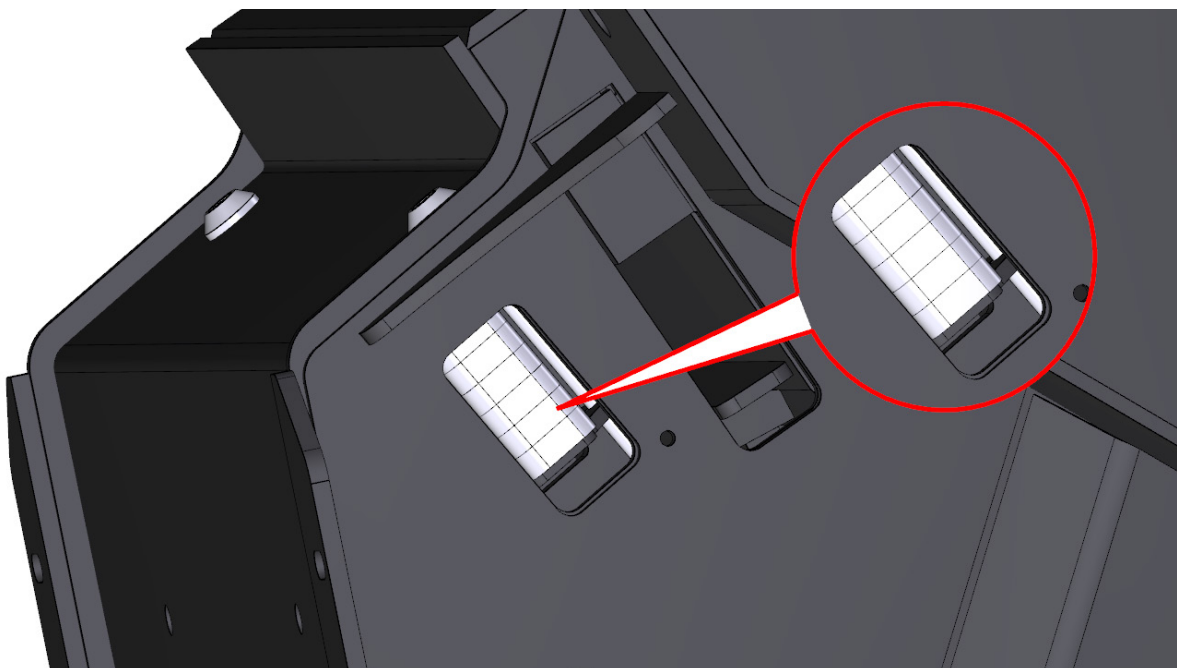
Please note that inserting all the shims supplied as standard equipment, to change the distance between the jaws, is prohibited. One of the taller shims (10 or 15 mm) is supplied as a spare part.



### ATTENTION !

Shims for BF60 S4, BF70 S4, BF80 S4, BF90 S4 BF120 S4, are located in the shims' vane (see detailed picture), shims for all other buckets are located in the rear motor vane.

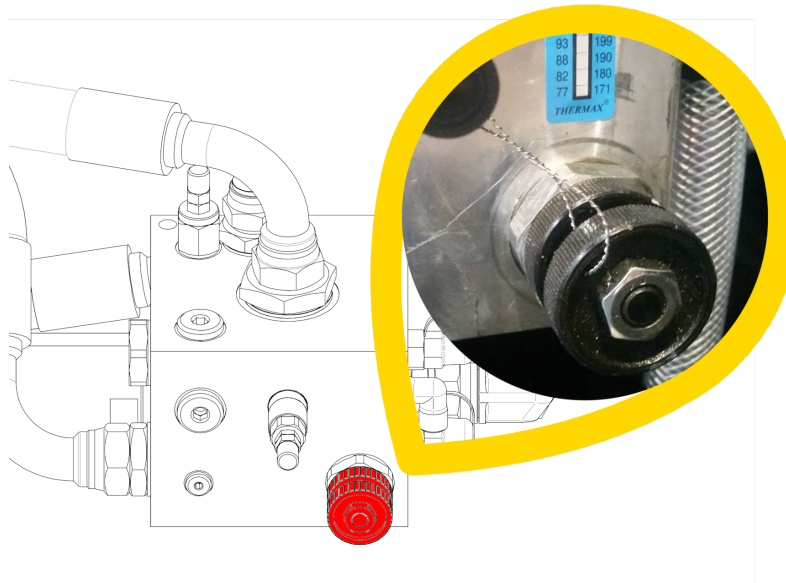
To access the shims in the BF60 S4, BF70 S4, BF80 S4, BF90 S4 and BF120 S4, undo the two fixing screws of the shims' locking bar. Once the shims have been removed, place the bar in position and secure it with its screws ( shown by the arrows in the picture).



### 5.4.1 ROTATION SPEED ADJUSTMENT

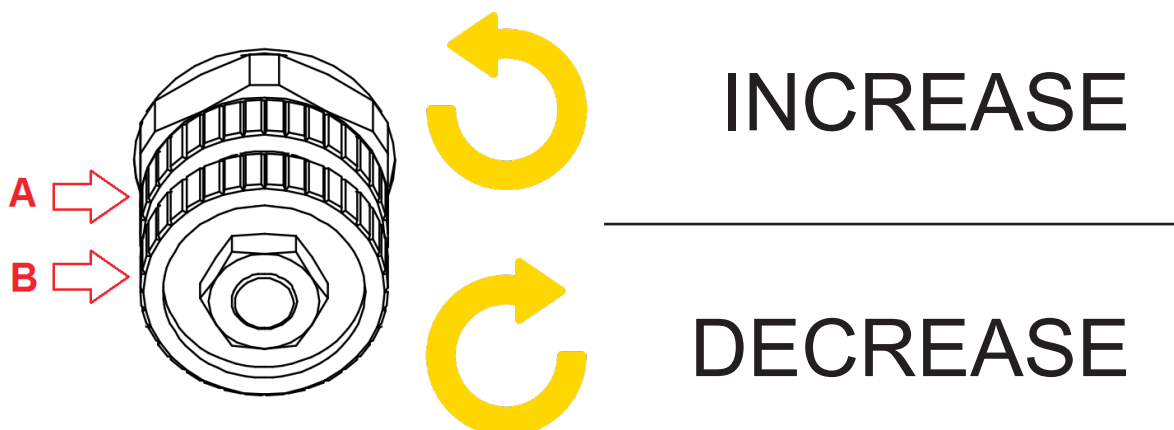
The motor rotation speed is factory calibrated, according to the values contained in the chart below. Adjustments may be necessary to achieve better levels of performance, depending on the crushed material, or to reduce vibration.

The motor rotation adjustment handwheel is located in the hydraulic control unit, as illustrated by the following figure. It is sealed with a specific wire, which however enables a slight variation for the reasons aforementioned.

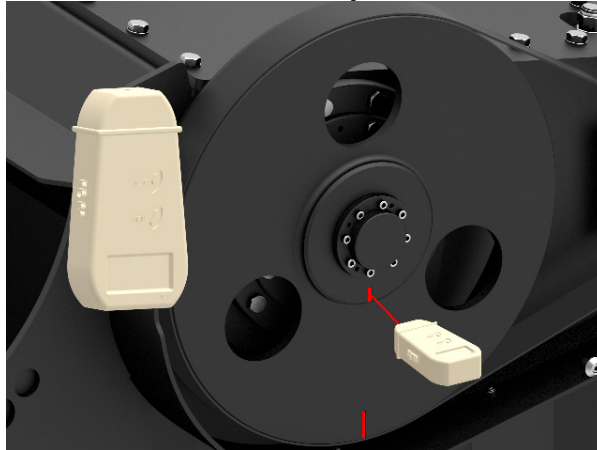


	MB C50 S4	BF 60.1 S4	BF 70.2 S4	BF 80.3 S4	BF 90.3 S4	BF 90.3 S4 HD	BF 120.4 S4	BF 120.4 S4 HD	BF 135.8
<b><i>rpm</i></b> <b><i>min.</i></b>	395	355	345	345	315	315	315	315	335
<b><i>rpm</i></b> <b><i>max.</i></b>	405	365	355	355	325	325	325	325	345

To adjust the speed just release the inner locking washer (A) in an counter clockwise direction, and turn the external handwheel (B) clockwise to decrease the flow to the motor, and turn counter clockwise to increase it. Once the adjustment is done, block the handwheel with the socket sealing ring.



The measurement for the crusher bucket's revolutions is considered correctly performed if carried out with a rev-counter, pointed at a line drawn in the fly-wheel, as demonstrated in the image below.



## 6 MACHINE MAINTENANCE

### 6.1 GENERAL WARNINGS

#### **DANGER !**

All inspection, cleaning and maintenance operations must be carried out only when the bucket and the machine that carries the attachment are turned off, and the ignition key is removed from the control panel.

#### **ATTENTION !**

It is strictly forbidden to remove or tamper with the machine protections, or to carry out any inspection, cleaning or maintenance operation with the machinery turned on.

#### **ATTENTION !**

Before carrying out any inspection, cleaning or maintenance operations, the operator must put on the Personal Protective Equipment (PPE), suitable for the operation to be performed.

#### **ATTENTION !**

If any protection breaks, it must be repaired immediately in an effective manner, or be replaced and reassembled in its position before using the machine.

#### **ATTENTION !**

If any of the machine's safety components break or go wrong, it must be replaced immediately.

#### **ATTENTION !**

MB S.p.A. forbids the use of the attachment in the case that all its safety components and protections are not on it, and in proper working order. The company also declines all liability in case of harm to people and/or damages to the attachment or properties, during operations carried out by the operator or by a third party, that do not comply with what is stated in this document.

#### **ATTENTION !**

Before starting the inspection, cleaning or maintenance operations, the following operations must be carried out.

#### **ATTENTION !**

Maintenance operations must be performed by qualified personnel, whom must avoid using the Crusher Bucket under unsuitable conditions and under the influence of alcohol or drugs.

## 6.2 PERIODIC MAINTENANCE



Before carrying out any type of maintenance, follow the instructions in paragraph 6.1. Maintenance operations must be performed by qualified personnel.



Maintenance (defined as a periodic, careful and efficient inspection of the attachment's components) is a fundamental necessity to maintain a satisfactory operational level of the equipment. Prevention is essential to avoid breakages or unexpected malfunctions.



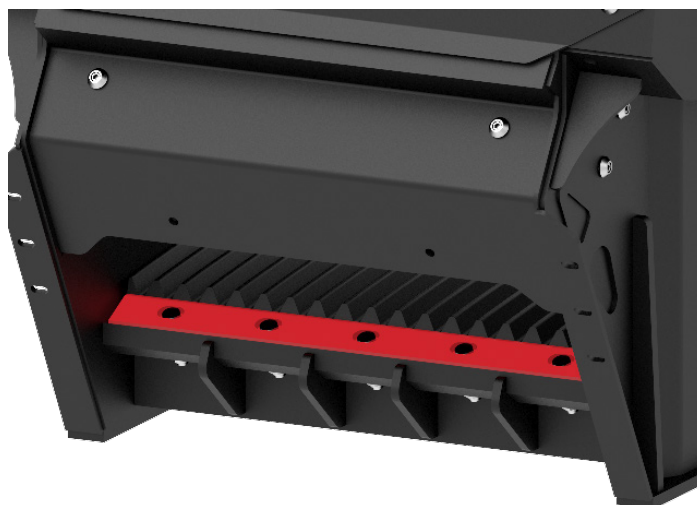
All operation aspects of maintenance, broken down by component, are detailed below. They must be considered universal since all MB Crusher buckets are manufactured in the same way. The user must fully comply with what is described and, if required, contact the service department through the contact information specified on Page 5, or by consulting the B2B portal.



### 6.2.1 JAW-BLOCAGE WEDGES



The jaw-blocking wedge holds the jaw in place. It is fastened by screws and nuts which can loosen, as a result of the vibration during the crushing phase. During the first installation, it is required to tighten the screws repeatedly. During the 2nd, 4th and 8th hour of operation, until the jaw settles in place. After this period of time the screws must be periodically checked at a recommend interval of every 40 hours. The wedge and its screws are considered parts that are subject to wear. If damaged, they will not ensure the required hold and they must be immediately replaced.



#### INFO!

The wedge screws must be tightened with torque wrench. Refer to the table at the end of this manual to identify the correct tightening torque.

#### INFO!

WEDGE REPLACEMENT TIMES: 1/2 hour\*.

#### INFO!

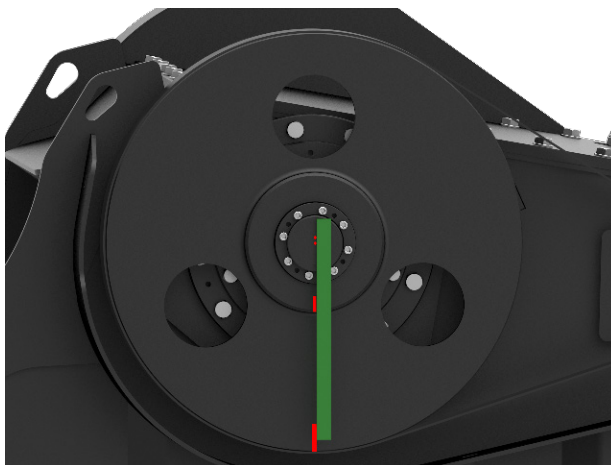
Fasten the screws repeatedly during the first installation, within the first 2, 4 and 8 hours of operation. Then the screws must be periodically checked. We recommend every 40 hours.

#### PERIODIC REPLACEMENT!

Every 500 hours\*.

### 6.2.2 FLYWHEELS

The flywheels are connected to the two ends of the kinematic system shaft. Make sure the indication strips are always aligned (IMG A). Make sure that the Allen screws are always tightened correctly.



#### CAUTION!

Damage to the protective casings or sheaths around them allows external particles, sometimes even of a large size, to enter the belt compartment, with the risk of them being wearing it out. Always keep the protection casings in perfect condition, if damaged replace them.

#### CAUTION!

Size and hardness of the material play an important role in wedge bolts loosening. Maintenance times may vary and shall be adapted accordingly.

#### INFO!

Wear of the adjustment screw unit shall be faster if the bucket is dedicated to the crushing of sturdy materials.

#### INFO!

REPLACEMENT TIMES: 30 minutes\*

### 6.2.3 BELT

The transmission belt connects the motor pulley to the flywheel. In order to fully perform properly, it must be correctly tense. The effects of a worn-out belt are:

- 1: transmitting power from the motor in a less efficient way;
- 2: premature wear due to sliding against the flywheel surface.

It is considered a consumable component because with time, it loses its sealing characteristics, and deteriorates.





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**CAUTION!**

Damage to the protective casings or sheaths around the casings allow external objects, of different sizes, to enter the belt compartment, causing wear by direct contact. Always keep the protective casings in perfect condition, if damaged, they must be replaced.

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**CAUTION**

In workplaces where the average temperature is generally high, the belt will tend to wear out. Temperature affects belt wear even while it is stored.

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**INFO!**

ESTIMATED REPLACEMENT TIME: 15 minutes\*.

ESTIMATED TENSIONING TIME: 5 minutes\*.

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**INFO!**

The belt is a component part of the recommended spare parts kit.

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**PERIODIC REPLACEMENT!**

Every 500 hours or 1 year\*.

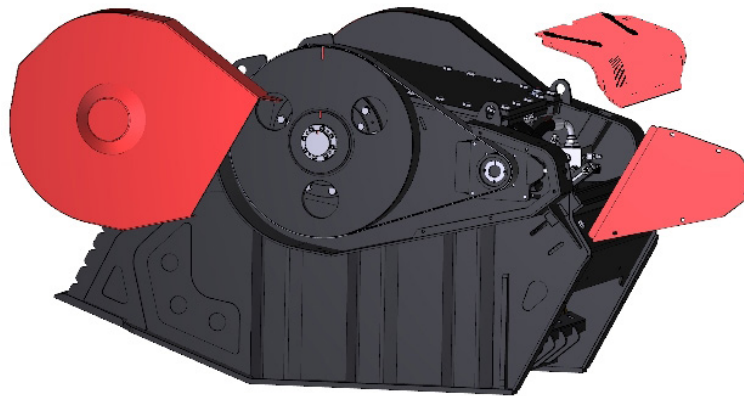
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**BELT TENSIONING**

Before proceeding, position the bucket so that the upper side of the belt is horizontal with respect to the support surface and remove the protection casings to access the tensioning system. Follow the instructions indicated below depending on model type:

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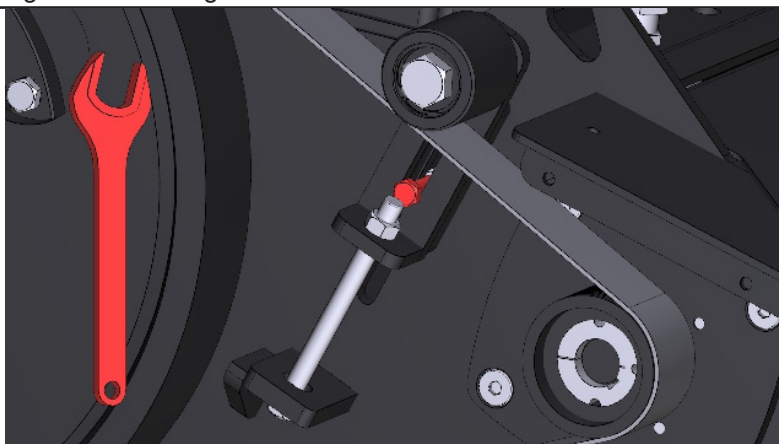


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**BELT TENSIONING: MB-C50 S4 / BF135.8**

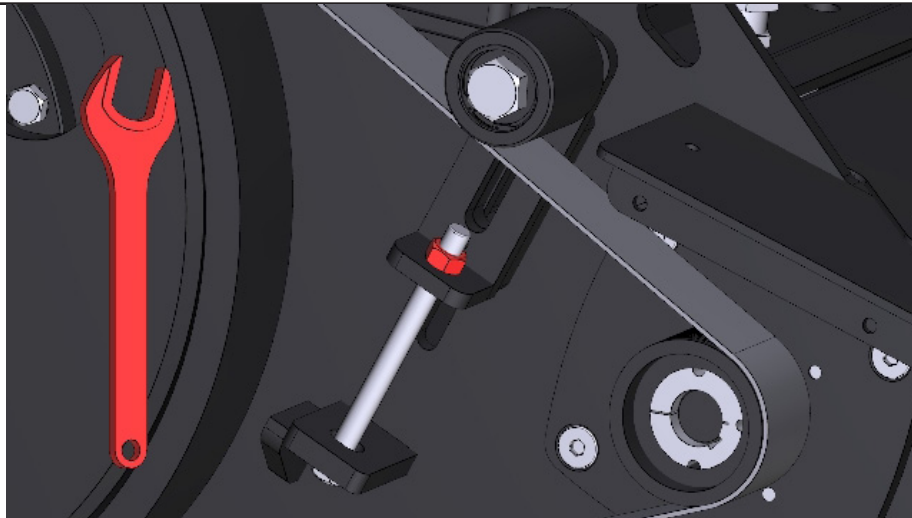
Loosen the belt tightener blocking screw to enable the roller to slide.

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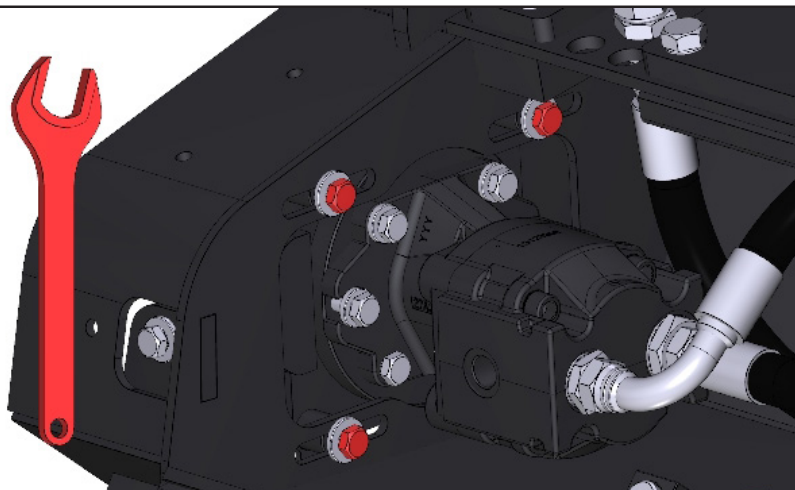


Tighten the nut so that the belt tightener, when lowering, presses and holds the belt.

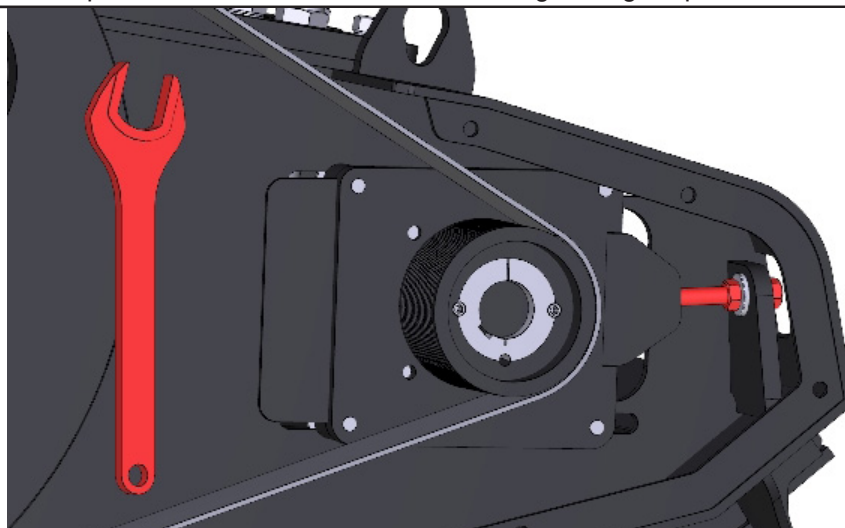


**Models: BF60.1 S4 / BF70.2 S4 / BF80.3 S4 / BF90.3 S4 / BF90.3 S4 HD / BF120.4 S4 / BF120.4 S4 HD**

Loosen the motor support blocking screws to enable the screw to slide in the slot

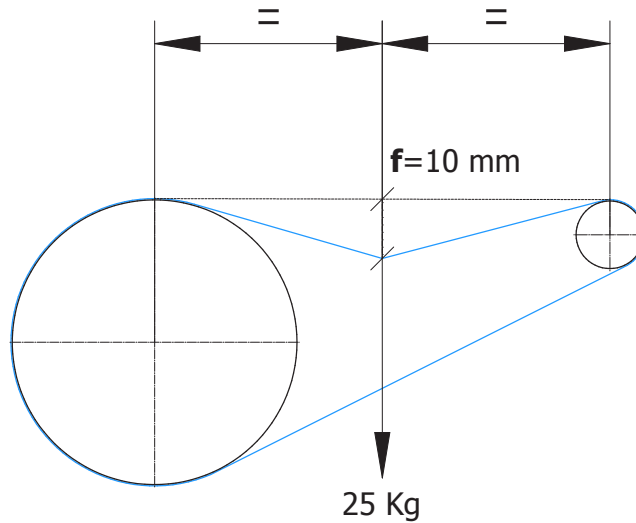


Screw the bolt nut connected to the engine mount to distance it from the flywheel, therefore tightening the belt. Once the operation has been carried out, remember to secure the screws in the slots with a torque wrench calibrated to the referred tightening torque.





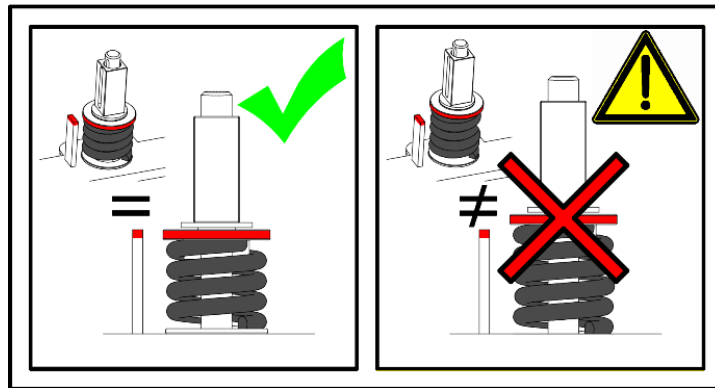
To verify the correct tensioning of the belt, apply a 25 kg/55 lb weight in the center-point of the axis between the two pulleys. If it is correctly set you will obtain a flection of 10 mm/0,4 in (see f arrow in the image bellow).



#### 6.2.4 THREADER BAR UNIT

The components that connect the upper jaw to the bearing structure are part of the adjustment unit. They must be considered important wear parts. Among them the following are specifically important:

1) The spring is a shock absorber that supports the weight of the jaw support. Make sure it is always aligned with the red bar.



2) The threaded bar: changes the distance between the jaws of the out feed mouth.

3) Silent-block: the shock absorber at the base of the threaded bar, it absorbs the shocks coming from the crushing.





#### CAUTION!

Crushing with an over-compressed or loosened spring will, in addition to shortening the life-span of the bucket, it will also unwind the connecting rod from the overall structure with potentially severe consequences. Regularly check the spring's wear condition and replace it if worn out or broken.



#### CAUTION!

The adjustment unit will wear faster if the bucket is consistently crushing sturdy materials.



#### INFO!

REPLACEMENT TIME: 30 minutes\*  
SPRING COMPRESSION TIME: 30 minutes\*



#### INFO!

Spring, upper and lower washer, silent block are part of the recommended spare parts kit.



#### PERIODIC REPLACEMENT!\*

Every 500 hours\*.

### 6.2.5 TOGGLE BOARD

The connecting rod rests on the upper jaw and directs the jaw's movement. It is prone to wear and/or break when it reaches the yield point, following the blows derived from crushing, which the connecting rod endures instead of the structure. For this reason it is called the bucket fuse.



#### CAUTION!

With loose, not compressed or broken spring, the connection rod will no longer be tight with the structure and as a result of the created play it will damage more quickly or it may come out of its seat. In addition, impacting the welded assembly of the jaw support will cause excessive vibrations that will weaken the structure, with potentially serious consequences.



#### INFO!

REPLACEMENT TIMES: 15 minutes\*



#### INFO!

The connection rod is part of the recommended spare parts kit.



#### PERIODIC REPLACEMENT!\*

Every 1000 hours\*.

### 6.2.6 JAWS

The jaws are designed to provide the best performance with the widest range of material. Their wear is inevitably connected to the type of material they come in contact with. It mainly depends on:

- in-feed and out-put size
- physical characteristics
- chemical composition
- external environment
- operator skill

The upper and lower jaws are interchangeable. This allows you to:

- replace the lower one to the upper one when the latter is worn
- turn them by 180 degrees to allow the least worn part to be in the mouth section that will be less subject to wear.



---

#### CAUTION!

Mandatory replace the jaw when the height of the tooth is reduced to less than 10 mm due to wear, and in any case if more than 40% of the surface is flattened. Failure to replace it will cause excessive stress on the bearing structure, with potentially severe consequences.

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#### CAUTION!

When rotating a jaw 180°, it is also mandatory to rotate the other if the distance between the two is such that there is a danger that the top of the teeth collide.

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#### CAUTION!

Store in a dry place, protected from weathering to avoid water infiltration that would alter its good condition. For the same reason, it should be noted that crushing very damp materials will significantly reduce the life-span of the jaw.

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#### CAUTION!

A substantial difference between input and output size is strongly discouraged. The volumetric reduction of large material to a very small size in a single step will cause the jaws to quickly wear.

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### INFO!

REPLACEMENT TIME: 45 minutes\*.



### PERIODIC REPLACEMENT!\*

Very variable. Depending on the material crushed.

## 6.2.7 MOTOR

The motor transforms the hydraulic force coming from the operating machine in mechanical energy. Therefore the system from which it is operated determines its good functionality as well as potential malfunctions and/or damage.



### CAUTION !

A correct installation, according to the specifications of chapter 3.1, preserves the motor from unwanted malfunctions. Make sure that the counter pressure in the return system of the operating machine is as low as possible. Where possible, use the crusher bucket only with the one-way/hammer/single-acting system.



### CAUTION !

Long work cycles cause quick wear of the motor gaskets



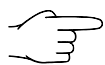
### CAUTION !

High operating and environment temperatures affect the duration of the gaskets.



### CAUTION !

Make sure that the valves, fittings, filters, pipes, flexible hoses and in general all components of the hydraulic circuit of the machine do not generate clogging. Using quick coupling on the pipes is not recommended.



### INFO!

REPLACEMENT TIMES: 45 minutes\*.



### PERIODIC REPLACEMENT!\*

Motor gaskets: every 300 hours. Complete motor: every 1200 hours.

### 6.2.8 NUTS AND BOLTS

It is mandatory to periodically tighten all the screws. Damaged screws must be replaced immediately.



#### CAUTION!

Tightening must be carried out with a torque wrench. Choose the tightening torques according to the chart at the end of the manual.

### 6.2.9 FRAME

The bearing structure is made with highly mechanical components. Wear is determined by the type of material the bucket will come into contact with.



#### CAUTION!

An incorrect crushing position weakens the frame with potentially severe consequences. The customer undertakes to appropriately train the operator on the improper use of the equipment



#### CAUTION!

A lack of or poor maintenance described in the previous points may lead to potentially severe structural damage.



#### CAUTION!

Any kind of impact on surfaces outside the crushing mouth is strictly forbidden. Specifically, avoid handling the material with the external parts of the bucket and use the bucket as a support to move the carriage.

### 6.2.10 HYDRAULIC CARTRIDGE

The hydraulic block of valves is equipped of a temperature gauge. Check the heat level to understand if the oil coming from the hosting machine has overheated. Oil overheating is evidence of a high pressure going through the system.



\* **“PERIODIC REPLACEMENT”**: for indicative purpose. They change depending on how the bucket is used, maintenance level, external agents.

\***REPLACEMENT TIMES**: Valid if performed by MB S.p.A.. They depend on the person performing the operation according to their knowledge, availability of suitable, appropriate equipment and/or possible

### 6.3 PERIODIC CHECKS SUMMARY TABLE

Chapter	Component	Periodical check	Description	Suggested replacement
6.2.1	jaw block-age wedge	every 20 hours every 4 hours. Afterwards every 40	bolts tightening check wedge wear status	every 600 hours
6.2.2	flywheel	every 40 hours	check tightness of the screws realign if necessary	1600 hours
6.2.3	belt	every 160 hours	tighten if necessary check for tear or wear	every 800 hours
6.2.4	threaded bar assembly	every 40 hours	check the spring's alignment and compression status	every 400 hours
6.2.5	toggle board	every 40 hours	check position and wear	every 800 hours
6.2.6	jaw	every 160 hours	check position and wear of the jaw surface	If the tooth's peak height is below 10 mm /0.4 in or the overall surface wear is > 40%
6.2.7	motor	every 160 hours	check for oil leaks and temperature variations in the control unit	gaskets: every 400 hours motor: every 1200 hours
6.2.8	nuts and bolts	every 200 hours	tightening of all screws	every 2400 hours
6.2.9	frame	every 1000 hours	check wear and surface planarity	if necessary
6.2.10	hydraulic cartridge	every 1000 hours	check heat, clean up valves	if necessary

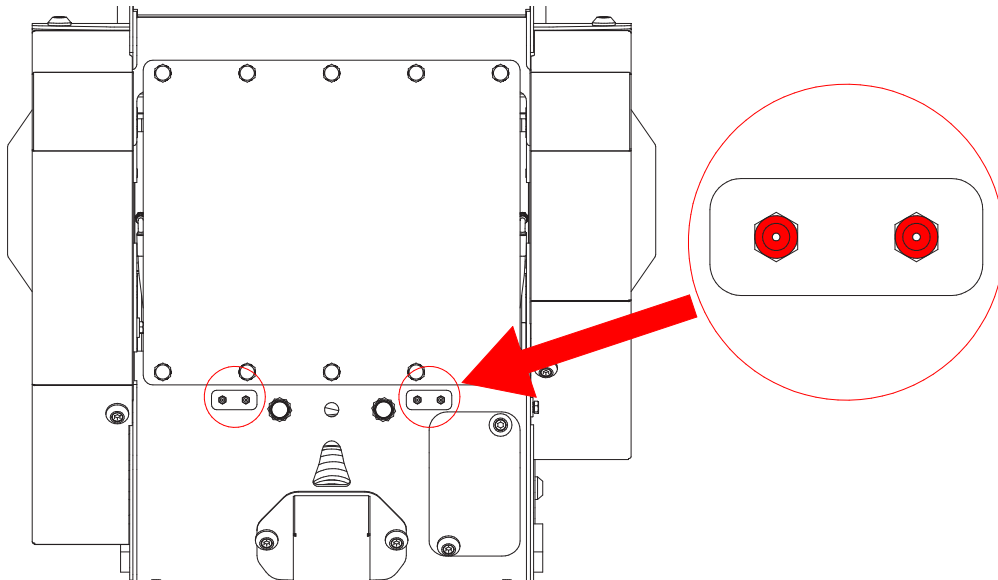
The estimated time shown in the chart may vary according to the level of maintenance, working conditions, operator skills, and external agents. Strictly comply with what is stated above. The partial or total failure to perform routine maintenance can cause potentially severe malfunctions.

## 6.4 GREASING

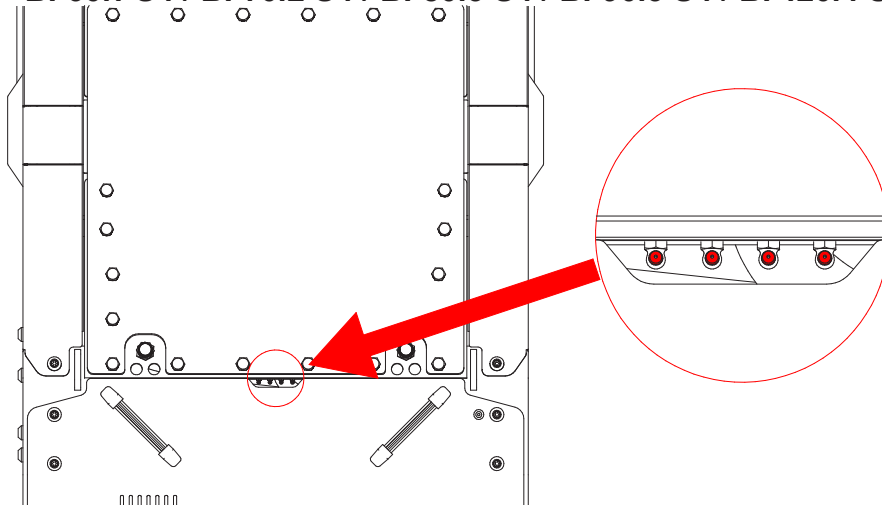
Every 10 hours grease the kinematics bearings during the first 100 hours of the machine life-span.  
Then 20 pumps every 30 hours.

The greasing nipples are appropriately indicated according to the figures below.

### MB-C50 S4 / BF135.8



### BF60.1 S4 / BF70.2 S4 / BF80.3 S4 / BF90.3 S4 / BF120.4 S4



### SUGGESTED LUBRICANTS

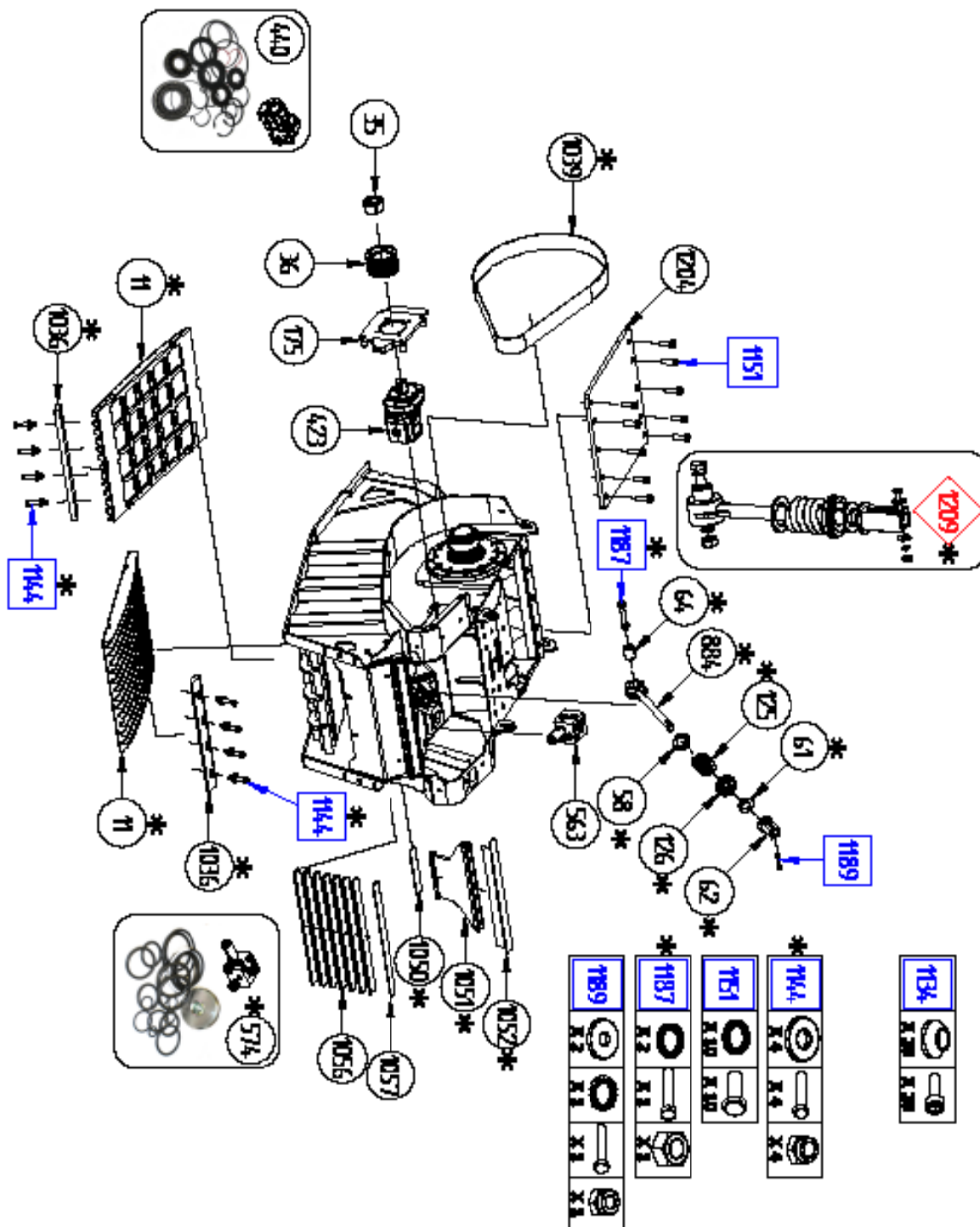
BRAND	MODEL	TEMPERATURE
AGIP	AGIP GR30	243 K / 393 K (-30°C / +120°C)
BP	ENERGREASE LS-ES 2	248 K / 413 K (-25°C / +140°C)
CASTROL	SPHEEROL EPL 2	253 K / 393 K (-20°C / +120°C)
ELF	EPEXA 2	243 K / 393 K (-30°C / +120°C)
ESSO	BEACON EP 2	253 K / 393 K (-20°C / +120°C)
IP	ATHESIA EP 2	248 K / 373 K (-25°C / +100°C)
MOBIL	MOBILUX EP 2	253 K / 398 K (-20°C / +120°C)
KLUBER LUBRIFICATION	CENTOPLEX 2 EP	248 K / 403 K (-25°C / +130°C)
SHELL	SHELL ALVANIA EP 2	248 K / 403 K (-25°C / +130°C)





# BF60.1 S4

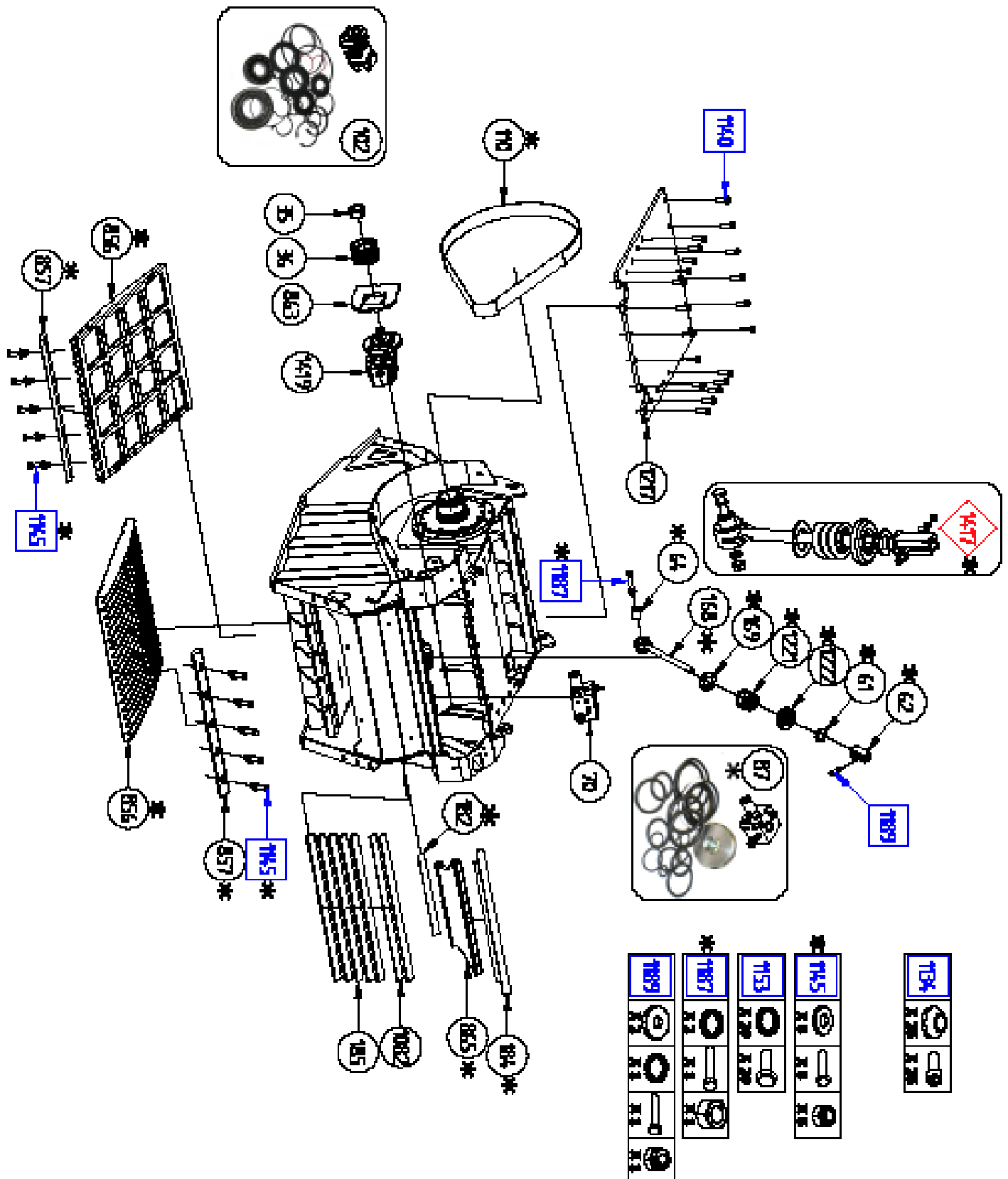
- \* Wearing part



[illegible]

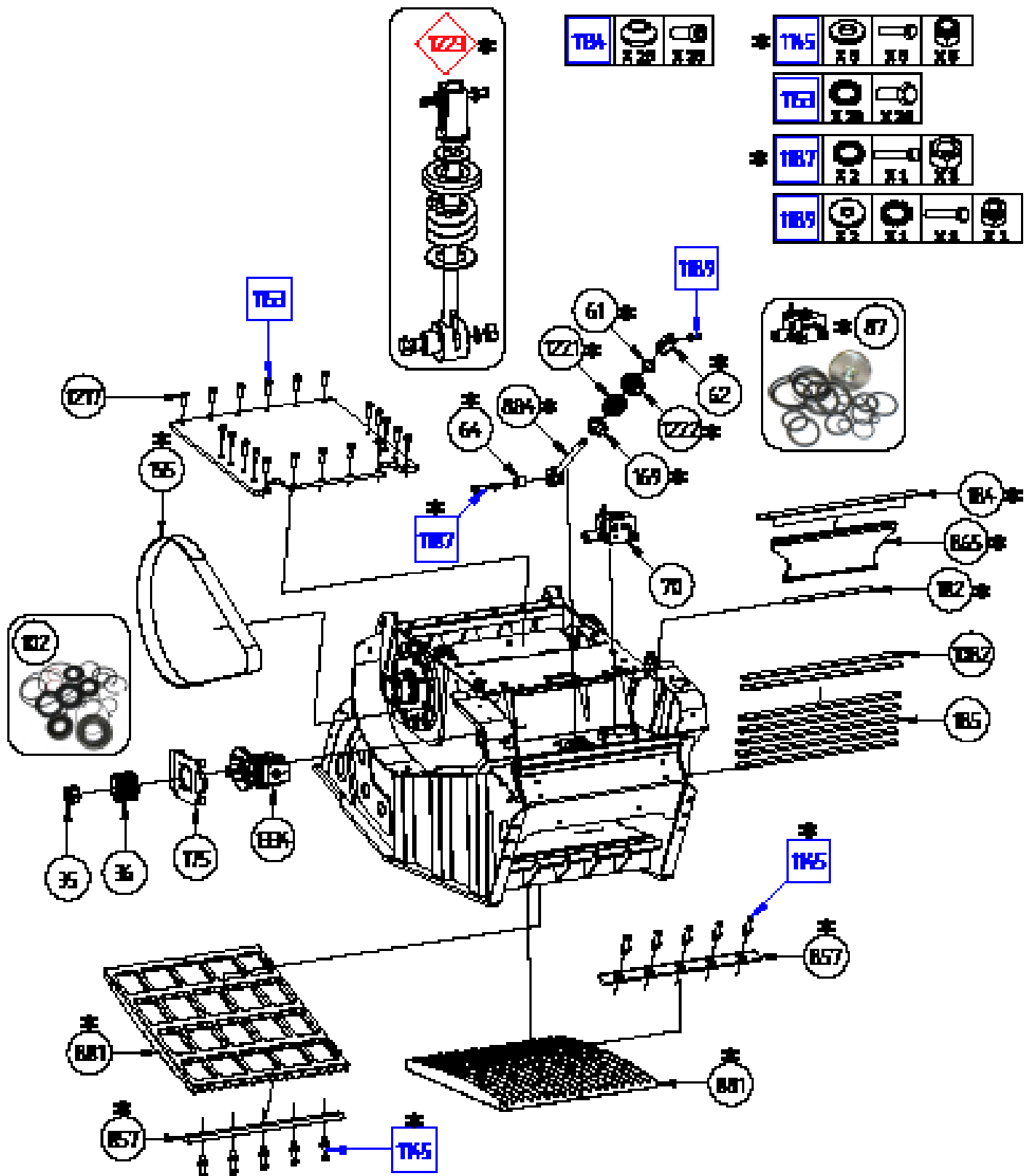
## BF80.3 S4

\* Wearing part



## BF90.3 S4 - BF90.3 S4 HD

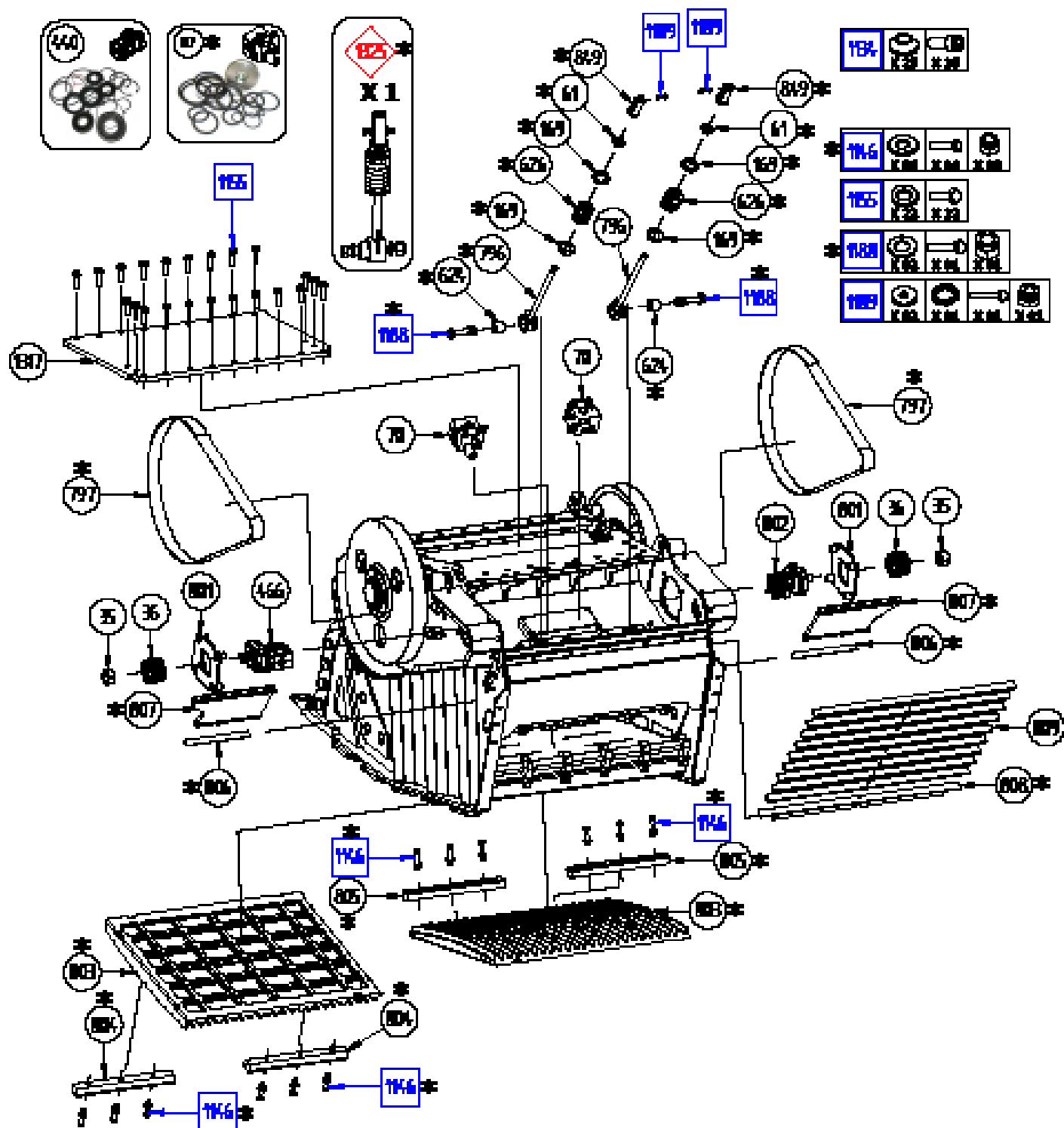
\* Wearing part





# BF135.8

- \* Wearing part



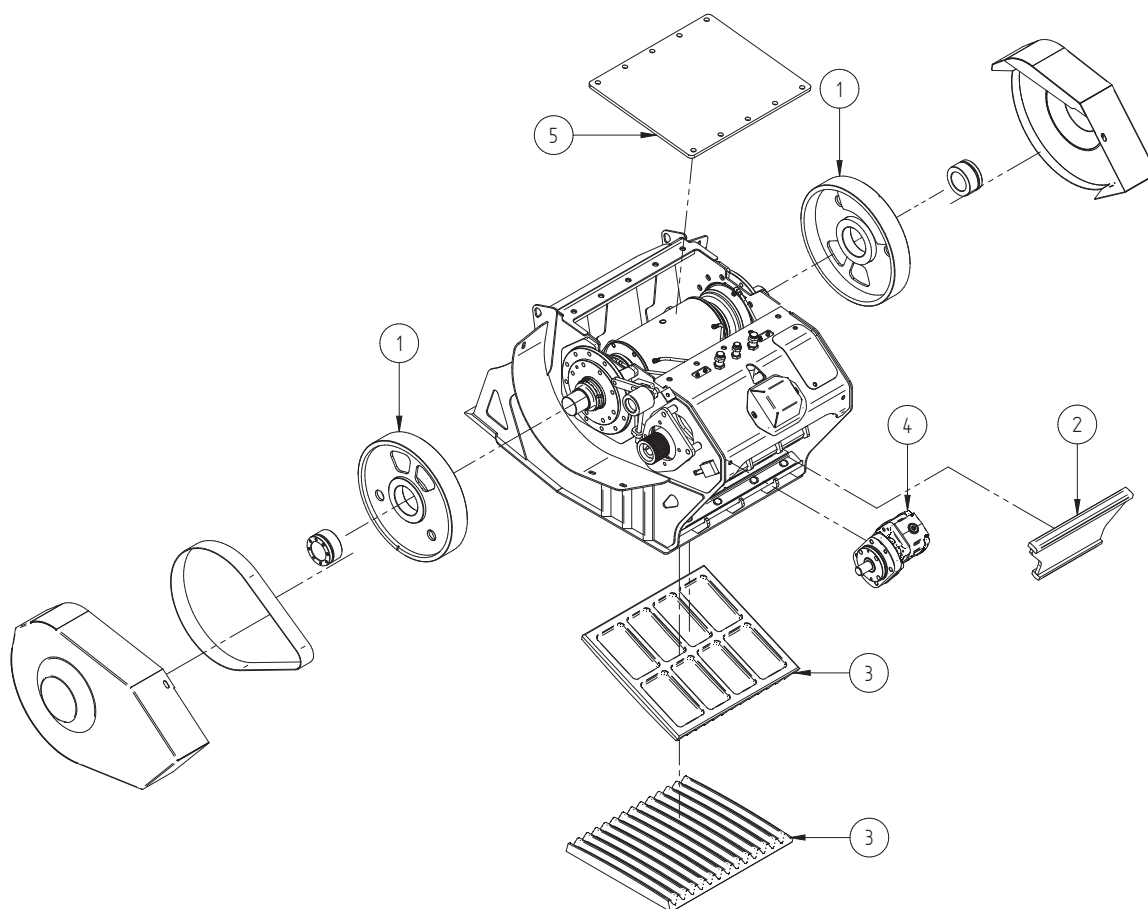
**INFO!**

Delivery times and warehouse availability may vary. Contact your dealer or directly at [mbservice@mbcrusher.com](mailto:mbservice@mbcrusher.com) for procurement of spare parts.



## 7 HEAVY COMPONENTS - WEIGHT OF SINGLE COMPONENTS

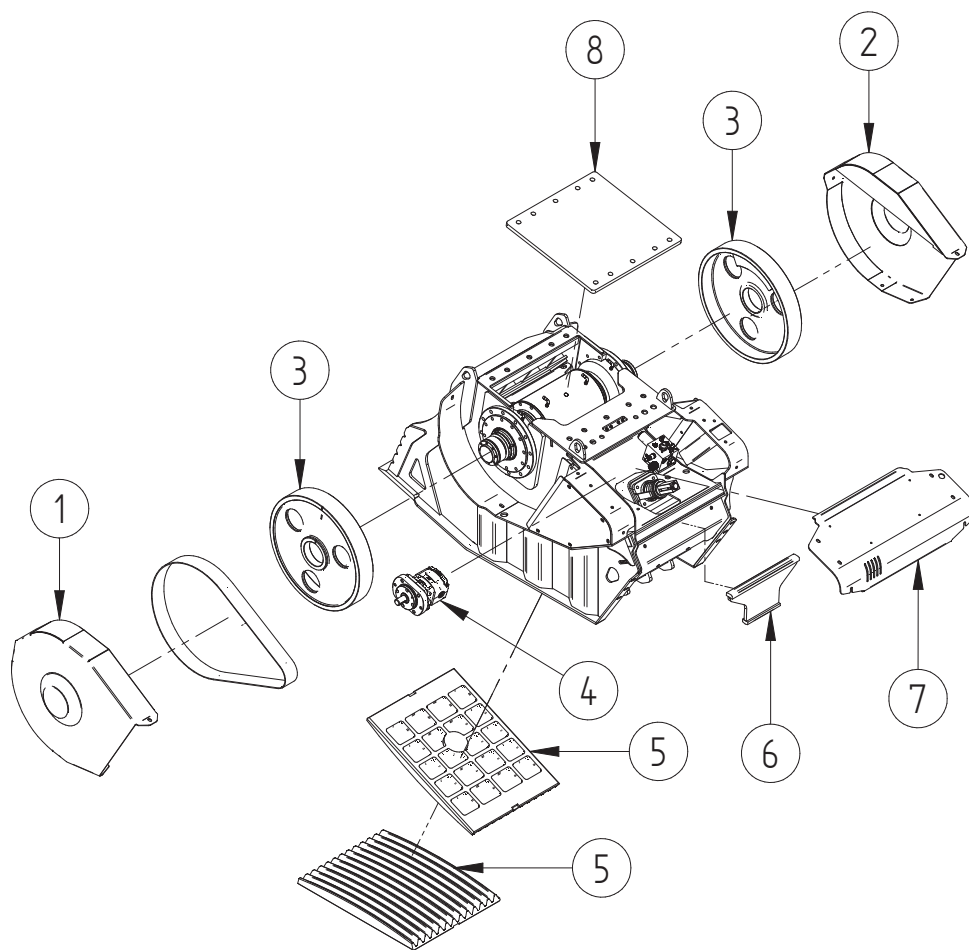
### 7.1 MB-C50 S4



REF.	CODE	DESCRIPTION	Kg
1	B50003031	Flywheel	28,5
2	B50001250	Toggle Board	10,5
3	B50005250	Jaw	66
4	201004301	Hydraulic Motor	27
5	B50001050	Plate	27

MB S.p.A. company encourages full attention while moving parts that weigh over 10 kg/ 22 lb. The use of personal protective equipment is mandatory and, if necessary, we kindly suggest the use of tools that are designed to lift heavy objects. Paying attention to all risks associated with moving the crusher's components.

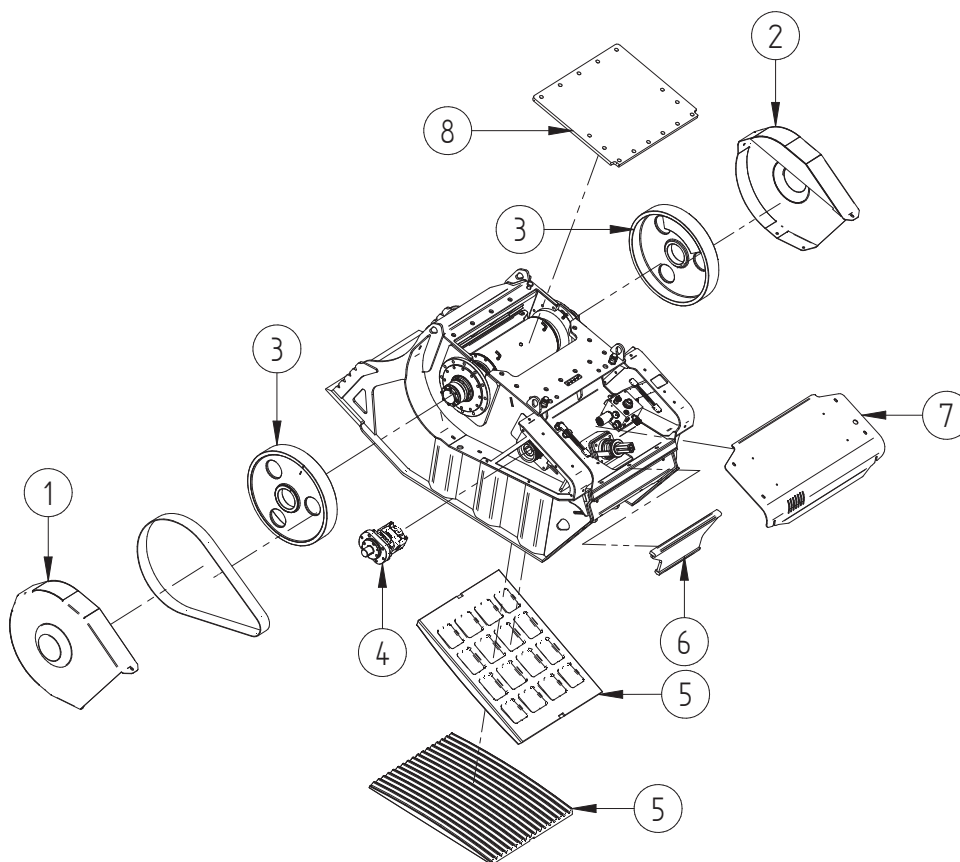
## 7.2 BF60.1 S4



REF.	CODE	DESCRIPTION	Kg
1	B70050450	Flywheel protection right	17
2	B70050550	Flywheel protection left	17
3	B60021850	Flywheel	65
4	201005003	Hydraulic motor	28
5	B60001150	Jaw	146
6	B60021050	Toggle board	11
7	B60020550	Rear motor protection	17
8	B60002051	Plate	57

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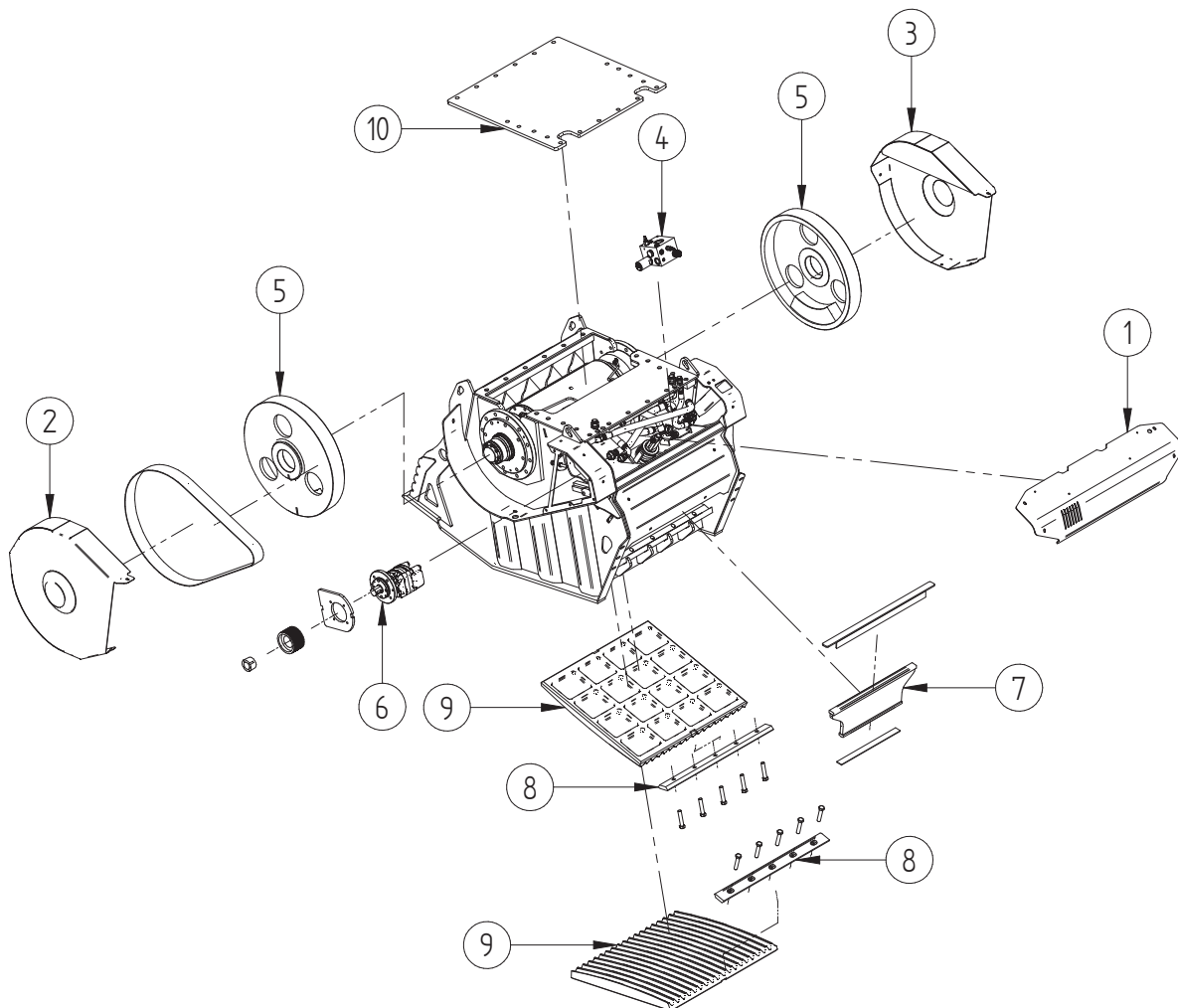
### 7.3 BF70.2 S4



REF.	CODE	DESCRIPTION	Kg
1	B70050450	Right flywheel protection	17
2	B70050550	Left flywheel protection flywheel	17
3	B70053050	Flywheel	71
4	201007003	Hydraulic motor	28
5	B70050850	Jaw	231
6	B70051250	Toggle board	16
7	B70050350	Rear motor protection	25
8	B70051850	Plate	81

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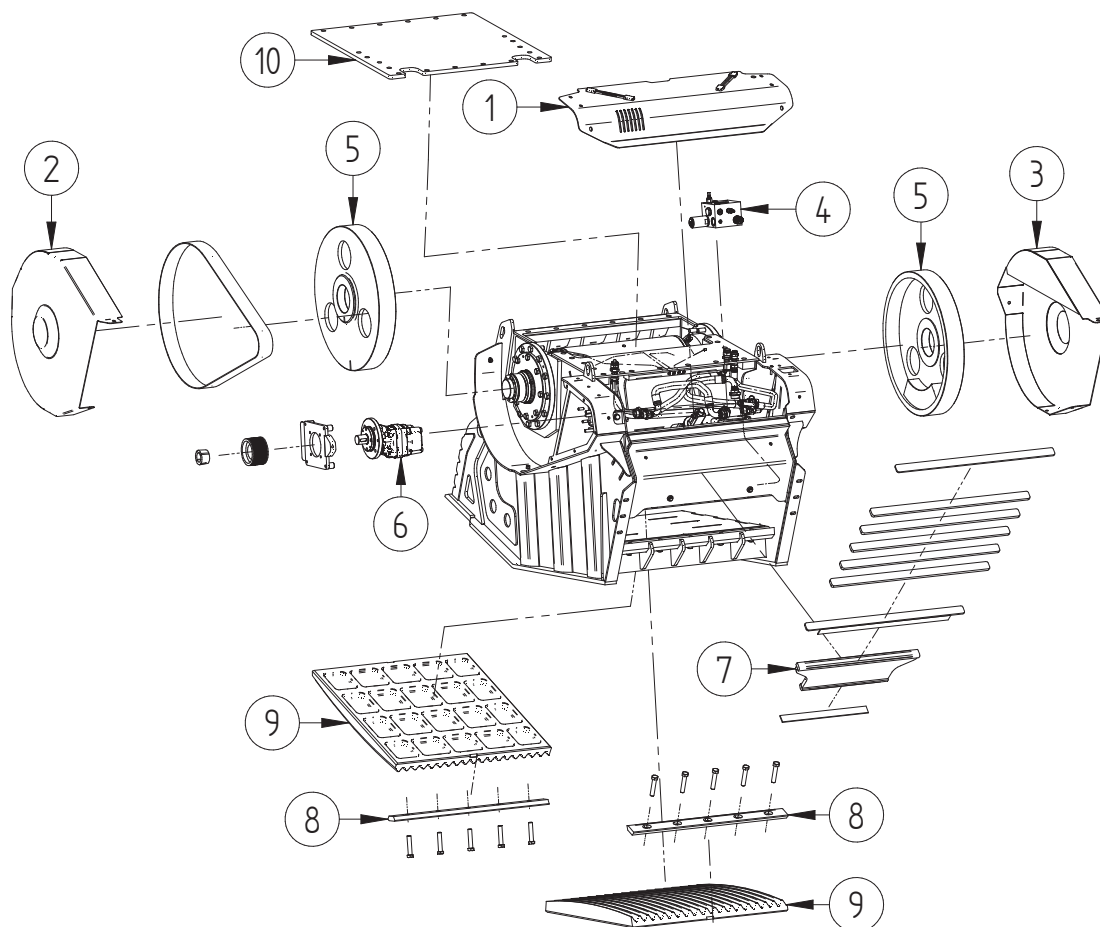
## 7.4 BF80.3 S4



REF.	CODE	DESCRIPTION	Kg
1	B80000850	Rear motor protection	18,5
2	B80000450	Right flywheel protection	22,5
3	B80000550	Left flywheel protection	22,5
4	215225801	Hydraulic box	19
5	249001550	Flywheel	135
6	201008001	Hydraulic motor	28
7	B80000650	Toggle board	25
8	B90065431	Wedge	11
9	B90045850	Jaw	250
10	B90066150	Plate	132

MB S.p.A. company encourages full attention while moving parts that weigh over 10 kg/ 22 lb. The use of personal protective equipment is mandatory and, if necessary, we kindly suggest the use of tools that are designed to lift heavy objects. Paying attention to all risks associated with moving the crusher's components

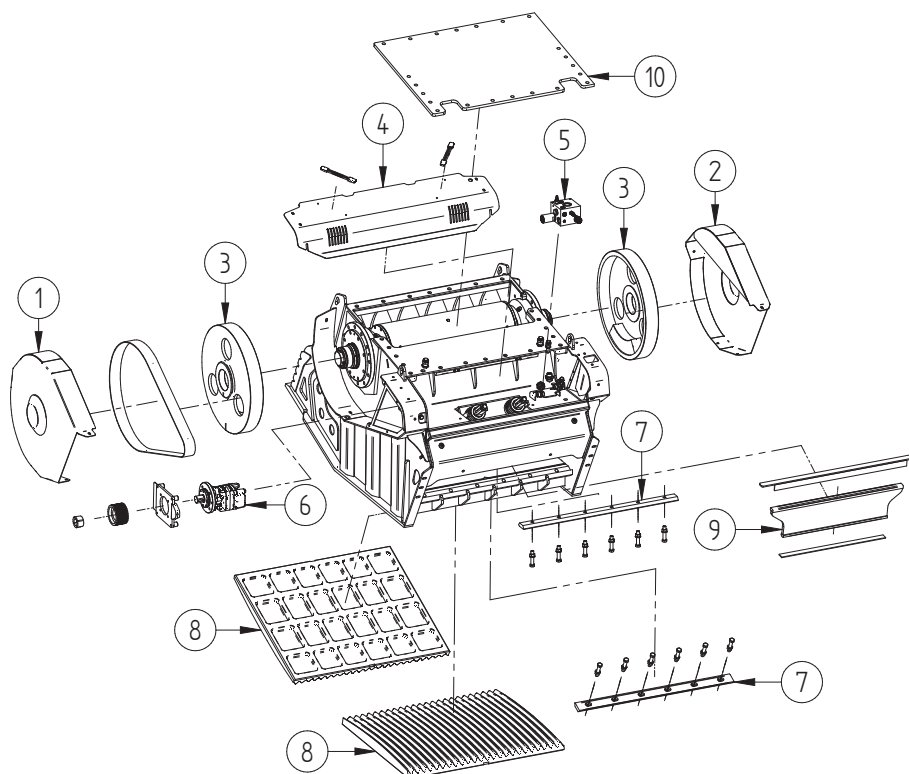
## 7.5 BF90.3 S4 - BF90.3 S4 HD



REF.	CODE	DESCRIPTION	Kg
1	B90065050	Rear motor protection	22
2	B90064850	Right flywheel protection	25
3	B90064950	Left flywheel protection	25
4	215225801	Hydraulic box	19
5	B90067050	Flywheel	128
6	201010001	Hydraulic motor	36
7	B80000650	Toggle board	25
8	B90064850	Wedge	11
9	B90062750	Jaw	312
10	B90066150	Plate	132

MB S.p.A. company encourages full attention while moving parts that weigh over 10 kg/ 22 lb. The use of personal protective equipment is mandatory and, if necessary, we kindly suggest the use of tools that are designed to lift heavy objects. Paying attention to all risks associated with moving the crusher's components

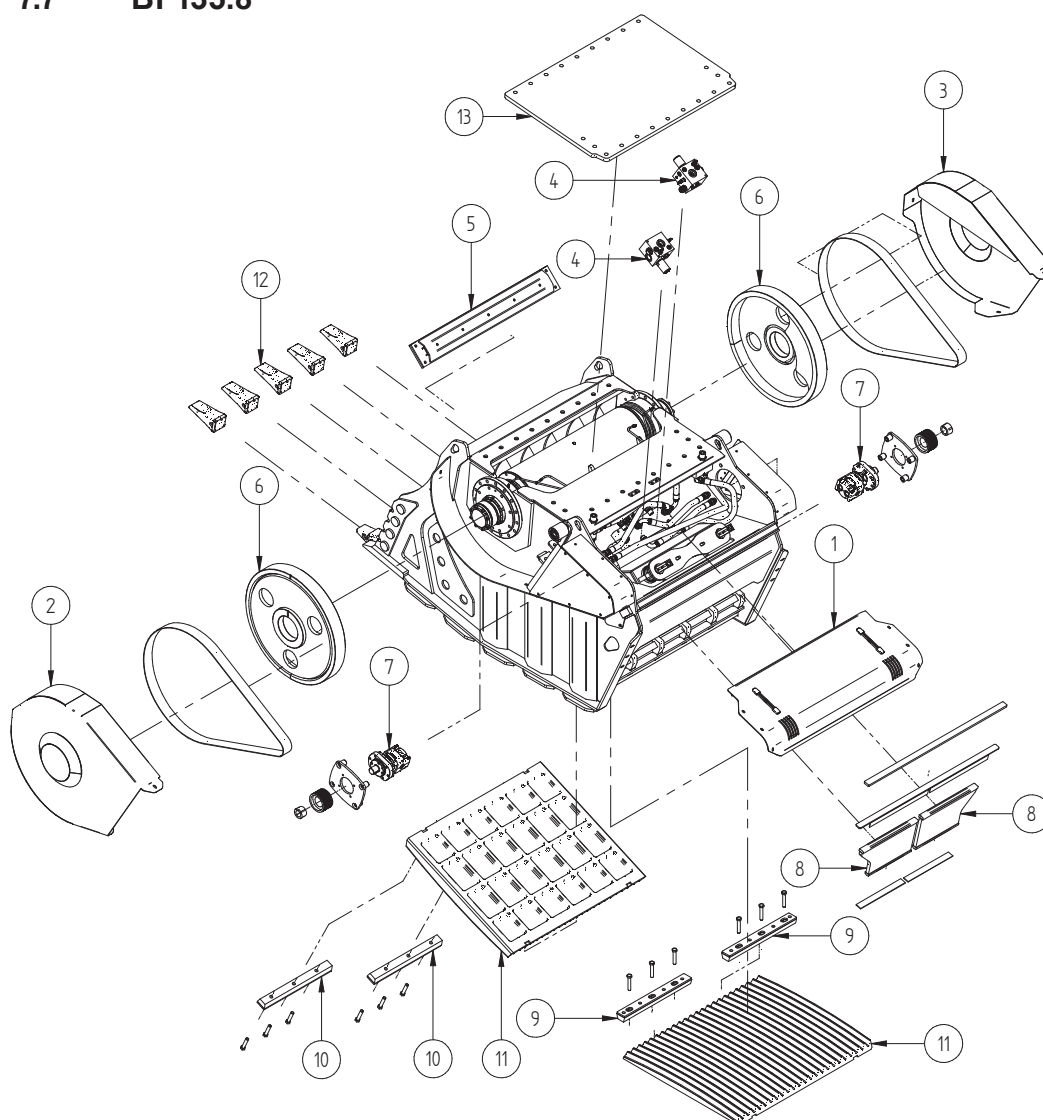
## 7.6 BF120.4 S4 - BF120.4 S4 HD



REF.	CODE	DESCRIPTION	Kg
1	B90064850	Right flywheel protection	24,5
2	B90064950	Right flywheel protection	24,5
3	249001550	Flywheel	130
4	B12028750	Rear motor protection	27
5	215225801	Hydraulic box	19
6	201010001	Hydraulic motor	36
7	B12028431	Wedge	14,5
8	B12028050	Jaw	430
9	B12028650	Toggle board	37,5
10	B12030550	Plate	175

MB S.p.A. company encourages full attention while moving parts that weigh over 10 kg/ 22 lb. The use of personal protective equipment is mandatory and, if necessary, we kindly suggest the use of tools that are designed to lift heavy objects. Paying attention to all risks associated with moving the crusher's components

## 7.7 BF135.8



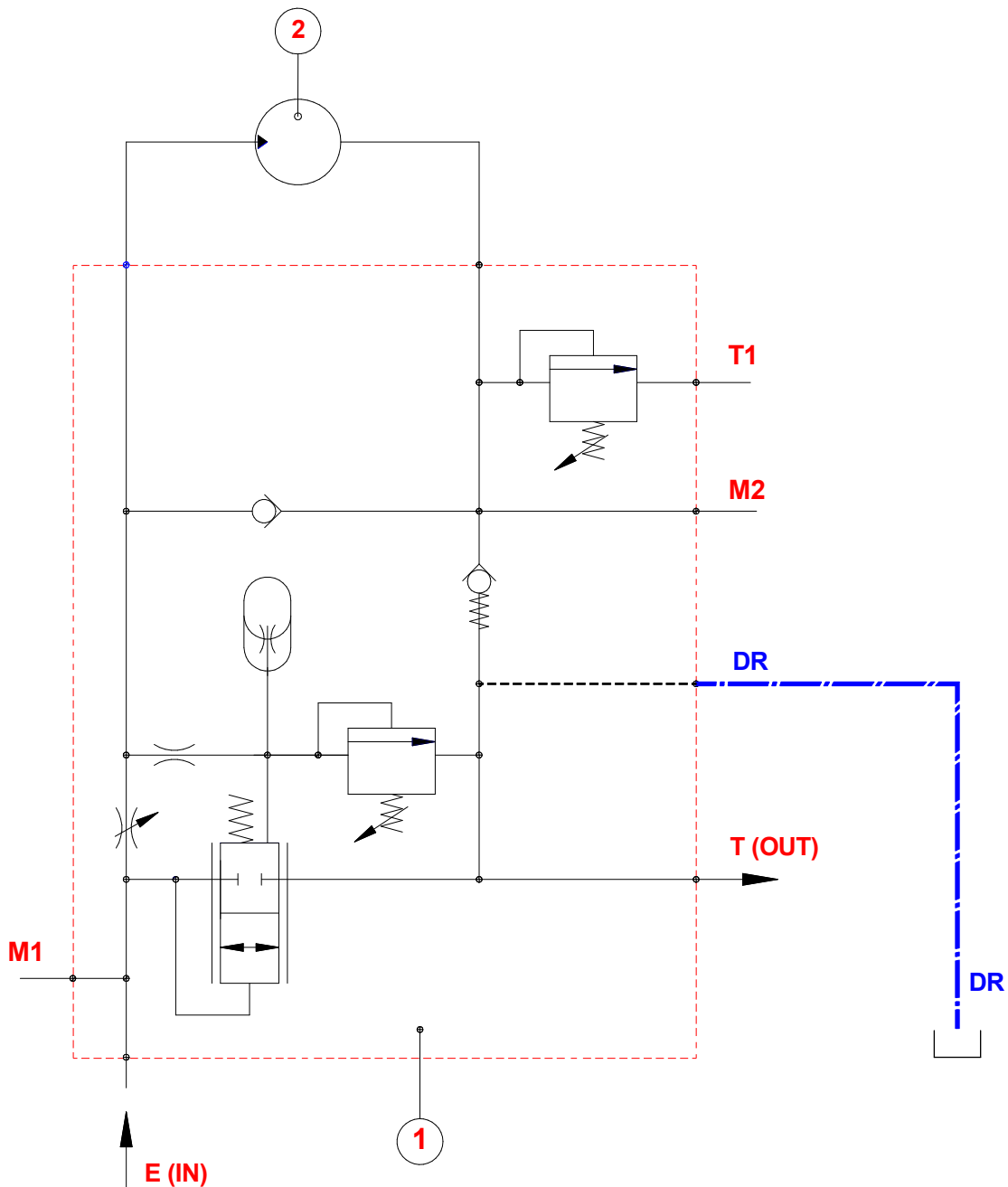
REF.	CODE	DESCRIPTION	Kg
1	B13502450	Rear motor protection	37
2	B13502650	Right flywheel protection	36
3	B13502550	Left flywheel protection	36
4	215225801	Hydraulic box	19
5	B13502950	Rear motor protection	48
6	B13502031	Flywheel	171
7	201007003	Hydraulic motor	28
8	B13500850	Connecting rod	30
9	B13501650	Lower wedge	17
10	B13500950	Upper wedge	17
11	B13500350	Jaw	600
12	700035601	Standard tip	11
13	B13501050	Plate	305

MB S.p.A. company encourages full attention while moving parts that weigh over 10 kg/ 22 lb. The use of personal protective equipment is mandatory and, if necessary, we kindly suggest the use of tools that are designed to lift heavy objects. Paying attention to all risks associated with moving the crusher's components



## 8 HYDRAULIC SYSTEMS

Reference diagram per models:  
MB-C50 S4 - BF60.1 S4 - BF70.2 S4 - BF80.3 S4 - BF90.3 S4 - BF90.3 S4 HD -  
BF120.4 S4 - BF120.4 S4 HD

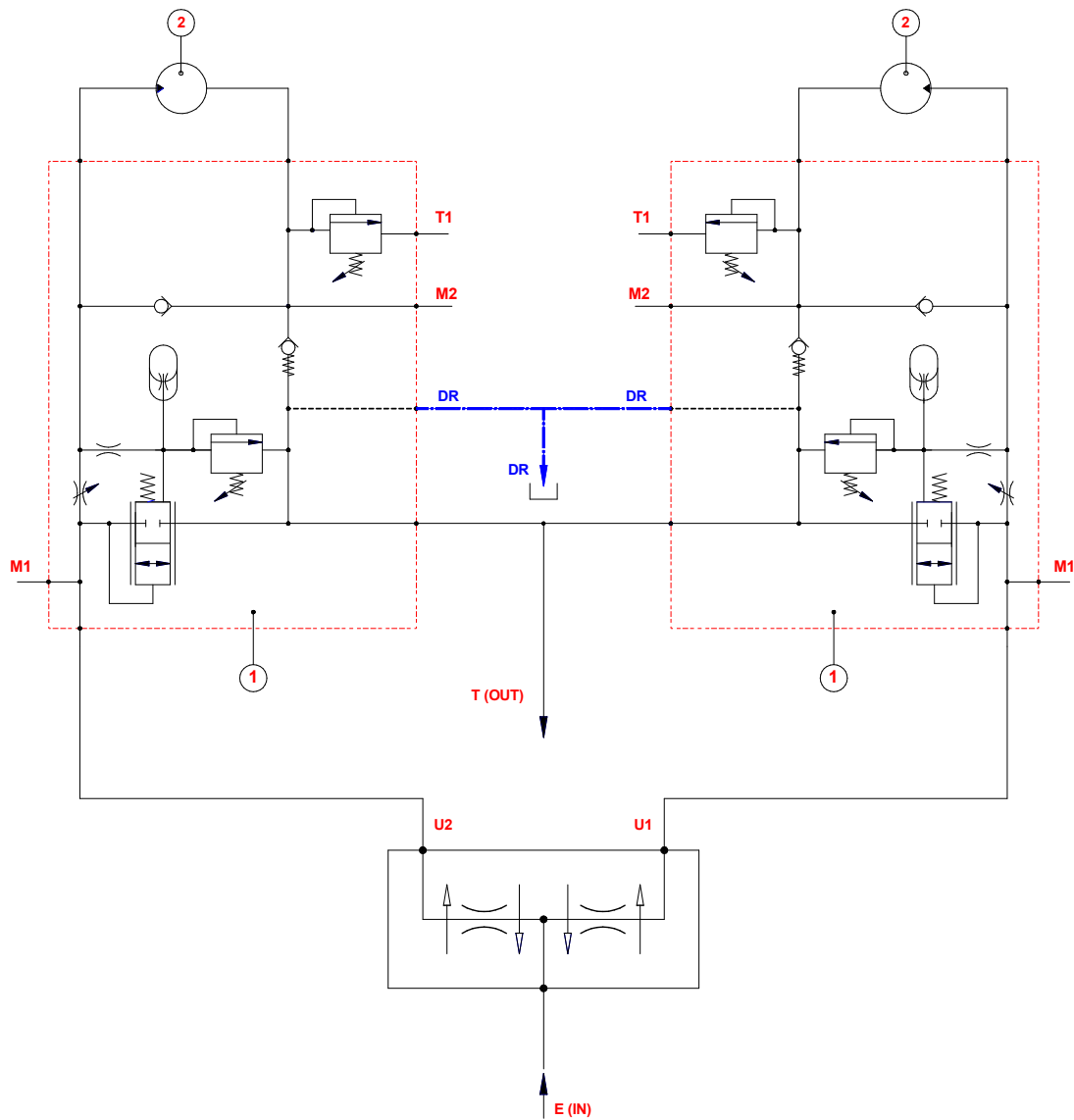


## LEGENDA

RIF	MB-C50 S4	BF60.1 S4	BF70.2 S4
1	Hydraulic valve block	Hydraulic valve block	Hydraulic valve block
2	Hydraulic motor 43 cc.	Hydraulic motor 51 cc.	Hydraulic motor 73 cc.
DR	Drain (maximum counter pressure in the return line 10 bar.)	Drain (maximum counter pressure in the return line 10 bar.)	Drain (maximum counter pressure in the return line 10 bar.)
OUT	Back pressure return line max. 20 bar	Back pressure return line max. 20 bar	Back pressure return line max. 20 bar
M1	Pressure test point IN line	Pressure test point IN line	Pressure test point IN line
M2	Pressure test point OUT line	Pressure test point OUT line	Pressure test point OUT line
T1	Safety discharge port	Safety discharge port	Safety discharge port

RIF	BF80.3 S4	BF90.3 S4 / BF90.3 S4 HD	BF120.4 S4 HD / BF120.4 S4 HD
1	Block of valves	Block of valves	Block of valves
2	Hydraulic motor 80 cc.	Hydraulic motor 100 cc	Hydraulic motor 100 cc
DR	Drain (maximum counter pressure in the return line 10 bar.)	Drain (maximum counter pressure in the return line 10 bar.)	Drain (maximum counter pressure in the return line 10 bar.)
OUT	Back pressure return line max. 20 bar	Back pressure return line max. 20 bar	Back pressure return line max. 20 bar
M1	Pressure test point IN line	Pressure test point IN line	Pressure test point IN line
M2	Pressure test point OUT line	Pressure test point OUT line	Pressure test point OUT line
T1	Safety discharge port	Safety discharge port	Safety discharge port

**MODEL: BF135.8**



**LEGEND**

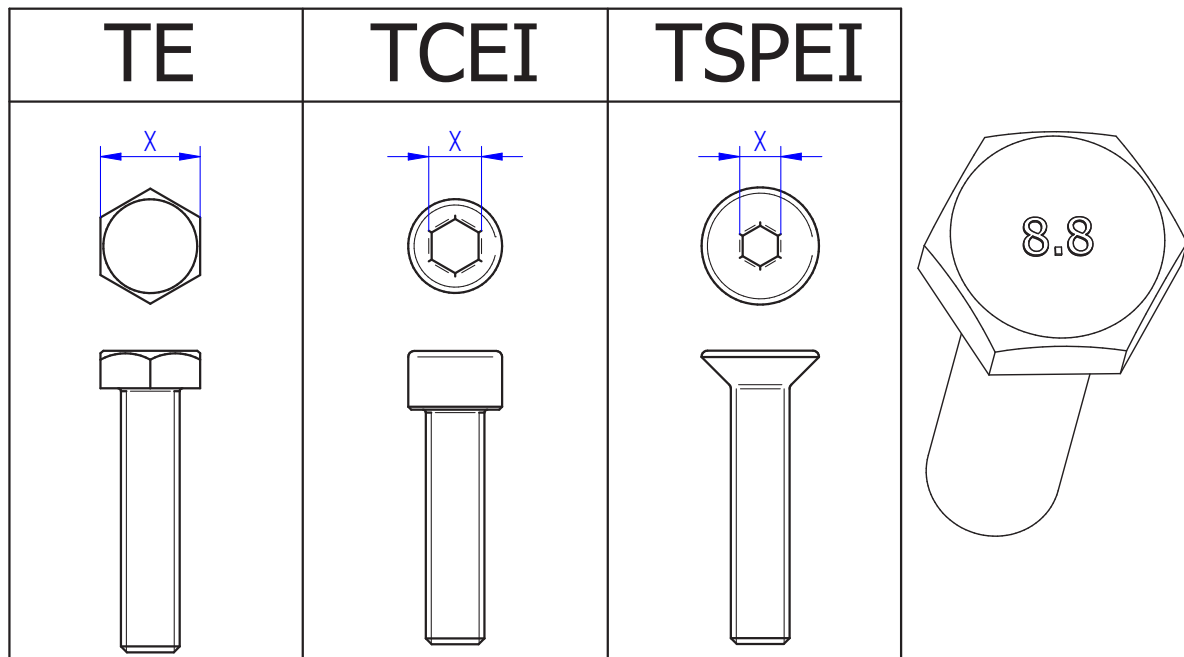
RIF	BF135.8
1	Hydraulic block of valves
2	Hydraulic motor 73 cc
DR	Drain (maximum back pressure in the return line 10 bar.)
OUT	maximum counter pressure in the return line 20 bar
M1	pressure test pint IN line
M2	pressure test pint OUT line
T1	Safety discharge port

## 9 TIGHTENING TORQUES TABLE

The M tightening torques of the table are valid approximately for the following conditions:  
The tightening moment is presumed applied slowly with torque wrenches.

To identify the correct tightening torque, proceed as follows:

1) Identify the screw type and the resistance class.



2) Measure the quota indicated (X, in mm) and, based on it, identify the screw diameter (Ø).

3) Check the correct tightening torque to be applied (in Nm) in the following table.

SCREW TYPE	Ø TE	Ø TCEI	Ø TSPEI	8.8	10.9	12.9
	mm	mm	mm	Nm	Nm	Nm
M8	13	6	5	25	35	42
M10	16	8	6	50	70	84
M12	18	10	8	85	119	143
M14	21	12	10	135	190	228
M16	24	14	10	212	298	357
M18	27	14	12	290	402	490
M20	30	17	12	413	580	697
M22	34	17	-	568	798	958
M24	36	19	14	714	1004	1204
M27	41	19	-	1050	1477	1772
M30	46	22	-	1429	2009	2411
M33	50	24	-	1941	2729	3275
M36	55	27	-	2497	3511	4213

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## 10 MACHINE DEMOLITION

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### 10.1 WASTE DISPOSAL

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The machine's working phase does not generate waste or rubbish that must be recycled or disposed of, according to the laws in force in the Country of use.

If a part has to be replaced, or when the machine has to be scrapped, the elements used for the equipment (oil, rubber tubes, etc.) must be brought to an authorized disposal centre, in compliance with the requirements of the current applicable law in the machine's Country of use.



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#### ATTENTION !

**MB S.p.A.** declines all liability in case the customer does not use authorized centres for the machine's equipment disposal.

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### 10.2 MACHINE DEMOLITION

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When the machine has to be scrapped (for any reason, limited use, impossibility of repair, or others), it is necessary to:

- Wash the machine thoroughly, with a water jet;
- Drain the oil from the hydraulic circuit, and place it in a specific vessel;
- Remove the flexible hoses from the hydraulic system;
- Dismantle the machine's parts as possible (cases, etc.), dividing them upon type (ex. rubber components, ferrous material, etc...).



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#### ATTENTION !

Any irregularity committed by the customer before, during or after the machine's components scrapping and disposal phases, with regard to the interpretation and application of the current laws in force, is of exclusive responsibility of the same.

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## 11 PERIODIC MAINTENANCE TABLE / NOTES

DATE	OPERATION SUBJECT	DESCRIPTION

DATE	OPERATION SUBJECT	DESCRIPTION





**SERVICE  
ONLINE ▼**



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**MB S.p.A.**

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