

OPERATOR'S AND MAINTENANCE MANUAL FRONT LOADER

CF

ORIGINAL INSTRUCTIONS



READ THIS MANUAL CAREFULLY BEFORE USE



0. FOREWORD.....	3
1. AIM OF THE INSTRUCTION MANUAL FOR USE AND MAINTENANCE.....	3
2. ADRESSEES	4
3. PICTOGRAMS	4
1. GENERAL INFORMATION	5
1. MANUFACTURER'S IDENTIFICATION DATA	5
2. CE MARKING OF THE FRONT LOADER	5
3. DECLARATIONS.....	6
4. SAFETY RULES	7
5. INFORMATION ABOUT TECHNICAL ASSISTANCE.....	7
2. SAFETY.....	8
1. GENERAL SAFETY RULES	8
2. WARNINGS	9
3. INTENDED USE.....	10
4. CONTRAINDICATIONS TO USE.....	10
5. SAFETY DEVICES.....	10
6. RESIDUAL RISKS.....	10
7. SIGNALIZATION	12
3. INSTALLATION	13
1. INSTALLATION MODALITIES ON TRACTOR FRAME.....	13
2. INSTRUCTIONS FOR ASSEMBLING AND DISASSEMBLING OF THE LOADER TO THE TRACTOR.....	13
3. TESTS FREE OF LOAD	14
4. TESTS UNDER LOAD	14
5. APPLICATION OF REAR BALLASTS FOR THE SAFE USE OF THE FRONT LOADER	14
4. DESCRIPTION OF THE FRONT LOADER	16
1. NOMENCLATURE OF COMPONENTS	16
2. TECHNICAL DATA.....	17
3. HYDRAULIC CONNECTIONS	18
5. USE OF THE FRONT LOADER	19
1. PREPARATION FOR DRIVING	19
2. DAILY OPERATIONS.....	19
3. CONTROL PANEL	19
4. USE OF THE FRONT LOADER.....	20
5. FILLING OF THE BUCKET	21
6. TEARING WORK	21
7. DIGGING OF MATERIALS	22
8. LEVELLING.....	22
9. MOTION OF THE TRACTOR WITH FULL BUCKET	22
10. LOADING OF MATERIALS ON TRUCKS.....	22
11. ON-ROAD CIRCULATION	23
12. REST PERIOD OF THE FRONT LOADER AFTER WORK	23
13. INSTRUCTIONS FOR ASSEMBLING AND DISASSEMBLING OF TERMINAL TOOLS.....	24
14. TERMINAL ACCESSORIES OF THE LOADER.....	24
15. INSTRUCTIONS FOR STORAGE.....	24
6. MAINTENANCE OF THE LOADER.....	25
1. LUBRICATION	25
2. MAIN FAILURES.....	26
7. SERVICE AND SPARE PARTS	26
1. SERVICE	26
2. SPARE PARTS	26

0. FOREWORD

1. AIM OF THE INSTRUCTION MANUAL FOR USE AND MAINTENANCE

The operator's and maintenance manual was written by the company **BONATTI CARICATORI S.r.l** in accordance with the requirements of the directive on machines and of its relevant harmonized rules and it is valid for the models CF1 CF2 F3 CF3/S CF4

This manual was issued to provide to the user a general knowledge of the front loader and to enable its use in safety conditions.

- The manual must accompany the front loader in all its movements. It contains the instructions to carry out without any risk all operations at work and during the rest period.
- The operator must understand this manual properly before carrying out loading activities.
- Untrained operators can cause damages and injuries to persons.
- Direction: right and link direction refer to the forward direction of travel of the tractor.



The competent responsible has the obligation, according to the rules in force, to read carefully the content of this Instruction Manual and to have drivers and maintenance operators read it for the parts of their competence.



CAUTION

- Plates, stickers and notices mentioned in this OPERATOR'S MANUAL must be compulsorily replaced by the user or by the owner of the front loader before they become illegible upon request to the company **BONATTI CARICATORI S.r.l**
- No responsibility will be assigned to the manufacturer in case of damages due to an untimely replacement.
- If a plate, sticker or notice was partially illegible or even missing, the user is obliged not to use the front loader up to the application of the plate, sticker or notice.
- Punching mentioned in this manual must not absolutely be altered or made illegible.

2. ADRESSEES

This Instruction Manual is addressed to installers, operators/users and to qualified personnel entitled to the use and maintenance of the front loader.

The front loader is intended for agricultural, forestry and gardening use. The use of the front loader is reserved to qualified figures and skilled technicians in particular who:

- have reached the legal age;
- are physically and psychologically capable of performing activities of particular technical difficulty;
- have been instructed properly to the use and maintenance of the front loader;
- have been considered by the employer suitable to perform the task entrusted to them;
- are able to understand and interpret the operator's manual and the safety requirements;
- know emergency procedures and their implementation;
- have understood the operating procedures as defined by the manufacturer of the front loader.

The instructions, the documentation and the drawings contained in this manual are of confidential technical nature and of strict property of the manufacturer and, therefore, except for the purposes to which it was created, any reproduction in whole or in part of the content and/or of the format, must take place subject to the prior approval by the manufacturer.



The term SPECIALIZED/QUALIFIED PERSONNEL refers to personnel that on the basis of training and professional experience has been expressly authorized to carry out the installation, the use and the maintenance of the front loader.

3. PICTOGRAMS

In this manual three types of safety warning are used: DANGER, CAUTION and IMPORTANT. These warnings point out the relevant risk levels undergone by the personnel engaged in driving the tractor with the applied front loader.



DANGER

The symbol of danger is used to point out dangerous situations for the personnel. If this signal is ignored, it is possible to incur the danger of serious injuries that in some cases can also cause death.



CAUTION

The symbol caution is used to point out dangerous situations for the integrity and the efficiency of the front loader and, therefore, they can involve the security and safety of persons, as well.



IMPORTANT

The symbol important is used to draw the attention to important information that the involved personnel must know and keep in mind.

1. GENERAL INFORMATION

1. MANUFACTURER'S IDENTIFICATION DATA

MANUFACTURER	BONATTI CARICARORI SRL
REGISTERED AND ADMINISTRATIVE OFFICE	STRADA PROVINCIALE OVEST N. 36 – 46020 – PEGOGNAGA - MN
PHONE-NR.	+39 0376 558089
FAX-NR.	+39 0376 559890
EMAIL-ADDRESS	info@bonatticaricatori.it

2. CE MARKING OF THE FRONT LOADER

Each front loader is identified by means of a CE plate on which the reference data of the loader are indelibly recorded.

The identification plate is placed on the right side of the front loader.

The picture below is purely illustrative, the label will have the data concerning the machine purchased



Always quote these references in any communication with the manufacturer or with service centres.

3. DECLARATIONS

The front loader is produced in accordance with the relevant Community Directives applicable when placing it on the market. A declaration of conformity is issued together with the documentation of the loader as per the facsimile here below:



The undersigned BONATTI SILVANO, born in San Benedetto Po on 06/09/1949
resident in PEGOGNAGA (MN) in Strada Provinciale Ovest
Legal Representative of the Company BONATTI CARICATORI s.r.l.
based in PEGOGNAGA (MN) in Strada Provinciale Ovest, 36
manufacturer of the following machine:

Type:

FRONT LOADER

Trade name:

CF

Serial-Number:

.....

Equipped with the following accessories:

.....

Suitable to the agricultural tractor:

.....

Frame-Number:

.....

DECLARES:

at his sole personal responsibility, that it complies with the requirements of the machines
Directive 2006/42/CE by the European Parliament and Council dated 17/05/2006.

The technical files are kept at the Company Bonatti Caricatori srl with reference to Mrs. Bonatti Giorgia.

Pegognaga, on .. - .. -

The Legal Representative
Bonatti Silvano

PROHIBITION OF PUTTING INTO SERVICE

The front loader cannot be put into service after undergoing building alterations or addition of other components that do not fall within ordinary or extraordinary maintenance without a new declaration of compliance with the requirements of Directive 2006/42/CE and of applicable CE/UE directives.

Place, date
Pegognaga on .././....

The manufacturer
Bonatti Silvano

4. SAFETY RULES

The front loader was manufactured in compliance with the Technical Standards listed below.

<u>STANDARD</u>	<u>Title</u>
EN ISO 12100	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN ISO 4413	Oil-hydraulics — General rules and safety requirements for systems and relevant components
EN 12525	Agricultural machines — Front loaders — Safety

5. INFORMATION ABOUT TECHNICAL ASSISTANCE

- The front loader is covered by warranty, as provided for in the general sales conditions.
- If during the period of validity malfunctions or failures of parts of the **front loader** occur, provided that they fall under the cases indicated in the warranty, the manufacturer, after appropriate checks, will repair or replace the defective parts.
- Interventions for modifications carried out by the user, without the express written consent of the manufacturer, invalidate the warranty and release the manufacturer from all liability for any resulting damage caused by a defective product.
- Interventions for modifications carried out by the user on the safety devices with a degradation of their effectiveness, without the express written consent of the manufacturer, invalidate the warranty and release the manufacturer from all liability for any resulting damage caused by a defective product.
- The use of non-original spare parts or of parts different from the ones explicitly indicated by the manufacturer as "safety devices" invalidate the warranty and release the manufacturer from all liability for any resulting damage caused by a defective product.

We invite our customers to address to our After-Sales Service before effecting the above-mentioned interventions on the front loader.

Eventual defects clearly and visibly existing at the time of delivery of the product (aesthetic defects on visible parts, breakages, dents, operational defects, missing parts, etc.) must be immediately reported to the company.



The manufacturer is not liable for any defect that is not reported by the customer at the time of delivery.

2. SAFETY

1. GENERAL SAFETY RULES

The manufacturer has made any possible effort in designing the front loader to make it as SAFE as possible.

The front loader is fitted with all protections and safety devices considered necessary and it is accompanied by sufficient information so that it can be used in a safe and correct way.



CAUTION

IT IS ESSENTIAL TO OBSERVE THE FOLLOWING INDICATIONS CONCERNING THE USE OF THE AGRICULTURAL TRACTOR EQUIPPED WITH FRONT LOADER:

- DO NOT TRANSPORT PEOPLE ON BOARD OF THE TRACTOR, EXCEPT FOR THE TRACTORS ADAPTED AND TYPE-APPROVED FOR THE CARRIAGE OF A NUMBER OF PERSONS.
- Study and familiarize with the exit or leaving points of the tractor as an alternative to the usual ones.
- IT IS FORBIDDEN TO GET INTO OR OUT OF THE TRACTOR WHEN IT IS MOVING.
- Make sure that eventual people based in the surroundings are completely outside the range of operation of the tractor before starting it or operating the equipment. Use the horn. Respect all indications given by flags, trucks and signals.
- Let the tractor move at a sufficiently low speed to ensure the highest possibility of control in any event.
- It is always necessary to move slowly on grounds with marked roughness, on the slopes, in proximity to ravines or in obstructed areas as well as on icy or slippery ground.
- While operating in reverse, always watch in the direction towards which the tractor is moving. Pay attention to the presence of people: if anyone of them enters the maneuvering area, STOP THE TRACTOR.
- Always keep a safe distance to the other vehicles and obstacles to ensure the necessary conditions of visibility.
- Always maintain a clear vision of the whole maneuvering or operating surrounding area.
- The cab windows must always be efficient and clean.
- Pay close attention to soft grounds, in proximity of recently built walls: the filling materials and the weight of the tractor could cause the fall of the wall.
- NEVER USE THE TRACTOR FITTED WITH FRONT COUNTERWEIGHTS IF THEY HAVE BEEN REMOVED.
- Observe the instruments at the beginning and frequently during the operations: if the brakes manometer signals a lower pressure than the minimum operating one, stop the tractor immediately.
- Do not use the terminal tool of the loader to lift or carry people.
- Do not use the loader as working platform or as scaffold nor for other unorthodox usages.
- Pay attention to the presence of people in the range of operation of the loader.
- Whenever it is possible, load the trucks from the driver's side.
- Always examine the operating area looking for eventual risk conditions. Here are some examples: slopes, protruding areas, trees, demolished constructions, fires, high scarps, ravines, cliffs, uneven ground, pits, peaks, crests, digs, heavy traffic, crowded parking and service areas, closed places. If similar conditions exist, proceed with extreme caution.
- Possibly, avoid to move transversely to slopes. Proceed upright-hill (from above to below and vice versa) in case the tractor slips laterally uphill, steer immediately directing the front part downwards.
- While working on slopes, there is no rule that can replace the operator's experience and common sense.
- Keep head, body, limbs, hands, feet away from the boom of the loader or from terminal tools in lifted position.
- ALWAYS REMOVE THE IGNITION KEY OF THE TRACTOR BEFORE EFFECTING ANY INTERVENTION ON THE FRONT LOADER (cleaning, repairs and maintenance).
- ALWAYS REMOVE THE IGNITION KEY OF THE TRACTOR WHEN IT HAS TO BE LEFT IN A PARKING AREA OR AT REST IN ORDER TO AVOID ACCIDENTAL OR UNAUTHORIZED STARTS.



IMPORTANT

THE MANUFACTURER IS RELIEVED OF ALL RESPONSIBILITIES DERIVING FROM DAMAGES CAUSED BY THE LOADER TO PERSONS, THINGS OR ANIMALS IN CASE OF:

- use of the front loader by not properly trained personnel;
- misuse of the front loader;
- defects of electrical, hydraulic or pneumatic supply due to the user's negligence;
- incorrect installation;
- lacks of planned maintenance;
- unauthorized modifications or interventions;
- use of non-original or non-specific spare parts for the model;
- total or partial failure to comply with the instructions;
- use contrary to the specific national rules;
- calamities and exceptional occurrences.

2. WARNINGS

The front loader is destined to the installation on agricultural tractors; before carrying out the installation, make sure that the tractor has sufficient characteristics and read carefully the section "INSTALLATION MODALITIES".



IMPORTANT DO NOT INSTALL THE LOADER ON NOT ADAPTED TRACTORS.



IMPORTANT OPERATING IN COMPLETE SAFETY REQUIRES A QUALIFIED OPERATOR.

A QUALIFIED OPERATOR MUST DO AS FOLLOWS:



IMPORTANT a) UNDERSTAND WRITTEN INSTRUCTIONS, LAWS AND RULES.

- The instructions written by the company BONATTI include the delivery report, the operator's manual and the warnings on the front loader (decals).
- Check the laws and regulations on site. The laws can provide special safety requirements for the employer.



IMPORTANT b) HAVE A REAL TRAINING ON DRIVING MANOEUVRES.

- The operator's training must consist in verbal demonstration and instruction. This instruction is provided by the Company BONATTI or, as an alternative, by the installer before the delivery of the front loader.
- The new operator must start in an area without people around and must use all the control devices until being able to drive the tractor with the loader applied to it, by using it in full autonomy and according to the instructions concerning the area of operations. Always wear protective clothing: HELMET, GLOVES AND SAFETY SHOES.



IMPORTANT c) KNOW CONDITIONS OF USE.

- For each material to be handled the operator must know how to avoid the exceeding of the operating nominal capacity of the loader with applied tool. For instance, while handling a given loose material by means of a particular terminal tool, the operator must know with certainty if he can fill the tool completely or only partially.
- The operator must know all the forbidden uses of the front loader and of the areas of operation. For example, he must know the excessive slopes of the scarps and the position of eventual underground pipelines and/or electrical power lines.
- Do not wear low-cut dresses. Always wear safety glasses when carrying out maintenance or repairing the loader. In certain operations it is required to wear safety glasses, ear protective devices or kits for special application. Please, address to DEALERS OF SAFETY EQUIPMENTS.

In order to be a **qualified operator** he must not consume drugs or alcoholic drinks that modify his quickness and coordination while working. An operator who makes use of prescribed drugs must have a medical certificate attesting to the capacity to drive or not to drive a tractor with front loader in complete safety.

3. INTENDED USE

The front loader model MP for agricultural tractors or for small garden tractors is designed to carry out works in farms or maintenance of green areas such as golf courses, parks, gardens. The loader is equipped with a quick-release device from the tractor by removing 2 pins and the hydraulic hoses through quick couplings or upon request of a multi-connection plate. The mechanic parallelogram always maintains the terminal tool leveled to the ground avoiding useless correction for the operator and preventing the load from tipping over the operator. The supporting frame is fastened to the fittings of the tractor. The front loader can work with the distributor supplied by us or with the original distributor of the tractor as option: single lever control, multi-connection plate, single lever with button for third function with electro-valve. The loader can be equipped with a quick-release device of the terminal tools which makes the replacement of the following tools quicker: earth-bucket, bucket for light materials, bale fork, manure fork, pallet fork, trunk fork and snow blades, all of them exclusively with brand BONATTI CARICATORI S.r.l.

4. CONTRAINDICATIONS TO USE



CAUTION

THE FRONT LOADER MUST NOT BE USED:

- for uses other than the ones established by the manufacturer or not mentioned or different from the ones in this manual;
- in explosive (ATEX unenforceability) or corrosive atmosphere or with high concentration of dusts or oily substances in suspension in the air;
- in atmosphere at risk of fire;
- in corrosive atmosphere;
- in atmosphere with dusts dangerous for the operator's health;
- in closed places;
- with electric bridges and/or mechanical means that exclude utilities/parts of front loader itself.

5. SAFETY DEVICES

The following safety devices are installed on the front loader:

- manual sectioning lever of the hydraulic fluid to the loader, for on-road circulation.

6. RESIDUAL RISKS

It is necessary to pay attention to the following residual risks that are existing when using the front loader and that cannot be eliminated.



CAUTION: DANGEROUS MOVEMENTS

No persons other than the operator must stand around the tractor equipped with front loader. In case of presence of third parties, stop all movements immediately and oblige them to move away.



CAUTION: DEVICES FOR INDIVIDUAL PROTECTION

Before proceeding with maintenance or adjustment operations, the operator must have and from time to time use the devices for individual protection as required by safety regulations and suitable to the type of maintenance to carry out as gloves, glasses, helmet, non-slip shoes, etc.



CAUTION: REMOVED PROTECTIONS

If protections are removed - for instance to carry out maintenance interventions - do not start the tractor for any reason before all protections are repositioned and fastened correctly.

6.1 SAFETY DISTANCE FROM POWER LINES



DANGER

Always maintain an adequate safety distance when electric lines pass within the operation range of the loader. This applies in particular to overhead lines that have not been disconnected by specialists or anyway to lines the conditions of which are not known.

VOLTAGE	MINIMUM DISTANCE (metres)
Up to 1000 V	1
Over 1 KV up to 110 KV	3
Over 110 KV up to 220 KV	4
Over 220 KV up to 380 KV	5



DANGER

Maintain an adequate safety distance from electric lines. Comply with specific national rules. If you do not know the nominal voltage, always maintain a minimum distance of 5 metres.

6.2 SAFETY DISTANCE FROM SCARPS AND DITCHES



DANGER

Place the front loader at an adequate safety distance from scarps or ditches. In case of not propped scarps or ditches, the distance also depends on the type of the ground.

Rule of thumb:

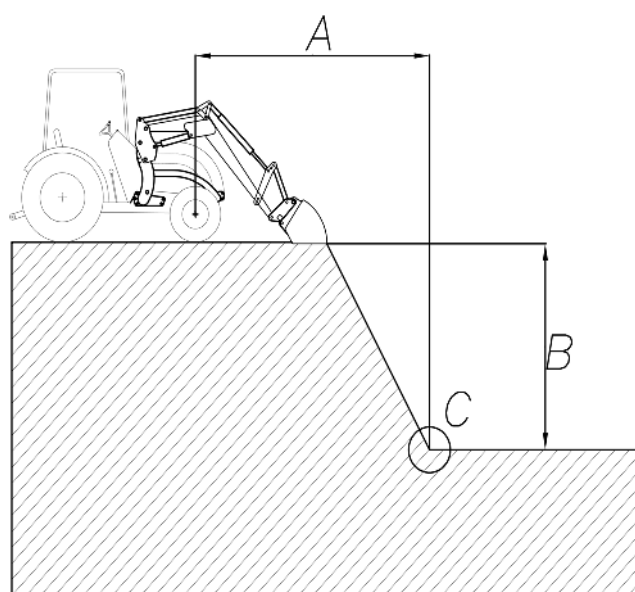
- In case of unstable ground or backfill, the safety distance (A) must be double the depth of the ditch (B).

$$A=2 \times B$$

- In case of compacted and not unstable ground, the safety distance (A) must be the same as the depth of the ditch (B).

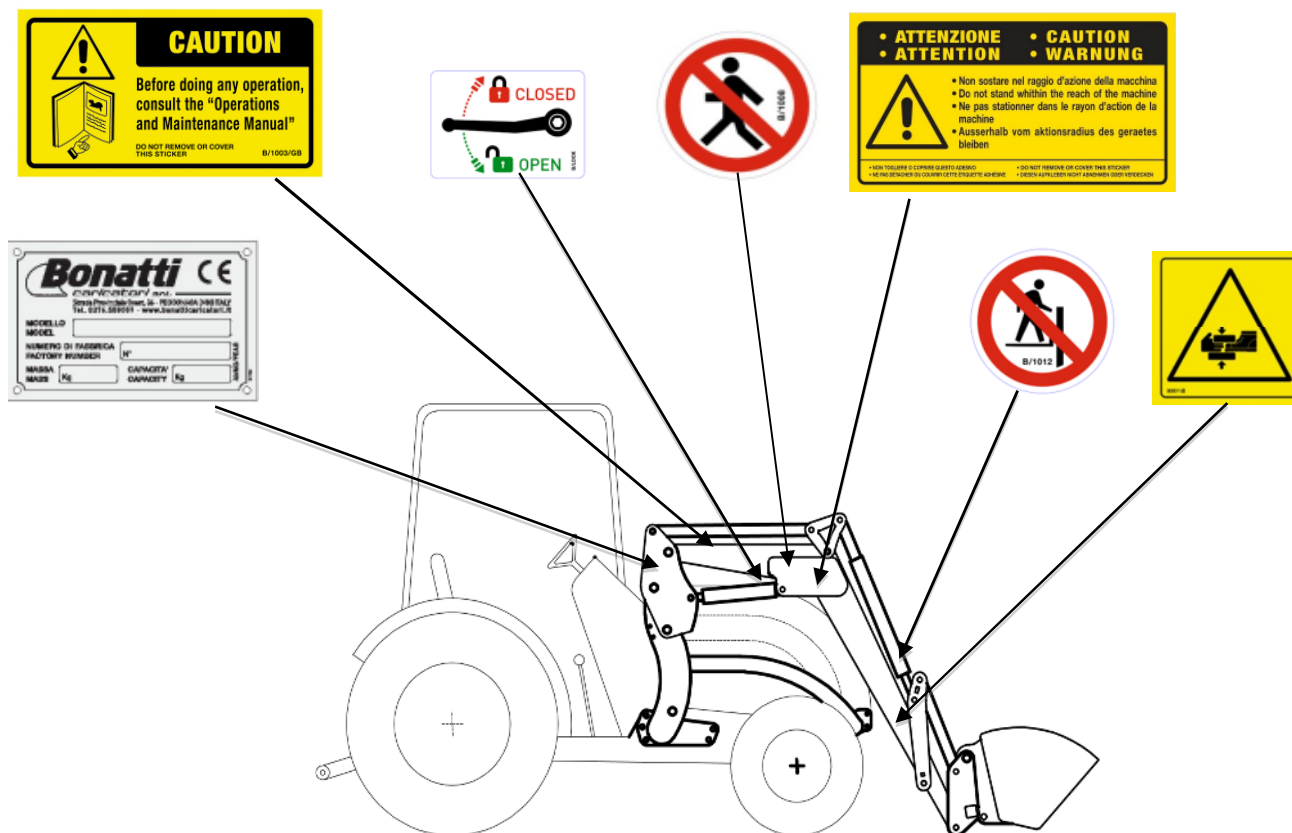
$$A=1 \times B$$

The safety distance must be measured from the base of the ditch (C).

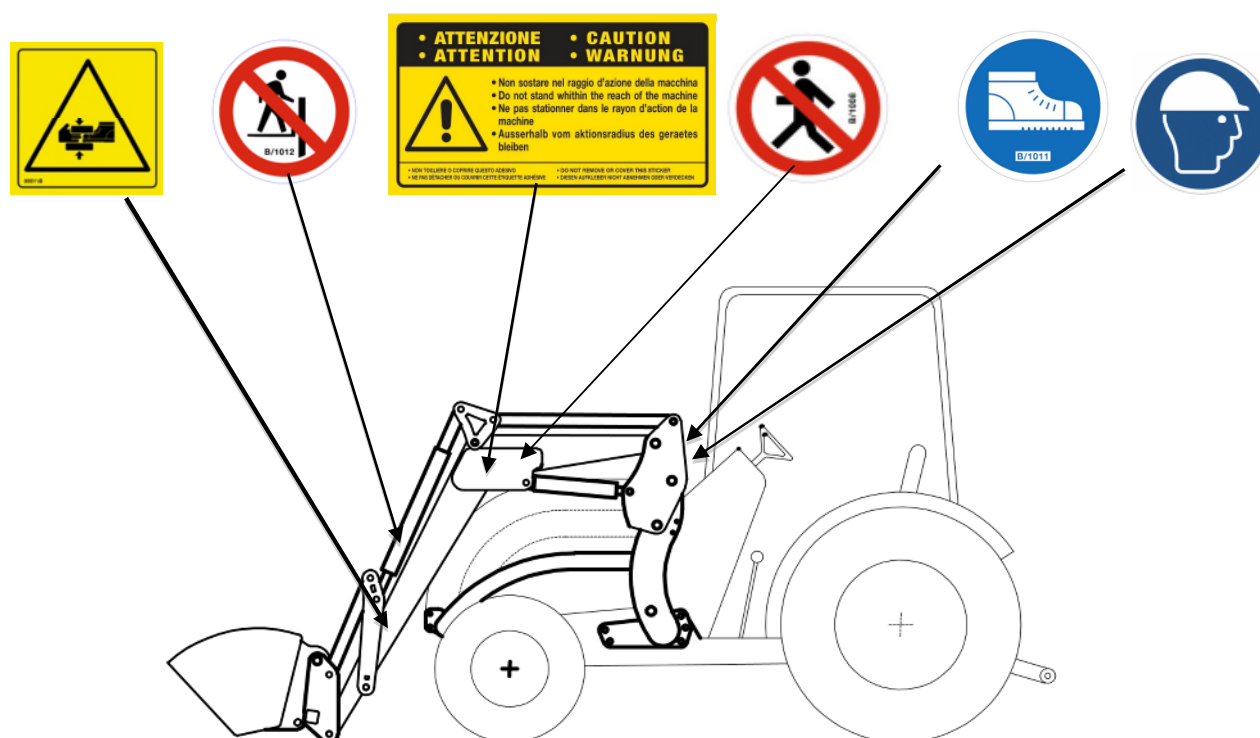


7 SIGNALIZATION

7.1 POSITIONING OF SERIAL NUMBER AND OF SAFETY SIGNAGE ON THE RIGHT SIDE OF THE LOADER



7.2 POSITIONING OF SAFETY SIGNAGE ON THE LEFT SIDE OF THE FRONT LOADER



3. INSTALLATION

1. INSTALLATION MODALITIES ON TRACTOR FRAME



CAUTION For each single tractor it is necessary to read the relevant assembling instructions to the manufacturing company.

2. INSTRUCTIONS FOR ASSEMBLING AND DISASSEMBLING OF THE LOADER TO THE TRACTOR



CAUTION It is important to comply with the below-mentioned instructions in order to avoid causing serious damages to things or persons and injuries or death of the operator.

2.1 ASSEMBLING OF THE LOADER TO THE TRACTOR

- Make sure that the loader is placed on the ground on even and stable soil.
- Remove the coupling pins from the boom support.
- Let the tractor approach slowly towards the loader up to the positioning of the couplings of the frame to the boom support.
- Apply the parking brake.
- Turn off the tractor engine.
- Move the lever of hydraulic controls in its four positions for a number of times to unload the hydraulic pressure.
- Get off the tractor.
- Hitch the quick couplers.
- Get on the tractor and start it.
- Operate the lever for tools by opening it so that the loader comes down towards the coupling seat.
- After having hitched the upper part, lift the loader from the soil for some centimetres.
- Apply the parking brake.
- Turn off the tractor engine.
- Insert the two coupling pins of the boom support into the corresponding seat with the relevant safety pins.
- Lock the support leg in the corresponding seat.
- The loader is ready for use.

2.2 DISASSEMBLING OF THE LOADER FROM THE TRACTOR

- Place the loader on the ground on even and stable soil by means of a tool in parallel to the soil (in case of use of a bale fork, keep the points closed and vertically to the ground).
- Apply the parking brake.
- Put the feet of the loader on the ground.
- Remove the coupling pins from the support boom.
- Move forwards the operating lever of the loader (as when the loader is lowered) up to the complete lockup of the cylinders.
- Close the tool slowly by means of the specific lever, by checking that the loader is disengaged from the seat of the supporting frames positioned on the tractor.
- Turn off the tractor engine.
- Move the lever of the hydraulic controls in its four positions for a number of times to unload the hydraulic pressure.
- Disengage the hydraulic hoses from the quick couplings placed on the coupling box (hydraulic distributor).
- Start the tractor engine and engage reverse gear by moving away from the loader slowly and without steering.

3. TESTS FREE OF LOAD



IMPORTANT Before effecting operations under load, carry out at least a test free of load in order to verify the absence of anomalies.

4. TESTS UNDER LOAD



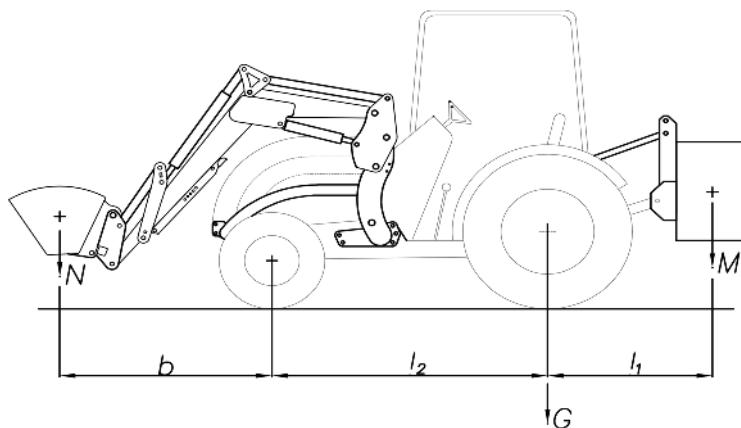
IMPORTANT Carry out at least a test under load in order to verify the absence of anomalies.

5. APPLICATION OF REAR BALLASTS FOR THE SAFE USE OF THE FRONT LOADER



ALWAYS REFER TO THE DATA QUOTED IN THE TECHNICAL ANNEX OF THE TRACTOR - A DOCUMENT THAT ACCOMPANIES THE REGISTRATION CERTIFICATE OF THE SAME - AND WHICH ARE MOREOVER INDICATED IN THE SPECIFIC PLATE APPLIED TO THE TRACTOR ITSELF. IN CASE OF DOUBTS OR MISUNDERSTANDINGS ABOUT THE USE OF THE BALLAST, ADDRESS TO THE TECHNICAL SERVICE OF THE MANUFACTURING COMPANY OF THE TRACTOR.

CALCULATION OF STATIC STABILITY:



IMPORTANT The conditions for a safe use of the front loader applied on an agricultural tractor must conform to the following points:

1)

Use without ballast

When the use of the ballast is not admissible, the static stability can be kept by adding some weights on the rear wheels or a liquid ballast in the tyres, so that:

$$\frac{G \times l_2 - N \times b}{l_2} \geq \frac{P + N}{5}$$

2)

Installation of a ballast

The required mass and the position of the ballast can be determined through a calculation of static stability by including a minimum requirement considering the dynamic effects on the stability of the combination tractor/front loader.

It is strictly recommendable that the rear axle of the tractor is loaded not less than 20% of the gross weight (tractor, loader, tool, ballast and load) in static conditions. It is required to have 20% of the rear load on the axle to ensure the existence of an adequate drive and braking when the combination tractor/front loader is in use.

The stability of the combination is ensured (see picture B.1) when:

$$\frac{G \times l_2 + M (l_1 + l_2) - N \times b}{l_2} \geq \frac{P + N + M}{5} \quad \text{namely 20\%}$$

where:

P is the mass in kilograms of the tractor, with the lift arms and the device for the assembly of the adapted tools but without any ballast;

M is the mass in kilograms of the rear ballast;

N is the mass in kilograms of the tool including the maximum admissible load;

Note The maximum admissible load is the maximum load which the hydraulic system can lift or the maximum load that can be lifted safely. This can be limited by the shape or the density of the load. If it is necessary to use several and different tools with a combination tractor/front loader, the calculation of the static stability should be based on the worst case.

G is the load on the axle, in kilograms, of the rear axle, without rear ballast but with assembled lift arms and with the device for the assembly of the tools in the most distant position;

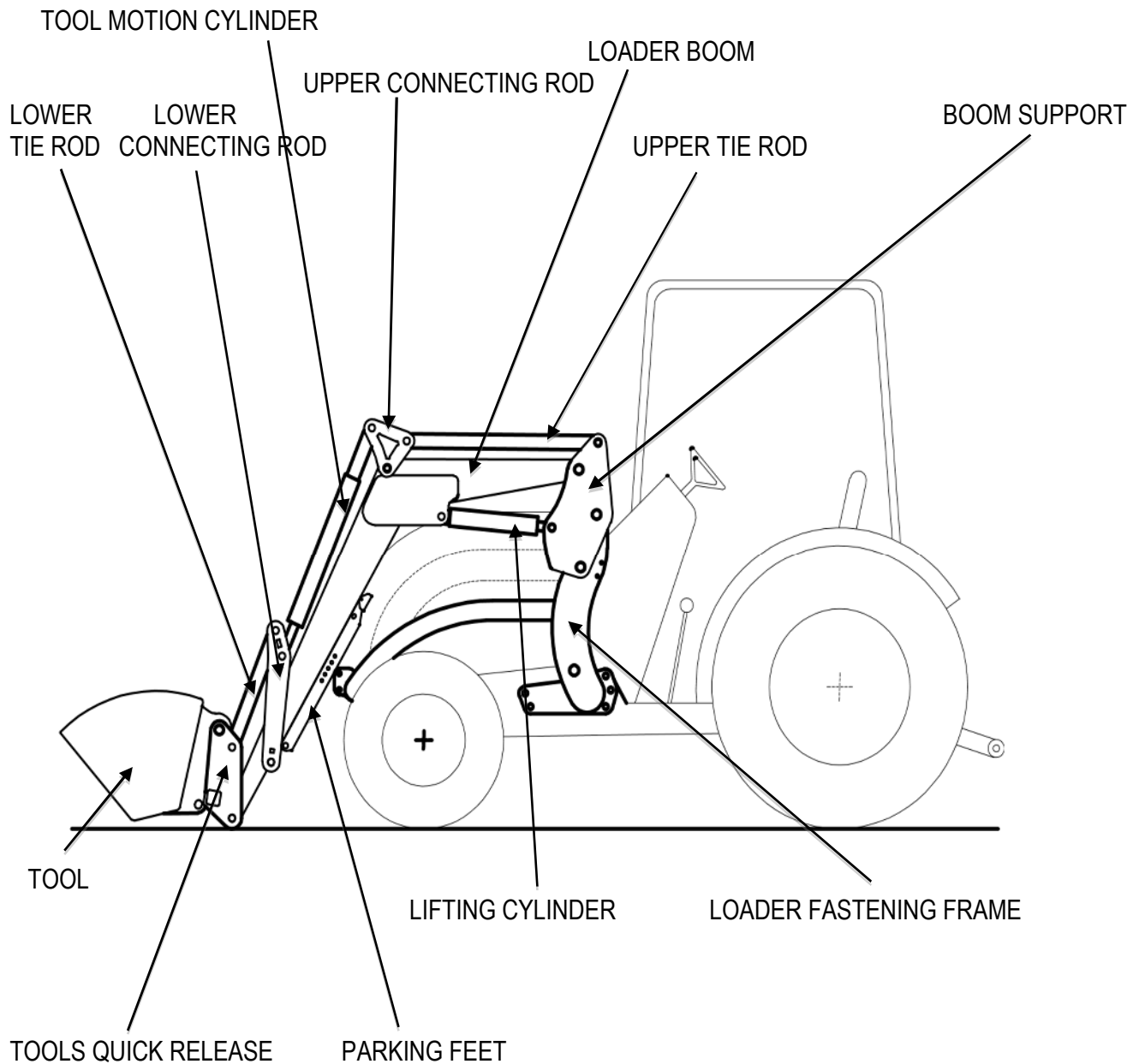
b is the horizontal distance between the centre of gravity of the most loaded tool (N), when it is in the position of highest reachable distance, and the axle of the front axle, in millimeters;

l_1 is the horizontal distance between the centre of gravity of the rear ballast and the axle of the rear axle, in millimeters;

l_2 is the axle spacing of the tractor, in millimeters.

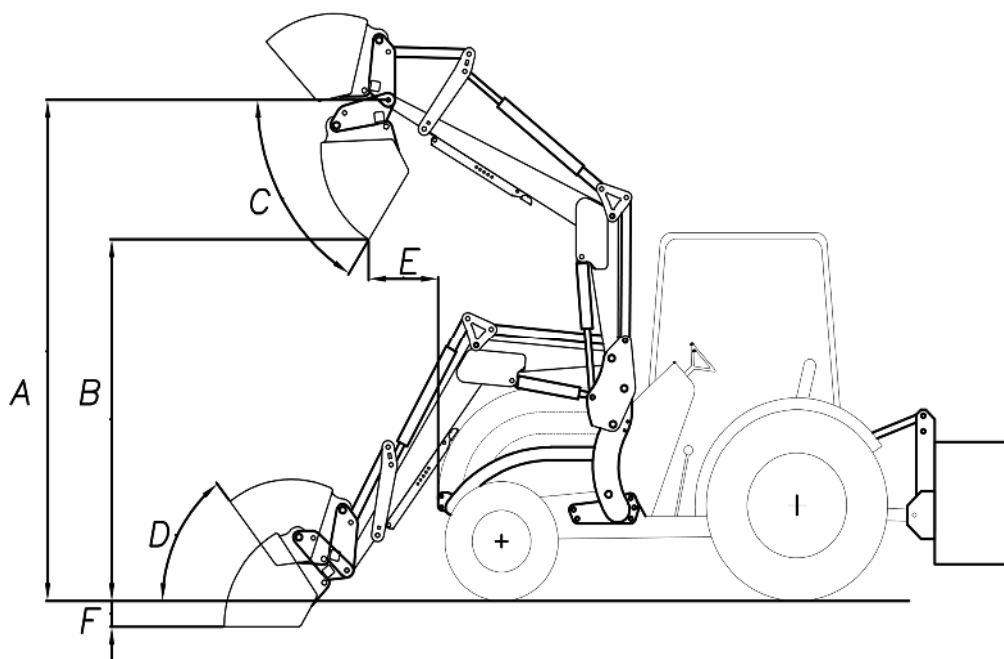
4. DESCRIPTION OF THE FRONT LOADER

1. NOMENCLATURE OF COMPONENTS



2. TECHNICAL DATA

2.1. DATA OF CF FRONT LOADER FOR AGRICULTURAL AND FORESTRY WHEELED TRACTORS



CAUTION THE FRONT LOADER MUST BE INSTALLED ON COMMERCIAL TRACTORS HAVING THE FEATURES INDICATED AT ITEM **P TRACTOR POWER Hp** OF THE TABLE HERE BELOW

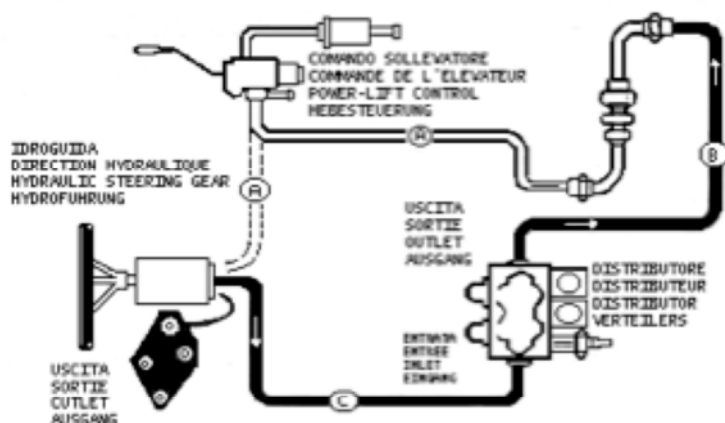
	Model	CF1	CF2	CF3	CF3/S	CF4
P	Tractor power Hp	40/65	60/90	80/120	110/160	150/210
A	Max. lifting height at articulation point in mm	3350	3700	3900	4150	4400
B	Distance from soil with overturned bucket in mm	2550	2900	3100	3350	3600
C	Bucket opening angle	30°	30°	30°	30°	30°
D	Bucket closing angle	40°	40°	45°	45°	45°
E	Distance between unloading bucket and tractor front part measured flush with bonnet in mm	100	150	200	300	500
F	Digging depth in mm	100	100	100	100	150

2.2. LOAD OF CF FRONT LOADER

	Model	CF1	CF2	CF3	CF3/S	CF4
	Max. load at max. height in Kg	800	1200	1600	1800	2200

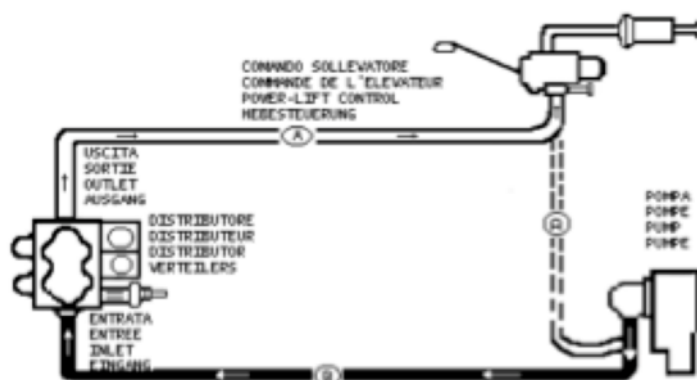
3. HYDRAULIC CONNECTIONS

3.1 CONNECTION OF HYDRAULIC CONTROLS OF THE LOADER ON TRACTOR WITH HYDRAULIC DRIVE



- On the outlet connection of the hydraulic steering gear, detach hose A to the power-lift control and connect it to hose B, supplied by us, that starts from the distributor outlet. Connect instead hose C, supplied by us, that starts from distributor inlet (the inlet is near the pressure control valve) to the outlet of the hydraulic steering gear.

3.2 CONNECTION OF HYDRAULIC CONTROLS OF THE LOADER ON TRACTOR WITH MECHANIC DRIVE



- Detach from the oil pump hose A to the lifter and connect it to the outlet of the distributor. Connect instead hose B, supplied by us, that starts from the distributor inlet (the inlet is near the pressure control valve) to the pump connection which was previously detached.



CAUTION

For each single tractor it is necessary to ask the relevant assembly instructions to the manufacturing company.

5. USE OF THE FRONT LOADER

1. PREPARATION FOR DRIVING

Read the operator's and maintenance manual before operating the loader.



CAUTION Before operating the tractor with applied front loader the operator must have been instructed. Untrained operators can cause injuries or death.

2. DAILY OPERATIONS



CAUTION Before starting operations:

- Check the integrity of the hydraulic hoses;
- General check of hydraulic leaks;
- General check of the conditions of carpentry parts for rust or eventual failures;
- Check the integrity of instruction labels;
- Check the integrity of control indications;
- Check the correct return to zero of control levers;
- Check the presence of locking pins on the fastening frame and on the tool;
- Check hydraulic oil liquid level of the tractor.

3. CONTROL PANEL

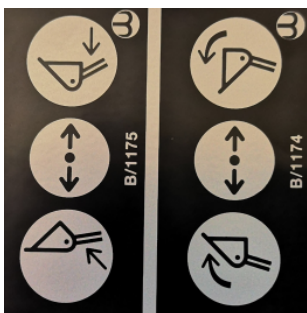


Before starting operations make sure to have the full visibility of the operation area.
In case of night time work, make sure that the lighting is sufficient.

The plates here below are supplied with and they must be applied near the loader controls.



INSTRUCTIONS FOR OPERATION WITH SINGLE LEVER (JOYSTICK)



INSTRUCTIONS FOR LOADER OPERATION WITH DOUBLE LEVER

4. USE OF THE FRONT LOADER



CAUTION

Before work: signal the operation area with appropriate signs.

During work: always keep under control the operation area and prevent people from approaching.



DANGER

DO NOT LOAD ANY MATERIALS IN PROXIMITY OF UNDERGROUND ELECTRIC LINES.



CAUTION

a) Never use bucket, forks or other accessory tools designed for the loader if they have not been approved by the Company **Bonatti Caricatori S.r.l** for each loader model manufactured by it.

b) The use of accessory tools on loaders **not approved** by **Bonatti Caricatori S.r.l** relieve the same from any responsibility in case of injury or death.



CAUTION THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY CONSEQUENCES DERIVING FROM THE NON-COMPLIANCE WITH THE ABOVE-MENTIONED POINTS a) b).



DANGER

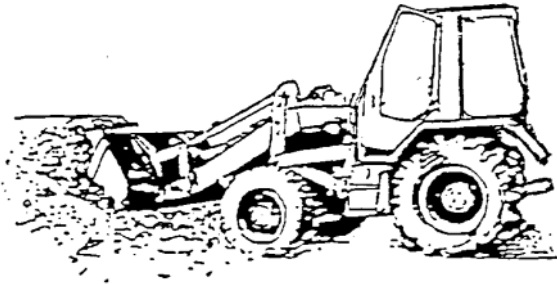
- Load and unload on a flat ground.
- Do not exceed operational capacity.
- Failure to observe warnings can cause the overturning and roll-over of the tractor and can cause injuries or death.
- Never unload over an obstacle which could get into the operator's cab. The tractor could move forward and cause injuries or death.



CAUTION

When the operator is about to work for the first time with the front loader, he must become familiar with the use of the bucket. Therefore he will have to gain preliminary experience by following all operations which the tools can carry out in order to develop a certain "sensitivity" to controls and to the reactions resulting from them. Please, remember that when the levers are in the neutral position, the tool becomes integral with the tractor (namely solidly integral): this means that it will follow any movement of the tractor.

5. FILLING OF THE BUCKET



For filling operations from loose piles, place the bucket so that the cutting edge is parallel to the soil.

Let the bucket return ahead of time to avoid wastes of power caused by the sliding of the rear part only of the bucket with unsuccessful or scarce penetration of the material.

The removal of the material from a scarp must take place in layers. To obtain a better performance of the tractor, it is good that the layers do not have an excessive thickness.



6. TEARING WORK

It is good practice to dedicate some minutes to the observance and assessment of the work to be carried out. If the surface layer is deep, it will be good to proceed by digging one part at a time. The depth of each digging will be determined according to the nature of the soil.



-Start digging by rotating the bucket (without teeth) downwards at a sufficient angle to grant the penetration of the cutting edge; this angle varies according to the nature and the toughness of the soil to be dug.

-Move forward with the tractor after having placed the control lever in the neutral position.

-If the penetration turns out to be difficult, reduce the penetration angle.

-The digging depth must always be such as to enable the tractor to work easily.

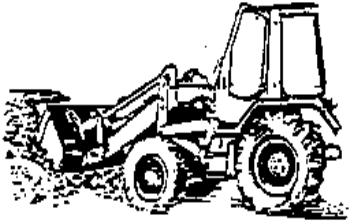
-Try to keep in any case the tractor on the flat or downhill so that the weight of the tractor is added up to the thrust of the bucket.

When the bucket has been filled, let it move completely backwards while it is still positioned in the advancing phase.

During transfers towards the unloading point, the bucket must be kept at approximately 30 cm from the ground.

7. DIGGING OF MATERIALS

When digging in very hard and resistant soils, the bucket must be fitted with teeth.



For the filling, let the bucket return completely, thus by taking advantage of the maximum stability.

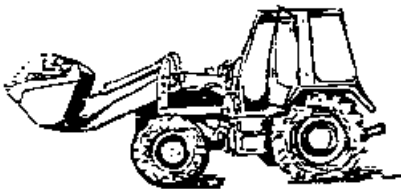
8. LEVELLING

Rotate the bucket slightly forwards by placing the cutting edge at a penetration angle of small entity. Fill the depressions before proceeding with the leveling.



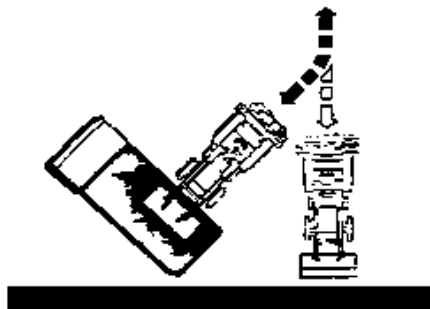
9. MOTION OF THE TRACTOR WITH FULL BUCKET

To move the material from the loading area, the bucket must be kept in a low position (20-30 cm. from the ground); this way the losses of material are reduced, maneuvering visibility is possible and, above all, a good stability of the tractor is assured even on sloping grounds.



10. LOADING OF THE MATERIAL ON TRUCKS

For the loading of the material on trucks, it is good practice for the tractor to travel for a journey as much short as possible. In any case it will be up to the operator to decide which position and which method will result as the most efficient ones for the typology of work to be carried out, also in consideration of his own experience. An example of an eventual position of the tractor is shown here below.



11. ON-ROAD CIRCULATION



IMPORTANT On-road circulation is subject to laws and regulations in force in the country where the front loader is used.

The manufacturer of the front loader is not responsible for any consequences deriving from the non-observance of the rules of the road.

11.1. PROVISIONS FOR ON-ROAD CIRCULATION:



CAUTION

- Orange rotating light in use;
- Do not circulate on the road with loaded terminal tool;
- Boom lifted at cm 40 from the ground with hydraulic valve (positioned on the right lifting cylinder) in “CLOSED” position;
- Engage the specific lock of the actuation levers of the loader;
- Protection of the front part of the cutting edge of the tool shall be equipped with white and red stripes as for signaling of overall dimensions;



CAUTION

The non-use of the locking devices can cause serious damages to things and persons.

12. REST PERIOD OF THE FRONT LOADER AFTER WORK



CAUTION Soon after getting out, in order to avoid injuries or death, before leaving the operator's seat, lower the booms of the loader and place the equipment on the flat on the ground. Stop the tractor engine and engage the parking brake.



CAUTION AT THE END OF WORK, before leaving the tractor, make sure that the tool is firmly lowered to the ground.



CAUTION Always remove the ignition key from the tractor.

13. INSTRUCTIONS FOR ASSEMBLING AND DISASSEMBLING OF TERMINAL TOOLS



CAUTION

- Place slowly the tool to the ground so that it does not overturn after the pins have been extracted;
- Extract the locking pins;
- Extract the four side pins of the tool or, in case the tractor is fitted with quick release, act on the lever.



DANGER Use plastic hammers to avoid dangerous slivers. Wear glasses, helmet and gloves.



DANGER

Do not stand in the area of possible fall of the tool: **DANGER OF SQUASHING**

14. TERMINAL ACCESSORIES OF THE LOADER

The following accessories can be installed on the front loader:

- Quick release of terminal tools
- Bucket with variable width
- Bucket for cereals
- Fork for round bales
- Fork for pallets
- Manure fork with variable width
- Manure fork with variable width and screwed points
- Manure fork with hydraulic grapple with variable length
- Pallet fork with hydraulic side-shift system
- Fork for trunks
- Fork for trunks with hydraulic grapple

The accessories supplied by the company Bonatti Caricatori are **CE**-marked and have to be requested according to the dimensions of the tractor.

15. INSTRUCTIONS FOR STORAGE



CAUTION In case of prolonged inactivity:

- Wash the tool carefully;
- Lubricate all unpainted parts;
- Lubricate all lubricators;
- Store in a dry location.

6. MAINTENANCE OF THE LOADER



CAUTION Regularly drain the hydraulic circuit of the loader, change the filters according to the manufacturer's provisions. These are essential operations to be carried out to avoid the wear of all hydraulic parts (pump, distributors, cylinders).



CAUTION Carry out the maintenance operations of the loader by detaching it from the tractor.

1. LUBRICATION

1.1. INDIPENDENT HYDRAULIC SYSTEM

		WORKING HOURS
Intake oil filter		500
Outlet oil filter		500
Hydraulic oil		500

OIL TANK CAPACITY: 20 l

HYDRAULIC OIL TYPE: ISO VG 46

1.2. HYDRAULIC SYSTEM COMBINED WITH THE TRACTOR

Intake oil filter:

refer to the maintenance manual of the tractor

Outlet oil filter:

refer to the maintenance manual of the tractor

Hydraulic oil:

refer to the maintenance manual of the tractor

TRACTOR OIL TANK CAPACITY:

refer to the maintenance manual of the tractor

HYDRAULIC OIL TYPE:

refer to the maintenance manual of the tractor

1.3. GREASING

ELEMENT		WORKING HOURS
Lubricator		10



CAUTION

- Avoid release of the oil to the environment
- Provide all necessary equipment to oil change (minimum capacity of the container: 50l)
- Wear all protective elements
- Place the collecting container under the cap positioned down on the left of the tank
- Unscrew the cap by means of the appropriate wrench
- Make sure that the oil has been completely drained
- Replace the cap seal with a new one
- Retighten the cap
- Fill the tank to its maximum level

2. MAIN FAILURES

MAIN FAILURES	CAUSE	REMEDY
Controls do not respond	<ul style="list-style-type: none">- Power take-off is not engaged- Hydraulic pump is damaged- Lack of oil	<ul style="list-style-type: none">- Engage the PTO- Replace the pump- Add oil
The boom and/or the tool move without activating of the controls	<ul style="list-style-type: none">- Worn cylinder seal	<ul style="list-style-type: none">- Replace the seal
Overheating	<ul style="list-style-type: none">- Dirty filter- Squashed hoses	<ul style="list-style-type: none">- Replace the filter- Check and replace
Leak from the junction	<ul style="list-style-type: none">- Loose junction	<ul style="list-style-type: none">- Tighten the junction
Low lifting force	<ul style="list-style-type: none">- Insufficient hydraulic pressure	<ul style="list-style-type: none">- Check tractor hydraulic system
Hydraulic levers difficult to be moved	<ul style="list-style-type: none">- Hoses do not move properly	<ul style="list-style-type: none">- Check the hoses and make sure that they are free to effect their movement- Oil the hoses- Replace the hoses if worn
The loader and the tool are very slow in their movement or do not move	<ul style="list-style-type: none">- Insufficient oil inside the system- Hydraulic couplings fixed in an incorrect way- Defective hydraulic couplings- Very slow oil flow	<ul style="list-style-type: none">- Check oil level and, if necessary, add oil- Check and correct couplings setting- Replace hydraulic couplings- Check tractor hydraulic system
The loader or the tool work in opposite direction to the movement foreseen by control levers	<ul style="list-style-type: none">- Hydraulic connection was not effected in a correct way- Hoses not fitted correctly	<ul style="list-style-type: none">- Check hydraulic connections- Check the hoses
The loader is very slow or the lifting is absent	<ul style="list-style-type: none">- Insufficient hydraulic oil- Excessive load- Defective hydraulic couplings- Defective cylinders- Incorrect pressure provided by the distributor	<ul style="list-style-type: none">- Check oil level and, if necessary, add oil- Decrease the load- Check the couplings- Check or replace the cylinders- Check the distributor

7. SERVICE AND SPARE PARTS

1. SERVICE

The manufacturer remains always at disposal for any type of information concerning the installation, the use and the maintenance of the front loader.

It is advisable for the customer to ask questions in clear terms, with references to this manual and to the instructions contained in it.

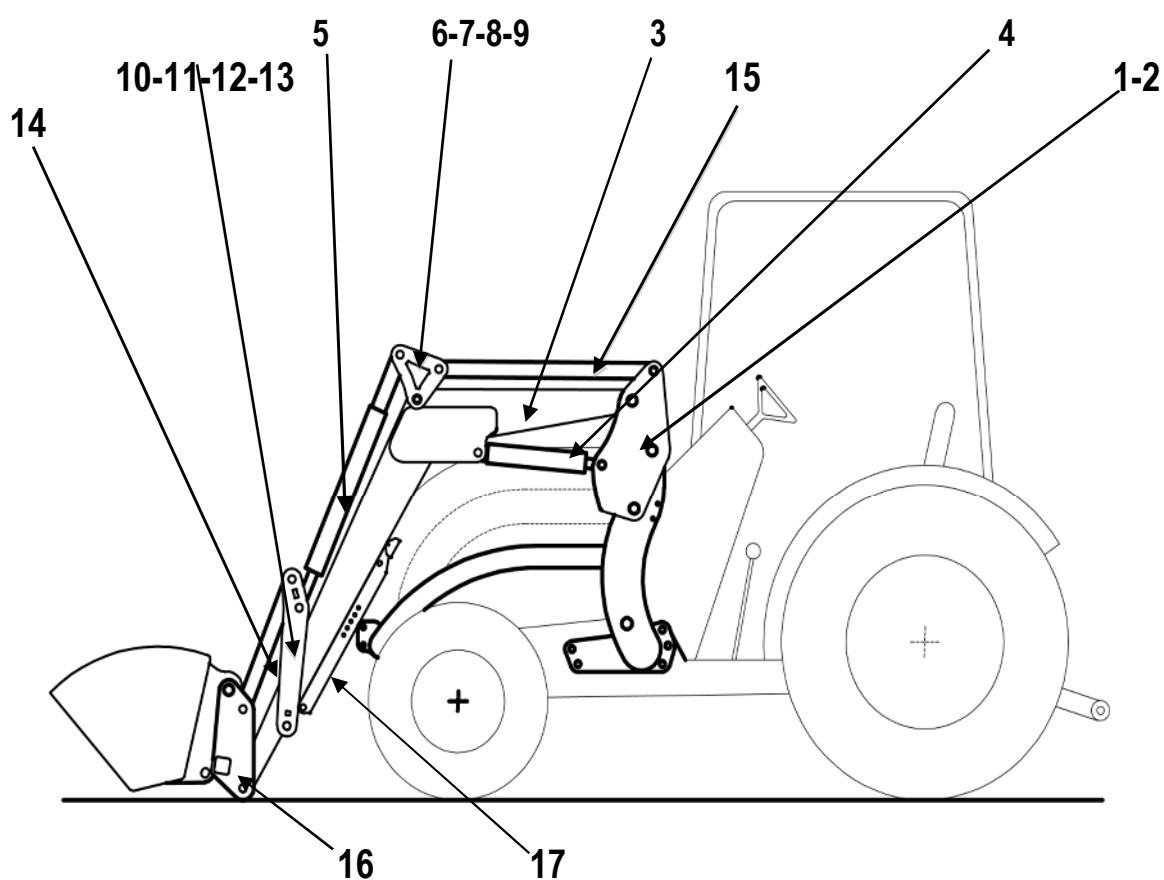
2. SPARE PARTS



**ALWAYS USE ORIGINAL SPARE PARTS.
FOR ANY SPARE PART, CONTACT THE MANUFACTURER.**

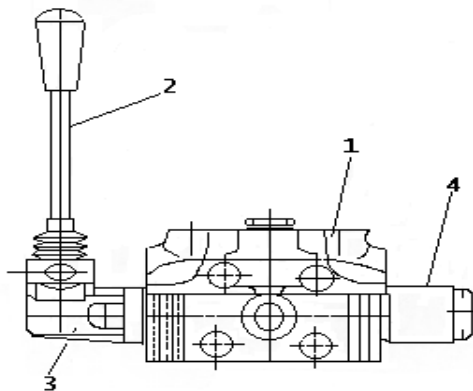
2.1 TABLE OF SPARE PARTS - GROUPS OF THE FRONT LOADER

Request spare parts by making reference to the **MODEL AND SERIAL NUMBER** of your front loader that you can find stamped in the plate applied to the support.



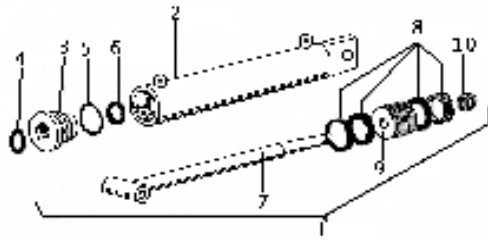
REF.	DESCRIPTION	PART-NR.					Q.ty
		CF1	CF2	CF3	CF3/S	CF4	
1	Right boom support	C/1000	C/1001	C/1002	C/1003	C/1004	1
2	Left boom support	C/1005	C/1006	C/1007	C/1008	C/1009	1
3	Boom	C/1010	C/1011	C/1012	C/1013	C/1014	1
4	Lifting cylinder	C/1015	C/1016	C/1017	C/1018	C/1019	2
5	Overturn cylinder	C/1020	C/1021	C/1022	C/1023	C/1024	2
6	Right external upper connecting rod	C/1025	C/1025	C/1025	C/1025	C/1025	1
7	Right internal upper connecting rod	C/1026	C/1026	C/1026	C/1026	C/1026	1
8	Left internal upper connecting rod	C/1027	C/1027	C/1027	C/1027	C/1027	1
9	Left external upper connecting rod	C/1028	C/1028	C/1028	C/1028	C/1028	1
10	Right external lower connecting rod	C/1029	C/1029	C/1029	C/1029	C/1029	1
11	Right internal lower connecting rod	C/1030	C/1030	C/1030	C/1030	C/1030	1
12	Left internal lower connecting rod	C/1031	C/1031	C/1031	C/1031	C/1031	1
13	Right external lower connecting rod	C/1032	C/1032	C/1032	C/1032	C/1032	1
14	Lower tie rod	C/1033	C/1033	C/1034	C/1034	C/1034	2
15	Upper tie rod	C/1035	C/1036	C/1037	C/1038	C/1039	2
16	Tools quick release	C/1040	C/1040	C/1041	C/1041	C/1041	1
17	Parking foot	C/1042	C/1043	C/1044	C/1045	C/1046	2

2.2 SPARE PARTS - HYDRAULIC DISTRIBUTOR



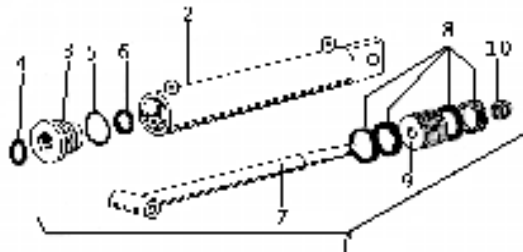
EEF.	DESCRIPTION	PART-NR.					Q.ty
		CF1	CF2	CF3	CF3/S	CF4	
1	Controls hydraulic distributor	C/1047	C/1048	C/1049	C/1050	C/1051	1
2	Lever	C/1052	C/1053	C/1054	C/1055	C/1056	1
3	Lever support	C/1057	C/1058	C/1059	C/1060	C/1061	1
4	Slider cap	C/1062	C/1063	C/1064	C/1065	C/1066	1

2.3 SPARE PARTS - LIFTING HYDRAULIC CYLINDER



REF.	DESCRIPTION	PART-NR.					Q.ty
		CF1	CF2	CF3	CF3/S	CF4	
1	Complete hydraulic cylinder	C/1015	C/1016	C/1017	C/1018	C/1019	1
2	Liner	C/1067	C/1068	C/1069	C/1070	C/1071	1
3	Head	C/1072	C/1073	C/1074	C/1075	C/1076	1
4	Scraper	C/1077	C/1078	C/1079	C/1080	C/1081	1
5	Or	C/1082	C/1083	C/1084	C/1085	C/1086	1
6	Sealing gasket	C/1087	C/1088	C/1089	C/1090	C/1091	1
7	Stem	C/1092	C/1093	C/1094	C/1095	C/1096	1
8	Piston gaskets kit	C/1097	C/1098	C/1099	C/1100	C/1101	1
9	Piston	C/1102	C/1103	C/1104	C/1105	C/1106	1
10	Nut	C/1107	C/1108	C/1109	C/1110	C/1111	1

2.4 SPARE PARTS - HYDRAULIC CYLINDER FOR TOOL MOVEMENT



REF.	DESCRIPTION	PART-NR.					Q.ty
		CF1	CF2	CF3	CF3/S	CF4	
1	Complete hydraulic cylinder	C/1020	C/1021	C/1022	C/1023	C/1024	1
2	Liner	C/1112	C/1113	C/1114	C/1115	C/1116	1
3	Head	C/1117	C/1118	C/1119	C/1120	C/1121	1
4	Scraper	C/1122	C/1123	C/1124	C/1125	C/1126	1
5	Or	C/1127	C/1128	C/1129	C/1130	C/1131	1
6	Sealing gasket	C/1132	C/1133	C/1134	C/1135	C/1136	1
7	Stem	C/1137	C/1138	C/1139	C/1140	C/1141	1
8	Piston gaskets kit	C/1142	C/1143	C/1144	C/1145	C/1146	1
9	Piston	C/1147	C/1148	C/1149	C/1150	C/1151	1
10	Nut	C/1152	C/1153	C/1154	C/1155	C/1156	1

BONATTI CARICATORI S.R.L

Registered Office: Strada Provinciale Ovest n .36
Operating Unit: Strada Provinciale Ovest n .38
46020 PEGOGNAGA (MN)
Phone nr. +39 0376-558089 -Fax nr. +39 0376-559890
E-Mail: INFO@BONATTICARICATORI.IT- WWW.BONATTICARICATORI.IT
Fiscal Code/VAT-Nr. IT02133730206 - CCIAA-MN-n. 02133730206
DATA PROCESSING SYSTEM NR. MN02142 R.E.A. MN-n 226961
Fully paid-up share capital € 30.000,00