



Instruction Manual

- use, care and maintenance -

(Ai sensi della 2006/42/CE)

FLAIL MOWER

Rear carefully this manual before using the equipment



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FLAIL MOWER INSTRUCTION MANUAL

MODELS:

118/50H
118/65H

118/60
118/70
118/80
118/100
118/120

118/3P80
118/3P100
118/3P120
118/3P140

118/3PSM100
118/3PSM120
118/3PSM140

118/3PSI100
118/3PSI120
118/3PSI140

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1. INTRODUCTION

The following manual is for the operator and above all for all those who will be responsible for the safe and correct use of the FLAIL MOWER . We advise you to read carefully the handbook, especially the paragraphs about the instructions and the way the worker must use the machine. The manual should be always at hand and possibly kept near the FLAIL MOWER itself so that, if you need to consult it, you will always be able to do it.

2. GENERAL INSTRUCTIONS

- Safety of working is warranted only if the FLAIL MOWER will be used for the materials listed in this handbook. Carli s.r.l. will not therefore be responsible if the FLAIL MOWER is not installed or used in accordance with the instructions about the proper way of installing and using the machine.
- As to safety and the correct use of the FLAIL MOWER Carli s.r.l. will not count oneself responsible if you will not follow and observe the instructions or the guidelines given in this manual, notably instructions for the following operations: installation, care and maintenance, minor and extraordinary repairs.
- Whenever you need to carry out repairs you must only get and install original spare parts. Anyway we advise you to contact our technical assistance service and this whether the assistance service will be devolved to another company or not. Whenever the correct use, care and maintenance of the FLAIL MOWER will not be observed or repairs carried out by unskilled workers the responsibility for it will fall upon the operator.
- The FLAIL MOWERS in made for being used in open fields and installed on tractors and rototillers. If the FLAIL MOWER will be used in any unsuited place or environment Carli s.r.l. will be free from any responsibility or obligation.
- Before touching the machine and put yourself in danger you should seriously think about it.
- Therefore follow the safety instructions which can be read on the FLAIL MOWER itself and pay special attention to the following guidelines:
 - Don't use the FLAIL MOWER if there are people around for a radius of 20 m.
 - Before intervening and touch the machine you must switch off the tractor and disconnect the force intake.
 - When you install, use and care for the equipment, protect yourself with gloves, caps and masks.
 - Use the FLAIL MOWER only to grind the materials listed in this Instruction Manual. The improper use of it can cause serious damage

to the machine and to the operator himself (such operations as crashing into big tree trunks, rocks, cement or metallic things must be avoided).

- Use the FLAIL MOWER only in daylight since it's not possible to light up the work-place during the night.

3. SPECIFICATIONS

3.1 FLAIL MOWER description

These FLAIL MOWERS built by Carli s.r.l. are used for grinding dry and not dry weeds, small branches fallen off while pruning olive and vine trees. The tritulates are composed of:

- A niche shaped framework which protects and holds up all the rotating tools and their driving mechanism of transmission.
- Rear and front protections from the detritus or waste material the FLAIL MOWER itself might throw off and a protective case for the driving unit..
- The supporting roller which regulates the depth of the cut.
- The FLAIL MOWER can be installed on a tractor whose operator is on the opposite side of the force intake (front installation) or on the same side (rear installation) and onto tractors with a three-hinged joint. In each case the rotation of the tools runs opposite to the movement direction.

3.2 Technical features

- FLANGES FOR ALL TYPES OF TRACTORS – A THREE-HINGER JOINT FOR MODEL 118/3P – HYDRAULIC OR MANUAL DISPLACEMENT FOR 3PSM AND 3PSI.
- ALL OUR MODELS HAVE THE FOLLOWING FEATURES: ANGULAR TRANSMISSION WITH AN INTERNAL OIL-BATH FREE WHELL.
- FOR MODEL 118 PROVIDED WITH FLANGES WE HAVE A LATERAL TRANSMISSION THROUGH TRAPEZOIDAL SERRATED BELTS (SECTION A) FORM MODEL 118/3P ORDINARY BELTS (SECTION B)
- ALL OUR MODELS HAVE A SUPPORTING ROLLER FOR REGULATING THE DEPTH OF THE CUT.
- FRONT INSTALLATION ON REVERSIBLE TRACTORS AND ROTOTILLER IS POSSIBLE ON DEMAND.

Modello	Larghezza di lavoro cm.	Imgombro max cm.	peso kg.	potenza min. richiesta	
				CV	KW
118/50H	50	55	52	8	6,6
118/65H	65	70	60	8	6,6
118/60	60	67	72	10	7,3
118/70	70	77	81	12,5	9
118/80	80	87	87	12,5	9
118/100	100	108	102	16	12
118/120	120	128	122	20,5	15
118/3P80	80	88	110	12,5	9
118/3P100	100	108	123	16	12
118/3P120	120	128	155	20,5	15
118/3P140	140	148	180	33	24
118/3P80H	80	88	87	12,5	9
118/3P100H	100	108	98	16	12
118/3PSM100	100	108	150	16	12
118/3PSM120	120	128	180	20,5	15
118/3PSM140	140	148	207	33	24
118/3PSI100	100	108	150	16	12
118/3PSI120	120	128	180	20,5	15
118/3PSI140	140	148	207	33	24

The transmission ratio is calculated from the force-intake speed of the tractor on which it has been installed so that the rotor will be able to reach a speed of about 1800-2000 revolutions per min.

3.3 Use limitations

The FLAIL MOWER has been planned and made for grinding green and dry weeds, small branches pruned from olive and vine trees and any waste material coming from corn and wheat. The blades must be set at a distance between 30 mm and 40 mm from the ground. Don't use the FLAIL MOWER in the presence of stones

► ATTENTION PLEASE!!!

ANY USE OF THE TRITURATOR OTHER THAN THE ONE DECLARED AND PLANNED BY THE BUILDER IN THE MANUAL WILL BE CONSIDERED IMPROPER AND CARLI s.r.l. WILL NOT TAKE RESPONSIBILITY FOR IT OR FOR ANY OTHER MISUSE OF THE PRODUCT BY THE OPERATOR. THE TRITURATOR MUST BE USED IN ACCORDANCE TO THE USER'S GUIDE AS ASKED BY THE BUILDER.

3.4 Safety regulations to referred to:

MACHINE DIRECTIVE RULE – D.P.R. 24 Luglio 96, N° 459. (89/392/CEE, 91/368/CEE, 93/44/CEE, 93/68/CEE) UNI EN 292-1, UNI EN 292-2, UNI EN 292-2/A1. Machinery safety, basic meanings and principles of a project, specifications and technical principles.

OPERATOR SAFETY AT WORK – Dec. Leg. 626 del 1994 e Dec. Leg. 242 del 1996 (89/391/CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE)

4. INSTALLATION

4.1 Transportation

In order to avoid damage to people and things we recommend you to be very careful while transporting and unpacking. We also advice you to wear protective gloves during the operation and use a vehicle fit to transport a machine of such size and weight (the weight can be read on the packaging and on the tag).

FLAIL MOWERS that are installed on rototillers are much lighter and therefore can be carried by men by two lateral handles. Three-hinged joint FLAIL MOWERS can be moved by a crane or a lift truck.

4.2 On locking and unlocking the FLAIL MOWER

The FLAIL MOWER must be installed on a tractor having a series of technical features and a befitting power. (please read the technical notes at page 6). The locking of the FLAIL MOWER on the tractor can vary and this variation depends on the tractor brand and type. You can lock it on the tractor by tightening the nuts on the studs the tractor is equipped with or through a quick fixing. Carli s.r.l. provides joint flanges built thanks to the measures given by the company that built the tractor.

- To lock the FLAIL MOWER you need to pull it close to the tractor joint and when you find the correct position push it into position and then start tightening the screws. If you have instead a three-hinged joint FLAIL MOWER first you need to place in position the two lower arms and then the upper one which can be regulated. When it has been fastened for good you can fixed the force-intake to the cardan joint.
- When you need to unlock the FLAIL MOWER follow the same steps but in reverse.

5. USE

5.1 Safety warnings

- When you are caring for the machine please use the proper protection (gloves, goggles and masks)
- Remember that the most dangerous areas are those that give power and movement to the tools (the whole transmission unit is very dangerous indeed)
- When the FLAIL MOWER is working don't put in any object and no in case your hands beyond the protective shield.
- Use only parts and spare parts manufactured by our company. They have been specifically planned to give our customers only the best product. We pay great attention to materials and structure.
- When not working the machine must be unlocked and the power switched off..
- Repairs and up-keep are allowed only when you have unlocked the force-intake and switched off the tractor.
- When the FLAIL MOWER is working be sure there's nobody around for a radius of 20 m. at least.

5.2 Tool replacement

If you should find out that there's something amiss, namely some distortion in the machine, chips or the cut itself isn't what it should be or there is a vibration somewhere please replace the tool by following these guidelines:

- Wear a pair of gloves, unlock the tool and the force intake by loosening their bolts.
- Up-turn the FLAIL MOWER by 180 degrees so that the tools on top will be utterly visible and without any cover. At this point the operator using two 24 mm spanners will be able to hold fast the bolt with the first spanners and unscrew the nut with the other one. When the old tools have been removed set in the new ones by following the same guidelines but in reverse.
- Place the new tools and then fasten them properly by using their bolts and nuts.
- Up turn the FLAIL MOWER again and bring it back to its former position.. After this lock it on the tractor once again by fastening their bolts.
- In case of a three-hinged joint FLAIL MOWER please unlock first the force intake of the tractor and then lift up the FLAIL MOWER as much as possible with the aid of the tractor hydraulic piston (which later on will be switched off). In order to avoid any danger and keep the FLAIL MOWER from falling and crash you must shore it up. This is the only way to keep it in position and protect the operator.

5.3 Driving belt replacement

If the driving belt has been damaged or worn out by use and can no longer transmit the proper power follow these instructions to replace it:

- Unlock the force intake from the tractor.
- Dismantle the protective case or housing of the driving belt by removing the screws with a proper spanner.
- Loosen the belt tensioner by turning the proper stop nut.
- Remove the old belt and set in the new one which will be identical to the other in size and features.
- Slide the new belt into the sheave grooves and then tighten it with the proper belt tensioner (by checking the bolt)
- Put on the protective case once again by using the proper screws.
- **For model 3P-3PSM-3PSI:** instead you must loosen the four nuts and the four stop nuts that keep in place the gearbox base (angular transmission) so that you will be able to lower it onto the nuts themselves and to lift it up until the belts will be properly tightened. Be careful and remember that at the end of these operations the two sheaves must be aligned.

5.4 How to regulate the driving belt

If the belt should slip and you need to regulate it please follow these steps:

- Remove the belt protective case by unfastening all its screws.
- Get hold of the belt tensor bolt and push it against the belt until you get the right tension.
- Check the belt tensioner movement by fastening it with its bolt.
- Put on the protective case and fix it with its screws.

- **For models 3P-3PSM-3PSI:** you have to work on the four nuts and the four check nuts which keep in place the gearbox base (angular transmission), once it's been lifted up you will be able to tighten the belts. At this point find the right degrees of tension and check it for good. Be careful and make sure the two belts are properly aligned.

5.5 How to regulate the depth of the cut

To regulate the depth of the cut and then regulate the distance between the tools and the ground follow these guidelines:

- Unlocked the FLAIL MOWER from the tractor (force intake)
- Up-turn the FLAIL MOWER as it has been previously said in paragraph 5.1
- Remove the lateral bolts that support the roller joint.
- Place the roller where you need to have it
- Place the bolts in the new position and fasten them up.
- Reposition the rear protection at 10 mm from the regulating roller.
- First reposition the FLAIL MOWER by bringing it back to its original position, then lock it again on the tractor through the force intake.

6. NOISE

When the FLAIL MOWER is adding there should be almost no noise. It's not possible for us to check up what kind of noise the FLAIL MOWER produces while working...(this depending on the different materials cut and ground by the FLAIL MOWER i.e. dry and green grass, small branches, left-over from pruning and other similar activities). We recommend you to wear safety earmuff if you work the FLAIL MOWER non-stop for several hours...

7. MAINTENANCE

The FLAIL MOWERS built by Carli s.r.l. don't need any particular care or maintenance but just cleaning and greasing. Our technical solutions (and materials used) aim to cut down future operations of maintenance..

7.1 Current maintenance

- Clean the tools after working the machine and remove strings, hairs and blades of grass from the tool post by using jets of water.
- Grease the bearings by using the proper grease cups. Use any ordinary kind of grease.
- Check up the gearbox oil level periodically. The gearbox is placed at the front of the FLAIL MOWER (near the force intake). Use oil for differential gears 90-120.

7.2 Extraordinary repairs

- Check up all the mechanical parts to see if all the screws are firmly fixed in place
- Be sure that all the moving parts are not damaged or blocked by detritus or other remains.
- Replace the damaged tools and driving belt by following the instructions given above (SEE TOOL REPLACEMENT AND DRIVING BELT REPLACEMENT).

If the FLAIL MOWER should emit unusual strong vibrations, check up the rotor and see if there are any broken or missing tools. If so please remember that it could cause serious unbalance e damage to the whole machinery.

8. SPARE PARTS

As for up-keep and extraordinary repairs you must always use only original spare parts. Anyway we advise you to contact our authorized assistance service or Carli s.r.l. itself, otherwise the responsibility for any damage by unskilled workers will fall upon the operator.

▶ ATTENTION PLEASE!!!

Remember Carli s.r.l. will be in no way responsible if the spare parts installed are not those built by Carli s.r.l.

9. SAFETY AND REGULATIONS TO REFERRED TO

9.1 Pictograms and their meaning

Please see the illustrations below (transfers and other signs of which you can read the meaning on the tools themselves)



| pict.1 | pict.2 | pict. 3 | | pict.4 |

pict. 1 Warning:

“To use the equipment implies a series of risks”

“Read the instruction manual”

Pict. 2 Warning:

“Objects may be projected while work”

“Keep off the premises all those who are not assigned to the work”

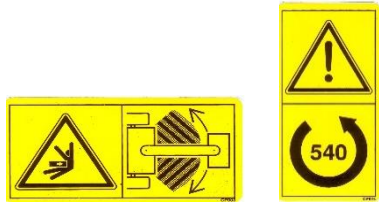
Pict. 3 Warning:

“Wear your protection gear”

Pict. 4 Warning:

“Bodies in motion: Do not remove the protections”

Pictograms equivalent to the models: 118/3P-3PH-3PSM-3PSI



| pict.5 | | pict.6 |

Pict. 5 Warning:

“Stay away from the articulation while the engine is running”

Pict.6 Warning:

“don't remove the protections from the moving tools”

Related regulations

Here below are reported the main directives and reference standards, which have been applied during the design and construction of the machine.

Directive 2006/42/CE	Machine Directive (D.L.gs. 10-01-10, n. 17).
UNI EN ISO 12100-1	Safety of machinery — General principles for design — Risk assessment and risk reduction
UNI EN ISO 12100-2	Safety of machinery — General principles for design — Risk assessment and risk reduction
UNI EN ISO 13857	Safety distances to prevent hazard zones being reached by upper and lower limbs
UNI EN 745	Agricultural machinery - Rotary mowers and flail-mowers - Safety