

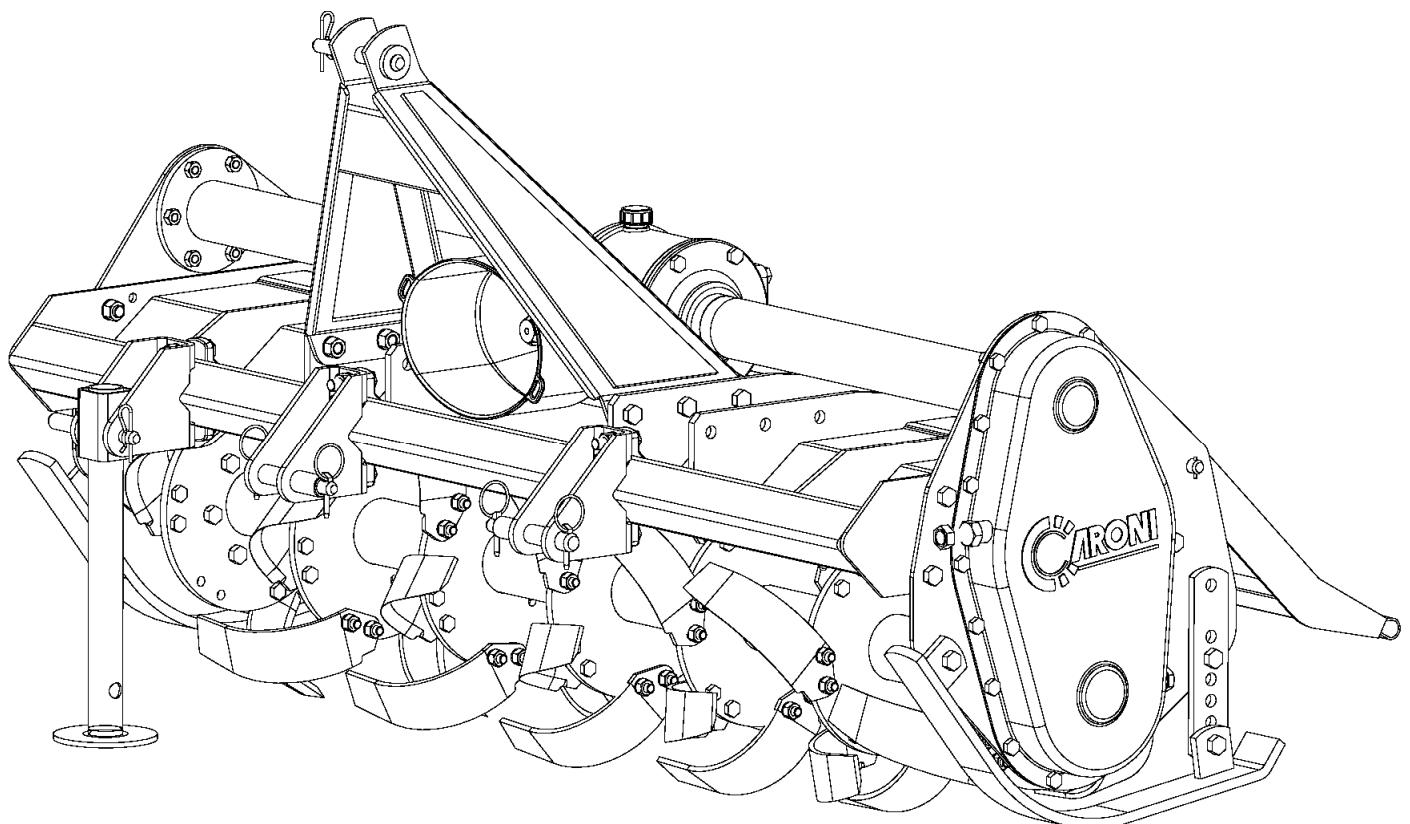


## **USER AND MAINTENANCE MANUAL ROTARY CULTIVATOR**



**ENGLISH**

**Code MUM-FLFM-EN-US\_Rev-10 Date: 06-06-2019**





# DECLARATION OF CONFORMITY



According to Directive 2006/42/CE as further modified

We

**CARONI S.P.A.**,  
Via Castelletto Stura 46  
I - 12100 CUNEO - ITALY,

Declare under our own responsibility that the following models of our horizontal and vertical:

## ROTARY TILLERS

**FL0800/FL0900/FL1000/FL1100/FL1200/FL1300/FL1400  
FM1100/FM1300/FM1500/FM1700**

comply with the relevant basic safety and health requirements of the Directive 2006/42/CE.

In order to check the conformity with the above mentioned directives, the following harmonized standards have been taken into consideration:

**EN 1553 – EN 12100/1 – EN 12100/2 – EN 294 – EN 708.**

The President and Managing director  
**ANDREA CARONI**

Cuneo, November 22, 2018

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## FOREWORD

CARONI SPA would like to thank you for your preference in choosing our quality machines. Aiming at obtaining the longest possible efficiency of the machines you have purchased, we kindly invite you to read and thoroughly understand the instructions for use and maintenance in this manual. A careful compliance with these instructions permits to prevent troubles and accidents or injuries caused by carelessness or lack of compliance with the safety standards and in that case our company shall not be held liable.

This manual complies with the requirements of the machine directive 98/37/EC.

The manual is integral with the machine and shall therefore accompany the machine should it be sold to a new user.



The presence of this symbol of danger in the manual points out important instructions concerning safety. It is first of all meant for the operator. The operator shall comply with the compliance with the warning contained in the message by himself but also by other people exposed to the machine risks. Lack of compliance with the instructions can cause damage to people which could sometimes even be cause of death.



This "instruction" symbol in the manual points out important instructions concerning the correct startup, operation and in general conditions which could jeopardize the life of the product.

The instructions contained in this manual should be read carefully before carrying out any operation with and on the machine, in order to work in safety and preserving its correct operation.

Apart from the main technical and safety features of the machines, the manufacturer reserves the right of carrying out modifications to the machine at any time for reasons of ongoing technical and technological evolution without having to be fined for that

Furthermore we stress the fact that the only expected use of this machine is the one described in the manual. Any other application is forbidden.

## 2 Marking and identification

### 2.1 Marking

Each machine bears the EC identification label (for its position see fig.4), which contains not only the EC mark but also the following data:

- A - Name of the manufacturer
- B - Model
- C - Serial number
- D - Year of manufacture
- E - EC mark of conformity
- F - Mass in kg



### 2.2 Warning pictograms



The following warning pictograms can be found on the machine (see fig.4)

- 1 **Identification signal:** indicates the data relevant to the machine.
- 2 **Indication signal:** indicates the direction of rotation of the machine.
- 3 **Warning signal:** indicates it is necessary to fill the reduction unit with oil when the piece of equipment is used for the first time.
- 4 **General danger:** before any intervention, read the manual carefully.
- 5 **Warning signal:** indicates the rpm of the power takeoff.
- 6 **Danger of limb shearing:** do not insert your limbs within moving parts.
- 7 **Danger of object projection:** keep at safety distance while working.
- 8 **General danger:** do not remove guards when parts are in motion.
- 9 **General danger:** do not climb on machine when parts are in motion.

## 2.3 Aerial noise and technical test data

Type of machine	ALL FL - FM
PTO RPM	540
Motor RPM	2000
Tractor power supply	Diesel oil
Tractor KW	37
Lpa (dBA)	69
Lwa (dBA)	86

Acoustic power has been measured according to pos. D4 and D5 of EN standard 1553

Acoustic pressure has been determined analytically by means of acoustic power at a distance defined by pos. D.2.2.4 a) of EN standard 1553

## 2.4 Third point hitch categories

### CATEGORY 1: THIRD POINT HITCH

REAR ROTARY CULTIVATORS FL0800 / FL0900 / FL1000 / FL1100 / FL1200 / FL1300  
FL1400 / FM1100 / FM1300 / FM1500 / FM1700 / FL1300



3

## CONDITIONS AND LIMITS OF USE



The destination of use of the rotary cultivator is finalized to cultivating the ground through a series of mechanical parts (tines) rotating on a horizontal axis parallel with the ground.

The machine is designed to be connected exclusively with the three-point hitch of a tractor and driven by the PTO mounted on the tractor.

Choose the tractor based on the power, loads, and overhang given in the table by using the data declared by the tractor manufacturer.

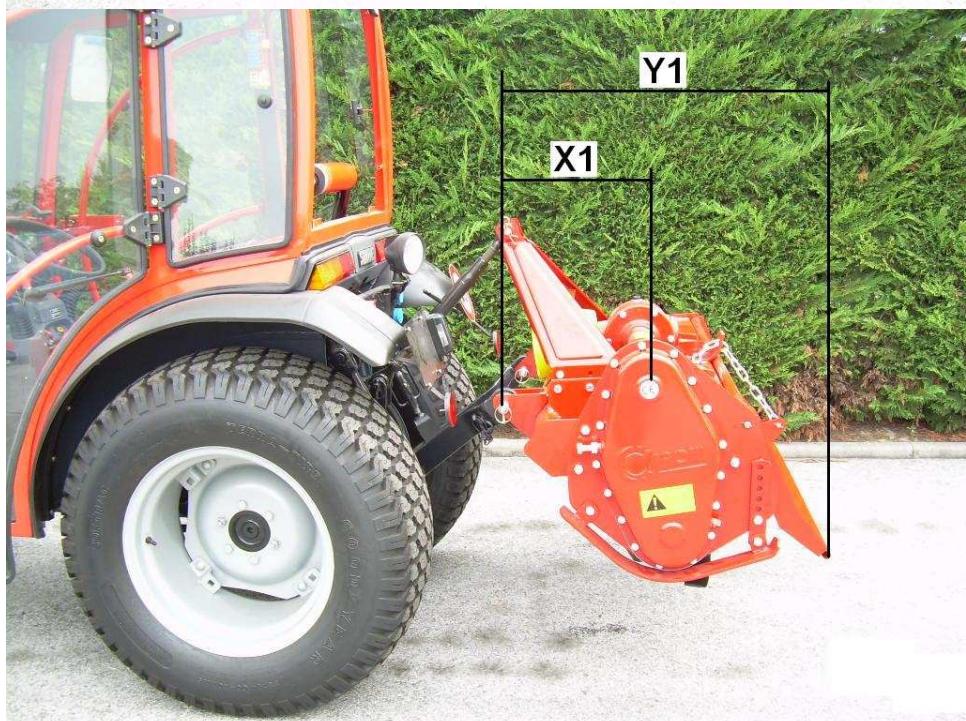
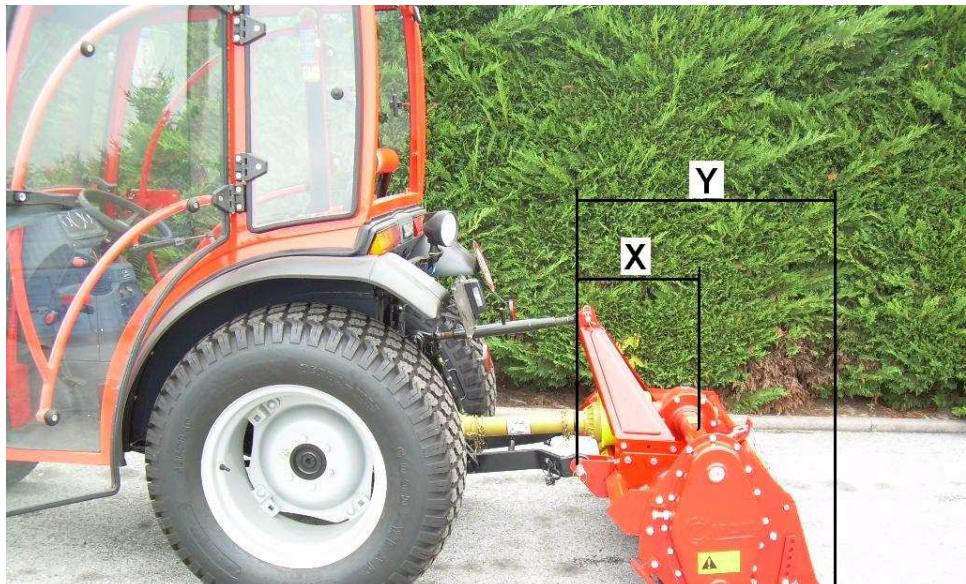
Any use apart from the specified one shall be considered improper, very dangerous and therefore prohibited. In particular we wish to highlight the fact that it is forbidden to use the machine to carry people, animals or loads.

For all the operations of use, adjustment and maintenance a single operator will be enough.

The presence of other people during the operations for linking the piece of equipment to the tractor is allowed only when the PTO is detached, the tractor motor is off and the brake is pulled. In fact in such a situation do not displace the tractor but the rotary cultivator, by using a suitable piece of equipment.

Should it be impossible to find the data useful to choose the right tractor, the user shall make sure or have someone check that suitable safety margins are applied at work, the max. load limit on the axles is not exceeded and the braking ability is still adequate.

Type of machine	FL0800	FL0900	FL1000	FL1100	FL1200	FL1300	FL1400	FM1100	FM1300	FM1500	FM1700
Mass (Kg)	152	162	168	175	185	188	207	249	270	277	320
Position of the barycenter in working conditions (mm) "X"	369	369	369	369	369	369	369	369	369	369	369
Position of the overhang in working conditions (mm) "Y"	896	896	896	896	896	896	896	896	896	896	896
Position of the barycenter in transfer conditions (mm) "X1"	369	369	369	369	369	369	369	369	369	369	369
Position of the overhang in transfer conditions (mm) "Y1"	896	896	896	896	896	896	896	896	896	896	896





## 4 USE IN SAFETY CONDITIONS



Most accidents that take place at work, maintenance operations and machine displacement are due to lack of compliance with the most elementary norms of accident prevention.

Therefore it is essential for those who are authorized to use the machines to read and thoroughly follow both the instructions below and the stickers applied to the machine.

1. Read this manual carefully before carrying out any operations for use, adjustment and maintenance.
2. Always stop the tractor engine, wait until all moving parts have stopped and detach the PTO shaft, before carrying out any operations for adjustment, maintenance or cleaning. Always rest the machine on the ground or on strong stands. Never lay down under the machine without these stands or without checking the stability of the machine.
3. Before use always make sure the screws or the nuts are tight, especially for blades or tines.
4. Always work with guards mounted, both on machine and on PTO shaft. Should the guards be damaged they should be replaced at once.
5. Keep anyone and all animals away before starting your machine. The dangerous area extends 15 meters around the machine.
6. Be particularly careful when working along roads or paths because of the possible projection of stones. Never exceed the prescribed slopes when using your tractor and always avoid particularly steep working areas.
7. Operate with suitable lighting only
8. A tractor with a cabin to protect the operator should be preferred.
9. Do not let the machine run unattended.
10. During checks and repairs make sure nobody can start the machine accidentally.
11. Wear tight clothes without any loose parts which could be caught in moving parts or in the machine rotating parts. Wear accident prevention shoes, and wear gloves if you have to handle blades or parts with sharp edges. In case of extended use and on a tractor with no cabin use suitable sound deadening devices (ear plugs or head sets)
12. Do not carry people or property on the machine or tractor at work or during a road transfer.
13. The PTO shaft guards shall always be in good operating conditions at work and fixed with the safety chains preventing them from turning. Should the guards be damaged or worn, replace them immediately with other original guards.
14. For circulating on public roads, the operator shall make sure his/her machine complies with the current highway code and shall personally comply with the current standards in force in their country scrupulously.
15. For your safety and that of any third parties and not to make the guarantee null and void, use original spare parts only. Use the required personal protection means at all times.
16. Mind the dangers any rotating tools may cause.
17. CARONI SPA shall not be liable for lack of compliance with these standards.

## **[i] 5 - STARTUP [i]**

Carry out all the operations for startup when the tractor engine is stopped, the PTO shaft is disconnected and all the transmission parts to the tools are stopped.

Before starting working fill the gearbox with oil HD 80 W 90 (see paragraph 7.1). When closing the cap do not tighten it too tight in order to prevent gasket deformation which could generate oil leaks.

Check the direction of rotation and the rpm of the tractor and of the machine PTO, which shall necessarily be the same as the ones signaled on the machine next to the PTO with two yellow stickers.

**Danger:** it is forbidden to use the machine at a speed either than the one specified in the label.



Use only CE marked PTO shaft with guards.

Once the machine has been hitched to the tractor, check the exact length of the PTO shaft.

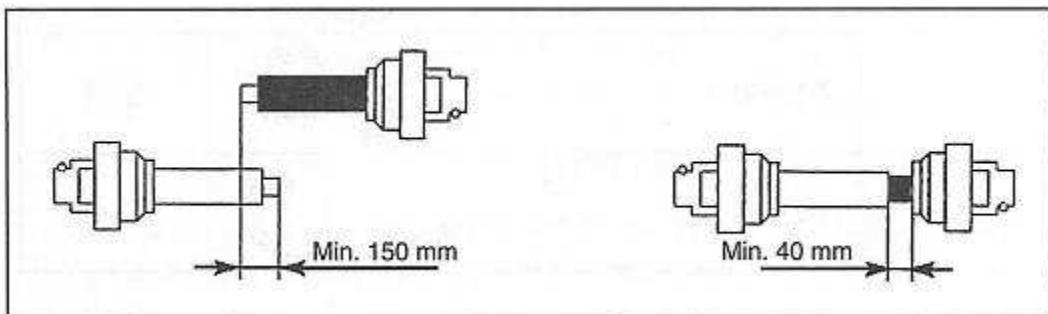


In the various working positions, the PTO shaft transmission hoses shall telescopically insert of at least 150 mm as shown in the figure below.

Repeat the check when the tool is hitched to a different tractor.



Any modifications to the PTO shaft are strictly prohibited. It is strictly prohibited to cut the PTO shaft in order to adapt its length.



The PTO shaft guards shall be still and in good conditions while the PTO shaft rotates. Therefore only the preset chains shall be used. For your safety, when the PTO shaft guards are worn, they shall promptly be replaced. When the machine is not in service, to prevent the PTO shaft from resting on the ground, use the extra chain supplied in our kit rather than the two small rotation-proofing chains supplied with the PTO shaft. Never leave the PTO shaft on the ground. When the PTO shaft is being clutched in, make sure it is correctly locked in position.

## 5.1 MOUNTING CONNECTIONS AND GUARDS

**See picture nr. 1**

- A. Position stand "1" and tighten screws "2", washers "3" and nuts "4". For models with displaceable hitch, choose the position most suitable for your work.
- B. Position stands "5" and tighten screws "6", with washers "7" and nuts "8".  
WARNING: for packaging reasons, stands "5" may be placed in a different position. Place them as shown by **Fig. 1**, the distance between them shall be about 670 mm.
- C. Position guards "9" by loosening nuts "10" then tighten them again. For safety reasons the guards must never be removed. Extensions "11" shall be shortened by cutting them before mounting them on guards "9" with screws "12" and nuts "13", in order to guarantee based on the position you have chosen for hitching to tractor the continuity of the protected area around the machine (extensions "11" are not necessary for rotary cultivators FL0800 and FL0900).



## 6 – ADJUSTMENTS

**See picture nr. 2**

Carry out all the operations for startup when the tractor engine is stopped, the PTO shaft is disconnected and all the transmission parts to the tools are stopped.

### 6.1 TRANSMISSION CHAIN STRETCH ADJUSTMENT



A check of the chain tension shall be performed after the first three hours' operation and then every time the machine is being used. Proceed as follows:

1. Hoist the machine with the tractor hoist and rest it on solid supports, so that the tines can rotate freely. Switch the tractor engine off and wait until all moving parts have stopped.
2. Loosen nut 14 with a 24 wrench.
3. Tighten screw "15" manually until you feel the resistance of the chain straightening shoe. DO NOT TIGHTEN ANY FURTHER. If you screw too tight, the tension on the chain will be too high and it will soon wear out.
4. Tighten nut "14".
5. This check will ensure the chain a long life and the machine a good performance efficiency.



### 6.2 WORKING DEPTH ADJUSTMENT

Make sure the tractor engine is off and all moving parts have stopped. Then proceed as follows:

1. Loosen screws "16", loosen and take out screw "17"; choose the required height by lowering or raising the adjusting blade "18".
2. Then tighten the screws again.

## 7 – MAINTENANCE



Carry out all the operations for startup when the tractor engine is stopped, the PTO shaft is disconnected and all the transmission parts to the tools are stopped.



Once your work is over, wash the underframe thoroughly in order to keep the machine perfectly effective.

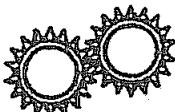
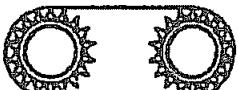


Use only original tines, in order to guarantee your safety and that of any third parties (also for guarantee purposes).

### 7.1 OIL QUANTITY



Before starting working fill the gearbox with oil HD 80 W 90 After the first 40 hours' work change the oil of the gearboxes by draining them off the drain plug. Fill with oil of the prescribed type through the topping up cap and check the quantity of oil filled in on the level rod. See table below. Dispose of the exhaust oil according to the current regulations. Do not abandon them in the environment.

TIPO SCATOLA INGRANAGGI	Q.TÀ LITRI
FL / FM 	0,75
FL / FM 	0,5

### 7.2 Tine replacement

See picture nr. 3



Hoist and rest the machine on solid supports and proceed as follows:

1. Loosen and remove screws "19"
2. Replace tines "20" if they are worn and chipped making sure you mount them correctly to the left or to the right.
3. Tighten screws "19" with washers "21" and nut "22".

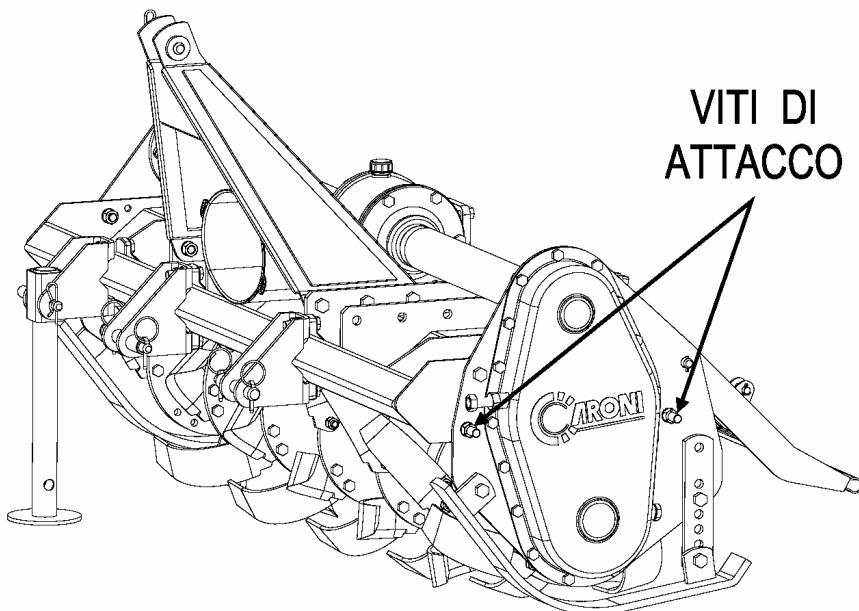
## 8 – TRANSPORT AND STORAGE

Transport can be carried out with different means also in view of the destination site.

To make transportation easier, shipment can be carried out after disassembling a few parts, duly protected and packed. While unpacking, check the integrity and correct quantity of the components. The packaging material shall be disposed of in compliance with the current laws.

**!** The personnel loading, unloading and handling the machine shall have abilities and experience acquired and acknowledged in this specific field.

**!** For a correct handling of the machine in order to remove its packaging we recommend you use 4 screws (for versions FL M12x1.75, for versions FM M14x2) as shown in the picture below by using eyebolts and belts as prescribed by the current standards concerning load handling.



During the period when the machine is not used, carry out the cleaning and maintenance operations specified in chapter 7 of the manual and store the machine in a dry and sheltered place.

Once the season is over, or you have finished your work, the cultivator shall be unhitched from tractor and rested on flat ground, by adjusting the foot as needed (optional).

To transport the machine on public roads follow the highway code in force in your country.

ONLY IF YOU USE ORIGINAL SPARES,

**CARONI S.p.A.**

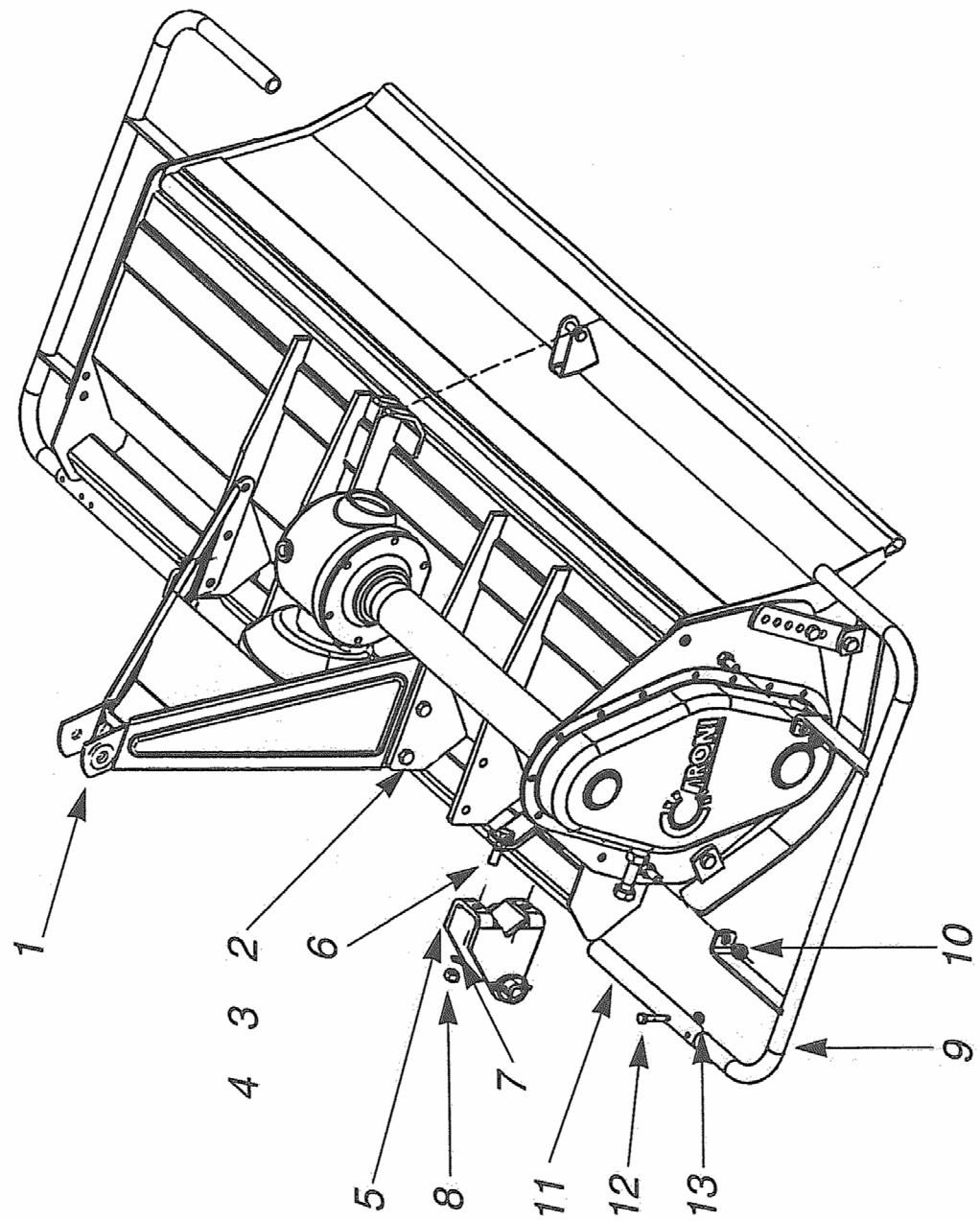
WILL ACKNOWLEDGE YOUR GUARANTEE AND YOU WILL BE ABLE  
TO OBTAIN THE BEST PERFORMANCE AND THE LONGEST LIFE OF THE MACHINE.

**CARATTERISTICHE TECNICHE  
FRESATORI SERIE FL-FM**

**TECHNICAL CHARACTERISTICS  
ROTARY TILLERS FL-FM SERIES**

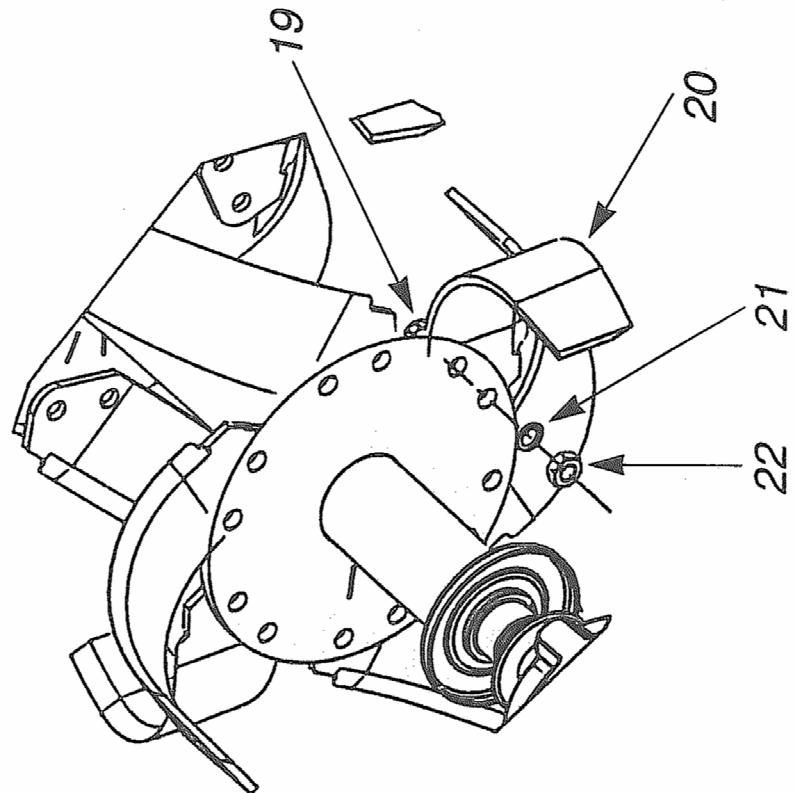
Codice macchina	Descrizione	Tipo di cardano	Larghezza di taglio	Nr. di zappe	Nr. di flange	Spostamento verso destra	Peso	Potenza trattore	Prof. di lavoro	Nr. di giri presa di forza	Attacco (3° P.)
Machine code	Description	Type of universal joint	Cutting width	N. of hoes	N. of flanges	Displ. to right	Weight	Tractor power	Working depth	Pto speed	Hitch (3rd P.)
			mm (inch)			mm	kg (lbs)	HP	mm	RPM	CAT.
FL0800ASC1638	Leggera/Light	4	800 (32")	18	3	-	144 (317)	15 ÷ 40	180 (7')	540	1
FL0800ASC1853	Leggera/Light	4 Frizione/Clutch	800 (32")	18	3	-	152 (335)	15 ÷ 40	180 (7')	540	1
FL0900ASC1638	Leggera/Light	4	900 (36")	24	4	-	155 (342)	15 ÷ 40	180 (7')	540	1
FL0900ASC1853	Leggera/Light	4 Frizione/Clutch	900 (36")	24	4	-	162 (357)	15 ÷ 40	180 (7')	540	1
FL1000ASC1638	Leggera/Light	4	1000 (40")	24	4	-	161 (355)	15 ÷ 40	180 (7')	540	1
FL1000ASC1853	Leggera/Light	4 Frizione/Clutch	1000 (40")	24	4	-	168 (370)	15 ÷ 40	180 (7')	540	1
FL1100ASC1638	Leggera/Light	4	1100 (44")	24	4	160 (6" 1/2)	168 (370)	15 ÷ 40	180 (7')	540	1
FL1100ASC1853	Leggera/Light	4 Frizione/Clutch	1100 (44")	24	4	160 (6" 1/2)	175 (386)	15 ÷ 40	180 (7')	540	1
FL1200ASC1638	Leggera/Light	4	1200 (48")	30	5	160 (6" 1/2)	178 (392)	15 ÷ 40	180 (7')	540	1
FL1200ASC1853	Leggera/Light	4 Frizione/Clutch	1200 (48")	30	5	160 (6" 1/2)	185 (408)	15 ÷ 40	180 (7')	540	1
FL1300ASC1638	Leggera/Light	4	1300 (52")	30	5	160 (6" 1/2)	188 (414)	15 ÷ 40	180 (7')	540	1
FL1300ASC1853	Leggera/Light	4 Frizione/Clutch	1300 (52")	30	5	160 (6" 1/2)	185 (408)	15 ÷ 40	180 (7')	540	1
FL1400ASC1638	Leggera/Light	4	1400 (56")	36	6	160 (6" 1/2)	200 (441)	15 ÷ 40	180 (7')	540	1
FL1400ASC1853	Leggera/Light	4 Frizione/Clutch	1400 (56")	36	6	160 (6" 1/2)	207 (456)	15 ÷ 40	180 (7')	540	1
FM1100ASC1638	Media/Medium	4	1100 (44")	24	5	160 (6" 1/2)	242 (534)	35 ÷ 60	200 (8')	540	1
FM1100ASC1853	Media/Medium	4 Frizione/Clutch	1100 (44")	24	5	160 (6" 1/2)	249 (549)	35 ÷ 60	200 (8')	540	1
FM1300ASC1638	Media/Medium	4	1300 (52")	30	6	160 (6" 1/2)	269 (593)	35 ÷ 60	200 (8')	540	1
FM1300ASC1853	Media/Medium	4 Frizione/Clutch	1300 (52")	30	6	160 (6" 1/2)	270 (595)	35 ÷ 60	200 (8')	540	1
FM1500ASC1638	Media/Medium	4	1500 (60")	36	7	160 (6" 1/2)	270 (595)	35 ÷ 60	200 (8')	540	1
FM1500ASC1853	Media/Medium	4 Frizione/Clutch	1500 (60")	36	7	160 (6" 1/2)	277 (611)	35 ÷ 60	200 (8')	540	1
FM1700ASC1638	Media/Medium	4	1700 (67")	42	8	160 (6" 1/2)	313 (690)	35 ÷ 60	200 (8')	540	1
FM1700ASC1853	Media/Medium	4 Frizione/Clutch	1700 (67")	42	8	160 (6" 1/2)	320 (705)	35 ÷ 60	200 (8')	540	1





*Fig. n. 1*

*Fig. n. 3*



*Fig. n. 2*

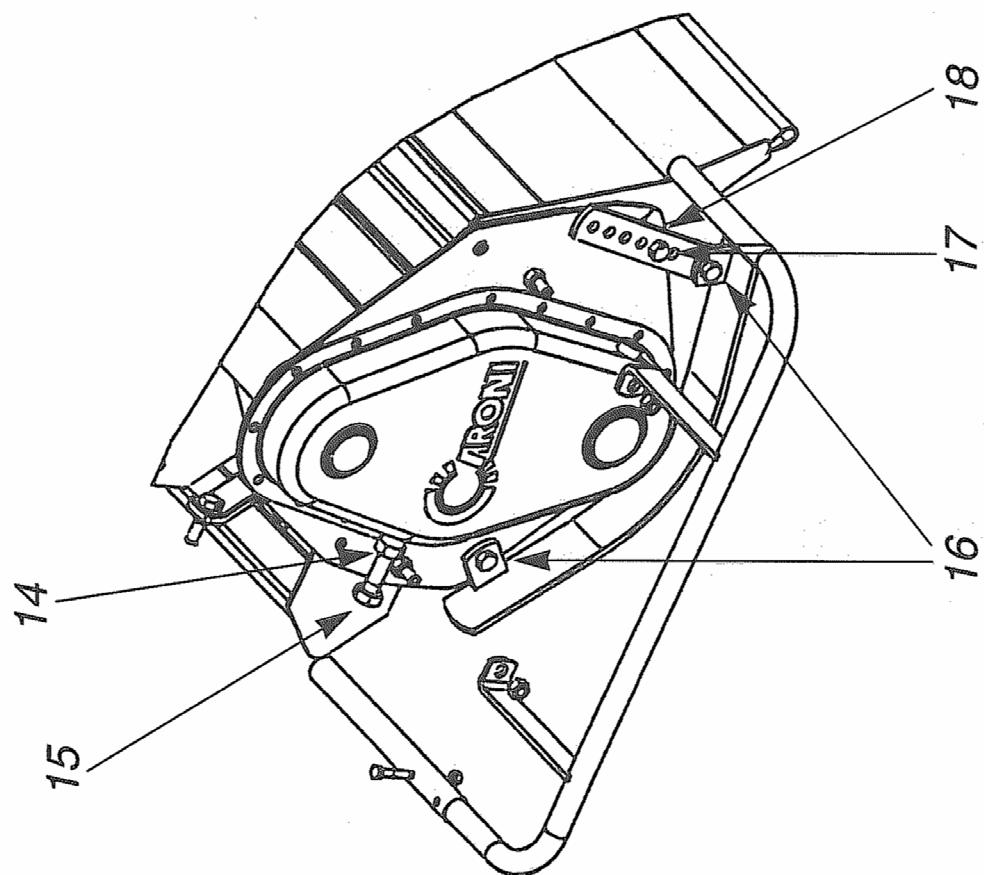
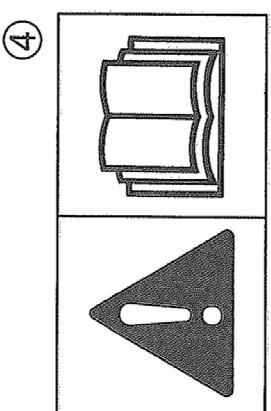
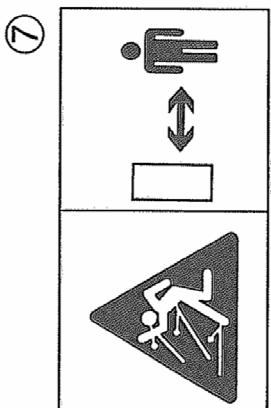
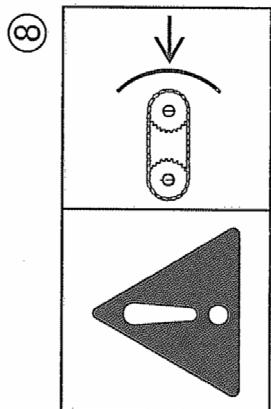
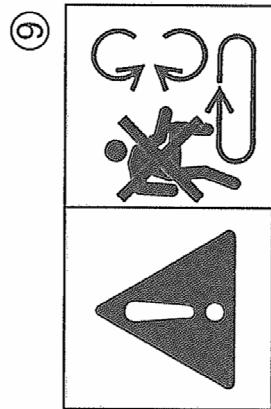
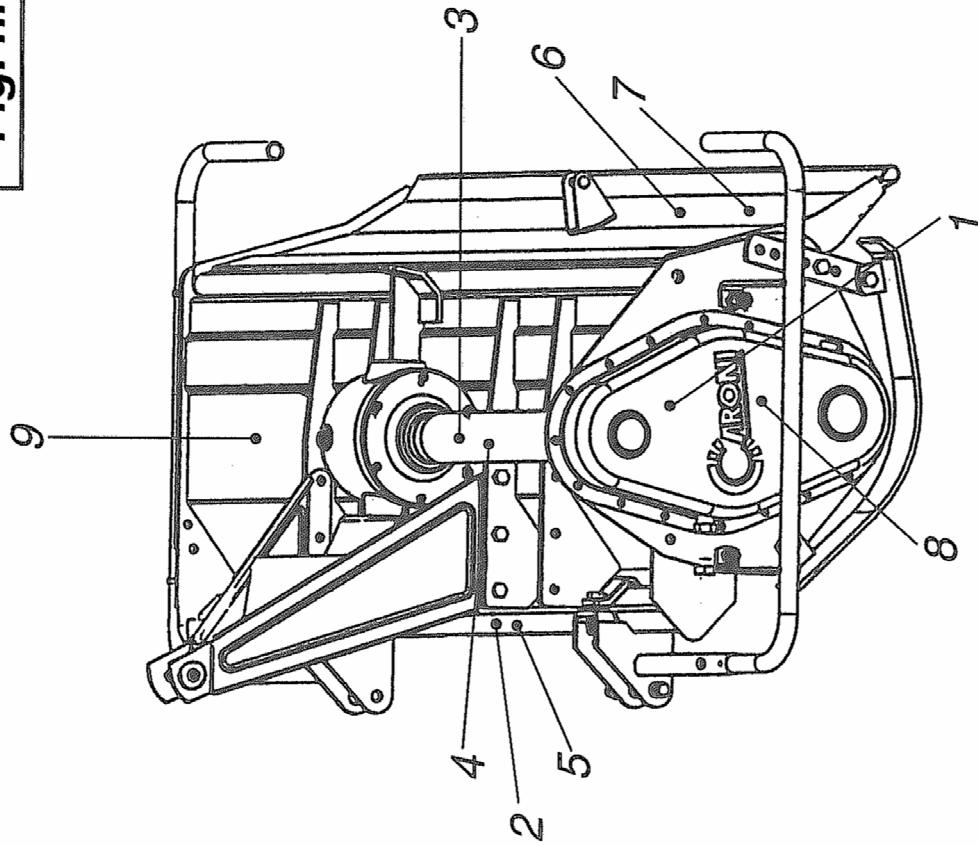
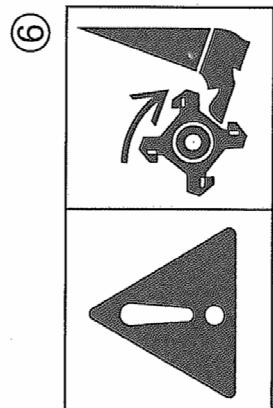


Fig. n. 4



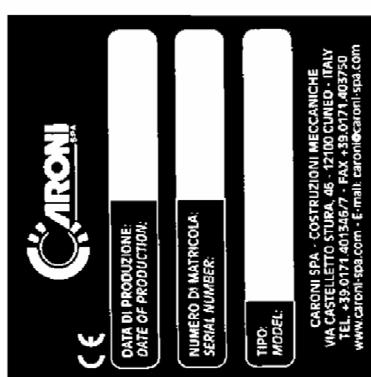
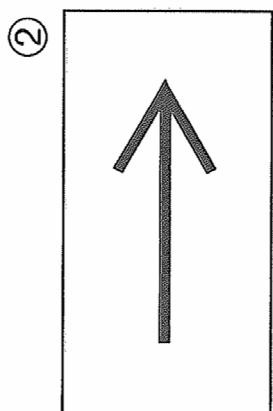
⑤

**540 min<sup>-1</sup>**



③

WARNING : Without OIL  
 ATTENTION : Sans HUILE  
 ATTENZIONE : Senza OLIO  
 ACHTUNG : Ohne OEL



A COLPO SICURO  
SU OGNI TERRENO

