

OPERATIONS & PARTS MANUAL

- FOR MODELS:**
- CAR-TM1300
 - CAR-TM1600
 - CAR-TM1900

PURCHASE DATE	MODEL NO.	SERIAL NUMBER
DEALER		

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FOREWORD

CARONI SPA would like to thank you for your preference in choosing our quality machines.

Aiming at obtain 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. This 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 start-up, 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.

MARKING AND IDENTIFICATION

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 - Manufacturer logo
- B - Model
- C - Serial number
- D - Year of manufacture
- E - EC mark of conformity
- F - Mass in kg



⚠ 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 rotating 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 removing parts. Anyway, before any intervention make sure the tractor engine is off.
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.

Aerial noise and technical test data

TYPE OF MACHINE	FTL-TL-FRTL 0900	FTL-TL-FRTL 1200	FTL-TL-FRTL 1500	FTM-TM-TRTM 1300	FTM-TM-TRTM 1300	FTM-TM-TRTM 1900
PTO RPM	540					
Engine RPM	2000					
Tractor power supply	Diesel Oil					
Tractor KW	37					
Lpa (dBA)	89					
Lwa (dBA)	106					

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 D224 a) of EN standard 1553

THIRD POINT HITCH CATEGORIES

CATEGORY 1: Third Point Hitch

Rear Flail Mowers: TL0900 / TL1200 / TL 1500 / TM1300 / TM1600 / TM1900

Front Flail Mowers: FTL0900 / FTL1200 / FTL1500 / FRTM1300 / FRTM1600 / FRTM1900

Front and Rear Flail Mowers: FRTL / FRTL1200 / FRTL1500 / FRTM1300 / FRTM1600 / FRTM1900

CONDITIONS AND LIMITS OF USE

The destination of use of the flail mowers 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.

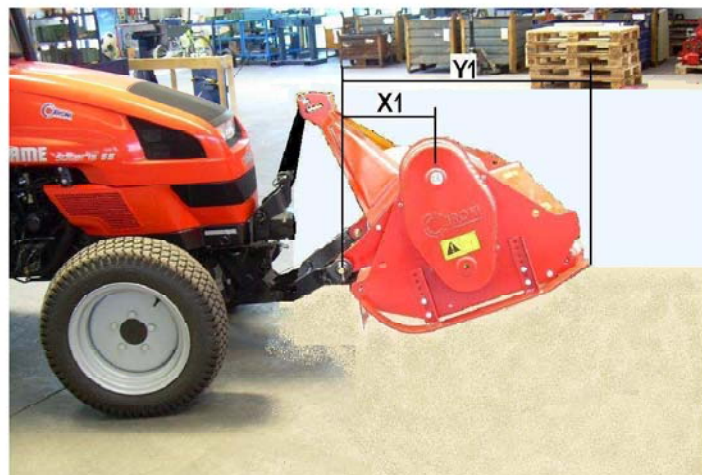
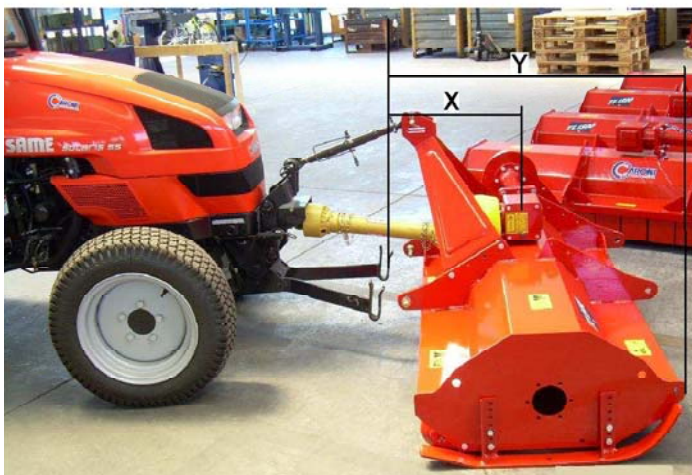
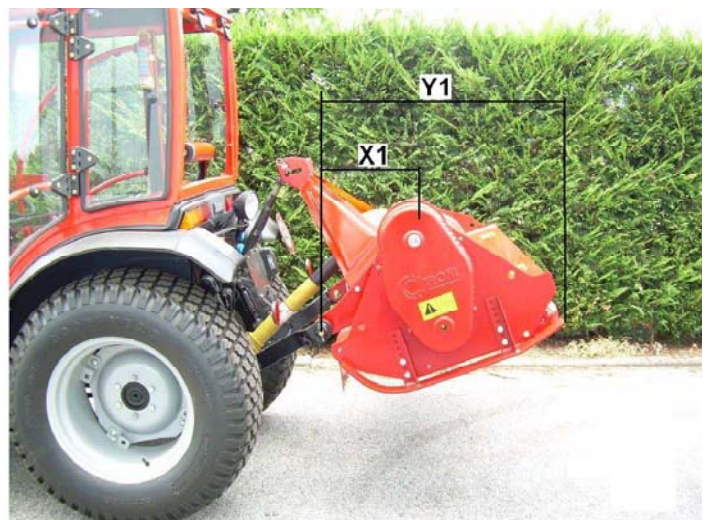
Any use apart from the specified one shall be considered improper, very dangerous and therefore prohibited. In particular we wish to highlight the fact that it is forbidden to use the machine to carry people, animals or loads.

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 engine is off and the brake is pulled. In fact, in such a situation do not displace the tractor but the mower, 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 of having someone check that suitable safety margins are applied at work, the max. load limit of the axles is not exceeded and the breaking ability is adequate.

TYPE OF MACHINE (FTL-M / FRTL-M / TL-M)	0900	1200	1500	1300	1600	1900
Mass (Kg)	195	218	228	261	293	318
Position of the barycenter in working conditions (mm) 'X'	463					
Position of the overhang in working conditions (mm) 'Y'	860					
Position of the barycenter in transfer conditions (mm) 'X1'	433					
Position of the overhang in transfer conditions (mm) 'Y1'	830					



⚠ 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 of 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, specially for blades or tines.
4. Always work with guards mounted, both on machine and 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 no one 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 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 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. Or 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. Always use the machine on a grassy ground. Stop the gearbox to stop the tines for transportation or when crossing areas with no grass.
18. CARONY SPA shall not be liable for lack of compliance with these standards

START-UP

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

Before start working fill the gearbox with oil HD 80 W 90. When closing the cap, do not tighten it too tight in order to prevent the 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

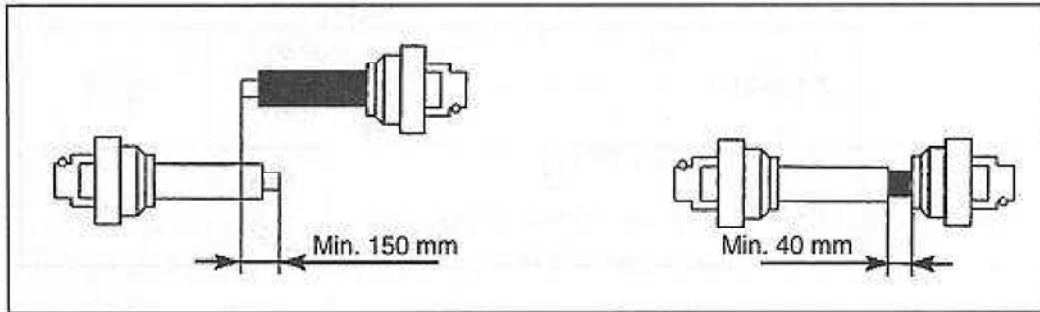
CE marked PTO shaft with guards. Once the machine has been hitched to the tractor, check the exact length of the PTO shaft.

I IN THE VARIOUS WORKING POSITIONS

the PTO shaft transmission hoses shall telescopically insert of at least 150mm 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 pre-established 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.

COMMISSIONING.

See picture nr. 1




1. Position U-Bolt “6” and tighten screws “7”, washers “8” and nuts “9”. For models with displaceable hitch, choose the position most suitable for your work.
2. Place guards “2” (Which shall never be removed for safety reasons) and for packaging cannot be mounted before shipment. Tighten them with screws “3” and washers “4”. Place the plastic PTO guard “5” by interposing the preset reinforcement disc under the screws (Guards “2” are necessary and demanded for the CE European market only).
3. Fill the gearbox with oil as shown in the table on page 8 of the manual. Then grease points 1 with EP2 grease every 8 to 10 hours’ work.

Adjustment of belt tension and cutting height

See picture nr. 2

1. A correct stretch of the belts will let your machines run smoothly for their best performance. Every 10 hours’ operation check the belt stretch carefully. Proceed as follows after the tractor engine off and waiting until all moving parts have stopped:
 - Remove the guard
 - Tighten nut “10” to stretch the belts, loosen the belts
 - Mount the guard back in place
2. Proceed as follows after switching the tractor engine off and waiting until all moving parts have stopped:
 - Lift and rest the machine on solid stands
 - Loosen and remove screws “11” and adjust the height by lowering shoe “12” and roller “13” to the same height.
 - Repeat the operation on the opposite shoe. Remember that to be able to use the machine correctly, shoe “12” and roller “13” shall work at the same height. For packaging reasons, the roller can be positioned higher

MAINTENANCE

-  Carry out all the operations for start up, 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 cutting tools in order to guarantee your safety and that of any third parties (also for guarantee purposes).

Oil Quantity and Greasing

BEFORE STARTING

working fill the gearbox with oil HD 80W-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	Q.TÀ LITRI
SCATOLA INGRANAGGI TM-TL 	0,5

Grease the points specified in pos. 1 fig. 1 every 10 to 12 hours. Use grease EP2.

Tine Replacement

See picture nr. 3

WARNING

Before carrying out any intervention on the machine, make sure the tractor engine is off, the PTO shaft has been detached from the PTO and all moving parts have stopped.

To replace the blades proceed as follows:

1. Lift and rest the machine on solid stands
2. Loosen nut "14" and take out screw "15", position the new tines as shown by figure 3.
3. Tighten screw "15" and nuts "14".
4. Not to apply any stresses or useless vibrations to the machine, we recommend you replace all the tines at the same time.

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


WARNING


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

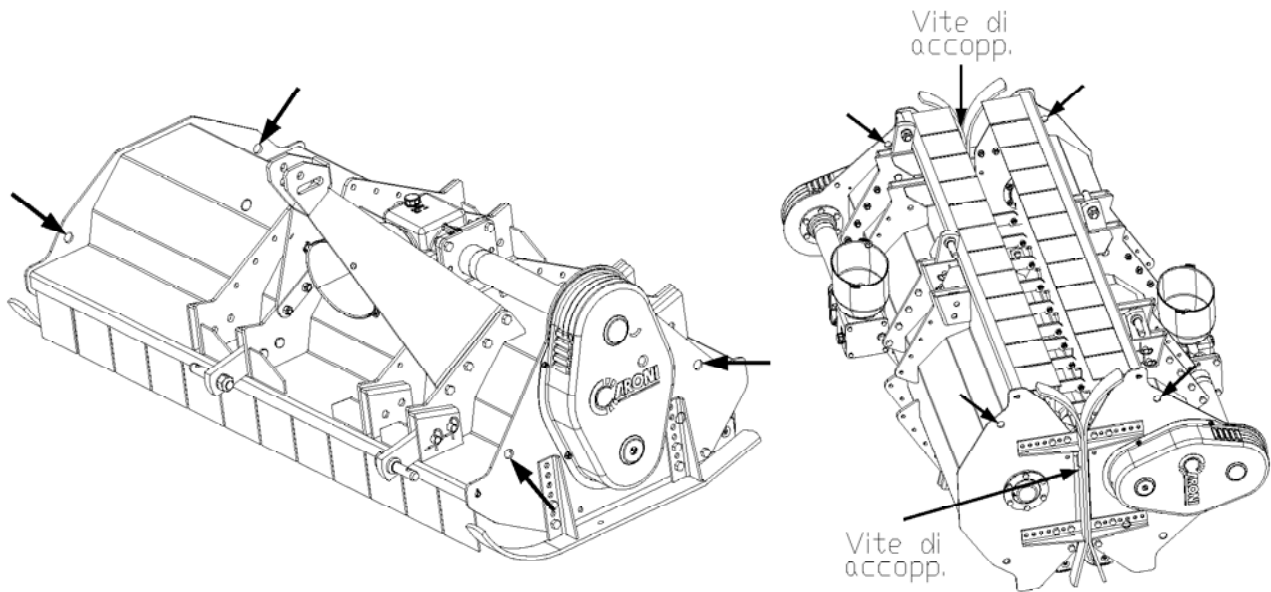
TRANSPORT AND STORAGE

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 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.

-  To take the machine out of its packing correctly, we recommend you use the 4 holes as shown in the figure below with bolts and belts required by the current standards relevant to load handling. If the machines are packed two by two, use the 4 holes as shown in the figure below and loosen the coupling screw on the shoes. Before you loosen the screw, we recommend you make sure the machines rest on even ground to avoid shocks against the gearbox.



During the period when the machine is not used, carry out the cleaning and maintenance operations specified in chapter 6 of the manual and store the machine in a dry and sheltered place.

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

Fig. n°1

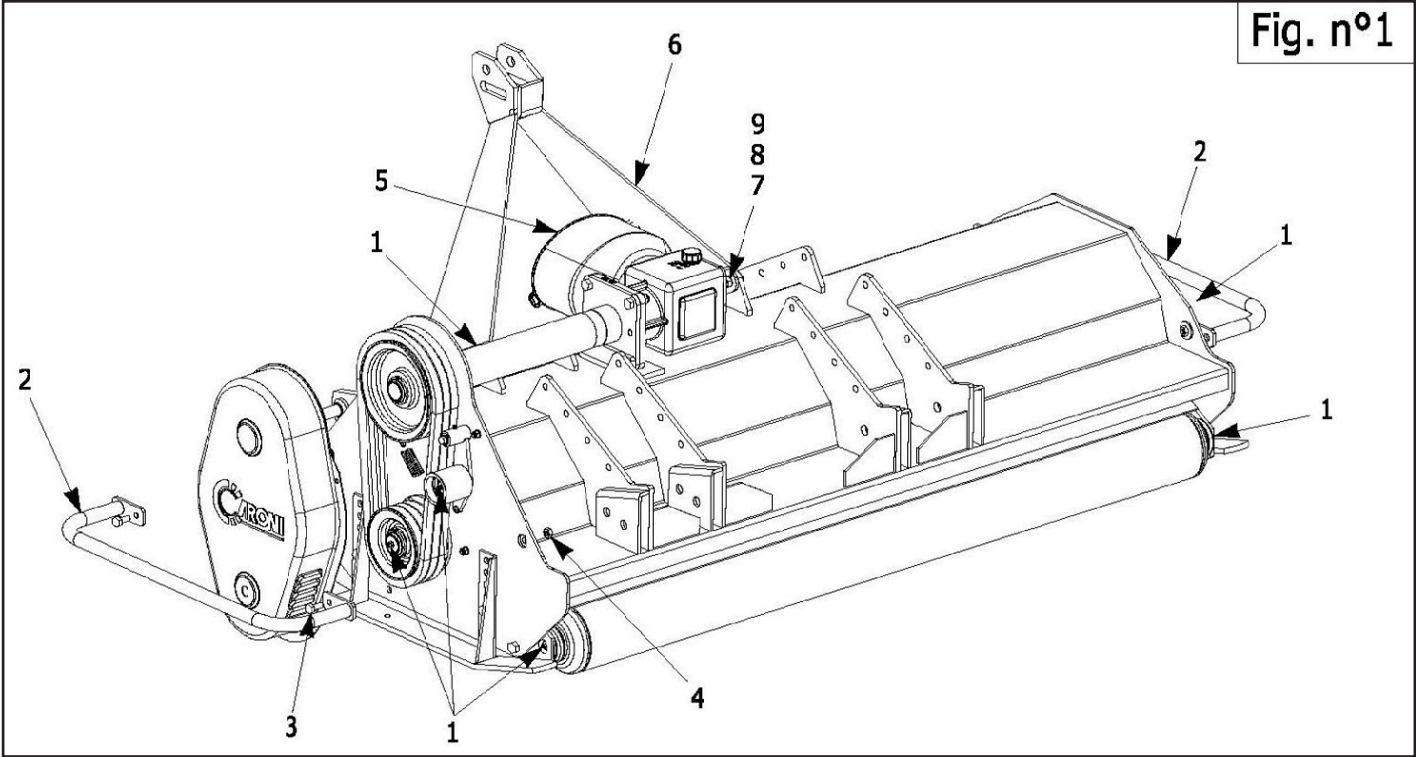


Fig. n°2

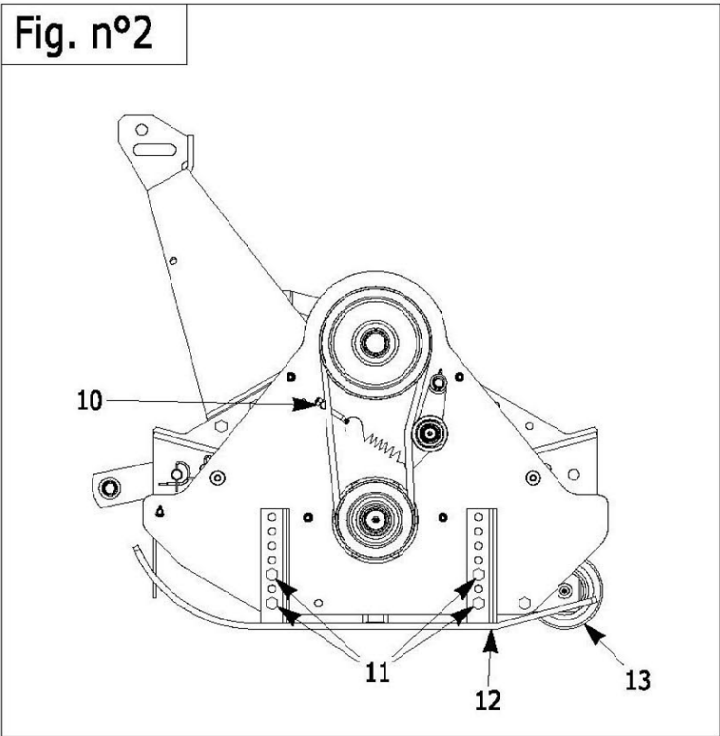


Fig. n°3

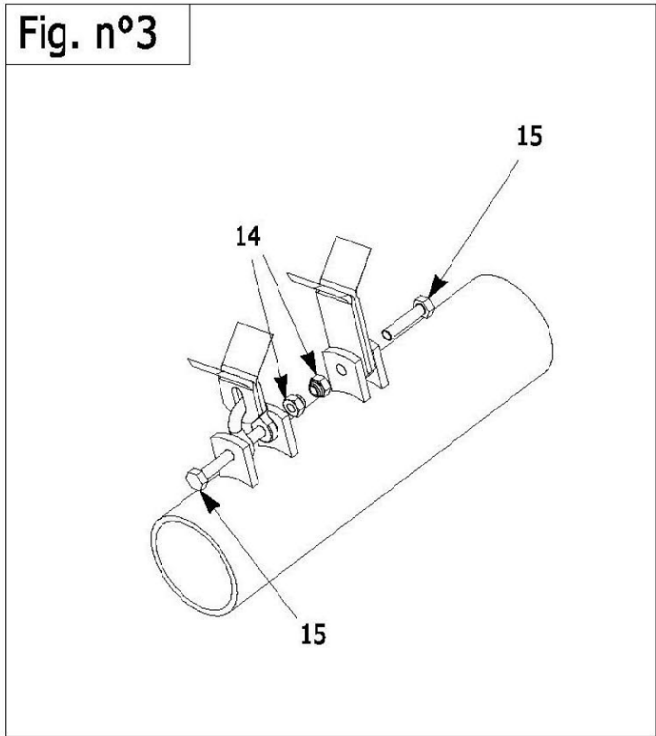
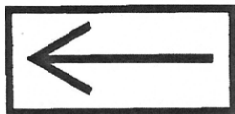
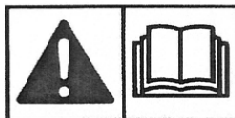


Fig. n°4

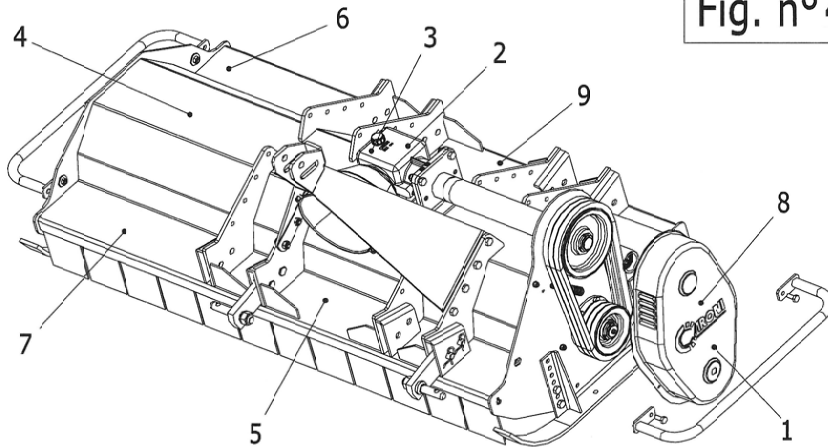
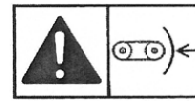


3
WARNING : With out OIL
ATTENTION : Sans HUILE
ATTENZIONE : Senza OLIO
ACHTUNG : Ohne OEL

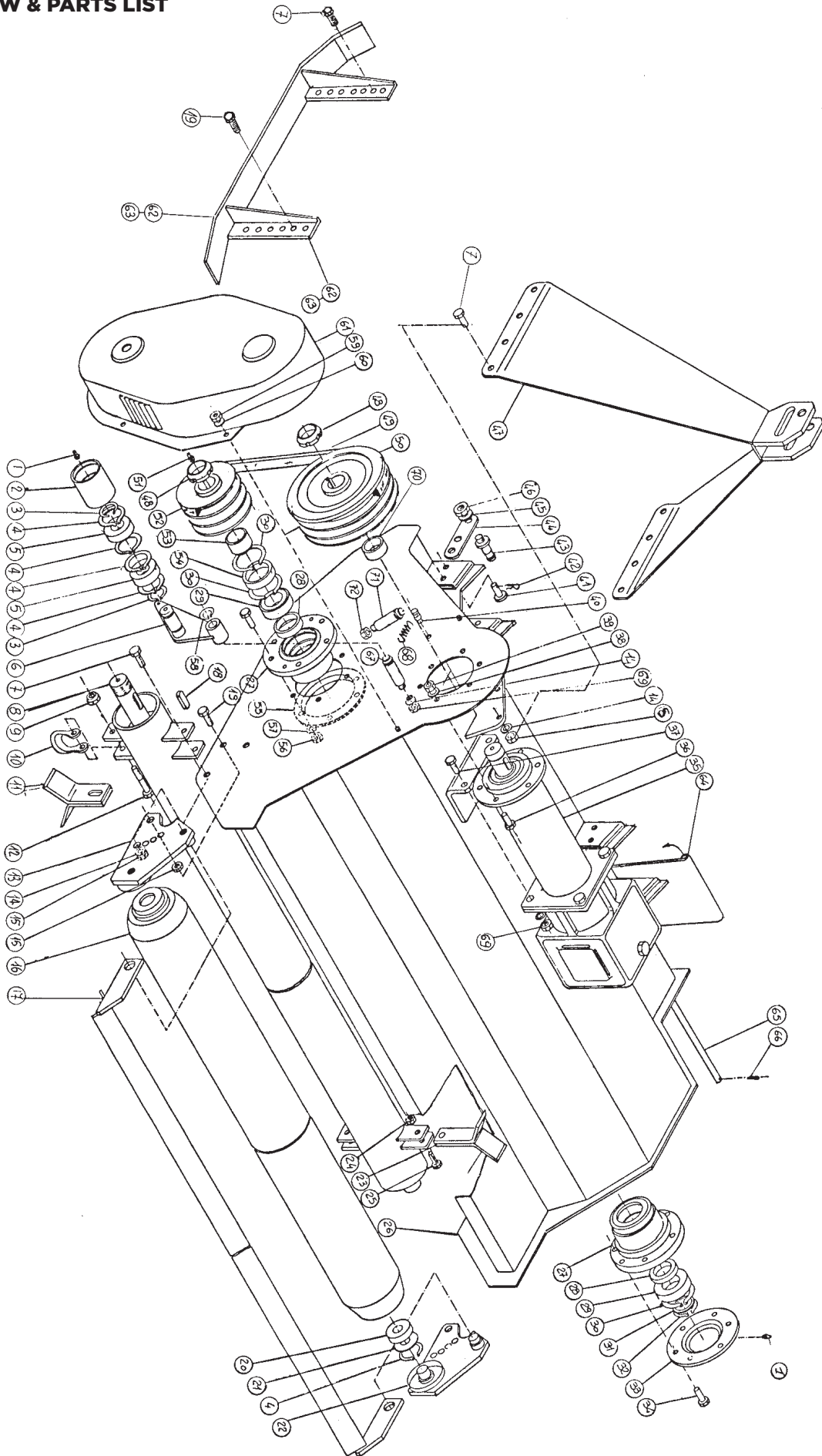


5
540 min⁻¹

5
1000 min⁻¹



EXPLODED VIEW & PARTS LIST



REF	PART NUM	DESCRIPTION	QTY
1	1234	Fitting	6
2	10004300	Belt Stretcher	1
3	1546	Cir Clip	2
4	1545	Cir Clip	6
5	1112	Bearing	2
6	20005610	Stretcher	1
7	1088	Screw	14
8	10013200	Rotor 1900	1
	10012900	Rotor 1600	1
	10012600	Rotor 1300	1
9		Nut 1900	24
	1220	Nut 1600	20
		Nut 1300	28
10	2000700	Support 1900	24
		Support 1600	20
		Support 1300	56
11	10007400	Blade 1900	48
		Blade 1600	40
		Blade 1300	28
12	1407	Screw 1900	24
		Screw 1600	20
		Screw 1300	1
13	10008300	Support	23
14	1227	Washer	23
15	1091	Nut	1
16	10003500	Roller 1900	1
	10006500	Roller 1600	1
	10006600	Roller 1300	1
17	10002700	Scraping 1900	1
	10006900	Scraping 1600	1
	10007000	Scraping 1300	1
18	1439	Key	3
19	1994	Screw	6
20	1874	Bearing	2
21	20008200	Washer	2
22	10008200	Support	1
26	10002300	Frame 1900	1
	10005400	Frame 1600	1
	10005500	Frame 1300	1
27	10001600	Support	2
28	1206	Oil Seal	2
29	1872	Bearing	2
30	1240	Cir Clip	3
31	1568	Washer	2
32	1572	Cir Clip	2

REF	PART NUM	DESCRIPTION	QTY
33	10006300	Cover	1
34	1659	Screw	6
35	10013500	Complete Trans. Box	1
36	1078	Screw	6
37	2011	Screw	2
38	1225	Washer	18
39	1080	Nut	18
40	10007800	Pin	1
41	15001510	Pin	4
42	1183	Lynch Pin	4
43	59003800	Pin	2
44	10003800	Blade	2
45	1829	Washer	2
46	1027	Nut	2
47	10003000	Hitch Frame	1
48	1357	Nut	2
49	2142	Belt	3
50	10005900	Pulley	1
51	1870	Fitting	1
52	10006020	Pulley	1
53	10005800	Spacer	1
54	1868	Oil Seal	1
55	10006100	Cover	2
56	1080	Nut	18
57	1225	Washer	18
58	1571	Cir Clip	1
59	1222	Nut	5
60	1231	Washer	4
61	10001200	Cover	1
62	10003700	Skid Right	1
63	10003600	Skid Left	1
64	10006200	Guard 1900	14
		Guard 1600	12
		Guard 1300	10
65	10004600	Axle 1900	1
	10004500	Axle 1600	1
	10004400	Axle 1300	1
66	1556	Lynch Pin	2
67	20005800	Pin	1
68	10009000	Spring	1
69	1558	Nut	2
70	10000900	Spacer	1
71	10007300	Pin	1
72	1222	Nut	1



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