



# Castellari

**VERTIGO 12V**

**VERTIGO**

**CARBON 12V**

**ELECTRIC RAKE**

**USER MANUAL AND MAINTENANCE**



**index**

The manual in language is available on the [www.castellarisrl.com](http://www.castellarisrl.com)  
 Use and maintenance manual: [www.castellarisrl.com](http://www.castellarisrl.com)  
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## 1 DESCRIPTION OF THE GENERAL CHARACTERISTICS OF THE MACHINE

### 1.1 Purpose of the manual

This manual collects the necessary instructions for a correct and safe use of the electric rake collect olives "VERTIGO C-L 12V" and "VERTIGO CARBON C-L 12V" below also defined as "machine", made by Castellari S.r.l., of Imola (BO). Before using the machine it is important to read and carefully follow the instructions in this manual as compliance with the indications given, together with proper maintenance, depends on the regular operation and durability of the machine itself.

**NB:** this manual is an integral part of the machine, it must always accompany it in any movement or resale. It is recommended to keep it in a safe place of which all possible users must be informed.

### 1.2 Machine identification

The machine is equipped with an identification plate on which the following data are given:

- Name of manufacturer and full address;
- Product name;
- Indication of DPI to be used;
- Indication of danger.

"CE" mark and year of production are printed directly on the tool.

### 1.3 Machine description and technical data

Vertigo (C-L 12V – CARBON C-L 12V) is a machine designed to make it easier and easier to harvest olives in complete respect of the plant. The shape and movement of the teeth of the rake are in fact such as to prevent violent mechanical stresses that could damage the plant.

The fall of the fruits occurs for the slight shaking caused by the movement of the combs. The motorization group with the reduction gears is positioned at the top of the machine.

The operating head is located at the end of a telescopic rod that allows the head with the comb to reach the foliage of the trees on which to collect the fruits.

The telescopic maneuvering rod is equipped with a quick locking system for appropriate, easy and fast working length adjustment. The machine is equipped with a 15-meter extension cable at the ends of which two pliers are fixed for connection to the power battery.

## TECHNICAL DATA:

Power supply, direct current

Length 1.9 – 2.4 m 2.4 – 3.2 m

Peso VERTIGO C-L 12V 2,45 Kg 2,75 Kg

Peso VERTIGO CARBON C-L 12V 2.3 Kg 2.6 Kg

Power cable length 15 m

Frequency of revolutions 1060/min

Engine power 80 Watts

Recommended battery 70 Ah – 90 Ah depending on usage

#### 1.4 Subjects to whom the manual is addressed

This manual is the indispensable guide for all users who, in various ways, can use or take care of the machine in carrying out different tasks. Here are the possible professional profiles:

**Utries:**

Person, entity or company that buys or rents the machine and intends to use it for the purpose. His is the responsibility of the machine and the training of those who work around it.

**Operator:**

Person trained to use the machine.

It is able to conduct the machine through the use of the controls arranged on the push button, it can intervene only to make simple adjustments. It is not allowed to perform maintenance on the electrical or mechanical system of the machine.

**Mechanical tool:**

Specialized technician able to intervene on mechanical organs and transmissions to carry out all the necessary maintenance and repairs. It is not allowed to carry out electrical maintenance on the machine.

**Electric tool:**

Specialized technician able to operate in the presence of voltage inside electrical panels or derivation boxes. It is not allowed to perform maintenance on mechanical parts.

#### 1.5 Intended and unforeseen uses of the machine

The machine is intended to be used exclusively for harvesting olives by vibration.

It is intended for professional use. Operators must be eligible and be able to read and understand what is stated in this manual. The machine should be used taking into account the current rules on accident prevention, the conditions of use and the characteristics of the machine itself.

#### **danger:**



Be **careful not to use** the machine in environments with an explosive atmosphere, and do not use in case of bad weather or thunderstorms!

#### 1.6 Protections and safety devices

The machine is equipped with safety devices to protect the operator from all moving parts of the same.

**Protective Arter :Fixed** device that prevents direct contact with moving organs or dangerous parts of the machine. The protection can only be removed through the use of special tools.

When the machine is in operation, the protective crankcase must be properly mounted.

**Delectrical interruption position:** Allows the **immediate** interruption of all machine functions in the event of an anomaly of the same. The intervention of this protection involves the emergency stop of the machine. In order for it to be reactivated, you must reset the device that caused the shutdown (fuse) by placing the start button in the stop position before restoring.

## 1.7 Risks arising from the use of the machine

### 1.7.1 Noise risk

The sound level was detected by measuring the emission with machine in motion in accordance with the UNI EN ISO 11201 : 2010. The following values have been collected:

- Average sound pressure LpA (A) dB 79.72

The values found conclude that the operation of the machine high noise level.



During the use of the machine it is therefore mandatory to use Otoprotector operators such as headphones or earplugs, to avoid the onset over time of damage to the hearing apparatus.



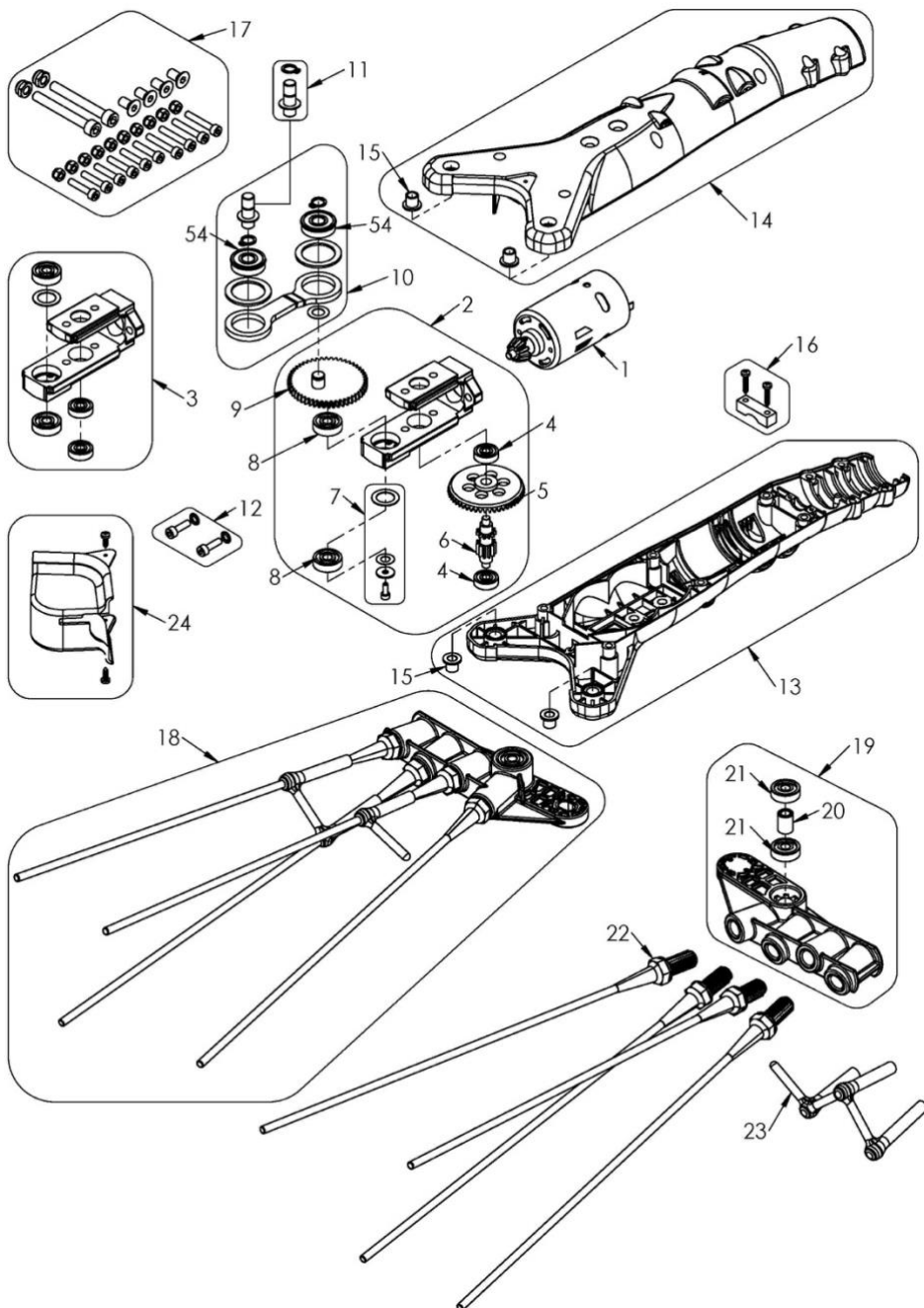
### 1.7.2 Vibration risk

The vibration level was measured with the machine in motion in accordance with UNI EN SO 5349-2 : 2015 for the evaluation of vibrations transmitted to the MANO-BRACC O system.

The following value has been collected:

Hand-arm vibration level:  $9.39 \text{ m/s}^2$  considering the heaviest use of open machines 3 meters. It is advisable to evaluate, according to local laws, the possible use of PPE.

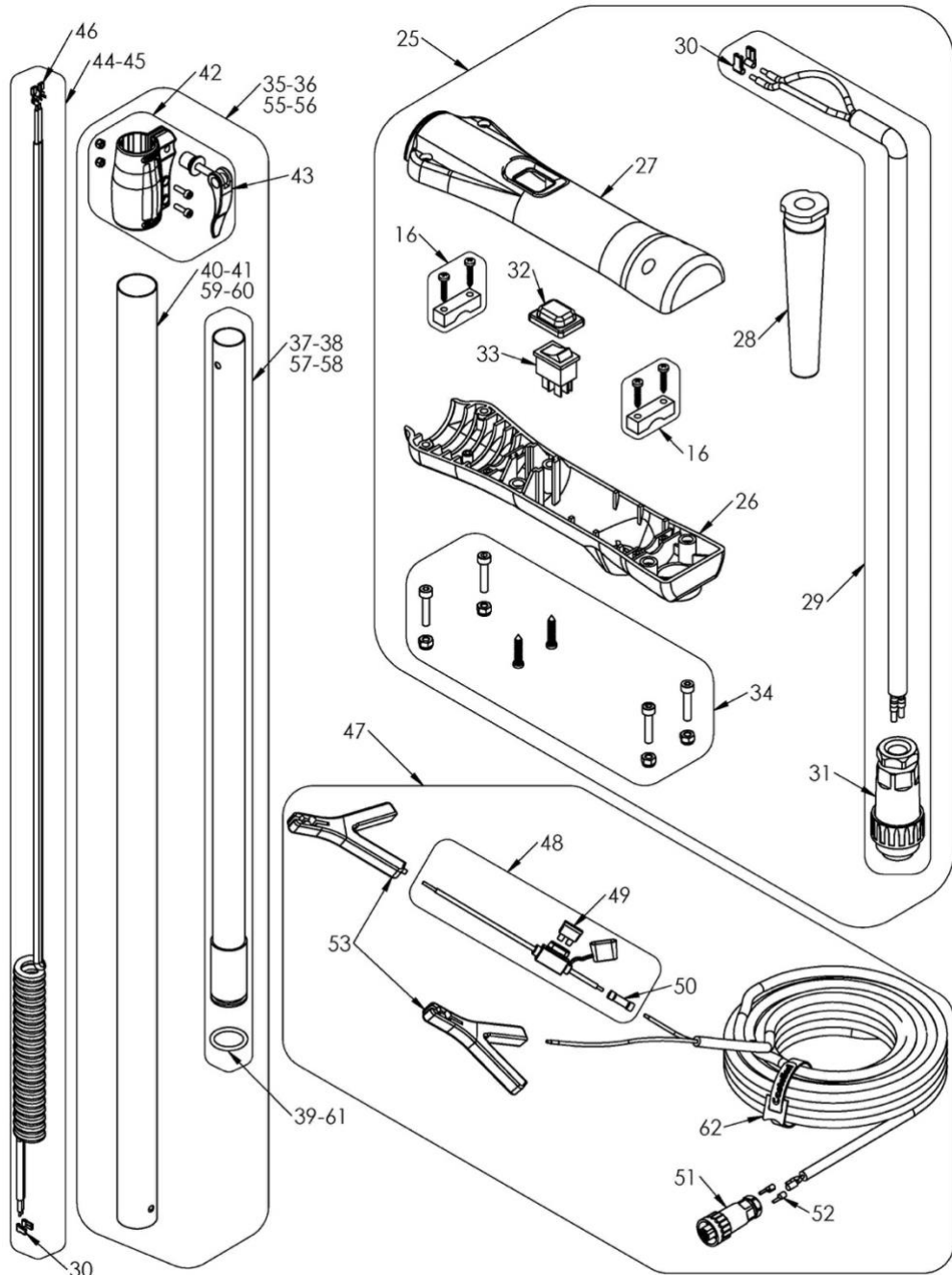
1.8



VERTIGO L/C 12V - VERTIGO CARBON L/C 12V REV01 - 22/02/2021



VERTIGO L/C 12V - VERTIGO CARBON L/C 12V			
POS.	SET CODE	SET DESCRIPTION	PACK
1	OE300100	SET MOTORE OLIVANCE EP/EP-S	1
2	VE300305	VERTIGO CHASSIS SET COMPLETE WITH GEARS	1
3	VE300315	VERTIGO CHASSIS SET COMPLETE WITH BEARINGS	1
4	VE300130	CUSCINETTO 625 ZZ NMB	1
5	OE300115	CONICAL CROWN	1
6	OE300120	CYLINDRICAL PINION	1
7	OE300140	BEARING FIXING KIT	1
8	VE300135	CUSCINETTO 626 ZZ NMB	1
9	OE300125	CYLINDRICAL CROWN WITH PARTNA	1
10	VE500136	VERTIGO VERTIGO FULL ELECTRIC CONNECTING ROD SET	1
11	VE500140	ELECTRIC VERTIGO CONNECTING ROD SET	1
12	OE300105	MOTOR SCREW SET	1
13	VE500110	LOWER CARTER SET	1
14	VE500100	UPPER CARTER SET	1
15	OE300200	BUSHING COMB SUPPORT	1
16	OE400110	SET BLOCCACAVO	1
17	VE500190	ELECTRIC VERTIGO CARTER SCREW SET	1
18	VE500200	ELECTRIC VERTIGO COMB SET	1
19	VE500106	ELECTRIC VERTIGO TEETH SUPPORT SET	1
20	VE500130	VERTIGO ELECTRIC BEARING SPACER BUSHING	1
21	OE300135	BEARING 626 ZZ	1
22	VE100120	COMB TOOTH VERTIGO	1
23	VE500185	ELECTRIC VERTIGO GENERATORS	1
24	VE500115	ELECTRIC VERTIGO EXTERNAL DUST SET	1



VERTIGO L/C 12V - VERTIGO CARBON L/C 12V REV01 - 22/02/2021

POS.	SET CODE	SET DESCRIPTION	PACK
16	OE400110	SET BLOCCACAVO	1
25	OE300320	COMPLETE HANDLE SET OLIVANCE EP 2016-2017 WITH CABLE	1
26	OE400106	LOWER SHELL	1
27	OE400100	UPPER SHELL	1
28	OE400141	PASSACAVO	1
29	OE800400	EXTERNAL CABLE 0.50 MT 2015-2016	1
30	OE600204	FASTON 4.8X0.5 FEMALE 90°	1
31	OE600116	SPINA FRUIT	1
32	OE600200	SWITCH PROTECTION SHELL	1
33	OE400115	SWITCH 12A	1
34	OE400130	HANDLE SCREW SET	1
35	OE608001	TELESCOPIC ROD SET 2-3 MT (VERTIGO L 12V)	1
36	OE608002	SET ASTA TELESCOPICA 1,5-2,2 MT (VERTIGO C 12V)	1
37	OE608003	SET THIS INTERNA OLIVANCE 2-3 MT	1
38	OE608004	SET THIS INTERNA OLIVANCE 1,5-2,2 MT	1
39	CA OR134	GASKET OR 25.80X3.53 (VERTIGO L/C 12V)	1
40	TO900210	ALUMINIUM LONG ROD SET Ø35	1
41	TO900215	ALUMINIUM Ø35 SHORT ROD SET	1
42	OE500100	SET LOCK SYSTEM	1
43	OE500106	QUICK CLOSE SET	1
44	OE609012	TELESCOPIC ROD CABLE 2-3 MT	1
45	OE609013	TELESCOPIC ROD CABLE 1.5-2.2 MT	1
46	OE600203	FASTON 4.8X0.5 STRAIGHT FEMALE	1
47	OE800150	EXTERNAL CABLE 15 MT WITH 32V BLADE FUSE	1
48	OE800151	2015/2016 BULK CARRIER SET FOR 15 MT CABLE	1
49	VE800150	BLADE FUSE 32V 20A FOR VERTIGO 12V	1
50	TO800239	PRE-ISOLATED HEAD CONNECTOR	1
51	OE600111	TAKEN FRUIT	1
52	TO800241	CAPOCORDA PUNTALINO	1
53	OE800152	START PLIERS SET	1
54	OE300175	CUSCINETTO FL 608 ZZ	1
55	VE625000	SET ASTA TELESCOPICA 2-3 MT (VERTIGO CARBON L 12V)	1
56	VE626000	SET ASTA TELESCOPICA 1,5-2,2 MT (VERTIGO CARBON C 12V)	1
57	VE630000	SET ASTA INTERNA VERTIGO CARBON 2-3 MT	1
58	VE631000	SET ASTA INTERNA VERTIGO CARBON 1.5-2.2 MT	1
59	VE635000	SET ASTA LUNGA VERTIGO CARBON Ø35	1
60	VE636000	VERTIGO CARBON Ø35 SHORT ROD SET	1
61	OR4087	GASKET OR4087 21.82X3.53 (VERTIGO CARBON L/C 12V)	1
62	OE800153	VELCRO BAND	1

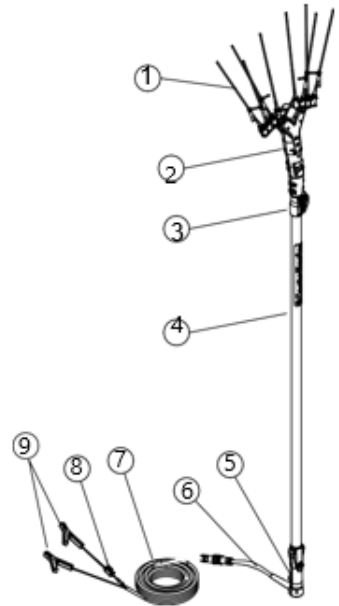
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## 1.9 Specify Components

1. Rake with pull-out combs
2. Motor-gearbox body protected by lock system
3. That telescopic
4. grip
5. Cable with 50 cm connector
6. Cable with 15 m connector
7. Fuse Holder (15 Amp)
8. Starter pliers for battery (12 V)
9. Starter pliers for battery (12 V)

Short telescopic rod (aluminum or carbon)  
from 1.9 to 2.4 m.

Long telescopic rod (aluminum or carbon)  
from 2.4 to 3.2m.



## 2 SAFETY AND PREVENTION

It is very important to read this manual carefully in order to be able to minimize the risks due to a reckless or incorrect use of the machine covered by the manual. The user will have to instruct the operator on the risks due to the use of the machine, on the devices prepared for safety and on the general safety rules provided for by the directives and legislation of the country of use of the machine.

### 2.1 Safety signals (pictograms)

The dangerous situations related to the use of the machine are indicated in the manual using the following symbol:



The same symbol is used on the machine to highlight potential residual risks which, despite the adoption of all possible safety standards in the construction of the machine, it has not been possible to eliminate completely for certain conditions of use.

**N.B.:** It is important to keep the signals on the machine always clean and therefore clearly visible in order to allow users a quick identification of possible risk situations during use.

### 2.2 General safety standards

The staff undertakes to:

- always use the personal means of protection provided for in the legislation and follow the information in this manual,
- comply with all the indications of danger and caution indicated on the machine,
- do not perform operations or interventions on the machine on your own initiative that are not within your competence,
- report to your superior any problem or dangerous situation that may arise.
- The machine should only be used for the use for which it was designed.
- The machine must not be operated with the protections dismantled: the safety barriers and the crankcases must not be removed or disengaged.



**NB:** Avoid wearing loose, fluttering clothes as they may get entangled in moving parts of the machine. It is important to use suitable clothing.

The operator must not carry scissors or pointed tools in the pockets. Mention should be made of the prohibition of transit and parking within range of the machine outside the operator.

## 2.3 Safety in use and maintenance

### 2.3.1 Safety in use

- Before putting the machine into operation, make sure that all the safety is perfectly safe.
- The area in which the machine is used is to be considered a "Danger Zone", i.e. an area in the vicinity of which the presence of an exposed person poses a risk to the health and safety of that person. This is particularly the case in the case of the presence of persons not trained in the use of the machine.
- The area surrounding the operating area of the machine must always be cleaned and kept clear of any impediment. Make sure there are no people or animals in the machine's use area
- When a person is "exposed" or is in a "danger zone", the operator must immediately intervene by stopping the machine and possibly driving the person in question away.
- During the operation of the machine the operator must maintain a position that allows full control of the machine so that it can intervene at any time and for any eventuality.
- Always make sure that the power supply is detached before you leave control of the machine.
- Periodically check the integrity of the machine as a whole including protective equipment.

### 2.3.2 Maintenance safety

- Before carrying out any maintenance work on the machine, make sure that the power supply is detached.
- Maintenance operations must always be carried out by personnel qualified for these specific functions.
- At the end of maintenance and repair operations, before restarting the machine, the technical manager must ensure that the work is completed, the safety restored and that the protections have been reassembled.

During maintenance or repair operations, the use of suitable protective clothing such as:

Gloves



Helmet



Otoprotective



Scile-proof shoes and to crush



Adjustments, whether disengaged or without a crankcase, must be made by a single operator; during these operations, access to the machine to non-workers is prohibited. Avoid dust deposits on the machine, especially on the electric motor and suction filters.

**NB:** Do not direct water jets against the machine (e.g. for cleaning), they could generate short circuitor!



## 2.4 Ecology and pollution

### 2.4.1 Waste management

The use and maintenance of the machine generates waste products that must be disposed of in compliance with the laws in force in the country where the machine is used. The user of the machine is required to comply with any recommendations of the manufacturers regarding the use of the products for the normal operation, cleaning and maintenance of the machine. Any special waste must be disposed of by contacting specialized firms authorized for this purpose. Ensure the correct disposal of the waste through the request of the receipt of "disposal". In the case of dismantling of the machinery, see paragraph 4.5.

### 2.4.2 User information



The crossed-out bin symbol on the equipment indicates that the product at the end of its useful life must be collected separately from other waste and cannot be disposed of like household waste. The user who must/will want to get rid of this equipment may refer to a person authorized to collect and recover such equipment or, alternatively, contact the manufacturer of the equipment that manages its end of life and follow the system indicated by it to allow its separate collection. In case of disposal in a foreign country, contact the competent local authority. Professional users will have to take care of agreeing on the disposal of the product at the end of their life. Also refer to the [www.registroraee.it](http://www.registroraee.it)

## 3 USE

### 3.1 Handling and transport

The machine is easily transportable both in packed and free form. It is recommended to pay attention to overhead power lines when it is transported for its use.

### 3.2 Before use

Before commissioning the machine, the operator must have read and understood all parts of this manual and in particular what is stated in Chapter 2 on safety.

Before using the machine for the first time:

- familiarize yourself with control devices and their functions,
- check that all machine components subject to wear or deterioration are in a healthy state,
- ensure that all security systems are intact and that the fixed crankcases are in the correct position.
- verify that the start button is in the stop position

### 3.3 connection

The machine must be connected exclusively to a well-charged 12 Volts battery via the clamps at the bottom of the supplied power cord.

How to connect clamps:

- make sure the power button is in the off position
- connect the RED CLAMP to the battery at the + SIGN
- connect the BLACK CLAMP to the battery at the SIGN -

Check the correct connection before turning on so as not to cause irreversible machine.



the

### NB:

- Do not connect clamps to generators, car batteries, agricultural vehicles or charging groups that could generate potentially harmful current spikes for the machine. Do not use the machine in contact with water.
- Be sure to screw the screw rings of the machine and cable connection sockets firmly, to avoid movements on the contacts that would damage the operation of the sockets themselves

### 3.4 Use of the machine

The machine is started by means of the switch placed on the handle. Once started approach with combs to the branch to shake. Pay attention to branches especially laden with fruits.

- The impugnare firmly the machine with both hands and always work in stable condition on the legs.

**NB:** Avoid touching moving parts of the machine in any way.

- To turn off the machine it is enough to return the switch to the opposite position to the power-on position.

In the event that the machine is temporarily unused, it is important to place it in a stable horizontal position in order to avoid risky falls.

#### Tips for use:

- The wear of the mechanical and electronic components of the machine is closely related to the mode of use of the machine itself. Therefore avoid insisting on the branch to be shaken until determining the stop of the machine, this would result in a mechanical and thermal overload of the components. Try to limit these locks as much as possible, so you will extend the life of your tool!
- In order to avoid dangerous overloads of effort that may cause damage to the comb, it is recommended to intersperse the shaking action with regular breaks in order not to solicit the tool beyond the standards for which it has been designed and tested.
- It is forbidden to use low or deteriorated batteries.

## 4 MAINTENANCE AND CLEANING

### 4.1 Routine maintenance

The long life of the machine and the lower operating cost depend on compliance with these standards.

#### Periodic checks to be carried out:

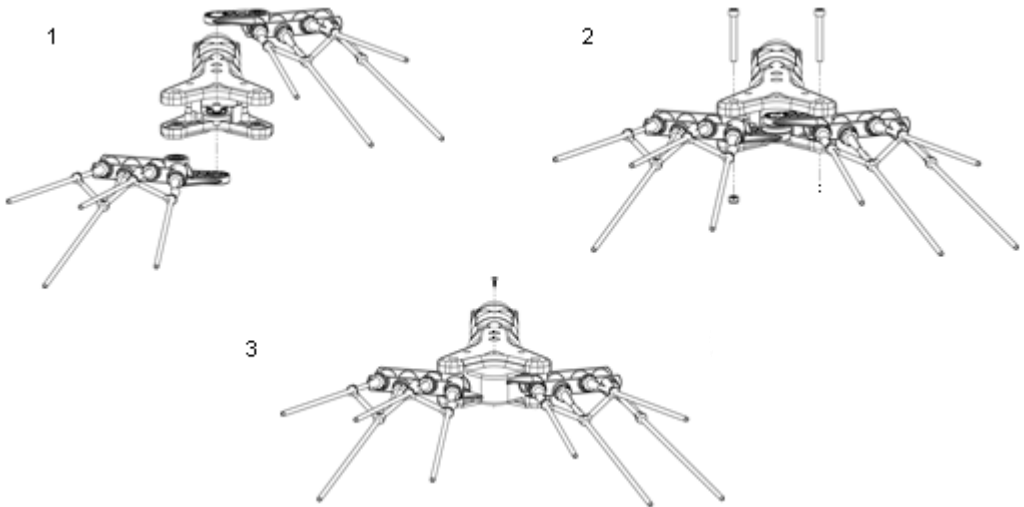
1. Periodically check the tightening of the beaded head screws on the crankcase
2. Every 15 days blow the engine air intakes from outside the crankcases

The reported intervention times are to be considered indicative and are defined considering normal conditions of use of the machine. They may vary according to the mode of use of the machine and in relation to the characteristics of the environment in which it is used, e.g. humidity level, air cleaning (presence of dust). In conditions of heavy use need to increase the number of maintenance operations. Before proceeding with any operation, make sure that the machine is turned off and the clamps disconnected from the battery.

### 4.2 Assembly and disassembly of combs

The machine is shipped with the combs disassembled. To mount, align the markings on the rotor and comb and follow the following images:

1. Insert the combs' bushings into the connecting rod after abounding with high efficiency scratched grease.
2. Turn the combs into the appropriate seat and secure them with screws and self-locking nut
3. Insert the dust shed and secure it with self-sticking screws





### 4.3 Cleaning and lubrication of the machine

The machine must be cleaned at the end of the season in order to avoid deposits of solid particles and dusts that can limit the efficiency of operation of the mechanical parts. This operation should be done if possible by your authorized reseller

### 4.4 Set-aside

In the event that a long rest period of the machinery is specified, the following operations must be carried out:

- disconnect the machine from the power supply;
- clean the machine freeing it from any residues of dirt deposited on its surface and inside it, between the mechanical parts;
- carry out a check by replacing the damaged/worn parts from use;
- cover the machine to avoid the deposit of dirt dust on its surface and inside it.

Carrying out the maintenance operations described above carefully involves finding the machine in optimal operating conditions when the work resumes.

### 4.5 Dismantling of the machine

Disconnect the machine from the power supply and cut the connecting cable.

The machine consists of materials that can be recovered; in particular, iron recovery is possible. Deliver your dismissed machine to an official materials recycling center. Actively contribute to the protection of the environment by applying methods of elimination and recovery also in relation to the packaging materials with which the packaging of the machine is made. Your local authority will be able to inform you of the most effective ways and possibilities for disposing of the old instrument in an environmentally friendly manner.

### 4.6 Troubleshooting common problems

see website [www.castellarisrl.com](http://www.castellarisrl.com)

problem	IL PETTI NOTPART OF IT	THE COMB FREEZES DURING WORK	THE COMB WORKS SLOWLY
ORIGIN OF THE PROBLEM			
CHECK THE FUSE OF SICUREZZA	*	*	
LOW BATTER CHARGE LEVEL			*

### 4.7 Spare parts

In order to guarantee the safety and long life of the product, it is recommended to use original spare parts exclusively. It is recommended to have specialist shelters or maintenance interventions carried out by specialized and authorized personnel

## 5 WARRANTY CONDITIONS

The manufacturer guarantees the new factory product for a period of 12 (twelve) months from the date of purchase.

**NB:** Check, at the time of purchase, that the machine is intact and complete in its components. Any complaints must be submitted within 7 days of receipt of the machine. The warranty involves the free repair or replacement of those parts that are defective.

**NB:** Replacements or repairs of the warranty parts do not in any way imply an extension of the warranty period. The buyer will only be able to assert his rights if he has complied with the conditions relating to the performance of the guarantee.

### **5.1 Exclusion from warranty**

The warranty lapses in the following cases:

- There is a maneuvering error attributable to the operator,
- The damage is due to insufficient or incorrect maintenance,
- Damage caused by assembly of non-original parts or as a result of repairs carried out by the user without the consent of the manufacturer,
- If detailed instructions are not followed in this manual.

## **6 DECLARATION OF CONFORMITY**

Directive 2006/42/EC of the European Parliament and of the Council.

I, signed Castellari Enrico, head of production Castellari S.r.l., "Scissor construction for agriculture", Via Lasie 16/E - 40026 IMOLA (BO) ITALY

It is clear under my sole responsibility that the electric rake "VERTIGO C-L 12V" complies with the essential safety and health protection requirements required by Directive 2006/42/EC of the European Parliament and of the Council.

**CERTIFICATE OF GUARANTEE · WARRANTY CERTIFICATE CERTIFIED BY GARANTIA  
ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΕΓΓΥΗΣΗΣ**

Product Name · Product's name  
Njmbre del producto · Product Names

Anno di immatricolazione prodotto · Registration's year of the product  
Año de matriculación del producto · Year of Product Registration In The Register

Date of purchase · Purchasing dates  
Date of purchase · Ημερομηνία Αγοράς

Castellari Srl guarantees its products against manufacturing defects for 1 year from the date of purchase.  
Submit/ship this coupon together with invoice/receipt in case of service request.

Castellari Srl guarantees that its products are free from manufacturing defects for 1 year from the purchase date.  
Please, to request technical support, submit/send this form together with the invoice/receipt of purchase of the goods.

The company Castellari Srl guarantees its products against manufacturing defects for 1 year from the date of purchase.  
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