



**Castellari**

# Vertigo

**PN**

**PNEUMATIC RAKE**

**USER AND MAINTENANCE MANUAL**

## INDEX

The language manual is available on the website [www.castellarisrl.com](http://www.castellarisrl.com)

Use and maintenance manual: [www.castellarisrl.com](http://www.castellarisrl.com)

Manual of use and maintenance: [www.castellarisrl.com](http://www.castellarisrl.com)

OPERATION 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 instructions necessary for a correct and safe use of the pneumatic harvester "Vertigo PN", hereinafter also referred to 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 the observance of the instructions 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 every move 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 reported:

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

"CE" mark and year of production.

### 1.3 Description of the machine and technical data

The Vertigo PN pneumatic rake 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 fruits occurs by entanglement between the teeth of the rake. It can be mounted on a pneumatic, fixed or telescopic rod, so that the use is comfortable even for considerable heights.

#### TECHNICAL DATA Vertigo PN:

Supply Required	Aria compressed
Pressure Length Rod	7 bar
Weight	see auction table
Beat rate at 7 bar	1,060 Kg
	1600 min

<b>TELESCOPIC PNEUMATIC RODS IN ALUMINIUM</b>
APT 100 E
APT 150 E
APT 200 E
<b>FIXED PNEUMATIC RODS IN ALUMINIUM</b>
APF 100P
APF 150 P
APF 200 P
APF 250 P
APF 300 P
APF 28 50 PE
APF 28 100 PE
APF 28 150 PE
APF 28 200 PE
APF 28 250 PE
APF 28 300 PE
<b>CARBON TELESCOPIC PNEUMATIC RODS</b>
APF 28 50PE CARBON
APF 28 100PE CARBON
APF 28 150PE CARBON
APF 28 200PE CARBON
APF 28 250PE CARBON
APF 28 300PE CARBON
<b>FIXED PNEUMATIC CARBON RODS</b>
APT 100E CARBON
APT 150E CARBON
APT 200E CARBON

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

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

User:

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

Operator:

Person trained in the use of the machine.

It is able to drive the machine and can only intervene to make simple adjustments. It is not authorized to perform maintenance on the mechanical system of the machine.

Mechanical maintainer:

Specialized technician able to intervene on the mechanical parts to carry out all the necessary maintenance and repairs.

#### 1.5 Intended and un intended uses of the machine

The machine is intended to be used exclusively for the olive harvest by shaking the branches. It is intended for professional use. Operators must have proven fitness and be able to read and understand what is stated in this manual. The machine must be used considering the regulations in force on accident prevention, the conditions of use and the characteristics of the machine themselves.

## 1.6 Risks arising from the use of the machine

### 1.6.1 Noise risk

The sound level was detected by measuring the emission with moving machines, in accordance with UNI EN ISO 11201: 2010. The following values were collected:



- A-weighted emission sound pressure level at the workplace: 74.6 db AC



From the values found it is concluded that the operation of the machine involves a high noise level.

During the use of the machine it is therefore mandatory for operators to use ear protectors, such as headphones or earplugs, to avoid the onset of damage to the auditory system over time.

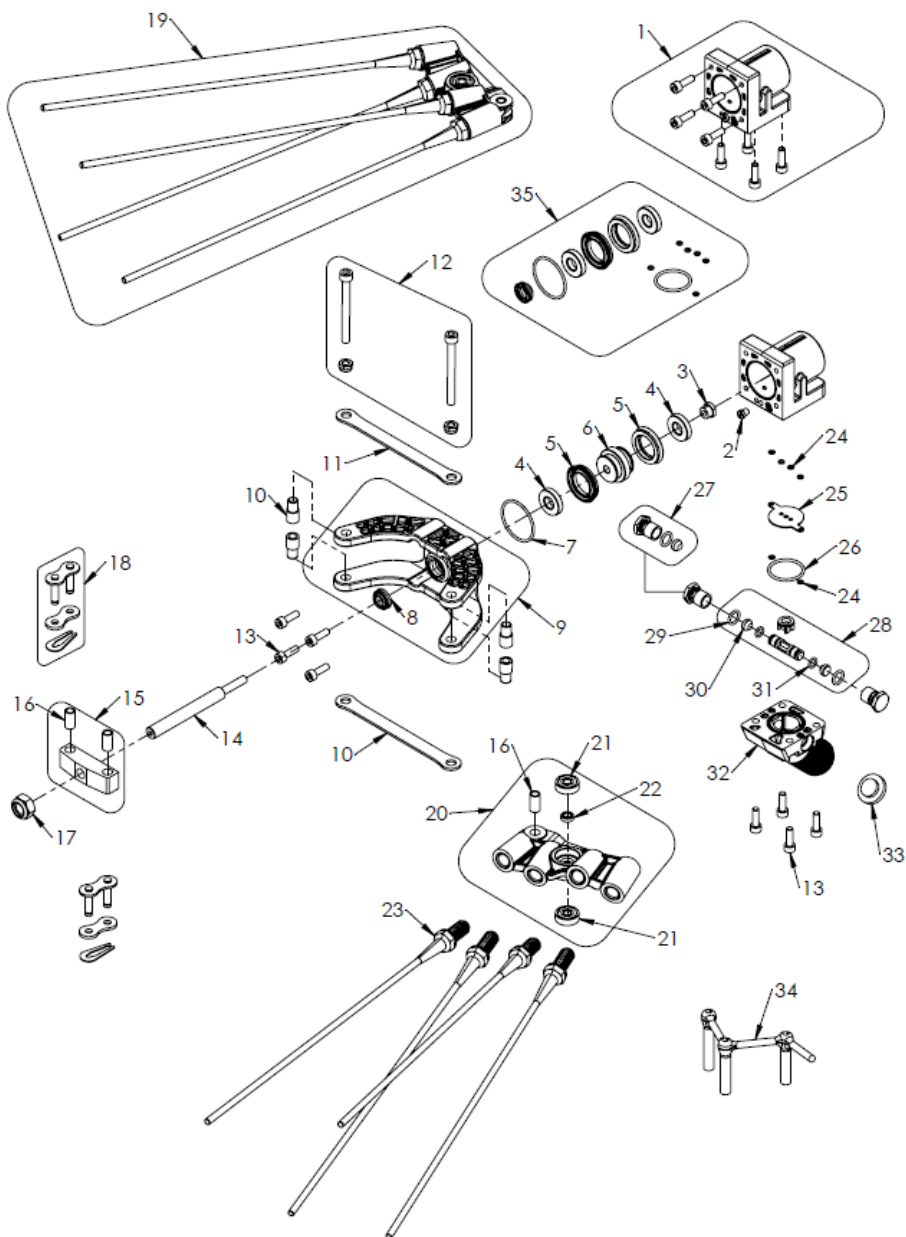
### 1.6.2 Vibration risk

The vibration level was measured with the machine in motion, in accordance with the UNI EN ISO 20643: 2008 + A1: 2012 EN 12096 standard for the evaluation of vibrations transmitted to the MANO-BRACCIO system.

The following value was collected:

6.67 m/s<sup>2</sup> considering the heaviest use of the machine. It is advisable to evaluate the possible use of PPE according to local laws.

1.7 Vertigo PN Components




VERTIGO PN			
POS.	SET CODE	SET DESCRIPTION	PACK
1	100.OP01K	CYLINDER BODY SET COMPLETE WITH BALLS AND SCREWS	1
2	100.OP47	GIGLER Ø2	1
3	100.OP40	THREADED SOFTENING STOP	1
4	OP14	POLYURETHANE WASHER	1
5	OP19	LIP GASKET	1
6	VE100145	PISTONE VERTIGO	1
7	OP18	GASKET OR2131	1
8	OP37	STEM SCRAPER	1
9	VE100190	ASSEMBLED VERTIGO PN SUPPORT	1
10	VE100195	VERTIGO PN PLASTIC COMBS SUPPORT BUSHING	1
11	VE100140	CONNECTING PLATE	1
12	VE100160	SET SCREWS SUPPORT COMB VERTIGO	1
13	VTCE 5X16	HEXAGONAL HOLLOW CYLINDRICAL HEAD SCREW M5X16 ZNB	1
14	100.OP08	PISTON ROD	1
15	100.OP20	ALUMINIUM COMBS UNION PLATE	1
16	OP51	HARDENED BUSHING	1
17	100.OP29	DADO M10	1
18	100.OP49	CHAIN MESH SET	1
19	VE100100	VERTIGO COMB SET	1
20	VE100105	TOOTH SUPPORT	1
21	OE300135	BEARING 626 ZZ	1
22	VE100115	COMB BEARING SPACER	1
23	VE100120	TOOTH COMB	1
24	OP34	OR 1X3	1
25	100.OP07	HEAT EXCHANGER PLATE	1
26	OP33	OR 2X25.5	1
27	100.OP39	THREADED SEAL CAP KIT + AMMORTIZZO AND GASKET	1
28	100.OP04K	EXCHANGER SET	1
29	OP42	GASKET OR 106	1
30	OP41	AMMORTIZZO	1
31	OP21	OR 6X1.5	1
32	100.OP02	CYLINDER BODY SUPPORT	1
33	100.OP16	FILTER	1
34	VE100185	BRANCH LOCK VERTIGO PN	1
35	100.OP06K	GASKET SET	1
REV04-29/04/2021			

## 2 SAFETY AND PREVENTION

It is very important to read this manual carefully in order to minimize the risks due to a careless or incorrect use of the machine covered by the manual.

The user must instruct the operator on the risks deriving from the use of the machine, on the devices prepared for safety and on the general accident prevention rules provided for by the directives and legislation of the country of use of the machine.

### 2.2 Safety signals (pictograms)

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

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

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

### 2.3 General safety rules

The staff undertakes to:

- always use the means of personal protection provided for by legislation and follow what is reported in this manual,
- follow all indications of danger and caution indicated on the machine,
- not to perform on its own initiative operations or interventions on the machine that are not within its competence,
- report to your superior any problem or dangerous situation that may arise.

The machinery must be used only for the use for which it was designed.

The machinery must not be operated with the protections disassembled: the safety barriers and the crankcases must not be removed or disengaged.



**NB:** Avoid wearing loose and fluttering clothes, as they may get stuck in the moving parts of the machine. It is important to use suitable clothing. The operator must not carry scissors or sharp utensils in the pockets. Please note the prohibition of transit and parking within range of the machine outside the operator.



## 2.4 Safety in use and maintenance

### 2.4.1 Safety in use

- Before putting the machine into operation, make sure of the perfect integrity of all safety.
- The area in which the machinery is used is to be considered a "danger zone", that is, an area in the vicinity of which the presence of an exposed person constitutes a risk to the health and safety of that person. This applies in particular in the case of the presence of people who are not trained in the use of the machine.
- The area surrounding the operating area of the machine must always be clean and kept free from any impediment. Make sure that there are no people or animals in the area of use of the machine.
- When a person is "exposed" or is in a "danger zone", the operator must immediately intervene by stopping the machine and possibly removing the person in question.
- During the operation of the machinery, the operator must maintain a position that allows his full control, so that he can intervene at any time and in any eventuality.
- Before abandoning control of the machine, always make sure that the power supply is disconnected.
- Periodically check the integrity of the machine as a whole, including protective equipment.

### 2.4.2 Maintenance safety

- Before carrying out any maintenance work on the machine, make sure that the power supply is disconnected and that the machine is disconnected from the rod.
- Maintenance operations must always be carried out by personnel qualified for these specific functions.
- At the end of the 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



Elmetto



Otoprotector



Non-slip and anti-crushing shoes

Adjustments must be made by a single operator; during these operations, access to the machine is forbidden to non-workers. Avoid dust deposits on the machine, especially on the suction filters.

## 2.5 Ecology and pollution

### 2.5.1 Waste management

The use and maintenance of the machine generates waste products, which 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 relating to the use of the products for the normal operation, cleaning and maintenance of the machines.

Any special waste must be disposed of by contacting specialized companies authorized for this purpose. Ensure the correct disposal of the waste through the request for the receipt of "successful disposal".

In case of dismantling of machinery see section 4.4.

### 3 USE

#### 3.1 Handling and transport

The machine are easily transportable both in packed and freeform. It is recommended to pay attention to the overhead lines of the machine when it is transported for its use.

#### 3.2 Before use

Before the machine is put into operation, the operator must have read and understood all the parts of this manual and in particular what is reported in Chapter 2 dedicated to safety.

Before using the machine for the first time:

- Familiarize yourself with the control devices and their functions,
- Check that all machine components subject to wear or deterioration are intact,
- Verify that all safety systems are intact and that the fixed crankcases are in the correct position.

#### 3.3 Assembly and connection

To mount the machine on the pneumatic rod, turn the thread clockwise until it locks. To disassemble rotate in the opposite direction.



Once mounted on the rod and before proceeding with the ignition, make sure that the compressor pressure is from 6 to 8 bar, higher pressures could cause greater wear of the machine components.

#### 3.4 Use of the machine

To start the machine you need to connect the handle to the compressor.

Pressing the lever on the handle starts the machine. The release of the lever blocks the operation. This device is to guarantee the safety of the operator who in case of accidental fall allows the blocking of the moving part.

Once started, approach with the comb to the branch to be shaken. Pay attention to branches especially laden with fruits. Hold the machine firmly with both hands and always work in stable conditions on the legs.

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

To turn off the machine, simply close the tap in the opposite position to the one of ignition. 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.

#### Directions for use:

- The wear of the mechanical components of the machine is closely related to the way the machine is used. Therefore, avoid insisting on the branch to be shaken until the machine stops, this would cause a mechanical overload of the components. Try to limit the stops as much as possible for too much effort, this extends the life of your tool!
- In order to avoid dangerous overloads of effort that can cause damage to the comb, it is advisable to intersperse the shaking action with regular pauses, in order not to stress the tool beyond the standards for which it was designed and tested.
- To reduce the effect of vibrations on the hand-arm system, it is recommended to intersperse the use of the comb with 15-minute pauses every two hours of use

### 4. MAINTENANCE AND CLEANING

#### 4.1. Routine maintenance

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

##### Periodic checks to be carried out:

- 1) screws of the body: tighten them weekly,
- 2) state of wear of moving mechanical parts: carry out daily checks,
- 3) at the end of the season it is recommended to bring the machine back to the trusted dealer for a generalized check.

The reported intervention times are to be considered indicative and are defined considering normal conditions of use of the machine. They may vary depending on the mode of use of the machines and in relation to the characteristics of the environment in which it is used, e.g.: humidity level, air cleanliness (presence of dust). In conditions of intense use it is necessary to increase the number of maintenance interventions.



Before proceeding with any operation make sure that the machine is disconnected.

#### 4.2. Machine cleaning and lubrication

Lubrication must be carried out systematically and periodically by means of the appropriate FRL group placed on the compressor. It is recommended to adjust the lubrication group: 1 drop every 20 seconds to oil the machine.

#### 4.3. Set-aside

In the event that a long period of rest of the machine is expected, it is necessary to carry out the following operations:

- disconnect the machine from the compressor;
- clean the machine, freeing it from any dirt residues deposited on its **surface** and especially inside it, between the **mechanical** parts;
- carry out a check by replacing the parts damaged / worn by use;
- carry out an accurate lubrication with special oil of the **mechanical** parts;
- cover or repack the machine to avoid dust/dirt depositing on its surface or inside.

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

#### 4.4. Dismantling the machine

The machine consists of materials that can be recovered; in particular, iron recovery is possible. Deliver your disused machines to an official material recycling center. Actively contribute to the protection of the environment

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 about the most effective ways and possibilities to carry out the disposal of the old instrument, in an environmentally friendly way.

#### 4.5. Troubleshooting the most common problems (see website)

SOURCE OF THE PROBLEM	PROBLEM
The machine does not start	Check the air hose
	Check the compressor faucet
The machine does not reach maximum power or stops	Check the piston of the machine
	Check the air hose
	Check the compressor pressure
	Check the wear status of the ORs

#### 4.6 Spare parts

In order to ensure the safety and long life of the product, the exclusive use of original spare parts is recommended. Repairs or maintenance of a specialized type must be 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:** Verify, at the time of purchase, that the machine are intact and complete in its components. Any complaints must be submitted within 7 days of receipt of the machine. The warranty involves the repair or replacement free of charge of the parts that may be defective.

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

#### 5.1. Disclaimer of Warranty

The warranty is void in the following cases:

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

### 6. DECLARATION OF CONFORMITY

Directive 98/37/EC of the European Parliament and of the Council.

I, the undersigned Castellari Enrico, responsible for the production of Castellari S.r.l. Construction of scissors for agriculture Via Lasie 16/E – 40026 IMOLA (BO) ITALIA, declare under my sole responsibility that the Vertigo PN electric rake complies with the essential safety and health protection requirements required by Directive 2006/42/EC of the European Parliament and of the Council.

WARRANTY CERTIFICATE · WARRANTY CERTIFICATE  
WARRANTY CERTIFICATE · ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΕΓΓΥΗΣΗΣ

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

Anno di immatricolazione prodotto · Registration's year of the product  
Año de matriculacion del producto · Year of Product Registration in the Register

Date of purchase · Purchasing date  
Date of purchase · Ημερομηνία Αγοράς

The company Castellari Srl guarantees its products against manufacturing defects for 1 year from date of purchase. Present/ship this coupon together with invoice/receipt in case of request of assistance.

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.

Present/send this voucher along with the invoice/receipt in case of requesting assistance.

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

Present/send this coupon along with the invoice/receipt in case you request support.

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