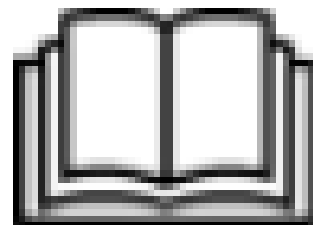




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**Service Manual for the Initialization and maintenance**

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## **Electronic Pruning Shears**

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The following instructions must be read carefully prior to the initialization the machine



In accordance with article  
2006/42/CE and subsequent  
modifications

## Contents:

- 1 TO BE READ CAREFULLY
- 2 COMMISSIONING OF THE SHEARS
- 3 VERIFYING THE COMMISSIONING
- 4 FLOW CHART PROGRAMME
- 5 DISASSEMBLING THE BLADE UNIT
- 6 SERVICE PARAMETERS
- 7 ALARMS
- 8 ATTACHMENTS

## 1. TO BE READ CAREFULLY

This manual is reserved for authorised retailers only and cannot be given to the end user as it contains technical information.

Please see the User's manual for reference to general safety, the warranty, maintenance, and battery safety regulations.



### INFORMATION FOR THE USER ON DISPOSING OF THE COMPONENTS

Pursuant to Art.14 of the Directive 2012/19/EU of the European Parliament and Council dated 4 July 2012 on Waste Electrical and Electronic Equipment (RAEE), it must be remembered that:

The symbol of the **bin crossed out with an X** on the device or on the package indicates that the product must be disposed of separately from other wastes at the end of its life span.

The user must therefore bring the device to suitable differentiated collection centres for electronic and electro-technical waste, or return it to the retailer when buying a new device to replace it, one to one.

The correct differentiated collection for the successive recycling, treatment, and compatible environmental disposal of the disused device makes it possible to avoid negative effects on the environment and on health, favouring the reuse and/or recycling of the materials the device is made of.

**The incorrect disposal of the product by the user will result in the application of administrative sanctions pursuant to current laws.**

Legend of the symbols of warnings present in the manual:



**DANGER: Risk of damage to people or things**



**NOTICE: Pay attention**

## 2. COMMISSIONING OF THE SHEARS

The electric shears are supplied **NOT COMMISSIONED**; for this reason, they will **turn off every 5 minutes**.

By following the procedure described below, this function will be eliminated and the pruner will turn itself off only after **5 minutes** of inactivity.

The commissioning saves the **date and time** and activates the warranty in the controller memory.

Procedure to be carried out in reference to Figure 1:

- A. Turn on the controller using the dedicated switch.
- B. Wait for the green LED (2) to turn on.
- C. Activate the shears by pressing the trigger twice.
- D. Press the "MODE" button (3) for **40 seconds**, until the **LED (2)** flashes.
- E. Release the button to complete the procedure.

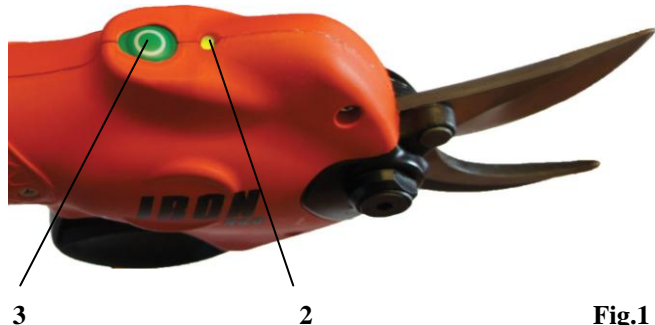


Fig.1



**While holding down the button "Mode 3", it is important not to let it go before the time indicated is up. Otherwise, it will be necessary to repeat the procedure.**

**Do not take into consideration the LED (2) flashing 5 seconds after pressing the button.**

### 3. VERIFYING THE COMMISSIONING

To verify if the **COMMISSIONING** of the shears has been completed successfully, continue as below:  
 Check that the **date and time** have been memorised in the specific fields, visualizing the Service parameters.  
 Operate the shears for **more than 5 minutes** to check that they do not turn off.  
 If the verification should continue in order to control the parameters, it is necessary to enter the "**Service**" menu as described below:

- A. Press the shear trigger for 5 seconds.
- B. Wait for the Green LED "2" to flash.
- C. Press the "-" key on the controller.

the following message appears on the display:

C	O	D	E	?		X	X	X	X					N	O

Put in the code **1111**, using the "+" and "-" keys.



With "+" the value of the flashing field increases, with "-" the cursor moves to the next field.

- D. After having entered the code, the following message appears:

C	O	D	E	?		X	X	X	X					O	K
D	E	F	?		N	O			S	W		X	.	X	0

- E. Press the "**Enter**" key to access the successive fields and use the "+" key to scroll to the specific ones.

A	N	N	O			I	N	I	Z	I	A	L	I	Z	Z	A
															0	0

M	E	S	E			I	N	I	Z	I	A	L	I	Z	Z	A
															0	1

If the **COMMISSIONING** procedure has been completed correctly, the current year and month will be displayed; on the contrary, the figures relative to the shears **NOT YET COMMISSIONED** will be indicated: year 2000 (00) , month January (01).

Example: if the shears were commissioned in February 2014, the field will read 14, 02.

- F. Once the verification is complete, turn off the "Controller" for exit from the "Service" menu.

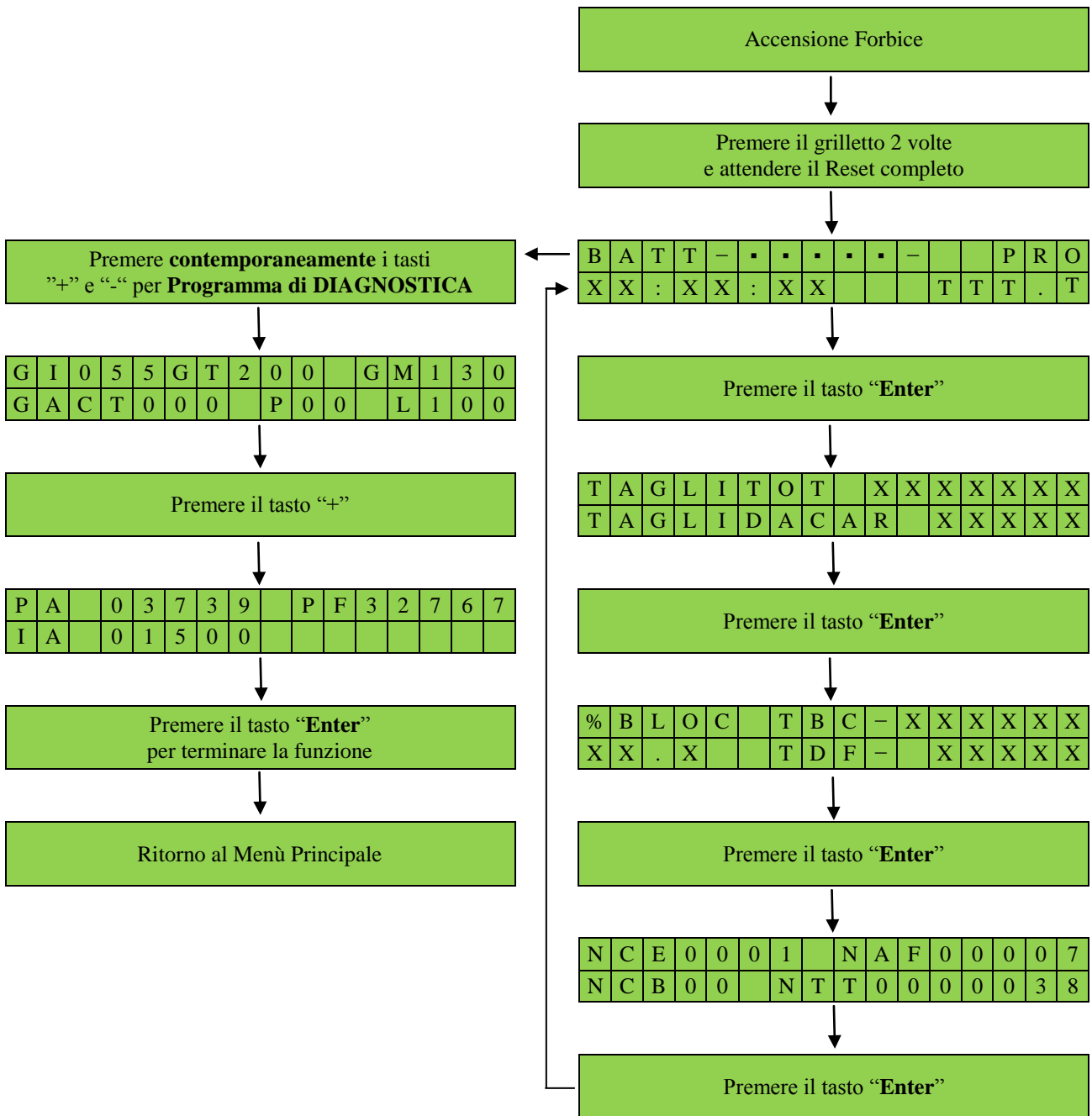
The warranty of the shears starts after completing this operation and is valid for the time indicated in the user manual. In order to control, change or extend warranty, it is necessary to use a specific PC software that allows working on counters and the parameters described here above.

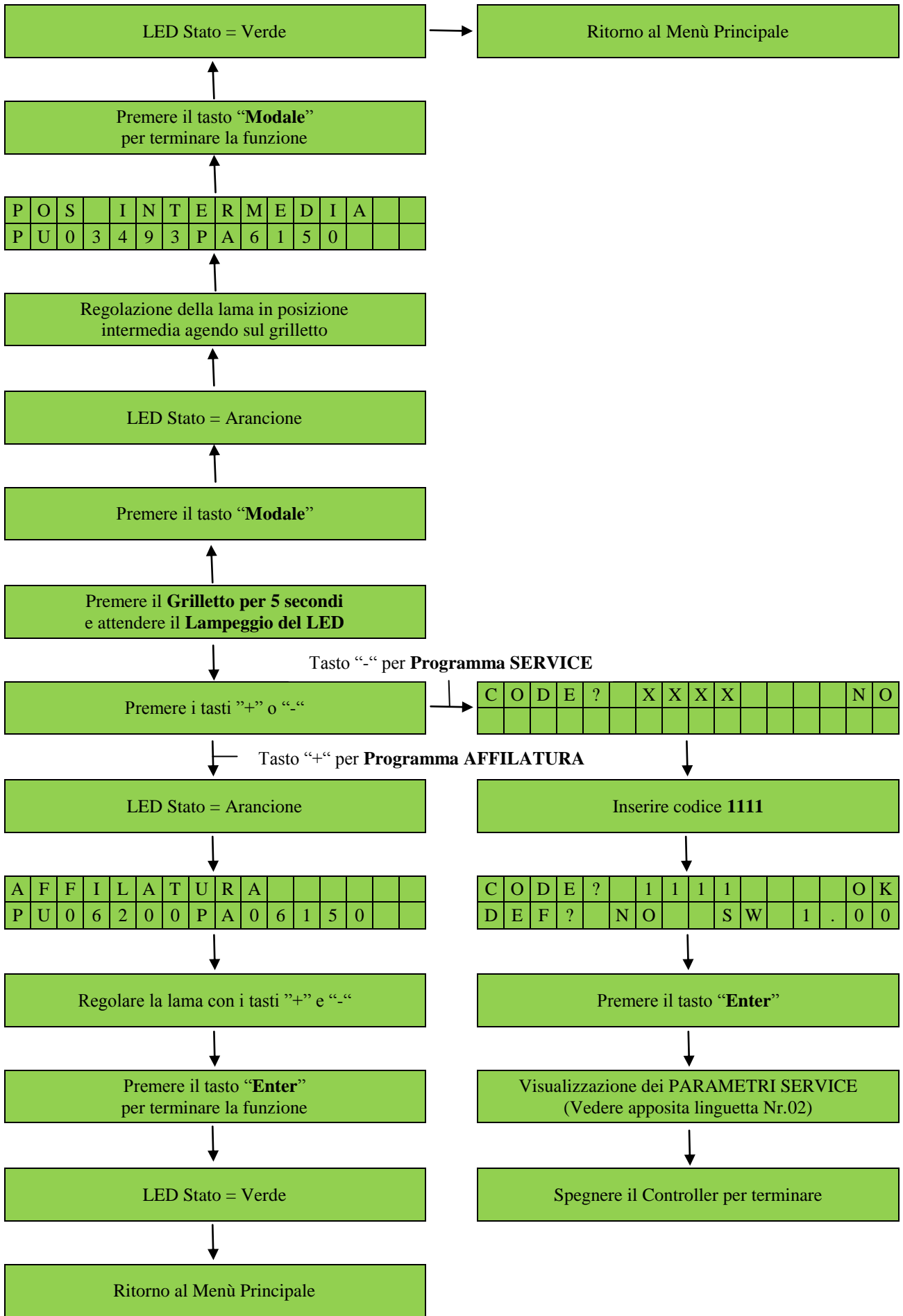
## 4. FLOW CHART PROGRAMME

The programme memorized in the controller is structured according to the following logic: the menus can be navigated by pressing the “**Enter**”, “+” and “-” keys.

When a page other than the main page of the menu is accessed, it is recommended that the shears not be used.

To return to the main menu where there is no automatic return function, it is necessary to turn the controller off and then on again.

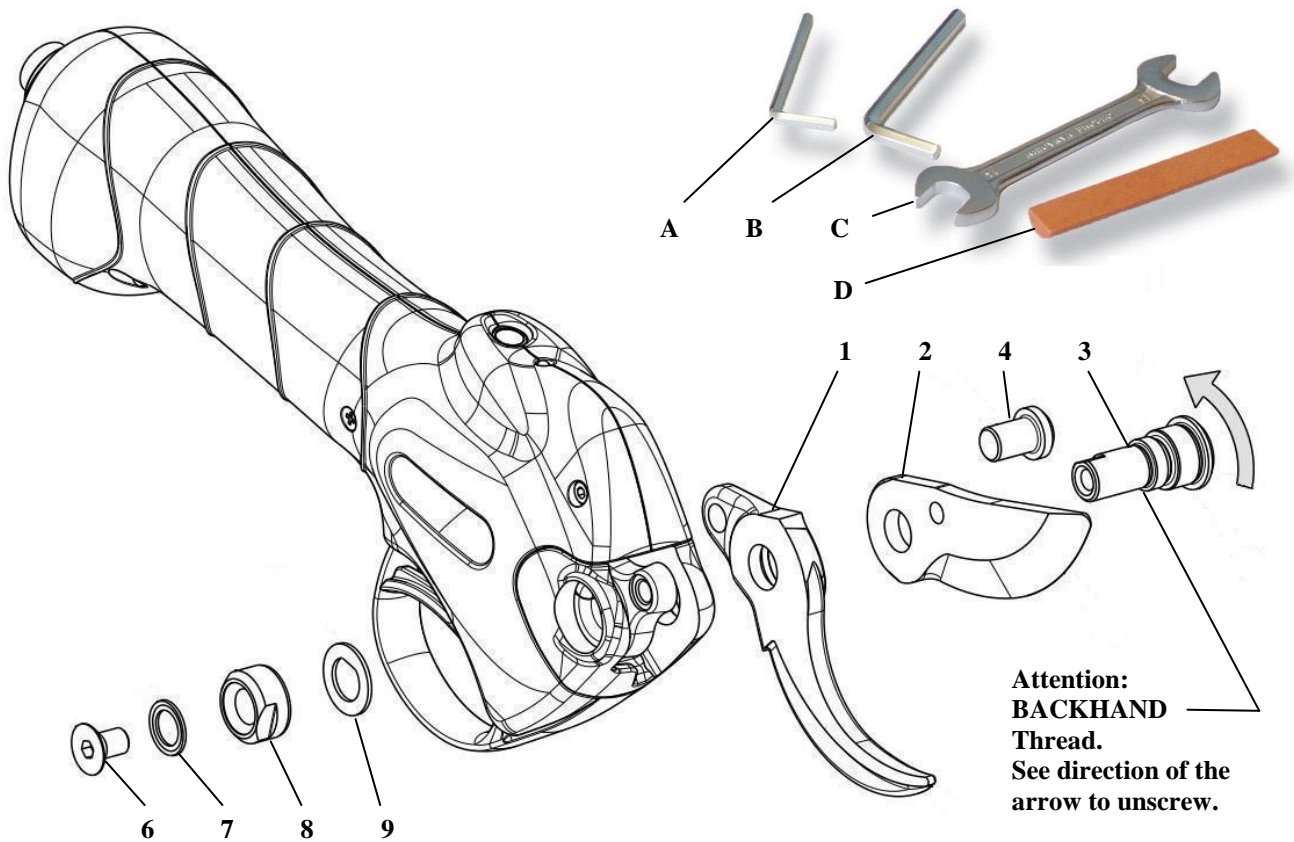




## 5. DISASSEMBLING THE BLADE UNIT

Disconnect the shears from the controller.

In reference to the numbered details in the exploded drawing below, proceed as indicated:



- Manually position the moving blade half-open.
- Loosen and remove screw “6” with the 4-mm Allen wrench “A” on the blade unit support pin “3”.
- Remove the conical washer “7”.
- Loosen and remove the locknut “8” with the 14-mm gab-ring spanner “C”.
- Remove the flat washer “9”.
- Unscrew and remove the blade unit support pin “3”, using the 6-mm Allen wrench “B”.  
Note carefully that the thread is **LEFT**, so the wrench must be turned clockwise to unscrew it.
- Slightly slip the moving blade “2” off the body of the shears.
- Turn the moving blade “2” counter-clockwise to allow the driving pin to be removed from the gear sector.

If it is necessary to replace the fixed blade 1, after having followed the steps described above, unscrew the screws “4” to release it.

During reassembly of the components, follow these simple rules:

- Tighten the locknut “8” until it is completely tight and then turn it back 1/4 of a turn.
- Insert and completely tighten the screw “6”, holding the locknut “8” blocked.
- Tighten and loosen the locknut “8” to ensure the movement necessary to the blades without loosening the screws completely “6”.



**If the washers “7” and “9” are not replaced or are replaced with unsuitable components, the functioning of the pruning shears will be compromised.**



**When using the shears, it is advisable to lubricate the blade pivot “3” blade with the oil spray provided or with grease. Do this at least once a day.**

## 6. SERVICE PARAMETERS

The service menu displays all the counters of the electronic shears.

To access the menu, repeat the steps described at "paragraph 3", point A, B, C, D, E.

The list and their meanings can be found below:

V	E	R		S	W		C	O	N	T	R	O	L	L	O
												X	.	X	X

**Version of the Controller software.**

(cannot be changed)

V	E	R		S	W		A	Z	I	O	N	A	M	E	N
												X	.	X	X

**Version of the shears Activation software.**

(cannot be changed)

S	E	R	I	A	L		N		F	O	R	B	I	C	E
								X	X	X	X	X	X	X	X

**Serial Number of the shears inserted in the Factory.**

(cannot be changed)

A	N	N	O												
														X	X

**The year the shears were sold by the distributor to the client.** (see Chapter 2 "Commissioning")

M	E	S	E												
														X	X

**Month of the year the shears were sold by the distributor.**

(see Chapter 2 "Commissioning")

A	N	N	O												
														0	0

**Setting/Visualization of the System Clock:**

**Year**

M	E	S	E												
														0	0

**Setting/Visualization of the System Clock:**

**Month**

G	I	O	R	N	O										
														0	0

**Setting/Visualization of the System Clock:**

**Day**

O	R	A													
														0	0

**Setting/Visualization of the System Clock:**

**Hour**

M	I	N	U	T	I										
														0	0

**Setting/Visualization of the System Clock:**

**Minutes**

T	O	T	A	L	E		O	R	E		F	U	N	Z	I
										0	0	0	0	0	0

**Hour Counter for shears operation**

(cannot be reset)

T	O	T	A	L	E		T	A	G	L	I				
								0	0	0	0	0	0	0	0

**Counter of the number of cuts**

(cannot be reset)

T	O	T		T	A	G	L	I		B	L	O	C	C	A
									0	0	0	0	0	0	0

**Counter of the number of cuts blocked**

(cannot be reset)

T	O	T	A	L	E		A	F	F	I	L	A	T	U	R
								0	0	0	0	0	0	0	0

**Counter of the number of times sharpened**

(cannot be reset)

A	L	L		T	E	M	P		T	O	T	A	L	I	
									0	0	0	0	0	0	0

**Counter of the total temperature alarms**

(cannot be reset)

A	L	L		T	E	M	P		D	A		A	F	F	I
									0	0	0	0	0	0	0

**Counter of sharpening temperature alarms**  
(cannot be reset)

T	E	N	T		M	A	X		T	O	T	A	L	I	
									0	0	0	0	0	0	0

Number of attempted cuts before a blocked cut.

T	E	N	T		M	A	X		D	A		A	F	F	I
									0	0	0	0	0	0	0

Number of attempted cuts after sharpening of a blocked cut.

N	U	M		C		B	A	T		1	-	2			
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**January-February**

N	U	M		C		B	A	T		3	-	4			
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**March-April**

N	U	M		C		B	A	T		5	-	6			
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**May-June**

N	U	M		C		B	A	T		7	-	8			
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**July-August**

N	U	M		C		B	A	T		9	-	1	0		
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**September-October**

N	U	M		C		B	A	T		1	1		1	2	
										0	0	0	0	0	0

**Counter Number of Battery Charges period**  
**November-December**

M	I	N	U	T	I		D	A		C	A	R	I	C	A
										0	0	0	0	0	0

Counter of the **Minutes of work** since the last battery charge.

T	A	G	L	I		U	L	T		C	A	R	I	C	A
										0	0	0	0	0	0

Counter of the **Number of Cuts** made since the last battery charge.

T	A		B	L		U	L	T		C	A	R	I	C	A
										0	0	0	0	0	0

Counter of the **Number of Cuts Blocked** since the last battery charge.

L	I	V		B		U	L	T		C	A	R	I	C	A
										0	0	0	0	0	0

Counter of the **charge Level** from where the last battery charge started.

T	A	G	L	I		P	E	N	U	L	T		C	A	R
									0	0	0	0	0	0	0

Counter of **Number of Cuts** from the next to the last battery charge.

T	A		B	L		P	E	N	U	L	T		C	A	R
									0	0	0	0	0	0	0

Counter of the **Number of Buts Blocked** from the next to the last battery charge.

L	I	V		B		P	E	N	U	L	T		C	A	R
									0	0	0	0	0	0	0

**Level of charge** from where the next to the last battery charge started.



T	A	G	L	I		T	E	R	Z	U	L	T		C	A
									0	0	0	0	0	0	0

Counter of the **Number of Cuts** from the third last battery Charge.

T	A		B	L		T	E	R	Z	U	L	T		C	A
									0	0	0	0	0	0	0

Counter of the **Number of Cuts Blocked** from the third last battery charge.

### SETTING THE SYSTEM CLOCK:

To set the system clock (RTC), proceed as follows:

- On the display page of the parameters to be modified, press the “**Enter**” key.
- With the “+” key, increase the value.
- With the “-” key, move to the next field.
- Conclude the procedure by pressing the new “**Enter**” key.

Repeat the procedure for all the other fields.

To exist the “Service” menu, turn the “Controller” off and then on again.



**Do not use the shears when the “Controller” is not in the main menu.**

## 7. ALARMS

If the Display indicates an “**Alarm Code**” from **AL1** to **AL11** when turned on, it is necessary to replace the electronic card the alarm refers to. The table below provides a list of origins and the cause:

Code	Origin	Generic Description
<b>AL1</b>	from Shear operation	Measure current Hardware Fail
<b>AL2</b>	from Shear operation	Board temperature > 80 degrees
<b>AL3</b>	from Shear operation	Current Max Hardware Fail
<b>AL4</b>	from Shear operation	Minimum Voltage under 30V
<b>AL5</b>	from Shear operation	Battery Voltage > 59V
<b>AL6</b>	from Shear operation	Configuration error due to RS232 Fail
<b>AL7</b>	from Shear operation	Command Error by Controller
<b>AL8</b>	from Shear operation	Homing Error (board broken on shears frame and body)
<b>AL9</b>	from Shear operation	Overflow positioning (board broken on shears frame and body)
<b>AL10</b>	from Controller	Measure of voltage on the Battery too Low
<b>AL11</b>	from Controller	Battery charge level too Low
<b>AL12</b>	from Controller	RTC Battery dead



Alarm **AL12** indicates that the battery of the RTC (Real Time Clock) in the controller must be replaced.

Open the controller by unscrewing the three Allen screws and replace the button cell with a similar one model **CR2032**.

The display shows the charge level of the battery when the shears are turned on:

I	N	I	T		5	8	.	2	V		3	.	0	0	V
P	R	E	M	I	2	V	O	L	T	E	G	R	I	L	L

**RTC Battery Voltage**

If the value is less than 2.70V, the error **AL12** is activated by blocking the operation of the shears.

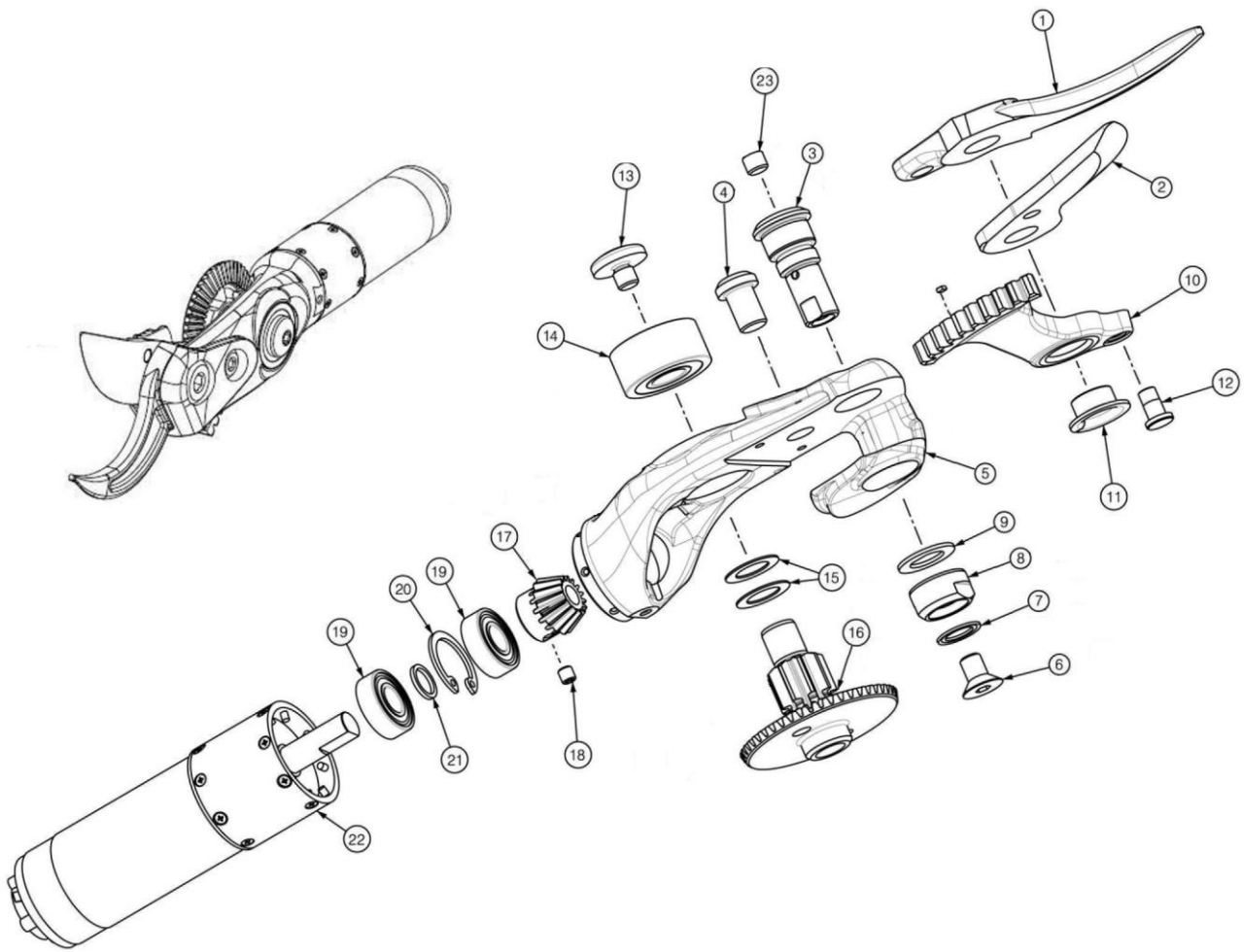


**Do not replace the battery if not necessary and do not try to recharge.**

**Pay attention to the polarity of the battery: The positive (+) pole is always upwards.**

**Following replacement of the battery, it is necessary to reset the system clock as described above.**

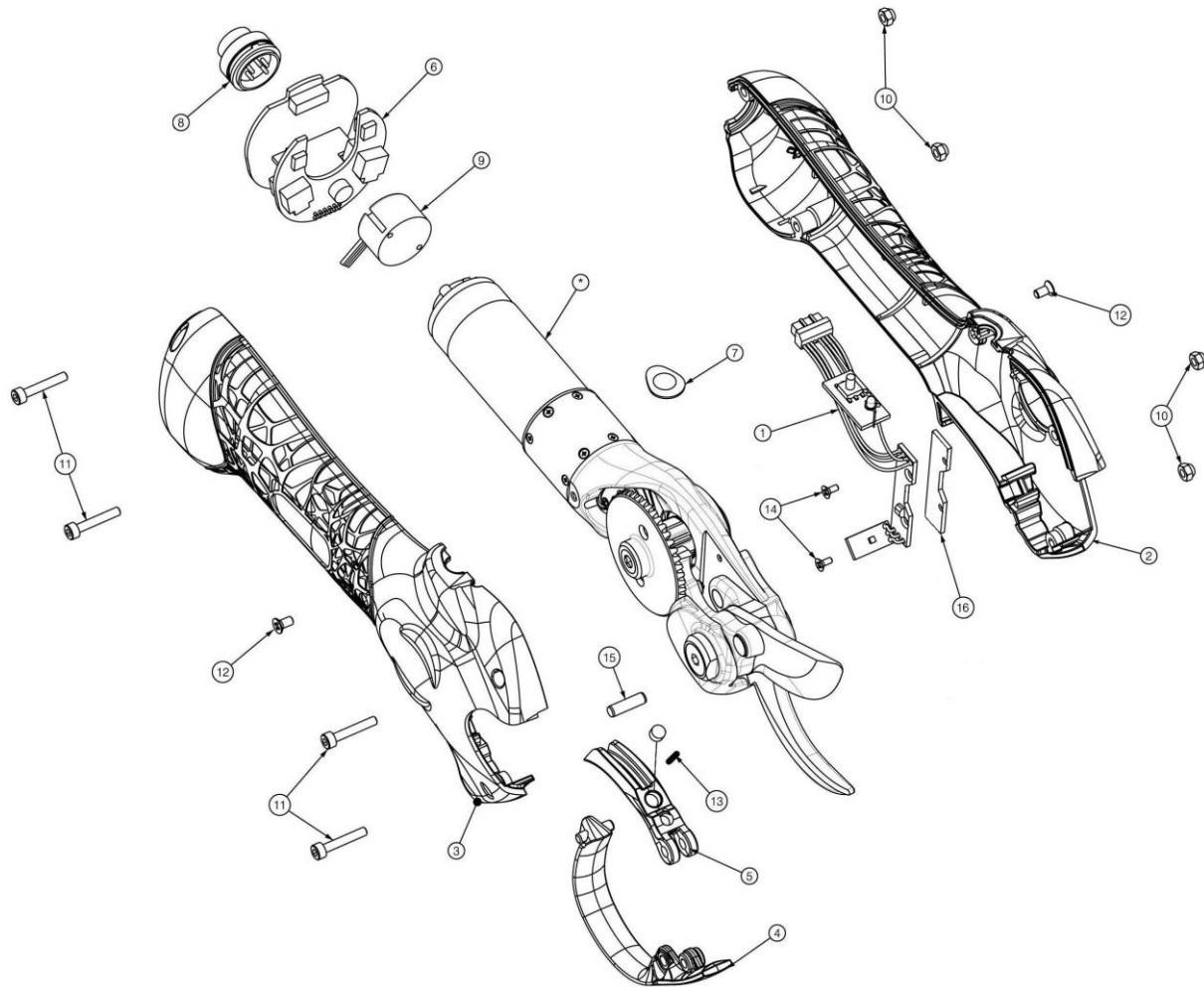
## 8. ATTACHMENTS



**One-handed shears frame mechanics**

Table 1/A – Page 1

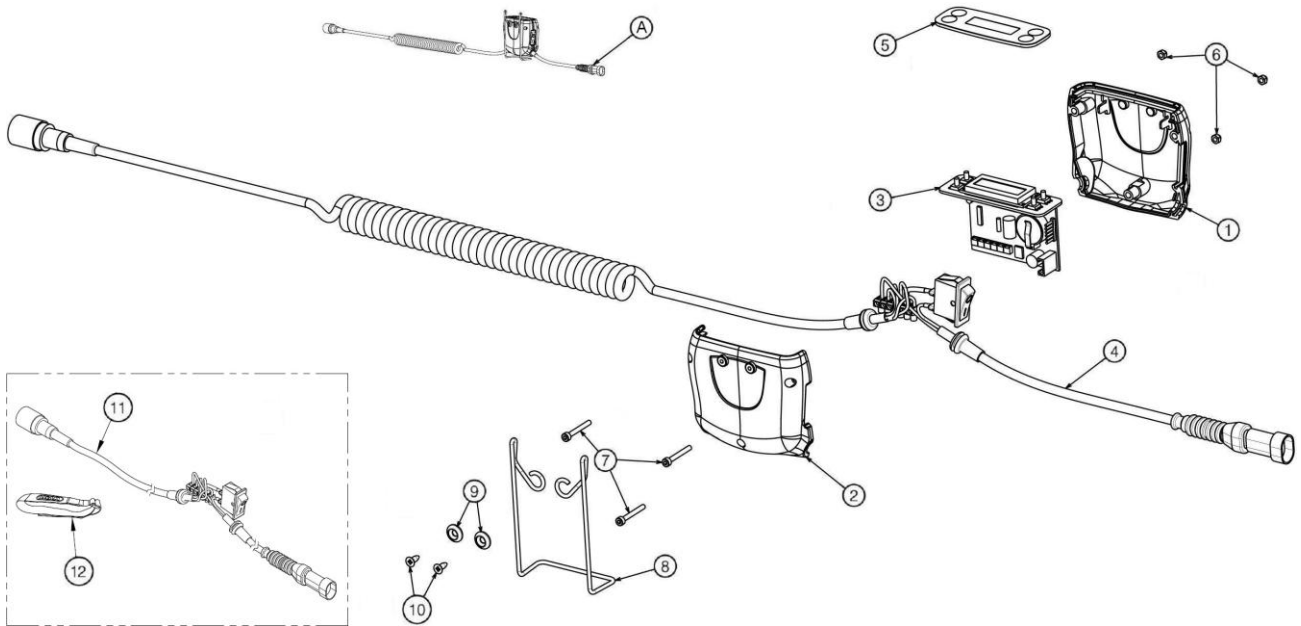
Ref.	Code	Name	N.
1	4130102	Fixed blade	1
2	4130101	Mobile blade	1
3	4130108	Pivot for blades electric shears	1
4	4130106	Blocking screw fixed blade	1
5	4130107	One-handed magnesium frame	1
6	0651006010	Screw hexagonal V-head TSEI M6x10 UNI 5933	1
7	4130111	Teethed bush 8,4x13 thickness 0,7 (Schnorr)	1
8	4130110	Adjustment ring nut mobile blade	1
9	4130109	Fixing spacer for blade pivot	1
10	4130104	Teethed section Z.47 m.1,5 with Magnet 2x2x1	1
11	051031007	Bushing with external collar PCMF101207 E 10x12x7 sliding bearing	1
12	4130103	Dragging pivot for mobile blade electronic pruning shears	1
13	4130119	Pivot for fixing transmission	1
14	069043000	Spherical bearing with oblique contact 3000-B 2RSR-TVH 26x10x12	1
15	4130112	Spacer rear regulation crown electronic pruning shears	2
16	4130115	Transmission shaft with Wheel/Crown conic Z.47	1
17	4130116	Conic pinion Z.15	1
18	0653004004	Hexagonal screw without head with flat end EI PS M4x4 UNI 5923	1
19	06904619	Radial spherical bearing at one crown 619/8/2RS1 19x8x6	2
20	06710019	Elastic ring for holes d.19 UNI 7437-75	1
21	4130117	Spacer bearing-reducer	1
22	4130118	Modification motor-reducer	1
23	4130120	Blade lubrication stopper	1



**One-handed shears' general mechanics**

Table 2/A – Page 1

Ref.	Code	Name	N.
1	4130190	Kit electrical control chip	1
2	4130130	Cover LH orange RAL 2009	1
3	4130131	Cover RH orange RAL 2009	1
4	4130132	Protection black RAL 9017	1
5	4130133	Trigger black RAL 9017 with round Magnet 5x3	1
6	4130188	Electronic power chip	1
7	4130186	Digital button green RAL 6024	1
8	4130187	Circular connector 5 poles male (LUMBERG)	1
9	4130189	Encoder d.22 mm.	1
10	0632003	Auto-blocking low nut M3 DIN 985	4
11	0650003018	Screw cylindrical head hexagonal TCE M3x18 UNI 5931	4
12	064430306	Screw V-head crossed TSICroce M3x6 UNI 7688-4,8	2
13	4130134	Trigger spring d.4,22 L.10,40 wire d.0,60	1
14	064430205	Screw V-head crossed TSICroce M2x5 UNI 7688	2
15	4130135	Cylindrical spine 4x18 UNI 1707	1
16	4130191	Isolating insert for electrical control chip kit	1



One-handed shears' controller

Table 3/A – Page 1

Ref.	Code	Name	N.
A	4130200	Controller complete with cables	1
1	4130201	Cover LH orange RAL 2009 controller	1
2	4130202	Cover RH orange RAL 2009 controller	1
3	4130203	Chip controller with front cover support	1
4	4130204	Spiral controller cable kit with switch	1
5	4130205	Polycarbonate controller front cover personalized Rinieri	1
6	0632003	Auto-blocking low nut M3 DIN 985	3
7	0650003025	Cylindrical head screw hexagonal TCE M3x25 UNI 5931	3
8	4130206	Support spring controller	1
9	4130207	Support spring blocking controller	2
10	0644439095	Auto-threading screw V-head crossed TSICroce 3,9x9,5 UNI 6955	2
11	4130208	Straight controller cable kit with switch	1
12	4130209	Controller cable bracelet	1



One-handed shears' accessories

Ref.	Code	Name	N.
3	4130300	Battery back 52 V 4,4 Ah with cable and APM female	1
4	4130400	Battery charger 14 58,8 vdc 1 A with connector DIN 5 male poles	1
5	4130500	Battery back-pack orange RAL 2009	1
6	4130600	Holster personalized Rinieri in leather for one-handed shear	1
7	4130700	Oil spray 100 ml. Brunox Turbo Spray	1
8	4130800	Tool kit for removing blade with sharpening stone without mobile blade	1
9	4130900	Complete case personalized Rinieri IRON 400	1