



1946

FP861A2

PNEUMATIC
CUTTING UNIT



USE MANUAL

Rasor® Elettromeccanica S.r.l. was established in Milan in 1946 by Luigi Spinelli. For more than sixty years it has been producing automatic cutting systems, cutting units for textile applications and electric and pneumatic cutters.



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Initially considered as a point of reference for cutting systems in the textile applications, the Rasor® products are nowadays widely used in other fields: chemical, automotive, nautical and sport sectors and in furniture manufacturing.

Nowadays Rasor® can rely on the professional continuity of two generations, with the experience inherited from the promoting partner,

with his passion and dedication.

The main characteristic of Rasor® is that each working phase, starting from the manufacturing of the product up to its packing and delivery is carried out in Rasor® premises by qualified operators who have professionally grown up following the spirit of the company and of its founders. This ensures the high quality which Rasor® has always considered as essential since the beginning of its activity.

Following the innovative spirit mentioned above, our company is constantly focused on the improvement of the product quality, on the study and development of new materials and technologies.

ACKNOWLEDGMENT

Dear Customer,

thank you for choosing a Rasor® Elettromeccanica S.r.l. product.

Rasor® has been a reference point in the field of cutting systems in the textile, clothing, furniture, tailoring, sport, chemical, automotive, nautical and insulating material sectors for years. Its production has been always synonymous with reliability attested by many of satisfied customers.

Rasor® quality system supervises all the company activities in order to provide the Customer with a service that meets its needs and expectations in terms of product quality, delivery reliability and stock of finished products.

All the parts of the devices have been planned and produced to guarantee an optimum performance. In order to keep the high quality level and the long reliability of the Rasor® products, it is recommended to use only original spare parts and to contact the head office for any maintenance work.

1. GENERAL SAFETY RULES



This manual is an integral part of cutting unit FP861A2 and must be carefully read before using it since it gives important indications with regards to its safe installation, use and maintenance. Keep it with care.



Before using cutting unit FP861A2, read carefully the following general safety rules.

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- **PACKAGING.**
After taking off the packaging make sure that the cutting unit is intact. In case of doubt do not use it and contact an authorized service centre. Do not leave pieces of packaging (plastic bags, foam polystyrene, boxes, etc.) within the reach of children or disabled persons since they are potential sources of danger.
- **AVOID DANGEROUS ENVIRONMENTS.**
- **KEEP CHILDREN AWAY.**
Unauthorized persons, in particular children, must be kept away from the working area.
- **KEEP THE WORKING AREA ALWAYS IN ORDER.**
The workplace must always be kept in order and well lightened.
- **ALWAYS USE cutting unit FP861A2 PROPERLY.**
Use the cutting unit only to carry out the works they have been designed for; do not use them improperly.
- **Observe the use of the tools.**
Do not cut excessively thick materials and always check blade conditions.
- **AVOID ACCIDENTAL STARTINGS.**
Before connecting cutting unit FP861A2, make sure that everything is installed properly.
- **CLOTHING.**
Do not use large clothes or accessories that might get stuck in the moving parts.
- **GOGGLES and PROTECTIVE metal mesh GLOVES.**
Always use goggles, protective metal mesh gloves recommended by Rasor® during use and maintenance operations (according to UNI EN 388:2017 standard).
- **spare parts.**
During maintenance and replacement operations use only original spare parts. Blade maintenance must be only performed by Rasor® technicians.
- **INSTALLATION.**
Any installation that is not in conformity with these specifications could jeopardize your safety and cancels the warranty.



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Informative letter

The installer and the maintenance man must know the content of this manual. Although the main features of the machine described in this manual are not subject to change, **Rasor® Elettromeccanica S.r.l.** reserves the right to modify the components, details and accessories it deems necessary to improve the machine or to meet manufacturing or commercial requirements at any time and without being obliged to update this manual immediately.

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WARNING



ALL RIGHTS ARE RESERVED ACCORDING TO THE INTERNATIONAL COPYRIGHT CONVENTIONS,

The reproduction of any part of this manual, in any form, is forbidden without the prior written authorization of Rasor® Elettromeccanica S.r.l.

The content of this guide can be modified without prior notice. Great care has been taken in collecting and checking the documentation contained in this manual to make it as complete and comprehensible as possible.

Nothing contained in this manual can be considered as a warranty, either expressed or implied - including, not in a restrictive way, the suitability warranty for any special purpose. Nothing contained in this manual can be interpreted as a modification or confirmation of the terms of any purchase contract.

Rasor® Elettromeccanica S.r.l. machines have not been conceived to work in areas at risk of explosions and at high risk of fire.

In case of damage or malfunction, cutting unit FP861A2 must not be used until the Customer Care Technical Service has repaired them.

Customer Care Technical Service



For any information, please contact
RASOR®ELETTROMECCANICA S.r.l.
Via V. Caldesi, 6; 20161, MILANO (MI) - ITALY
Phone: +39.02.66221231; Fax: +39.02.66221293
e-mail: info@rasor-cutter.com
web: www.rasor-cutters.com

WARNING



The original configuration of the cutting unit must not be changed at all.

On receiving the machine make sure the supply corresponds to what has been ordered.

In case of non-compliance immediately inform Rasor®.

Also make sure the cutting unit has not been damaged during transport.

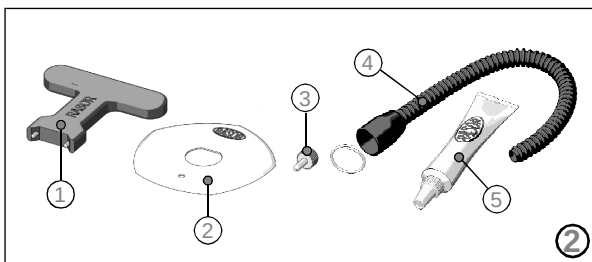
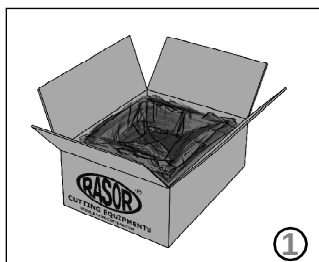


2. TRANSPORT AND PACKING

The cutting unit is delivered in a cardboard box which contains there are various options. The code of the ordered product and its serial number are indicated outside the package (see picture 1). The following accessories are contained in a bag inside the package (see picture 2):

- 1) HSS steel polygonal blade;
- 2) Butterfly key for blade nut disassembly;
- 3) Drift for blade disassembly;
- 4) Flexible pipe with ring;
- 5) Lubricating oil.

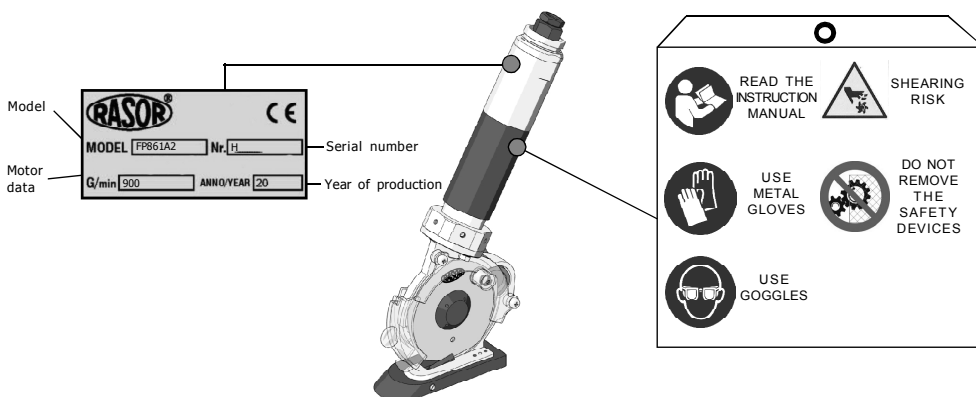
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3. PLATE DATA

The manufacturer's identification and 2006/42/EC STANDARD conformity plate (see picture below) is located on the front part of the cutting unit.

The plate must not be removed at all, even if the machine is resold. Always refer to the serial number (written on the plate itself) when contacting the manufacturer. Several safety warnings are printed on a card which is applied to the cutting unit feeding cable; such warnings must be strictly followed by everyone dealing with the machine. **The company is not to be held responsible for damage to property or accidents to people which might occur if the above-mentioned warnings are not observed. In such a case, the operator is the only person responsible.**



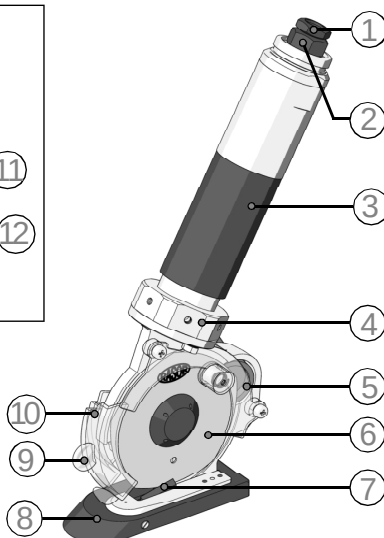
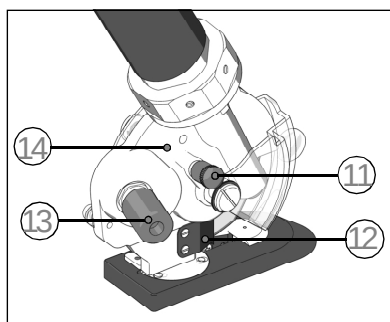
4. PRODUCT DESCRIPTION

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The fixture described in this manual is a pneumatic cutting unit model FP861A2 which can be assembled on automatic machines (e.g. spreaders, computerized cutting, etc...) by means of a proper bracket. Thanks to a reference pin on the front part and of an effective cutting system with polygonal blade, this cutting unit can be used for many applications: in particular, this cutting unit has been designed to cut hard materials such as moquette, polymeric materials, fiber glass, insulating materials and leather (even rawhide).

One special feature of cutting FP861A2 is its ability to sharpen the blade in each moment without disassembling it by means of a grinding wheel mounted on the cutting unit head. After carrying out this operation, it is possible to start cutting again. The pneumatic cutting unit is provided with a threaded connection to the majority of the air pipes. The turbine, perfectly balanced, with a high number of revolutions and totally free of maintenance, reduces the vibrations and the noise to the minimum. The cutting unit can be used to cut damp or wet materials and therefore particularly recommended in tannery, dyeworks, etc... The use of compressed air as source of energy allows working continuously without problems of heating or motor overload. The mechanical parts are made up of steel, high resistant bronze and aluminium and require a lubrication after many working hours.

Device components			
1	1/4" gas connection for the air connector	8	Aluminium base covered with Teflon®
2	Silencer	9	Reference drift
3	Pneumatic motor	10	Front guard
4	Fixing flange	11	Greaser
5	Rear guard	12	Spring locking the thread
6	Polygonal blade	13	Sharpening push button
7	Hard metal counterblade	14	Motor support



5. TECHNICAL FEATURES

Cutting unit FP861A2 features	
Blade diameter	86 mm with hard-metal counterblade
Blade speed	900 rev/min
Cutting working depth	about 25 mm
Power	400 W (by nominal working pressure)*
Air consumption	9 litres/sec.
Weight	1350 g
Weight with package	3050 g
Minimum luminosity for working operations	LUX 200
Vibrations at the start up	1,36 m/s ² (ISO 8662)**
Temperature	0 ~ 55°C
Humidity	10 ~ 95 % without condensate

* The data refer to a suggested working pressure of 6 bar (ISO 2787: 1984)

** Rasor recommends using dry air lubricated with special Rasor VG 5 pneumatic oil

Features of the available blades	
86PHSS	5 side blade Ø 86 mm in HSS steel
86THSS	8 side blade Ø 86 mm in HSS steel
86PHSSTF	5 side blade Ø 86 mm, in H.S.S. steel covered with Teflon®
86THSSTN	8 side blade Ø 86 mm in HSS steel covered with T.I.N.
86THSSTF	8 side blade Ø 86 mm, in H.S.S. steel covered with Teflon®
86TMD	8 side blade Ø 86 mm in integral hard metal

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The technical data are only indicative and they can be changed without notice.

6. NOISE LEVEL

The maximum acoustic pressure level emitted by cutting unit FP861A2 is about 72 dB (A). Noise tests have been carried out in compliance with Standard UNI EN ISO 15744:2008. The device noise levels, measured at different distances (without any sound wave filtering system), vary in the extent of few db (A). The noise level has been detected with the silencer supplied with the fixture assembled on the exhaust. The silencer must never be removed.

NOTE

It is advisable for cutting unit FP861A2 owners to verify the compliance with the standard concerning safety of workers: refer to the Local Law.

7. FIELD OF APPLICATION

Cutting unit FP861A2 has been designed, manufactured and assembled to cut textile or technical fabrics, with the exception of metal, plastic or wood, by means of rotary blades. This equipment must not work:

- in areas prone to explosions;
- in presence of fine dust or corrosive gases;
- to cut plastic, metal and wooden materials.

It is forbidden to use cutting unit FP861A2 for purposes different from the above-mentioned ones.

8. USE WARNINGS

We recommend following the indications below in order to always work in safety conditions.

- All the operations must be carried out complying strictly with the safety rules of the country where the fixture is sold.
- It is **STRICTLY FORBIDDEN** to smoke during the installation or adjustment operations of the cutting unit.
- The Customer undertakes to comply with and make his staff observe all the rules and regulations in force concerning safety, prevention of accidents and health in the work place. Therefore, the Customer assumes the responsibility to strictly follow all the rules and regulations in force, as well as the special provisions in force in sport and public installations the Customer declares to know after receiving all the relative necessary information.
- **The cutting unit works also without their safety protective device. This protective device must NEVER be removed.**
- Always check the resistance of the material to be cut and the kind of blade which is being used.
- The Customer shall equip his own personnel with all the individual safety protections for the execution of the works, as well as with the ones which might be prescribed by the Manufacturer due to specific danger conditions of the plant or of the area where the personnel must work.
- Do not carry out any adjustment while the blade is working.
- Always pay attention to the position of the air pipe to prevent it from being cut or damaged by the blade.
- It is possible to assemble cutting unit FP861A2 on machines O.E.M. only if their original structure is not modified. Otherwise, the intervention must be certified by Rasor®.

9. RESIDUAL RISKS

Even though the cutting unit is safe, operators must pay attention to preserve their and other people's safety.

- ☹ The cutting blade can work even when the protective device is disassembled.

10. INSTALLATION AND USE

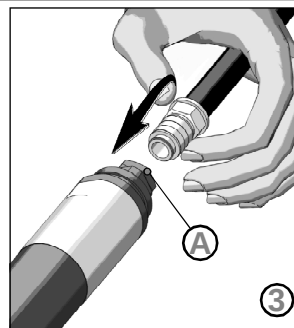
To install and use the cutting unit do as follows:

- 1) Fix the cutting unit to the machine by means of a flat or angle bracket to mount on the upper part of the motor support of the unit.

NOTE

The cutting unit can be installed in any position or angle: vertical, upside down, lateral. The aluminium base does not have to touch the machine table.

- 2) Lay down the material to be cut;
- 3) Connect the air hose to quick connection "A" (not supplied) (see picture 3);



- 4) Set the pressure gauge (option) to 6 bar;
- 5) Put the material on the cutting base (see picture 4);
- 6) Adjust the moving front protection according to the thickness of the material to cut;
- 7) Enable the air remotely and carry out the cutting operation.

NOTE

It is possible to use cutting unit FP861A2 both keeping it fixed and making the material slide and viceversa. It is important to keep the material to cut as stretched as possible to prevent it from curling.

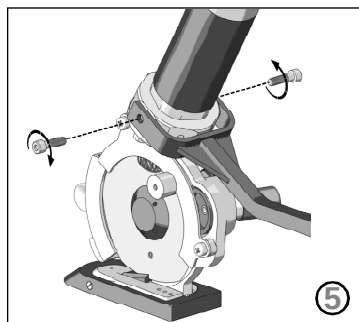
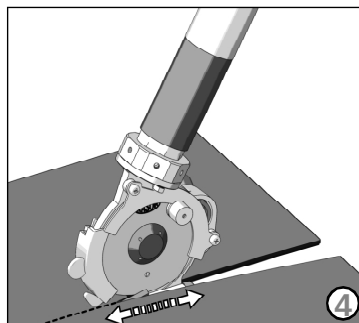
NOTE

Cutting unit FP861A2 is provided with a simple anchorage flange, by means of which it can be fastened on fixed or automated brackets (see picture 5).

WARNING



Do not use the two bolts which connect the motor to the cutting part to fix cutting unit FP861A2, otherwise the motor shaft could break. In this case the warranty will be void.



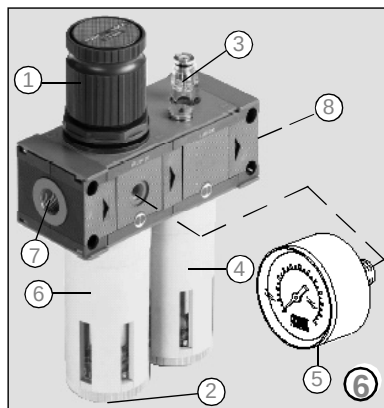
11. AIR PRESSURE GAUGE (OPTION)

The cutting unit must be necessarily fed with lubricated air with a pressure of 4-6 bar.

Rasor® offers, as option, a reduction unit filter with a pressure gauge already calibrated with the quantity of oil to be delivered as option.

The unit shown also in picture 6 is made up of:

- 1 - pressure reducer;
- 2 - valve to drain the condensate;
- 3 - drip-feed oiler unit;
- 4 - oil tank;
- 5 - pressure gauge;
- 6 - condensate tank;
- 7 - pipe fitting to connect the quick connection to the network;
- 8 - pipe fitting to connect the quick connection to the scissor.

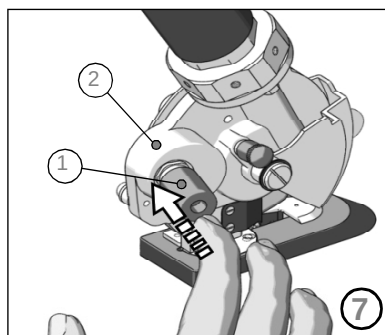


For the use and maintenance read the instruction sheet supplied with the filter.

12. BLADE SHARPENING

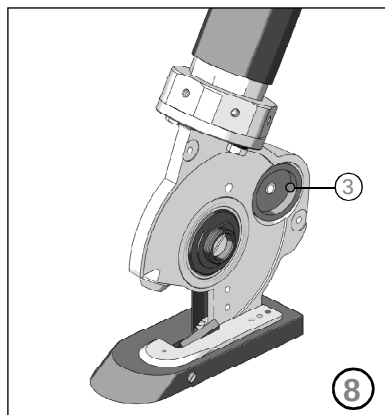
After using the cutting unit for some hours without interruption, or if its cutting capacity is reduced, it is necessary to sharpen the blade.

To carry out this operation, start the blade and press sharpener "2" on the blade itself (by means of push button "1", as shown in picture 7) for 3-4 seconds. Repeat this operation 2-3 times.



If the sharpening operation is not effective, check the wear of emery grinding wheel "3" (see picture 8).

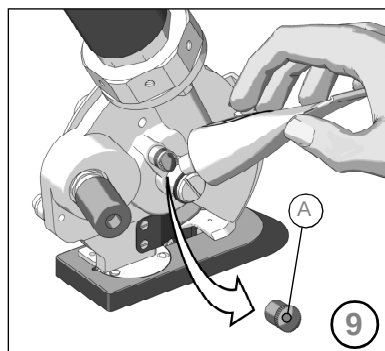
If grinding wheel "3" is too worn or dirty, replace it.



13. LUBRICATION

Every 3-4 working days, it is necessary to lubricate the gear pair. In order to carry out this operation, remove protective plug "A" located on the head of the cutting unit and fill it with Rasor lubricating grease. Screw plug "A" again a few turns. Screw plug "A" a few turns every 2-3 working days (see picture 9).

Once the plug is screwed until the end, fill it again.



WARNING



There must not be stains of grease or oil on the blade.

14. BLADE REPLACEMENT

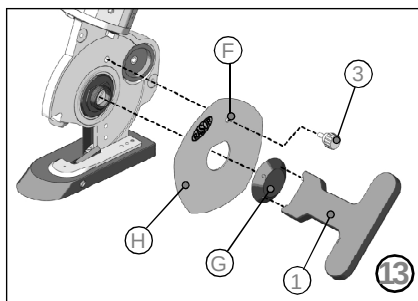
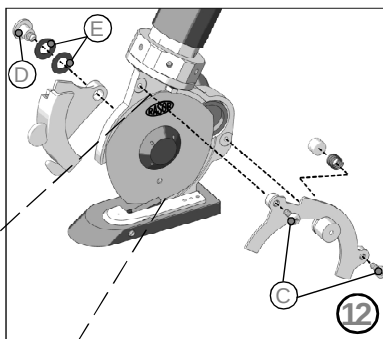
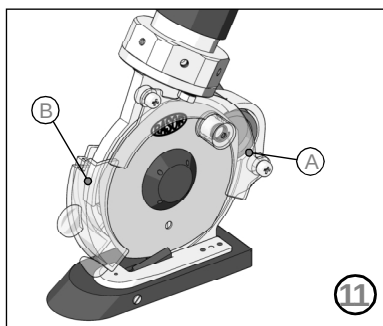
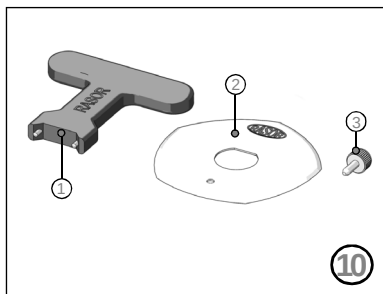
If the blade is no more able to cut (even after repeating the sharpening operation several times) it is necessary to replace it. In order to carry out this operation, use butterfly key "1" and drift "3" locking the blade (shown in picture 10).

In order to replace the blade, proceed as follows:

- 1) Use some protective gloves in compliance with the Local Law of the Country where the cutting unit is to be used;
- 2) Remove fixed safety protection "A" (see picture 11) by unscrewing cross screws "C" with a screwdriver (not supplied by the manufacturer), as shown in picture 12.

Remove the moving front safety protection "B" (see picture 11) by unscrewing pin "D" and taking out the two washers "E" as shown in picture 12.

- 3) Insert drift "3" (see picture 13) into hole "F" in order to lock the blade (the hole in the blade must correspond to the hole in the structure).
- 4) Use butterfly key "1" in order to unscrew nut "G" and remove blade "H" (see picture 13).
- 5) Replace the worn blade with the new one "2", being careful to center the blade on the shaft, in the correct position, and remember to assemble it so that the operator can see the writing "Rasor".
- 6) Assemble all the components again and sharpen the blade.



15. TROUBLESHOOTING

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PROBLEM	SOLUTION
The fabric is not cut or it gets stuck between the blade and the counterblade	Check the counterblade integrity
	Check the kind of fabric
	Sharpen the blade
	Check the fabric thickness
	Check the compatibility between blade and fabric
	Make sure that the turbine turns correctly
The cutting unit is noisy	Reduce the feeding speed
	Carry out the lubrication
	Disassemble the blade and remove the material residues
	Check the silencer
The cutting unit starts slowly, works intermittently or does not start	Check the wear of the gear pair
	Check the pneumatic circuit integrity
	Adjust the working pressure at 6 bar
	Check the internal diameter of the hose and the connector (not less than 8 mm)

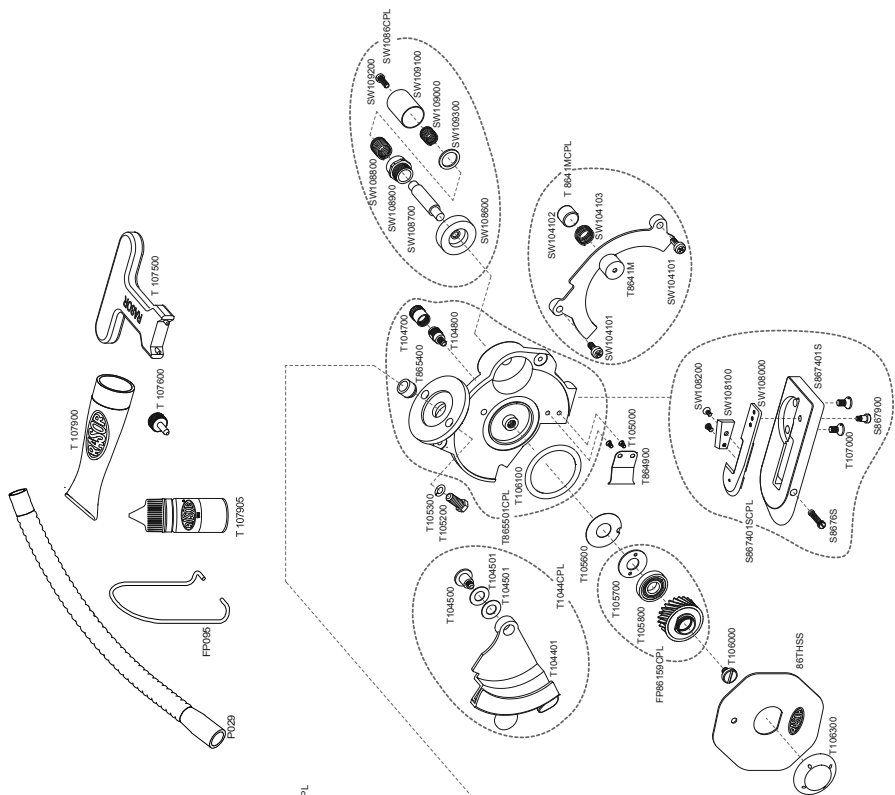
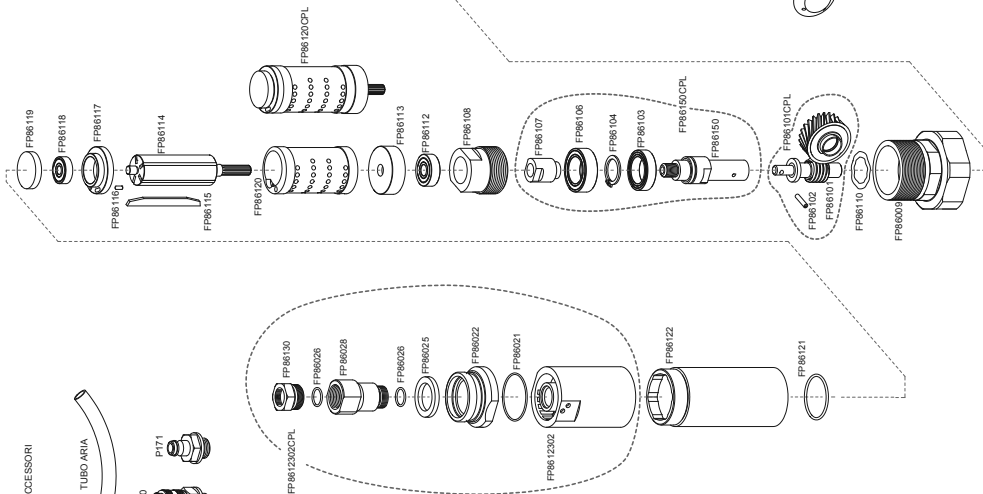
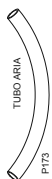
16. SPARE PARTS / EXPLODED VIEW

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
86PH55	5-SIDE BLADE 86mm, H.S.S STEEL	FP86113	FRONT FLANGE	SW104101	REAR GUARD FIXING SCREW	T105200	MOTOR FIXING SCREW
FP095	HANDLE FOR HOOK	FP86114	ROTOR	SW104102	OILER RING	T105300	WASHER
FP86009	COUPLING FLANGE	FP86115	ROTOR BLADE	SW104103	OILER SPRING	T105600	SHIM WASHER
FP861010	PISTON GUIDE	FP86116	POSITIONING PIN	SW108000	COUNTERBLADE HOLDER	T105700	GEAR BEARING FIXING RING NUT
FP86011	PISTON GUIDE O'RING	FP86117	REAR FLANGE	SW108100	WIDIA COUNTERBLADE	T105800	GEAR RING BEARING
FP86014	STOP RING	FP86118	REAR FLANGE BEARING	SW108200	COUNTERBLADE FIXING SCREW	T106000	LEFT SCREW FOR GEAR FIXING
FP86021	SILENCER SEAT O'RING	FP86119	REAR FLANGE CAP	SW108600	EMERY GRINDING WHEEL	T106100	SUBBLADE RING
FP86022	SILENCER HOUSING	FP86120	CYLINDER	SW1086CPL	COMPLETE SHARPENING UNIT	T106300	BLADE FIXING RING NUT
FP86025	BRONZE SILENCER FILTER	FP86120CPL	COMPLETE TURBINE	SW108700	EMERY PIN	T107000	BASE FIXING SCREW
FP86026	REDUCTION UNIT O' RING	FP86121	O' RING GASKET	SW108800	EMERY SPRING Ø 11 mm	T107500	BLADE ASSEMBLING/ DISASSEMBLING WRENCH
FP86028	REDUCTION UNIT	FP86122	MOTOR FRAME	SW108900	SHARPENER BUSH	T107600	BLADE LOCKING DRIFT
FP86101	GEAR WORM SCREW	FP8612301	CONTROL HEAD	SW109000	SHARPENER SPRING Ø 6 mm	T107900	LUBRICATING GREASE
FP86101CPL	COMPLETE PAIR OF GEAR	FP86130	1/4" CONNECTOR WITH FILTER	SW109100	SHARPENER PUSH BUTTON	T107905	LUBRICATING OIL (30 ml)
FP86102	ELASTIC PIN	FP86150	COUPLING SHAFT	SW109200	SHARPENER PUSH BUTTON FIXING SCREW	T8641M	REAR GUARD
FP86103	SHAFT FRONT BEARING	FP86150CPL	COMPLETE COUPLING SHAFT	SW109300	SHARPENER WASHER	T8641MCPL	REAR GUARD SET
FP86104	SNAP RING	FP86159CPL	COMPLETE RING GEAR	T104401	FRONT GUARD	T864900	SPRING LOCKING THE THREAD
FP86106	SHAFT REAR BEARING	P029	RUBBER HOSE	T104500	FRONT GUARD FIXING SCREW	T865400	ANTI-FRICTION BUSH
FP86107	JOINT	S8674015	ALUMINIUM SIMPLE BASE	T104501	CONVEX WASHER	T865501CPL	COMPLETE MOTOR SUPPORT
FP86108	THREADED RING NUT	S8674015CPL	ALUMINIUM COMPLETE BASE	T104700	GREASER CAP		
FP86110	COMPENSATOR RING	S8676S	SPRING WITH DOWEL	T104800	GREASER		
FP86112	MOTOR FLANGE BEARING	S867900	COUNTERBLADE HOLDER FIXING SCREW	T105000	SPRING LOCKING THE THREAD FIXING SCREW		

ACCESSORIES

CODE	DESCRIPTION	CODE	DESCRIPTION
P170	FEMALE QUICK COUPLING - 1/4" GAS	P173	AIR PIPE Ø 8x6 mm
P171	MALE QUICK COUPLING - 1/4" GAS		

ACCESSORI



WARRANTY

Rasor® Elettromeccanica S.r.l. cutting unit has a 12 month warranty from the date indicated on the last page of this manual, except in case of different written agreements.

The warranty covers all manufacturing and material defects. Replacement and repair operations are covered only if carried out by our company and at our workshop.

In case of returned goods for repair under warranty, **the Customer must always send to Rasor® the complete machine. Repairs under warranty of single faulty components are not accepted.**

The material to be repaired must be sent CARRIAGE FREE.

Once the machine has been repaired, it will be sent CARRIAGE FORWARD to the customer. The warranty covers neither technicians' intervention on site nor the machine disassembly from the installation place.

If for practical reasons, one of our technicians is sent to the premises, the customer will be charged the costs plus the travelling expenses.

The warranty does not include:

- failure caused by wrong use or assembly,
- failure caused by external agents,
- failure caused by lack of maintenance or negligence;
- blades and components subject to wear.

WARRANTY FORFEITURE:

In case of arrearage or other breaches of contract,

Whenever changes or repairs are carried out on our cutting unit without our prior authorization,

Whenever the serial number is tampered with or cancelled,

Whenever the damage is caused by improper use, bad treatment, bumps, falls and other causes not due to normal working conditions,

Whenever the unit seems tampered with, dismantled or previously repaired by unauthorized staff,

In case the cutting unit is used for purposes that are different from the ones described in this manual.

All repair operations carried out under warranty do not interrupt its duration.

All disputes will be settled in the court of justice of Milan (Italy).

We thank you in advance for the attention you will pay to this manual and we invite you to inform us of any change you deem necessary to improve it and make it more complete.

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