



1946

FP100

PNEUMATIC
CUTTING UNIT



USE MANUAL

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



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.

Rasor® can rely on the professional continuity of three generations, thanks to the precious support of the promoting partner, to his passion, dedication and great experience of seventy years.

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.



This manual is an integral part of cutting unit FP 100 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 FP 100, 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 UNITS FP 100 PROPERLY.**

Use the cutting units only to carry out the works they have been designed for; do not use them improperly.

- **OBSERVE THE USE OF THE TOOL.**

Do not cut excessively thick materials and always check blade conditions.

- **AVOID ACCIDENTAL STARTINGS.**

Before connecting cutting unit FP 100, 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 approved by Rasor® during use and maintenance operations (according to UNI EN 388:2004 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.

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.



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 FP 100 must not be used until the Customer Care Technical Service has repaired them.

Customer Care Technical Service



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

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

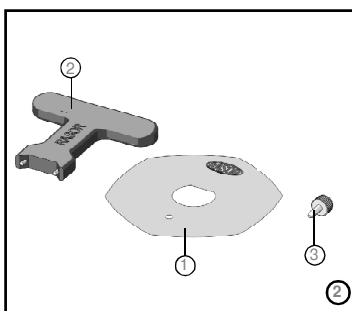
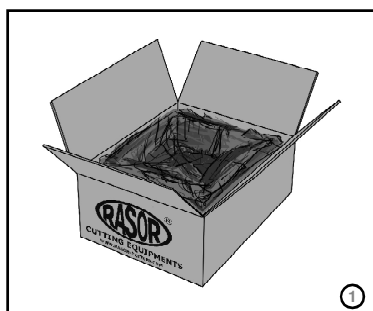


2. TRANSPORT AND PACKAGING

The cutting unit is delivered in a cardboard box, inside which 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 blade (6 sides);
- 2) Butterfly wrench for blade nut disassembly;
- 3) Drift for blade disassembly.

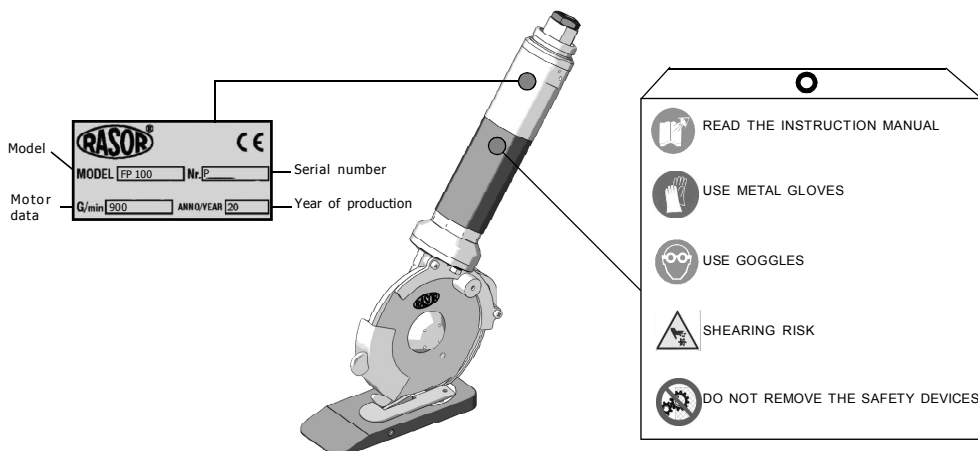
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3. PLATE DATA

The manufacturer's identification and EC STANDARD 2006/42/EC 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; 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.**



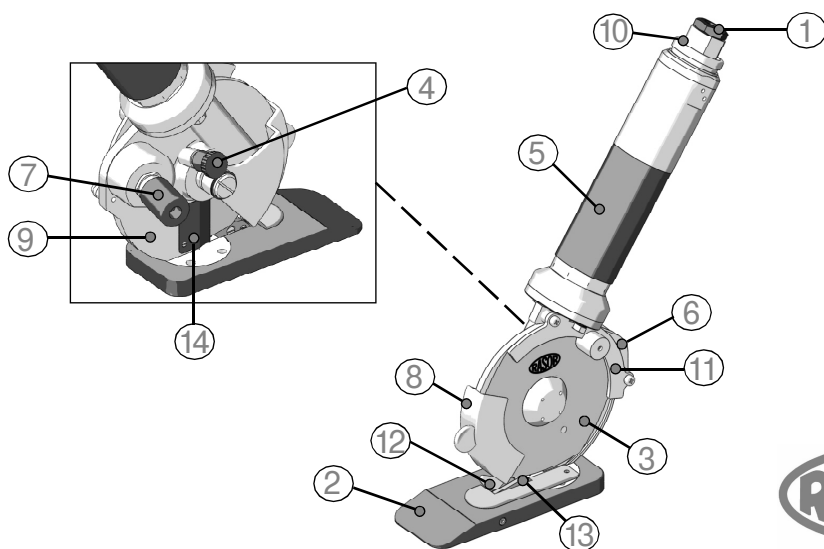
4. PRODUCT DESCRIPTION

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The fixture described in this manual is a pneumatic cutting unit model FP 100 which can be assembled on automatic machines (e.g. spreaders, computerized cutting) by means of a proper bracket. Thanks to the use of a front point of reference and of an effective cutting system with a hexagonal blade it is possible to use the cutting unit to cut different materials. In particular the cutting unit has been planned to cut difficult materials such as moquettes, polymeric materials, fiber glass, insulations and leather (even hide). One special feature of cutting unit FP 100 is its ability to sharpen the blade in each moment without disassembling it by means of a sharpener 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 suitable for most of the air pipelines. The turbine, perfectly balanced, with a high number of revolutions and totally free of maintenance, reduces vibrations and noise to the minimum. The cutting unit can be used also to cut damp or wet materials; therefore it is recommended in tanneries, 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 high quality steel, bronze and aluminium and require a lubrication after many working hours.

Device components

1	1/4" gas connection for the air connector	8	Front protection guard
2	Aluminium base covered with Teflon®	9	Motor support
3	Hexagonal blade	10	Silencer
4	Greaser	11	Rear protection guard
5	Pneumatic motor	12	Reference point
6	Emery	13	Carbide counterblade
7	Sharpening button	14	Plate locking the thread



5. TECHNICAL FEATURES

Cutting unit FP 100 features	
Blade diameter	100 mm, with counterblade - hard metal
Blade speed	900 rev/min
Cutting working depth	≈ 35 mm
Power	350 W with max. pressure
Working pressure	6 bar (max)
Weight	1350 g
Weight with package	2400 g
Air consumption	9 litres/sec
Minimum light for working operation	LUX 200
Vibrations at the start up	< 2,5 m/s ²
Temperature	0 ~55 °
Humidity	10 ~ 95% without condensate

Features of the available blades	
10EHSS	6 side blade Ø 100 mm, H.S.S. steel
10CSW	Circular blade Ø 100 mm, Extra steel
10SEXTG	4 side blade Ø 100 mm, Germany Extra steel
10EHSSTF	6 side blade Ø 100 mm, H.S.S. steel covered with Teflon®
10EMD	6 side blade Ø 100 mm, solid carbide
10CFR	Cutter circular blade Ø 100 mm, Extra steel

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This technical data is only indicative and may be subject to change without notice.

6. NOISE LEVEL

The maximum acoustic pressure level emitted by cutting unit FP 100 is about 60dB (A). Noise tests have been carried out in compliance with Standard UNI EN ISO 11202. 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 FP 100 owners to verify the compliance with the local standard concerning safety at work. The use of ear protecting devices is compulsory.

7. FIELD OF APPLICATION

Cutting unit FP 100 has been designed, manufactured and assembled to cut any kind of fabrics or materials, 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 FP 100 for purposes different from the above-mentioned ones.

8. USE WARNINGS

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

- All the operations must be carried out complying strictly with the safety rules of the country where the device is to be installed.
- 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 relevant necessary information.
- The cutting unit works even without its safety protection device. **This protection 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 perform any adjustment while the blade is working.
- Always pay attention to the air pipe position to prevent it from being cut or damaged by the blade.
- It is allowed to assemble cutting unit FP 100 on machines O.E.M. on condition that 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 safety and that of others.

- ⊗ The cutting blade can work even when the protection device is disassembled.



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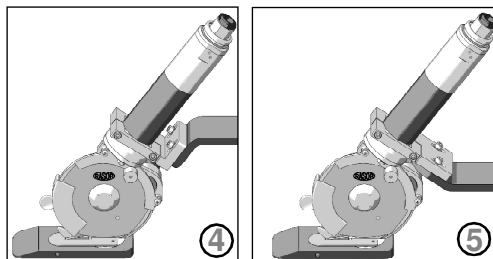
10. INSTALLATION AND USE

To install and use the cutting unit proceed as follows:

- 1) Fix the cutting unit on the machine by means of a flat or angle bracket by inserting it on the upper part of the cutting unit motor support (see pictures 4 and 5).

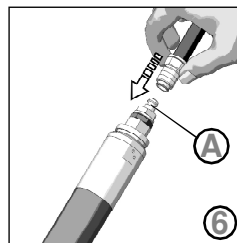
NOTE

The cutting unit can be installed in any position/angle: vertically, laterally and it can be turned upside down. It is not necessary that the aluminium base touches the machine table.



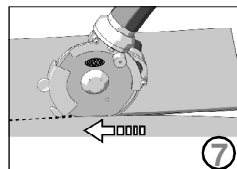
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- 2) Lay the material to be cut;
- 3) Connect the air pipe to the quick connection "A" (not supplied) (see picture 6);
- 4) Set the pressure gauge (option) to 6 bar;
- 5) Put the material on the cutting foot (see picture 7);
- 6) Adjust the front mobile protection according to the thickness of the material to be cut;
- 7) Enable the air remotely and carry out the cutting operation.



NOTE

Cutting unit FP 100 can work in a fixed position (the material moves) or it can move forward while the material is kept in the same position. Make sure the material to be cut is properly stretched, preventing it from curling.



WARNING



Never use the two bolts which fix the motor to the cutting part to fasten cutting unit FP 100. This operation may cause the motor shaft to break. In this case, warranty is not valid.

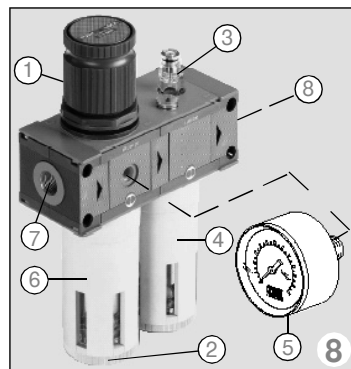
11. AIR PRESSURE GAUGE (OPTION)

The cutting unit must be necessarily supplied 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.

The unit shown in picture 8 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 cutting unit.



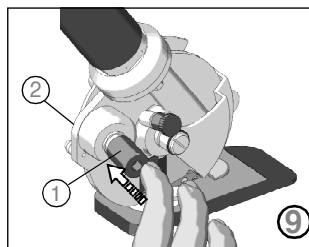
For the use and maintenance read the instruction sheet supplied with the filter.

12. BLADE SHARPENING

After many hours of a continuative use of the cutting unit, or if it would not be able to cut anymore, it is necessary to sharp the blade.

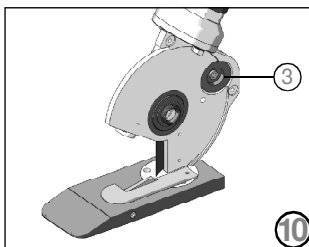
To carry out this operation, start the blade and press sharpener "2" located on it for 3-4 seconds (by pressing push button "1", as shown in picture 9).

Repeat the operation 2-3 times.



If the sharpening operation is not effective, check the wear of emery grinding wheel "3" (see picture 10).

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



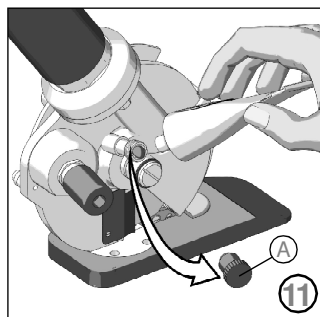
13. LUBRICATION

Every 3-4 consecutive working days, it is necessary to lubricate the pair of gears. To carry out this operation, remove protective plug "A" located on the cutting unit head and fill it with lubricating grease Rasor.

Screw plug "A" again few turns.

Screw plug "A" some turns every 3-4 consecutive working days (see picture 11).

Screw the plug completely and fill it again.



WARNING

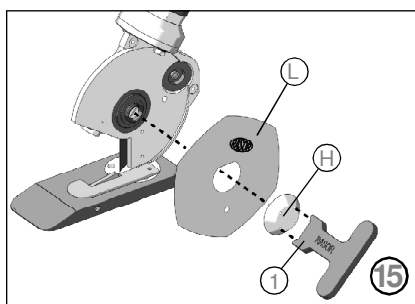
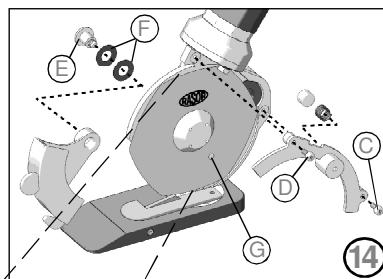
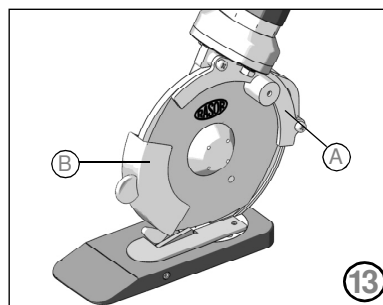
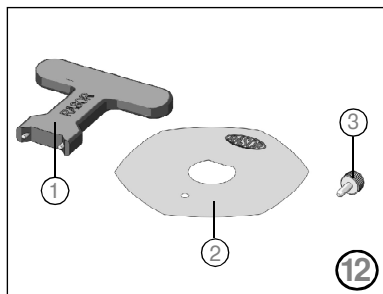
The blade must never be dirty with grease or oil.

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 wrench "1" and drift "3" locking the blade (see picture 12).

In order to replace the blade, proceed as follows:

- 1) Use some protective gloves in compliance with the Local Law concerning safety at 2)
Remove the fixed rear safety protection "A" (see picture 13) by unscrewing the cross screw "C" and "D" by means of a screwdriver (not supplied by the manufacturer) as shown in picture 14.
- Remove the mobile front safety protection "B" (see picture 13) by unscrewing pin "E" and removing the two washers "F" as shown in picture 14.
- 3) Insert drift "3" (see picture 12) into hole "G", so as to lock the blade (the hole on the blade must correspond to the one on the structure).
- 4) Use butterfly wrench "1" to unscrew nut "H" and remove blade "L" (see picture 15).
- 5) Replace the worn blade with the new one "2", being careful to center the blade on the gear, in the correct position, and remember to assemble it, so that the Rasor writing can be seen by the operator.
- 6) Assemble all the components again and carry out the sharpening.



15. TROUBLESHOOTING

☆ PROBLEM

⇒ SOLUTION

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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

Reduce the feeding speed

The cutting unit is noisy

Carry out the lubrication

Disassemble the blade and remove the material residues

Check the silencer

Check the wear of the gear pair

The cutting unit starts slowly, works intermittently or it does not start

Check the air circuit integrity

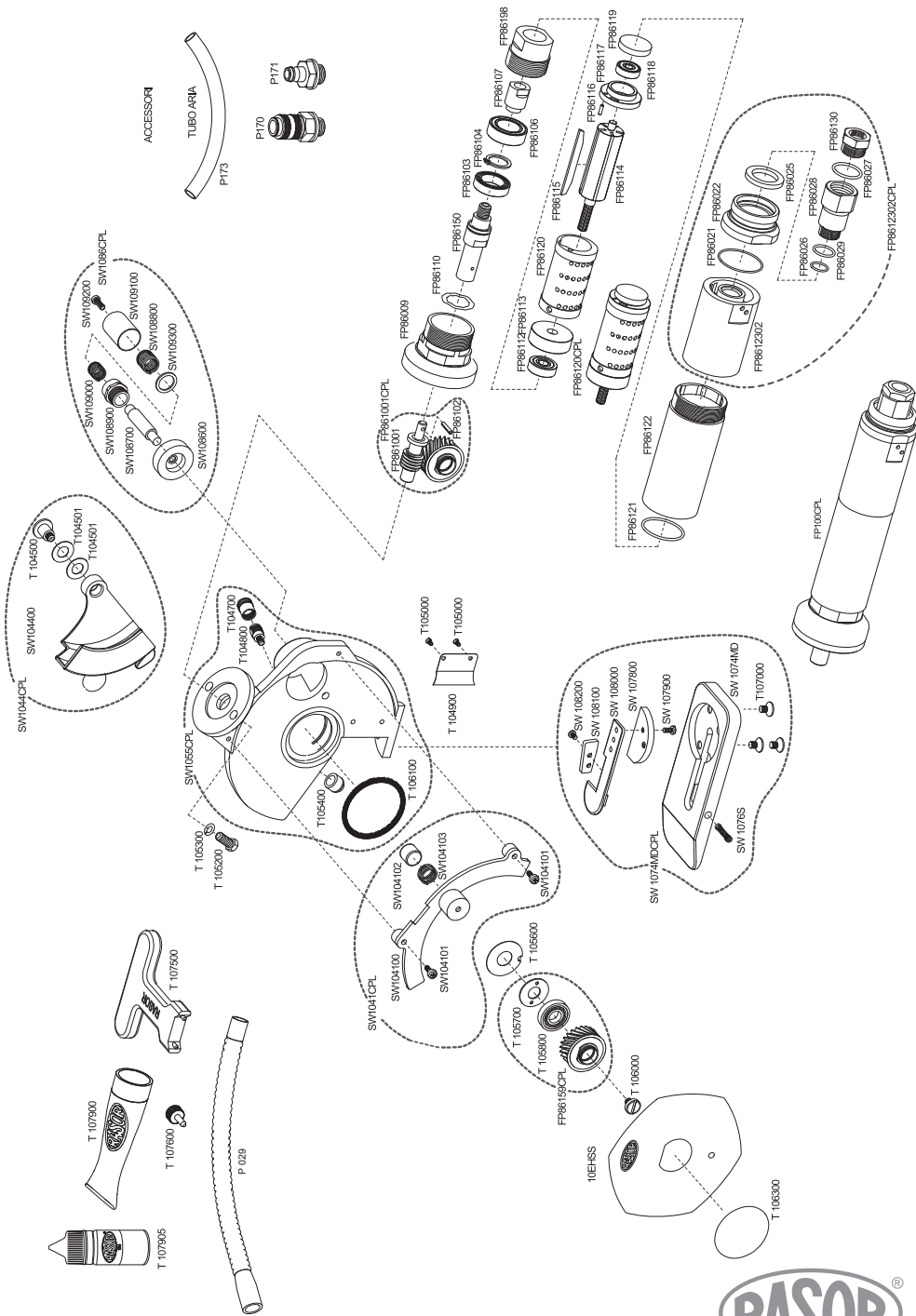
Set working pressure at 6 bar

16. SPARE PARTS / EXPLODED VIEW

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
10EHSS	6-SIDE BLADE Ø 100 mm, H.S.S. STEEL	FP86114	ROTOR	SW104103	OILER RING SPRING	SW109200	SCREW FASTENING SHARPENER CAP
FP100CPL	COMPLETE MOTOR	FP86115	BUCKET	SW1041CPL	REAR PROTECTION SET	SW109300	STEEL WASHER
FP86009	COUPLING FLANGE	FP86116	POSITION PIN	SW104400	FRONT PROTECTION GUARD	T 104500	SCREW FASTENING FRONT PROTECTION GUARD
FP86021	SILENCER SEAT O'RING	FP86117	REAR FLANGE	SW1044CPL	FRONT PROTECTION SET	T 104501	CONVEX WASHER
FP86022	SILENCER SEAT	FP86118	REAR FLANGE BEARING	SW1055CPL	COMPLETE MOTOR SUPPORT	T 104700	GREASER CAP
FP86025	BRONZE SILENCER-FILTER	FP86119	REAR FLANGE PLUG	SW1074MD	RIGHT BASE WITH BEVEL mm 130x49x10	T 104800	GREASER
FP86026	REDUCTION UNIT O'RING	FP86120	CYLINDER	SW1074MDCP L	COMPLETE RIGHT BASE WITH BEVEL mm 130x49x10	T 104900	PLATE LOCKING THE THREAD
FP86027	REDUCTION UNIT O'RING	FP86120CPL	COMPLETE TURBINE	SW10765	SPRING WITH DOWEL	T 105000	SCREW 2.6MA FASTENING THE PLATE BLOCKING THE THREAD
FP86028	REDUCTION UNIT	FP86121	GASKET O'RING	SW107800	SECTOR BASE/PLATFORM	T 105200	MOTOR SUPPORT FIXING BOLT
FP86029	BIG REDUCTION UNIT O'RING	FP86122	MOTOR FRAME	SW107900	SCREW FASTENING THE COUNTERBLADE HOLDER	T 105300	SPLIT WASHER
FP861001	WORM SCREW	FP8612301	CONTROL HEAD	SW108000	COUNTERBLADE HOLDER	T 105400	ANTI-FRICTION BUSH
FP861001CPL	COMPLETE GEAR PAIR	FP8612302CP L	COMPLETE CONTROL HEAD	SW108100	CARBIDE COUNTERBLADE	T105600	WASHER
FP86102	ELASTIC PIN	FP86130	CONNECTOR 1/4" WITH FILTER	SW108200	SCREW FASTENING THE COUNTERBLADE	T105700	RING LOCKING THE BEARING
FP86103	SHAFT FRONT BEARING	FP86150	COUPLING SHAFT	SW108600	EMERY Ø 25 x9 x 6	T105800	GEAR CROWN BEARING
FP86104	ELASTIC RING	FP86159CPL	COMPLETE GEAR CROWN	SW1086CPL	COMPLETE EMERY UNIT	T106000	LEFT SCREW FASTENING THE GEAR
FP86106	SHAFT REAR BEARING	FP86198	THREADED RING NUT	SW108700	EMERY PIN	T106100	RING UNDER BLADE
FP86107	JOINT	PAT107000	SCREW FASTENING THE BASE/SECTOR	SW108800	EMERY SPRING Ø 11 mm	T106300	RING NUT FASTENING THE BLADE
FP86110	ADJUSTING RING	SW104100	REAR PROTECTION GUARD	SW108900	SHARPENER BUSH	T107500	BLADE DISASSEMBLING WRENCH
FP86112	MOTOR FLANGE BEARING	SW104101	SCREW FASTENING REAR PROTECTION GUARD	SW109000	EMERY SPRING Ø 6 mm	T107600	DRIFT LOCKING THE BLADE
FP86113	FRONT FLANGE	SW104102	OILER RING	SW109100	SHARPENER CAP WITH BEARING	T107900	LUBRICATING GREASE
						T107905	LUBRICATING OIL (30ml)

ACCESSORIES

CODE	DESCRIPTION	CODE	DESCRIPTION
P171	MALE QUICK COUPLING - 1/4" GAS	P169	FLEXIBLE PIPE FITTING Ø 8 mm - 1/4" GAS FEMALE
P170	FEMALE QUICK COUPLING - 1/4" GAS	P173	AIR PIPE Ø 8x6 mm



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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 parts subject to wear.

WARRANTY FORFEITURE:

-  In case of arrearage or other breaches of contract,
-  Whenever changes or repairs are carried out on our cutting units 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 units are 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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