



1946

FP120SM

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.



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.

ACKNOWLEDGEMENT

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 FP120SM 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 FP120SM, read carefully the following general safety rules.

- **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 FP120SM 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 FP120SM, 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.

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4



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 FP120SM must not be used until the Customer Care Technical Service has repaired them.

Customer Care Technical Service



dal 1946

For any information, please contact
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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.

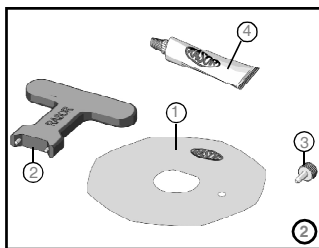


dal 1946

2. TRANSPORT AND PACKAGING

The cutting unit is delivered in a carrying case, 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:

- 1) Polygonal blade;
- 2) Butterfly wrench for blade nut disassembly;
- 3) Drift for blade disassembly.
- 4) Lubricating oil.

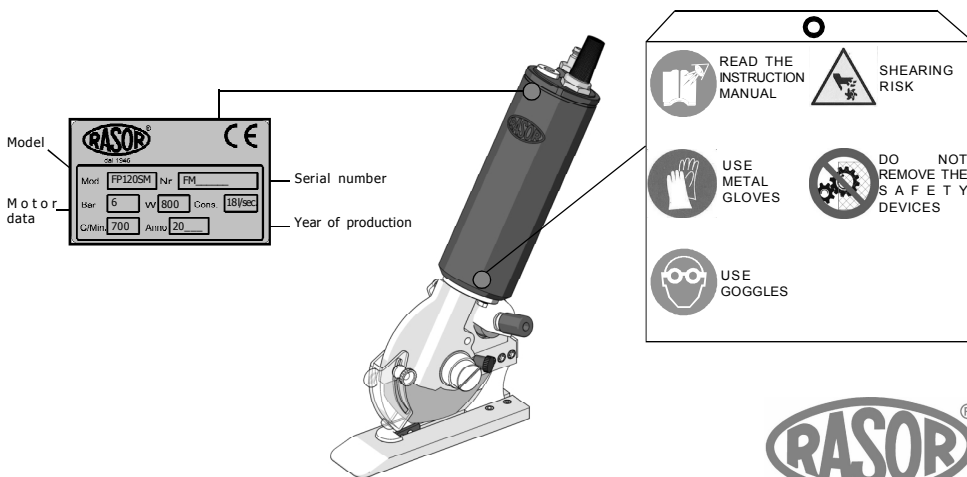


3. PLATE DATA

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.**



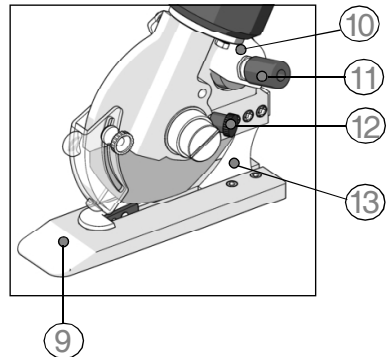
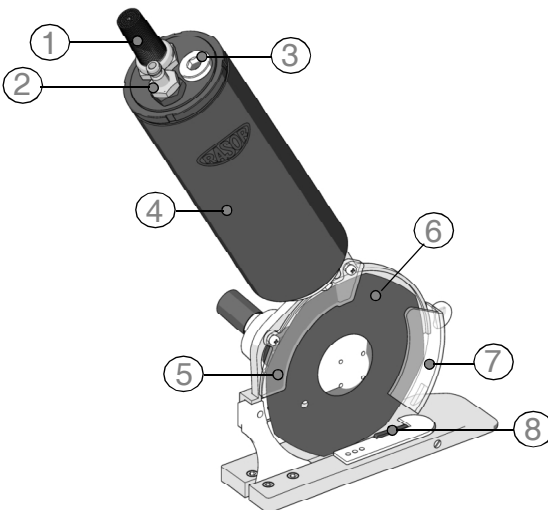
4. PRODUCT DESCRIPTION

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6

The fixture described in this manual is a pneumatic cutting unit model FP120SM which can be assembled on automatic machines (e.g. spreaders, computerized cutting). FP120SM can operate continuously and it can cut at various heights by means of multiple installation. Thanks to the presence of a 1HP pneumatic motor, FP120SM is able to cut difficult materials with thickness up to 50 mm. It is particularly suitable for technical fabrics and composite materials. By cutting with the blade and the counterblade always in contact and thanks to the steel upper quality of the blade supplied, FP120SM guarantees the clean separation without fraying of the two borders of the cut material. One special feature of cutting unit FP120SM is its ability to sharpen the blade in each moment without disassembling it by means of a emery 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 suitable for most of the air pipelines. A high power motor, perfectly balanced, with a high number of revolutions and totally free of maintenance, reduces the vibrations to the minimum, thus making the cutting unit comply with European Directive No. 2002/44/EC concerning the risks deriving from mechanical vibrations. 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	Silencer	8	Hard metal count blade
2	1/4" gas connection for the air connector	9	Aluminium base covered with Teflon®
3	Closing plug	10	Motor support
4	Pneumatic motor	11	Sharpening button
5	Rear protection guard	12	Greaser
6	Poligonal blade	13	Steel structure
7	Front protection guard		



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5. TECHNICAL FEATURES

Cutting unit FP120SM features	
Blade diameter	120 mm, with counterblade - hard metal
Blade speed (at max. power)	550 rev./min
Cutting working depth	about 50 mm
Motor power	800 W with max. pressure*
Torque at maximum power	1.6 Nm*
Working pressure	6 bar (max.)
Air consumption	18 litres/sec*
Weight	4300 g
Weight (with package)	6000 g
Minimum light for working operation	LUX 200
Vibrations at the start up	< 2,5 m/s ²
Working temperature	0 ~ 55°C
Working humidity	10 ~ 95% without condensate

Features of the available blades	
12SHSS	8 side blade Ø 120 mm, in H.S.S. steel
12CHSS	Circular blade Ø 120 mm, in H.S.S. steel
12SHSSTN	8 side blade Ø 120 mm, in H.S.S. steel covered with TIN
12SMD	8 side blade Ø 120 mm, in integral hard metal
12SHSSTF	8 side blade Ø 120 mm, in H.S.S. steel covered with Teflon®

EN
7

* The indicated data is detected at the recommended working pressure of 6 bar.

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 FP120SM is about 60dB (A). Noise tests have been carried out in compliance with Standard UNI EN ISO 11202:2010. The device noise levels, measured at different distances (without any sound wave filtering system), vary in the extent of few db (A).

NOTE

It is advisable for cutting unit FP120SM 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 FP120SM 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 FP120SM for purposes different from the above-mentioned ones.



dal 1946

8. USE WARNINGS

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8

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 FP120SM on machines O.E.M. on condition that their original structure is not modified. Otherwise, the intervention must be certified by Razor®.
- The (inside) air pipe and connector diameter must be min. \varnothing 8 mm.

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.



dal 1946

10. INSTALLATION AND USE

To install and use the cutting unit proceed as follows:

- 1) Fix the cutting unit directly on the motor body by means of two half rings and screw them by means of two socket head screws (see pictures 4 and 5).

WARNING 

Do not tighten the two socket head screws, so as to avoid that the two half rings deform the motor. Consider that the motor has a diameter of 65 mm (see picture 4). In this case, warranty is not valid.

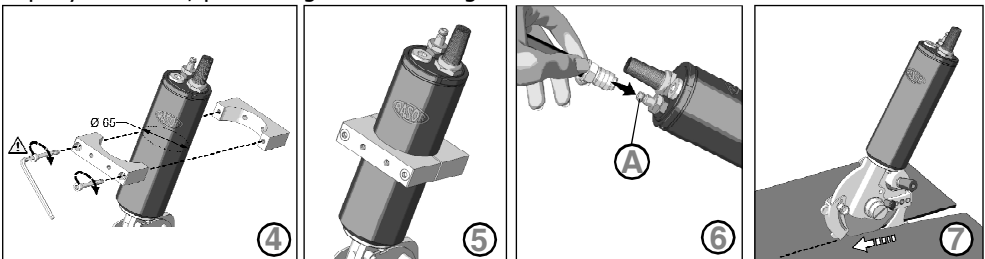
NOTE

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.

- 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 FP120SM 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.



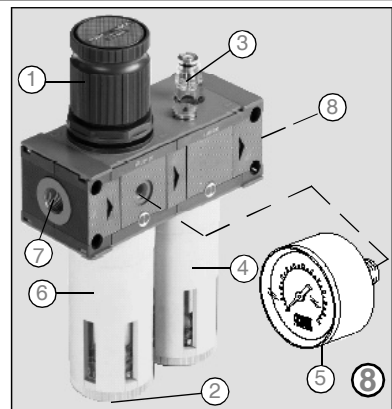
11. AIR PRESSURE GAUGE (OPTION)

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.

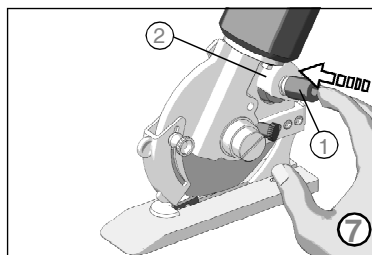


For the use and maintenance read the instruction sheet supplied with the filter.

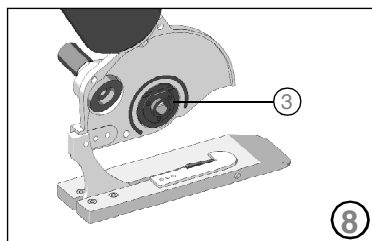
12. BLADE SHARPENING

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 emery grinding wheel "2" located on it for 3-4 seconds (by pressing push button "1", as shown in picture 7). Repeat the operation 2-3 times.



If the sharpening operation is not effective, check the wear of emery grinding wheel "3" (see picture 8). If emery grinding wheel "3" is too worn or dirty, replace it.

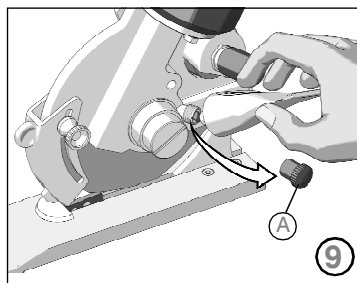


13. LUBRICATION

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 2-3 consecutive working days (see picture 9).



WARNING



The blade must never be dirty with grease or oil.

14. PNEUMATIC MOTOR

In case of technical problems with the pneumatic motor, the entire motor must be sent to Rasor®. Never disassemble the pneumatic motor since it could jeopardize the guarantee.



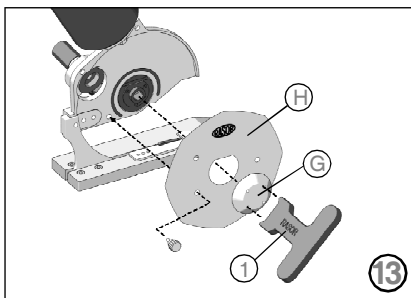
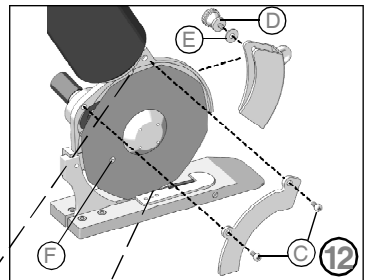
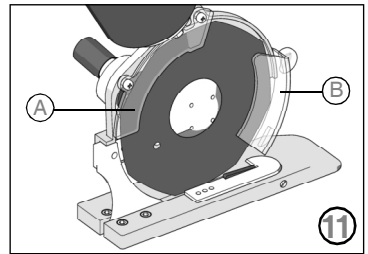
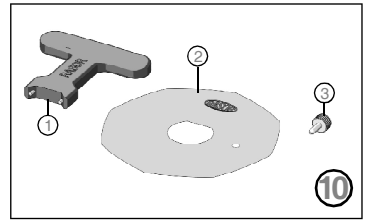
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14. BLADE REPLACEMENT

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

To replace the blade, proceed as follows:

- 1) Use some protective gloves in compliance with Italian Legislative Decree 81/08;
- 2) Remove the fixed rear safety protection "A" (see picture 11) by unscrewing the cross-slotted screws "C" by means of the proper screwdriver (not supplied by the manufacturer) as shown in picture 12. Remove the movable front safety protection "B" (see picture 11) by unscrewing pin "D" and the washer "E" as shown in picture 12.
- 3) Insert drift "3" (see picture 10) into hole "F", 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 "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 gear, in the correct position; we remind you to assemble it so that the side with the writing Rasor can be seen by the operator.
- 6) Assemble all the components again and carry out the sharpening.



16. TROUBLESHOOTING

✘ PROBLEM

⇒ SOLUTION

EN
12

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

17. SPARE PARTS / EXPLODED VIEW

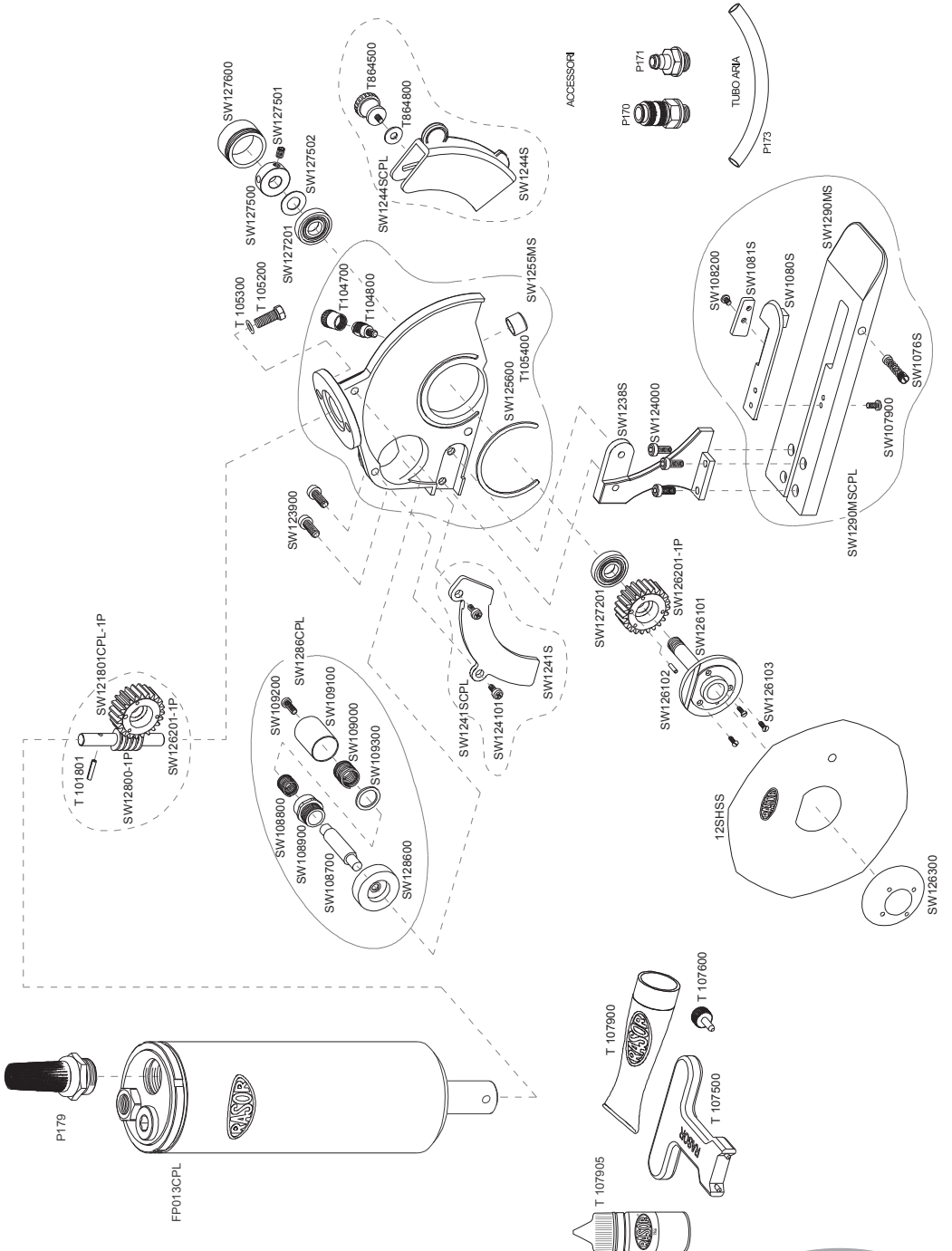
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
125H5S	8 SIDE BLADE Ø 120 mm, IN H.S.S. STEEL	SW109100	SHARPENER CAP WITH BEARING	SW125600	SUBBLADE RING	SW1290MSC PL	COMPLETE LEFT BASE WITH BEVEL Monster
FP013CPL	COMPLETE PNEUMATIC MOTOR	SW109200	SCREW FOR SHARPENER CAP FIXING	SW126101	BLADE GUIDE PIN series> 2001	T 101801	ELASTIC PIN
P179	CONICAL SILENCER FILTER	SW109300	WASHER	SW126102	REFERENCE PIN	T 104700	GREASER CAP
SW104102	OILER RING	SW121800-1P	WORM SCREW	SW126103	GEAR RING FIXING SCREWS 2,5MA	T 104800	GREASER
SW104103	OILER RING SPRING	SW121801CPL-1P	COMPLETE GEAR PAIR	SW126201-1P	BRONZE GEAR CROWN	T 105200	MOTOR SUPPORT FIXING BOLT
SW1076S	SPRING WITH DOWEL	SW1238S	STEEL STRUCTURE Monster series	SW126300	BLADE FIXING RING NUT	T 105300	WASHER
SW107900	SCREW FOR THE COUNTERBLADE HOLDER FIXING	SW123900	STRUCTURE FIXING SCREW Monster	SW127201	BEARING R6 GEARS series> 2001	T 105400	ANTI-FRICTION BUSH
SW1080S	COUNTERBLADE HOLDER	SW124000	STRUCTURE SUPPORT SCREW Monster	SW127500	GEAR BEARING ADJUSTING DEVICE	T 107500	BLADE ASSEMBLING/DISASSEMBLING WRENCH
SW1081S	HARD METAL COUNTERBLADE	SW124101	REAR GUARD FIXING SCREW 3x10 MA	SW127501	ADJUSTING DEVICE FIXING DOWEL	T 107600	DRIFT LOCKING THE BLADE
SW108200	COUNTERBLADE FIXING SCREW	SW1241S	REAR PROTECTION GUARD	SW127502	WASHER	T 107900	LUBRICATING GREASE
SW108700	SHARPENER PIN	SW1241SCPL	REAR PROTECTION SET	SW127600	CLOSING CAP	T 10790S	LUBRICATING OIL (30ml)
SW108800	EMERY SPRING Ø 11 mm	SW1244S	FRONT PROTECTION GUARD	SW128600	MEDIUM GRAIN EMERY Ø 30x10x6	T864500	FRONT GUARD FIXING SCREW
SW108900	SHARPENER BUSH	SW1244SCPL	FRONT PROTECTION SET	SW1286CPL	COMPLETE EMERY UNIT	T864800	WASHER
SW109000	EMERY SPRING Ø 6 mm	SW1255MS	COMPLETE MOTOR SUPPORT	SW1290MS	LEFT BASE WITH BEVEL Monster		

ACCESSORIES

CODE	DESCRIPTION
P170	FEMALE QUICK COUPLING - 1/4" GAS
P171	MALE QUICK COUPLING - 1/4" GAS
P173	AIR PIPE Ø 8X6 mm



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1946

WARRANTY

Razor® 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 Razor® 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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