RASOR®

1946

SW12S CUTTING UNIT

USE MANUAL

COMPANY

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 professionaly 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 reliabilty 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 SW12S 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 SW12S, 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.
  Prevent the cutting unit SW12S components from coming in contact with damp or wet surfaces.
- KEEP CHILDREN AWAY.
  Unauthorized persons, in particular children, must be kept away from the working area.
- FEED CABLE.
  Prevent the feed cable from coming in contact with hot objects, pointed surfaces or sharp edges. Never pull the feed cable of the machine. It must never be replaced by the user. If necessary contact professionally qualified staff.
- KEEP THE WORKING AREA ALWAYS IN ORDER.
  The workplace must always be kept in order and well lightened; liquids or oil traces must not be present.
- ALWAYS USE CUTTING UNITS SW12S 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 TOOLS.
  Do not cut excessively thick materials and always check blade conditions.
- AVOID ACCIDENTAL STARTINGS.
  Before connecting cutting unit SW12S, 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

Rasor® Elettromeccanica S.r.l. machines have not been conceived to work in areas at risk of explosions and at high risk of fire and they cannot cut wet or damp materials. Moreover, they cannot work in case of rain.
In case of damage or malfunction, cutting unit SW12S must not be used until the Customer Care Technical Service has repaired them.

Customer Care Technical Service

RASOR® dal 1946

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

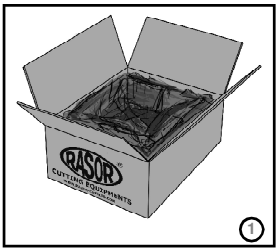
WARNING

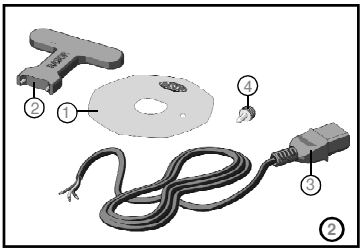
The original configuration of the cutting unit must not be changed at all.
On receiving the machine make sure the supply corresponds to what has been ordered. In case of non-compliance immediately inform Rasor®.
Also make sure the cutting unit has not been damaged during transport.

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:

1) Poligonal blade;
2) Wrench for blade nut disassembly.
3) Shuko cable without plug;
4) Drift for blade disassembly.



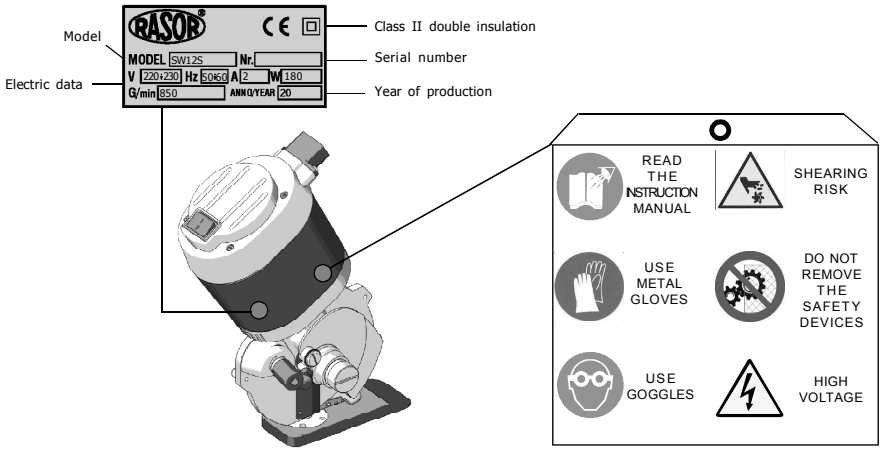


3. PLATE DATA

The manufacturer's identification and CE STANDARD 2006/42/CE 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.

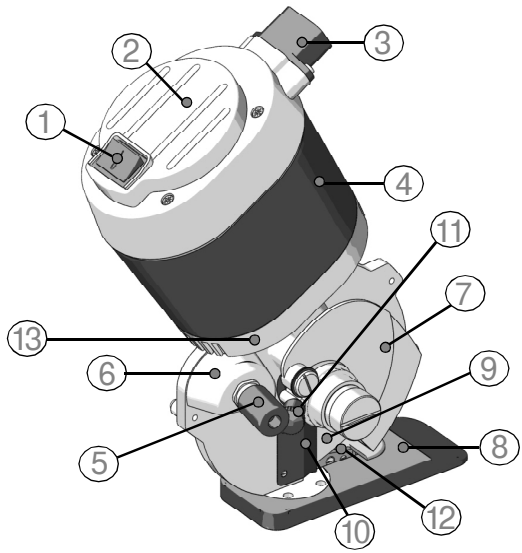
Several safety warnings are printed on a card which is applied to the cutting unit feeding cable; such warnings must be strictly followed by everyone dealing with the machine. **The company is not to be held responsible for damage to property or accidents to people which might occur if the above-mentioned warnings are not observed. In such a case, the operator is the only person responsible.**



4. PRODUCT DESCRIPTION

The fixture described in this manual is a cutting unit model SW12S which can be assembled on automatic machines (e.g. spreaders, computerized cutting) by means of proper holes located in the motor support.
SW12S can operate continuously and it can cut at various widths by means of multiple installation. By cutting with the blade and the counterblade always in contact and thanks to the steel upper quality of the blade supplied, SW12S guarantees the clean separation without frayings of the two borders of the cut material. Moreover, the 220 Volt single-phase motor guarantees a blade peripheral speed of 280 m/min allowing great cutting performances in terms of traversing speed/speed of travel.
The 120 mm blade diameter and the power motor (180 Watt) of the cutting unit make it ideally suited for small radius cut profiles on materials with thickness up to 5 cm. A sharpener assembled on the cutting unit head allows sharpening the blade at any moment without disassembling it. After carrying out this operation, it is possible to start cutting again. A high power motor, perfectly balanced, with a high number of revolutions and totally free of maintenance, reduces the vibrations to the minimum, so that the cutting unit SW12S complies with Italian Legislative Decree No. 187 dated 19/8/2005, which adopts European Directive No. 2002/44/CE concerning the risks deriving from mechanical vibrations. The mechanical parts are made of high resistance steel, bronze and aluminium and require lubrication after several working hours.

Device components			
1	Switch provided with light	7	Movable front protection
2	Motor cover	8	Aluminium base covered with Teflon®
3	Connector socket	9	Poligonal blade
4	Motor frame	10	Plate blocking the threads
5	Sharpener push button	11	Greaser
6	Motor support	12	Carbide counterblade
		13	Motor lower cover with assembly holes



5. TECHNICAL FEATURES

Cutting unit SW12S features	
Blade diameter	120 mm with carbide counter blade
Blade speed	850 rpm
Cutting working depth	about 50 mm
Motor power	Monophase 220 V - 180 W
Max. Absorption	2 A
Weight (with feeding cable)	3100 g
Weight with package	4000 g
Electric cable length	1,5 m
Minimum luminosity for working operations	LUX 200
Vibrations at the start up	< 2,5 m/s^2
Temperature	0 ~ 55°C
Humidity	10 ~ 95% without condensate

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

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 SW12S is about 60 dB (A). Noise tests have been carried out in compliance with Standard ISO 11202 (1995). The device noise levels, measured at different distances (without any sound wave filtering system), vary in the extent of few db (A).

It is advisable for cutting unit SW12S's owners to verify the compliance with the standard concerning safety of workers: Italian legislative decree N.277 ITEM IV (DATED 15-08-91).

7. FIELD OF APPLICATION

Cutting unit SW12S has been designed, manufactured and assembled to cut every kind of fabrics or materials, with the exception of metal, plastic or wood, by means of rotary poligonal blades.
This equipment must not work:

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

It is forbidden to use cutting unit SW12S for purposes different from the above-mentioned ones.

8. USE WARNINGS

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

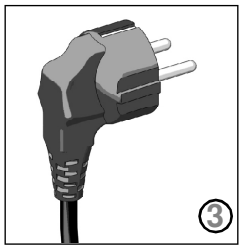
- All the operations must be carried out complying strictly with the safety rules of the country where the device is to be installed.
- It is STRICTLY FORBIDDEN to smoke during the installation or adjustment operations of the cutting unit.
- The Customer undertakes to comply with and make his staff observe 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 relative necessary information.
- The cutting unit also works without its 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.
- Always pay attention to the electric cable position to prevent it from being cut or damaged by the blade.
- It is allowed to assemble cutting unit SW12S on machines O.E.M. on condition that their original structure is not modified. Otherwise, the intervention must be certified by Rasor®.

9. ELECTRIC CONNECTION

Firstly make sure that the lines and electric systems of the machine, on which the SW12S will be installed, are able to supply the cutting unit with power correctly, in compliance with the safety rules (for the feature required see par. 5).

WARNING ⚠

We suggest installing a magnetothermic safety device before the cutting unit and check that the ground circuit is effective. Before working on the feeding cable, unplug the unit. Check that electric connections and protections correspond to the driving force and to the plate data values (voltage and current), required by the different electric circuits. Possible faulty ground connections make the working conditions unsafe. Possible damages are not charged to Rasor®. By referring to the EC 11-27/1 standard all the works carried out by means of electric current must be performed by a staff, who has been provided with all the devices required by the above-mentioned standard. For the works carried out under voltage, it is necessary that the employer certifies the suitability, against formative processes. As the cutting unit SW12S is supplied without plug, the user must use a plug homologated in the country in which the cutting unit is used. In the European Countries a Shuko plug is required (see picture 3). Never change the lenght of the cable supplied. The cutting unit SW12S is a class II electric device; therefore, it does not need earthing.



10. RESIDUAL RISKS

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

☹ At the end of the working operations, the motor could be very hot.

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

11. INSTALLATION AND USE

To install and use the cutting unit manually, proceed as follows:

1) Fix the cutting unit on level squares or angles by means of four 5MA screws, by inserting them in the four holes located in the motor lower cover (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 touch the machine table.

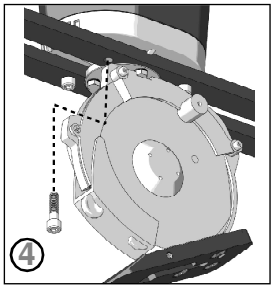
1) Lay the material to be cut;
2) Plug the cutting unit into the electrical outlet (see picture 6);
3) Put the material on the cutting foot (see picture 7);
4) Adjust the front mobile protection according to the thickness of the material to be cut (see picture 7);
5) Enable the switch; once it has been enabled, it lights up with a green light (see picture 8).

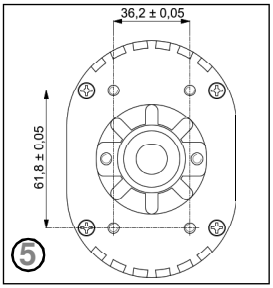
NOTE

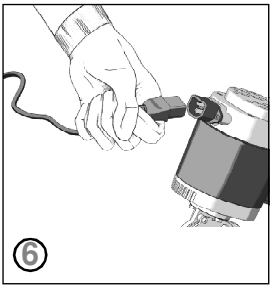
Cutting unit SW12S can work in a fixed position (the material moves) or it can move forward while the material is kept in the same position. Make sure the material to be cut is properly stretched, preventing it from curling.

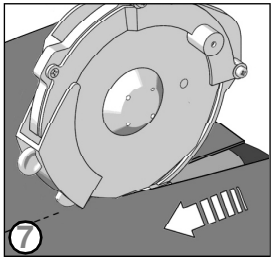
WARNING ⚠

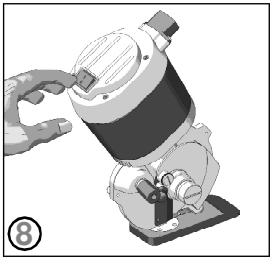
Never use the two bolts which fix the motor to the cutting part to fasten cutting unit SW12S. This operation may cause the motor shaft to break. In this case, warranty is not valid.











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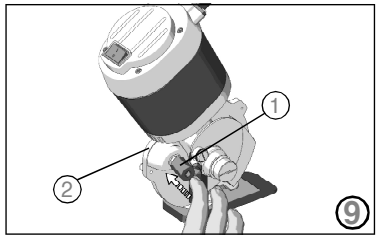
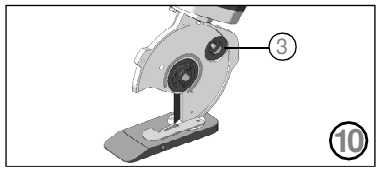
12. BLADE SHARPENING

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.

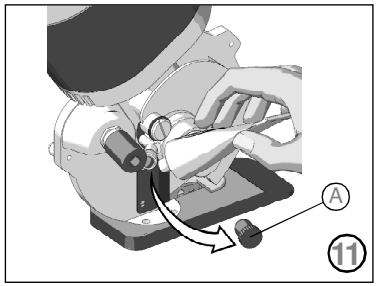




13. LUBRICATION

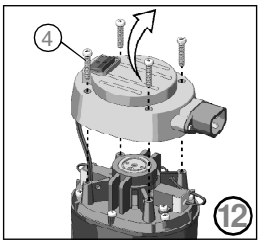
Every 3-4 working hours, it is necessary to lubricate the pair of gears. To carry out this operation, remove protective plug "A" located on the motor support of the cutting unit and fill it with lubricating grease Rasor. Screw plug "A" again few turns. Screw plug "A" some turns every 3-4 working hours (see picture 11).

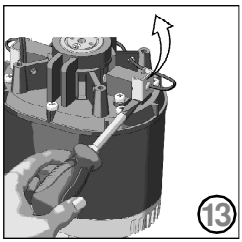
WARNING ⚠
The blade must never be dirty with grease or oil.

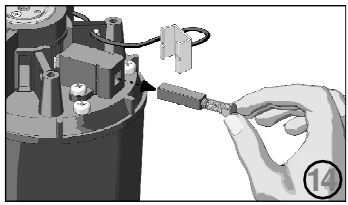


14. MOTOR BRUSH REPLACEMENT

Worn motor brushes could create a cutting unit malfunction (no starting, intermittent start, etc.), therefore it should be better to verify their wear periodically.
Open the motor cover by unscrewing 4 screws "4" on the cutting unit head (see picture 12). Remove the metal contacts that close the brushes with a slotted screwdriver (see picture 13). Remove the brushes and check their wear: if the graphite has a length shorter than 15 mm or it is uneven, replace it (see picture 14).
Close the metal contacts again by making sure that they adhere well to the metal part of the brush. Finally close the motor cover again.







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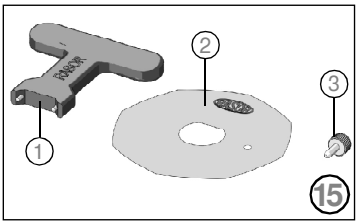
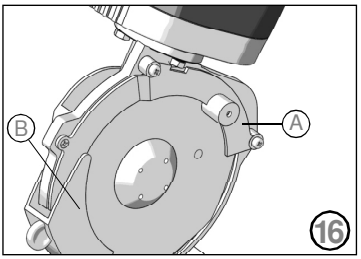
15. BLADE REPLACEMENT

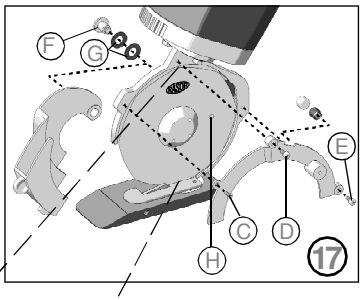
If the blade is no more able to cut (even after repeating the sharpening operation several times) it is necessary to replace it. To carry out this operation, use wrench "1" and drift "3" locking the blade (shown in picture 15).

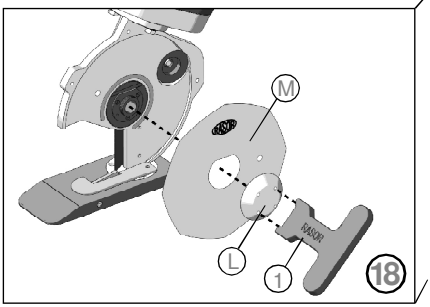


To replace the blade, proceed as follows:

1) Use some protective gloves in compliance with Legislative Decree 242 dated 19 March 1996 (use of personal protection devices);
2) Remove the fixed rear safety protection "A" (see picture 16) by unscrewing the cross screws "C", "D" and "E" by means of a screwdriver (not supplied by the manufacturer) as shown in picture 17.
   Remove the mobile front safety protection "B" (see picture 16) by unscrewing pin "F" and removing the two washers "G" as shown in picture 17.
3) Insert drift "3" (see picture 15) into hole "H", so as to lock the blade (the hole on the blade must correspond to the one on the structure).
4) Use wrench "1" to unscrew nut "L" and remove blade "M" (see picture 18).
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 Rasor writing can be seen by the operator.
6) Assemble all the components again and carry out the sharpening.







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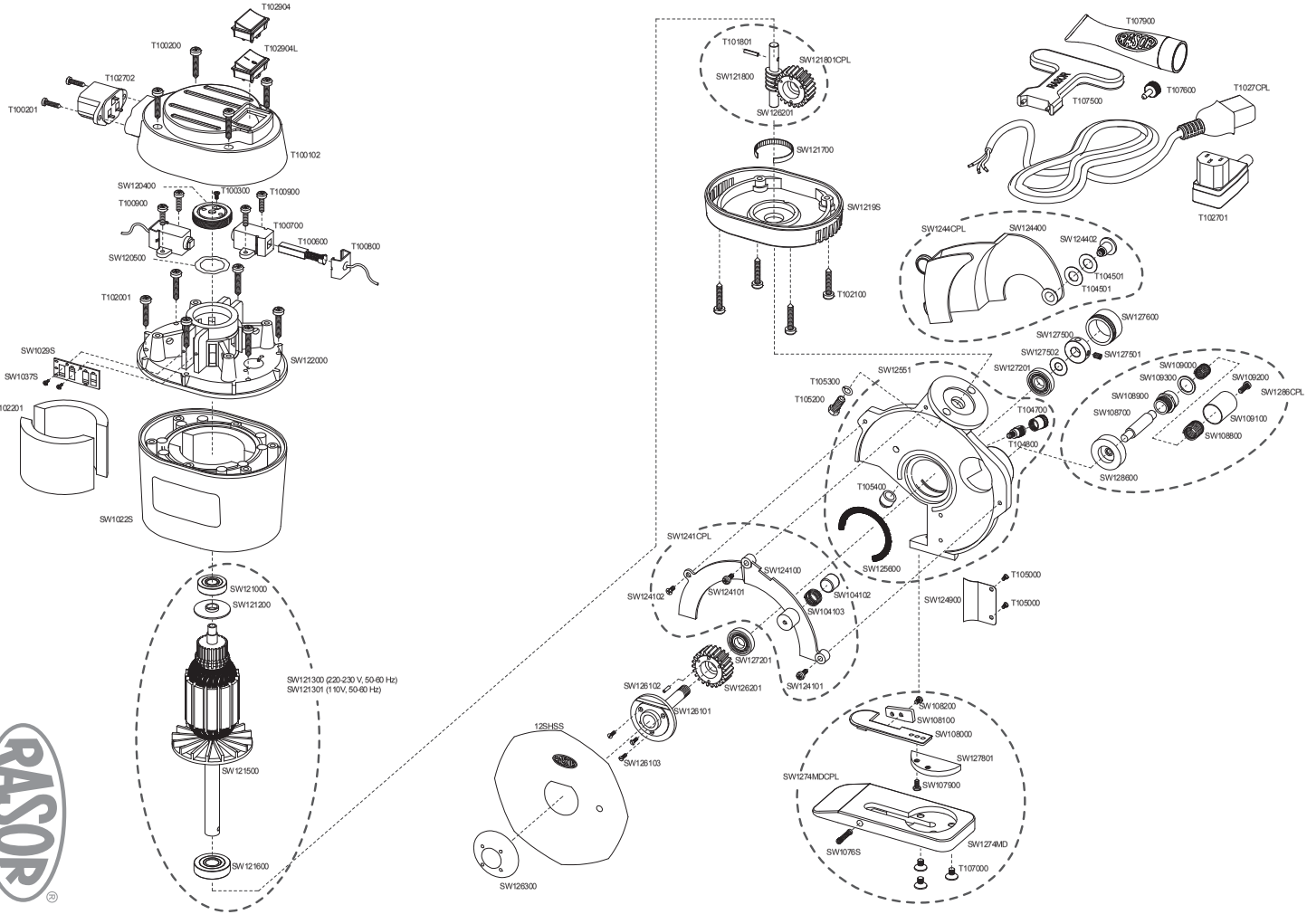
16. TROUBLESHOOTING

✖ PROBLEM	➡ SOLUTION
The fabric is not cut or it gets stuck between the blade and the counterblade	Check that the blade and the counterblade are in contact
	Check the kind of fabric
	Sharpen the blade
	Check the fabric thickness
	Check the compatibility between blade and fabric
	Make sure that the motor turns correctly
	Reduce the speed of travel
	Check the counterblade integrity
The cutting unit is noisy	Carry out the lubrication
	Disassemble the blade and remove the material residues
	Check the wear of the pair of gears
The cutting unit starts slowly, works intermittently or it does not start	Check the electric connections
	Check the motor brushes
	Check the feeding cable
	Check possible electric problems on OEM machine

17. SPARE PARTS / EXPLODED VIEW

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
12SHSS	8-SIDE BLADE Ø 120 mm, H.S.S. STEEL	SW121200	ANTI-GREASE WASHER	SW126102	REFERENCE PIN	T 101801	ELASTIC PIN
SW1022S	MOTOR FRAME WITH MAGNETS, WITHOUT HANDLE	SW121300	COMPLETE ROTOR 220 V	SW126201	GEAR BEVEL series >2001	T 102001	SCREW FASTENING THE UPPER COVER
SW1029S	ELECTRONIC FEEDING CIRCUIT	SW121301	COMPLETE ROTOR 110 V	SW126300	RING NUT FASTENING THE BLADE	T 102100	SCREW FASTENING THE LOWER COVER
SW1037S	SCREW FASTENING THE FEEDING CIRCUIT	SW121500	FAN	SW127201	GEAR BEARING R6 series > 2001	T 102201	PAIR OF PERMANENT MAGNETS
SW104102	OILER RING	SW121600	MOTOR BEARING L12	SW1274MD	RIGHT BASE WITH BEVEL mm 130x50x10	T 102701	THREE-POLE PLUG WITH CABLE GLAND
SW104103	OILER RING SPRING	SW121700	ELASTIC RING SW121800	SW1274MDCPL	RIGHT BASE WITH BEVEL mm 130x50x10 COMPLETE	T 102702	THREE-POLE SOCKET
SW1076S	SPRING WITH DOWEL	GEAR WORM SCREW		SW127500	GEAR BEARING ADJUSTMENT	T 1027CPL	FEEDING CABLE WITHOUT PLUG
SW107900	SCREW FASTENING THE COUNTERBLADE HOLDER	SW121801CPL	COMPLETE PAIR OF GEAR series> 2001	SW127501	FASTENING ADJUSTING DOWEL	T 102904	CAP SWITCH WITHOUT LIGHT
SW108000	COUNTERBLADE HOLDER	SW1219S	MOTOR LOWER COVER	SW127502	WASHER	T 102904L	CAP SWITCH WITH LIGHT, SERIES 2008
SW108100	CARBIDE COUNTERBLADE	SW122000	MOTOR UPPER COVER	SW127600	CAP	T 104501	CONVEXED WASHER
SW108200	SCREW FASTENING THE COUNTERBLADE	SW124100	REAR PROTECTION GUARD	SW127801	PLATFORM SECTOR	T 104700	GREASER CAP
SW108700	SHARPENER PIN	SW124101	3x10 MA SCREW FASTENING THE REAR GUARD	SW128600	EMERY Ø 30x10x6, MIDDLE GRAIN	T 104800	GREASER
SW108800	EMERY SPRING Ø 11 mm	SW124102	3x5 MA SCREW FASTENING THE REAR GUARD	SW1286CPL	EMERY UNIT COMPLETE	T 105000	SCREW 2.6MA FASTENING THE PLATE BLOCKING THE THREAD
SW108900	SHARPENER BUSH	SW1241CPL	REAR PROTECTION SET	T 100102	MOTOR CAP WITH SLOT	T 105200	MOTOR SUPPORT FIXING BOLT
SW109000	EMERY SPRING Ø 6 mm	SW124400	FRONT PROTECTION GUARD	T 100200	SCREW FASTENING THE MOTOR CAP	T 105300	SPLIT WASHER
SW109100	SHARPENER CAP WITH BEARING	SW124402	SCREW FASTENING THE FRONT GUARD	T 100201	SCREW FASTENING THE CONNECTOR SOCKET	T 105400	ANTI-FRICTION BUSH
SW109200	SCREW FASTENING THE SHARPENER CAP	SW1244CPL	FRONT PROTECTION SET	T 100300	ADJUSTMENT LOCKING SCREW	T 107000	SCREW FASTENING THE BASE/PLATFORM/SECTOR
SW109300	WASHER	SW124900	PLATE BLOCKING THE THREAD	T 100600	BRUSH	T 107500	BLADE ASSEMBLING/DISASSEMBLING WRENCH
SW120400	MOTOR BEARING ADJUSTMENT	SW125501	COMPLETE MOTOR SUPPORT, series >2001	T 100700	BRUSH HOLDER	T 107600	DRIFT LOCKING THE BLADE
SW120500	THRUST BELLEVILLE SPRING	SW125600	RING UNDER BLADE	T 100800	BRUSH SPRING	T 107900	LUBRICATING GREASE
SW121000	MOTOR BEARING L9	SW126101	BLADE GUIDE PIN series > 2001	T 100900	SCREW FASTENING THE BRUSH HOLDER		


T102904
T100200
T102904L
T102702
T100201
T100102
SW120400
T100300
T109900
T109900
T100700
T100600
T100800
SW120500
T102001
SW1029S
SW1037S
SW122000
T102201
SW1022S
SW121000
SW121200
SW121300 (220-230 V, 50-60 Hz)
SW121301 (110V, 50-60 Hz)
SW121500
SW121600
T101801
SW121801CPL
SW121800
SW126201
SW121700
SW1219S
T102100
T107900
T107500
T107600
T1027CPL
T102701
SW1244CPL
SW124400
SW124402
T104501
T104501
SW127600
SW127500
SW127502
SW127501
SW127201
SW12551
T105300
T105200
T104700
T104800
T105400
SW125600
SW109000
SW109300
SW109200
SW1286CPL
SW108900
SW108700
SW109100
SW108800
SW128600
SW1241CPL
SW124100
SW124102
SW124101
SW104102
SW104103
SW124900
T105000
T105000
SW127201
SW126201
SW124101
SW126102
SW126101
SW126103
12SHSS
SW126300
SW108200
SW108100
SW108000
SW127801
SW1274MDCPL
SW107900
SW1076S
SW1274MD
T107000

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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.
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 neglicence;
- ☞ 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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