

**MACROZA**

**M90**

**"PORTABLE ELECTRICAL CHASER MACHINE"**



**INSTRUCTIONS**

**FOR USE AND MAINTENANCE**



MADE IN SPAIN

## GENERAL SAFETY RULES

### THE FOLLOWING IS RECOMMENDED:



**WARNING!** Read and understand all instructions before using the MACROZA M-90. Failure to follow all basic safety measures listed below may result in electric shock, fire and/or serious personal injury.

The term "power tool", "machine", and "chaser machine" in all warnings below refers to mains-operated MACROZA M-90 wall chaser.

1. Keep your work area clean, tidy and well lit. Dirty, untidy and dark work areas increase the risk of accidents.
2. Do not operate MACROZA M-90 in explosive atmospheres such as in the presence of flammable liquids or gasses. Power tools create sparks which may ignite fumes.
3. Do not expose MACROZA M-90 to rain or wet conditions. Contact with water when using a power tool will increase the risk of electric shock.
4. Keep bystanders, children and visitors away while operating MACROZA M-90.
5. Tools with an earth or ground connection to the exposed metal parts must be connected to a power outlet that has an earth or ground connection in accordance with all codes and regulations. Check with a qualified electrician if you are in doubt as to whether the outlet is properly earthed or grounded.
6. Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
7. Do not abuse the cord. Never use the cord to carry the MACROZA M-90 or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cord immediately. Damaged cords increase the risk of electric shock.
8. When operating MACROZA M-90 use only outdoor extensions cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.
9. Stay alert; watch what you are doing when operating MACROZA M-90. Use common sense. Do not use the power tool when tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury. To reduce the risk of fatigue it is recommended to have a break of no less than 10 minutes after every hour of work
10. Use safety equipment. Always wear eye and ear protection and rubber gloves. Safety equipment such as dust mask, non-slip footwear or hard hat used for appropriate conditions will reduce personal injuries.
11. Dress properly. Do not wear loose-fitting clothing or jewellery. Long hair should be tied back. Keep your hair, clothing and gloves away from moving parts as they can be caught in the power tool.

**12.** Do not overreach. Keep a proper footing balance at all times. Proper footing and balance enables better control of the tool in unexpected situations. Follow instructions in this book of proper chasing positions.

**13.** Store idle MACROZA M-90 in a dry safe place under lock and key and out of reach of children. Do not allow persons unfamiliar with the chaser machine or these instructions to operate the power tool. Tools are dangerous in the hands of untrained users.

**14.** Avoid accidental starting. Make sure the switch is off before plugging in. Do not carry MACROZA M-90 with your finger on the switch. In case an unexpected jam occurs, switch the power tool off and unplug it from the mains socket.

**15.** Remove adjusting tools and attachments before turning MACROZA M-90 on. A wrench or a key that is left attached to a rotating part of the machine may result in personal injury.

**16.** Disconnect the plug from the power source before making any adjustments, changing accessories or storing the MACROZA M-90. Such preventive safety procedures will reduce the risk of starting the machine accidentally.

**17.** Do not overload the MACROZA M-90 as it will work more safely and efficiently within the indicated power range. Do not use this wall chaser on extremely hard materials such as concrete or stone.

**18.** Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer for which it is designed.

**19.** Do not use MACROZA M-90 if the switch does not turn on and off. It must be repaired immediately.

**20.** Maintain MACROZA M-90 with care. Keep power tool clean and milling cutter sharp to ensure perfect working condition.

**21.** All moving parts should be periodically inspected together with the cord and cutter protective cover.

**22.** Keep handles clean and free from grease and oil. Properly maintained tools reduce risk of personal injury.

**23.** Warning! Use only MACROZA original parts. Failure to do so may lead to personal injuries.

**24.** Before starting the job, check for damages or breakages and any other condition that may affect the operation of the wall chaser or moving parts. If damaged, service the MACROZA M-90 before using it. Many accidents can be caused by poorly maintained tools.

**25.** Always use approved MACROZA service centres for maintenance. Have power tool service by a qualified repair person. This will ensure safety of the machine is maintained.

**26.** MACROZA M-90 is designed in accordance with these instructions and in the manner intended for the particular type of job. All maintenance should carry out by a specialist and using only MACROZA original spare parts.

**27.** The MACROZA M-90 chaser machine should not be used to perform work for which it has not been designed (for example, to cut wood). Use of chaser machine for operations different from those intended could result in a hazardous situation.

**WARNING!** To reduce risk of injury, user must read instruction manual.

## ELECTRICAL SAFETY

The installation voltage must be as stated on the MACROZA M-90 specifications plate



## EQUIPMENT

- 1 MACROZA M-90 chaser machine
- 1 Special fixed wrench for loosening the milling cutter
- 1 Fixed spanner for tightening the shaft
- 1 Box and case
- 1 Instructions manual

## TECHNICAL INFORMATION

Acoustic power level: 110 dBA ( $\pm 3$  dB)

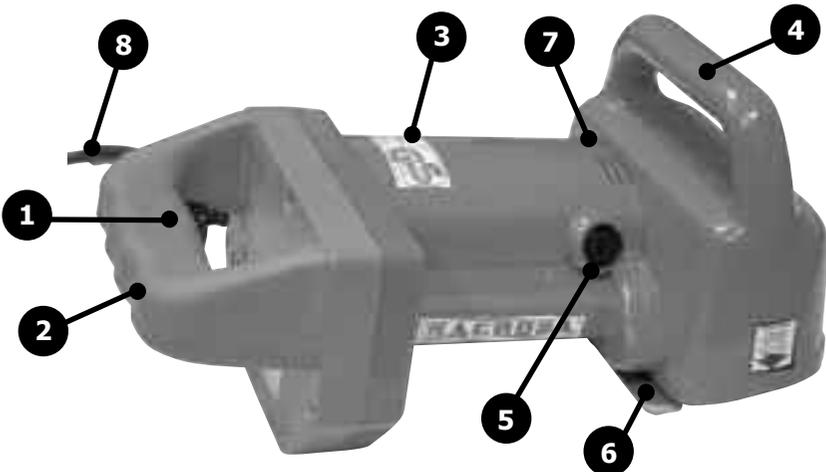
Vibration level: 10 m/sec<sup>2</sup>.

Model	M-90
Class II	
Motor	Single-phase
Voltage	220V AC
Frequency	50 / 60 Hz
Power	2,000 W (at full load)
Off-load rotating speed	1,000 r.p.m.

Model	M-90
Class II	
Motor	Single-phase
Voltage	110V AC
Frequency	50 / 60 Hz
Power	2,000 W (at full load)
Off-load rotating speed	1,000 r.p.m.

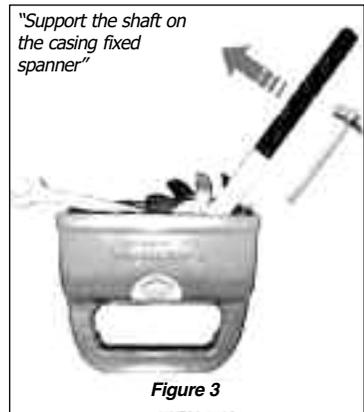
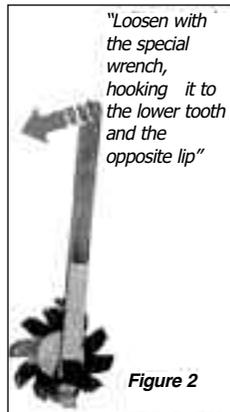
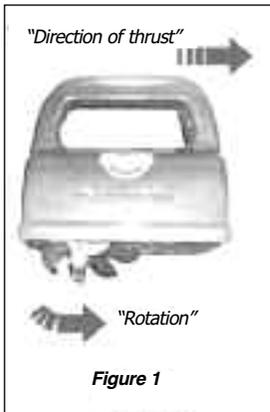
## DESCRIPTION

- 1. On/Off switch
- 2. Rear handle
- 3. Motor casing
- 4. Front handle/Milling cutter cover
- 5. Brush holder
- 6. Front skid
- 7. Ventilation slits
- 8. Mains power cord



## INSTALLING THE MILLING CUTTER

- There are several sizes of MACROZA milling cutter depending on the width and depth of the chase.
- Only original MACROZA milling cutters should be used as they are designed specifically for the MACROZA M-90.
- Make sure that the MACROZA M-90 is switched off and unplugged from mains power before handling the milling cutter.
- Install milling cutter as shown in Figure 1, with teeth facing downwards in cutting position.
- Milling cutter shaft rotates to the left as indicated on arrow engraved on the milling cutter cover (fig.1).
- Before installing the milling cutter it is very important to place a washer (supplied with the machine and cutters) between the shaft and milling cutter. This will ensure perfect seating on the shaft and make it easier to remove the milling cutter after use.
- It is also recommended to grease the thread shaft with oil or lubricant
- To remove milling cutter, use the special wrench as shown on Figure 2.
- Once the spanner is attached hit the special wrench as shown in Figure 3. Do not hit the special wrench if the spanner is not fixed between the shaft and milling cutter cover.



## VERY IMPORTANT:

Check the following each time before using MACROZA M-90

- Milling cutter does not have any Tungsten Carbide plate missing.
- Ensure all milling cutter teeth are sharpened.

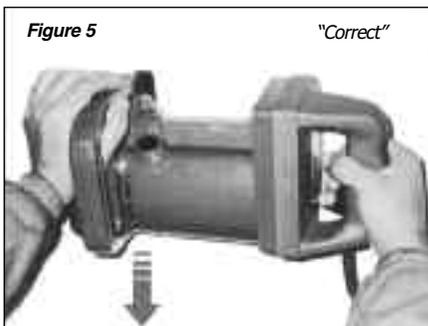
## STARTING JOB WITH MACROZA M-90

- Plug MACROZA M-90 in the mains socket.
- Switch on MACROZA M-90 before contact with the surface to verify its rotating direction. Teeth must rotate forward as shown in Figure 1.
- Lean MACROZA M-90 lateral to the wall. Slowly insert the milling cutter into the wall (Figure 4).
- Hold the machine firmly to avoid initial vibrations.



## VERTICAL CHASES

- Vertical chases are done from top to bottom.
- Right hand should hold on to handle and switch while the left hand firmly grips on the milling cutter cover (Figure 5).
- Left hand guides the chaser machine bearing most of the force.
- Once the cutter has entered the wall, pull down MACROZA M-90 with both hands producing a straight vertical cut.
- A difference in movement from one hand to the other will produce a curved cut.



## HORIZONTAL CHASES

- Horizontal chases are done from right to left.
- The right hand holds the wall chaser by the right side of the milling cutter cover and pushes leftwards (Figure 6).
- Right arm will lean on to the machine and push also leftward from the left hand side (Figure 7).
- The left hand holds the rear handle and operates the switch (Figure 6).



Figure 6



Figure 7



"Right hand incorrect"

## HORIZONTAL CHASES CLOSE TO THE FLOOR

- Horizontal chases close to the floor are done from left to right. (Figure 8)
- Right hand holds the machine by the rear handle and operates the switch. Left hand holds the milling cutter cover from the left hand side and pushes to the right (Figure 8)



Figure 8 "Correct"



"Incorrect"  
"Both hands and the machine incorrect"

**MILLING CUTTERS**

**MILLING CUTTERS**

The MACROZA M-90 chaser machine's cutting attachment is a milling cutter made of Tungsten Carbide plates.

M-90 uses four different types of milling cutters depending on the measure of chase required (depth x width):

**RZ-10**

25 mm x 25 mm.



**RZ-105**

30 mm x 30 mm.



**RZ-12**

45 mm x 15 mm.



**RZ-11**

35 mm x 25 mm.

**NOTES:**

Cutting width and depth might vary depending on milling cutter's level of wear.

- For cuts wider than 50 mm, make two parallel cuts side by side
- For gear or switch boxes, make two additional parallel cuts on each side of the existing cut.

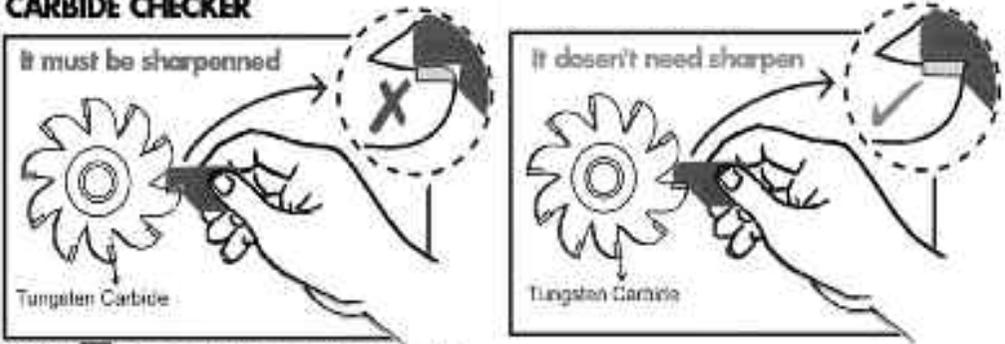
**MILLING CUTTER SHARPENING**

Use the MACROZA Carbide Tester before sharpening the milling cutter to check whether the carbide teeth need to be sharpened.



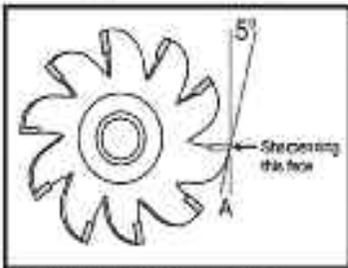
Carbide Sharpness tester

**CARBIDE CHECKER**



**NOTE** Gap means need sharpening

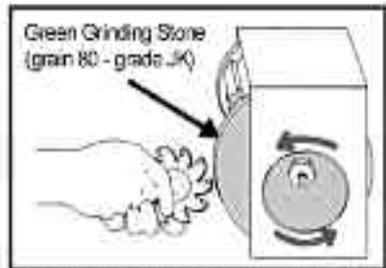
*Do NOT use this kind of machine for sharpening.*



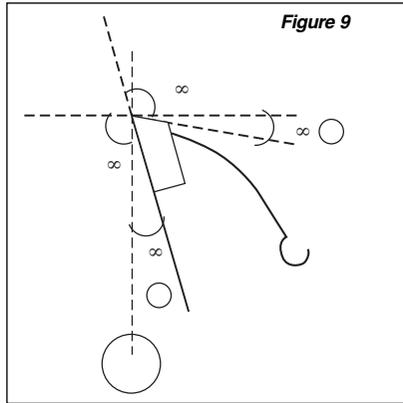
Sharpening angle must be 5° (cutting angle A) on hard-metal plate.



*Sharpening must be done with this kind of grinding stone machine.*



Method and position to sharpen the milling cutter



Sharpen the milling cutter's upper part.  
Never sharpen the front part.

To sharpen a milling cutter use an emery or grinding stone with the following specifications: Silicone Carbide, Grain 80, and Grade JK.

Milling cutter sharpening angle must be  $5^\circ$  (cutting angle A), as shown in Fig. 9.

**APPROXIMATE MILLING CUTTER DURATION**

The MACROZA M-90 chaser machine has been designed to work on the following materials:

- Bricks (both solid and hollow)
- Fireproof bricks
- Ytong blocks
- Cement blocks
- Cement plastered walls

Do not use the M-90 chaser machine on concrete, stone or any other extremely hard material.

The life figures (lineal metres opened) of a milling cutter are approximate. It will depend on the material it is used on:

**MATERIALS**

- Soft materials (plaster, Ytong, etc.)
- Hollow brick
- Solid brick
- Cement block

**LIFESPAN**

- 15,000 m
- 9,000 m
- 4,000 m
- 3,000 m

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**REPAIRING THE MILLING CUTTER** (plate replacement):

Keep your milling cutter sharpened at all times and without any missing Tungsten Carbide plate. A milling cutter with a missing or broken Tungsten Carbide plate will be useless within a few hours of work and may be a potential hazard. Repair immediately.

Tungsten Carbide plate replacement:

- 1. Use a blowtorch to remove all old plate remains.
- 2. Use a file to make the original gap. The gap should maintain the original position
- 3. New plate must welded with an autogenously filler weld. It should protrude 0.5 mm above the milling cutter (figure 7).
- 4. Sharpen the new plate following instructions above.

**MAINTAINING THE MACROZA CHASER MACHINE:**

All maintenance and repair jobs on the machine must be carried out at a MACROZA Technical Service Centre.

**MACROZA M-90 Maintenance**

We strongly recommend that all maintenance of Macroza Wall Chasers is done at an official Macroza Technical Service Centre.

Regular maintenance should be done to ensure the best performance of your wall chaser.

**Daily maintenance.**

Check the sharpness of the milling cutter approximately after each hour of use and change the cutter when it becomes blunt.

After each day's use, clean the machine so that there is no dust. If necessary, blow shots of compressed air through the machine to remove the dust.

**Monthly maintenance.**

All MACROZA Wall Chasers used on daily basis should be checked at least once a month.

It is extremely important to check if there is any play in the bearings located in the milling cutter shaft. At the slightest play we strongly recommend that the bearings are changed.

Failure to do so may lead to severe failures in the machine engine.

In normal working conditions and due to the harsh nature of chasing job, it may be necessary to change the bearings each month.

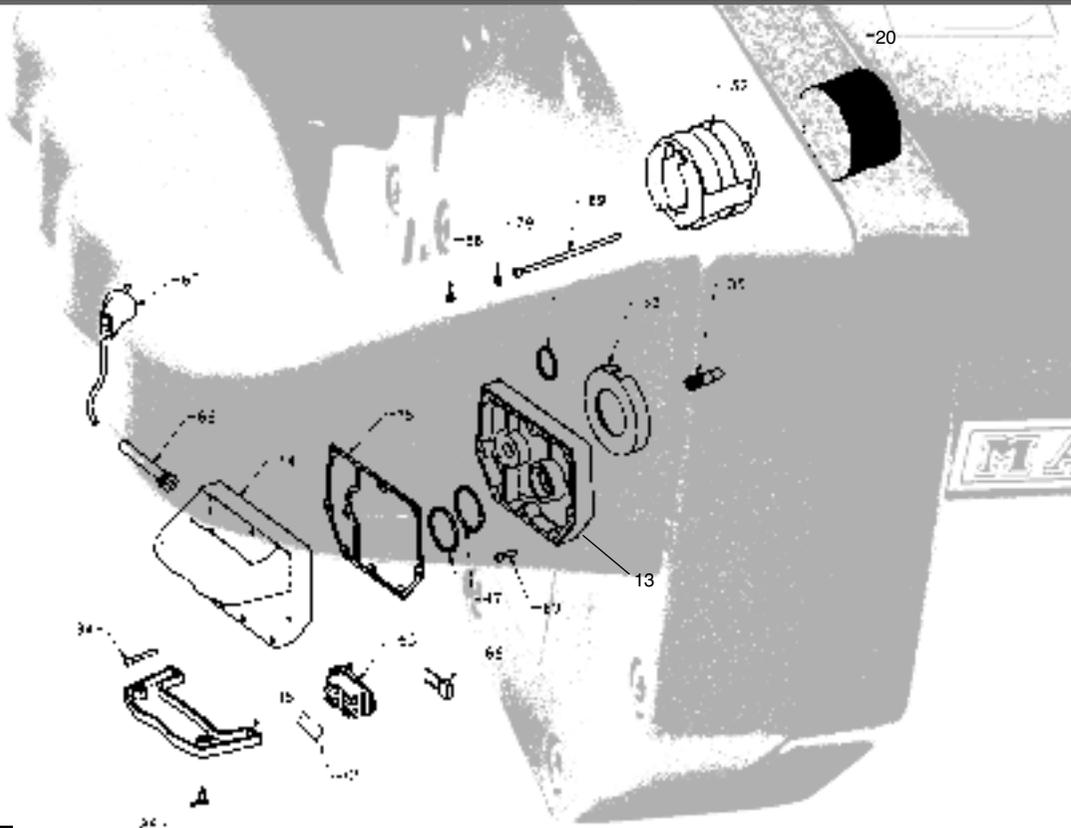
Look through the lateral slots of the chaser to check whether sparks produced by the carbon brushes in the commutator are stronger than normal. If necessary replace both carbon brushes. Always replace the pair of carbon brushes.

**AFTER-SALES SERVICE FOR YOUR MACROZA M-90:**

MACROZA has an Official Technical Service Centre network to provide you with excellent service and fast repairs.

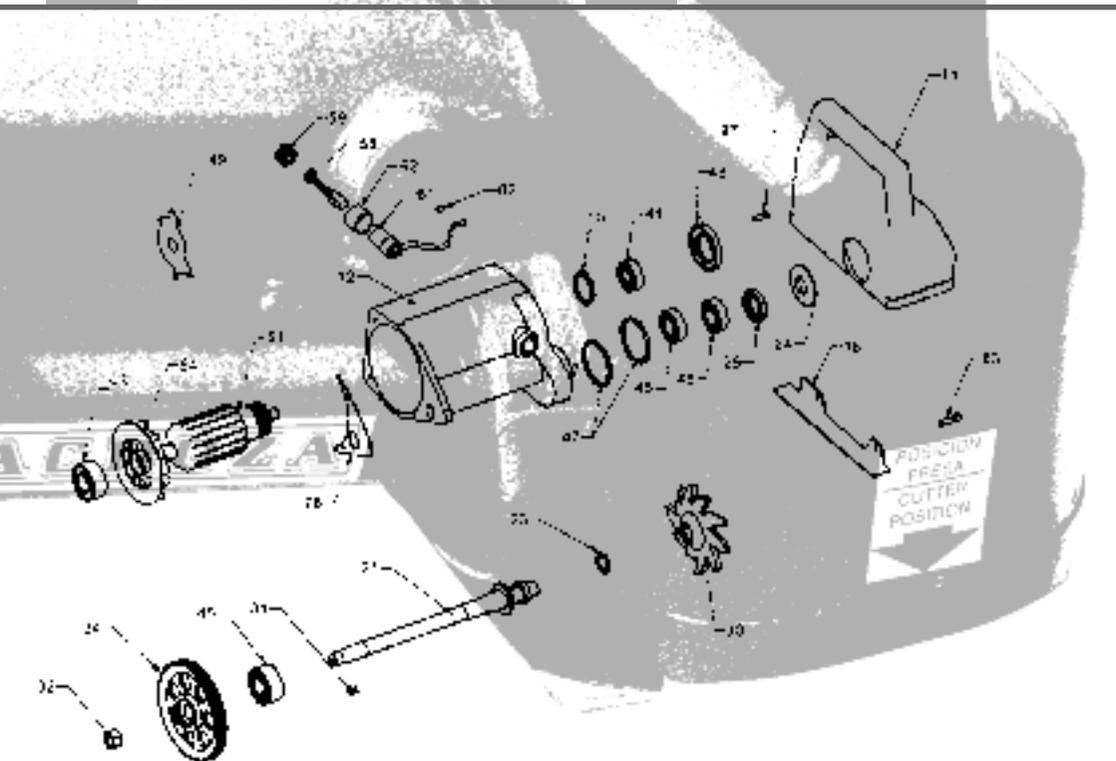
The use of non original MACROZA spare parts could lead to machine damage.

Ref.	Description	Ref.	Description
11	Milling cutter cover	28	RZ-12 Milling cutter
12	Motor casing	29	RZ-105 Milling cutter
13	Intermediate cover	30	RZ-10 Milling cutter
14	Complete rear handle	31	Crown knuckle pin
15	Switch cover (handle)	32	Crown nut
16	Intermediate cover seal	34	Gear
18	Front skid	35	Pinion
21	Cutter attachment shaft	41	Motor bearing
23	Cutter attachment washer	43	Motor bearing
24	Shaft dust-guard	45	Shaft bearing
25	Shaft grease retainer	46	Shaft and motor bearing
26	Shaft cover seal	47	O-ring
27	RZ-11 Milling cutter	48	Motor bearing cover
		49	Casing lower insulator



# PARTS

Ref.	Description	Ref.	Description
50	Interior insulator	68	Overload chip
51	Complete armature	69	Capacitor
52	Stator	70	Special cutter spanner
53	Fan spacer	71	Fixed spanner
54	Fan	78	Flat washer
58	Brush	79	Lock washer
59	Brush plug	82	Brush keeper
60	Brush plug	83	Allen screw
61	Brush tube	84	Allen screw
62	Insulated bushing	86	Allen screw
63	Switch	87	Bearing cover screw
66	Cable exit rubber grommet	88	Nut
67	Cable with mains plug	89	Coil rod
		90	Hard metal plate



## DECLARACIÓN DE CONFORMIDAD CE

La firma MACRO s.l, fabricante de máquinas con Domicilio Social en la calle Leñeros 15  
28039 Madrid (ESPAÑA)

DECLARA bajo su responsabilidad que la máquina rozadora eléctrica portátil

Marca: MACROZA

Modelo: M-90

Voltaje: 220 / 240 V.a.c. (110/125 V.a.c.)

Potencia: 2.000 W

Frecuencia: 50/60 Hz O

Consumo en carga: 9 A.

Velocidad giro fresa: 1.000 r.p.m.

Nivel de vibraciones: 10 m/sg2

Nivel de ruido: 110 dBA (+/- 3 dB)

esta fabricada conforme a:

**la Directiva: 98/37/CE**, aplicando las siguientes normas armonizadas:

UNE EN 50144-1: 1995

UNE EN 292-1: 1993

UNE EN 292-2: 1993

UNE EN 614-1: 1996

UNE EN ISO 3741: 2000

UNE EN ISO12001: 1997

UNE EN 953: 1998

UNE EN 626-1: 1995

cumple con los requisitos esenciales de seguridad y de salud relativos al diseño y fabricación establecidos en el Anexo I de la citada directiva.

La máquina no se encuentra entre las recogidas en el Anexo IV.

Ha sido constituido el correspondiente expediente técnico de construcción, establecido en el Anexo V.

**la Directiva 89/366/CE**, aplicando las siguientes normas:

EN 55014 : 1993 + A1 (1997) + A2 (1999) EN 61000-3-2 (95) + A12 (96) + A13 (97) + A1 (98) + A2 (98) (Armónicos) y la norma EN 61000-3-3 (95) (Flicker)

**la Directiva de baja tensión 73/23 "Seguridad de las herramientas manuales portátiles accionadas por motor eléctrico"**

EN 50144-1:1998 - UNE-EN 50144-1:2001

Firmado:

*Javier Baschwitz*  
Gerente