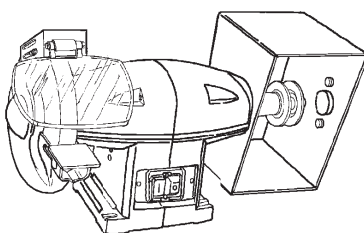
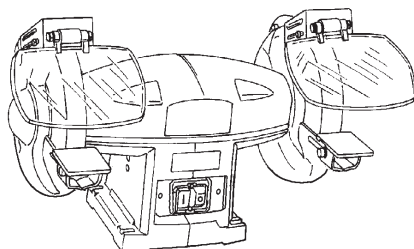
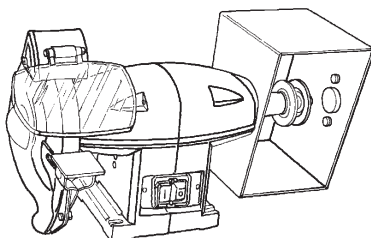
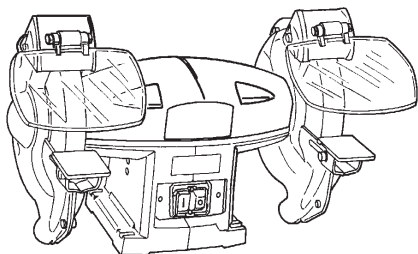


**SMERIGLIATRICI E PULITRICI E
GRINDERS AND POLISHING MACHINES
SCHLEIFMASCHINEN UND POLIERMASCHINEN
TOURETS ET EBARBEUSES
ESMERILLADORAS Y LIMPIADORAS
ESMERILADORAS E MAQUINAS DE POLIR**



**ISTRUZIONI PER L'USO E MANUTENZIONE/RICAMBI
INSTRUCTIONS FOR USE AND MAINTENANCE/SPARE PARTS
GEBRAUCHSANLEITUNGEN UND WARTUNG/ERSATZTEILE
MODE D'EMPLOI ET ENTRETIEN/PIECES DE RECHANGE
INSTRUCCIONES PARA EL USO Y MANUTENCION/REPUESTOS
INSTRUÇÕES DE UTILIZAÇÃO/PEÇAS DE MUDANÇA**

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INDEX

| | |
|------------------------------------|-----------|
| 1 INTRODUCTION TO USE | 10 |
| 2 INSTALLATION | 11 |
| 3 ADJUSTMENT | 12 |
| 4 MAINTENANCE | 14 |

1 INTRODUCTION

Please read these instructions carefully in order to learn how to use this machine and how to deal with any contraindications. Keep these instructions in a safe place: they are an integrating part of the machine. This instruction manual is an integral part of the machine and therefore must be kept complete and handled with care. Always refer to the contents reported in this manual for carrying out all the operations required for using the machine to the best advantage and under utmost safety conditions.

Use the machine solely and exclusively for the uses outlined below, as recommended in this manual, and do not attempt to tamper with it, force it or use it for other purposes.

1.1 CONVENTIONAL SYMBOLS

Never underestimate the warnings "ATTENTION - CAUTION" given in this manual.

In order to draw the user's attention and to preserve safety, hazardous operation are preceded by symbols and notes that point out the danger and explain how to behave to avoid any risk.

These symbols and notes are divided in three categories, identified by the following words:



WARNING: dangerous-behaviours that could cause serious injuries.



CAUTION: behaviours that could cause slight injuries or damages to things.



NOTE: the notes preceded by this symbols are technical and are aimed at making operations easier.

1.2 STANDARDS ON SAFETY

The machine has been designed and manufactured conforming to the norms set forth by the following prevailing Machinery Directives: **EEC 98/37 - EEC 73/23 - EEC 89/336**

The annexed CE Declaration of Conformity, together with the CE mark attached to the product, constitute an essential element and are an integral part of the machine: they guarantee that the product duly conforms to the aforesaid safety Directives.

1.3 TYPE OF USE

This machine has been conceived and manufactured to remove material, such as tool grindings or lappings, from any type of metal.

In the bench grinder and polishing machine (combined version) the shaft is fitted with an extension on one or both sides, where it is possible to fit several types of brushes (such as with steel wires, with abrasive blades or in fabric) suitable for any type of metal. Avoid using it for any other type of use that is not foreseen by these instructions.

1.4 SAFETY REGULATIONS

- Do not use the machine outdoors, in humid places or in the presence of gas or flammable liquids.
- Put the machine in a well lit working area: this is extremely important in preventing work accidents.
- Do not force the machine unnecessarily: excessive pressure could cause the grinding wheel to deteriorate very quickly, the machine's performances could worsen and the motor be damaged by overheating.
- Each time a machine operation is finished, turn off the machine switching it to position "O".
- Avoid wearing loose-sleeved work clothes or accessories such as scarves, neck-chains or bracelets which could be hooked by the moving parts.
- Always use protection devices: accident prevention eyeglasses as foreseen by regulations, headsets or earphones and if necessary, caps to hold back loose hair.
- Do not use the electric feeding cable to lift the machine or to take off the plug from the current tap. Avoid contact with sharp edges, oils and high temperatures.

1.5 DESCRIPTION OF THE MACHINE

- (Picture 1a: bench grinder)
- (Picture 1b: combined bench grinder)

1. MACHINE BODY
2. TURNING-ON SWITCH
3. ABRASIVE GRINDING WHEEL
4. TRANSPARENT SPARK ARRESTERS
5. SAFETY CAP
6. PIECE-REST
7. ADJUSTABLE CHIP GUARDS
8. KEEPER HOLES
9. BRUSH PROTECTION
10. SHAFT EXTENSION

1.6 PACKING REMOVAL, STORAGE and TRANSPORT

Packing removal

If the machine is fit with a base, first separate it from the machine by removing the fastening screw nuts.

Remove the machine from the packing that protects it during transport. Please do not throw the box away, it could be useful in case you will have to displace the machine or need to store it for long periods.

Displacement and transport



WARNING: The machines with more than 1100 Watt are very heavy and must therefore be lifted and positioned on the choosen working place. Otherwise they have to be displaced by at least two people.

Machines with a lower power can be lifted and displaced by one person only.

Storage

Should you have to store the machine, please take into account the ideograms printed on the box. Do not crush the box with overloads and put it in a safe position so that it does not fall.

2 INSTALLATION

Positioning in working area (Picture 2)



CAUTION: Ensure that the machine is located in a suitable area both as far as work environment and lighting are concerned: always keep in mind that the overall work environment conditions are essential for preventing accidents.

Position the machine on a sufficiently flat bench so as to have the best stability possible.

The ideal height of the bench is that allowing the positioning of the piece-rest 6 at about one meter from the ground.

Machine fastening on working table (Picture 1a)

We recommend to secure the machine to the work bench, by inserting four M6 screws in holes 8, locking them on the opposite side using the appropriate screw nuts.

Machine fastening on the column (where foreseen)

In order to secure the machine to the base, use the standard fittings provided. Match holes 8 of the machine with the corresponding holes in the upper support surface of the base.

Securing the base to the floor

The column (if delivered with the machine) has to be fixed to the floor through the special holes on its lower part. Furthermore fill it with sand to avoid vibrations and in order to increase its stability.

Fitting of auxiliary equipment

From the bag inside the packaging take out the adjustable chip guards 7, the transparent spark arresters 4 and the piece-rests 6 and assemble them onto the safety caps 5 using the screws inside the same bag, as shown in picture.

2.1 ELECTRIC CONNECTION

Grounding

Check that the power grid to which the machine is plugged in is grounded as foreseen by the safety rules in force, and that the current socket is in good condition.

Plug fitting

Connect a plug in compliance with safety regulation to the end of the mains cable of the machine, check that the yellow/green protective conductor is fitted into the relative terminal.

Choice of the thermal protection

We remind the user that a magnetothermic protection, fit for safeguarding all the conductors from short-circuits and overloads, must always be placed before the power grid.

Said protection is to be chosen according to the electric specifications of the machine, indicated on the data plate applied to it.

2.2 NOISE RELATED INFORMATION

Under normal working conditions as described in these instructions, the grinding machines bring about a level of acoustic pressure corresponding to:

Leq = 60 dB (A) when idling;

Leq = 77 dB (A) during workings (for example: lapping a C 40 steel rod)

Tests were carried out according to **UNI 7712, ISO 3740, ISO 3746 and CEE 89/392** regulation.

It is however recommended to use personal means for hearing protection, such as headsets or earphones.

2.3 ELECTROMAGNETIC COMPATIBILITY INFORMATION

The recent European Safety Standards, especially **EEC Directive 89/336**, set forth that all the equipment must be fit with radio interference suppressors both to and from the outside environment.

This machine conforms to such Standards.

Tests were carried out according to **EN 55011, EN 55014, EN 50082-1, IEC 1000-4-2, IEC 1000-4-4** regulations.

3 ADJUSTMENTS (Picture 2-3)

The international safety rules prescribe that the adjustable chip guards 7 and the piece-rest 6 are to be positioned not more than 2 mm. from the peripheral edge of the grinding wheel.

As the grinding wheel wears out, its diameter decreases, and these distances are then increased.

Periodically check their values and, if they have increased, reduce them within the fixed limits by adjusting accessories 7 and 6 by means of their fastening screws.

3.1 USE OF THE GRINDING WHEEL (Picture 4-8)

Insert the input cable plug into the current socket of the power grid.

Start running the machine by pressing the green pushbutton 12 of switch 2.



WARNING: ALWAYS WEAR ACCIDENT PREVENTION EYEGLASSES.

Gently bring the piece to be worked in contact with the grinding wheel, laying it on piece-rest 6, and start applying pressure progressively, but without pushing too hard, so that the machine will not lose the normal r.p.m.



CAUTION: The piece being worked on must always be held with both hands, and cooled every now in a tank of water.

The grinding wheel on the right is of a thicker grain: it is more suitable for chipping operations.

The left grinding wheel is of a thinner grain, and is more suitable for finishing and grinding tools.

In order to stop the machine, press the red pushbutton 13 of switch 2 or press the emergency stop button 11.

3.2 REPLACING THE GRINDING WHEEL (pictures 2-5-6)



WARNING: Prior to performing any maintenance operation, disconnect the electric power supply.

Activate switch **2** to stop the machine and wait until the grinding wheels have stopped completely. Take away parts **7** and **6**.

Remove cover **14** from the safety cap, unscrewing the relevant screws.

With an open key unscrew the nut **15** and keep the shaft steady through an hexagonal key, keeping in mind that on the left side it has a left-handed threading, and therefore it is unscrewed in clockwise direction.

Replace worn out grinding wheel with a new one.

Check if a new grinding wheel is integral

Before mounting the new grinding wheel, it is advisable to perform a sound test in order to check its integrity.

To carry out this test, the grinding wheels must be dry and clean, otherwise the emitted sound could result dampened. With the help of a non-metallic tool (wooden handle of a screwdriver or a wooden mallet), lightly strike the grinding wheel on its side (**picture 5**): a light strike against an integral grinding wheel produces a pleasant and clear sound.

If, on the other hand, the emitted sound is dull or cracked, the grinding wheel should not be used.

Retighten **15** screw nut.

Reassemble cover **14** of the safety cap.

Re-assemble the pieces that were taken off previously.

If the radial and axial movement of the rotating grinding wheel, gauged both on the circumference and on the side wall of the grinding wheel respectively, should be too much, the grinding wheel produces excessive vibration when used at maximum rotating capacity.

In order to decrease such value, stop the machine, loosen the grinding wheel and turn it on its axis by 1/4 turn holding the motor shaft firmly, then lock the grinding wheel. If the problem persists, repeat the operation as many times as required until the best possible position is found.

3.3 USE OF THE BRUSH (Fig. 7)

The right-hand part of the combined bench grinder is manufactured so that it can house a brush for the cleaning or polishing of various types of metals. It is possible to fit metal wire brushes (cleaning) or cloth/fabric brushes (polishing) with varying maximum diameter, maximum width and stop collar hole, depending on the model (refer to the "USE OF APPROPRIATE TOOLINGS" table).

Ensure that the diameter of the middle collar **16** that keeps the wires together is always greater than the diameter of the fastening flanges **17** provided on the machine.



WARNING: It is prohibited to secure the brushes with the flanges in direct contact with the wires.

Every now and then check the general condition of the brush by visually inspecting it, especially as concerns the hold of the wires, by means of the middle collar. If you notice that the collar does not close perfectly any more, replace the brush with a new one at once.



WARNING: Prior to performing any maintenance operation, disconnect the electric power supply.

Fitting of the brush

Ensure that the machine is OFF and that the toolings provided (e.g. grinding wheels) are perfectly still. Use an Allen wrench to unscrew the screw nut **18** that locks the flanges to the shaft.

Remove the tightening flange **17** from its seat.

Fit the brush onto the shaft, ensuring that the hole of the brush has the same diameter of the shaft or of the adapting bush provided onto which it is secured.

Re-position the tightening flange **17** onto the shaft making it touch the collar **16** of the brush.

Remove the middle side plug **19** from the protection and introduce a socket wrench through the hole until the seat is properly fit on the shaft **20**.

At this point, keeping the shaft locked by means of the socket wrench, tighten the fastening screw nut on the flanges.

Try to turn the brush by hand to make sure that it is centered. If it does not turn properly, repeat the aforesaid steps.

USE OF APPROPRIATE TOOLINGS

| ITEM | mm. | m m |
|------|-----------|-----------|
| 404 | 150x20x16 | / |
| 424 | 150x20x16 | 150x25x16 |
| 405 | 200x20x16 | / |
| 425 | 200x20x16 | 150x25x16 |

4.1 DISPOSAL OF THE MACHINE, PACKING

At the end of the machine life, if the machine must be scrapped, contact an authorised waste disposal centre in order to comply with the Standards for hygiene and environment safeguard.



The packing must be disposed of according to the ruling standards by delivering it to authorised people for the collection, disposal or reclaim. Please contact the ASSOCIATION OF USED OILS near to you.

2002/96/EC

3.4 SUCTION AND POWDERS COLLECTION

The machine is fitted with holes for discharging the powders both from the wheels protection caps (bench-grinders) and from the brush protection (combined versions and polishing machines).

It is possible to fit it with a powders suction system. Ask your dealer the complete suction unit with all connections and the bags for powders collection in order to keep the working area clean and salubrious.

4 MAINTENANCE

Normal operations of routine maintenance, which can be also be carried out by non-skilled personnel, are all described in the previous paragraphs and in the present one.

In case the intervention of qualified personnel is required for extraordinary maintenance operations, or in case of repairs, both during guarantee periods and afterwards, always turn to an authorized service center, or directly to the factory if the service center is not present in your area.