7104-M005-0_R

G1500.3
G1500.3IT

INSTRUCTION MANUAL

GB TRANSLATION FROM THE ORIGINAL INSTRUCTIONS

For spare parts drawings refer to the section " LIST OF COMPONENTS" enclosed to this manual.

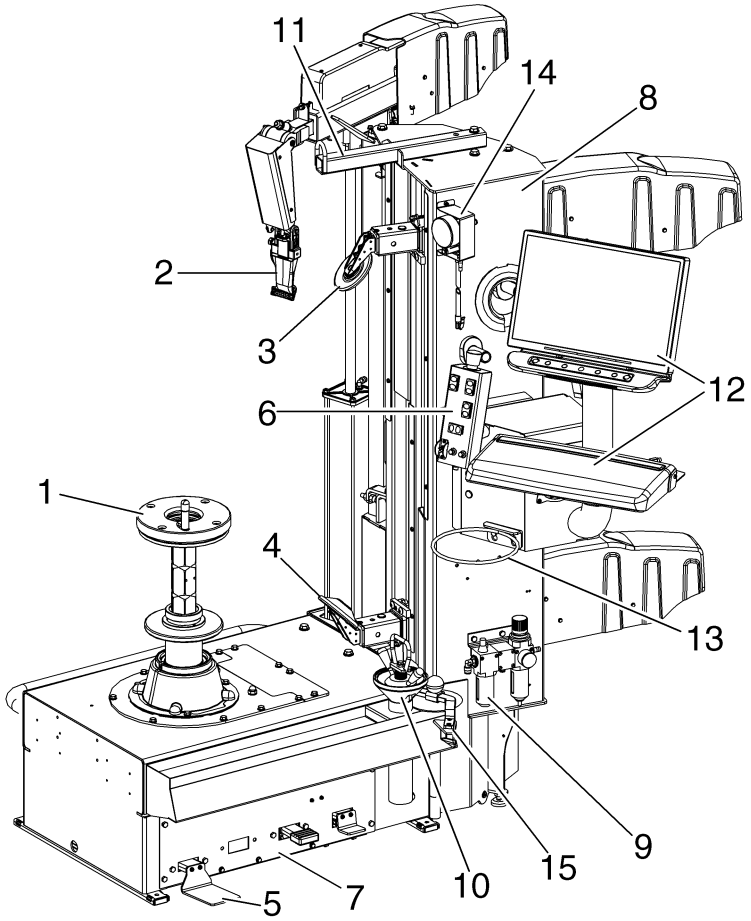
• For any further information please contact your local dealer or call:

Technical services: **RAVAGLIOLI S.p.A.** - Via 1° Maggio, 3 - 40037 Pontecchio Marconi - Bologna Italy
Phone (+39) 051 6781511 - Telex 510697 RAV I - Fax (+39) 051 846349 - e-mail: aftersales@ravaglioli.com

7104-M005-0_R - Rev. n. 0 (07/2011)

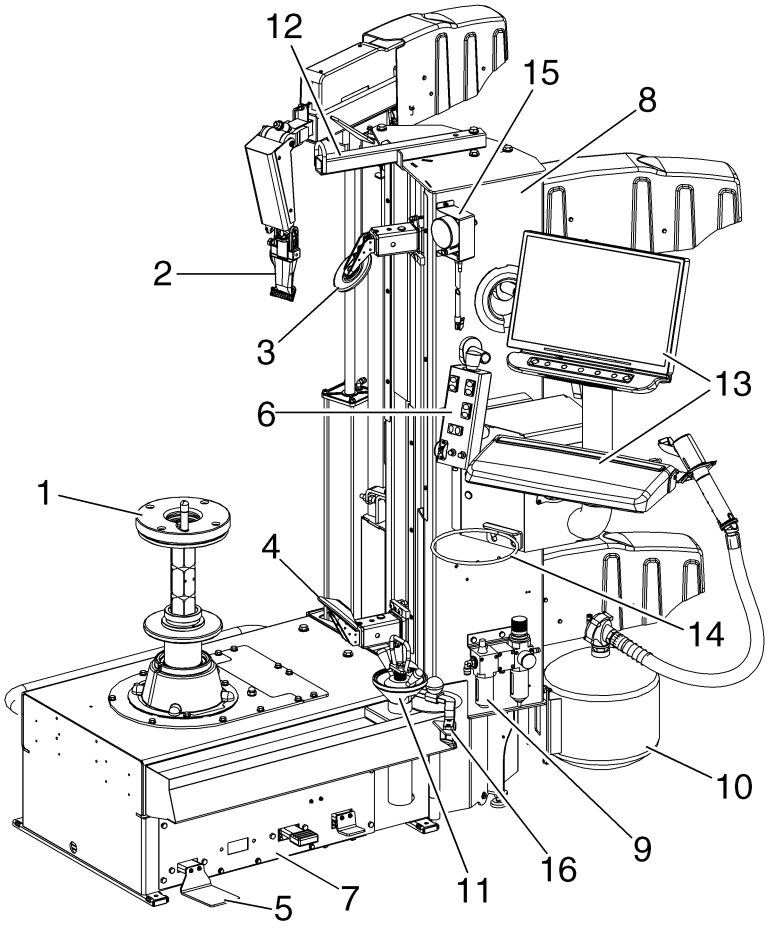
SUMMARY

FIG. 1 - G1500.3



KEY
1 – Wheel support
2 – Tool
3 – Upper roll
4 – Lower roll
5 – Pedal for operations assent
6 – Multifunctional console
7 – Pedalboard
8 – Complete column
9 – Air preparation filter
10 – Locking device
11 – Lifting device
12 – Consolle
13 – Ring for assembly grease support
14 – Pedal-operated inflation device
15 – Entrainer

FIG. 2 - G1500.3IT



KEY
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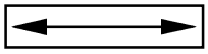
16 – Entrainer

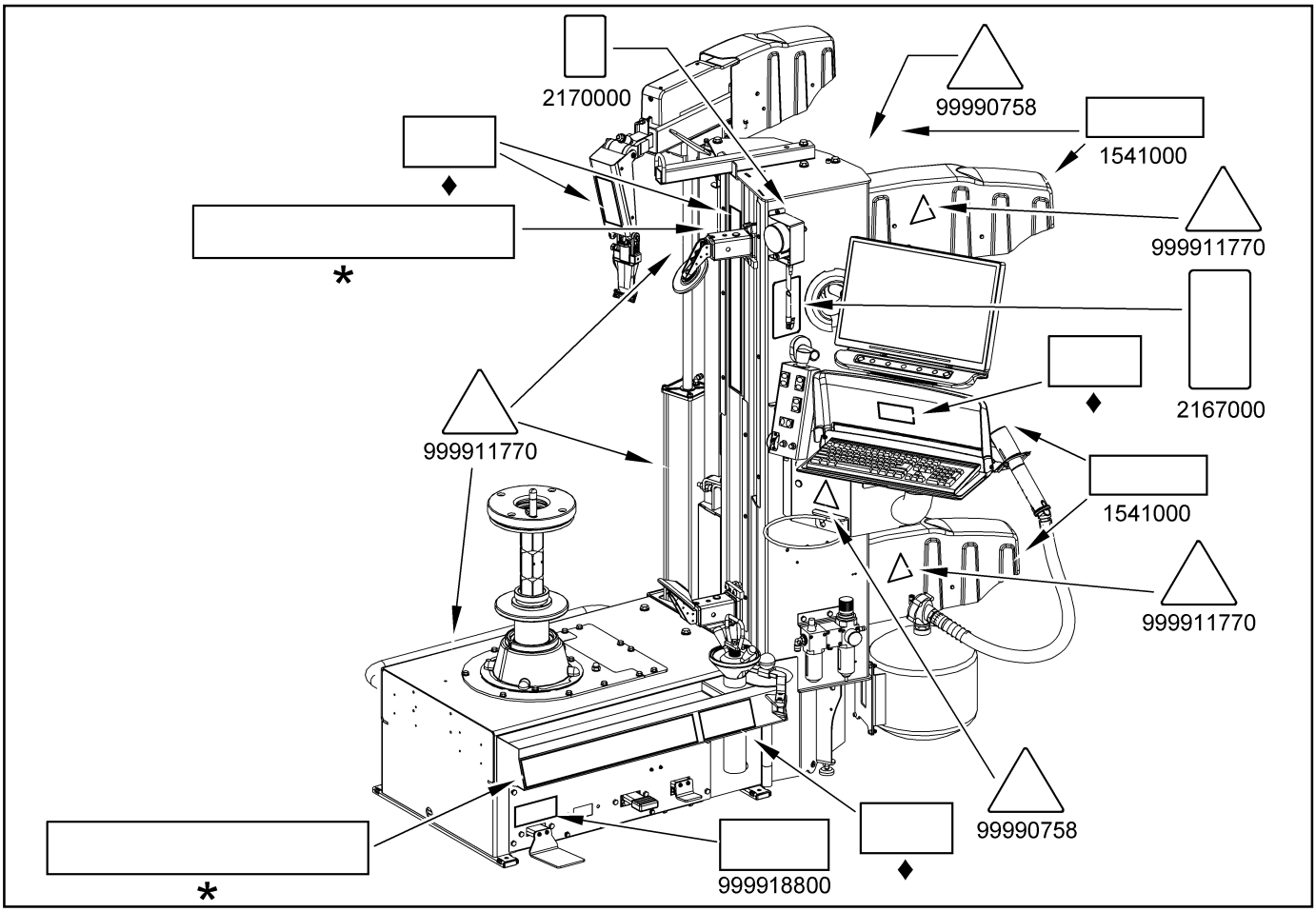
SYMBOLS USED IN THE MANUAL AND ON THE MACHINE

Symbols	Description
 *	Read instruction manual.
 *	FORBIDDEN!
 * 2167000	Wear work gloves.
 *	Wear work shoes.
 * 2167000	Wear safety goggles.
 *	Wear safety earcaps.
 99990758	Shock hazard.
 999911770	Danger! Moving mechanical parts.
 *	Caution: hanging loads.

Symbols	Description
 *	Mandatory. Operations or jobs to be performed compulsorily
 *	Danger! Be particulary careful.
 *	Move with fork lift truck or transpallet.
 *	Lift from above.
 1541000	General danger.
 *	Technical assistance necessary. Do not perform any intervention.
 2166000	Risk of hands crushing.
 6419000	Mandrel rotation index plate.

* General signalling used in this manual.

INFORMATION PLATE LOCATION TABLE



Code numbers of plates

1541000	*Danger indicating plate*
1594000	*Date indicating plate*
2166000	*Bead breaker hand danger indicating plate*
2167000	*Obligation to wear protective clothing plate*
2168000	*Burst danger indicating plate*
2170000	*Max inflation pressure rating plate*
3691000	*Inflation pedal plate*
4182000	*Electric motor specifications plate*
4218000	*Electricity danger plate*
4221000	*Grounding plate*
4244000	*Rotating parts danger indicating plate*
7189000	*Mushroom head pushbutton plate*
99990758	*Electricity danger plate*
999911770	*Unit move indicating plate*
999912430	*230V 50 Hz plate*
999915200	*Serial number plate*
999916011	*Motoinverter plate*
999916310	*Rubbish skip label*
999918800	*Assent pedal label*
*	*Machine name plate*
♦	*Manufacturer name plate*

IF ONE OR MORE PLATES DISAPPEARS FROM THE MACHINE OR BECOMES DIFFICULT TO READ, IT MUST BE REPLACED. QUOTE THE CODE NUMBER WHEN REORDERING.

1.0 GENERAL INTRODUCTION

This manual is an integral part of the product and must be retained for the whole operating life of the machine.

Carefully study the warnings and instructions contained in this manual. It contains important instructions regarding **FUNCTIONING, SAFE USE and MAINTENANCE.**

KEEP THE MANUAL IN A KNOWN, EASILY ACCESSIBLE PLACE FOR ALL OPERATORS TO CONSULT IT WHENEVER IN DOUBT.

THE MANUFACTURER DISCLAIMS ALL RESPONSIBILITY FOR ANY DAMAGE OCCURRED WHEN THE INDICATIONS GIVEN IN THIS MANUAL ARE NOT RESPECTED: AS A MATTER OF FACT, THE NON-COMPLIANCE WITH SUCH INDICATIONS MIGHT LEAD TO EVEN SERIOUS DANGERS.

1.1 Introduction

Thank you for preferring this tyre-changer. We feel sure you will not regret your decision. This machine has been designed for use in professional workshops and stands out for its reliability and easy, safe and rapid operation. With just a small degree of maintenance and care, this tyre-changer will give you many years of trouble-free service and lots of satisfaction.

2.0 INTENDED USE

The model **G1500.3** machines and relative versions is a disassembling machine for car tires and light transport projected to be used exclusively for the mounting, demounting, and inflation of wheels with dimensions of max. diameter of 54" and max. width of 15".

DANGER: THIS MACHINE MUST BE USED STRICTLY FOR THE INTENDED PURPOSE IT WAS DESIGNED FOR (AS INDICATED IN THIS MANUAL). ANY OTHER USE WILL BE CONSIDERED IMPROPER USE. IN PARTICULAR BEAD FITTING AND INFLATING MUST BE CARRIED OUT IN A SPECIALLY APPROVED INFLATION CAGE

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR ANY DAMAGE CAUSED BY IMPROPER, ERRONEOUS, OR UNACCEPTABLE USE.

AN INTENSIVE USE OF THE EQUIPMENT IN INDUSTRIAL ENVIRONMENT IS NOT RECOMMENDED.

2.1 Training of personnel

The machine may be operated only by suitably trained and authorized personnel.

Given the complexity of the operations necessary to manage the machine and carry out the operations safely and efficiently, the personnel must be trained in such a way that they learn all the information necessary to operate the machine as intended by the manufacturer.

A CAREFUL READING OF THIS INSTRUCTION MANUAL FOR USE AND MAINTENANCE AND A SHORT PERIOD OF TRAINING WITH SKILLED PERSONNEL CAN BE AN ENOUGH PREVENTIVE PREPARATION.

3.0 SAFETY DEVICES

- **Non-adjustable pressure limiter.**
  This allows inflation of tyres in reasonable safety. Inflation of tyres to over 4,2 ± 0,2 bar (60 PSI) is not allowed.
- **Controls logic disposition**
  Its function is to prevent the operator from dangerous mistakes.
- **Motor protection devices**
  The new "Invemotor" motor is equipped with electronic protection devices. They stop the motor if working defected conditions appear to avoid that the motor itself can be damaged and that the operator safety can be compromised (overvoltage, overload, overtemperature).
- **Emergency pushbutton**
  The "Emergency pushbutton" (**Fig. 14 pos. I**) has two fixed operative functions:
  - pressed pushbutton: all control unit functions are interrupted and the supply to the machine electrical panel is interrupted, except for the control PC.
  - Lifted pushbutton: reset of machine functions.
- **Emergency start**
  The machine is equipped with a control mechanism requiring some operations and/or checks in case of anomalous switch-off (in case of power lack, for instance). After confirmation through push-button panel, the functions are reset and the machine emergency condition is cancelled.
- **Assent pedal**
  In automatic functioning (from PC) this pedal enables machine automatic functioning. When the pedal released, the machine automatically stop. When lowered, the machine operations are reset.

3.1 Residual risks

The machine was subjected to a complete analysis of risks according to reference standard EN 1050.Risks are as reduced as possible in relation with technology and product functionality. Possible residual risks have been emphasized through pictorial representations and warnings which placing is indicated in " PLATE POSITIONING TABLE" at page 5.

4.0 GENERAL SAFETY RULES

- Any tampering with or modification to the machine not previously authorized by the manufacturer exempts the latter from all responsibility for damage caused by or derived from said actions.
- Removing of or tampering with the safety devices or with the warning signals placed on the machine leads to serious dangers and represents a transgression of European safety rules.
- Use of the machine is only permitted in places free from **explosion** or **fire** hazard and in **dry places under cover**.
- Original spare parts and accessories should be used.

THE MANUFACTURER DENIES ANY RESPONSIBILITY IN CASE OF DAMAGES CAUSED BY UNAUTHORIZED MODIFICATIONS OR BY THE USE OF NON ORIGINAL COMPONENTS OR EQUIPMENTS.

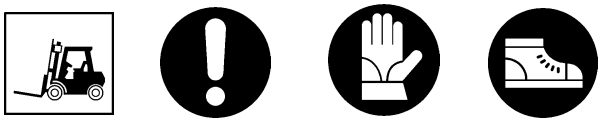
- Installation must be conducted only by qualified personnel exactly according to the instructions that are given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the machine if it mis-functions and contact the assistance service of an authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, disconnect all supplies to the machine by using the main switch.
- The machine electrical supply system must be equipped with an appropriate earthing, to which the yellow-green machine protection wire must be connected.
- Ensure that the work area around the machine is free of potentially dangerous objects and that there is no oil since this could damage the tyres. Oil on the floor is also a potential danger for the operator.

OPERATORS MUST WEAR SUITABLE WORK CLOTHES, PROTECTIVE GLASSES AND GLOVES, AGAINST THE DANGER FROM THE SPRAYING OF DANGEROUS DUST, AND POSSIBLY LOWER BACK SUPPORTS FOR THE LIFTING OF HEAVY PARTS. DANGLING OBJECTS LIKE BRACELETS MUST NOT BE WORN, AND LONG HAIR MUST BE TIED UP. FOOTWEAR SHOULD BE ADEQUATE FOR THE TYPE OF OPERATIONS TO BE CARRIED OUT.

- The machine handles and operating grips must be kept clean and free from oil.
- The workshop must be clean, dry and sufficiently lighted. The machine can be operated by a single operator. Unauthorised personnel must remain outside the working area, as shown in **Fig. 11**.
  Avoid any hazardous situations. Do not use air-operated or electrical equipment when the shop is damp or the floor slippery and do not expose such tools to atmospheric agents
- When operating and servicing this machine, carefully follow all applicable safety and accident-prevention precautions. The machine must not be operated by professionally unskilled persons.
- During inflation do not lean on the tyre or remain above it. When beading in the tyre, keep hands away from tyre and the rim flange.
- During inflation always stay to the side of the machine and never in front of it.

IN CASE OF A CHANCE SUPPLY FAILURE MOVE THE CONTROLS TO THE NEUTRAL POSITION.

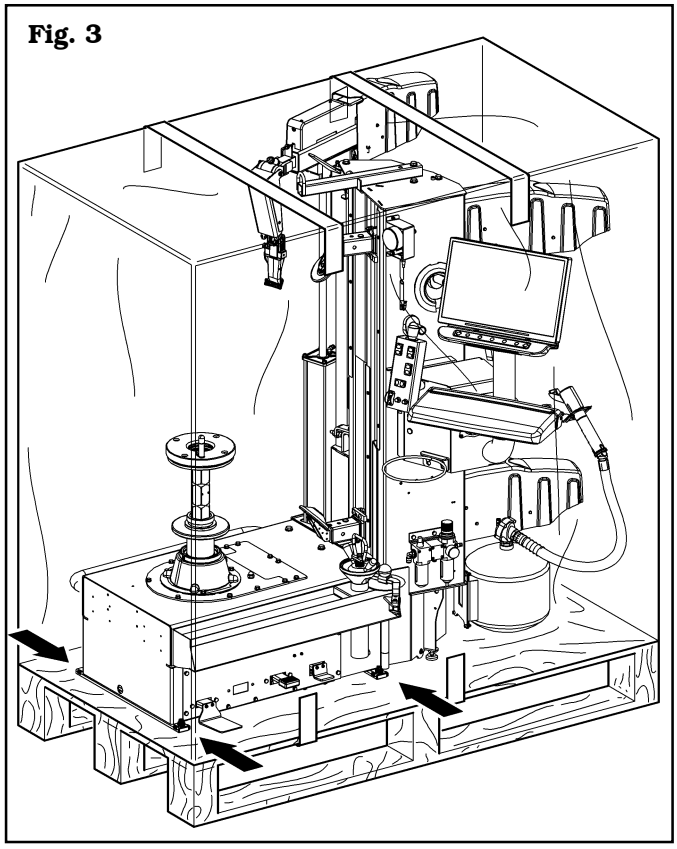
5.0 PACKING AND MOBILIZATION FOR TRANSPORT



THE MACHINE MUST BE HANDLED BY SKILLED PERSONNEL ONLY. THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE PACKED MACHINE.

The machine can be packed fully assembled. In this case the cardboard box containing it has dimensions of 2300x2300x1450 mm.
Movement must be by pallet-lift or fork-lift trolley.
The fork lifting points are indicated on the packing.

Fig. 3



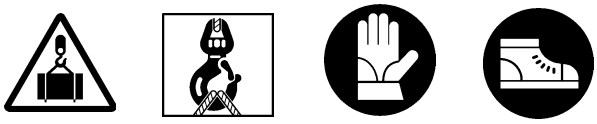
6.0 UNPACKING

WHEN UNPACKING THE MACHINE, ALWAYS WEAR GLOVES TO PREVENT SCRATCHES AND CUTS CAUSED BY CONTACT WITH PACKING MATERIAL (NAILS, ETC...).

The cardboard box is supported with plastic strapping. Cut the strapping with suitable scissors.
Use a small knife to cut along the lateral axis of the box and open it like a fan.
It is also possible to un-nail the cardboard box from the pallet it is fixed to.
After removing the packing, and in the case of the machine packed fully assembled, check that the machine is complete and that there is no visible damage.
If in doubt **do not use the machine** and refer to professionally qualified personnel (to the seller).
The packing (plastic bags, expanded polystyrene, nails, screws, timber, etc.) should not be left within reach of children since it is potentially dangerous.
These materials should be deposited in the relevant collection points if they are pollutants or non biodegradable.

THE BOX CONTAINING THE ACCESSORIES IS CONTAINED IN THE WRAPPING. DO NOT THROW IT AWAY WITH THE PACKING.

7.0 MOBILIZATION

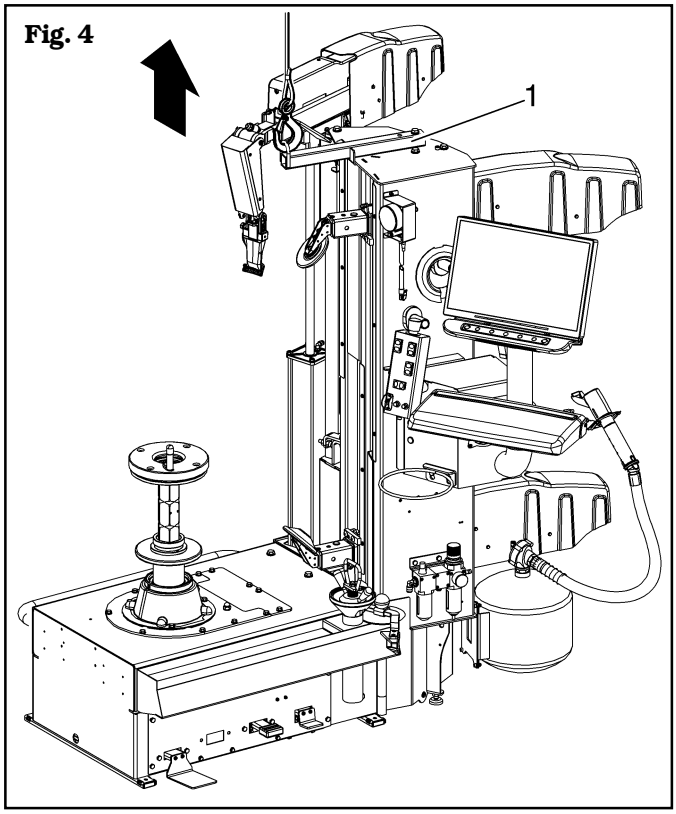


THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE MACHINE (SEE PARAGRAPH TECHNICAL SPECIFICATIONS). DO NOT ALLOW THE LIFTED MACHINE TO SWING.

If the machine has to be moved from its normal work post, the movement must be conducted following the instructions listed below.

- Protect the exposed corners with suitable material (Pluribol/cardboard).
- Do not use metallic cables for lifting.
- Make sure that the electricity supply is not connected.
- Sling with belts long at least 450 cm and with a capacity load greater than 2500 kg.
  Then carry out the lifting using the bracket (**Fig. 4 pos. 1**).

Fig. 4



8.0 MACHINE ASSEMBLY

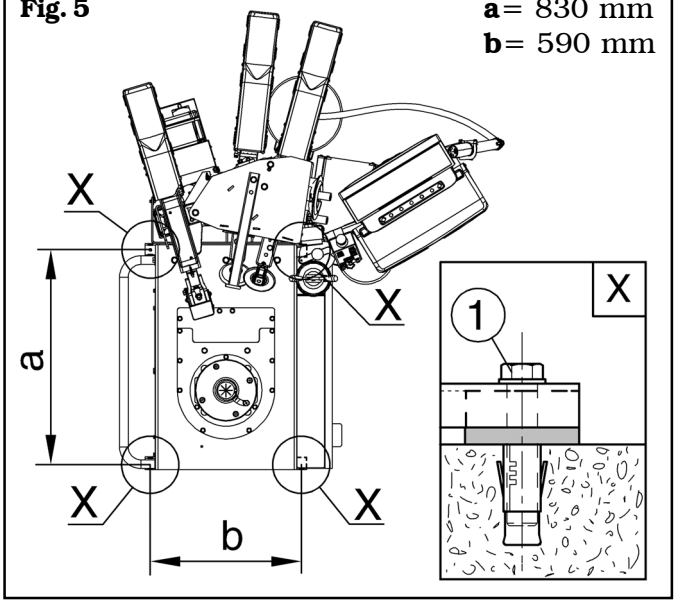
After having freed the various components from the packing check that they are complete, and that there are no anomalies, then comply with the following instructions for the assembly of the components making use of the attached series of illustrations.

8.1 Anchoring system

The packed machine is fixed to a pallet by support feet. Such feet also fix the machine to the ground through anchor small blocks as shown in **Fig. 5**.

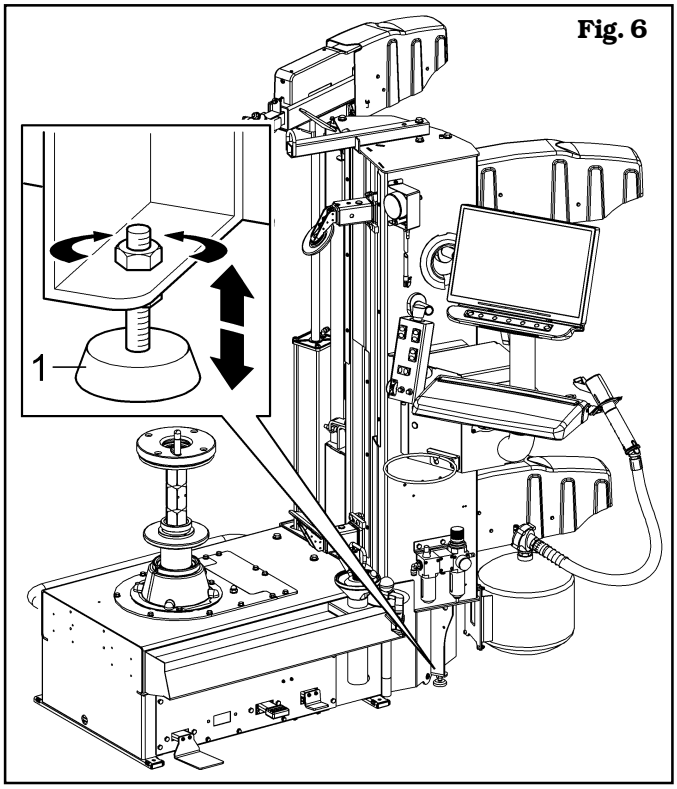
Fig. 5

a= 830 mm
b= 590 mm



The holes in the solid floor must be about 10 cm deep with a diameter of 8 mm.
The bolts (**Fig. 5 pos. 1**) must be inserted in the holes and fully tightened.
Before fixing completely the machine to the ground, flush its rear part rotating the feet (**Fig. 6 Pos. 1**).

Fig. 6



8.2 Accessories contained in the packing

The packing case contains also the accessory box.
Check that all the parts listed are there.

Code	Description	N.
B1157000	*Galvanized double-fronted cone*	**1**
710013421	*Reverse wheels protection*	**1**
G1000A124	*Bead depressing 28" with entrainer*	**1**
G1000A80	*Coupling with quick ring nut*	**1**
710013421	*Reverse wheels protection*	**1**

Each machine is supplied with an activation kit (**WARNING: DO NOT THROW AWAY!**), in a separated box near the monitor; the kit consists of:
- SMART CARD (**Pos. 1**) with serial number (**WARNING: DO NOT THROW AWAY!**);
- USB (**Pos. 2**) marked with the same serial number and containing the machine PC installation files. The card can be used for backup procedure and for PC data restore.

CAREFULLY KEEP THIS MATERIAL AS IT WON'T BE SUPPLIED AGAIN AS A SPARE PART.

THE MANUFACTURER DENIES LIABILITY FOR THE LOSS OF THE SMART CARD AND/OR USB KEY.

8.3 Assembly procedure

1. Assemble "Gonfiatubeless" unit to the machine keeping to the following instructions:
   - fix the tank (**Fig. 7 pos. 6**) to the support flange (**Fig. 7 pos. 7**) using the screws (**Fig. 7 pos. 4**) and nuts (**Fig. 7 pos. 5**) equipped on issue;
   - fix the flange (**Fig. 7 pos. 7**) to the machine (**Fig. 7 pos. 3**) using screws (**Fig. 7 pos. 1**) and nuts (**Fig. 7 pos. 2**) equipped on issue;

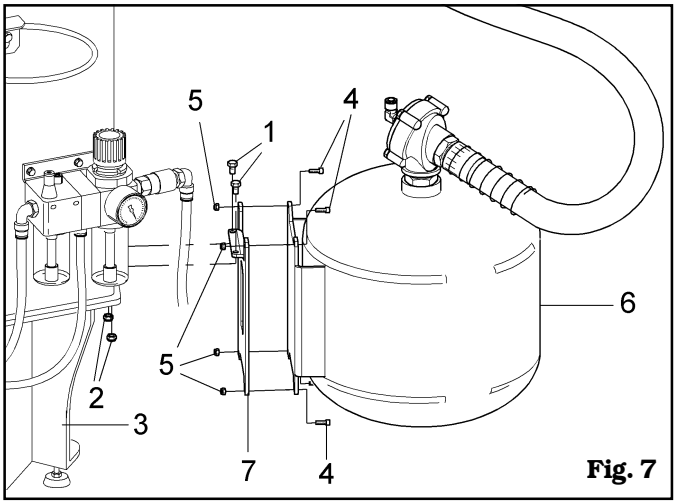
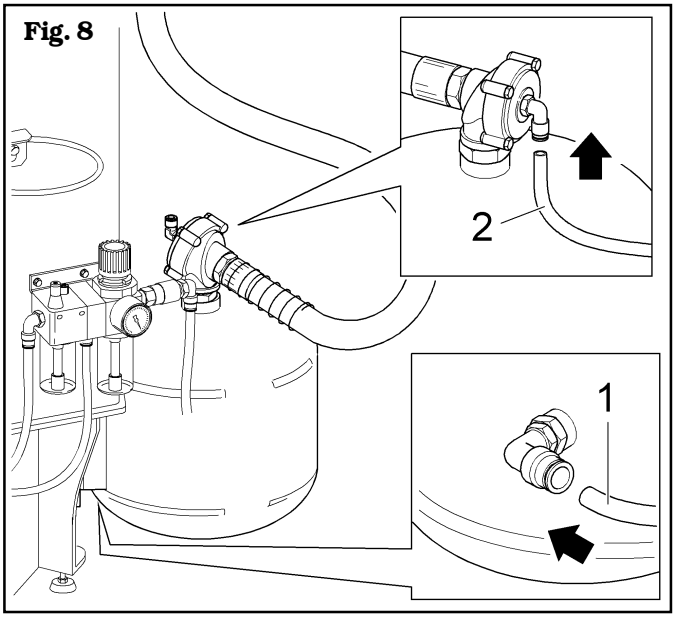


Fig. 7

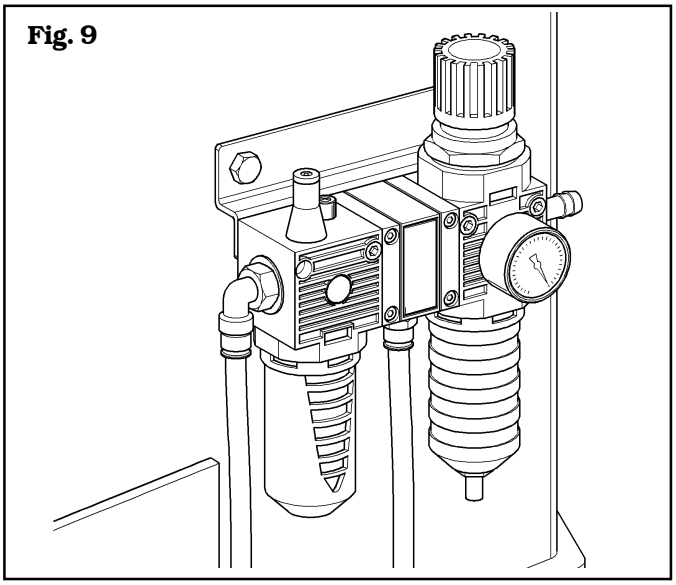
2. Connect the black pipe (**Fig. 8 pos. 1**) and the blue pipe (**Fig. 8 pos. 2**) to the provided quick couplings as shown in figure **8**.

Fig. 8



3. Connect the mains pneumatic power supply by using the union placed on filter unit of the machine. The pressurized pipe (see **Fig. 9**) coming from the mains must have a section of 10x19.

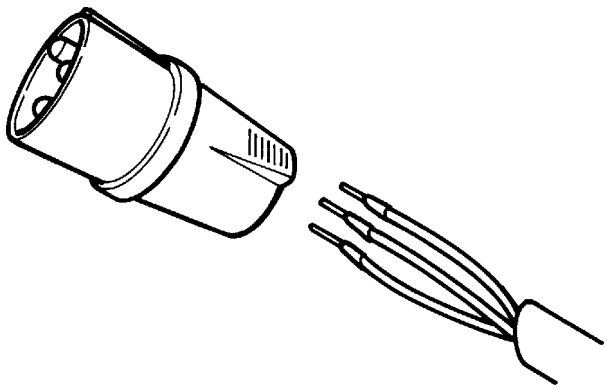
Fig. 9



9.0 ELECTRICAL CONNECTION

EVEN THE TINIEST PROCEDURE OF AN ELECTRICAL NATURE MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED STAFF.

BEFORE CONNECTING THE MACHINE:
- **MAKE SURE THAT THE POWER MAINS RATING CORRESPONDS TO THE MACHINE RATING AS SHOWN ON THE MACHINE PLATE;**
- **CHECK THAT ALL POWER MAINS COMPONENTS ARE IN GOOD CONDITION;**
- **CHECK THAT THE ELECTRICAL SYSTEM IS PROPERLY GROUNDED (EARTH WIRE MUST BE THE SAME CROSS-SECTION AREA AS THE LARGEST POWER SUPPLY CABLES OR GREATER);**
- **MAKE SURE THAT THE ELECTRICAL SYSTEM FEATURES A CUT-OUT WITH DIFFERENTIAL PROTECTION SET AT 30 MA.**



The machine is supplied with **3** mt. of free cable. A plug corresponding to the following requirements must be connected to the cable:
- Conformity to Norm **IEC 309**
- **230 Volt – 16A**
- **2P + Ground**
- **IP 44**

VERSION WITH MONOPHASE MOTOR

On delivery, the machine is preset to operate at a voltage of 230V - 50 Hz monophase.

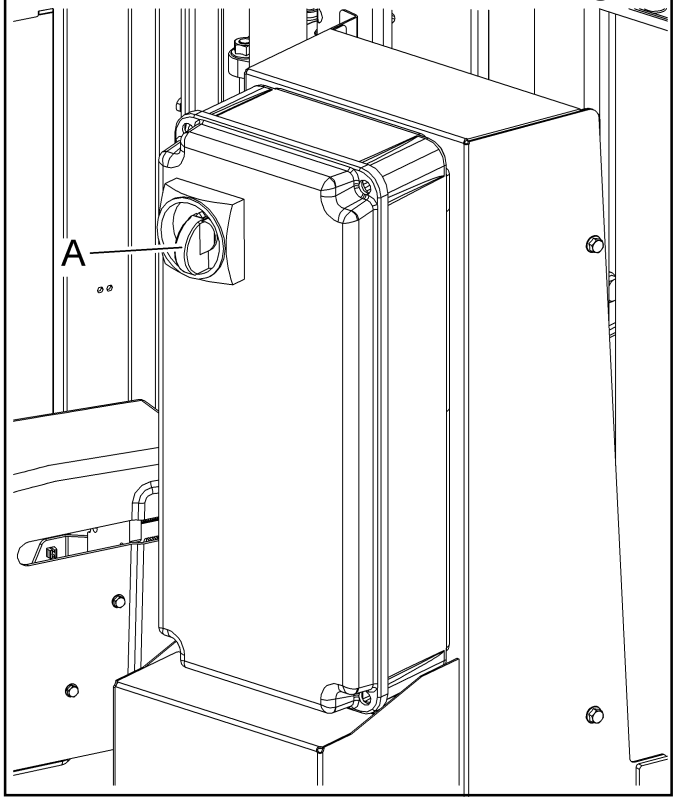
FIT A TYPE-APPROVED PLUG TO THE MACHINE CABLE (THE EARTH WIRE IS YELLOW/GREEN AND MUST NEVER BE CONNECTED TO THE PHASE LEADS). MAKE SURE THAT THE ELECTRICAL SYSTEM IS COMPATIBLE WITH THE RATED POWER ABSORPTION SPECIFIED IN THIS MANUAL AND APT TO ENSURE THAT VOLTAGE DROP UNDER FULL LOAD WILL NOT EXCEED 4% OF RATED VOLTAGE (10% UPON START-UP).

9.1 Electrical checks

BEFORE STARTING UP THE TYRE-CHANGER, BE SURE TO BECOME FAMILIAR WITH THE LOCATION AND OPERATION OF ALL CONTROLS AND CHECK THEIR PROPER OPERATION (SEE PARAGRAPH "CONTROLS").

Once the plug/socket connection has been made, turn on the machine using the master switch (**Fig. 10 pos. A**).

Fig. 10



10.0 WORKING ENVIRONMENT CONDITIONS

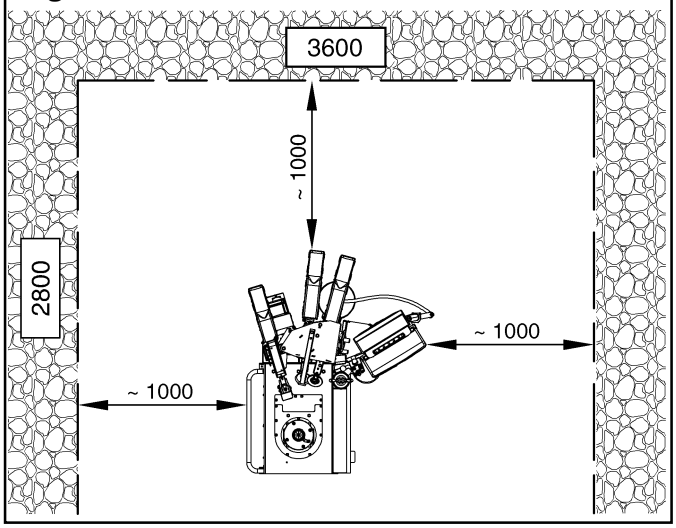
The machine must be operated under proper conditions as follows:

- temperature: 0° +55° C
- relative humidity: 30 - 95% (dew-free)
- atmospheric pressure: 860 - 1060 hPa (mbar).

The use of the machine in ambient conditions other than those specified above is only allowed after prior agreement with and approval of the manufacturer.

10.1 Working area

Fig. 11



USE THE MACHINE IN A ROOFED AREA. PLACE OF INSTALLATION MUST BE DRY, ADEQUATELY LIT AND IN COMPLIANCE WITH APPLICABLE SAFETY REGULATIONS.

The location of the machine requires a usable space of 3600x2800, mm (as indicated in **Fig. 11**).
The positioning of the machine must be according to the distances shown. From the control position the operator is able to observe all the machine and surrounding area. He must prevent unauthorized personnel or objects that could be dangerous from entering the area.
The machine must be fixed on a flat floor surface, preferably of cement or tiled.
Avoid un-solid or irregular surfaces.
The base floor must be able to support the loads transmitted during operation.
This surface must have a strength of at least 500 kg/m^2.
The thickness of the solid floor must be sufficient to guarantee that the anchoring bolts hold.

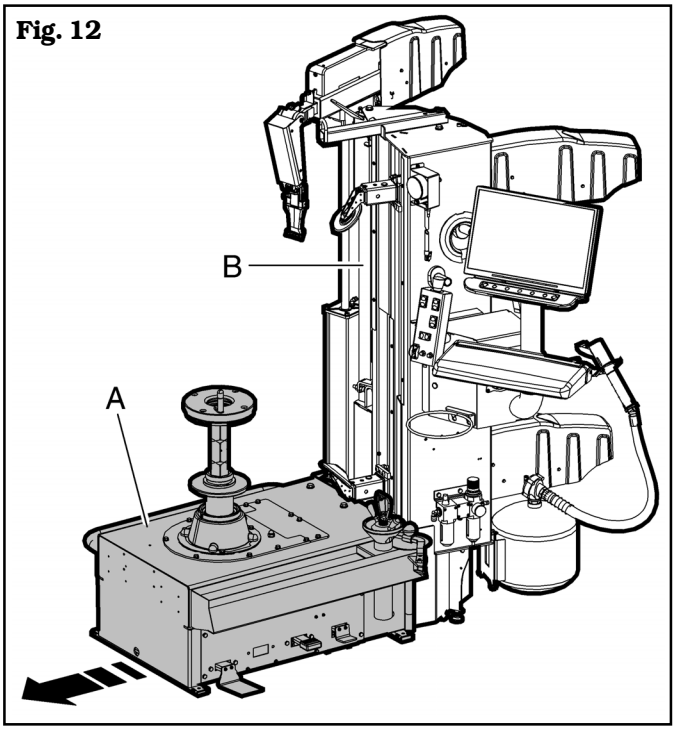
10.2 Lighting

The machine does not require its own lighting for normal working operations. However, it must be used in an adequately lit environment.
In case of poor lighting use lamps having total power 800/1200 Watt.

10.3 Working area modification

After the delivery, the machine is prearranged to operate on wheel of 50" maximum diameter and a rim diameter (10" - 30"). It's possible to move the tools column to enlarge the working area from 52" (with rim diameter of 12" - 32") to 54" (with rim diameter of 14" - 34") (see **Figure 12**).

Fig. 12



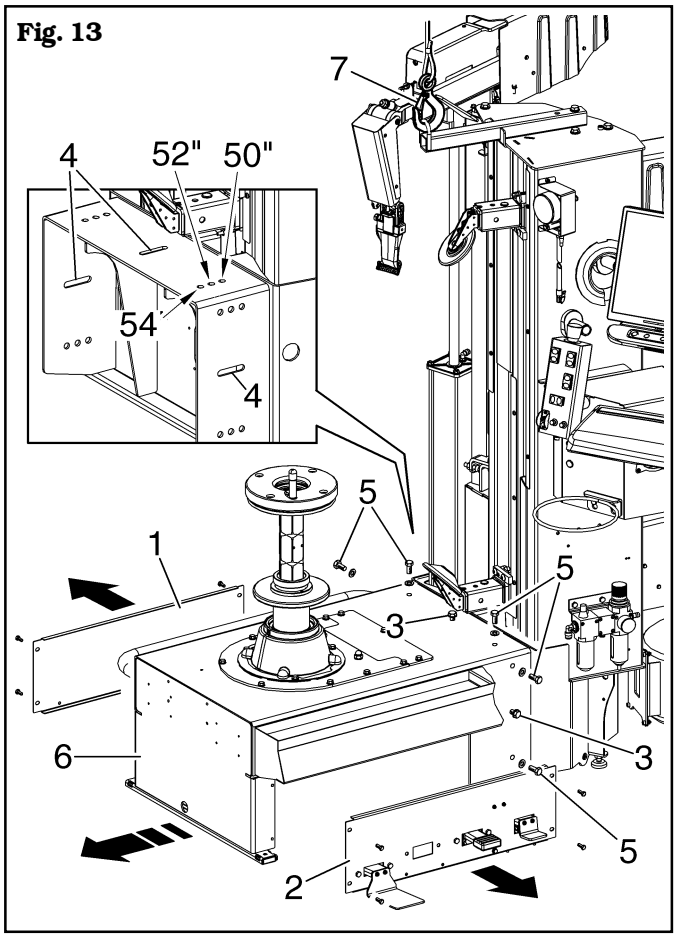
The column handling is possible unscrewing the fixing screws of the base (**Fig. 12 pos. A**) to the column (**Fig. 12 pos. B**) and sliding the base (**Fig. 12 pos. A**) into the proper slots until the required measure.

MAKE SURE THAT THE TYRE CHANGING MACHINE COLUMN IS STABLE USING A CABLE WITH A BLOCK TO LOCK ON THE LIFTING CROSS BEAM (FIG. 13 POS. 7).

1. To remove the lateral guard (**Fig. 13 pos. 1-2**) of the machine.
2. To unscrew the screws (**Fig. 13 pos. 3**) and the nuts near the central slots (**Fig. 13 pos. 4**) playing attention to not remove the nuts from the proper screws.
3. To remove six remained screws (**Fig. 13 pos. 5**).
4. To move the base (**Fig. 13 pos. 6**) into the required position (to 52" or 54") and if necessary to use a lifting device (**Fig. 13 pos. 7**).
5. To lock the base three screws (**Fig. 13 pos. 3**) with a couple of 80 Nm.
6. To place six screws (**Fig. 13 pos. 5**) previously removed and to lock them on the base side with a couple of 80 Nm.
7. To assemble again the lateral guard (**Fig. 13 pos. 1-2**) of the machine.

NOTE: after the assembly, to check the right position of the tools. To lock the rim on the chuck center. With the bead breaker arm, to check that the distance between the roll and the rim edges (upper and lower) is the same. To repeat the all the procedures starting from the point one if the distance is not the same.

Fig. 13



11.0 CONTROLS

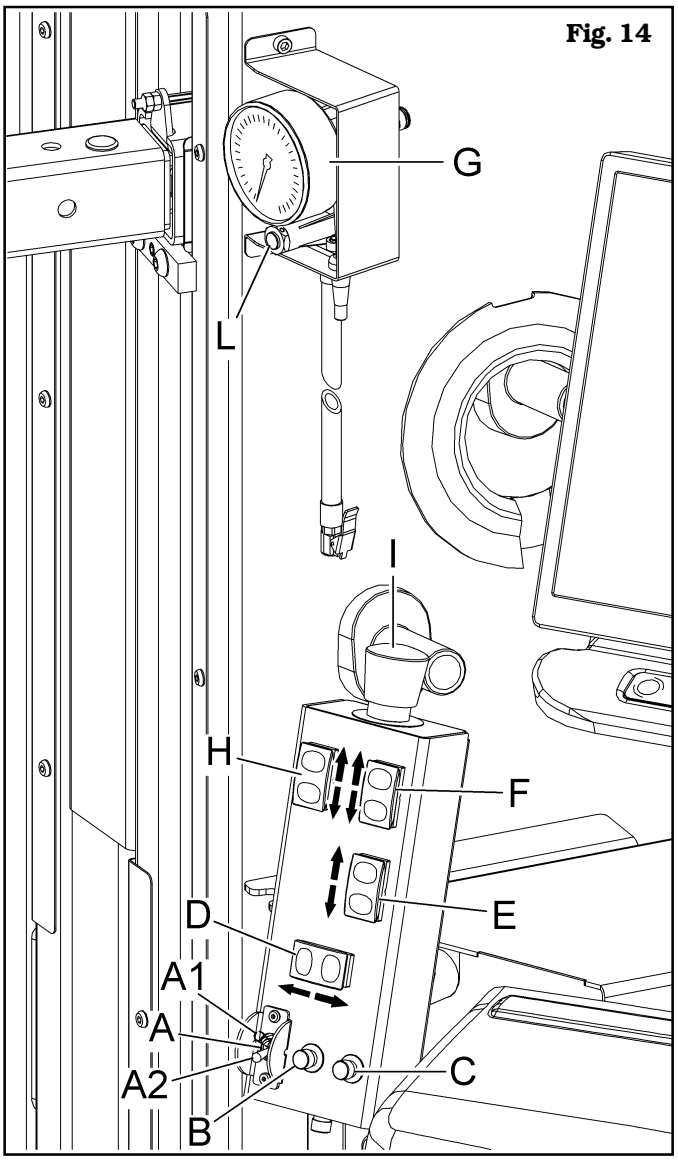


Fig. 14

11.1 Multifunctional console

The multifunctional console consists of a panel with keys and pushbutton integrated.

- Selector **"A"** allows machine functioning selection: automatic (from PC) or manual.
  - "**A1**": Automatic (AUTO): enables machine functioning from PC (if user interface function is activated).
  - "**A2**": Manual (MAN): allows to cary out all operations with the "manual" controls.
- The pushbutton "**B**" has one mechanically hold position and once pushed it controls the operation of the upper bead breaking roll cam for its insertion into the rim in "MAN" mode. In the "AUTO" model the pushbutton is disenabled.
- The pushbutton "**C**" has one mechanically hold position and once pushed it controls the operation of the lower bead breaking roll cam for its insertion into the rim in "MAN" mode. In the "AUTO" model the pushbutton is disabled.
- Arms automatic return from the working position (machine zero).
  In AUTO mode, pushing at the same time the "**B**" and "**C**" keys, the tools arms automatically return into the limit switch position. To stop the automatism, to push the keys to control the arms vertical translation (**Fig. 14 pos. E o F**).
- The pushbutton "**D**" has one hold position and once pushed (⬅) it controls the ahead translation of the tools. If pushed (➡) it controls the backwards translation of the tools.
  "MAN" mode:
  - the four arms keep the synchronization: if a positioning error concerning the four arms is detected, only the arms to be synchronized with the other ones will be moved. The arms can be moved one by one using the push-button panel with seven keys, only in "MAN" position.

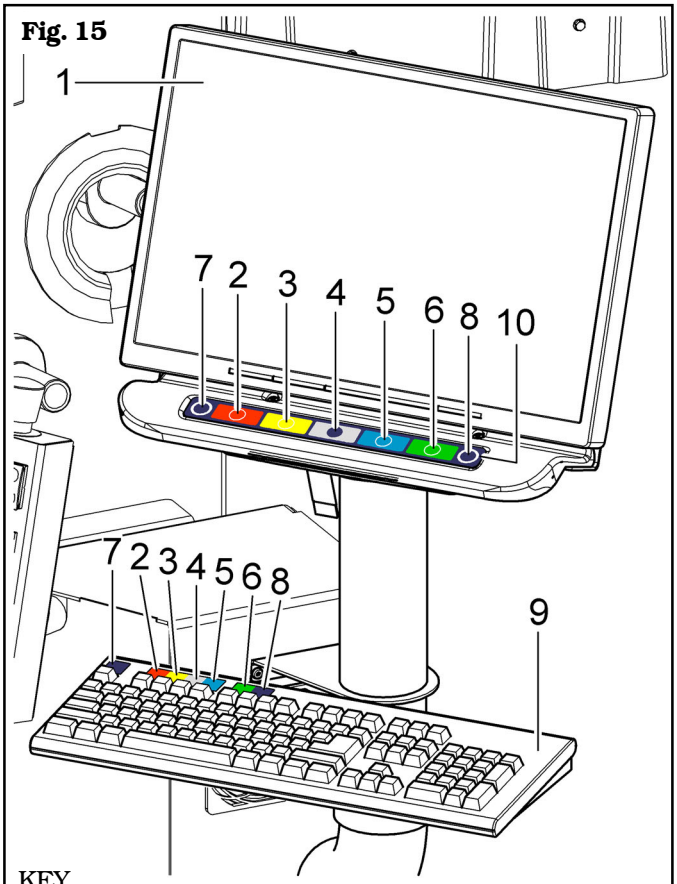
  "AUTO" mode:
  - the four arms keep the synchronization: if a positioning error concerning the four arms is detected, only the arms to be synchronized with the other ones will be moved. In "AUTO" mode the arms can not be moved one by one.
- The pushbutton "**E**" has one mechanically hold position and once pushed it controls the vertical shifting of the lower bead breaking roll. If pushed on its lower part (⬇),it will control the shifting downwards. If pushed on its upper part (⬆), it controls upward shift. Keeping it pushed for more than one second, translation carries on automatically until the arm reaches the stroke limit. To stop automatism, push again the push button "**E**".
- The pushbutton "**F**" has one mechanically hold position and once pushed it controls the vertical shifting of the upper bead breaking roll. If pushed on its lower part (⬇), it will control the shifting downwards, if pushed on its upper part (⬆), it will control the shifting upwards. Keeping it pushed for more than one second, translation carries on automatically until the arm reaches the stroke limit. To stop automatism, push again the push button "**F**".
- The inflation pressure gauge "**G**" displays the pressure into the tyre.
- The pushbutton "**H**" has one mechanically hold position and it controls the tool vertical shift. If pushed on its lower part (⬇), it will control the shifting downwards. If pushed on its upper part (⬆), it controls upward shift. Keeping it pushed for more than one second, shifting carries on automatically until the arm reaches the stroke limit. To stop the automatism, push again the push button "**H**".
- "**I**" Emergency pushbutton has two fixed operative functions:
  - pressed pushbutton: every function of the control unit is interrupted.
  - lifted pushbutton: machine functions are reset.
- The inflation pushbutton "**L**" , if pushed it allows to deflate the tyre at the required pressure.

11.2 Computer

The machine is equipped with a computer checking and controlling the automatic cycle operations of tyre mounting and demounting from the rim.

11.2.1 Control panel description

Fig. 15



KEY
1 – Monitor
2 – Function push button (red) (F1)
3 – Function push button (yellow) (F2)
4 – Function push button (grey) (F3)
5 – Function push button (blue) (F4)
6 – Function push button (green) (F5)
7 – "Esc" push button (Esc)
8 – "More" push button (F6)
9 – Push-button panel for data entry
10 – Rapid functions push-button panel (push-button panel with 7 keys)

When tyre change machine is started up, the main screen page of the machine (Home) is displayed:

Coloured boxes with icons representing precise functions are displayed in the bottom part of the main screen page and of each page afterwards described. When the corresponding coloured pushbutton on the "rapid functions push-button panel" (**Fig. 15 pos. 10**) or on the "data entry push-button panel" (**Fig. 15 pos. 9**) is pressed, these functions are enabled.

N.B.: in case of anomalous shutdown (not through "PC" shutdown key), the "emergency startup" picture is displayed.

Functions list:


PC shutdown.


Enabling of tyre mounting/demounting procedures.


Submenu for assistance service only.


Display of no info for activation of automatic procedure.


Return to "Home" screen page.


Selection up scroll.


Selection down scroll.


Selection confirmation.


Access to memory bank.

Exit from screen page.

Access to the following screen page.


Cyclic scroll of data to be personalized.


Values save in memory bank.

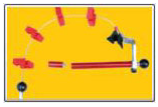

Activation of automatic procedure /enabling of displayed operation.


Selection of tool device.


Selection cancellation/esc from device selection menu.


Selection of upper bead breaker device.


Selection of lower bead breaker device.


Selection of entrainer device.


Selection of Plus device.


Store of stored data by type of wheel.

Store of stored data by number plate.


Store of stored data by owner name.


Notes field.

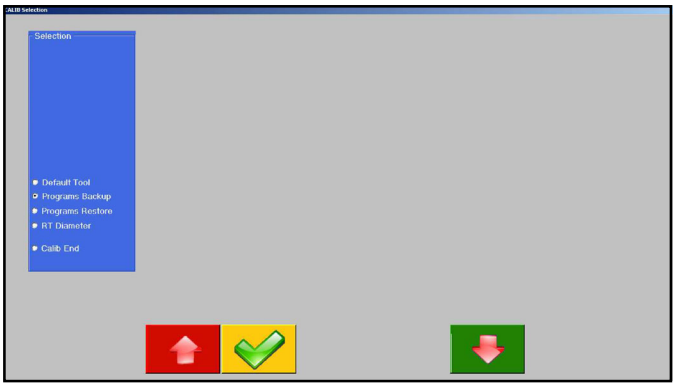
11.2.2 Assistance menu

When the machine is switched on, press  key and enter the user password to display the following page for the selection submenus listed in the left side:

Backup/Restore: in order not to lose the memory bank concerning the vehicles and customers, we advise to frequently create a backup copy. For this purpose use a “flash disk” USB key.
The lost or cancelled data can be recovered through restore procedure (if backup has been previously executed).

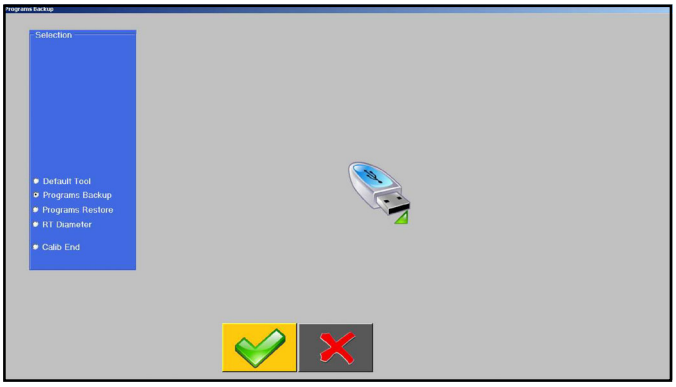
Use the arrows to select the required submenu.

Press key to conferm the selected choice.



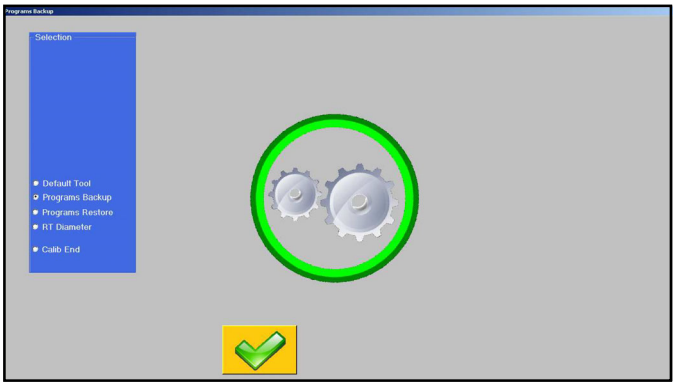
Select “Programs backup” to save on the the PC stored data (eg: memory bank) on the USB key.

Press key to display the following machine screen page.



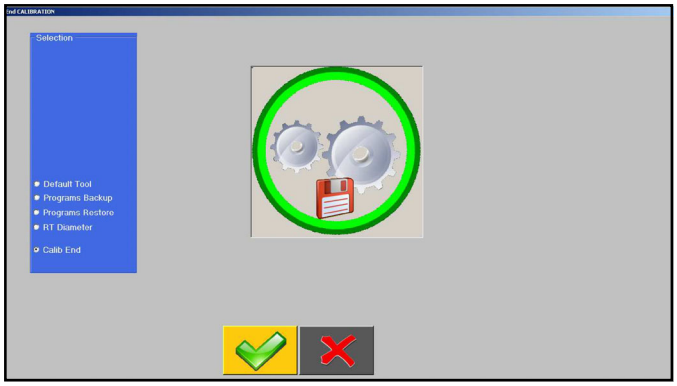
Once the presence of the USB key in the provided “port” has been verified, press key to display the following screen page.

Press key to cancel the operation.



Press to give the go-ahead for the saving on the USB key.

To close the assistance menu, use the arrows to position on “Calib end”, then press key to confirm and display the following page

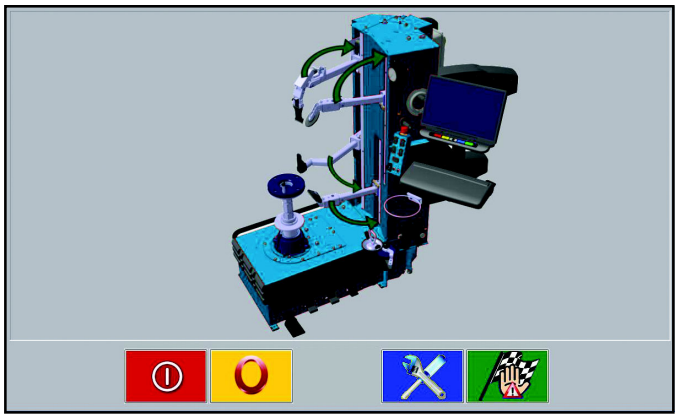


Now, if the previously executed changes must be kept (DEFAULT TOOL or RT DIAMETER), press key, otherwise, press to get out without saving the previously executed changes.

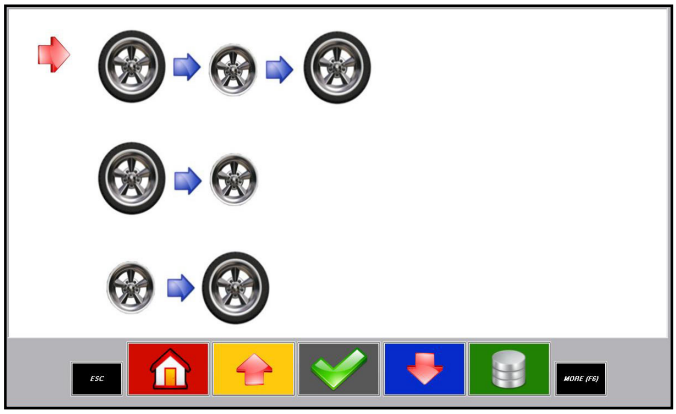
11.2.3 Read in of rim/tyre combination in memory bank

The computer is equipped with a memory bank where rym/tyre combinations can be stored.
In order to enter a new rym/tyre combination carry out the following operations from the main screen page (Home):

1. Press key in order to reset the machine.



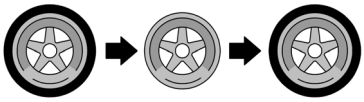
At the end of reset operation the screen page below is displayed.



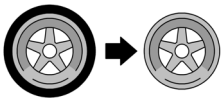
2. Use the arrows  to select the type of cycle to be executed.

N.B.: in this screen page, press  to set the machine to "AUTO" without the cycle management from the PC (see Chapt. 11.3 *"Machine use in "AUTO" mode without PC management"*).

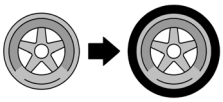
A. Tyres mounting/demounting (ordinary activity).



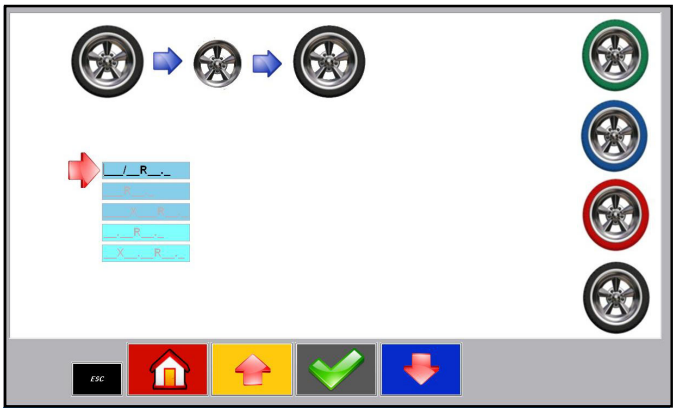
B. Repeated demounting (at the end of an operation, the machine is automatically set for the following demounting operation).



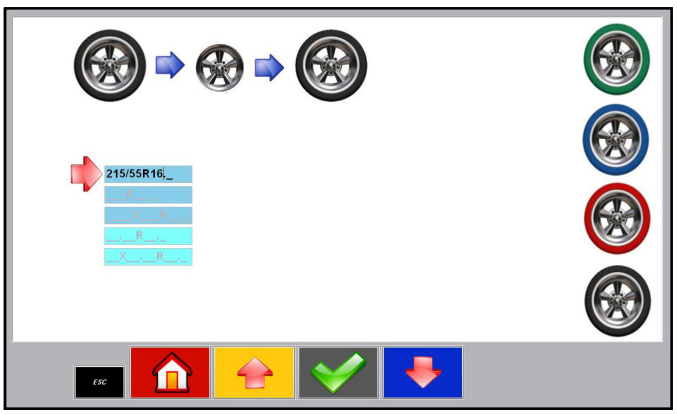
C. Repeated mounting (at the end of an operation, the machine is automatically set for the following mounting operation).



3. Confirm the choice with  key.



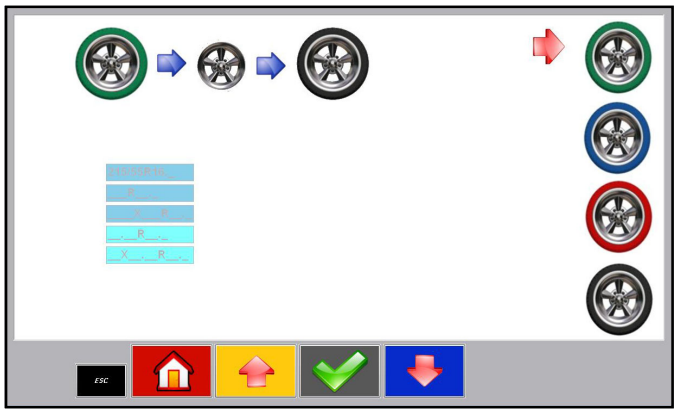
4. Keystroke the tyre sizes by the push-button panel. Such information will subsequently allow to recover the match tyre/rim from the memory bank (eg: 215/55R16.0).



5. Confirm the entered values pressing  .

The more suitable demounting program for the inserted sizes will be automatically selected after the analysis of such data:

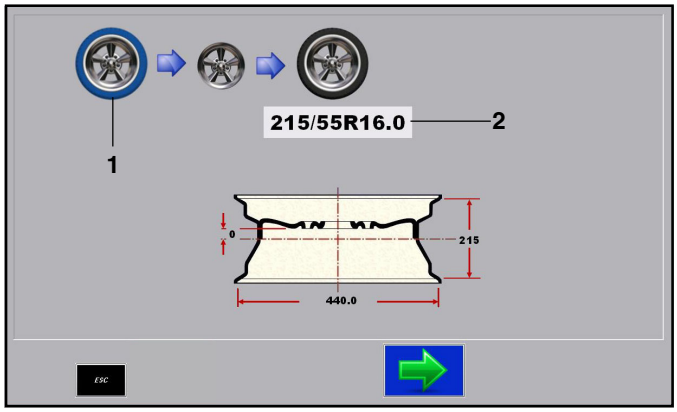
- Green coloured tyre (soft program);
- Blue coloured tyre (standard program);
- Red coloured tyre (Run-Fflat or UHP - Ultra High Performance program).



The operator can anyway decide to use a different program from that suggested from the machine: select using  keys.

N.B.: the software does not allow the use of not suitable programs for the type of selected tyre.

6. Confirm the selection with  key.



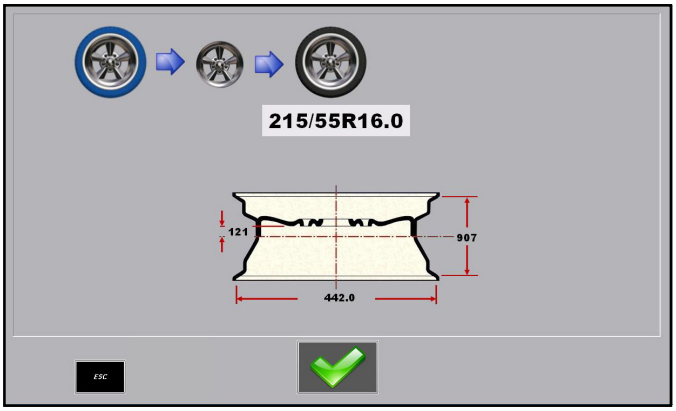
The colour of the tyre (screen page above, position 1) in in the screen page corresponds to the selected program; the inserted data are highlighted (screen page above, position 2).

7. Press  to carry on.

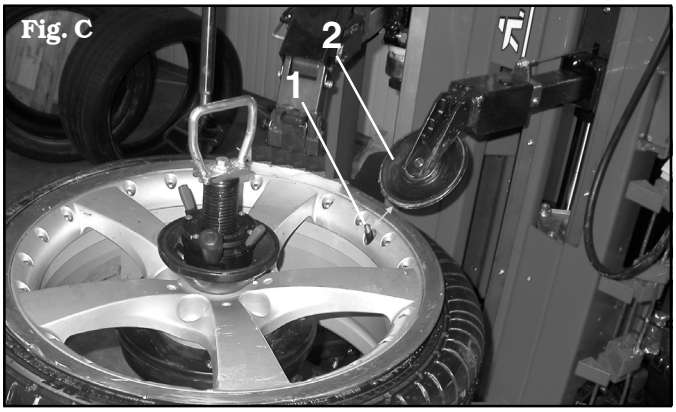
The upper and lower bead breaking rolls near the rim will be automatically preset.

8. Use the manual pushbuttons (**Fig. 14 pos. E and F**) to let the bead breaking rolls come into contact with the tyre bead, as indicated in **Figures A and B** below.

If the bead breaking rolls should not correctly come into contact with the tyre rim, use the pushbutton (**Fig. 14 pos. D**) in order to diametrically translate them in the correct position.



9. Position valve (**Fig. C pos. 1**) next to the roll (**Fig. C pos. 2**) and press key.

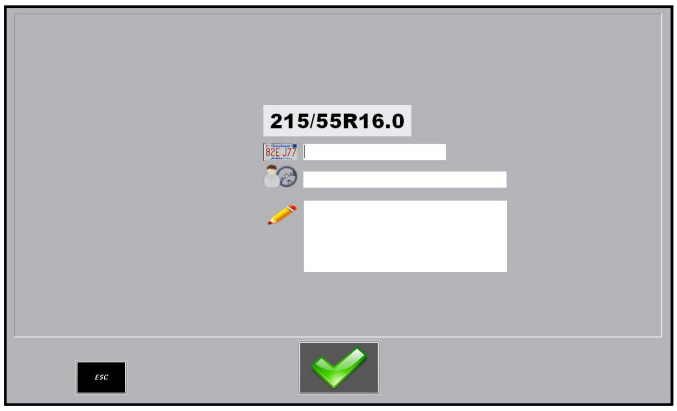


N.B.: the machine reads in the valve position along the whole demounting/mounting cycle. The machine will therefore make the valve reach the correct position before each tyre demounting/mounting operation.

N.B.: in case of wrong data entry, the operator will be warned by an appropriate message.

11.2.4 Data save

1. Press key to save values in the memory bank.
2. Further information can be entered in the screen page below, in order to facilitate a future research:



Vehicle number plate.

Vehicle owner name.

Notes.

N.B.: press "Tab" key in the push-button panel to shift to and from the different fields.

3. Confirm the correct inserted data using key.

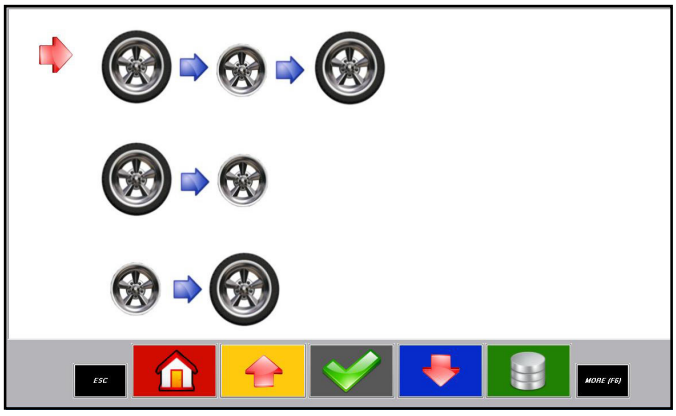
11.2.5 Tyre demounting in "AUTO" mode (from PC)

There are two ways to operate the automatic functioning managed by the PC:

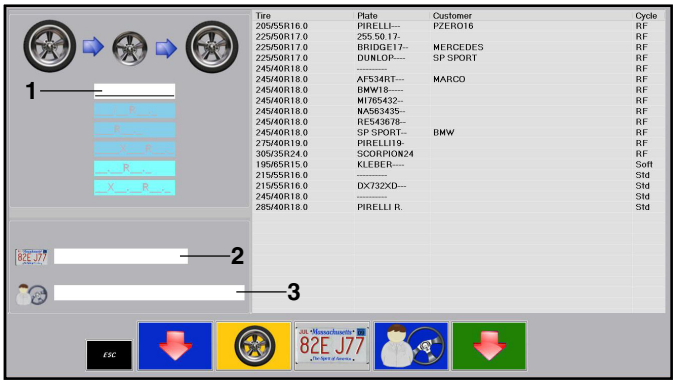
A. Manual data entry and activation of the automatic operations.
In this case repeat the operations from point 1 to 9 described in paragraph ***"11.2.3 Read in of rim/tyre combination in memory bank"***, then press the assent pedal (Fig. 16 pos. C) and keep it pressed in order to activate the automatic functions. The machine automatically performs all tyre demounting operations.

B. Loading of memory bank data and following activation of automatic operations.
When the rim/tyre combination is already present in the memory bank, a few operations are required to activate the machine automatic functioning, in particular:

1. Press  key from "Home" page.



3. Press  key to enter the memory bank.



All rim/tyre combinations are displayed.

4. Select the rim/tyre combination present in the memory bank.

N.B.: the wheel, plate number or owner search fields (position 1, 2 and 3 in the screen page above) can be used in order to reduce to a minimum extent the selection lists: insert the values in the provided foreseen fields.

N.B.: the memory bank can also be arranged using the coloured keys in the bottom part of the screen page: by wheel (yellow key), number plate (grey key) or by owner name (blue key) repectively.

5. At the end, confirm the selection with  key. The screen page showing valve position is displayed.

Therefore press  key and then the assent pedal (**Fig. 16 pos. C**): the machine automatic cycle starts.

N.B.: the same cycle can be activated quickly pressing the assent pedal twice (Fig. 16 pos. C) (double click).

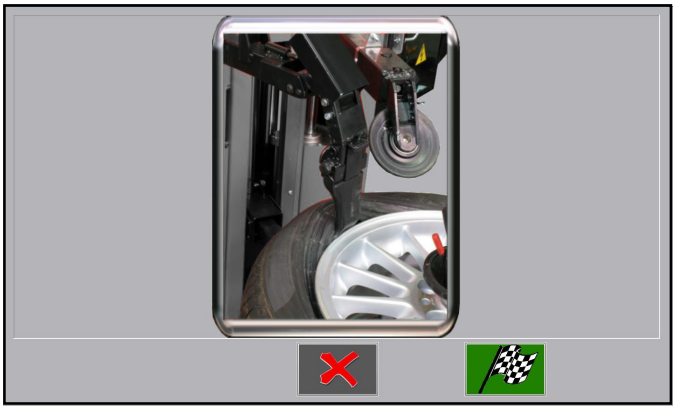
6. Press the assent pedal (**Fig. 16 pos. C**) and keep it pressed: the machine automatically performs all tyre demounting operations. Explanatory pictures concerning the operation being executed will be displayed during demounting, in particular:

- Upper bead breaking roll.

• Lower bead breaking roll.

• Tool.

At the end of tyre demounting operation, the key will be displayed, to indicate the end of automatic operations.
The tool and the bead breaking rolls keep their position.



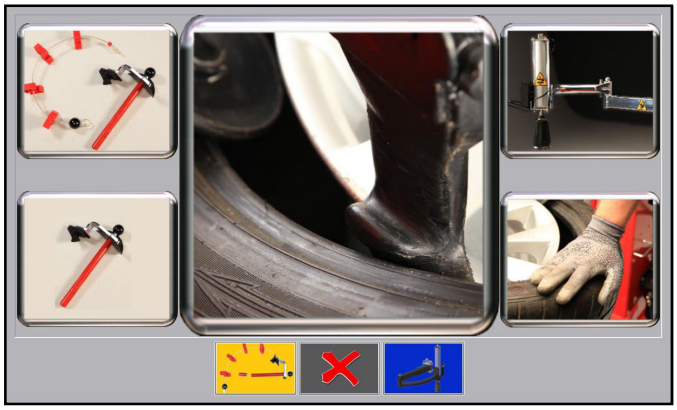
11.2.6 Tyre mounting in "AUTO" mode (from PC)

At the end of tyre automatic demounting, the machine will position as showed in the screen page below:

Quickly press the assent pedal twice (**Fig. 16 pos. C**): the machine is preset for the automatic mounting (this type of functioning is activated if "tyres demounting/mounting" activity is selected).

The machine positions the tool and the upper bead breaking roll in the upper bead mounting position.
The valve positions itself before the entrainer insertion point.

Attachments selection. The type of attachment to be used to complete assembly can be used during this mounting phase.



A provided screen page allows the selection of the more suitable attachment to be used for the following operations before the mounting of the lower bead.

Key  must not be pressed to use Plus Device: just press the assent pedal (**Fig. 16 pos. C**) twice to activate the upper bead mounting operations.

N.B.: On the other hand, press  key and then the assent pedal (Fig. 16 pos. C) in order to start the upper bead mounting operations. The machine starts the upper bead mounting operations. Take the foot away from the assent pedal (Fig. 16 pos. C) during the insertion of the bead depressor blocks.

N.B.: at the end of mounting operation, the machine rotates the mandrel in the opposite direction of the mounting itself, so that the previously inserted blocks can be easily removed.

At the end of the upper bead mounting the machine stops.

Quickly press the assent pedal (**Fig. 16 pos. C**) twice: the tool and the bead breaking rolls reach completely open position.

The screen page below is displayed.

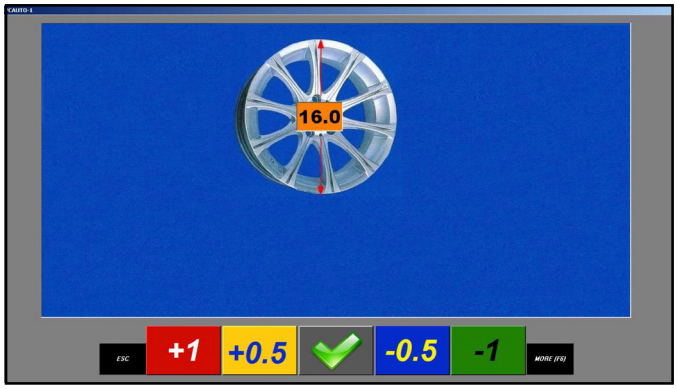
Now the machine is ready to peform a new cycle with the same rim and tyre.

Remove the assembled wheel from the mandrel and position the new wheel to be disassembled on it. Lock the wheel and bring the valve next to the upper bead breaking roll.

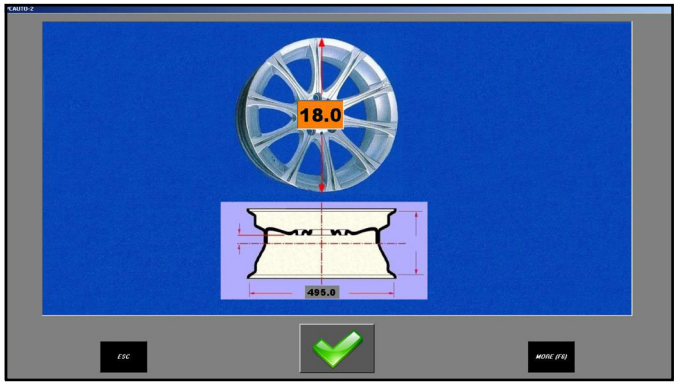
Press the assent pedal (**Fig. 16 pos. C**) twice to start a new tyre demounting/mounting operation.

11.3 "Machine use in "AUTO" mode without PC management"

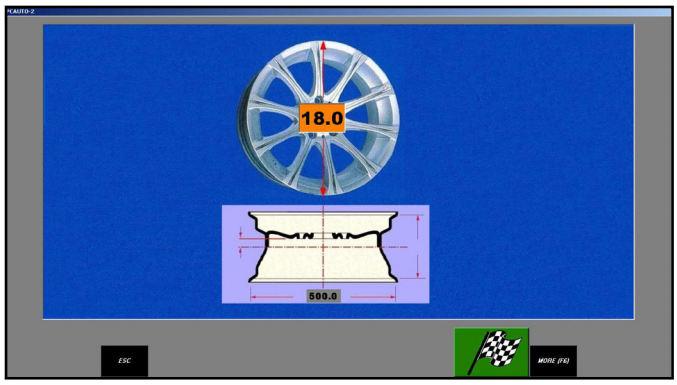
Press  key from the screen page with the selection of the type of program to be used (see ***Chapt. 11.2.3: "Read in of rim/tyre combination in memory bank"***): the machine is set to "AUTO" without the cycle management from the PC. This mode allows the setting of the diameterof the rim at issue: press  ,  ,  and  keys.



Press  to display the following page.



Press  to confirm the diameter to be used: the following machine screen page is displayed.



Press  : the tool diametrically positions itself onto the base of the inserted rim: therefore the operations can be started using the keys on the control panel.

11.4 Pedalboard (see Fig. 16)

The **"pedal A"** has two mechanically holded operative positions. Pressing it downward the chuck motor rotates in clockwise sense. Lifting the pedal causes a movement in the opposite sense.

NOTE: Chuck unit speed can be metered continuously only in clockwise sense: the maximum speed is reached through a progressive speed on the pedal.

The **"pedal B"** has a different function depending on the version on the machine.

Version with inflation with pressure gauge

The inflation pedal in this version has only one function. A continuous pressure supplies air at a controlled pressure (max. 4,2 ± 0,2 bar 60 PSI).

Version with tubeless inflation

The inflation pedal has two functions. The supply of air at a controlled pressure as in the previous version, and a second function of a jet of air from the inflation nozzle to assist the beading in of the tyre.

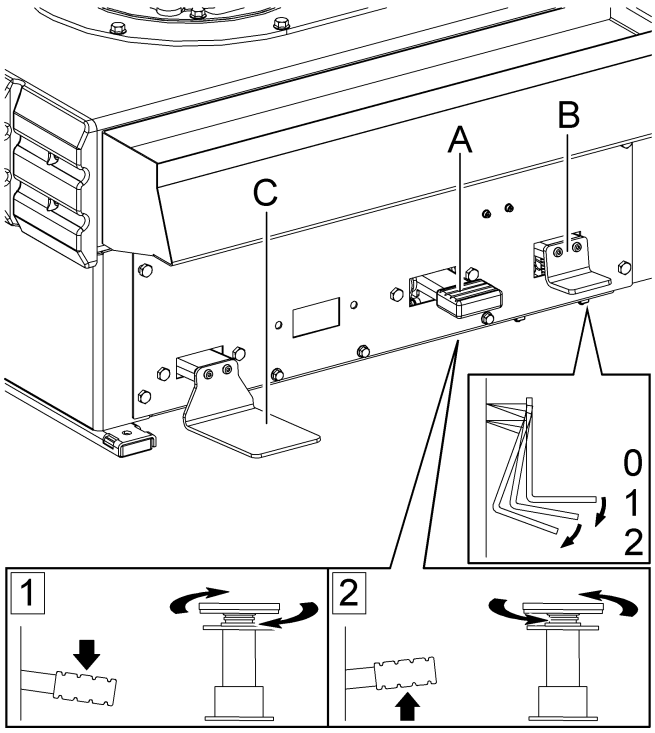
"Assent pedal" (C)

In "AUTO" mode (from PC) this pedal allows the machine to operate automatically.

The machine can be stopped in case of programmed functions as well: release and quickly press the assent pedal again, which is equivalent to the "Start" from the console.

N.B.: this pedal is not activated in "MAN" and "AUTO" mode, as it is used only in "PC managed AUTO mode".

Fig. 16



KEY (pedal **Pos. B**)
Pos. 1 - Tyre inflation with pressure gauge
Pos. 2 - Tyre inflation with pressure gauge + inflation nozzle

12.0 MACHINE SWITCHING ON AND OFF

BEFORE MACHINE SWITCHING ON, MAKE SURE THE SMART CARD (FIG. 17 POS. 3) FOR PROGRAM ENABLING AND MEMORY BANK IS INSERTED IN THE PROVIDED READER, IN THE PC BACK PART (see Fig. 17).

12.1 Smart card for program protection and memory bank

All machines are equipped with a PC (**Fig. 17 pos. 1**) with SMART CARD reader (**Fig. 17 pos. 2**).
This SMART CARD (**Fig. 17 pos. 3**), inserted in the reader allows the functioning of the program itself and enables access to vehicles DATABASE.

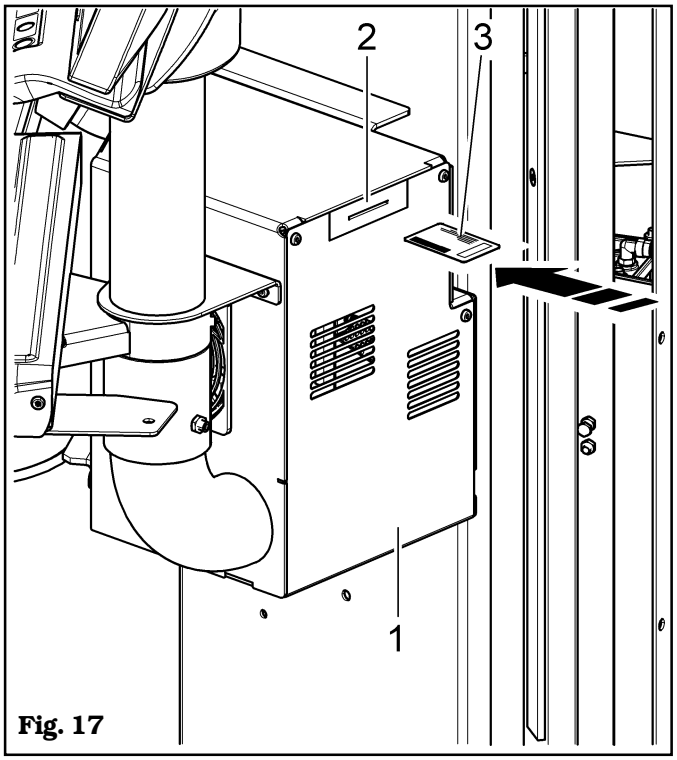


Fig. 17

Each machine is equipped with its own single SMART CARD, which can not absolutely be replaced by a smart card of another machine.
When such SMART CARD is removed or replaced, the program displays an error message and does not allow to carry on.

N.B.: in case of SMART CARD malfunction during PC switching on phase, contact the manufacturer, which will authorize the return of the faulty SMART CARD: it will be replaced with a working one with the same USB serial number.

13.0 USING THE MACHINE

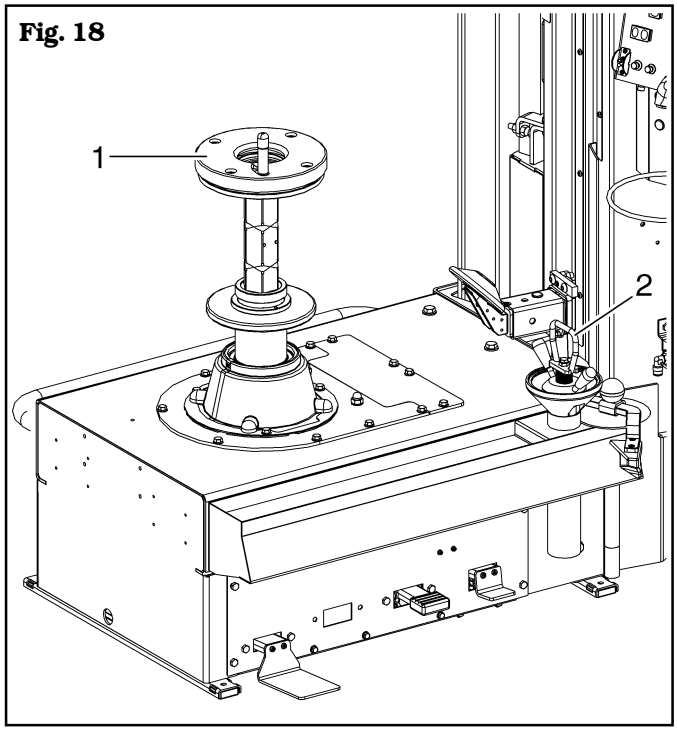
13.1 Preliminary operations - Preparing the wheel

- Remove the wheel balancing weights from both sides of the wheel.
- Remove the valve stem and allow the tyre to completely deflate.
- Establish from which side the tyre should be demounted, checking the position of the channel.
- Find the rim locking type.
- Try to establish the special types of wheels, such as "EH2" and "EH2+", in order to improve locking, bead breaking, mounting and demounting performances.

13.2 Wheel locking

All rims must be locked on the rubber plate (**Fig. 18 pos. 1**) through the central hole using the proper locking device (**Fig. 18 pos. 2**).

Fig. 18



NOTE: in case of use of rims without central hole, it's necessary to use the proper accessory (available on demand).

To lock a rim proceed as follows:

1. Dowel the wheel (**Fig. 19 pos. 1**) on the locking platform and check that the dragging pin (**Fig. 19 pos. 2**) enter in a hole placed on the rim hub.

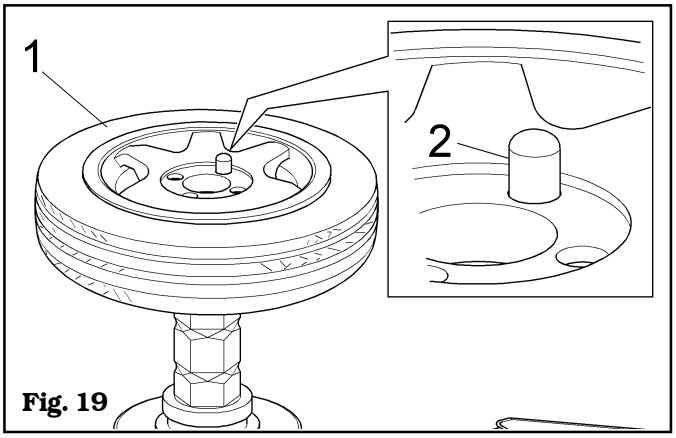


Fig. 19

2. If the wheel hub is higher then the dragger (**Fig. 20 pos. 2**), use the extension (**Fig. 20 pos. 1**) supplied on issue.

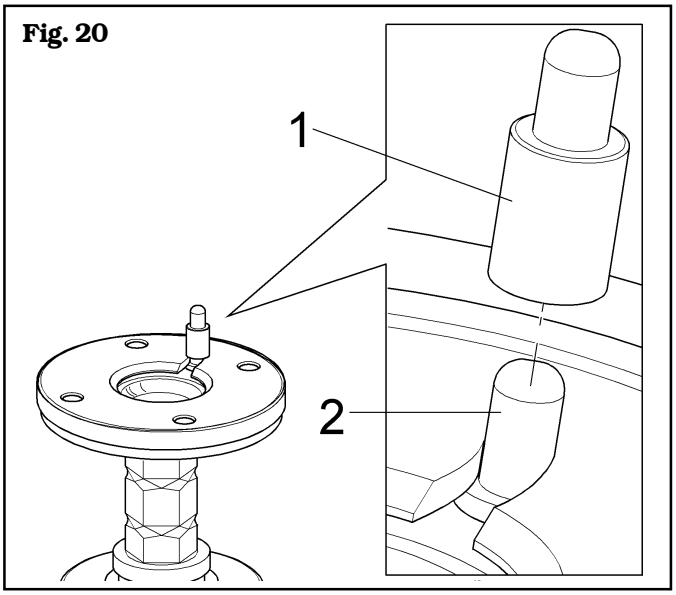


Fig. 20

3. Insert the shaft complete with cone (**Fig. 21 pos. 1**) on the rim (**Fig. 21 pos. 2**).

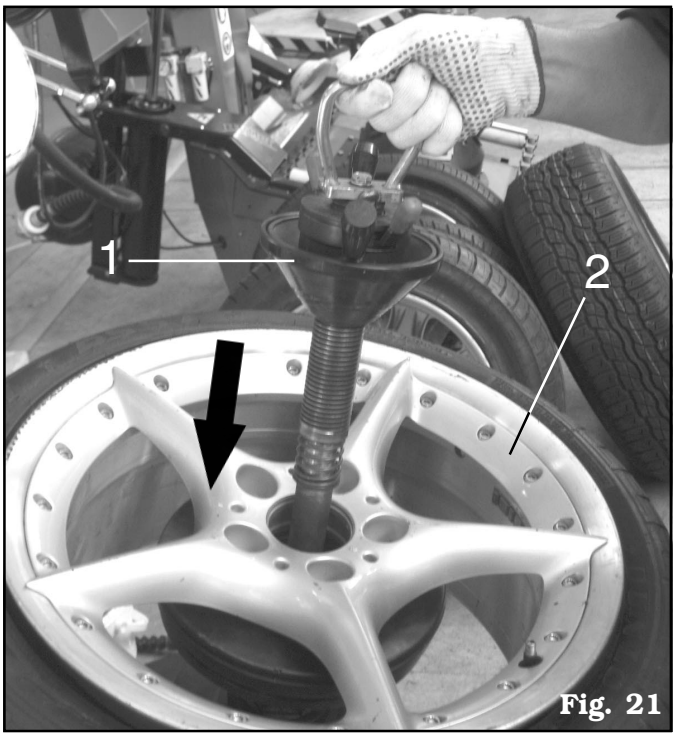


Fig. 21

4. Through the proper handle (**Fig. 22 pos. 1**), push on the lower part (**Fig. 22 pos. 2**), turn it of 90° (**Fig. 22 pos. 3**) and lift the shaft (**Fig. 22 pos. 4**) to hook it into the hole.

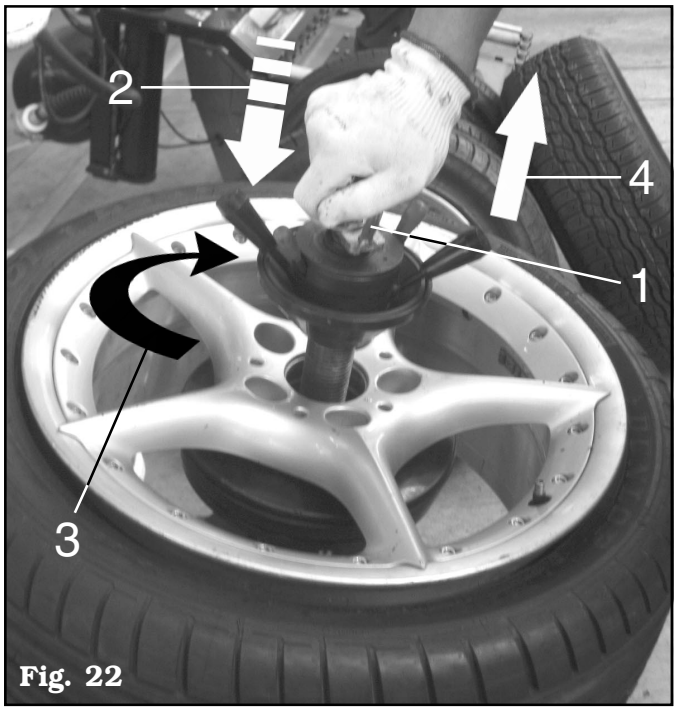


Fig. 22

5 - Trough the internal little levers (**Fig. 23 pos. 1**), loose the ring nut and approach the ring nut (**Fig. 23 pos. 3**) and cone (**Fig. 23 pos. 4**) to the rim (**Fig. 23 pos. 2**).

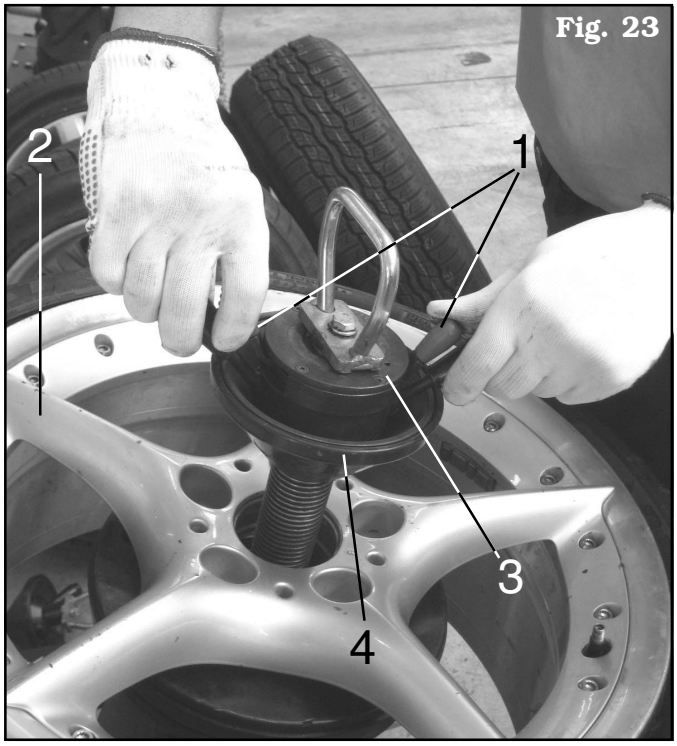


Fig. 23

6 - Then, turn the ring nut (**Fig. 24 pos. 1**) trough the external levers (**Fig. 24 pos. 2**) still the cone complete clamping (**Fig. 24 pos. 3**) on the wheel (**Fig. 24 pos. 4**).

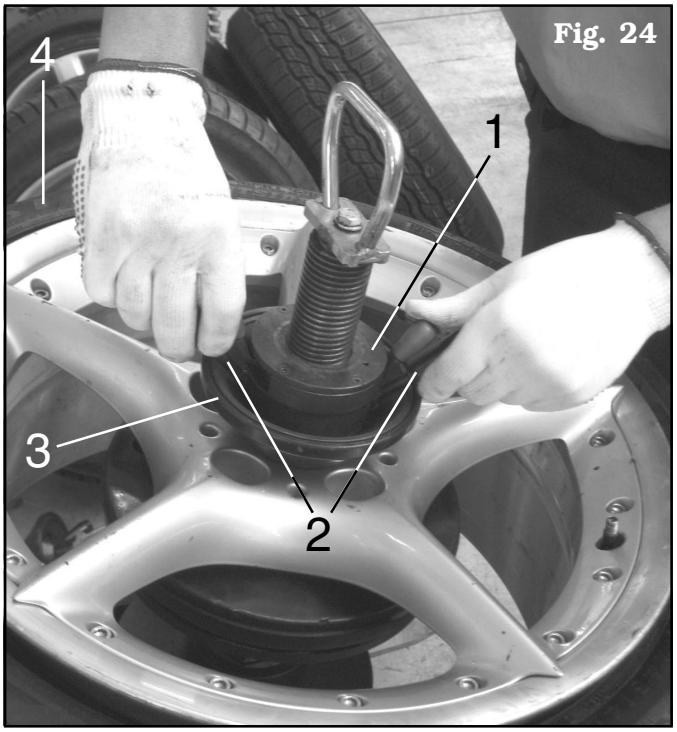


Fig. 24

7. For wheels with alloy rims, use a proper plastic guard (**Fig. 25 pos. 1**).

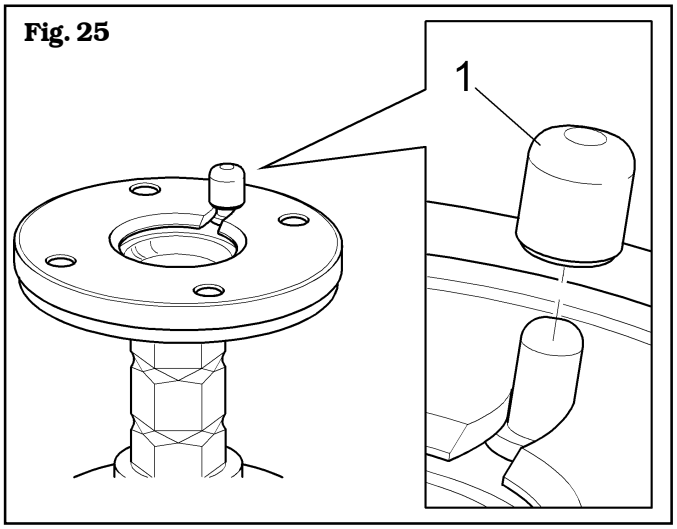


Fig. 25

7 - At the end of the operations, loosen the device realising the cone with the external levers and then move away the ring nut and the rim cone with the little levers.

8 - Lower the shaft to release it from its seat, turni it of 90° on counterclockwise and extract it from the hole through the propre handle.

13.2.1 Chuck height adjustment

The chuck with central locking has 3 different height mode. A "quick release" system allows to remove the chuck mobile part and dowel the support plate at the required height.
The adjustment through the sliding shaft is possible following three phases as indicated on the enclosed photo:

1- Lift the flange as the arrows indicated (**Fig. 26 pos. 1**).

2 - In the same time release and lift the wheel support as the arrows indicated (**Fig. 26 pos. 2**).

3 - Check that the flange return into the coupler position.

Now it's possible to place the tyre in the right way with the working tools.

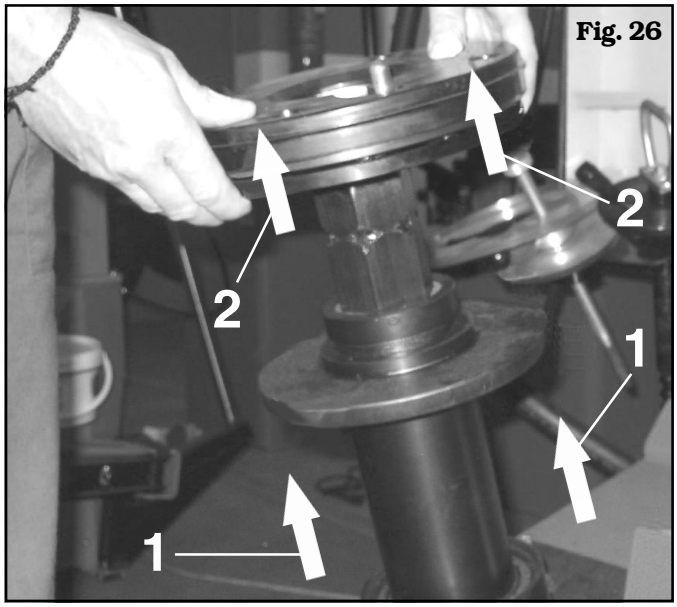


Fig. 26

13.2.2 Reverse wheel pan protection

In case of use of reverse wheels, to protect the rim, apply on the rubber platform a protection made to a transparent plastic material available on demand (**Fig. 27 pos. 1**). We suggest you a constant replacement of it and in any case if there are visible damages (see **Fig. 27**).

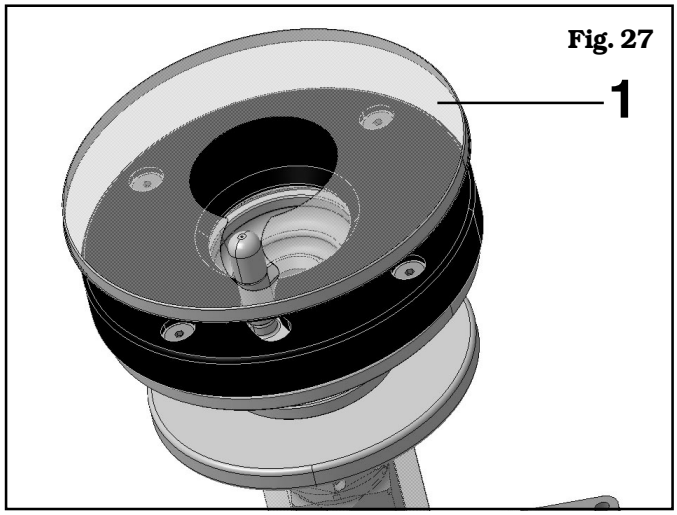


Fig. 27

13.3 Tyre bead breaking and demounting

There are two different functioning modes, in particular:

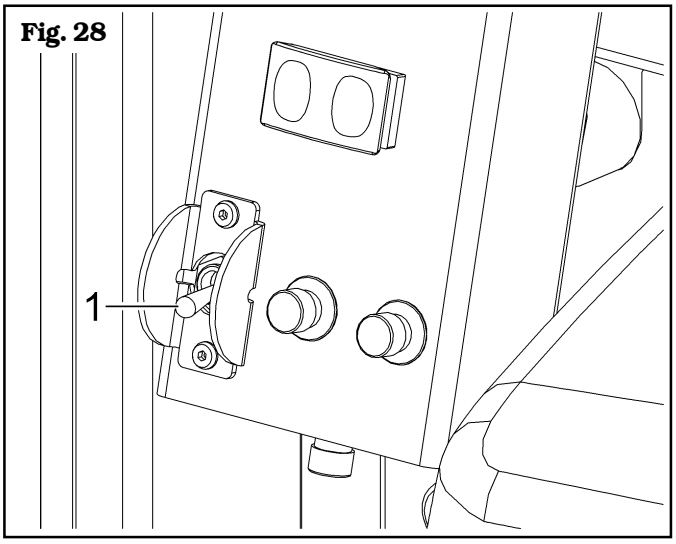
1. Automatic (from PC)
2. Standard (with manual controls)

13.3.1 Tyre bead breaking and automatic demounting in "AUTO" mode (from PC)

Carry out the following operations after the wheel has been locked onto the mandrel:

1. Position the selector (**Fig. 28 pos. 1**) on "AUTO".

Fig. 28



2. Enter the tyre data in the PC (**Fig. 1 and 2 pos. 12**) or load them from the memory bank (if rim/tyre combination is not present in the PC memory bank, it can be created following the operations described in paragraph ***"11.2.3 Read in of rim/tyre combination in memory bank"***).
3. Follow the operations described in paragraph ***"11.2.5 Tyre demounting in "AUTO" mode (from PC)".***

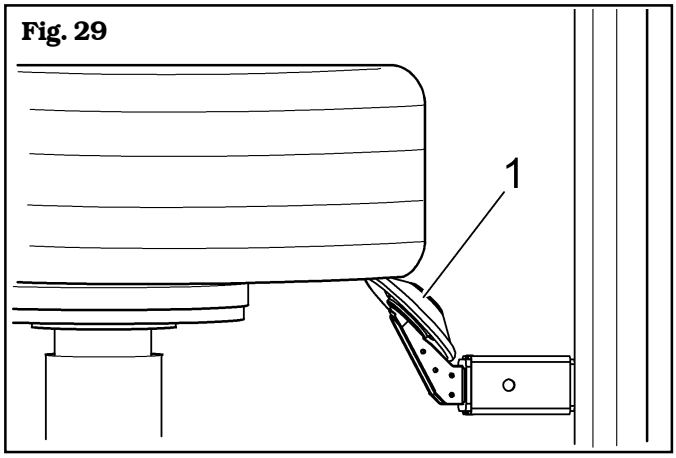
NB: the operator can intervene in the cycle at any moment locking the automatic functioning and then start again from the interruption point with no need to begin from cycle start.

13.3.2 Tyre bead breaking and demounting with manual controls (in "MAN" mode)

Carry out the following operations after the wheel has been locked onto the mandrel:

1. Position the selector (**Fig. 28 pos. 1**) on "MAN".
2. Use the manual controls to position the upper bead breaking roll (**Fig. 1 and 2 pos. 3**) on the wheel rim.
3. Activate the wheel clockwise rotation.
4. Draw the lower roll (**Fig. 29 Pos. 1**) near the push button (**Fig. 14 Pos. E**).

Fig. 29



5. Rotate the wheel in clockwise sense pressing the assent pedal (**Fig. 16 Pos. A**) and at the same time activate the push button (**Fig. 14 Pos. E**), keeping it pushed until the space created is enough to advance the roll with the manual cam. Activate the lower cam pushing the push button (**Fig. 14 Pos. C**) and keep on bead breaking until the operation is complete.
6. Once bead breaking has been completed in the lower part, move lower roll in the rest position activating the push button (**Fig. 14 Pos. E**). The roll re-enters automatically nullifying the cam approaching movement. This automatism can be applyed on both arms.
7. Rotate the rim until the valve is positioned immediately at the right side of the roll.
8. For the upper edge bead breaking the instructions described above must be followed, but using the push buttons related to the upper roll (**Fig. 14 Pos. B and F**).

NOTA: until both upper and lower rolls do not re-enter, is not possible to carry out a new diameter adjustment.

When both beads are broken, the tyre can be demounted.

9. Press the assent pedal (**Fig. 16 Pos. A**) to rotate the wheel in clockwise sense until the valve stem is next to the upper bead breaking roll (**Fig. 30 Pos. 1**).

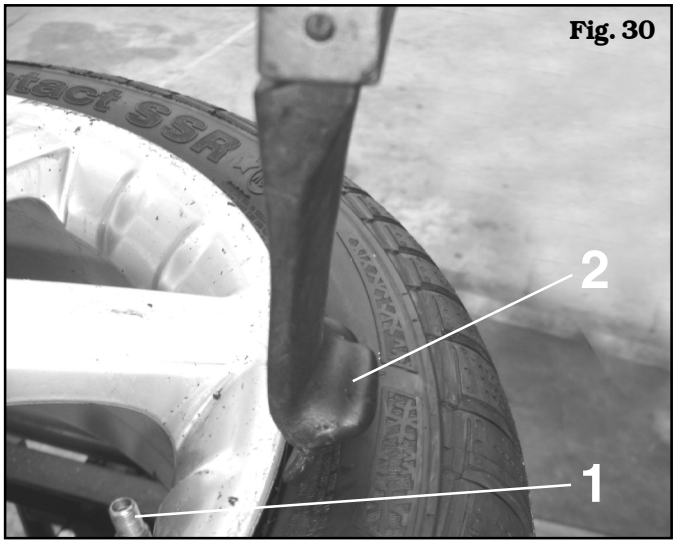


Fig. 30

10. Position the tool (**Fig. 30 Pos. 2**) just next the rim edge using the provided control (**Fig. 14 Pos. H**) (tool descent) (see **Fig. 32**). While this phase is being carried out, stay just next to a zone in the tyre where bead breaking has been effectuated.

Wheels with rimprotector

With this type of tire, there could be cases where the rimprotector doesn't allow the tool to insert between the rim and the tire (as represented in **Figure 31**).

Fig. 31

In these cases, it's necessary to let the wheel turn clockwise and to apply a slight pressure through the tool as represented in **Figure 32**. In case of rimprotectors with particular shapes, let the wheel turn counterclockwise.

Fig. 32

WHILE THIS OPERATION IS BEING CARRIED OUT PAY ATTENTION NOT TO DEFORM THE TYRE SIDE. GREASE THE BEAD BEFORE THE ROLL RE-ENTERS.

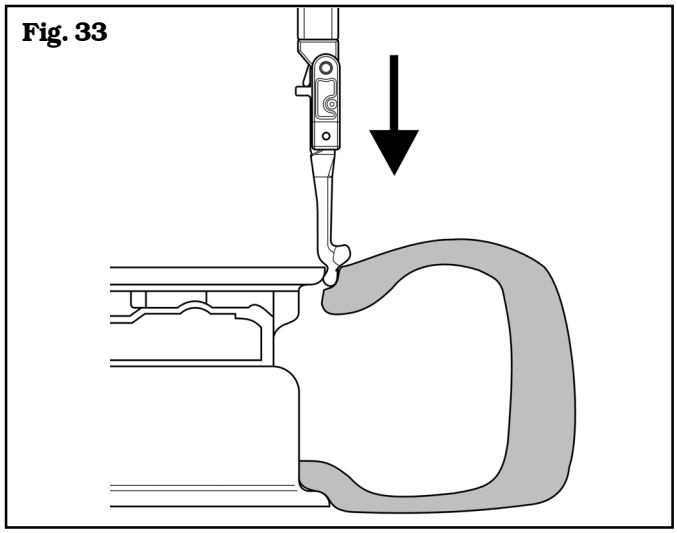


Fig. 33

11. Move forward the tool so that it penetrates between the rim and the tyre(see **Fig. 34**). While this operation is being effectuated, the tool rotates around the rim edge until it hooks the tyre bead (see **Fig. 35**).

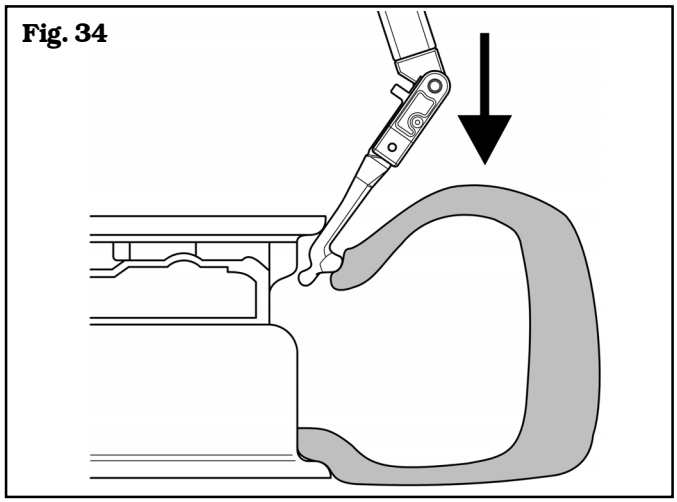


Fig. 34

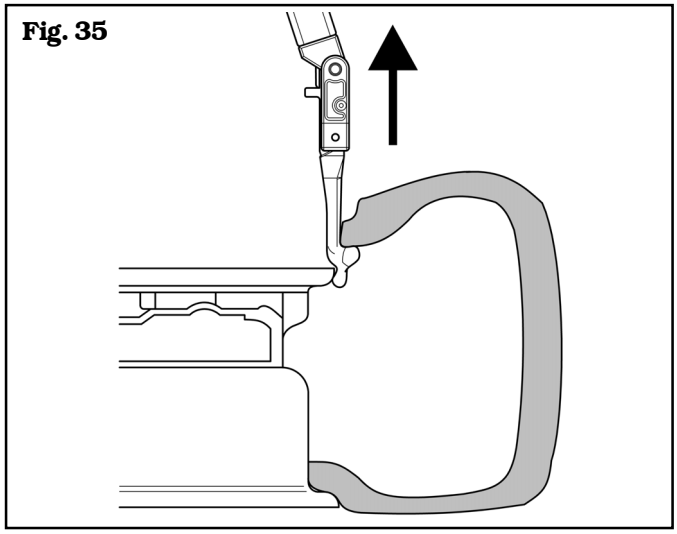


Fig. 35

12. Lift the tool through the provided control (**Fig. 14 Pos. H**). When the tool reaches a vertical position related to the rim (**Fig. 36 Pos. 1**), rotate the chuck so that the tyre enters the rim channel. Keep on lifting the tool until the bead is on the rim edge (see **Fig. 35**).

TO MAKE SURE THAT THE TOOL IS ON DEMOUNTING POSITION (FIG. 35) BEFORE STARTING THE CHUCK ROTATION.

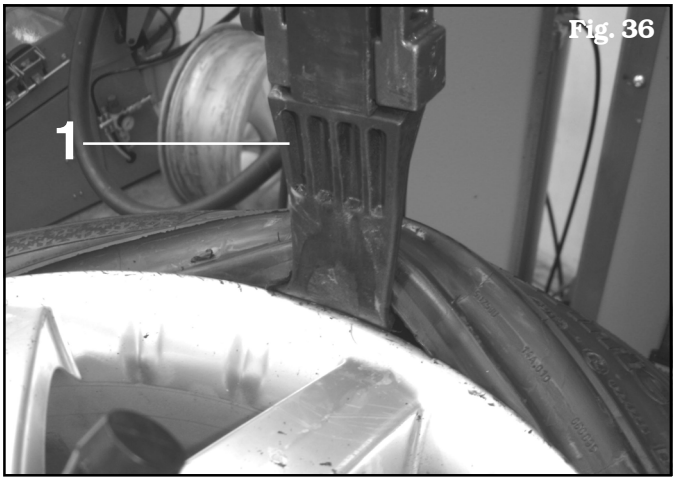


Fig. 36

13. Rotate in clockwise sense until the upper bead is completely disassembled (see **Fig. 37**).

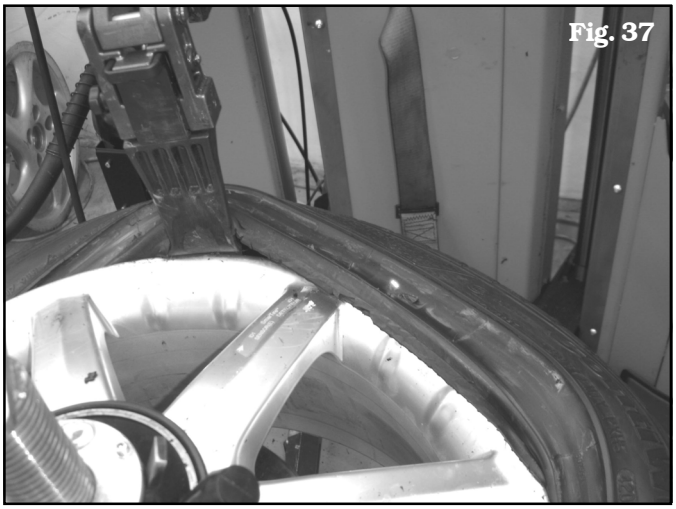


Fig. 37

14. Lift the tool (see **Fig. 38 pos 1**) maintening it coupled to the upper bead of the tyre with the lower roller.

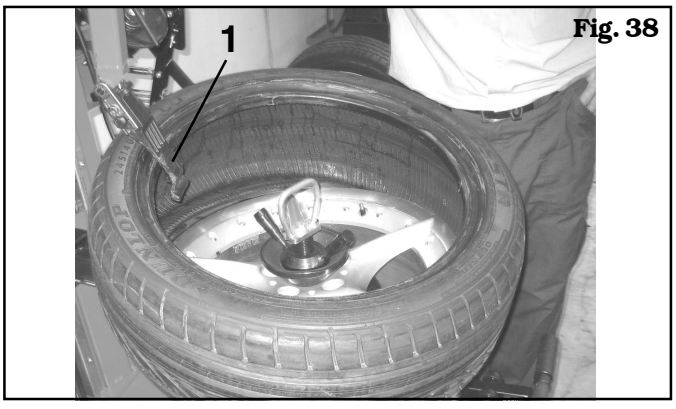


Fig. 38

15. Place the tool (see **Fig. 39**, **pos 1**) near the rim edge. Using the lower roller, load the lower bead on the tool in demounting position.

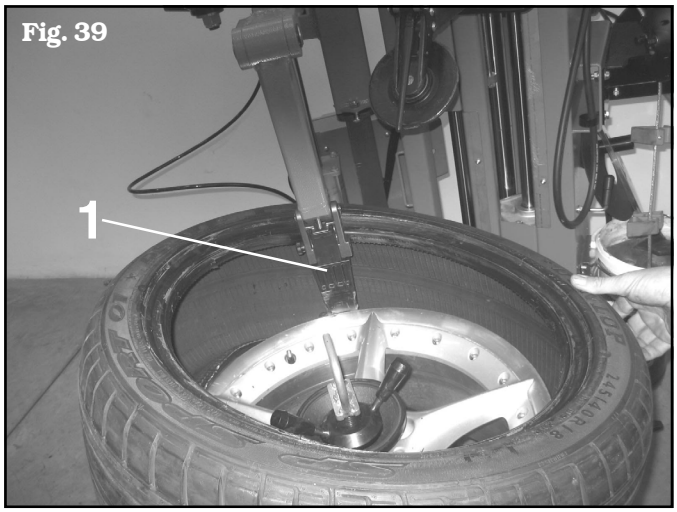


Fig. 39

16. Rotate the chuck in clockwise sense until the tyre is completely disassembled.

Smontaggio del tallone inferiore
Demounting the lower bead

To disassemble the lower tyre the lower roll can be used alternatively. Lift the tool and go away from the working area.

17. Lift the roll and the tyre just next to the rim edge (see **Fig. 40**) through the pushbutton (**Fig. 14 Pos. E**).

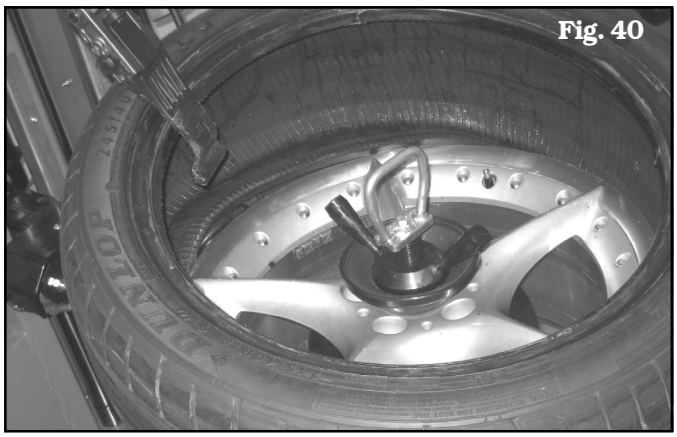


Fig. 40

18. Therefore, move forward the roll through the provided control (**Fig. 14 Pos. E**) so that it is inserted between the rim edge and the lower bead (see **Fig. 41**).

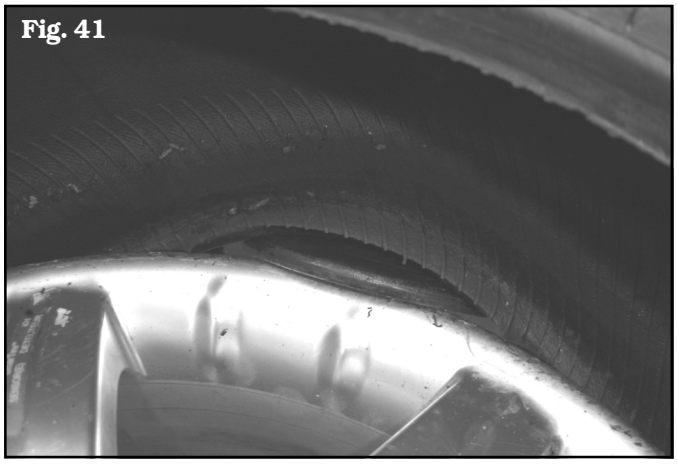


Fig. 41

19. Then, rotate and complete the bead demounting (see **Fig. 42**).

Fig. 42

13.4 Tyre mounting

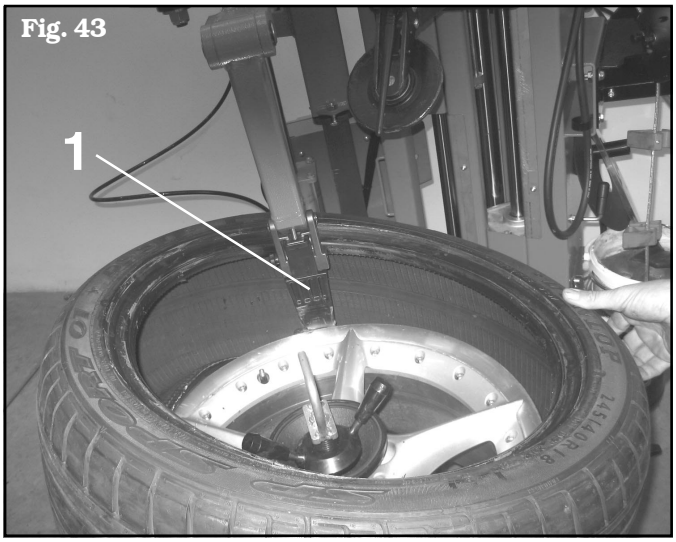
13.4.1 Automatic mounting of the tyre

At the end of demounting carry out tyre automatic mounting ***according to the procedure described in paragraph "11.2.6. Tyre mounting in "AUTO" mode (from PC)".***

13.4.2 Manual mounting of the tyre

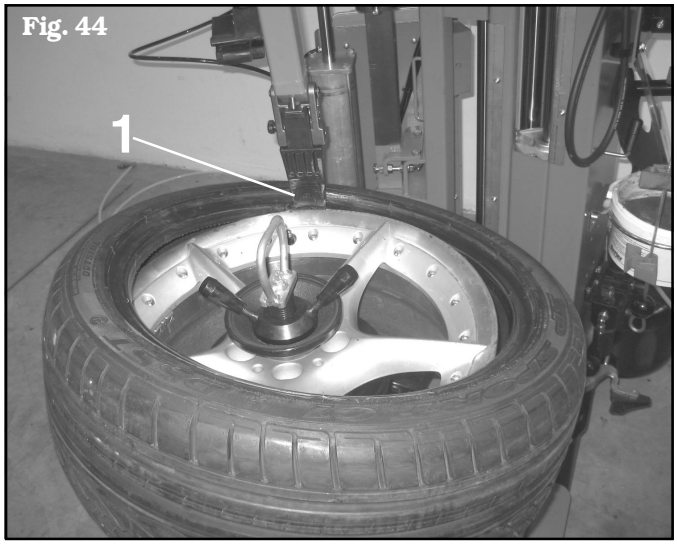
1. Lubricate the tyre's beads.
2. Position the upper tool (**Fig. 43 Pos. 1**) just next to the rim edge.

Fig. 43



3. Hook the lower bead on the tool then rotate in clockwise sense until the complete assembly.
4. Then, position the upper bead on the tool assembly area (**Fig. 44 Pos. 1**).

Fig. 44

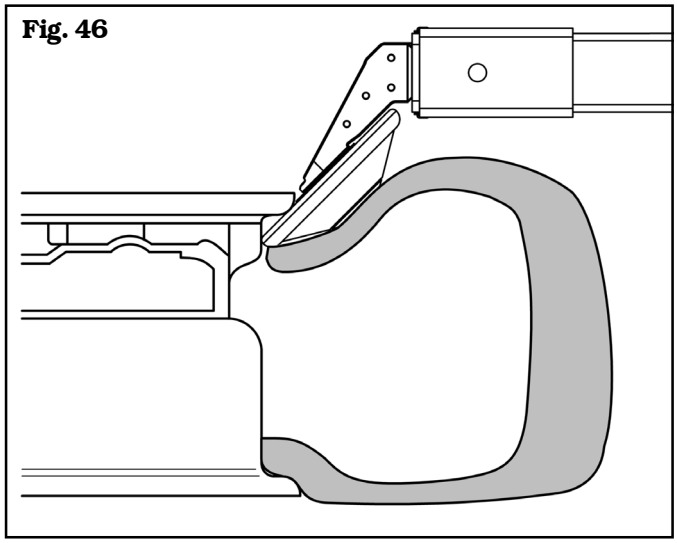


5. Assemble the extension with entrainer near the edge rim (see **Fig. 45**).

Fig. 45

6. Lower the upper bead breaker roll so that the tyre bead is kept at the same height of the rim channel (see **Fig. 46**).

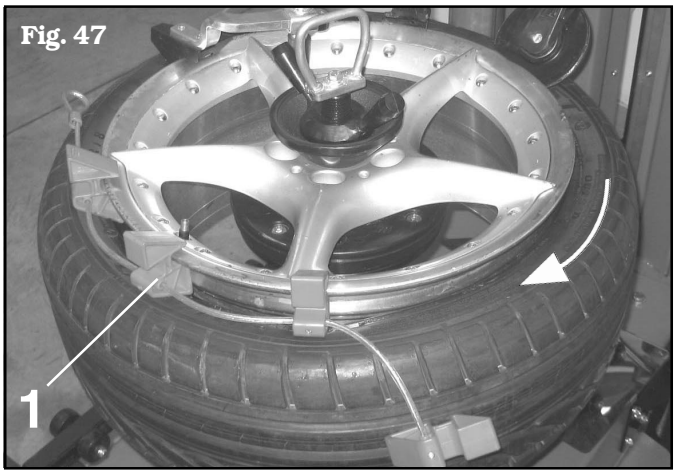
Fig. 46



7. Rotate in clockwise sense of rotation till the complete tyre mounting (see **Fig. 47**).

NOTE: for the mounting of very difficult wheel, use the extension of the bead depressor (**Fig. 46 pos. 1**).

Fig. 47



8. When the operations have been completed move all the tools in rest position.

13.5 Special use of bead breaker in "AUTO mode without PC management"

Follow the operations described in paragraph ***"11.3 Machine use in "AUTO" mode without PC management"*** to diametrically position the tool/bead breaking rolls onto the rim base.
In addition to its use during mounting and un-mounting, the bead-breaker can also be used for matching the tyre to the rim. To conduct this operation follow the following instructions:

- Grip the tyre between the bead-breaker rollers.
- Turn the motor anti-clockwise until the reference point on the tyre coincides with the reference point on the rim (usually the valve) (See **Fig. 48**).

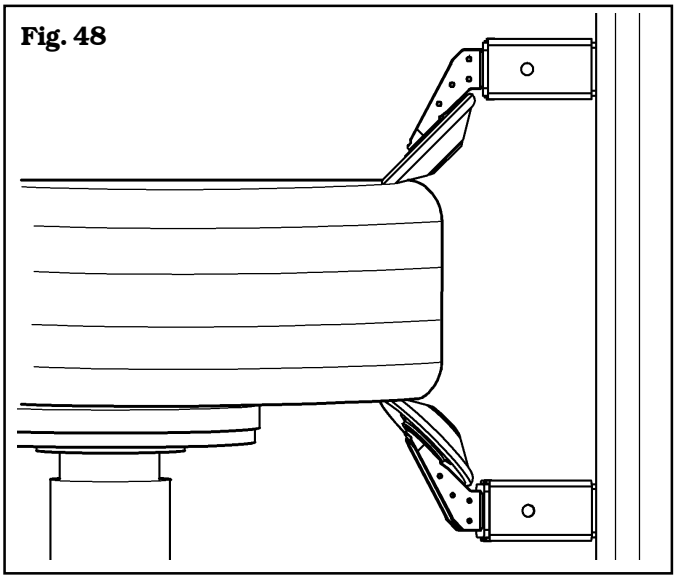
At the end of the operations, the machine has stored the sizes (width and rim diameter) of the lastly used wheel.
When this mode is left (press "ESC" key), the sizes of the used wheel are not stored in the memory bank, therefore, they can not be used for the following operations.

13.6 Special use of the bead-breaker (only in "MAN" mode)

In addition to its use during mounting and demounting, the bead-breaker can also be used for matching the tyre to the rim. To conduct this operation follow the following instructions:

- Grip the tyre between the bead-breaker rollers.
- Turn the motor anti-clockwise until the reference point on the tyre coincides with the reference point on the rim (usually the valve) (See **Fig. 48**).

Fig. 48



14.0 ROUTINE MAINTENANCE

BEFORE CARRYING OUT ANY ROUTINE MAINTENANCE OR ADJUSTMENT PROCEDURE, POSITION THE MAIN SWITCH ON "0", DISCONNECT THE MACHINE FROM THE ELECTRICITY SUPPLY USING THE SOCKET / PLUG COMBINATION AND CHECK THAT ALL MOBILE PARTS ARE AT A STANDSTILL.

BEFORE EXECUTING ANY MAINTENANCE OPERATION, MAKE SURE THERE ARE NO WHEELS LOCKED ONTO THE MANDREL.

To guarantee the efficiency and correct functioning of the machine, it is essential to carry out daily or weekly cleaning and weekly routine maintenance, as described below.
Cleaning and routine maintenance must be conducted by authorized personnel and according to the instructions given below.

- Remove deposits of tyre powder and other waste materials with a vacuum cleaner.

DO NOT BLOW IT WITH COMPRESSED AIR.

- Do not use solvents to clean the pressure regulator.
- The conditioning unit is equipped with an automatic vacuum-operated drain therefore it requires no manual intervention by the operator (see **Fig. 49**).

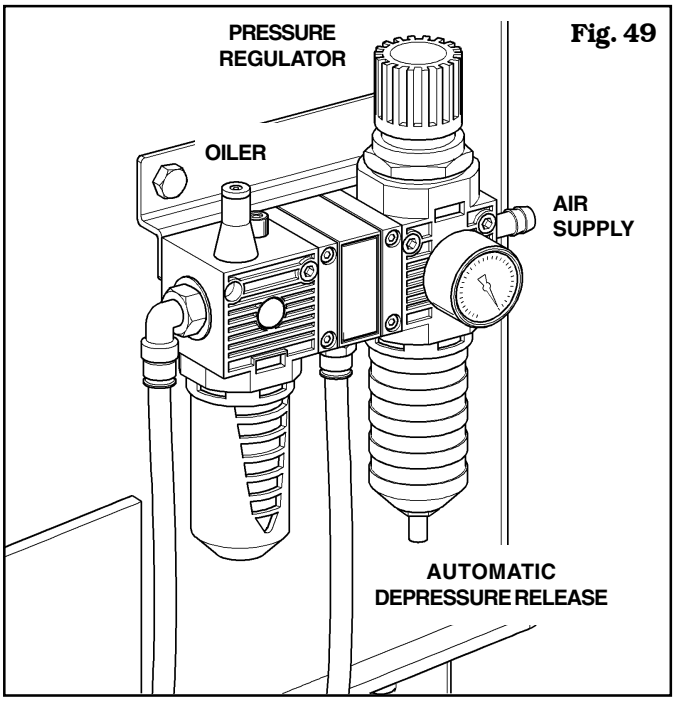


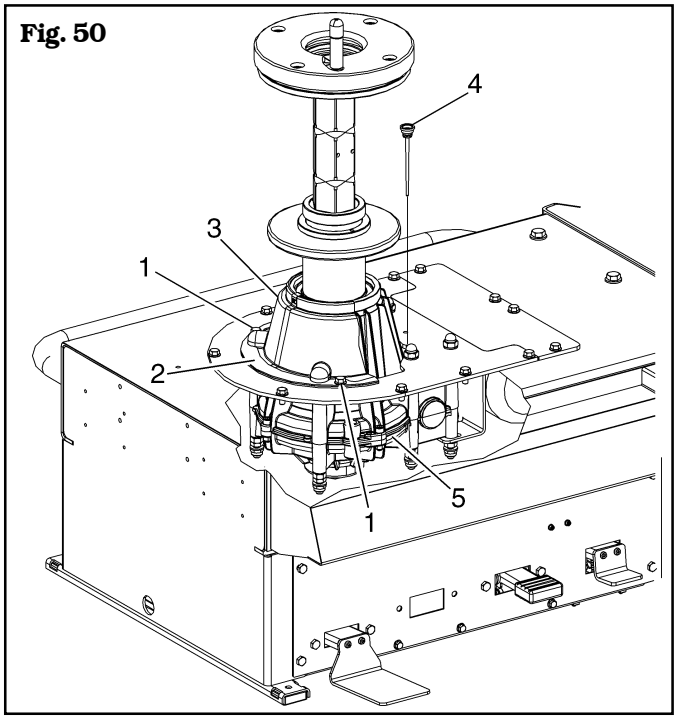
Fig. 49

IN ORDER TO ALLOW A LONGER LIFE OF THE FILTER AND OF ALL MOVING PNEUMATIC DEVICES, YOU HAVE TO MAKE SURE THAT THE SUPPLIED AIR IS:
- **EXEMPT FROM THE LUBRICATING OIL OF THE COMPRESSOR;**
- **EXEMPT FROM HUMIDITY;**
- **EXEMPT FROM IMPURITY.**

- Periodically, with a frequency of at least once a month, lubricate the arms of the bead breaking rolls and of the tool.
- Immediately replace worn parts, bead breaking rolls, assembly tool.
- Every **week** and/or when necessary, top up the oil tank using the filler hole provided closed by a cap or screw on the lubricator filter.

  N.B: This operation should not be carried out by unscrewing the cup of the lubricator filter.
- The use of synthetic oil might damage the pressure regulator filter.
- At regular intervals, (at least every 100 working hours) check reduction gear (**Fig. 50 pos. 5**) lubricating oil level. Such operation must be effectuated unscrewing the screws (**Fig. 50 pos. 1**), removing the flange (**Fig. 50 pos. 2**), the guard (**Fig. 50 pos. 3**) and the plug (**Fig. 50 pos. 4**) on the reduction gear.

Fig. 50



THE MANUFACTURER DOES NOT ACCEPT ANY DAMAGE RESULTING FROM THE FRAILURE TO OBSERVE THE ABOVE INSTRUCTION, AND SUCH FAILURE COULD INVALIDATE THE WARRANTY!!

15.0 TECHNICAL DATA

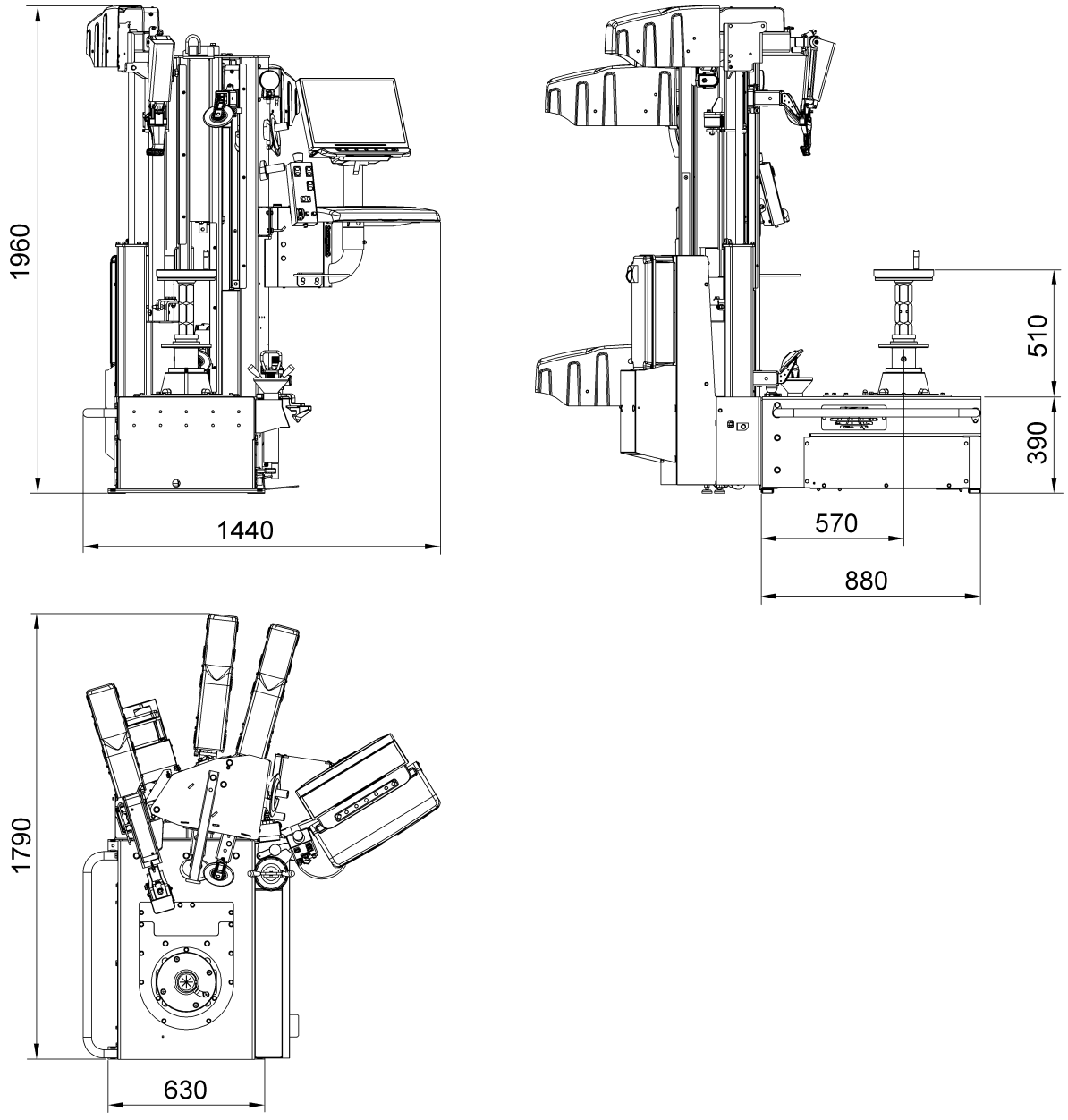
Recommended air supply pressure ..... **8 - 10 bar**
Invemotor speed ..... **18 rpm**
Invemotor power ..... **1,5 kW**
Raccomanded
electric supply..... **monophase 200÷265V - 50/60 Hz**
Maximum wheel diameter ..... **50"/52"/54"**
Wheel max. width ..... **15"**
Rim locking diameter ..... **10"-30"÷12"-32"÷14"-34"**
Bead-breaker power per roller (10bar)..... **1200 kg**
Vertical bead breaker max. opening ..... **900 mm**
Gear noise ..... **dBA 76**

15.1 Weight

Model without tubeless inflation ..... **434 kg**
Model with tubeless inflation ..... **440 kg**

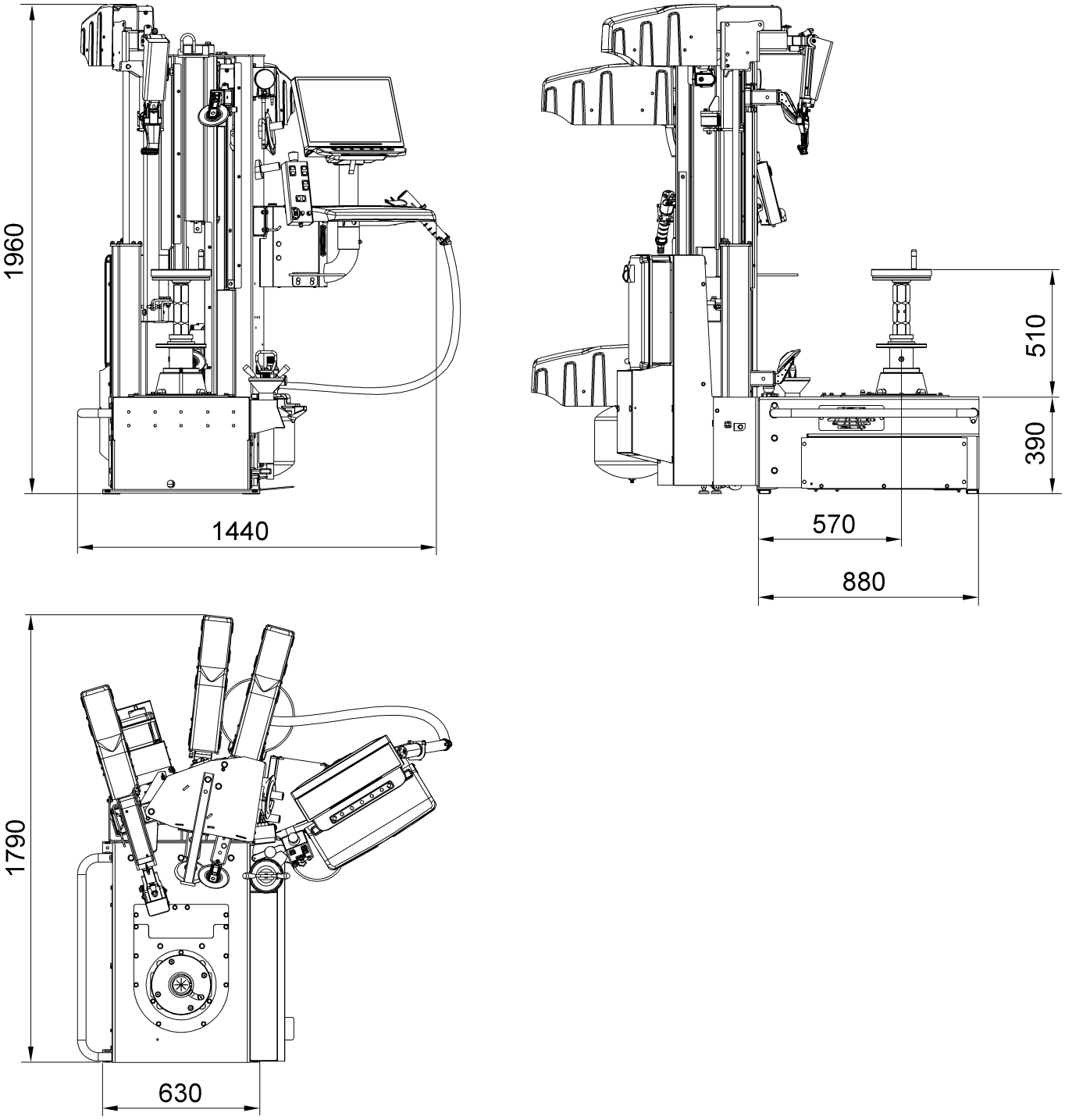
15.2 Dimensions

G1500.3 **Fig. 51**



G1500.3IT

Fig. 52



16.0 STORING

If storing for long periods (6 months or longer) disconnect the main power supply and take measures to protect the machine from dust build-up. Lubricate parts that could be damaged from drying out. When putting the machine back into operation replace the rubber pads and the mounting tool. Moreover, carry out a verification of machine perfect functioning.

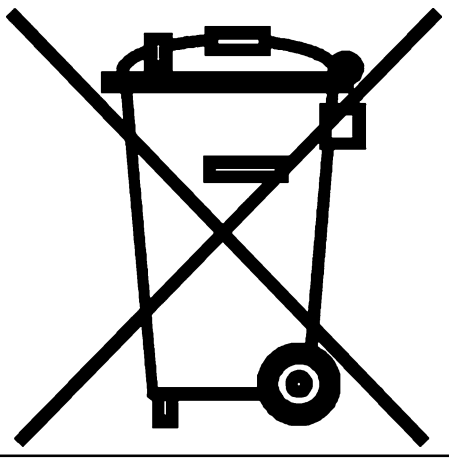
17.0 SCRAPPING

When the decision is taken not to make further use of the machine, it is advisable to make it inoperative by removing the connection pressure hoses.
The machine is to be considered as special waste and should be dismantled into homogeneous parts.
Dispose of it in accordance with current legislation.

17.1 Instructions for the correct management of waste from electric and electronic equipment (in italian RAEE) according to legislative decree 151/05

- RAEE may not be disposed of as urban waste.
- These kinds of waste must be collected separately and taken to dedicated collection and recycling centres, according to OEM instructions and abiding by national laws.
- The above symbol on the product means that anyone wishing to dispose of the waste must follow the above-mentioned instructions.
- Any incorrect management of the waste or its parts or its abandonment outside dedicated areas could contaminate the environment, owing to the dangerous substances contained in it, and cause damage to human health, flora and fauna.
- National laws provide for sanctions against those responsible for illegal disposal or abandonment of waste from electric and electronic equipment.

Fig. 53



18.0 REGISTRATION PLATE DATA

The validity of the Conformity Declaration enclosed to this manual is also extended to products and/or devices the machine model object of the Conformity Declaration can be equipped with.

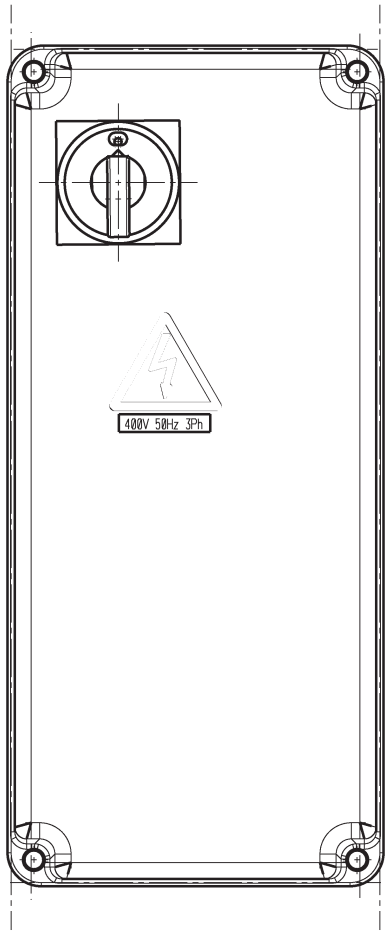
CAUTION: DO NOT TAMPER WITH, CARVE, CHANGE OR REMOVE THE IDENTIFICATION PLATE;DO NOT COVER IT WITH PANELS, ETC., SINCE IT MUST ALWAYS BE VISIBLE.

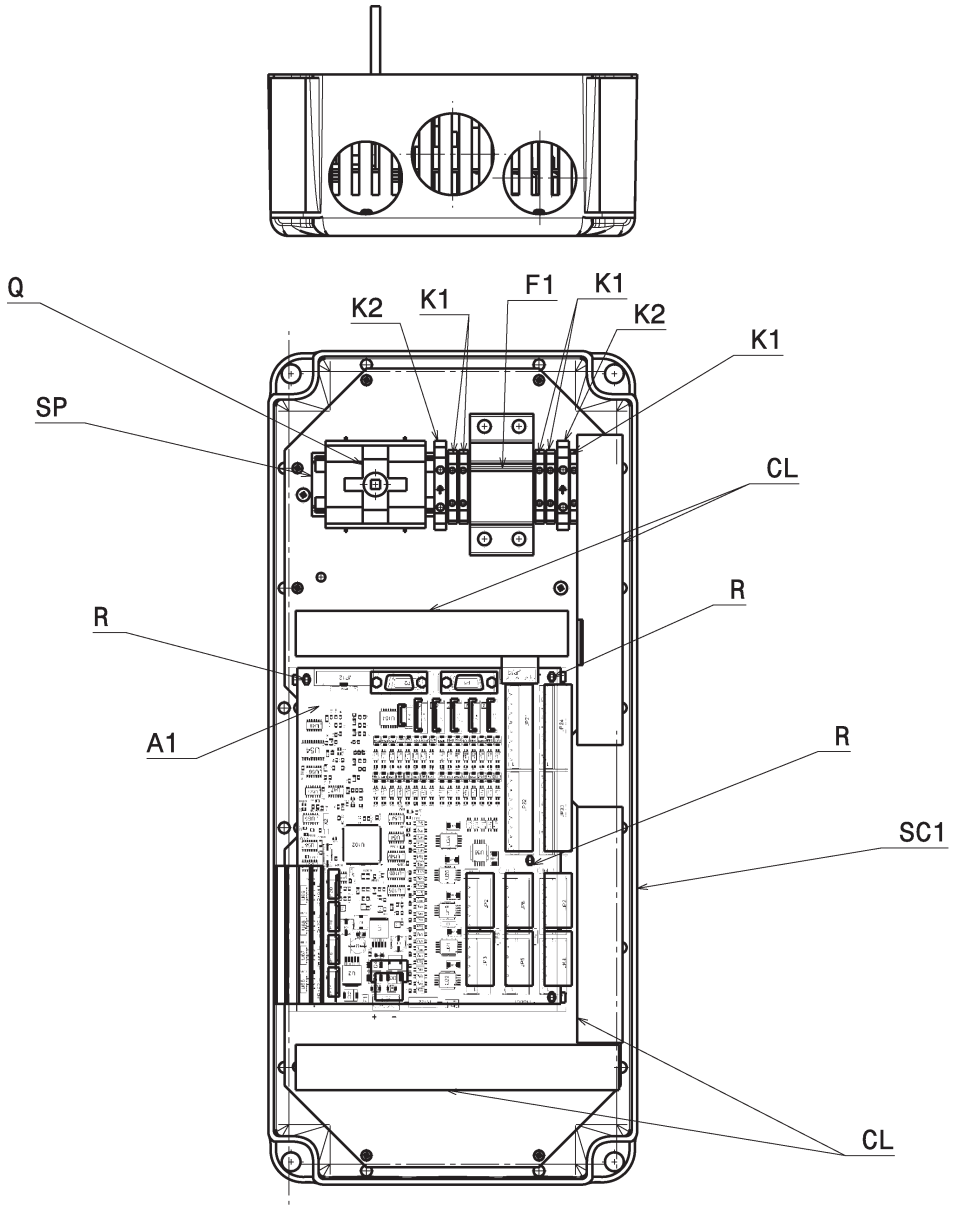
Said plate must always be kept clean.

WARNING: Should the plate be accidentally damaged (removed from the machine,damaged or even partially illegible) inform immediately the manufacturer.

19.0 FUNCTIONAL DIAGRAMS

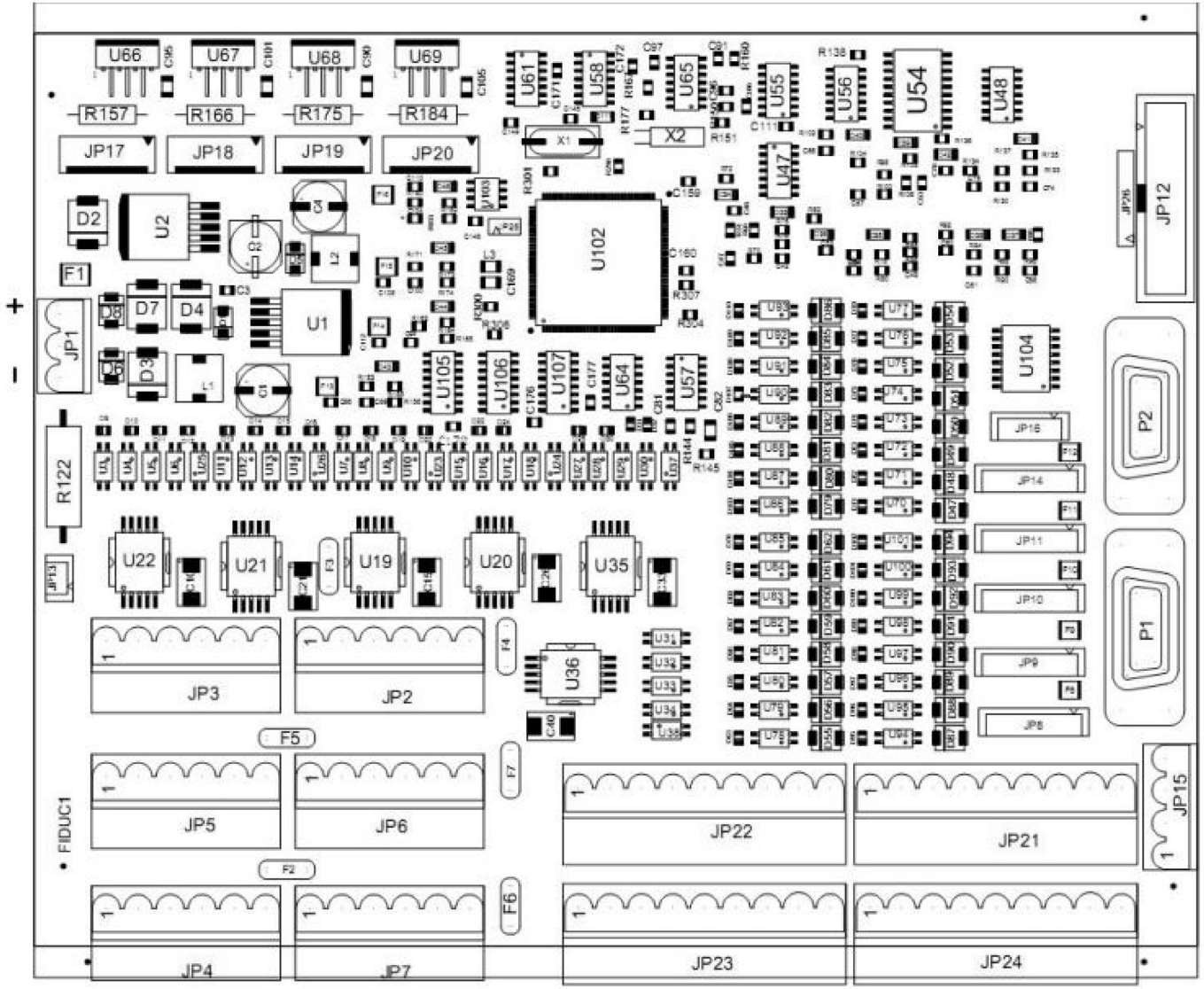
Here follows a list of the machine functional diagrams.



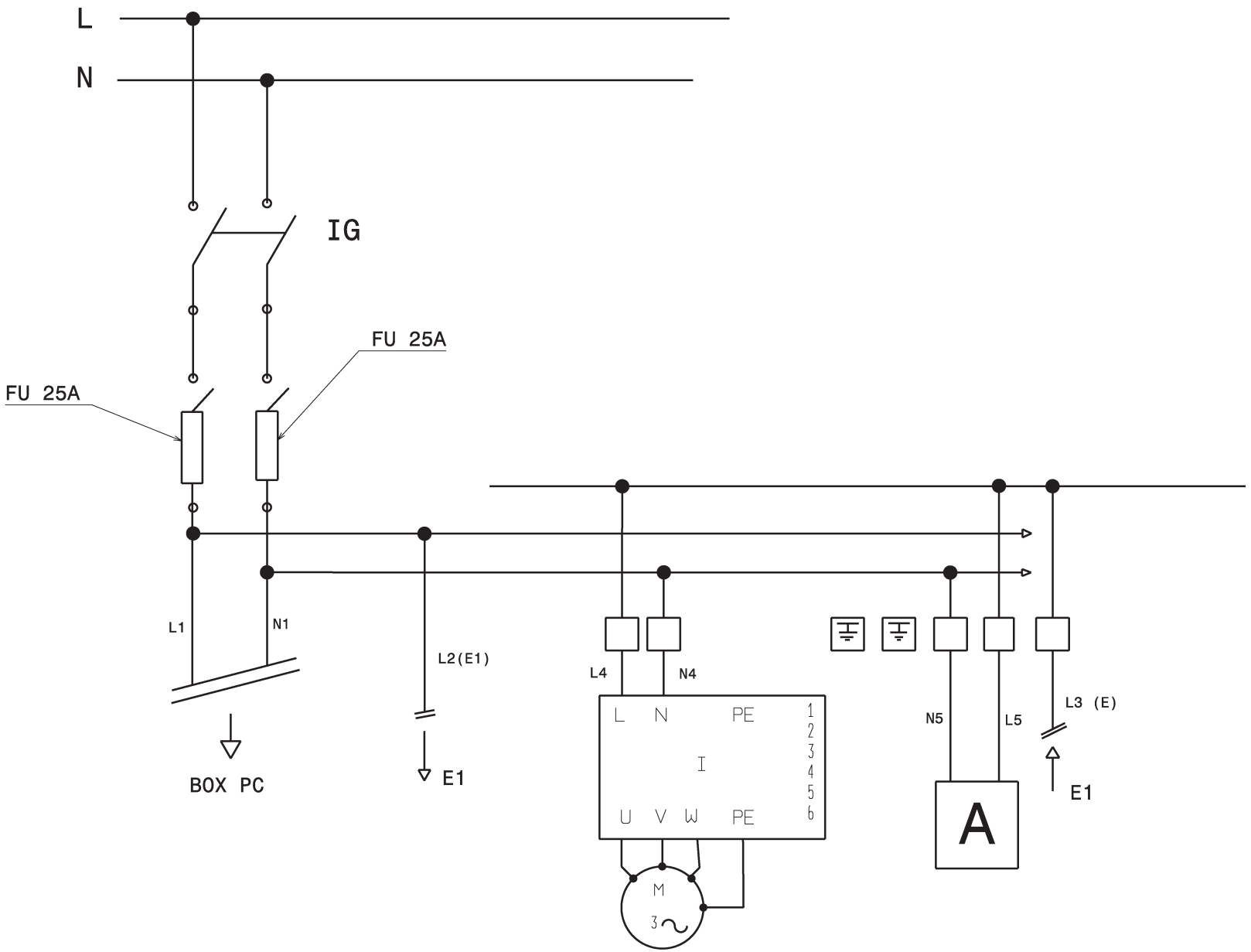


RAVAGLIOLI S.p.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/19 ELECTRICAL SCHEME 1/19 SCHALTPLAN 1/19 SCHEMA ELECTRIQUE 1/19 ESQUEMA ELECTRICO 1/19*	***Pag. 36 di 56***
	Tavola N°A - Rev. 0	**710105070**		**G1500.3 - G1500.3IT**

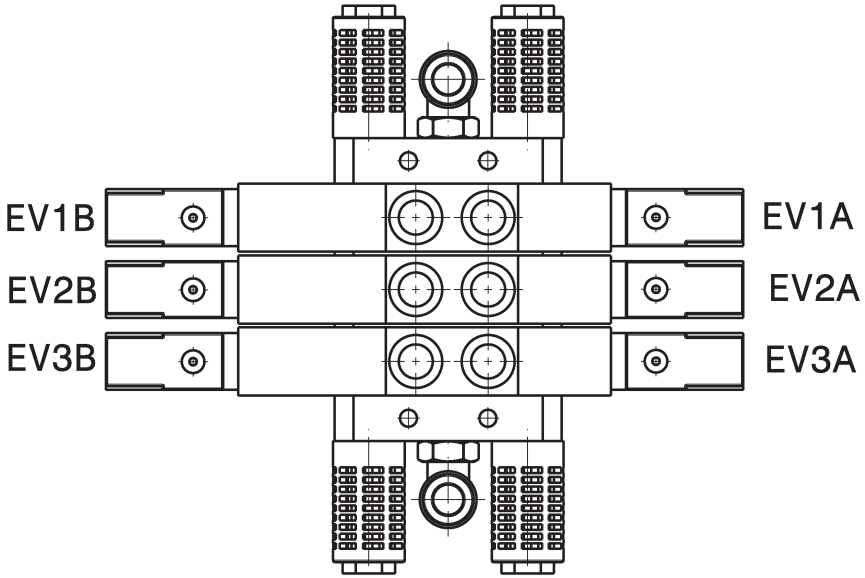
TOPOGRAFICO SCHEDA 18295
18295 TOPOGRAPHIC VIEW

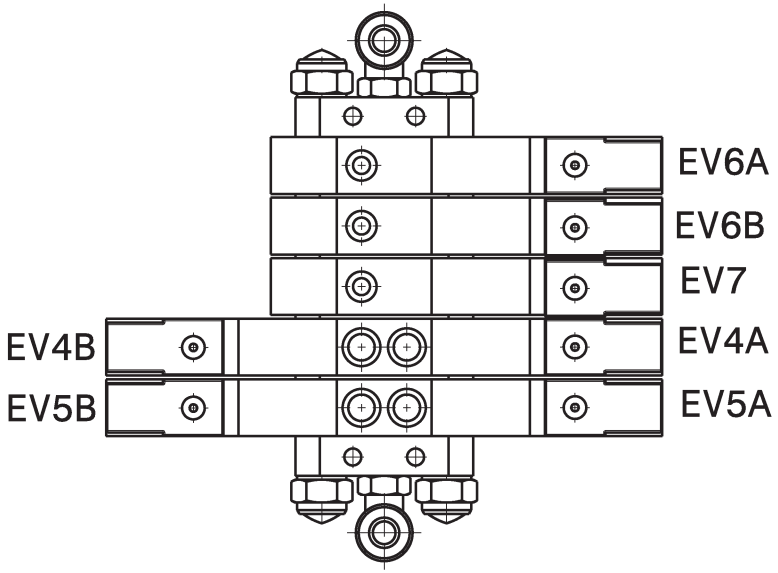


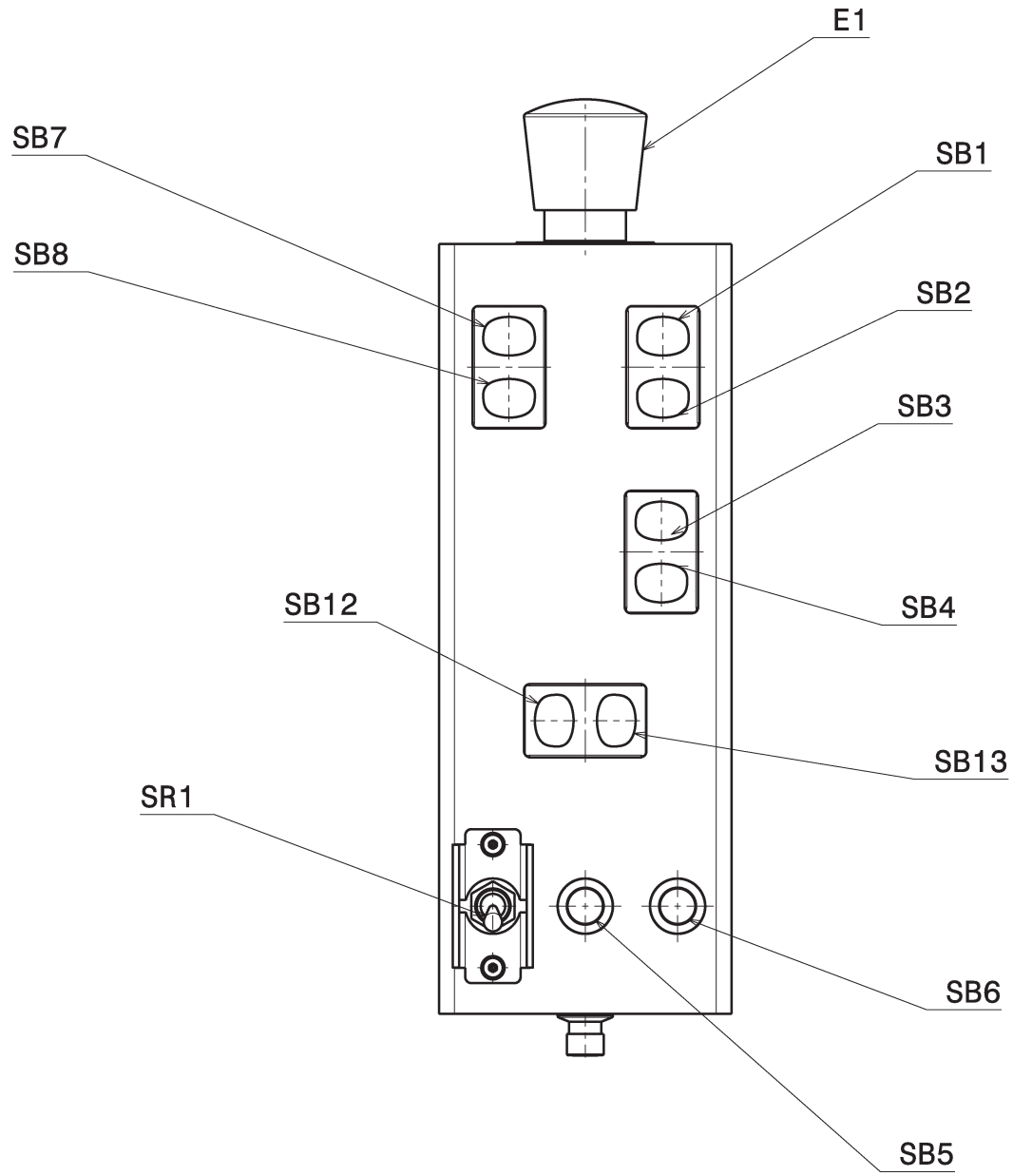
RAVAGLIOLI S.p.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 2/19 ELECTRICAL SCHEME 2/19 SCHALTPLAN 2/19 SCHEMA ELECTRIQUE 2/19 ESQUEMA ELECTRICO 2/19*	***Pag. 37 di 56***
	Tavola N°A - Rev. 0	**710105070**		**G1500.3 - G1500.3IT**

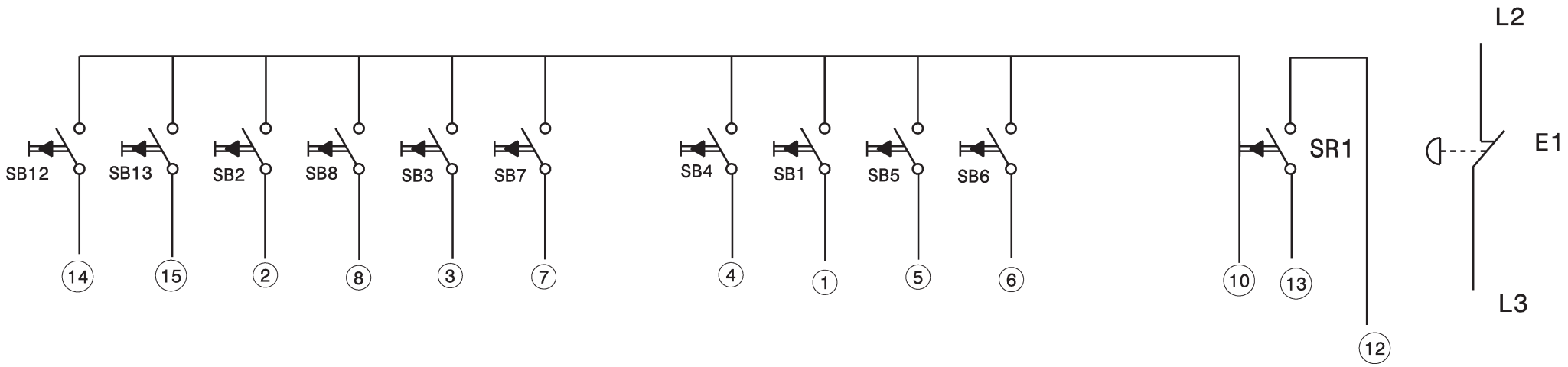


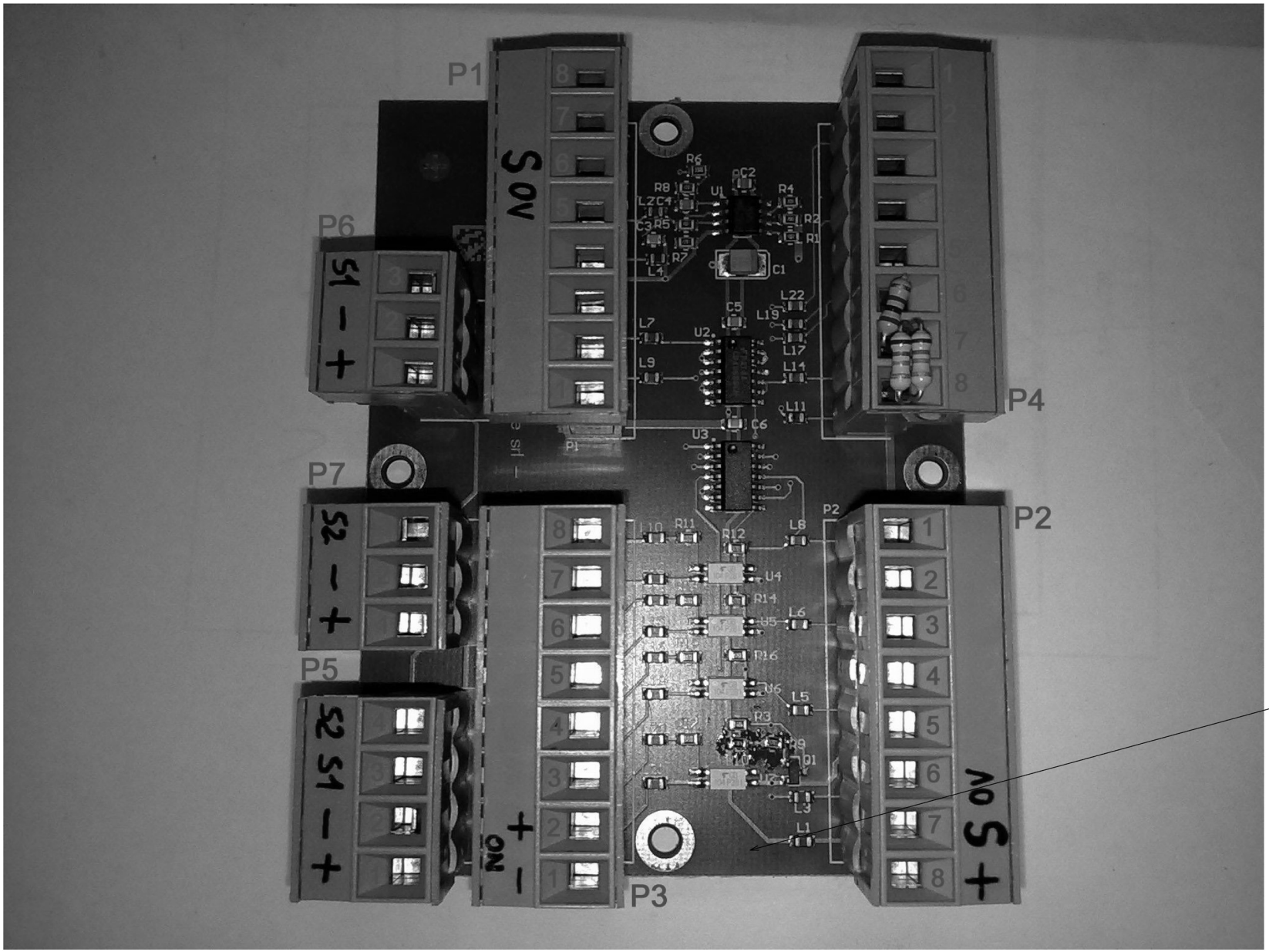
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		SCHEMA ELETTRICO 3/19 ELECTRICAL SCHEME 3/19 SCHALTPLAN 3/19 SCHEMA ELECTRIQUE 3/19 ESQUEMA ELECTRICO 3/19	Pag. 38 di 56
	Tavola N°A - Rev. 0	710105070		G1500.3 - G1500.3IT


EV1B
EV2B
EV3B
EV1A
EV2A
EV3A


EV6A
EV6B
EV7
EV4A
EV5A
EV4B
EV5B


E1
SB7
SB1
SB8
SB2
SB3
SB12
SB4
SB13
SR1
SB6
SB5


L2
SB12
SB13
SB2
SB8
SB3
SB7
SB4
SB1
SB5
SB6
SR1
E1
L3
14
15
2
8
3
7
4
1
5
6
10
13
12



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		SCHEMA ELETTRICO 7/19 ELECTRICAL SCHEME 7/19 SCHALTPLAN 7/19 SCHEMA ELECTRIQUE 7/19 ESQUEMA ELECTRICO 7/19	Pag. 42 di 56
	Tavola N°A - Rev. 0	710105070		G1500.3 - G1500.3IT

P1 INTERFACCIA ANALOGICA VERSO SCHEDA 18295

1			
2			
3			
4			
5	0V	(MARRONE)	Collegare cavo 18883
6	SEGNALE INGRESSO	(BIANCO)	Collegare cavo 18883
7			
8			

P2 CONNETTORE VERSO INVERTER

1			
2			
3			
4			
5			
6	0V	(VERDE)	Collegare cavo 18884
7	SEGNALE USCITA	(BIANCO)	Collegare cavo 18884
8	+10V	(GIALLO)	Collegare cavo 18884

P3 SWITCH VELOCITA' E ABILITAZIONE 18295

1	0V Abilitazione scheda	(MARRONE)	Collegare cavo 18945
2	24V Abilitazione scheda	(BIANCO)	Collegare cavo 18945
3			
4			
5			
6			
7			
8			

P4 INTERFACCIA VERSO PEDALIERA

1			
2			
3			
4			
5			
6	Potenziometro negativo		Resistenza 2K7
7	Potenziometro cursore		Comune resistenze
8	Potenziometro positivo		Resistenza 7K32

P5 CAVO PROXIMITY VERSO SCHEDA 18295

1	+24V	(ROSA)	Collegare cavo 18945
2	0V	(GRIGIO)	Collegare cavo 18945
3	Segnale Proximity 1	(GIALLO)	Collegare cavo 18945
4	Segnale Proximity 2	(VERDE)	Collegare cavo 18945

P6 PROXIMITY 1

1	+24V	(MARRONE)	
2	0V	(BLU)	
3	Segnale proximity 1	(NERO)	

P7 PROXIMITY 2

1	+24V	(MARRONE)	
2	0V	(BLU)	
3	Segnale Proximity 2	(NERO)	

P1 ANALOGIC INTERFACE TO CARD 18295

1			
2			
3			
4			
5	0V	(BROWN)	Connect cable 18883
6	INPUT SIGNAL	(WHITE)	Connect cable 18883
7			
8			

P2 CONNECTOR TO INVERTER

1			
2			
3			
4			
5			
6	0V	(GREEN)	Connect cable 18884
7	OUTPUT SIGNAL	(WHITE)	Connect cable 18884
8	+10V	(YELLOW)	Connect cable 18884

P3 SPEED SWITCH AND ENABLING 18295

1	OV Card enabling	(BROWN)	Connect cable 18945
2	24V Card enabling	(WHITE)	Connect cable 18945
3			
4			
5			
6			
7			
8			

P4 INTERFACE TO PEDALBOARD

1			
2			
3			
4			
5			
6	Negative potentiometer		Resistance 2K7
7	Wiper potentiometer		Common to resistances
8	Positive potentiometer		Resistance 7K32

P5 PROXIMITY CABLE TO CARD 18295

1	+24V	(PINK)	Connect cable 18945
2	0V	(GRAY)	Connect cable 18945
3	1 signal Proximity	(YELLOW)	Connect cable 18945
4	2 signal Proximity	(GREEN)	Connect cable 18945

P6 PROXIMITY 1

1	+24V	(BROWN)	
2	0V	(BLUE)	
3	1 signal Proximity	(BLACK)	

P7 PROXIMITY 2

1	+24V	(BROWN)	
2	0V	(BLUE)	
3	2 signal Proximity	(BLACK)	

ASSEGNAZIONE CONNETTORI

JP8	Encoder V1(con cablaggio 18338r01) (*)
JP9	Encoder V2(con cablaggio 18338r01)
JP10	Encoder V3(con cablaggio 18338r01)
JP11	Encoder V4(con cablaggio 18338r01)
JP14	Vuoto
JP16	Ingresso potenziometro cod.18882(lato con 3 fili per JP15)
JP17	Motore+Encoder 01(con cablaggio 18345 r01
JP18	Motore+Encoder 02(con cablaggio 18345 r01)
JP19	Motorr+Encoder 03(con cablaggio 18345 r01
JP20	Motore+Encoder 04(con cablaggio 18345 r01
P1	Vuoto
P2	Seriale PC cod.18893
	(*)se l'encoder viene montato inversamente rispetto al senso di avanzamento dell'asse,devono essere scambiati tra loro i fili giallo e verde

ALIMENTAZIONE

JP1			
1		GND	
2			
3		+24V 20A	

USCITE

JP2			
1	Rit.3B,1B,2B,8B		
2	3B	EV.giu V1	
3	1B	EV.giu V2	
4	2B	EV.giu V3	
5	8B	EV.giu V4	
6			

USCITE

JP3			
1	Rit.3A,1A,2A,8A	Cavallottare filo 8A su JP6-1	
2	3A	EV.su V1	
3	1A	EV.su V2	
4	2A	EV.su V3	
5	8A	EV.su V4	
6			

JP4			
1	BLU+BLU Proximity	GND(0V),Proxy(BIANCO)	
2	GRIGIO	Cod.18881	TASTIERA
3	BIANCO/BLU	Cod.18881	TASTIERA
4	MARRONE/ROSSO	Cod.18881	TASTIERA
5			
6			

JP5			
1			
2			
3			
4			
5			
6			

JP6			
1	Rit.6A,6B,7,8A		
2	6A	EV.Blocco bracci02;03	
3	7	EV.Blocco stelo V1	
4	(GRIGIO)	Abil.scheda interf.Inverter	
5	6B	EV.Blocco bracci 01;04	
6			

CONNECTORS ASSIGNMENT

JP8	Encoder V1 (with harness 18338r01) (*)
JP9	Encoder V2 (with harness 18338r01)
JP10	Encoder V3 (with harness 18338r01)
JP11	Encoder V4 (with harness 18338r01)
JP14	Empty
JP16	Input of potentiometer cod. 18882 (side with 3 wires for JP15)
JP17	01 Motore+Encoder (with r01 18345 connection)
JP18	02 Motore+Encoder (with r01 18345 connection)
JP19	03 Motore+Encoder (with r01 18345 connection)
JP20	04 Motore+Encoder (with r01 18345 connection)
P1	Empty
P2	PC serial cod. 18893
	(*) if the encoder is assembled in reverse direction compared to the axis progress, the green and yellow wires must be exchanged

INPUT

JP1			
1		GND	
2			
3		+24V 20A	

OUTPUTS

JP2			
1	Rit.3B,1B,2B,8B		
2	3B	SV. down V1	
3	1B	SV. down V2	
4	2B	SV. down V3	
5	8B	SV. down V4	
6			

OUTPUTS

JP3			
1	Rit.3A,1A,2A,8A	Connect wire 8A on JP6-1	
2	3A	SV. on V1	
3	1A	SV. on V2	
4	2A	SV. on V3	
5	8A	SV. on V4	
6			

JP4			
1	BLUE+BLUE Proximity	GND (OV), Proxy (WHITE)	
2	GRAY	Cod. 18881	KEYBOARD
3	WHITE/BLUE	Cod. 18881	KEYBOARD
4	BROWN/RED	Cod. 18881	KEYBOARD
5			
6			

JP5			
1			
2			
3			
4			
5			
6			

JP6			
1	Rit.6A,6B,7,8A		
2	6A	SV. for arms lock 02 ; 03	
3	7	SV. for rod lock V1	
4	(GRAY)	Enabling of Inverter interface card	
5	6B	SV. for arms lock 01 ; 04	
6			

USCITE

JP7			
1	Rit.4A,4B,5A,5B		
2	4°	EV.Camma sup.avanti	
3	4B	EV.Camma sup.indietro	
4	5°	EV.Camma inf.avanti	
5	5B	EV.Camma inf.indietro	
6	13n	Comune tasto MAN-AUTO	

SEGNALE POTENZIOMETRO PER INVERTER

JP15			
1	GIALLO	Cod.18882	
2	VERDE	Cod.18882	
4	SCHERMO(NERO)	Cod.18882	

INGRESSI

JP21	MARRONE		
1	+24V	Proximity+Comune Micro (C1-C2)	
2		Ingr.Tastatore 1A	
3		Ingr.Tastatore 1B	
4		Ingr.Tastatore 2	
5			
6			
7			
8			
9			

INGRESSI

JP22			
1	10n	Comune tasti	
2	7n	Tasto su V1	SB7-7
3	1n	Tasto su V2	SB1-1
4	3n	Tasto su V3	SB3-3
5	9n	Tasto su V4	SB10-9
6	8n	Tasto giu V1	SB8-8
7	2n	Tasto giu V2	SB2-2
8	4n	Tasto giu V3	SB4-4
9	11n	Tasto giu V4	SB11-11

JP23			
1			
2	NERO	PROXY SX	
3	NERO	PROXY DX	
4	12n	Tasto MAN-AUTO	
5	NC2	Sensore L	Rit.JP21-1
6	NC1	SENSORE H	Rit.JP21-1
7	VERDE	Cod.18881	TASTIERA
8	GIALLO	Cod.18881	TASTIERA
9	ROSA	Cod.18881	TASTIERA

JP24			
1	BIANCO	+24 PEDALE	
2	15	Selettore:Tutti indietro / Avanti 01;04	
3	14	Tutti Avanti / Avanti 01;04	
4	6n	Camma inferiore -SB6-	
5	5n	Camma superiore -SB5-	
6	MARRONE	Pedale	Rit.JP24-1
7	GIALLO	Tasto indietro 02;03	
8	VERDE	Tasto avanti 02;03	
9			

OUTPUTS

JP7			
1	Rit.4A,4B,5A,5B		
2	4°	SV. Upper cam forward	
3	4B	SV. Upper cam back	
4	5°	SV. Lower cam forward	
5	5B	SV. Lower cam back	
6	13n	Common to MAN-AUTO key	

POTENTIOMETER SIGNAL FOR INVERTER

JP15			
1	YELLOW	Cod.18882	
2	GREEN	Cod.18882	
4	DISPLAY (BLACK)	Cod.18882	

INPUTS

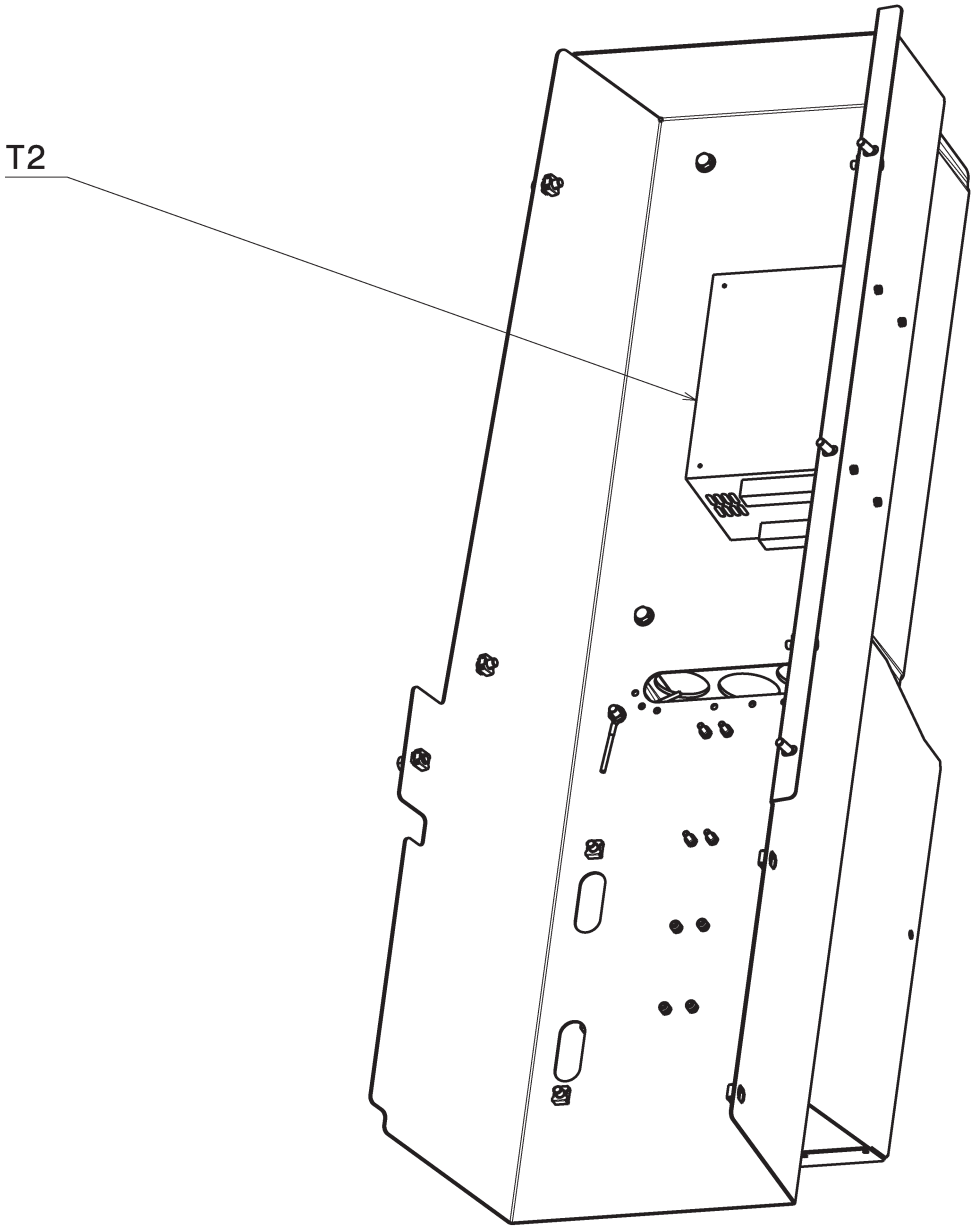
JP21	BROWN		
1	+24V	Proximity+Common to Micro (C1 - C2)	
2		Feeler 1A input	
3		Feeler 1B input	
4		Feeler 2 input	
5			
6			
7			
8			
9			

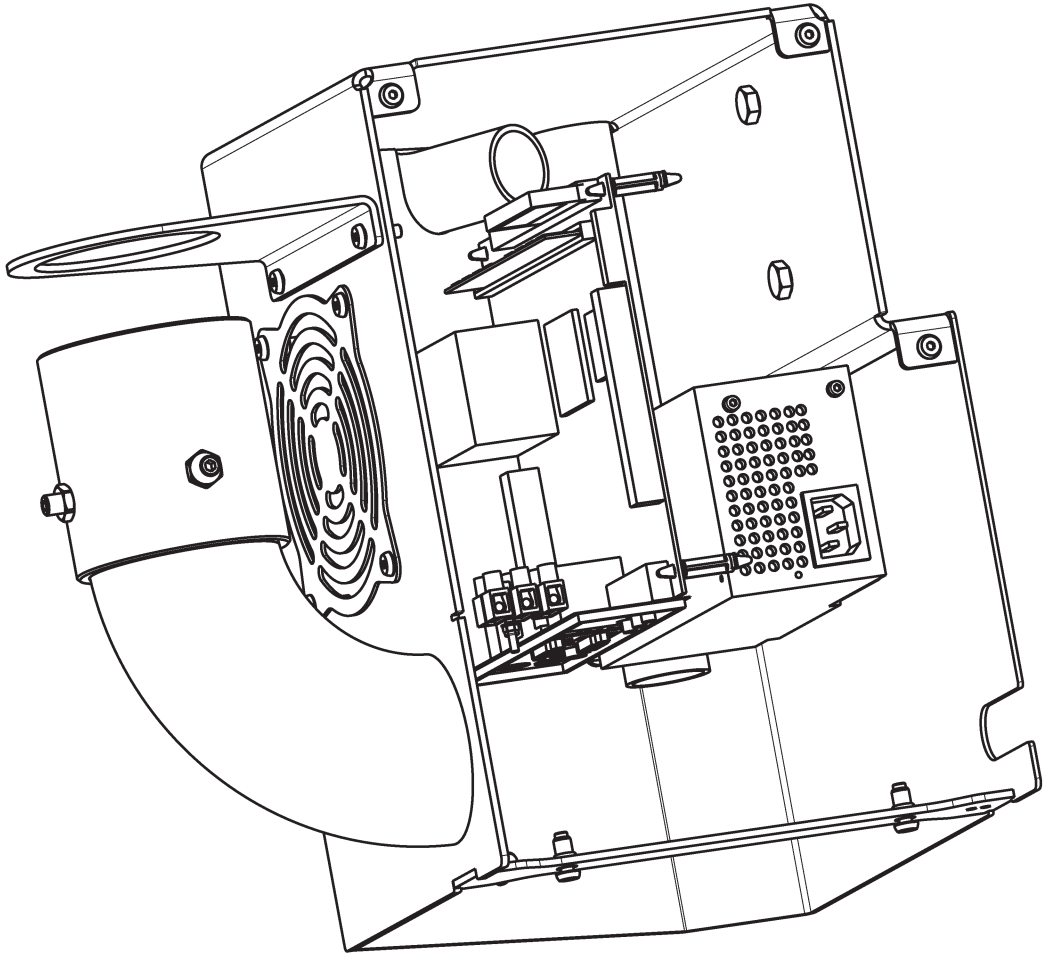
INPUTS

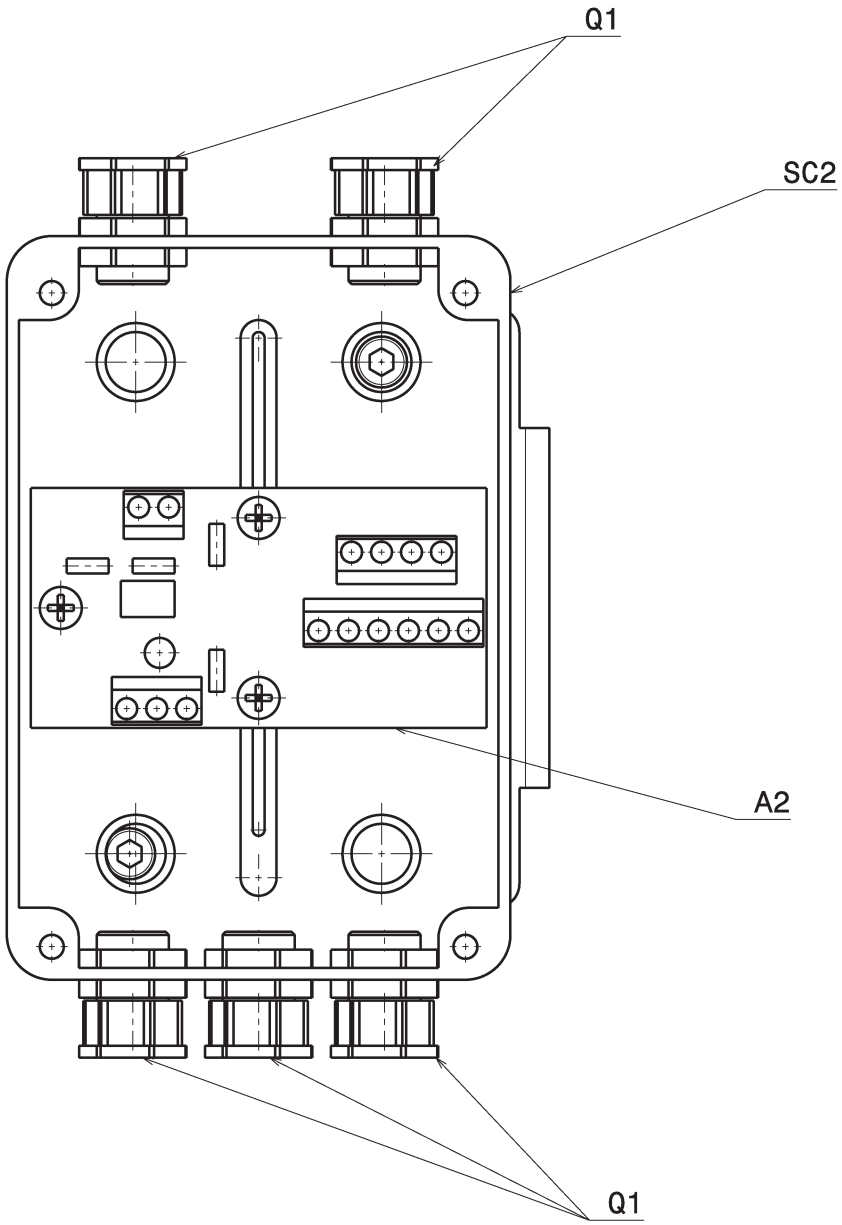
JP22			
1	10n	Common to buttons	
2	7n	Button on V1	SB7-7
3	1n	Button on V2	SB1-1
4	3n	Button on V3	SB3-3
5	9n	Button on V4	SB10-9
6	8n	Button down V1	SB8-8
7	2n	Button down V2	SB2-2
8	4n	Button down V3	SB4-4
9	11n	Button down V4	SB11-11

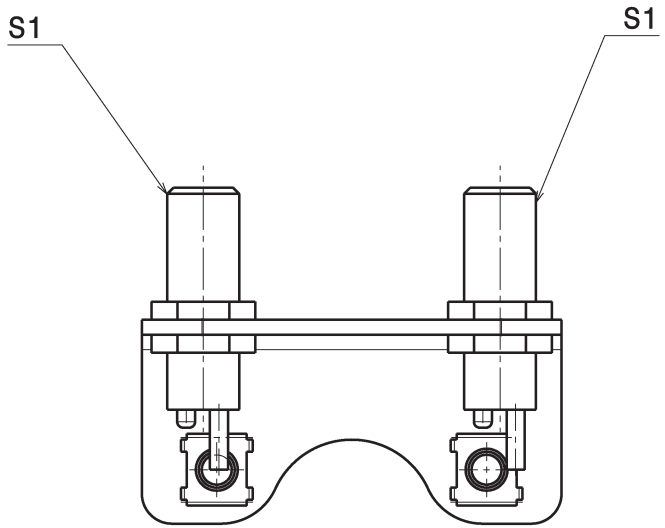
JP23			
1			
2	BLACK	PROXY LH	
3	BLACK	PROXY RH	
4	12n	MAN-AUTO Button	
5	NC2	L Sensor	Rit.JP21-1
6	NC1	H Sensor	Rit.JP21-1
7	GREEN	Cod.18881	KEYBOARD
8	YELLOW	Cod.18881	KEYBOARD
9	PINK	Cod.18881	KEYBOARD

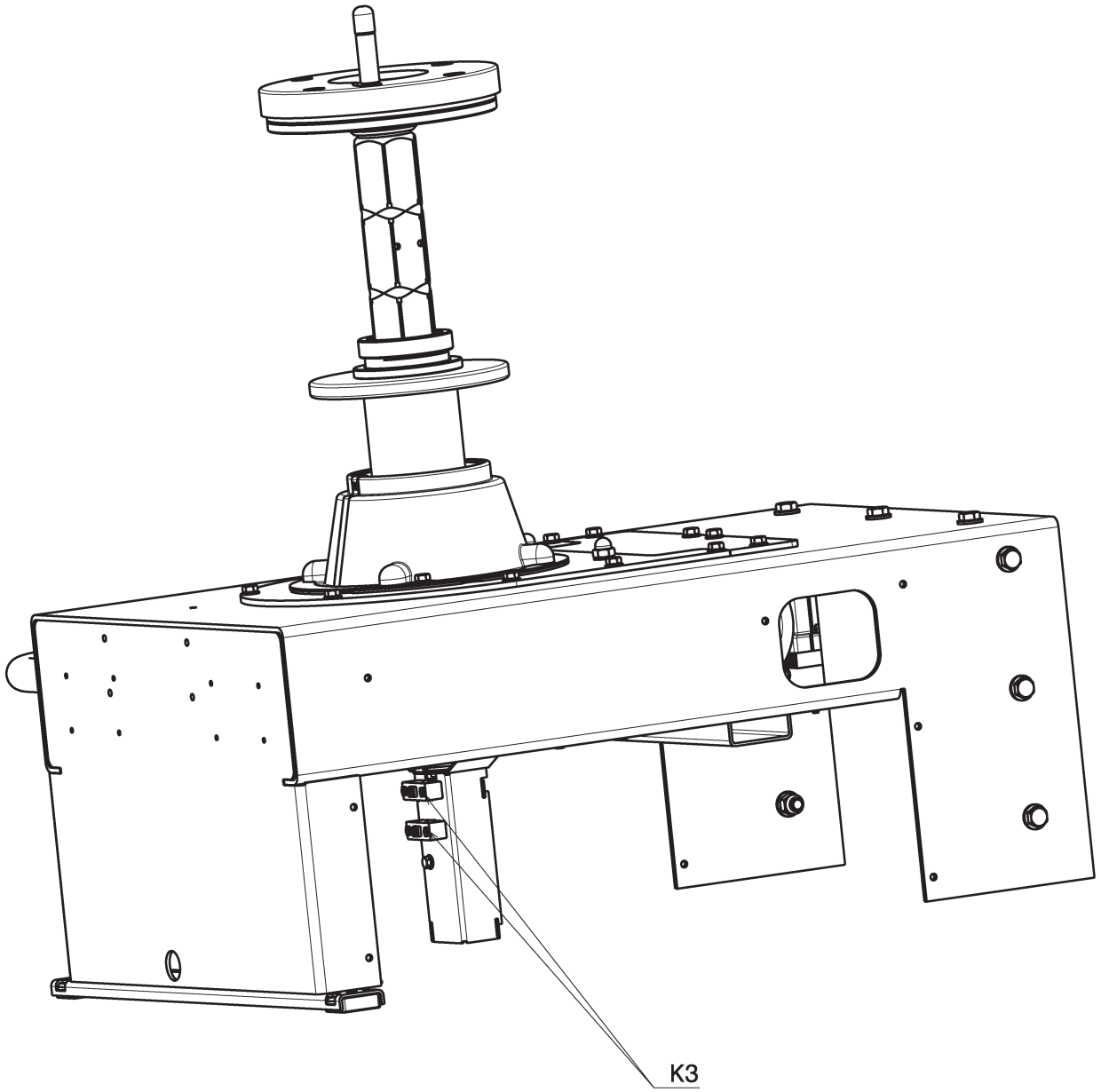
JP24			
1	WHITE	+24 PEDAL	
2	15	Selector: all back/forward 01;04	
3	14	All forward/forward 01;04	
4	6n	Lower cam -SB6-	
5	5n	Upper cam -SB5-	
6	BROWN	Pedal	Rit.JP24-1
7	YELLOW	Back button 02;03	
8	GREEN	Forward button 02;03	
9			


T2




Q1
SC2
A2
Q1


S1
S1

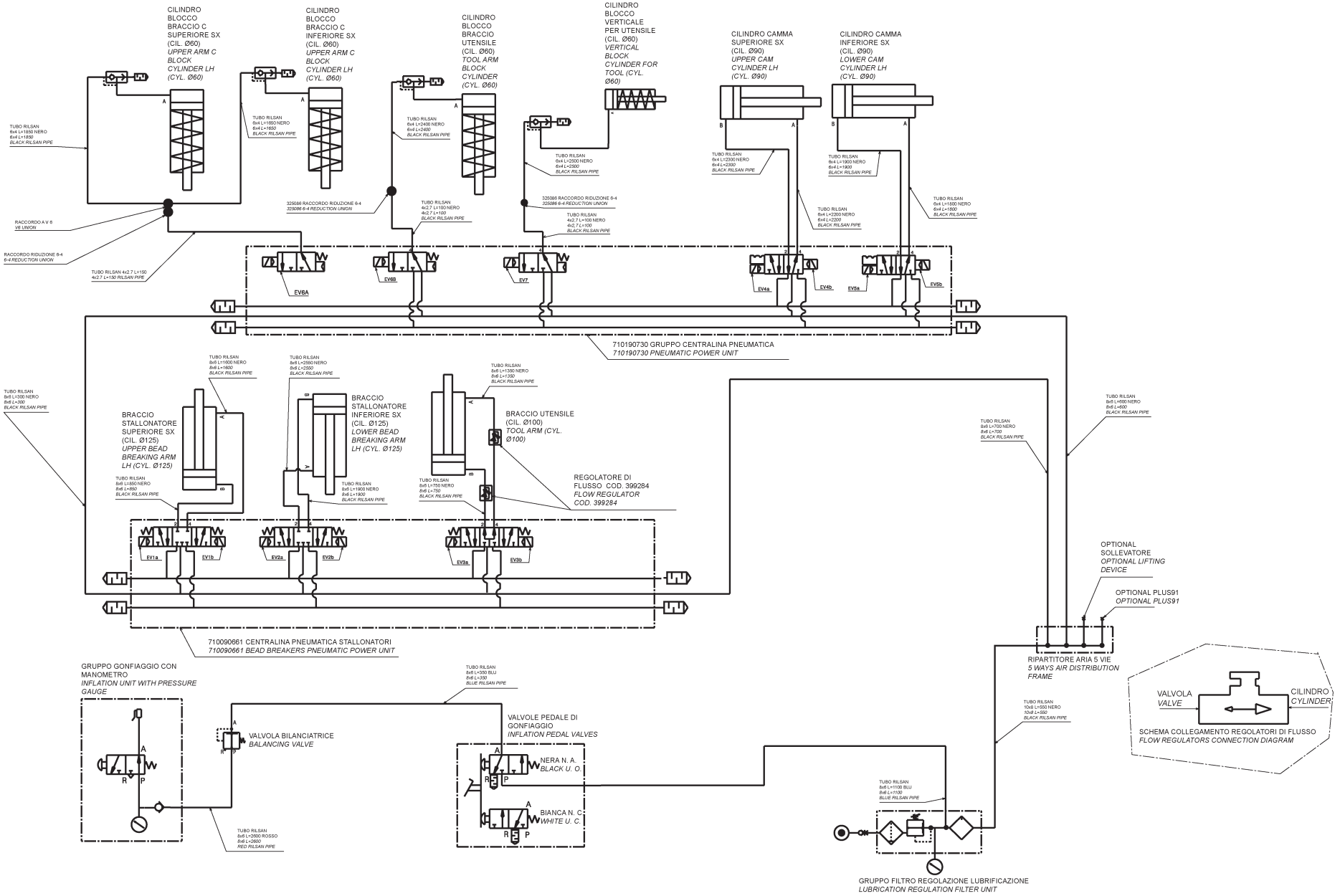

K3

LISTA COMPONENTI

RIFERIMENTO	DESCRIZIONE	DATI TECNICI	SIGLA CATALOGO	QUANTITA	RIFERIMENTO DOCUMENTO
A1 A2	SCHEDA ELETT. AIKIDO CONCERT SCHEDA ELETT.AGGIUNTIVA AIKIDO CONCERT	-	18295 18886	1 1	
F1	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	515027	1	
	FUSIBILE	10,3x38 25A 500V aM RITARDATO	507048	2	
Q	INTERRUT.A SELETTTORE	2 POLI SE32 40A(GIOVENZANA SE3210F28)	518268	1	
	MANOPOLA GIALLO/ROSSA	BL/PORTA LUCCH.(GIOVENZANA A.012/0001-1)	518226	1	
K1	MORSETTO 2.5 2mmq	MORS.2mmq ART.CBD.2 CABUR CB110	510145	5	
K2	MORSETTO 4mmq	MORS.G/V 4mmq ART.TEO.4 CABUR T0430	510150	2	
R	ELEMENTI FISSAGGIO	ELEMENTI DI FISSAGGIO DLCBS 14-01	N517046700	5	
SC1	SCATOLA QUADRO ELETTR.		710414310	1	
SC2	SCATOLA	SCATOLA GEWISS GW 44 205	18908	1	
CL	CANALINA	CANALINA 26X60 T1-EM			
SP	SUPPORTO COMPONENETI		146565340	1	
SBL	PULSANTE BASCULANTE		517296	4	
SB	PULSANTE	PULSANTE DP820/N(NO)	517282	3	
SR	INTERRUTTORE UNIPOLARE LEVA	INT.UNIPOLARE LEVA S1F-I	518240	1	
E1	PULSANTE A FUNGO ROSSO	FUNGO.EM.ROSSO C/SBLOCC.ROT.(SIEMENS 3SB32-031HA20)	517254	1	
T2	ALIMENTATORE	ALIMENTATORE MEANWELL SP-500	18741	1	
Q1	PRESSACAVO	PRESSACAVO CON DADO PG7 97200018 S3-6	599175	5	
S1	SENSORE	SENSORE NPN NO ALTA SENS.4mm	18554	2	
K3	CONTATTORI NON STAGNI		527066	2	
M2	MOTORE ELETTRICO PIEDINO SMONT.MOT.CASSA 71 INVERTER	MOT.EL.0.75Kw 185V 50Hz GS2546/014 PIEDINO SMONT.MOT.CASSA 71 INVERTER PROGRAMMA VERSIONE FF	900003720 900003730 710590963	1 2 1	

COMPONENTS LIST

REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	ABBREVIATION ON CATALOGUE	QUANTITY	DOCUMENT REFERENCE
A1	ELECTR. CARD OF AIKIDO CONCERT	-	18295	1	
A2	ADDITIONAL ELECTR. CARD OF AIKIDO CONCERT		18886	1	
F1	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	515027	1	
	FUSE	10,3x38 25A 500V aM DELAYED-ACTION	507048	2	
Q	SELECTOR SWITCH	SE32 40A (GIOVENZANA SE3210F28) 2 POLES	518268	1	
	YELLOW/RED HANDLE CONTROL	BL/PADL.HOLDER (GIOVENZANA A.012/0001-1)	518226	1	
K1	TERMINAL 2,5 2 mmq	TERM. 2mmq ART. CBD. 2 CABUR CB110	510145	5	
K2	TERMINAL 4 mmq	TERM. G/V 4mmq ART. TEO. 4 CABUR T0430	510150	2	
R	FIXING ELEMENTS		N517046700	5	
SC1	ELECTR. PANEL BOX		710414310	1	
SC2	BOX	GEWISS BOX GW 44 205	18908	1	
CL	DUCT	DUCT26x60 T1 - EM			
SP	COMPONENTS SUPPORT		146565340	1	
SBL	BALANCING PUSHBUTTON		517296	4	
SB	PUSHBUTTON	DP820/N (NO) PUSHBUTTON	517282	3	
SR	UNIPOLAR LEVER SWITCH	UNIPOLAR LEVER SWITCH S1F - I	518240	1	
E1	RED MUSHROOM HEAD PUSHBUTTON	RED MUSHR.-HEAD EMERG. W. ROTATION UNLOCK (SIEMENS 3SB32 - 031HA20)	517254	1	
T2	FEEDER	SP - 500 MEANWELL FEEDER	18741	1	
Q1	CABLE PRESS	CABLE PRESS WITH NUT PG7 97200018 S3-6	599175	5	
S1	SENSOR	NPN SENSOR NO HIGH SENS. 4mm	18554	2	
K3	NOT WATERPROOF CONTACTORS		527066	2	
M2	ELECTRIC MOTOR REMOV. PIN CASE MOT. 71 INVERTER	EL.MOT. 0,75 kW 185V 50Hz GS2546/014 REMOV. PIN CASE MOT. 71 FF VERSION INVERTER PROGRAM	900003720 900003730 710590963	1 2 1	

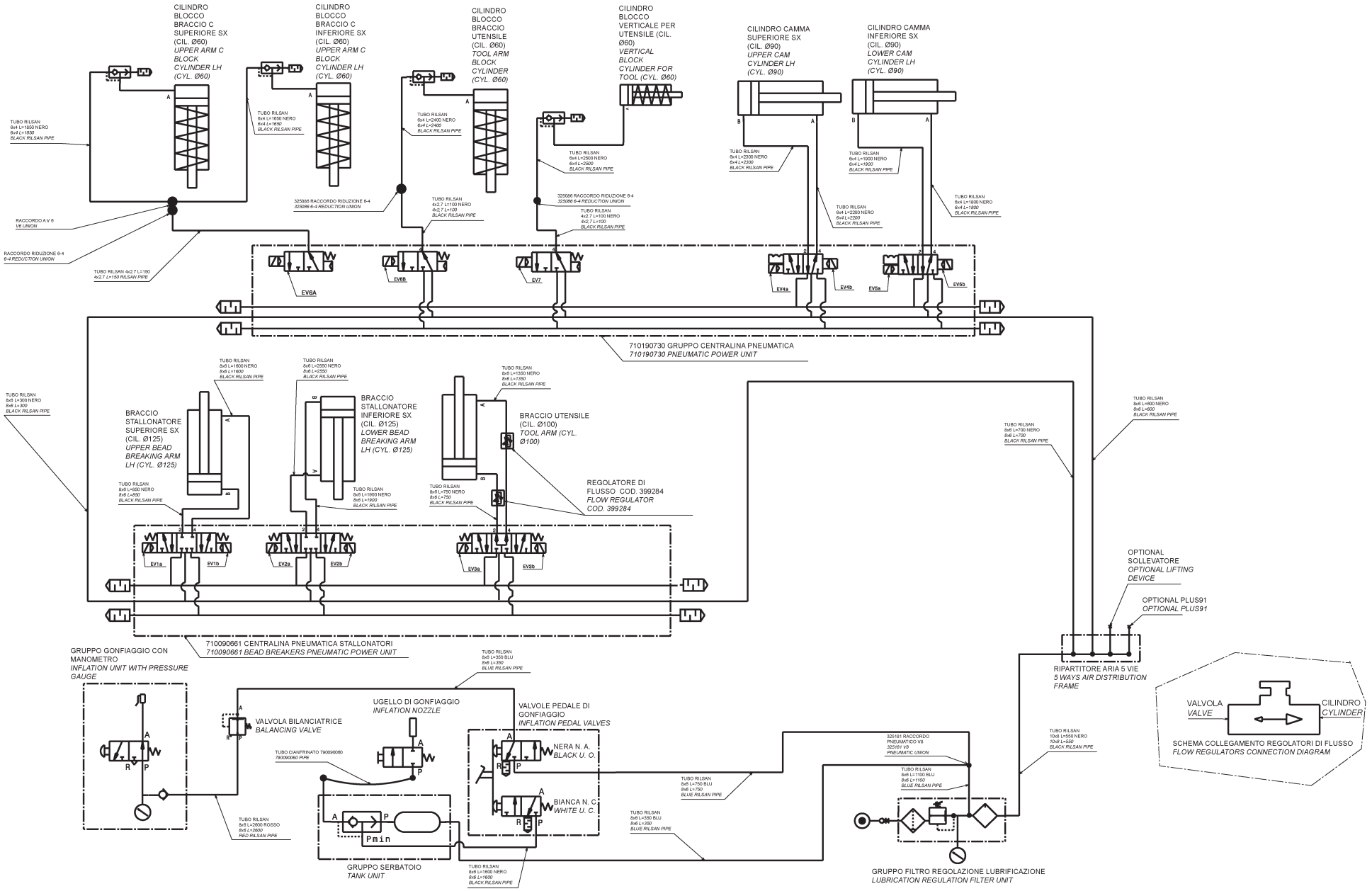


RAVAGLIOLI S.p.A.

LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE
LISTE DES PIECES DETACHEES - LISTA DE PIEZAS

Tavola N°B - Rev. 0 | **710105050**

SCHEMA PNEUMATICO
PNEUMATIC DIAGRAM
PNEUMATISCHER SCHEMA
SCHEMA PNEUMATIQUE
ESQUEMA NEUMÁTICO



RAVAGLIOLI S.p.A.

LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE
LISTE DES PIECES DETACHEES - LISTA DE PIEZAS

Tavola N°C - Rev. 0 | **710105060**

SCHEMA PNEUMATICO IT
IT PNEUMATIC DIAGRAM
PNEUMATISCHER SCHEMA IT
SCHEMA PNEUMATIQUE IT
ESQUEMA NEUMÁTICO IT

7104-R005-0_R

G1500.3
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I	20.0 LISTA DEI COMPONENTI
GB	20.0 LIST OF COMPONENTS
D	20.0 TEILELISTE
F	20.0 LISTE DES PIECES DETACHEES
E	20.0 LISTA DE PIEZAS

GLI ESPLOSI SERVONO SOLO PER L'IDENTIFICAZIONE DELLE PARTI DA SOSTITUIRE. LA SOSTITUZIONE DEVE ESSERE EFFETTUATA DA PERSONALE PROFESSIONALMENTE QUALIFICATO.

THE DIAGRAMS SERVE ONLY FOR THE IDENTIFICATION OF PARTS TO BE REPLACED. THE REPLACEMENT MUST BE CARRIED OUT PROFESSIONALLY QUALIFIED PERSONNEL.

DIE ZEICHNUNGEN DIENEN NUR ZUR IDENTIFIZIERUNG DER ERSATZTEILE. DIE ERSETZUNG MUß DURCH QUALIFIZIERTES PERSONAL ERFOLGEN.

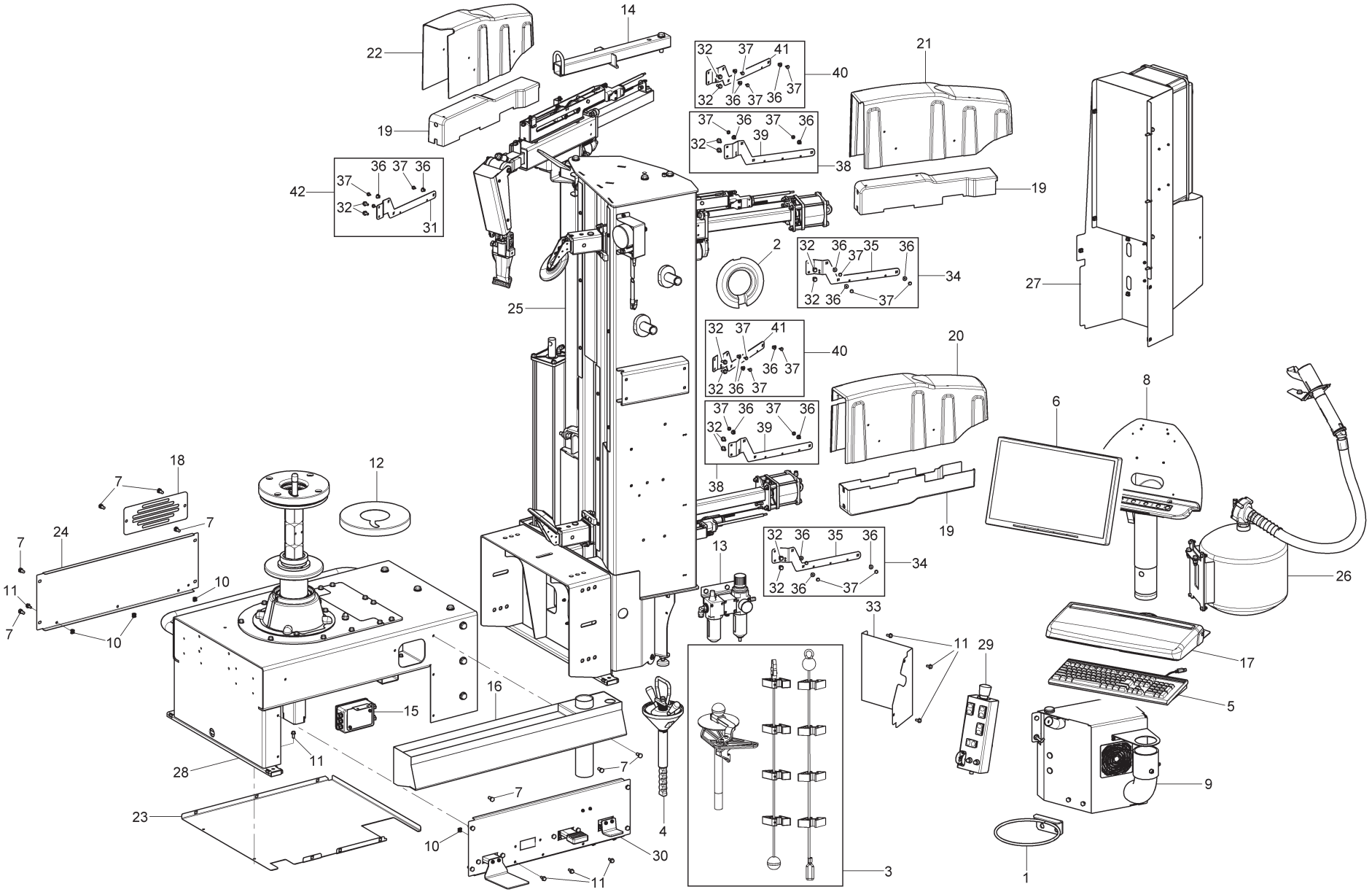
LES DESSINS NE SERVENT QU'À L'IDENTIFICATION DES PIÈCES À REMPLACER. LE REMPLACEMENT DOIT ÊTRE EFFECTUÉ PAR UN PERSONNE PROFESSIONNELLEMENT QUALIFIÉ.

LOS DIBUJOS EN DESPIECE SIRVEN ÚNICAMENTE PARA IDENTIFICAR LAS PIEZAS QUE DEBEN SUSTITUIRSE. LA SUSTITUCIÓN DE PIEZAS DEBE EFECTUARLA EXCLUSIVAMENTE PERSONAL PROFESIONALMENTE CUALIFICADO.

- Per eventuali chiarimenti interpellare il più vicino rivenditore oppure rivolgersi direttamente a:
- For any further information please contact your local dealer or call:
- Im Zweifelsfall ober bei Rückfragen wenden Sie sich bitte an den nächsten Wiederverkäufer oder direkt an:
- Pour tout renseignement complémentaire s'adresser au revendeur le Plus proche ou directement à:
- En caso de dudas, para eventuales aclaraciones, póngase en contacto con el distribudor más próximo ó diríjasie directamente a:

Technical services: **RAVAGLIOLI S.p.A.** - Via 1° Maggio, 3 - 40037 Pontecchio Marconi - Bologna Italy
Phone (+39) 051 6781511 - Telex 510697 RAV I - Fax (+39) 051 846349 - e-mail: aftersales@ravaglioli.com

SOMMARIO - SUMMARY - INHALT
SOMMAIRE - SUMARIO



RAVAGLIOLI S.p.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**	*ASSIEME GENERALE SLIMIT MAIN ASSEMBLY GENERALSATZ ASSEMBLAGE GENERAL JUNTO GENERAL*	***Pag. 4 di 66***
	Tavola N°1 - Rev. 0		**G1500.3 - G1500.3IT**

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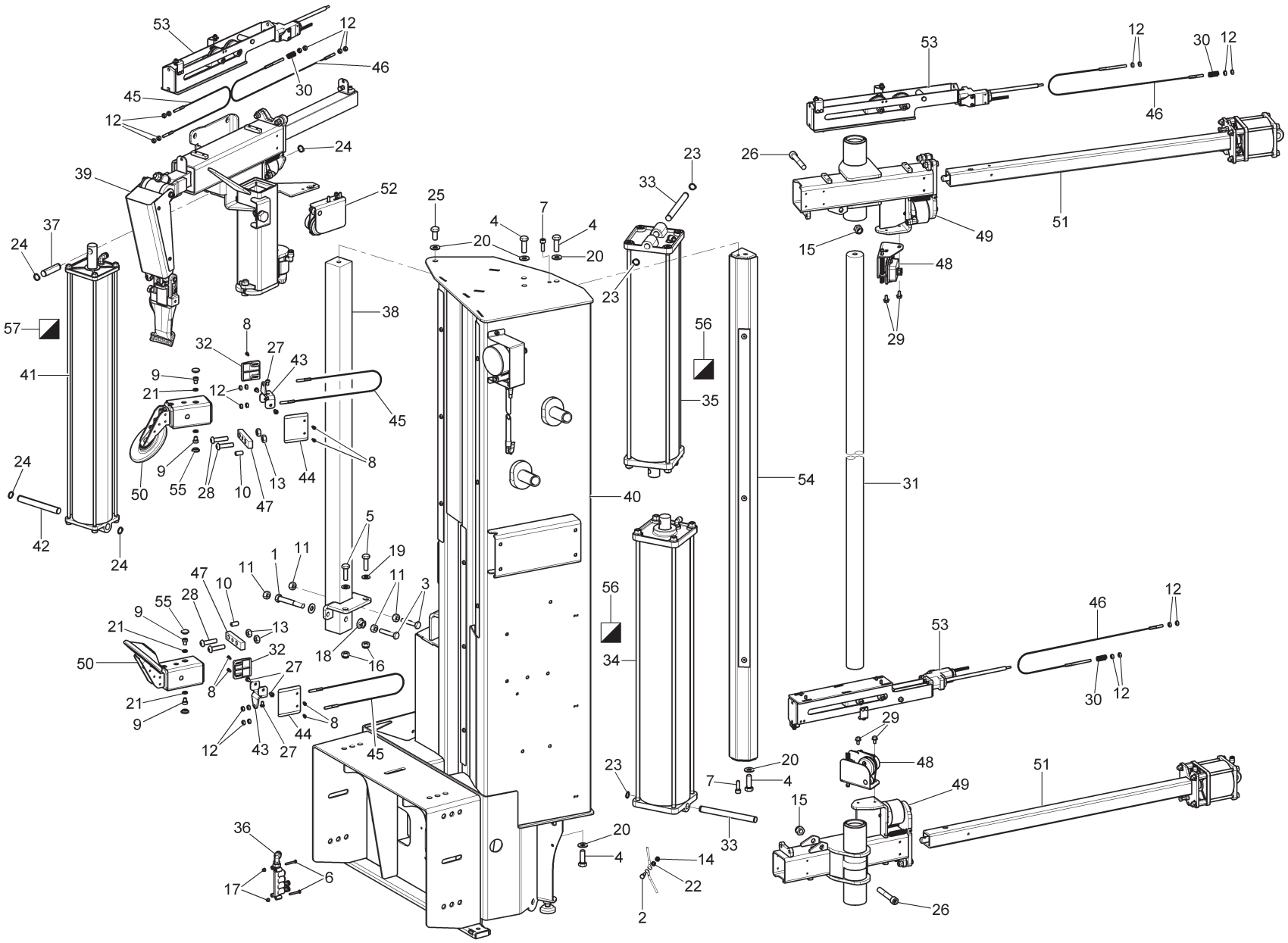
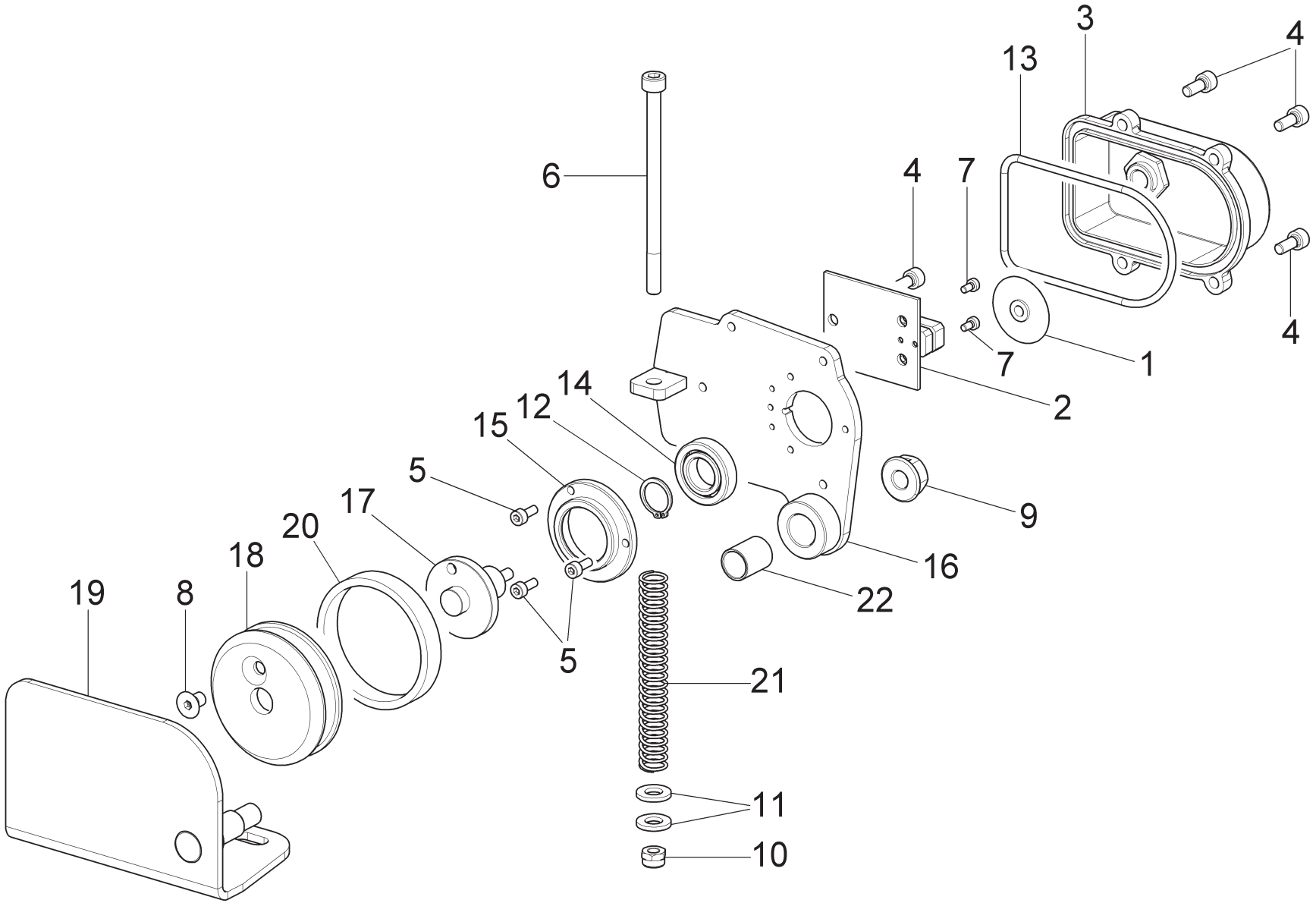


RAVAGLIOLI S.p.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*ASSIEME COLONNA COLUMN ASSEMBLY SÄULENENSEMBLE ASSEMBLAGE COLONNE ENSAMBLADO COLUMNA*	***Pag. 6 di 66***
	Tavola N°2 - Rev. 0	**710190700**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		GRUPPO ENCODER STALLONATORI BEAD BREAKING ENCODER UNIT ABDRÜCKENCODERSATZ GROUPE ENCODER DÉCOLLE-TALONS GRUPO ENCODER DESTALONADORES	Pag. 9 di 66
	Tavola N°3 - Rev. 0	710490450		G1500.3 - G1500.3IT

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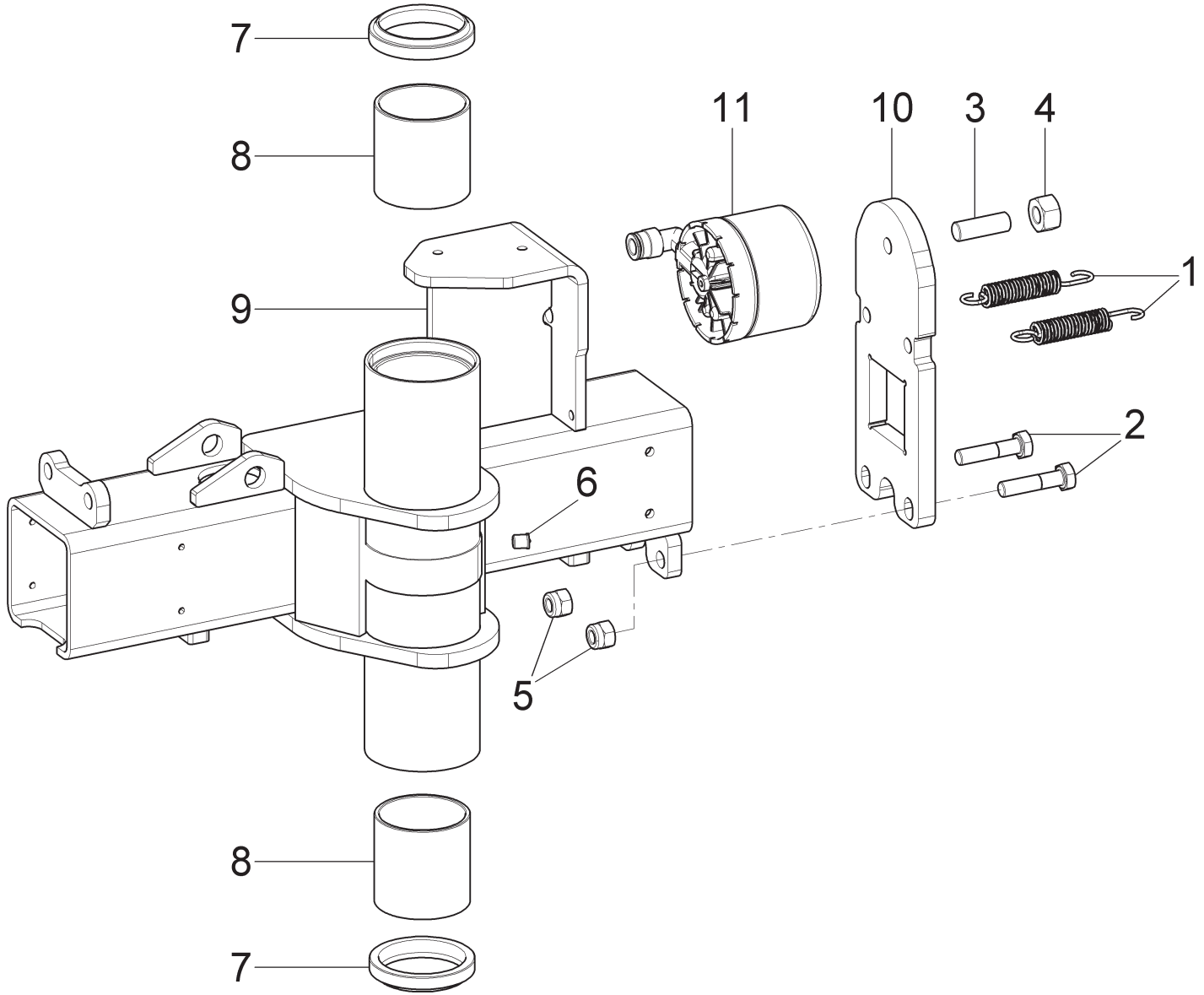
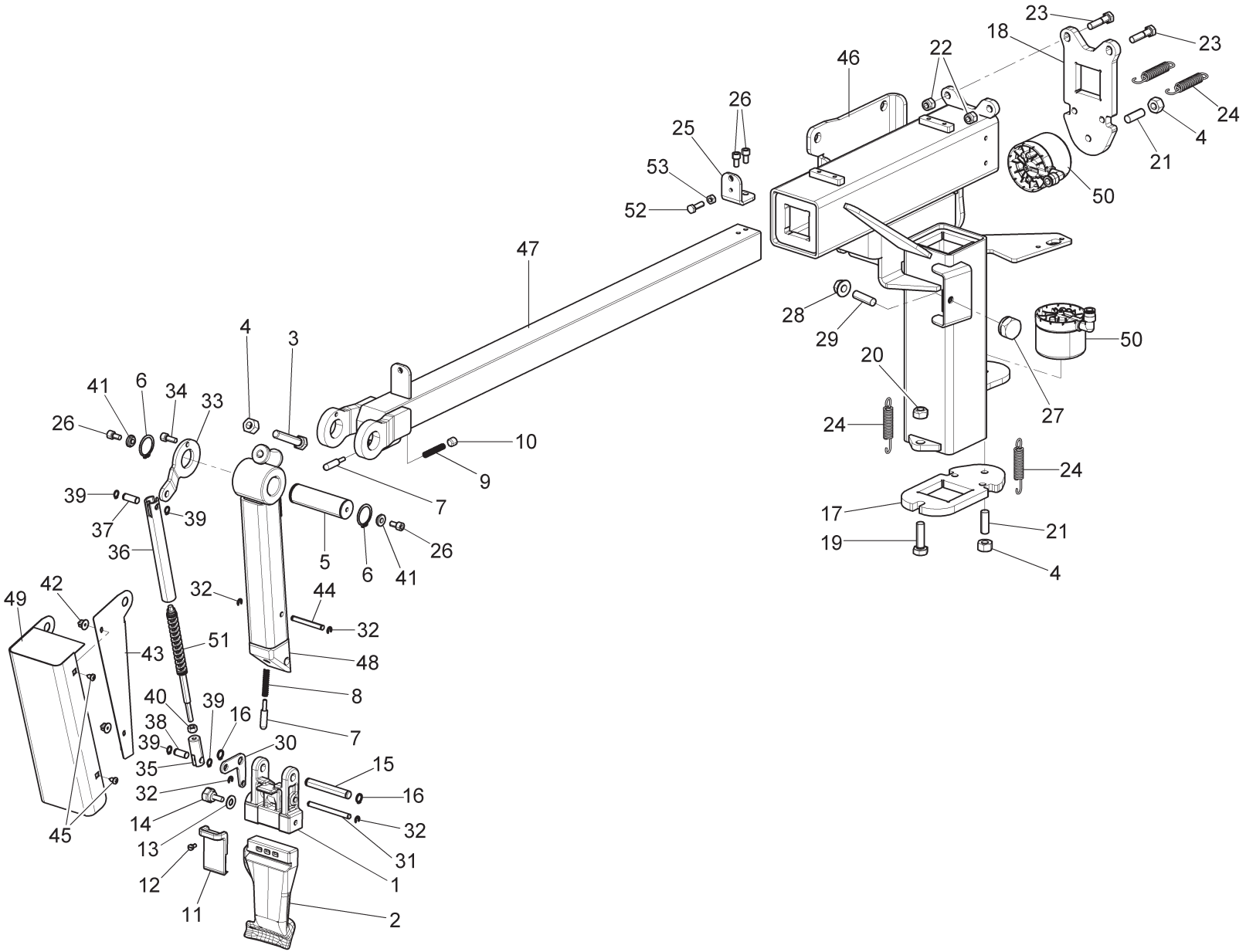
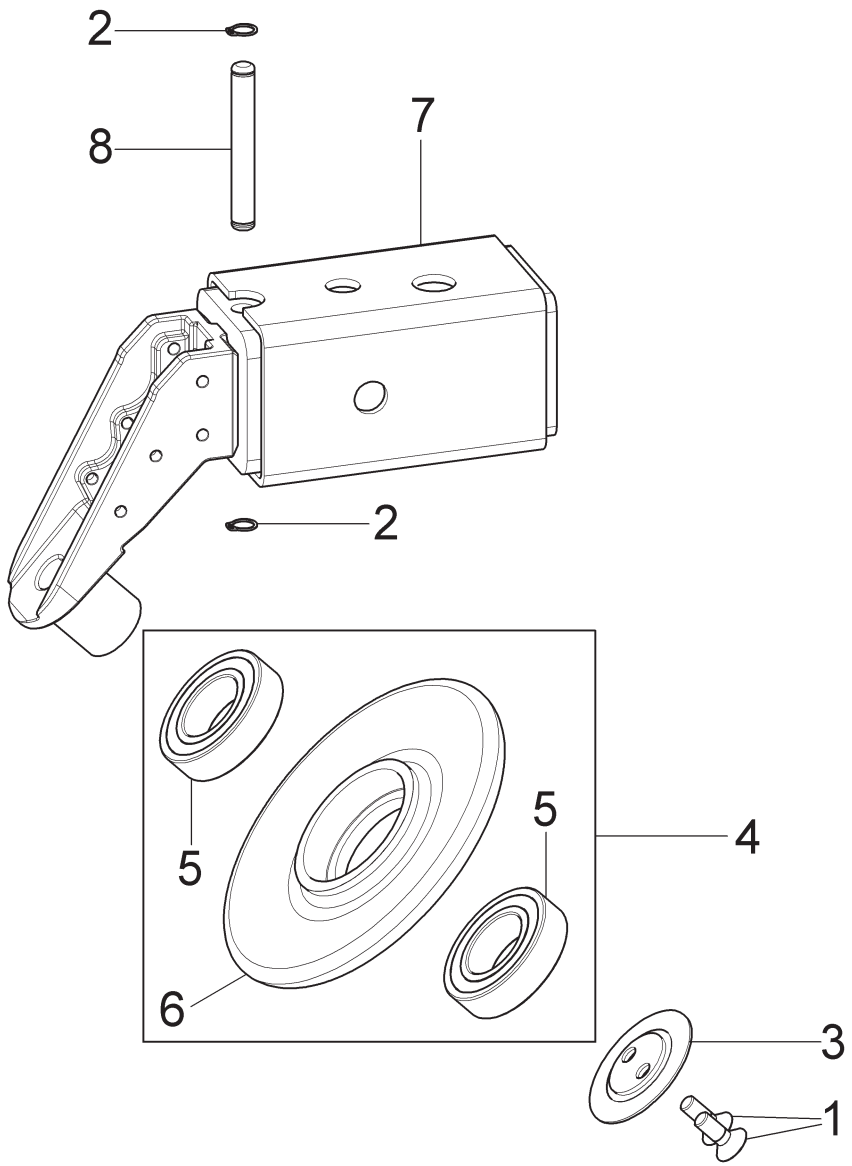


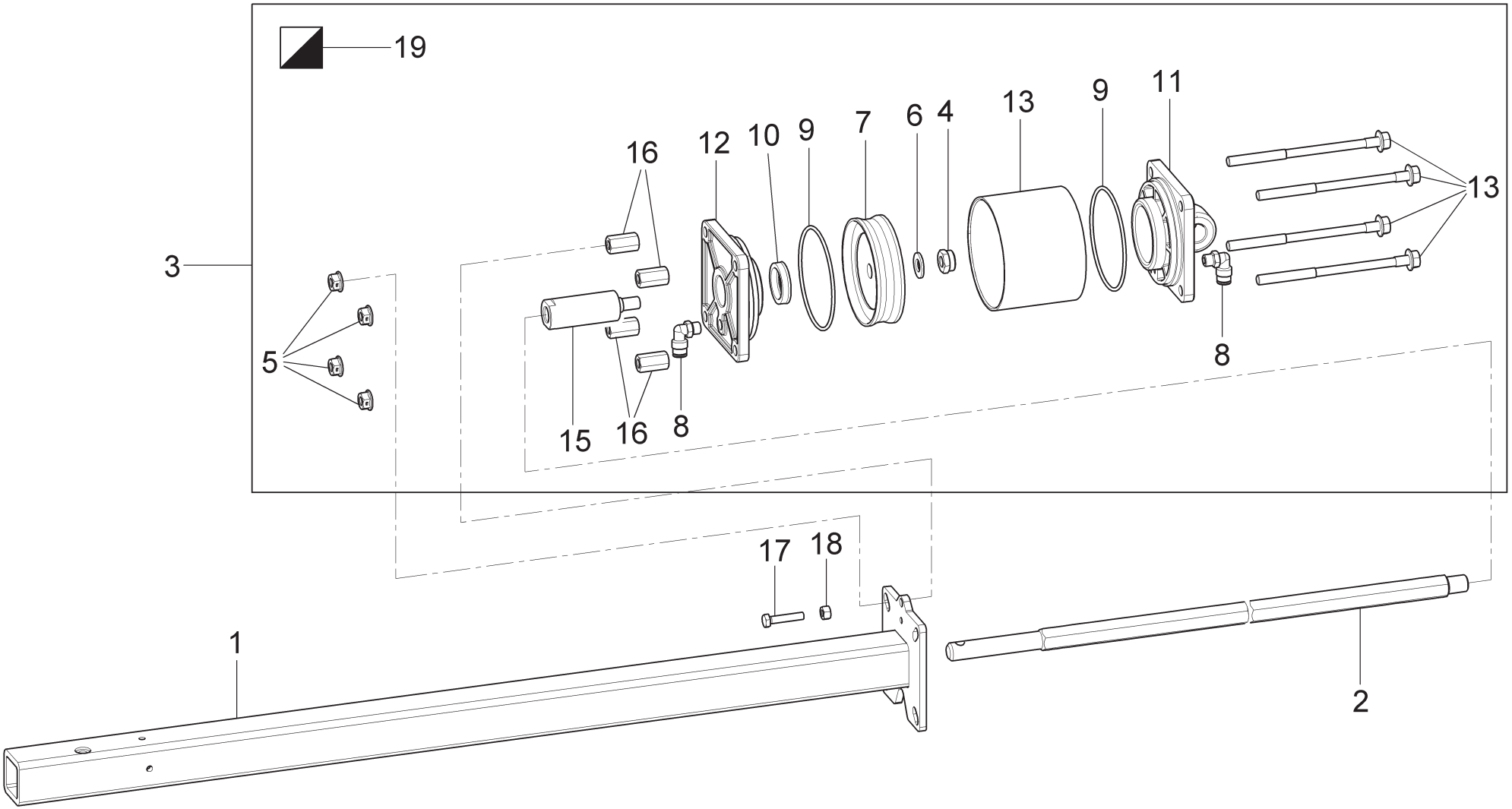
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO SUPPORTO BRACCIO STALLONATORE* *BEAD BREAKER ARM SUPPORT UNIT* *ABDRÜCKARMSTRÄGERSATZ* *GROUPE SUPPORT BRAS DÉCOLLE-TALONS* *GRUPO SOPORTE BRAZO DESTALONADOR*	***Pag. 11 di 66***
	Tavola N°4 - Rev. 0	**710490490**		**G1500.3 - G1500.3IT**



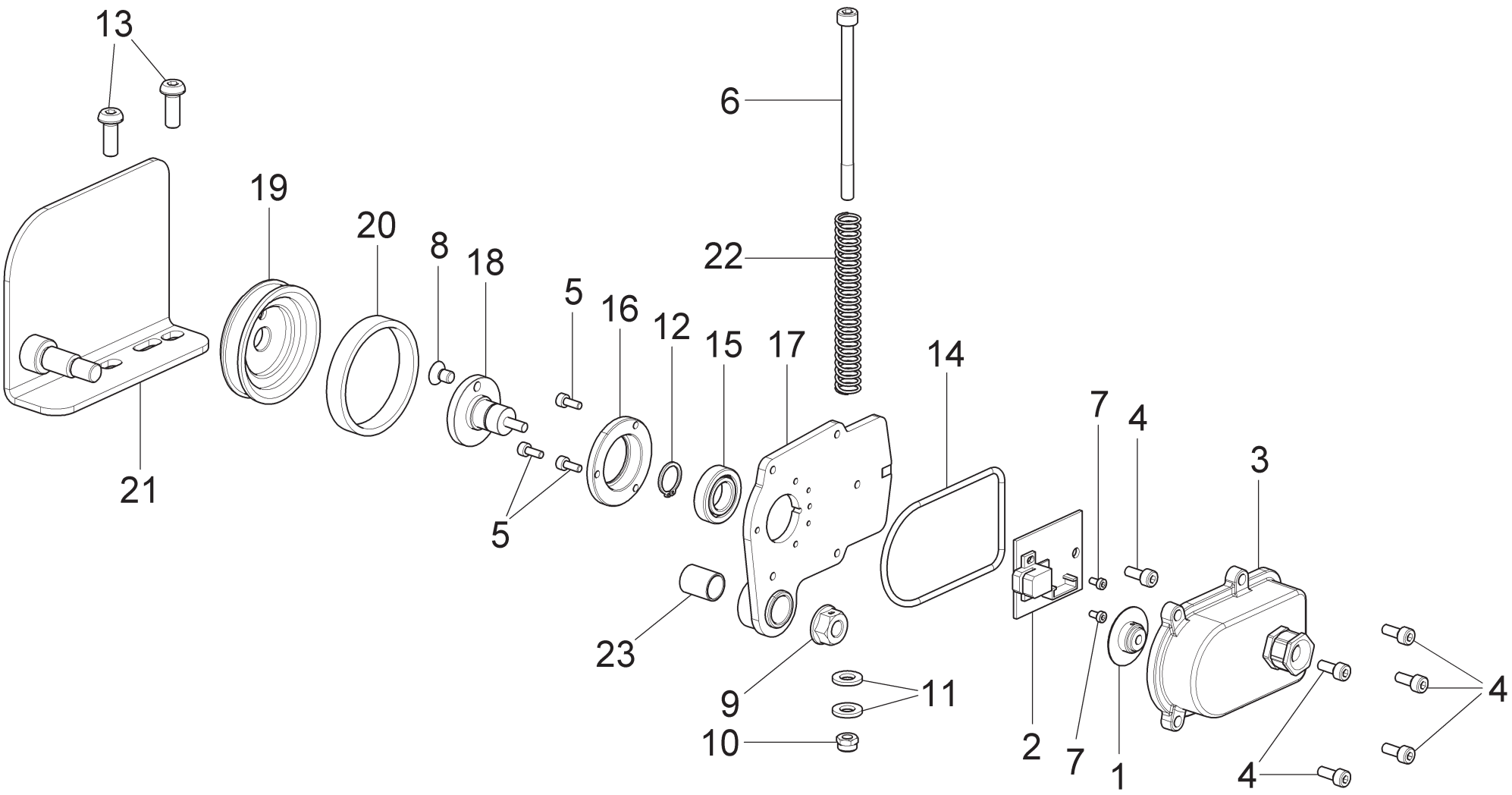
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO SUPPORTO BRACCIO SUPERIORE* *UPPER ARM SUPPORT UNIT* *OBERER ARMTRÄGERSATZ* *GROUPE SUPPORT BRAS SUPÉRIEUR* *GRUPO SOPORTE BRAZO SUPERIOR*	***Pag. 13 di 66***
	Tavola N°5 - Rev. 0	**710190710**		**G1500.3 - G1500.3IT**



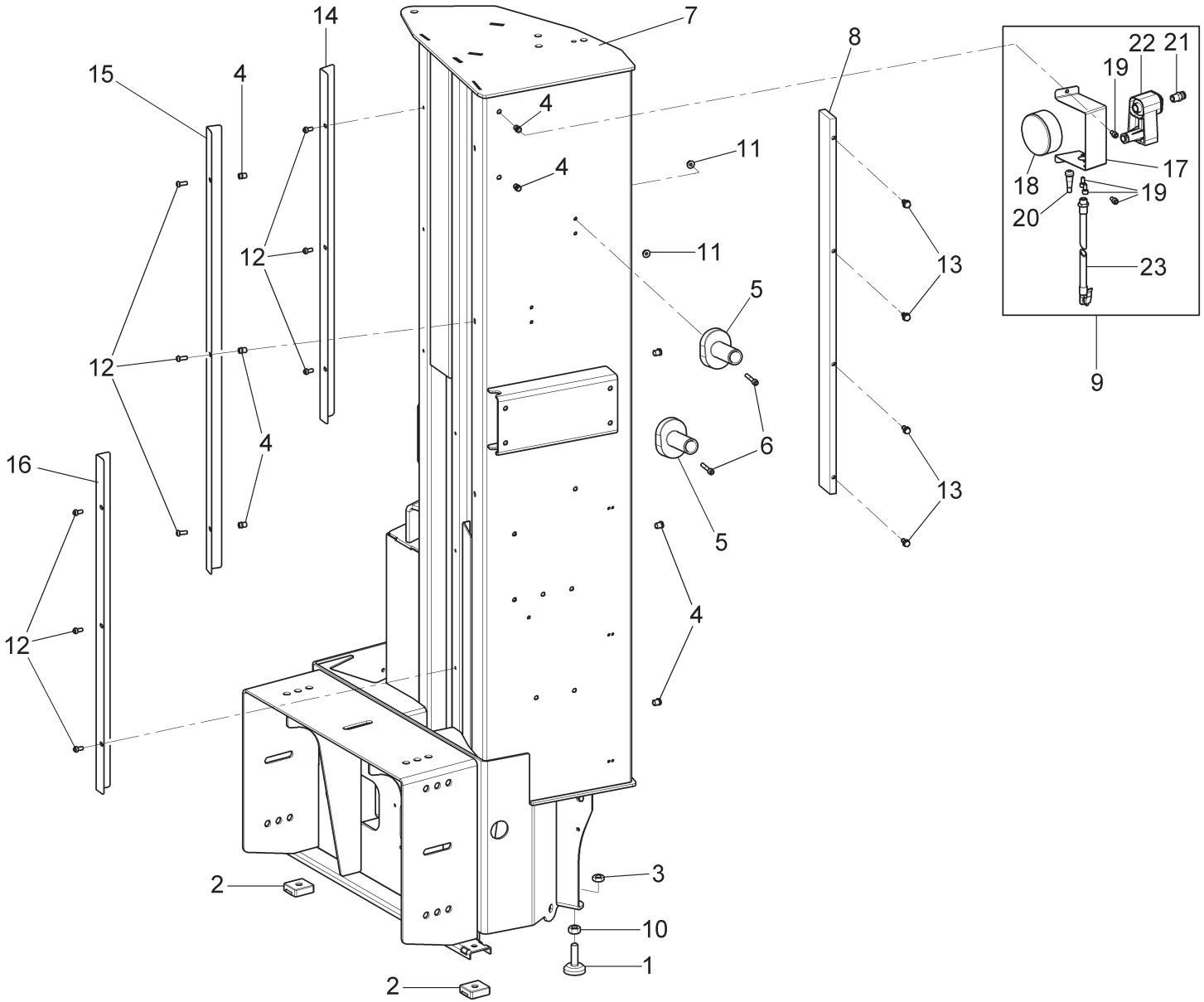
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO GUIDA CON RULLO* *GUIDE UNIT WITH ROLLER* *FÜHRUGSATZ MIT ROLLEN* *GROUPE GUIDE AVEC ROULEAU* *GRUPO GUÍA CON RODILLOS*	***Pag. 16 di 66***
	Tavola N°6 - Rev. 0	**710490560**		**G1500.3 - G1500.3IT**



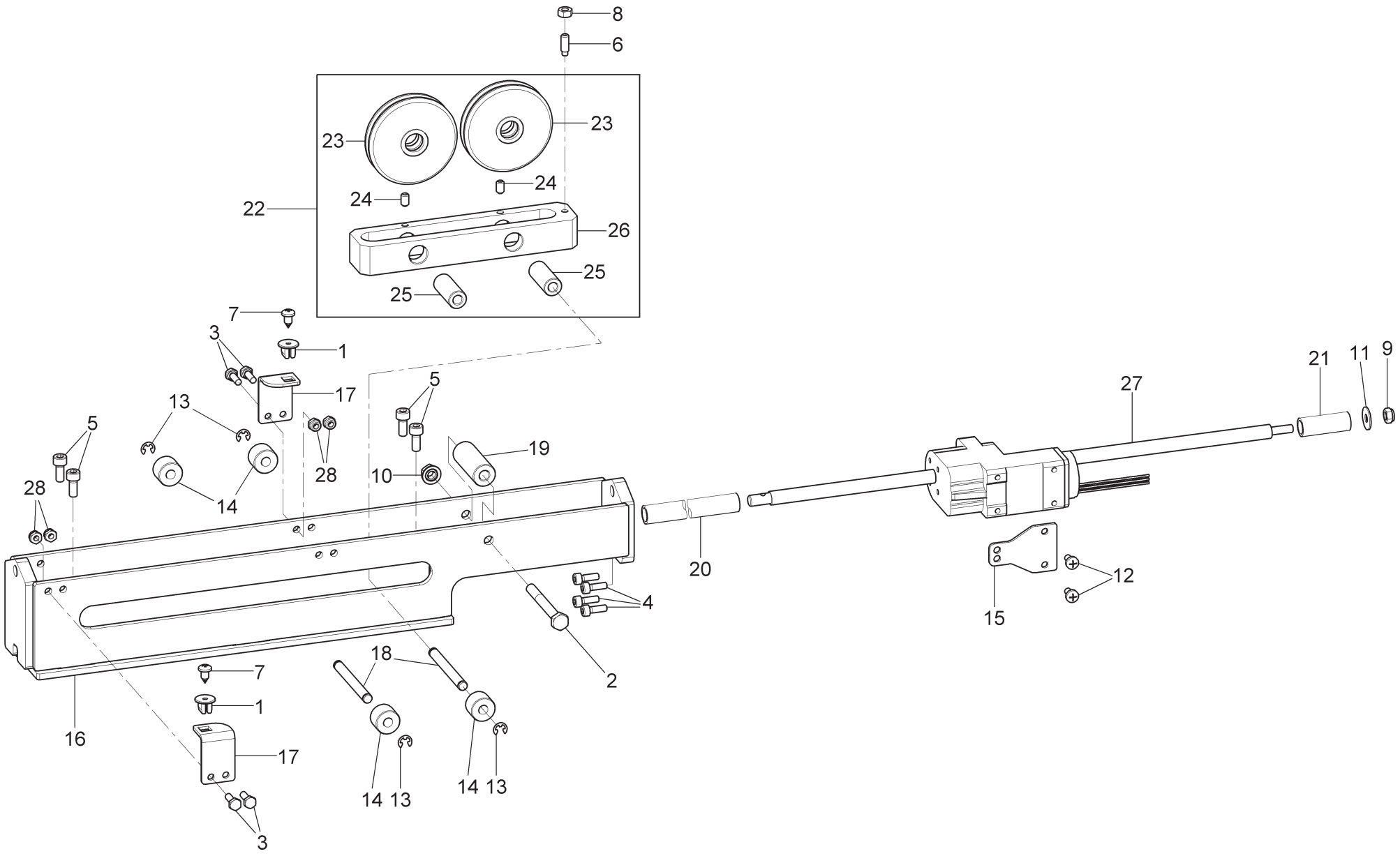
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO BRACCIO CON CILINDRO* *ARM UNIT WITH CYLINDER* *ARMSATZ MIT ZYLINDER* *GROUPE BRAS AVEC CYLINDRE* *GRUPO BRAZO CON CILINDRO*	***Pag. 18 di 66***
	Tavola N°7 - Rev. 0	**710490580**		**G1500.3 - G1500.3IT**



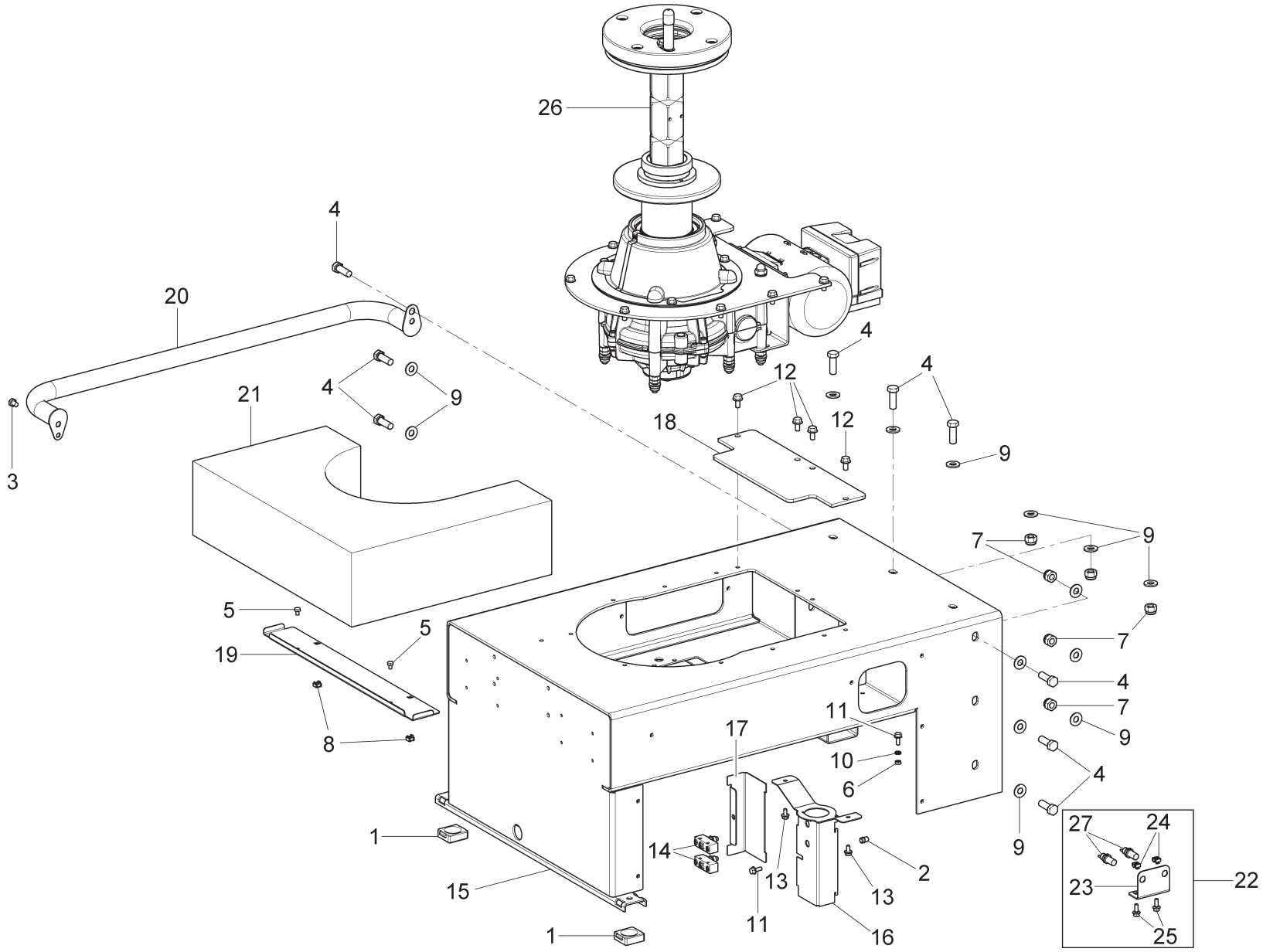
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		GRUPPO ENCODER UTENSILE SUPERIORE UPPER TOOL ENCODER UNIT OBERER WERKZEUGENENCODERSATZ GROUPE ENCODER OUTIL SUPÉRIEUR GRUPO ENCODER UTENSILIO SUPERIOR	Pag. 20 di 66
	Tavola N°8 - Rev. 0	710490670		G1500.3 - G1500.3IT



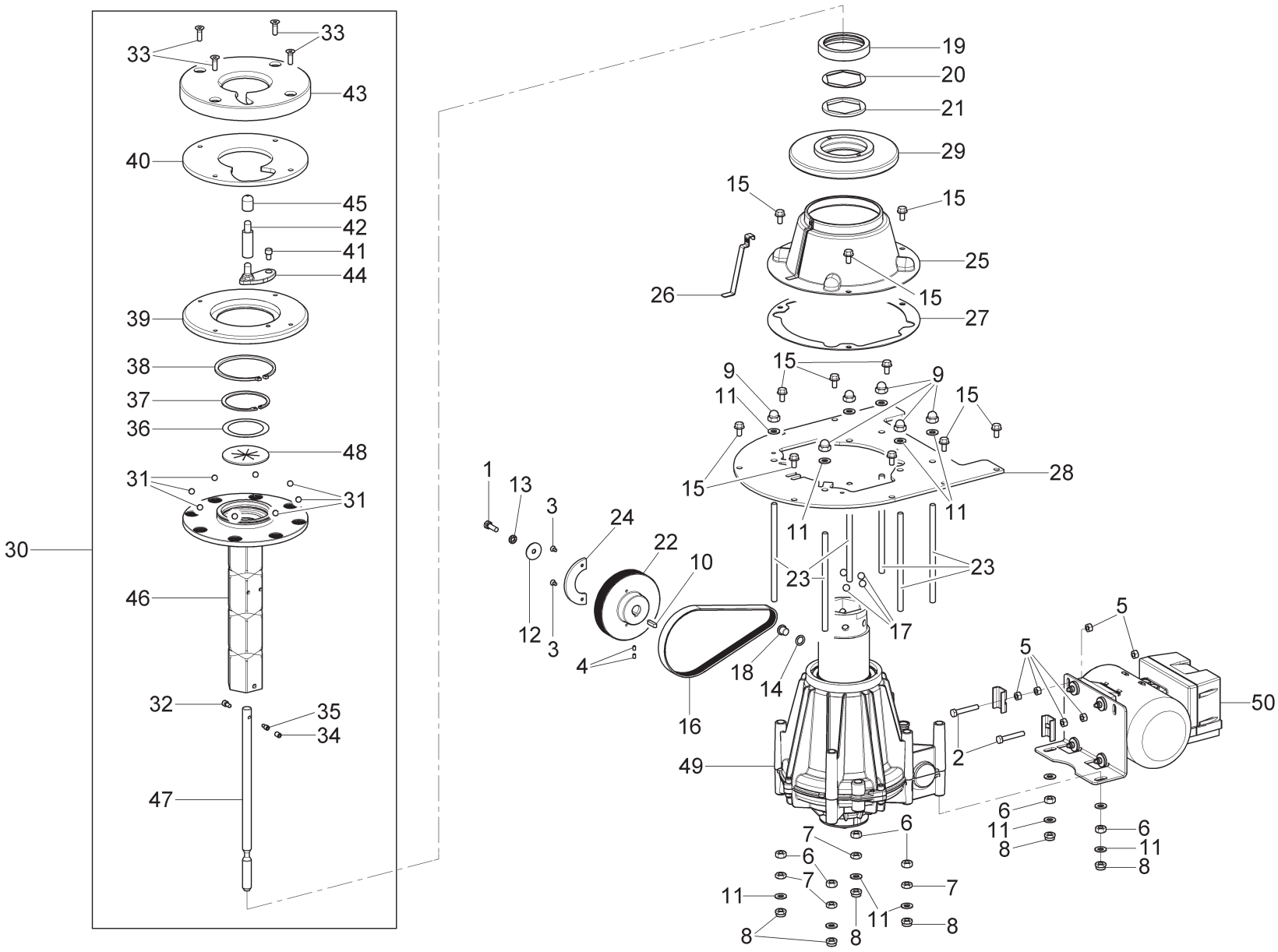
RAVAGLIOLI S.p.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*COLONNA CON INSERTI COLUMN WITH INSERTS SÄULE MIT EINSATZEN COLONNE AVEC RENFORTS COLUMNA CON INSERCIONES*	***Pag. 22 di 66***
	Tavola N°9 - Rev. 0	**710190720**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO SUPPORTO ATTUATORE* *ACTUATOR SUPPORT UNIT* *ANTRIEBTRÄGERSATZ* *GROUPE SUPPORT ACTIONNEUR* *GRUPO SOPORTE SERVOMOTOR*	***Pag. 24 di 66***
	Tavola N°10 - Rev. 0	**710490860**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO BASAMENTO* *DRIVE BASE UNIT* *UNTERGESTELLSATZ* *GROUPE BÂTI* *GRUPO BASE*	***Pag. 26 di 66***
	Tavola N°11 - Rev. 0	**710490590**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO AUTOCENTRANTE* *SELFCENTERING CHUCK UNIT* *AUTOZENTRIERESATZ* *GROUPE AUTOCENTREUR* *GRUPO AUTOCENTRANTE*	***Pag. 28 di 66***
	Tavola N°12 - Rev. 0	**710591260**		**G1500.3 - G1500.3IT**

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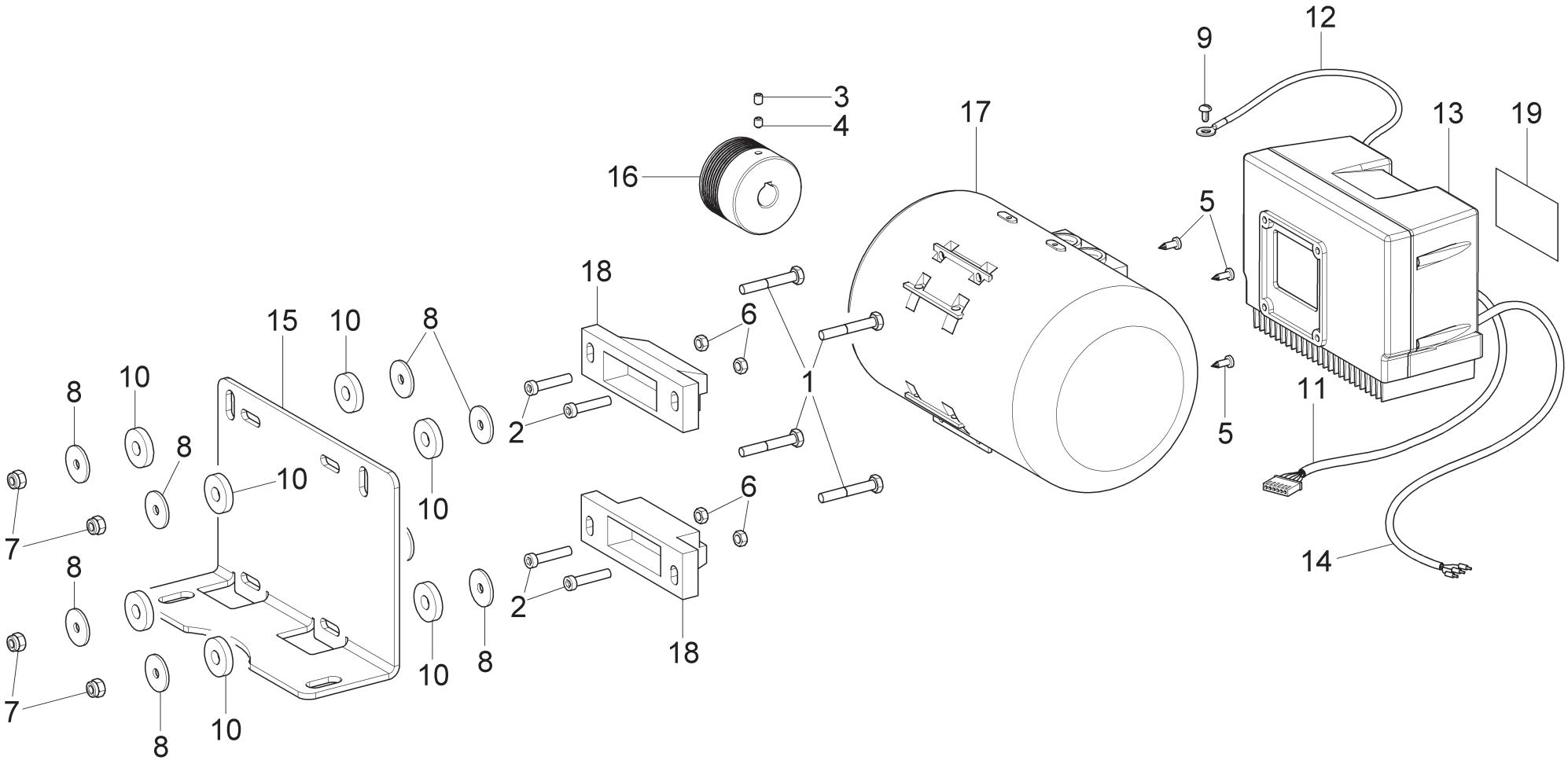
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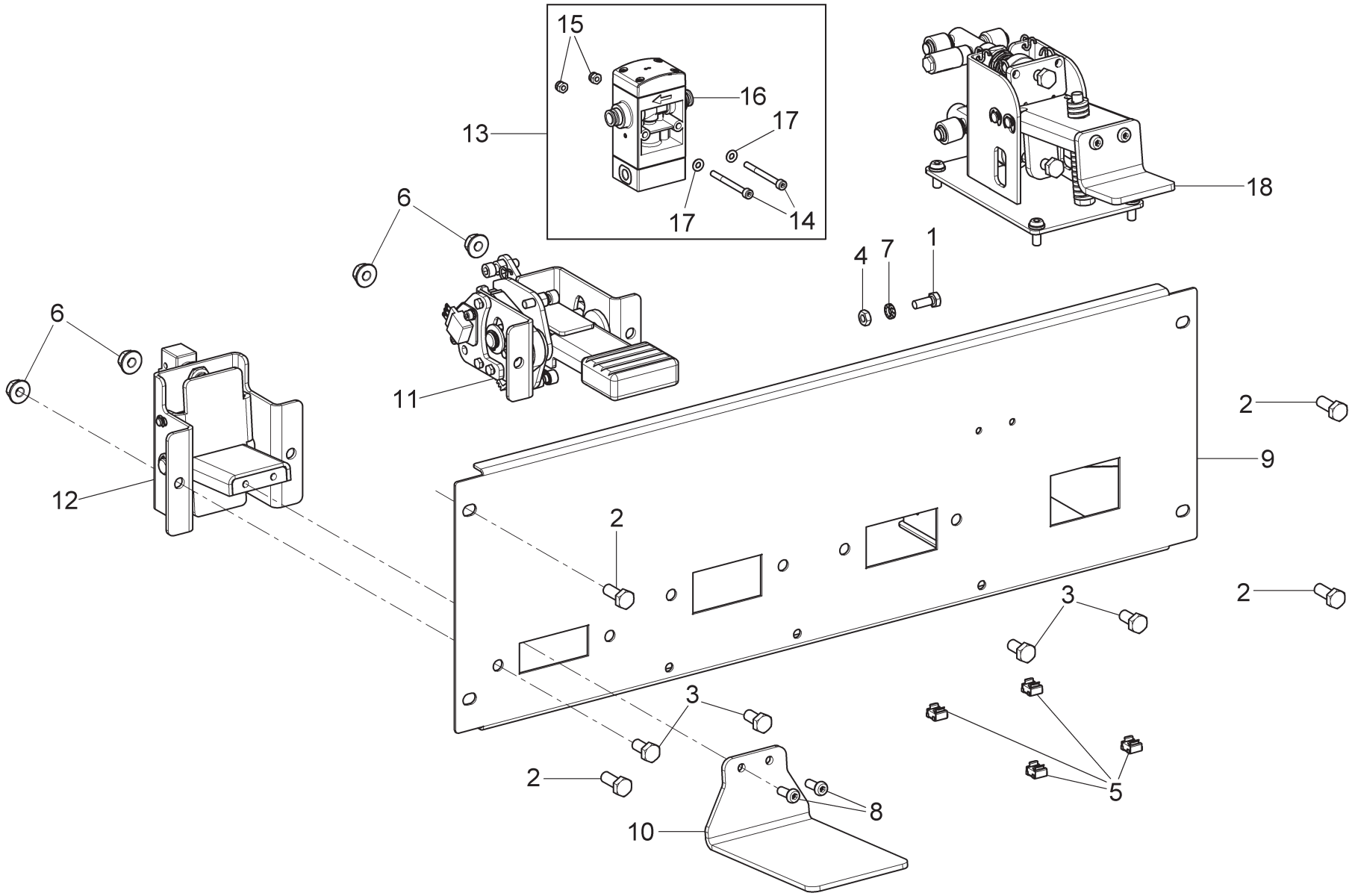
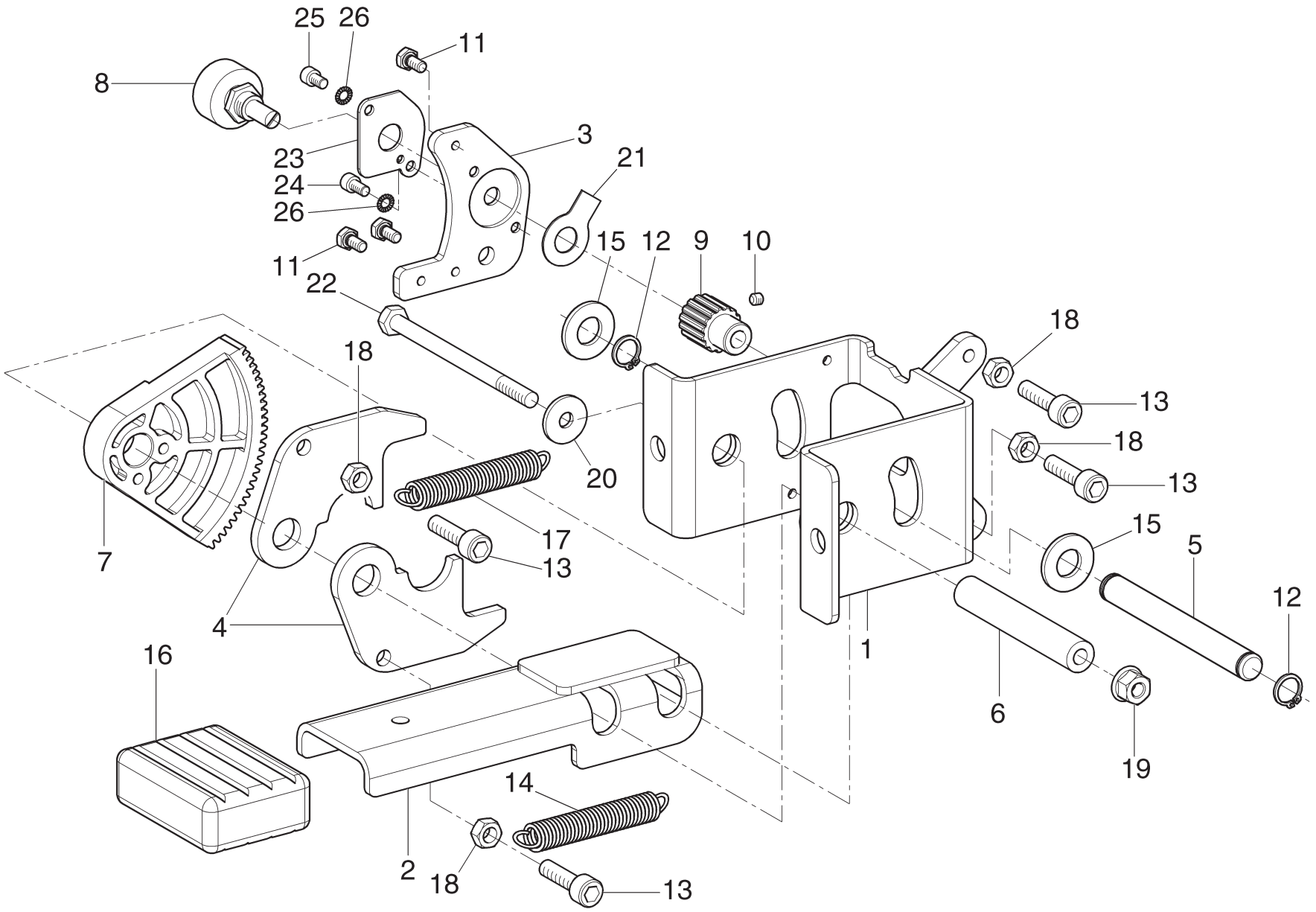
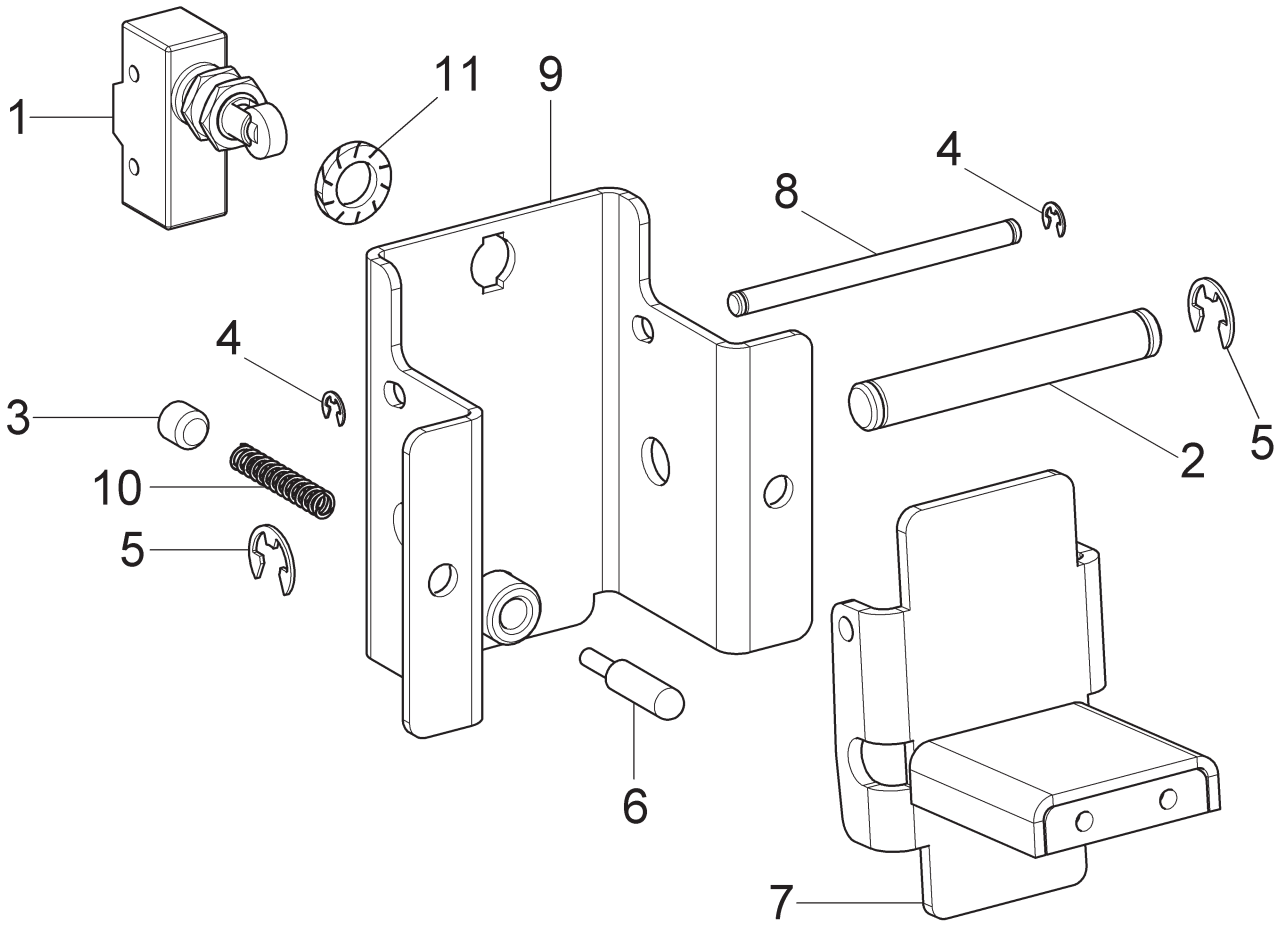


RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO COFANO CON PEDALIERE* *CASING UNIT WITH PEDALBOARDS* *HAUBESATZ MIT PEDALLEISTE* *GROUPE COFFRE AVEC PÉDALES DE DIRECTION* *GRUPO CAPOT CON PEDALERAS*	***Pag. 33 di 66***
	Tavola N°14 - Rev. 0	**710490690**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		PEDALIERA PER INVERTER PEDALBOARD FOR INVERTER PEDALLEISTE FÜR INVERTER PÉDALES DE DIRECTION POUR INVERSEUR PEDALERA PARA INVERTER	*Pag. 35 di 66*
	Tavola N°15 - Rev. 0	**710490401**		**G1500.3 - G1500.3IT**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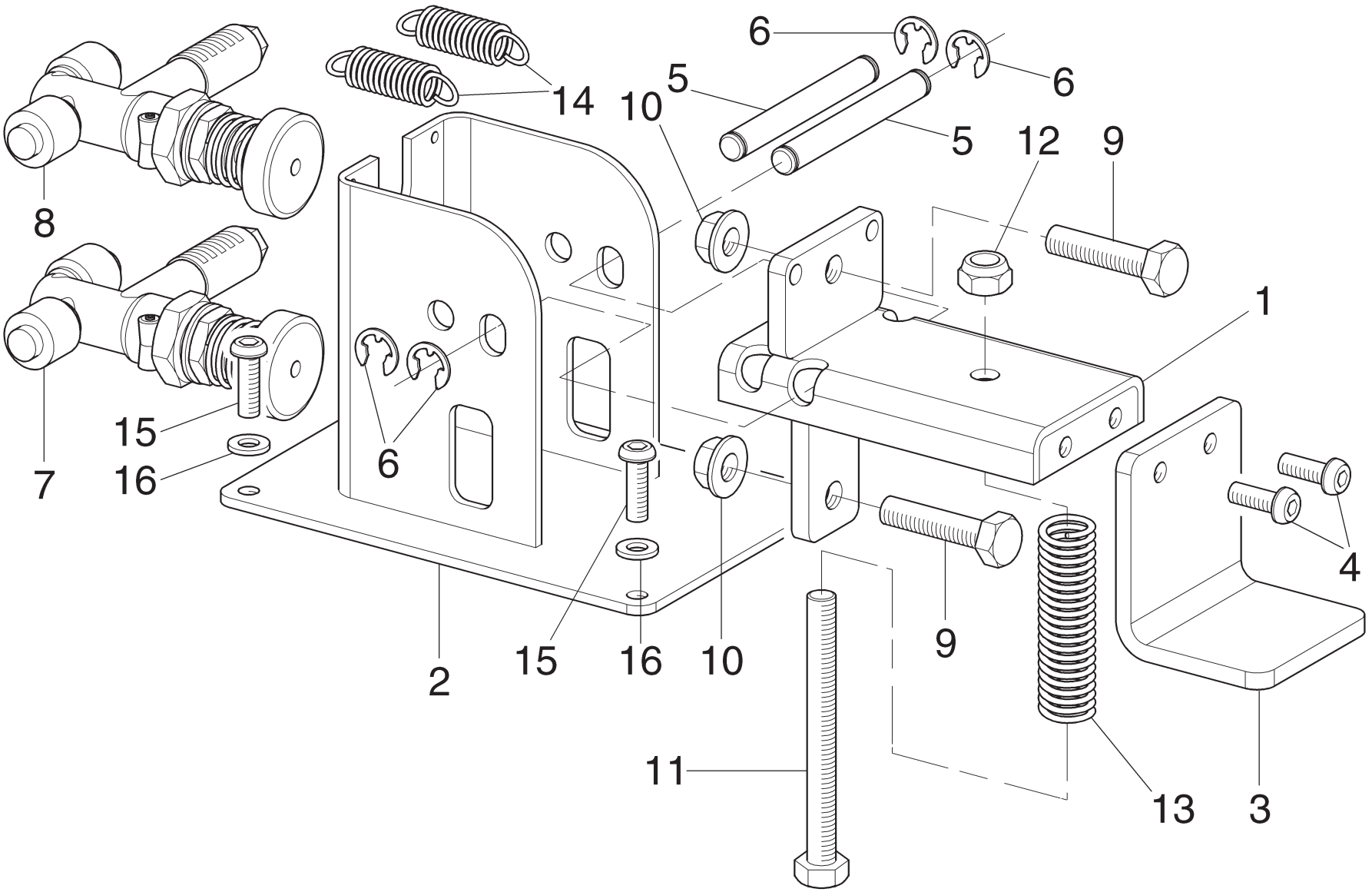
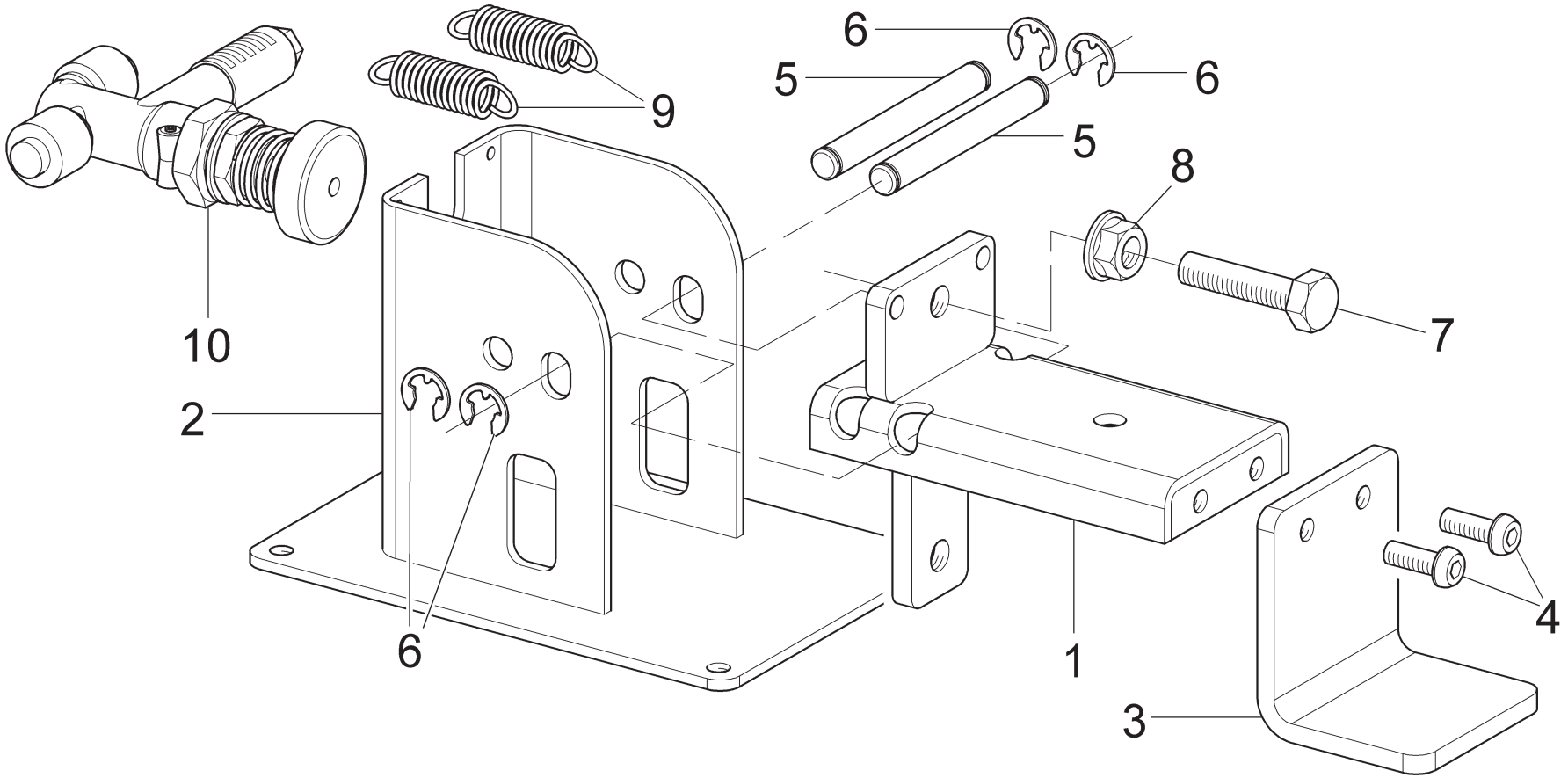


RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO PEDALIERA GONFIATUBELESS* *TUBELESS INFLATION PEDALBOARD* *PEDALERIE TUBELESS* *PÉDALES DE DIRECTION DE GONFLAGE TUBELESS* *PEDALERA DE INFLADO TUBELESS*	***Pag. 39 di 66***
	Tavola N°17 - Rev. 0	**140990371**		**G1500.3 - G1500.3IT**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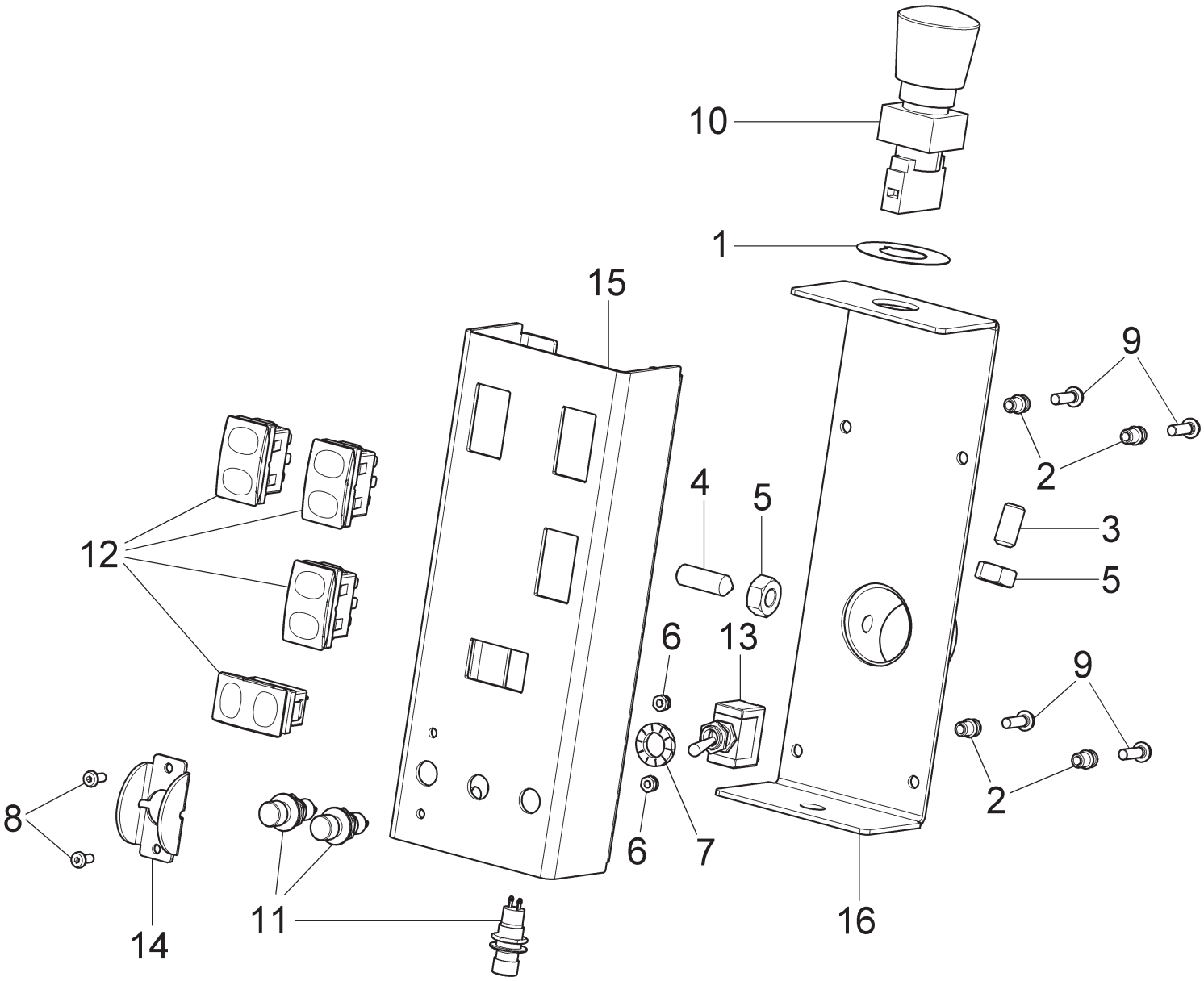
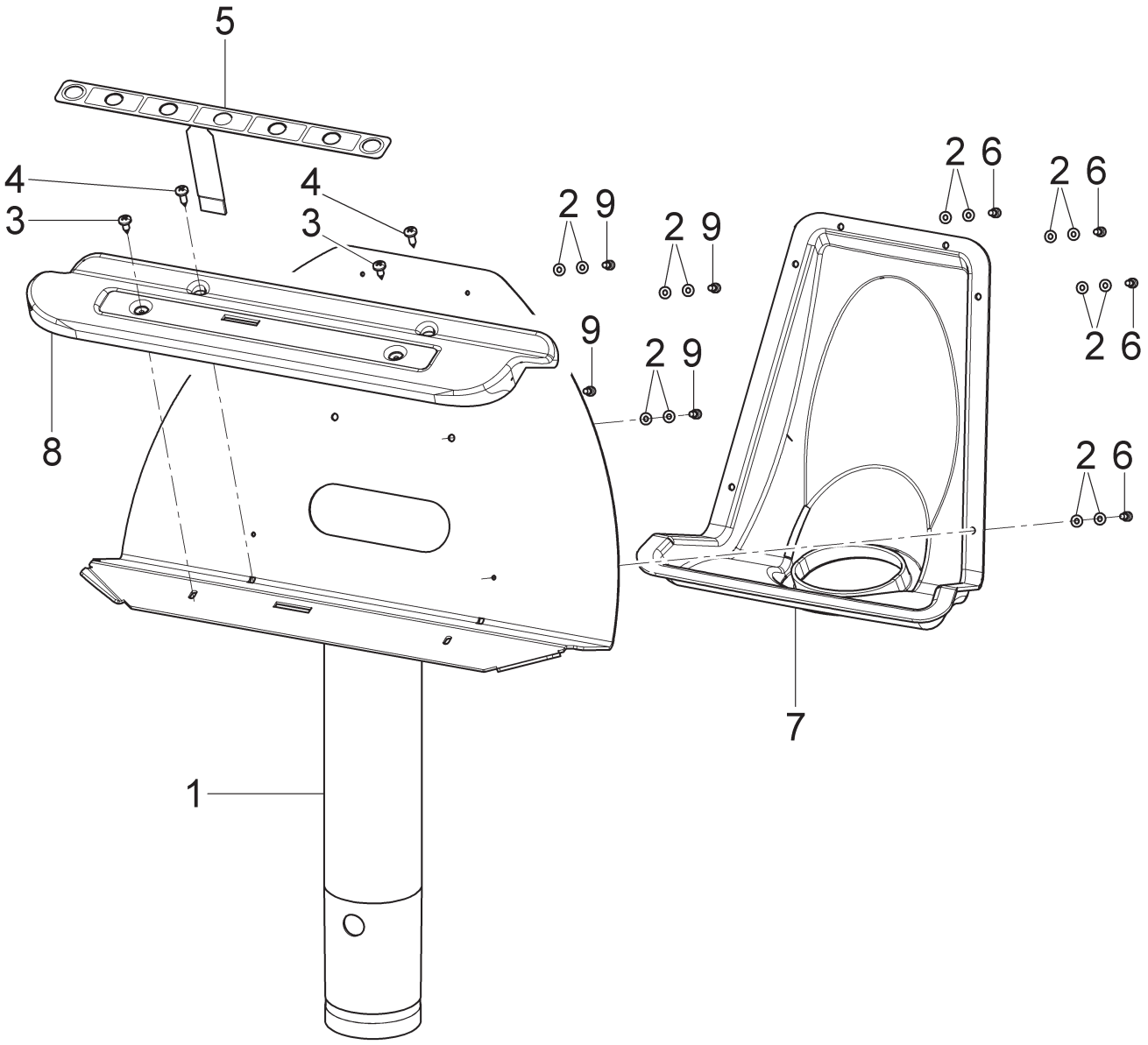
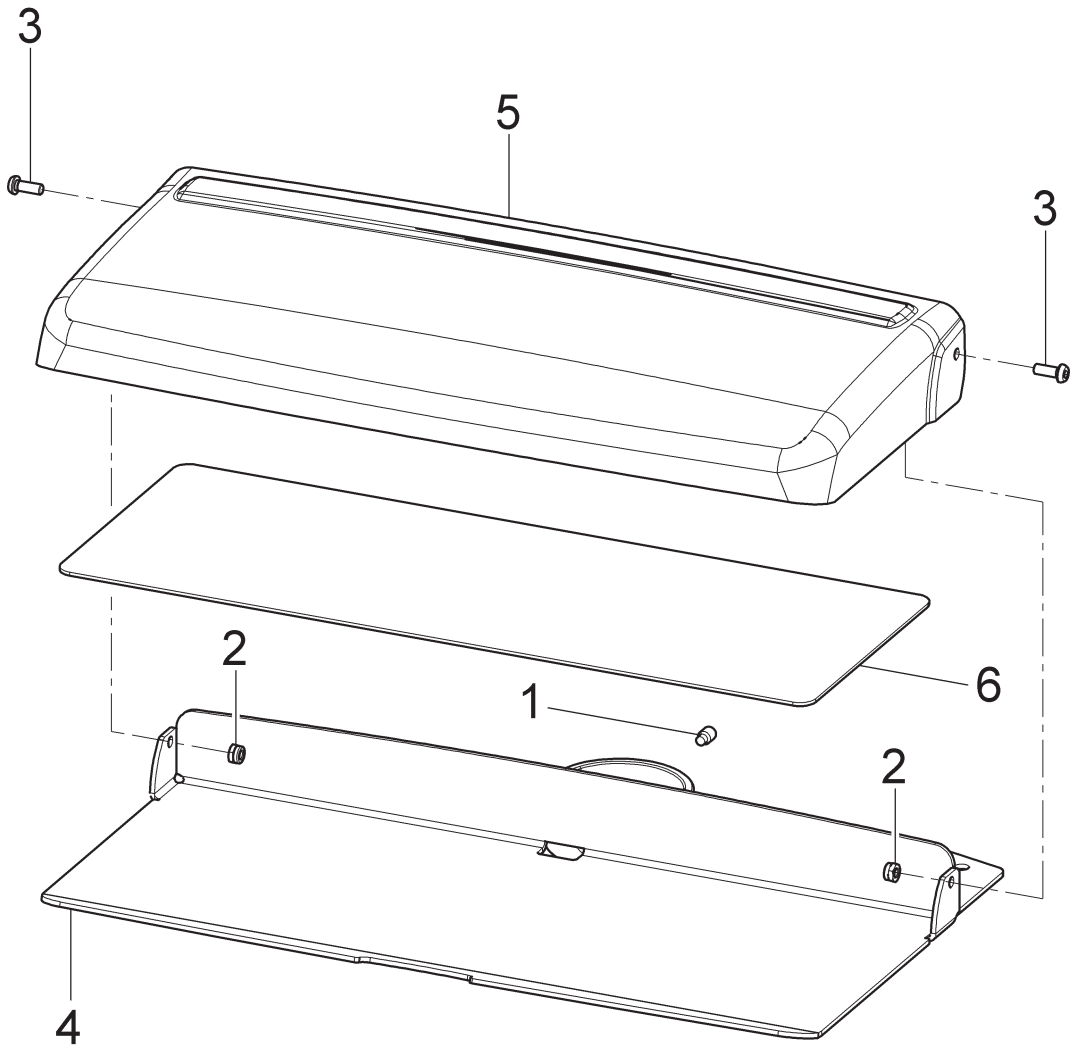


RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO FRONTALE CON PULSANTI* *FRONT UNIT WITH PUSHBUTTONS* *FRONTSATZ MIT KNÖPFE* *GROUPE FRONTAL AVEC POUSSOIRS* *GRUPO FRONTAL CON PULASADORES*	***Pag. 43 di 66***
	Tavola N°19 - Rev. 0	**710190810**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO MONITOR* *MONITOR UNIT* *MONITORSATZ* *GROUPE MONITEUR* *GRUPO MONITOR*	***Pag. 45 di 66***
	Tavola N°20 - Rev. 0	**710490800**		**G1500.3 - G1500.3IT**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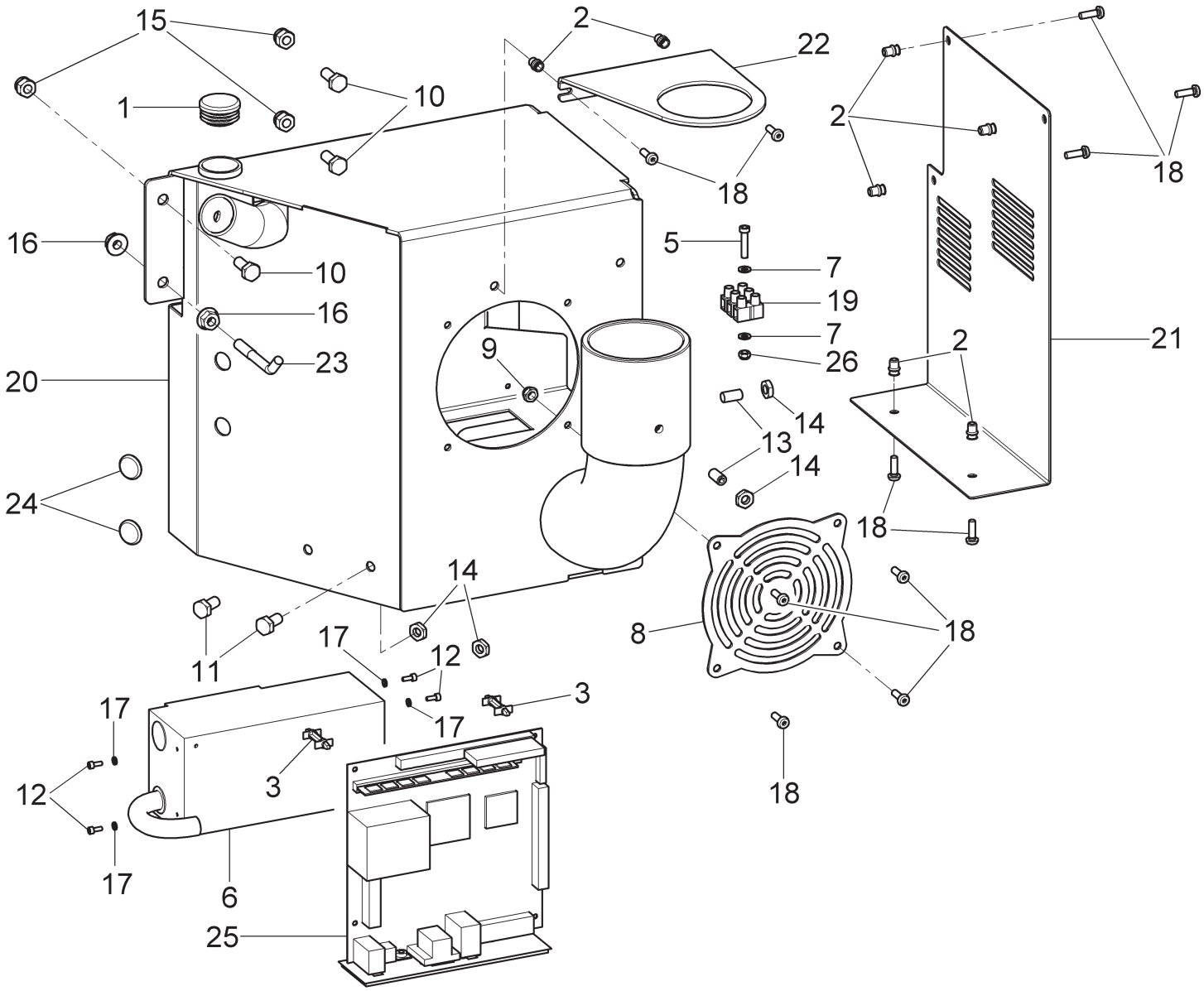
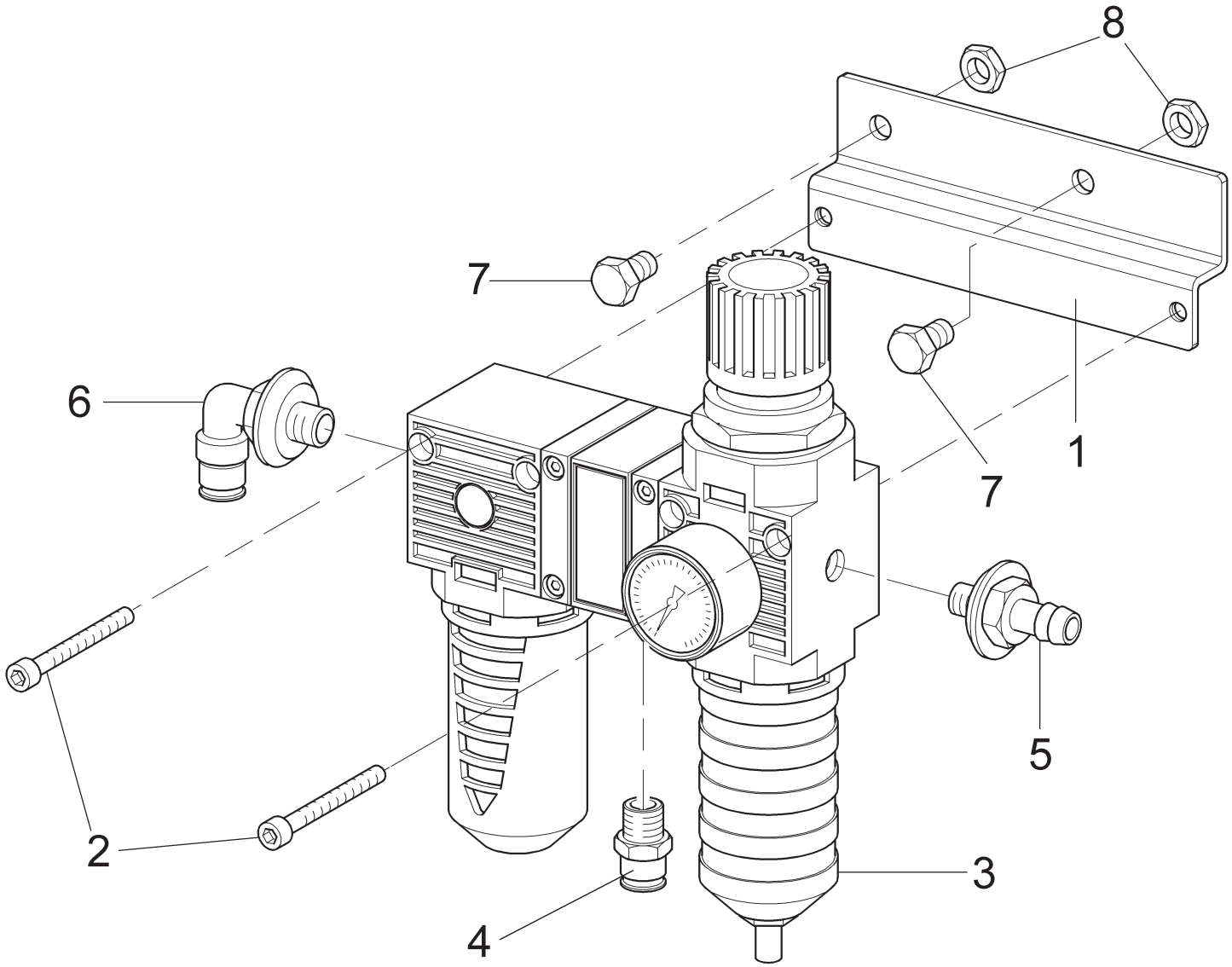
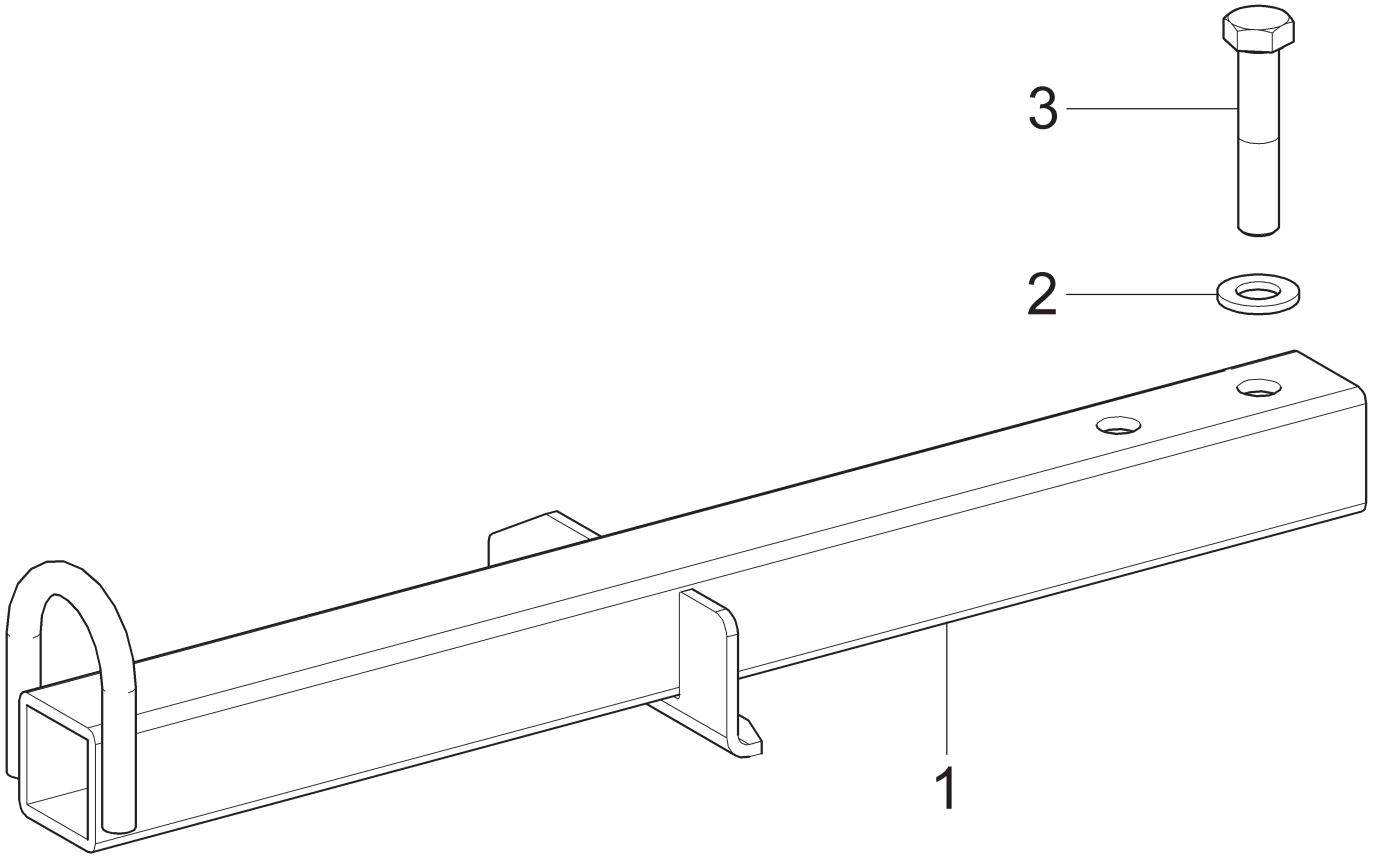


RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		GRUPPO BOX PC BOX PC UNIT BOX PC SATZ GROUPE BOX PC GRUPO BOX PC	Pag. 49 di 66
	Tavola N°22 - Rev. 0	710490830		G1500.3 - G1500.3IT



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO TRATTAMENTO ARIA* *AIR TREATMENT UNIT* *AUFBEREITUNGLUFTSATZ* *GROUPE TRAITEMENT AIR* *GRUPO TRATAMIENTO AIR*	***Pag. 51 di 66***
	Tavola N°23 - Rev. 0	**710090640**		**G1500.3 - G1500.3IT**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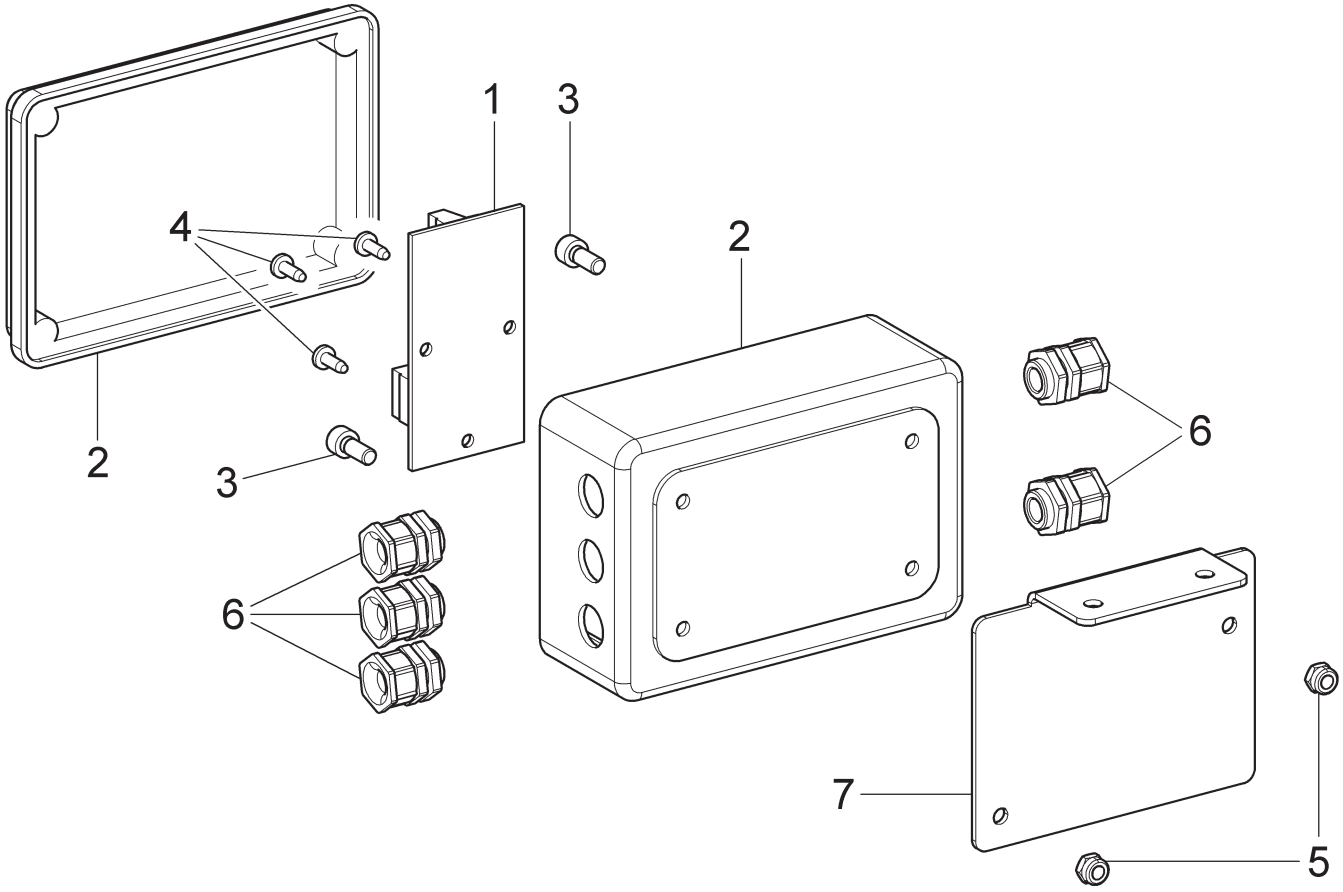
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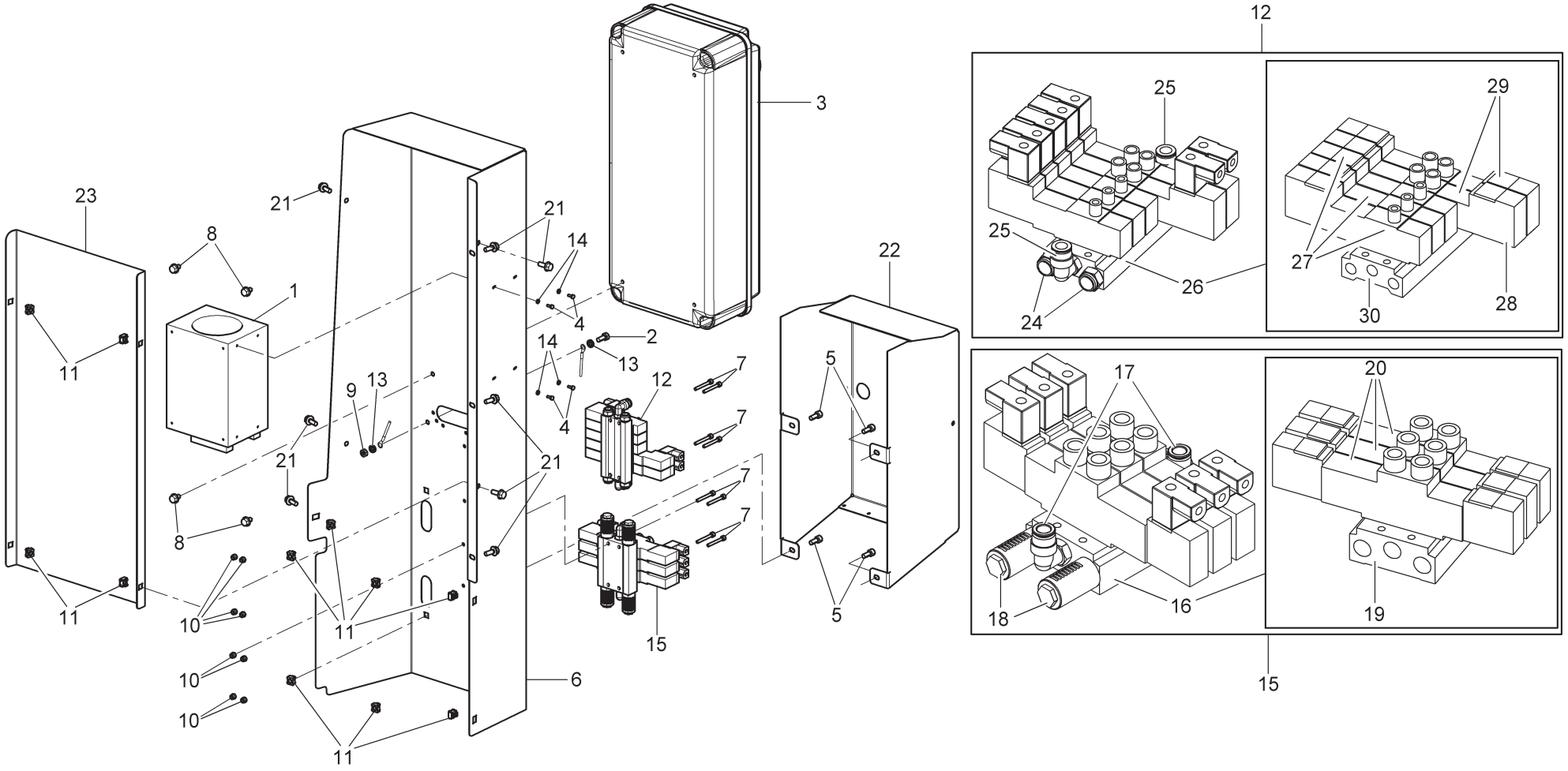
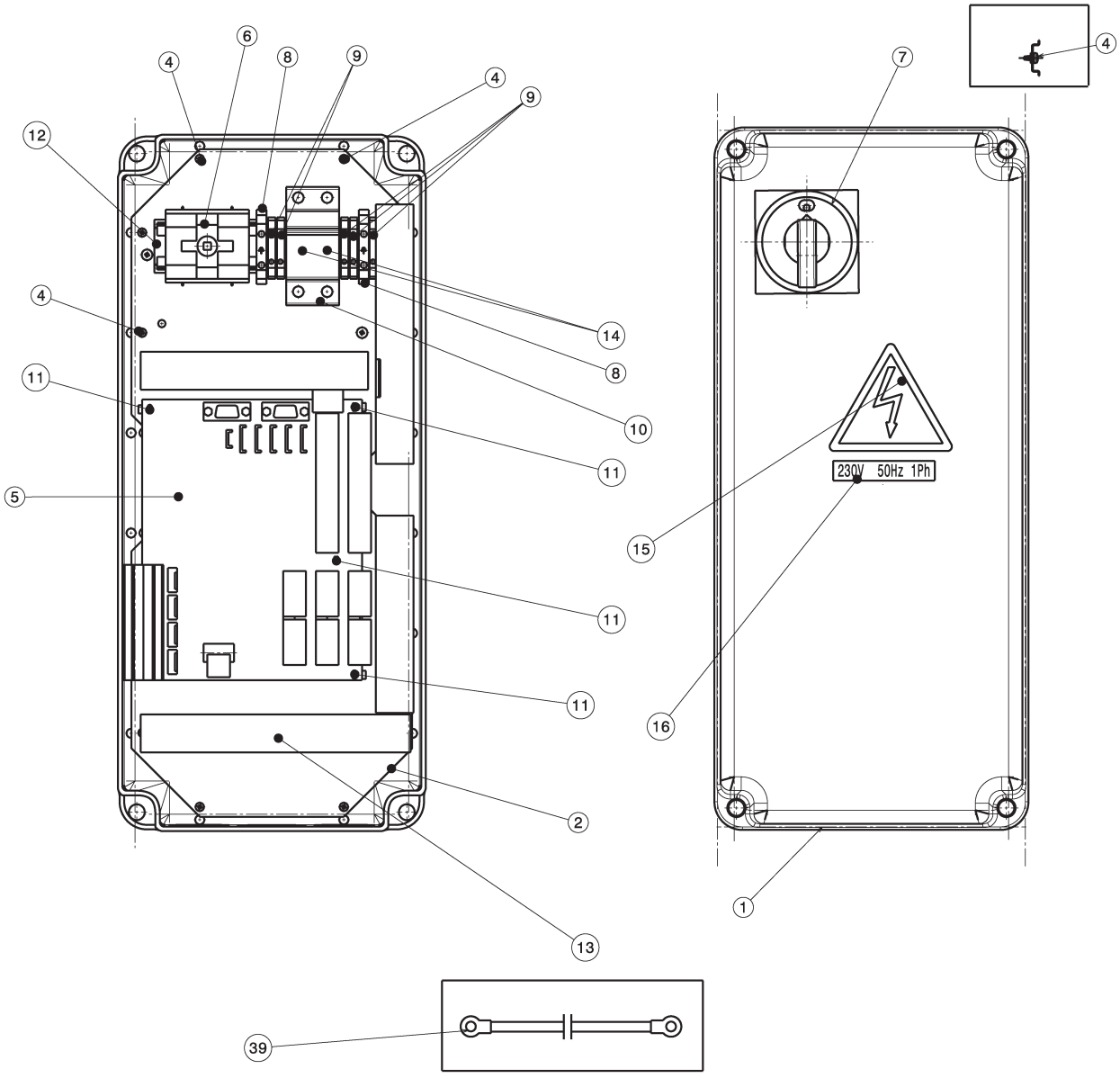
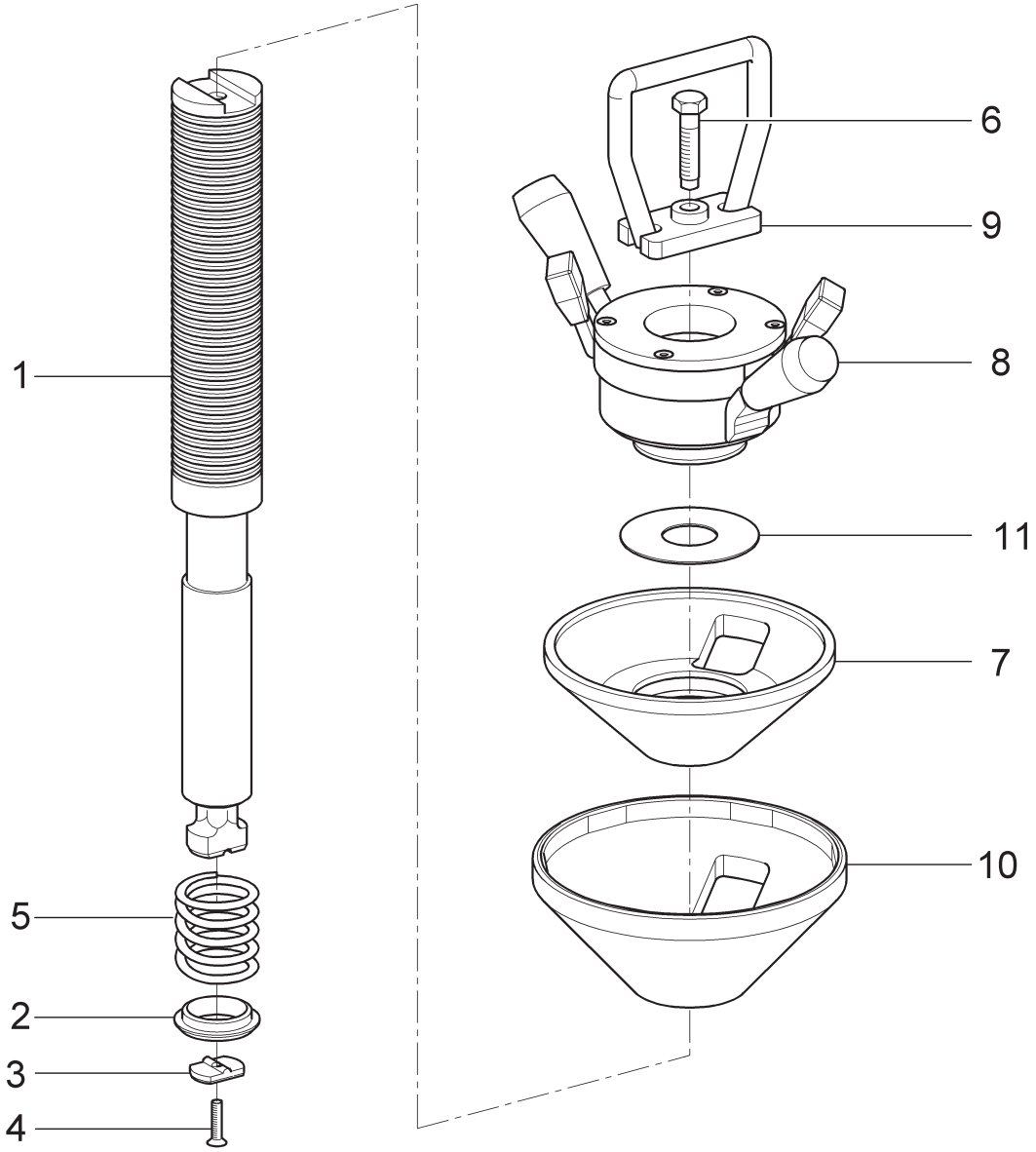


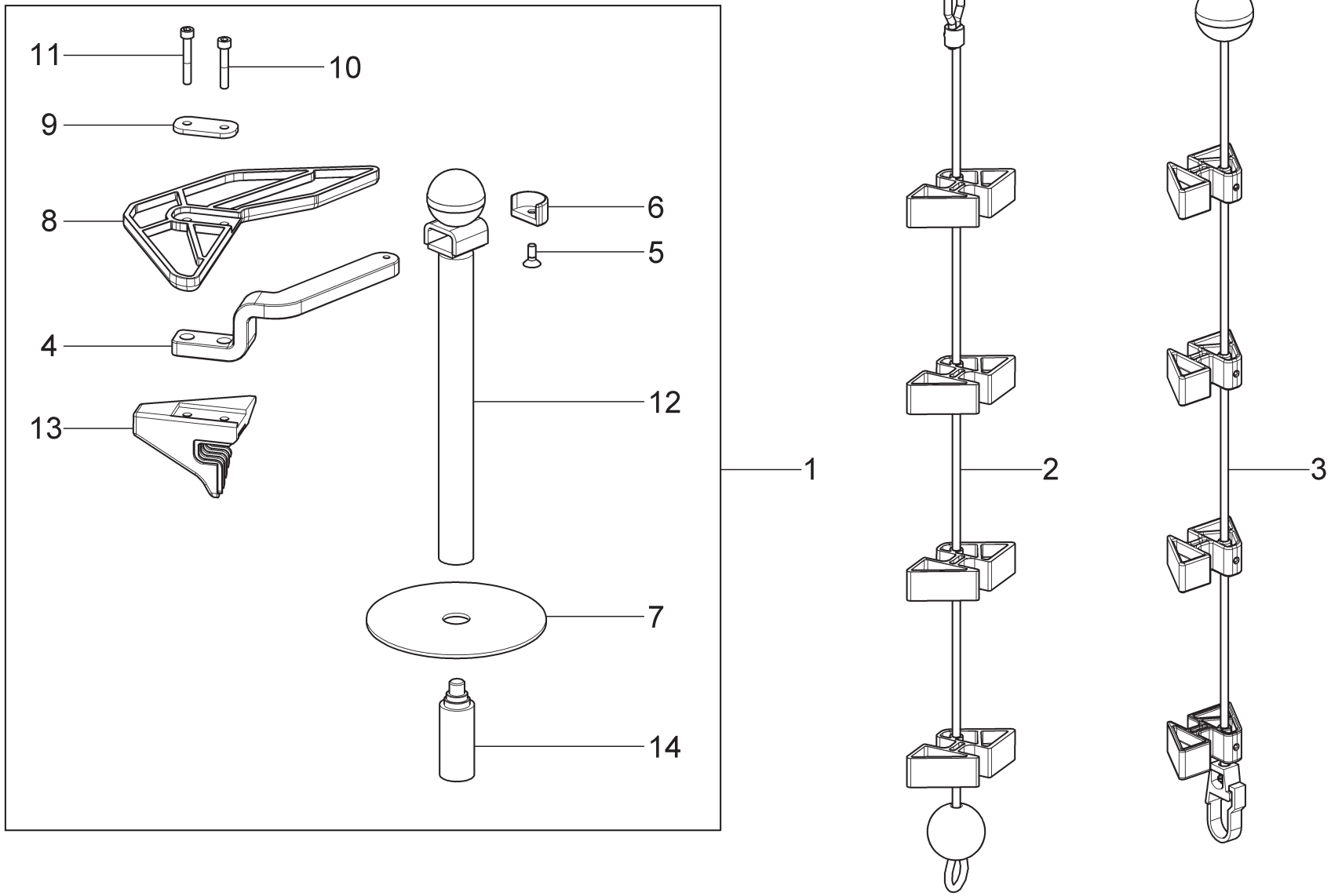
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO CHIUSURA CON IMPIANTO ELETTRICO* *CLOSING UNIT WITH ELECTRIC SYSTEM* *VERSCHLUSSSATZ MIT MIT ELEKTROANLAGE* *GROUPE DE FERMETURE AVEC SYSTÈME ÉLECTRIQUE* *GRUPO DE CIERRE CON SISTEMA ELÉCTRICO*	***Pag. 57 di 66***
	Tavola N°26 - Rev. 0	**710190740**		**G1500.3 - G1500.3IT**



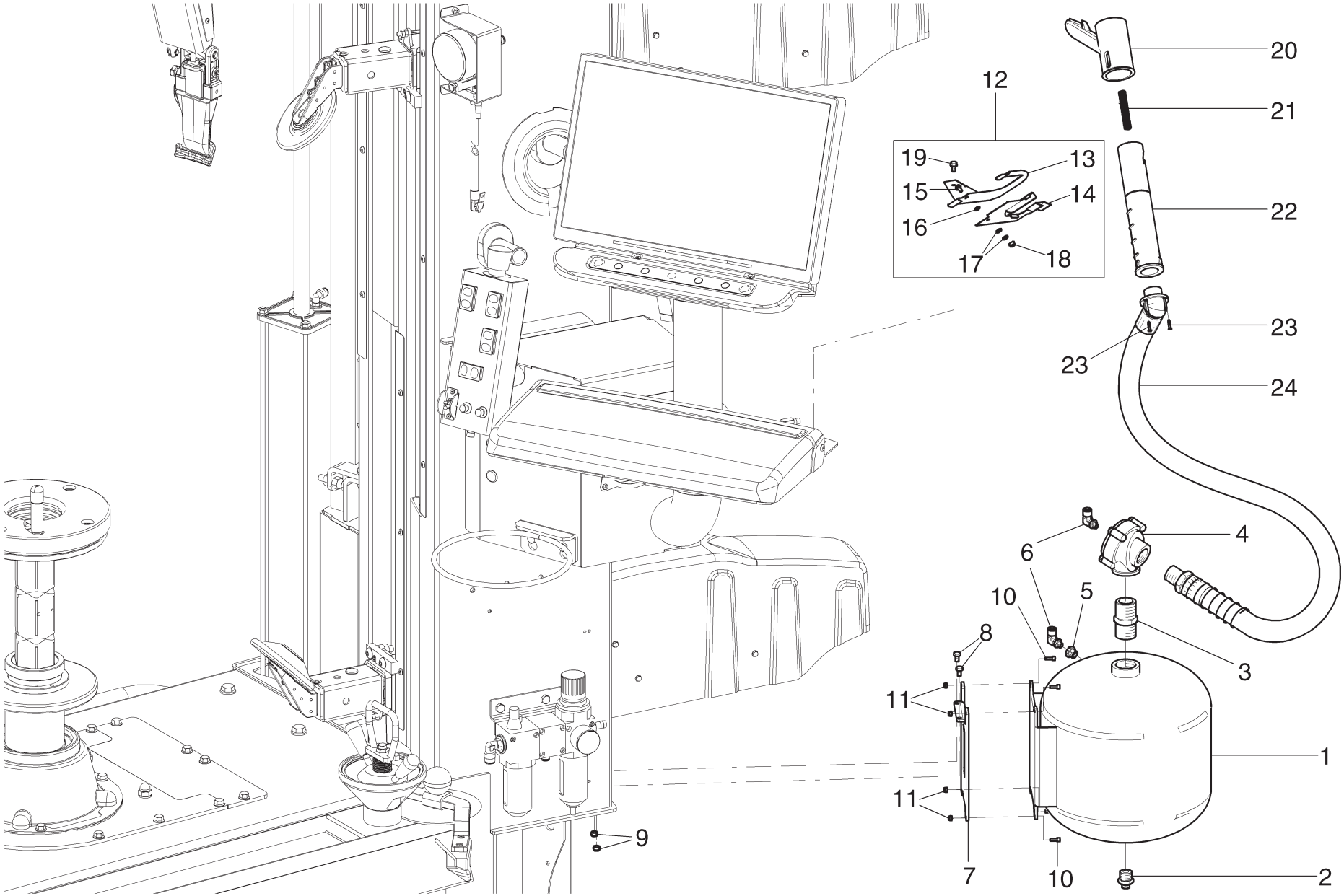
RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*MTG CASSETTA ELETTRICA* *ELECTRICAL BOX MTG* *MTG ELEKTRISCHEKISTE* *MTG BOITER ÉLECTRIQUE* *MTG CAJITA ELECTRICA*	***Pag. 59 di 66***
	Tavola N°27 - Rev. 0	**710403060**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*ATTACCO CON GHIERA RAPIDA* *COUPLING WITH QUICK RING NUT* *ANSCHLUSS MIT SCHNELLNUTMUTTER* *BRANCHEMENT AVEC COLLIER RAPID* *CONNEXIÓN CON RUEDA RÁPIDA*	***Pag. 61 di 66***
	Tavola N°28 - Rev. 0	**G1000A80**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*PREMITALLONE 28" C/TRAZIONE* *BEAD DEPRESSING 28" WITH ENTRAINER* *WULSTABDRÜCKERVORRICHTUNG MIT FÜHRUNGSPIN* *POUSSE-TALON AVEC GALET* *PRESIONATALÓN CON TRANSPORTADOR*	***Pag. 63 di 66***
	Tavola N°29 - Rev. 0	**G1000A124**		**G1500.3 - G1500.3IT**



RAVAGLIOLI S.p.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*GRUPPO GONFIAGGIO* *INFLATION GROUP* *AUFPUMPENSATZ* *GROUPE DE GONFLAGE* *GRUPO DE INFLADO*	***Pag. 65 di 66***
	Tavola N°30 - Rev. 0	**790090180**		**G1500.3 - G1500.3IT**