



# Artiglio Master 26''

Cod. 4-102261C del 06/06

Italiano

Manuale d'uso

English

Operator's manual

Français

Manuel d'utilisation

Deutsch

Betriebsanleitung

Español

Manual de uso

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Español

Elaborazione grafica e impaginazione

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# INTRODUCTION

The purpose of this manual is to furnish the owner and operator with a set of practical, safe instructions for the use and maintenance of the ARTIGLIO Master tyre changer. Follow all the instructions carefully and your tyre changer will assist you in your work and give lasting, efficient service in keeping with CORGHI traditions. The following points define the levels of danger regarding the machine, associated with the warning captions found in this manual:

## **DANGER**

**Refers to immediate danger with the risk of serious injury or death.**

## **WARNING**

**Dangers or unsafe procedures that can cause serious injury or death.**

## **ATTENTION**

**Dangers or unsafe procedures that can cause minor injuries or damage to property.**

Read these instructions carefully before powering up the machine. Conserve this manual and all illustrative material supplied with the machine in a folder near the tyre changer where it is readily accessible for consultation by the machine operators.

The technical documentation supplied is considered an integral part of the machine; in the event of sale all relative documentation must remain with the tyre changer.

The manual is only to be considered valid for the machine of the model and with the serial number indicated on the nameplate applied to it.



## **WARNING**

**Adhere to the contents of this manual: Corghi declines all liability in the case of uses of the machine not specifically described.**



## **WARNING**

**This machine can only be used properly by a skilled, authorised operator capable of understanding the written instructions provided by its producer and those of the tyres and wheel rims. Operators must also be trained and familiar with the safety rules. Use of the machine by inappropriate staff may involve serious risks for the operator and for the final user of the product processed (the wheel rim and tyre assembly).**

## **NOTE**

Some of the illustrations in this manual have been taken from photographs of prototypes: standard production machines may vary in some respects.

These instructions are for the attention of persons with basic mechanical skills. We have therefore omitted detailed descriptions of procedures such as how to loosen or tighten the fixing devices on the machine. Do not attempt to perform operations unless properly qualified and with suitable experience. In case of need, contact an authorised Service Centre for assistance.

**GB**

# TRANSPORT, STORAGE AND HANDLING

## Conditions for transporting the machine

The tyre changer must be transported in its original packing and maintained in the position shown on the packing itself.

- Packaging dimensions:

- width ..... 1240 mm
- depth..... 1730 mm
- height ..... 1840 mm

- Weight of packaging in wood:

- STD version ..... 530 kg
- T.I. version ..... 545 kg

## Ambient conditions for storage and transport

Temperature:  $-25^{\circ} \div +55^{\circ}\text{C}$ .



**WARNING**

**Do not stack other goods on top of the packaging or damage may result.**

## Handling

To move the packaging, insert the forks of a pallet truck in the channels provided in the base of the pallet (1 fig. 1).

For instructions on moving the machine, refer to the HOISTING/HANDLING section.



**ATTENTION**

**Keep the original packaging materials for possible future transport of the machine.**

# UNPACKING/ASSEMBLY



## WARNING

**Carry out the unpacking, assembly, lifting and installation operations described below with care.**

**Failure to comply with these recommendations may damage the machine and put the operator's safety at risk.**

- Remove the upper part of the packaging, if provided. Make sure that the machine has not been damaged in transit, and identify the points at which it is anchored to the pallet
  - 2 fig. 1.
- The machine comprises five main sections (fig. 1 and fig. 2):
  - 1 supporting structure with controls and tools
  - 2 body with pedal unit and self-centring turntable device
  - 3 air tank (T.I. version only)
  - 4 wheel lift (optional)
  - 5 support unit (optional)

See fig.2

- Remove the packaging from the air tank 3 or the optional units 4 and 5, and place them in a position where they cannot fall over and be damaged.
- Fit the wheel lift unit 4 on the side of the body, securing it with the screws and washers A.
- Remove the perimeter casing of the body, fit the wheel support unit 5 on the front of the body, fixing it in place with the screws and washers B, and replace the casing.
- Connect the connection of the tank 3 to the air connection hose provided, securing it with a band clamp. Secure the air tank 3 to the machine using the bracket C provided, with the nuts and washers D (T.I. version only).

## LIFTING/HANDLING

To remove the machine from the pallet connect to it by means of the lifting bracket 1 provided, as shown in fig. 3.

This lifting point must be used whenever you need to change the installation position of the machine. Do not attempt to move the machine until it has been disconnected from the electricity and compressed air supply systems.

**GB**

# INSTALLATION CLEARANCES



## WARNING

The installation site must be chosen in strict observance of local regulations regarding safety in the workplace.

**IMPORTANT:** for correct, safe use of the machine, users must ensure a lighting level of at least 300 lux in the place of use.



## ATTENTION

If the machine is installed outdoors, it must be protected by a roof.

Place the tyre changer in the chosen work position, complying with the minimum clearances shown in fig 4.

The machine must be placed on a horizontal surface, preferably concrete or tiled. Do not install on loose or uneven surfaces.

The surface on which the machine is installed must withstand the loads transmitted during operation. The surface must have a load-carrying capacity of at least 500 kg/m<sup>2</sup>.

### Ambient conditions for operation

- Relative humidity 30% - 95% without condensation.
- Temperature 0°C ÷ 50°C.



## WARNING

The machine must not be operated in a potentially explosive atmosphere.

# ELECTRICAL AND PNEUMATIC HOOK-UPS



## WARNING

All operations required for electrical hook-up of the machine must be carried out exclusively by a qualified electrician.

- The electricity supply must be suitably rated in relation to:
  - the machine's electrical power absorption, specified on the machine's dataplate - 23 fig. 8a;
  - the distance between the machine and the power supply hook-up point, so that voltage drops under full load do not exceed 4% (10% during start-up) below the rated voltage specified on the dataplate.
- The user must:
  - fit a power plug in compliance with the relevant safety standards on the power supply lead;
  - connect the machine to its own electrical connection - A fig. 5a - having a specific circuit-breaker (residual current set to 30 mA);

- fit fuses to protect the power supply line, rated as indicated on the general electrical system diagram enclosed with this manual;
  - provide a suitable earthing system on the workshop mains line.
- To prevent unauthorised use of the machine, always disconnect the mains plug when the machine is out of use (switched off) for lengthy periods.
- If the machine is connected directly to the power supply by means of the main electrical panel without the use of a plug, a key-switch or device with padlock fixture must be provided to restrict use of the machine to authorised personnel only.



### WARNING

**A good earth connection is essential for proper operation of the machine. NEVER connect the earth wire to a gas or water pipe, telephone wire or any other unsuitable objects.**

Check that the pressure and flow-rate provided by the compressed air system are compatible with those required for proper operation of the machine - see "Technical Data" section. For correct operation of the machine the compressed air supply line must provide a pressure range from no less than 8 bar to no more than 16 bar.

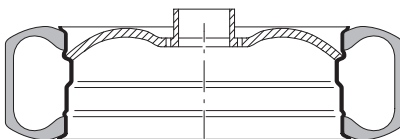
Make the connection to the compressed air system by means of a supply line connected to the intake of the air treatment unit on the side of the base of the machine - A fig. 5b. Check that the Lubricator unit B fig. 5b contains air lubricating oil; top up if necessary. Use SAE20 oil.

The customer must provide an air cut-off valve upstream of the air treatment and regulator device supplied with the machine B fig. 5a.



### ATTENZIONE

**The machine is equipped with a pressure regulator set at 10 bar (standard use of the machine). When working on weak rims (i.e. with central well with thin, projecting edges - see side), we recommend to use the universal flange / flange for close centre rims.**



**GB**

# SAFETY REGULATIONS

The equipment is intended for professional use only.



## WARNING

**Only one operator may use the equipment at a time.**



## WARNING

**Failure to comply with the instructions and the danger warnings can cause serious injury to the operator and others in the area. Before powering up the machine, read and ensure you understand all the danger, warning and attention notices in this manual.**

This machine can only be used properly by a qualified, authorised operator capable of understanding the written instructions provided by the producer; he must also be trained and be familiar with the safety regulations. Operators must not use the machine under the influence of alcohol or drugs which may affect their physical and mental capacity.

The following conditions are essential:

- The operator must be able to read and understand all the information in this manual.
- He must have a thorough knowledge of the capabilities and characteristics of this machine.
- Keep unauthorised persons well clear of the area of operations.
- Make sure the machine has been installed in compliance with all relevant regulations and legislation.
- Make sure that all machine operators are suitably trained, that they are capable of using the equipment correctly and that they are adequately supervised.
- Never leave nuts, bolts, tools or other equipment on the machine; they may become entrapped between moving parts.
- Do not touch power lines or the inside of electric motors or other electrical equipment until the power supply has been disconnected.
- Read this manual carefully and learn how to use the machine correctly and safely.
- Always keep this operator's manual in an easily accessible place and consult it whenever necessary.



## WARNING

**Do not remove or deface the Danger, Warning or Instruction decals. Replace any missing or illegible decals. Missing or damaged decals can be obtained at your nearest Corghi dealer.**

- When using and carrying out maintenance on the machine, observe the standardised industrial accident prevention regulations for high voltages.
- Unauthorised alterations to the machine relieve the constructor of all liability for any consequent damage or accidents. Specifically, tampering with or removing the safety devices is a breach of the regulations for safety in the workplace.
- The user must wear personal protection equipment such as gloves, safety footwear and goggles.



## WARNING

**When operating or servicing equipment tie back long hair and do not wear loose-fitting clothes, ties, necklaces, rings or wristwatches which could become entrapped by moving parts.**

## DESCRIPTION OF THE ARTIGLIO MASTER

The ARTIGLIO Master is an electro-pneumatic tyre charger for car, off-road vehicle and van wheels.

Designed to work on:

- open or closed centre conventional wheels;
- reverse rim wheels;
- runflat wheels with reinforced sidewall system;
- runflat wheels with inside support\*.

*\*WARNING: Special working procedures have been specifically studied for these wheels' systems.*

The ARTIGLIO Master makes it incredibly easy to break the bead of, demount and mount any type of the tyres referred to above having rim diameter from 12" to 26". The machine operates with the wheel horizontal, clamped and perfectly centred on the self-centring turntable, in all processing stages.

Its absolutely innovative operating principle features:

- electronic presetting of the rim diameter with automatic radial positioning of the mounting and demounting tools and bead breaker discs;
- a pneumatic bead breaker unit with two automatically operated, controlled-penetration vertical two-way discs;
- a tool head with two-way vertical movement controlled from the console, allowing optimum tyre mounting and demounting without using the bead lifter lever;
- a pneumatically operated wheel lift for loading and unloading the wheel from the working area (optional);
- a pneumatic support unit with automatic positioning to support the tyre during demounting (optional).

The drive controls are grouped together on an ergonomic console, with a display for setting and displaying the wheel data and a control pedal unit. The layout adopted means the operator can work in complete safety without leaving his working position.

The ARTIGLIO Master also achieves the following:

- reduced physical effort on the part of the operator;
- no risk of damage to rim or tyre;
- the greatest possible automation of operations previously carried out by the operator by hand.

Each machine carries a nameplate 23 fig. 8 with its identification data and some technical data.

As well as the manufacturer's details, it carries: Mod. - - Machine model; V - power supply voltage in Volts; A - Current absorption in Amps; kW - Power absorption in kW; Hz - Frequency in Hz; Ph - Number of phases; bar - Operating pressure in bar; Serial N. - Machine serial number; ISO 9001 - Guarantee of certification of the company Quality System; CE - CE mark.

**GB**



## WARNING

The data on the nameplate may never be altered or defaced for any reason.

# TECHNICAL DATA

- Overall dimensions (see fig. 6):
  - Length ..... A = 1635 mm
  - Length (with wheel lift) ..... A' = 1970 mm
  - Width ..... B = 1200 mm
  - Height ..... H = 1600 mm
- Tyre types processed ..... conventional and PAX System
- Wheel dimension range:
  - rim diameter ..... from 12" to 26"
  - maximum tyre diameter ..... 1020 mm
  - maximum tyre width ..... 360 mm (14")
- Self-centring Turntable:
  - positioning in relation to tools ..... automatic
  - rest ..... flanged
  - centring ..... on cone
  - clamping ..... automatic
  - speed torque ..... 1000 Nm
  - rotation speed ..... 6-18 rpm
- Bead Breaker Unit:
  - tool ..... disc
  - positioning in relation to rim ..... automatic
  - penetration ..... guided
  - maximum bead breaking range ..... 18"
  - top bead breaker stroke ..... 450 mm
  - bottom bead breaker stroke ..... 450 mm
  - top bead breaker force ..... 7600 N
  - bottom bead breaker force ..... 7600 N
- Mount/demount tool head:
  - positioning in relation to rim ..... automatic
  - tool change ..... automatic
  - demount operation ..... automatic
  - mount operation ..... automatic
- Wheel lift:
  - operation ..... automatic
  - drive ..... pneumatic
  - lifting capacity ..... 65 kg
- Power supply:
  - electric 1 Ph ..... 230V-0.98 kW 50Hz
  - electric 1 Ph (alternative) ..... 110V-0.98 kW 60Hz
  - pneumatic operating pressure ..... 9,5 ÷ 10 bar
- Weight ..... 450 kg (T.I. version 465 kg)

- Noise level:

- Weighted noise level A ( $L_{pA}$ ) in working position ..... < 70 dB(A)

The stated noise levels are emission levels and do not necessarily represent safe operating levels. Although there is a relationship between emission levels and exposure levels, this cannot be used reliably to establish whether or not further precautions are necessary. The factors which determine the level of exposure to which the operator is subjected include the duration of the exposure, the characteristics of the workplace, other sources of noise, etc. The permitted exposure levels may also vary from country to country. However, this information will enable the machine's user to make a more accurate evaluation of the hazard and risk.

## OPTIONAL ACCESSORIES

For the full list of optional accessories for the ARTIGLIO MASTER TYRE CHANGER, refer to the "ORIGINAL ACCESSORIES" handbook supplied with the machine.

## SPECIFIED CONDITIONS OF USE

ARTIGLIO Master tyre changers are designed solely for mounting and demounting tyres using the tools with which they are equipped as described in this manual.



### WARNING

All other uses apart from those described are considered improper and unreasonable.

The machines are equipped with an inflation system independent of the other functions described above. Take great care when using it (read the INFLATION section).



### WARNING

When using the machine we advise strongly against the use of equipment not manufactured by CORGHI.



### WARNING

Keep hands well away from moving parts of the machine.



### WARNING

To stop the machine in an emergency:

- disconnect the power supply plug;
- cut off the compressed air supply network by disconnecting the shut-off valve (snap coupling).

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## Operator position

A - fig. 7 shows the position the operator occupies during the various working phases. The display for setting and displaying the wheel data, the control console and the pedal control unit are all on the same side of the machine. This defines the working position of the operator using the machine. The operator must only work on the wheel and use the machine's controls from this one position.

In these conditions all tyre changing operations are carried out and overseen by the operator, who checks that everything is proceeding properly and is ready to step in at the slightest problem.

## MAIN OPERATING PARTS



### WARNING

**Get to know your machine: the best way to prevent accidents and obtain top performance is to know exactly how it works. Learn the function and location of all controls. Check carefully that all the machine's controls are working correctly. To avoid accidents and injury, the machine must be installed properly, operated correctly and serviced regularly.**

The machine's main operating parts are shown in fig. 8a and fig. 8b.

- 1 Body
- 2 Wheel lift (optional accessory).
- 3 Support (optional accessory).
- 4 Centring handle (device for clamping the wheel to the self-centring turntable).
- 5 Mobile tool (for demounting the tyre).
- 6 Tool head.
- 7 Fixed tool (for mounting the tyre).
- 8 Supporting structure.
- 9 Top bead breaker disc.
- 10 Display for setting and displaying the wheel data - see fig. 9a and relative description in CONTROLS section.
- 11 Top bead breaker disc release lever.
- 12 Control console - see fig. 9b and relative description in CONTROLS section.
- 13 Bottom bead breaker disc.
- 14 Self-centring turntable (rotating device to which the wheel is clamped).
- 15 Pedal control unit - see fig. 9c and relative description in CONTROLS section.
- 16 Rim rest for demounting/mounting closed centre rims (optional accessory).
- 17 Relief valve (max. pressure 12 bar) (in T.I. versions only).
- 18 Filter Regulator + Lubricator unit (unit which regulates, filters, dehumidifies and lubricates the compressed air supplied).
- 19 Grease container
- 20 Doyfe union (union for connection to the wheel valve for inflation).
- 21 Bead presser gripper.
- 22 Air tank (in T.I. versions only).
- 23 Nameplate



## WARNING

For technical characteristics, warning notices, maintenance and all other information regarding the air tank, refer to the air tank operator's manual supplied with the machine documentation.

## Controls

### Display for setting and displaying the wheel data - fig. 9a

#### 1 - Air pressure gauge

Pressure gauge which displays the air pressure set with the pedal 3 fig.9c.

Displays the tyre pressure in bar.

#### 2 - Wheel type selection panel

Arrow-shaped keys allowing the tyre changer to be set to accept parameters relating to two categories of wheel: conventional car, off-road vehicle or van wheel or PAX wheel.

#### 3 - Rim diameter display.

Display for showing the rim diameter in inches. The figure displayed consists of two figures separated by a decimal point.

#### 4 - Rim diameter setting keypad

The keypad subdivides into:

- keys for entering the numerical values of the units. Use these keys to enter the value of the units by increasing (+) or decreasing (-) the value set;
- keys for entering the numerical values of the decimal figures. Use these keys to enter the value of the decimal figures by increasing (+) or decreasing (-) the value set;

#### 5 - Deflation button

Press this button to discharge excess air from inside the tyre. This button can only be used during inflation of the tyre with the Doyfe union of the inflation line connected to the stem of the valve.

### Master switch-fig.9d

#### 1 - Master switch

Green two-position on the lid of the electrical box (1 fig.9d).

On "0" - the machine is not receiving mains power.

On "1" - the machine is powered up. Control console - fig. 9b

### Control console - fig. 9b

#### Area A - Bead breaker disc unit functional controls

1 - Lever controlling vertical movement of the top bead breaker disc.

2 - Lever controlling vertical movement of the bottom bead breaker disc.

3 - Button without detent controlling forward movement of the top bead breaker disc.

When the top bead breaker disc is resting on the tyre, pressing this button moves the disc forward in a radial direction, so that it enters the wheel following the profile of the rim.

#### Area B - Tool head functional controls

4 - Button controlling head rotation

Press the Button to rotate the tool head through 180°. This control allows selection of the tool suitable for mounting or demounting the tyre. The control is only

active when the head is close to its rest position; this ensures that head and therefore tool rotation cannot be accidentally started in the working position, damaging the tyre.

*5 - Button which operates the mobile tool for gripping the top bead*

Press the button to operate the mobile tool which moves to grip the top bead of the tyre. When the button is released the tool returns to its rest position.

*6 - Switch without detent which operates the mobile tool for demounting the top bead*

Rotate the switch to operate the mobile tool and prepare to demount the top bead of the tyre. Do not rotate this switch unless the mobile tool is gripping the top bead of the tyre.

*7 - Head movement control lever*

Lever which moves the tool head in 4 directions: up-down-forward-back. The head's forward travel stroke is limited by the rim approach limit position set automatically when the wheel data are set.

Area C - Auxiliary unit functional controls

*8 - Pneumatic lift operating lever*

Lever which operates the pneumatic lift, on the frame of which the wheel is positioned. Move the lever up to operate the pneumatic lift and bring the wheel placed on the frame from the ground to the working position on the turntable. Move the lever down to operate the pneumatic lift and bring the wheel placed on the frame from the working position on the turntable to the ground.

While the pneumatic wheel lift is ascending or descending a beeper warns the operator that the procedure is in progress.

*9 - Pneumatic support operating lever*

Lever which operates the pneumatic support. Move the lever up to operate the pneumatic support and bring the supporting element into contact with the underside of the tyre. Move the lever down to return the pneumatic support to its rest position.

The pneumatic support is operated at the end of demounting of the top bead, before the bottom bead is demounted.

*10 - Pax Selector switch (see "Artiglio Master Pax System Kit" manual).*

**Pedal control unit - fig. 9c**

*1 - Self-centring turntable rotation pedal*

This pedal starts rotation of the self-centring turntable to which the wheel is fixed. The pedal has 4 different positions, providing 4 different rotation speeds.

1. Pedal raised (without detent): slow anti-clockwise rotation.
2. Pedal in rest position (with detent): self-centring turntable at a standstill.
3. Pedal pressed slightly down (without detent): slow clockwise rotation.
4. Pedal pressed right down (without detent): fast clockwise rotation.

*2 - Tyre inflation pedal*

Press with the Doyfe union of the inflation line fitted to the valve to deliver air into the tyre and inflate it.

*3 - Wheel clamping pedal*

Pressed to release the system which locks the turntable centring handle. In its rest position, the system which clamps the turntable centring handle is normally active. The pedal is used during positioning and clamping of the wheel on the turntable, and to release the wheel when the job is done.



## WARNING

**Problem:** after PAX wheels have been selected the machine remains locked in this function ..... it does not return to the status allowing work on wheels in INCHES.

Solution to problem ....

- the "wheel type" can only be selected if
- the wheel lift is in the rest (loading) position ...with microswitch tripped
- demount command not activated.....it is of "dead-man" type, the contact has to remain pressed down
- the PAX overlapping command must not be activated
- the tool head must be in the rest (fully retracted) position ....

### NOTE for this last point:

*If the machine still does not work after all the above conditions have been met, try moving the tool head to the working position....*

since there is no position microswitch, ...the circuit board does not recognise the precise position, but it remembers the last command carried out.

## Key to danger warning decals



Risk of crushing.

Never insert any part of the body, and in particular the hands, between the bead breaker discs or demounting/mounting tools and the wheel. Never insert any part of the body between the wheel support and the tyre.



Risk of crushing.

Never insert any part of the body between the wheel lift and other elements with which it comes into contact. A beeper warns when it is in operation.



NEVER stand behind the machine. Only one operator is authorised to operate and use the machine.

GB

# BEAD BREAKING

## Preliminary checks

Check on the pressure gauge of the filter regulator + lubricator unit that there is a pressure of at least 8 bar.

Check that the machine has been hooked up to the electrical mains correctly.

## Switching on the machine

Power up the machine using the green master switch 1 fig.9d on the lid of the electrical box.

To switch on the machine, press the master switch to the -I- (ON) position. The master switch illuminates to indicate that the machine is powered up.

If the machine is inactive after a sudden power drop, the message “ATT” appears on the Display fig. 9a. To re-enable operation of the machine if the power blackout has occurred during operation, the head tools and the units with bead breaker disc must be removed from the working area.



### ATTENTION

**In these conditions, if the reset procedure is triggered accidentally, the movement can be stopped by pressing one of the four “Wheel dimension” keys on the display panel. The message “STP” will appear and a beeper will sound; all the machine’s controls can now be used in “manual” mode to restore normal working status.**

Press any of the numerical value input keys on the Keypad 4 - Fig. 9a. The turntable and the two units with bead breaker disc automatically reset in the radial position suitable for processing 26” rims.

The machine is now ready to accept new settings and restart subsequent jobs.

**Important note:** during this operation, with the machine/support plate on the 26” setting, once the reset microswitch is tripped the support plate moves back by about 1” before restarting the reset operation.

## How to decide the side of the wheel from which to demount the tyre

See fig.10

Find the position of the drop centre A on the wheel rim. Find the largest width B and the smallest width C.

The tyre must be demounted or mounted with the wheel positioned on the turntable with the side with the smallest width C facing upward.

## Special instructions

Some types of wheels on the market require special procedures and precautions which differ from the standard procedure.

This applies in particular to the following types of wheels:

**Alloy rim wheels:** some wheels have alloy rims where the drop centre A is very small or non-existent - fig. 10a. These rims are not approved to DOT (Department of Transportation) criteria - the marking which certifies the tyre’s conformity to the safety standards adopted by the United States and Canada (these wheels cannot be sold on these markets).



## DANGER

**Take great care when mounting the tyre. The rim and/or the tyre may be damaged accidentally, with the risk of the tyre exploding during the inflation stage.**

**European style high-performance wheels (asymmetric curvature)** - fig. 10b: Some European wheels have rims with very pronounced curves C, except in the area of the valve hole A where the curvature is less pronounced B. On these wheels the bead must first be broken in correspondence with the valve hole, on both the top and bottom sides of the wheel.

**Wheels with "low pressure indicator system"** - fig. 10c (Corvette, BMW, Lamborghini etc. wheels): Some types of high performance wheels are equipped with a low pressure indicator system featuring a pressure transmitter B. The pressure transmitter is fixed to the rim by a belt C and is on the side opposite the valve hole A. To avoid damaging this device, on these wheels the bead must first be broken in correspondence with the valve hole, on both the top and bottom sides of the wheel.

## Bead breaking



## WARNING

**Bead breaking is well known to be a dangerous operation. It must be carried out in accordance with the instructions below.**

### Car, off-road vehicle and van wheels

- Use the *Display for setting and displaying the wheel data* fig. 9a, checking that the wheel type (normal or PAX) is illuminated. Set the rim diameter value using the relative keypad 4. The diameter of the rim in inches is shown on display 3. The figure displayed consists of two figures separated by a decimal point. As this value is set both the self-centring turntable and the two units with bead breaker disc automatically move to the ideal radial position for performing the job.
- Load the wheel on the lift 2 fig. 8a.
- Operate the *Lever* 8 fig. 9b and lift the wheel to position it in its working position on the turntable (fig. 11). When the wheel is placed on the turntable, the mobile pin in a radial position on the turntable must also be fitted into one of the fixing bolt holes (fig. 12)
- Press the *Pedal* 3 fig. 9c to release the turntable clamping system. Take hold of the centring handle 1 and adjust the position of the wheel by hand to fit the handle into its centre hole fig. 12a. Release the *Pedal* 3 fig. 9.c The wheel clamping system is now active and the wheel is locked to the turntable by means of the centring handle, moving as one with it.
- Completely deflate the tyre by removing the valve.
- Place the top bead breaker unit in the working position (axis of the arm horizontal) by lowering it by hand using the fixed gripper lever provided. Operate the *Lever* fig. 9b to bring the disc almost into contact with the tyre. The wheel data have been set correctly if the radial gap between the rim of the wheel and the edge of the bead breaker disc is about 5 mm. Lower further until the bead breaker disc is touching the tyre.
- Press the *Button* 3 (fig. 9b) once.
- Press the *Pedal* 1 fig. 9c to rotate the turntable. The bead breaker disc is moved in a radial direction around the edge of the rim as the wheel turns, completely separating the top bead of the tyre from the rim (fig. 13).
- Operate the *Lever* 1 fig. 9b to return the entire unit upward, removing it from the working

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- area. Return the top bead breaker unit to the rest position by operating the mobile lever underneath the arm of the unit by hand from the operator side - 11 fig. 8a.
- The bottom bead breaker unit is already in the ideal radial position for breaking the bead on the underside of the tyre. Operate the *Lever 2* fig. 9b to bring the disc into contact with the tyre.
- Press the *Pedal 1* fig. 9c and operate the *Lever 2* fig. 9b so that the disc penetrates further into the wheel. The bead breaker disc is inserted into the wheel as it rotates to completely separate the bottom bead of the tyre from the rim.
- Operate the *Lever 2* fig. 9b to return the entire unit downward, removing it from the working area.
- Remove any old balancing weights from the rim.

## TYRE DEMOUNTING

- **Make sure that you have lowered the lower bead breaker.**
- When working on stiff, difficult tyres the tyre should be lubricated carefully along the whole circumference of the top and bottom beads to simplify demounting and prevent damage to the beads (fig. 14). Lubricate with specific products and do not use oily solutions containing hydrocarbons or silicones.
- With the tool head at the start of its travel stroke, meaning that it is above the wheel and away from the working zone, if necessary push or pull the *Button 4* fig. 9b to prepare the mobile tool 1 fig. 15 to demount the top bead of the tyre.
- Operate the *Lever 7* fig. 9b to move the mobile tool forward to its limit position in the direction of the wheel, and lower it until it is almost touching the top bead (fig. 15a).
- Completely lower the mobile tool beyond the shoulder of the rim (fig. 15b). Now press the *Button 5* fig. 9b to obtain a grip on the top bead of the tyre (fig. 15c). If necessary, turn the wheel to allow this by pressing *Pedal 1* fig. 9c. Once the grip has been established release the button to return the tool to its rest position (fig. 15d).
- Operate the *Lever 7* fig. 9b and raise the mobile tool, gripping the tyre, until the whole of the groove on the tool can be seen beyond the rim (fig. 15e and A fig. 16).
- Turn the *Switch 6* fig. 9b fully down. The mobile tool gripping the top bead moves away from the centre of the wheel, lifting the tyre beyond the rim (fig. 15f). At the same time the turntable moves towards the taut part, releasing the tensions generated in the structure of the tyre. Keeping the *Switch 6* fig. 9b turned, press the turntable rotation *Pedal 1* fig. 9c to demount the top part of the tyre from the rim.
- Once the top bead has been demounted release the *Switch 6* fig. 9b to return the mobile tool to its rest position and the *Pedal 1* fig. 9c to stop rotation of the wheel.
- Operate the *Lever 7* fig. 9b to remove the mobile tool from the working area. The tool head must be lifted away from the wheel and moved completely back.
- If the tyre has an inner tube, after demounting the top bead remove the inner tube before proceeding to demount the bottom bead. If necessary, turn the wheel slightly to facilitate this by pressing *Pedal 1* fig. 9c. Rotation of the turntable can be stopped at any moment by releasing its control pedal. To rotate in the opposite direction, simply raise the pedal.
- Press *Lever 9* fig. 9b up to operate the pneumatic support and bring the supporting element into contact with the underside of the tyre. Press until the underside of the tyre has been raised to about the height of the rim's top shoulder.
- Operate the *Lever 7* fig. 9b to guide the tool head into the working zone to demount the

bottom bead from the rim. The tool to be used to demount the bottom bead from the rim is the fixed tool 7 fig. 8a. Move the fixed tool forward to the limit position and raise it to the height of the rim's top shoulder.

- With the aid of your hand, position the tyre so that the hook of the tool fits between the bottom bead and the rim.
- Operate the *Lever 2* fig. 9b to bring the bottom bead breaker disc into contact with the tyre (fig. 17).
- Operate the *Lever 2* fig. 9b to raise the tyre further and press the *Pedal 1* fig. 9.c The bead breaker disc pushes the bottom bead up as the wheel turns to completely remove the tyre from the rim.
- At this point the tyre is completely demounted from its rim. Place the tyre temporarily on the wheel lift frame.
- Operate the *Lever 2* fig. 9b and the *Lever 7* fig. 9b to remove the bottom bead breaker disc and the fixed tool from the working area. The tool head must be lowered away from the wheel and moved completely back.
- Place the tyre for changing on the ground by hand.

## TYRE MOUNTING

### Instructions for choosing the tyre

To obtain full benefit from the characteristics offered by a tyre and to obtain the necessary guarantees of safety in use, it is necessary to adopt a series of precautions when choosing and installing it.

The dimensional and construction characteristics and service characteristics can be identified by interpreting the markings on the sidewall of the tyre.

Once the appropriate tyre has been chosen from those permitted for use on the vehicle, the mounting procedure can be begun.



#### ATTENTION

**When fitting a new tyre, replace the inner tube in case of a tube type and the valve in case of a tubeless type.**



#### ATTENTION

**Always check that the tyre and rim are compatible in type (tubeless tyre on tubeless rim, tube type tyre on tube rim) and geometrical dimensions (keying diameter, cross-section width, Off-Set and type of shoulder profile) before mounting.**

**Also check that rims are not deformed, that their fixing holes have not become oval, that they are not encrusted or rusty and that they do not have sharp burrs on the valve holes.**

**Check that the tyre is in good condition with no signs of damage.**

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## Mounting the tyre

- Place the tyre on the frame of the wheel lift 2 fig. 9a.
- Lubricate the tyre carefully along the whole circumference of the top and bottom beads to simplify mounting and prevent damage to the beads (fig. 18). Lubricate with specific products and do not use oily solutions containing hydrocarbons or silicones.
- Operate the *Lever* 7 fig. 9b to guide the tool head into the working zone to mount the bottom bead. The tool to be used to mount the bottom bead on the rim is the fixed tool 7 fig. 8a. Move the tool head forward to the limit position and raise the fixed tool to the height of the rim's top shoulder.
- Sliding it along the fixed tool (fig. 19) and moving the tyre by hand, fit part of the bottom bead across the rim's top shoulder into the drop centre. Maintaining a light pressure on the part of the tyre where the bottom bead has not yet been fitted into the rim, press gently on the *Pedal* 1 fig. 9c. The downward pressure on the tyre and the rotation of the wheel insert the bottom bead completely into the width of the rim.
- In tube type wheels, fit a new inner tube into the width of the rim. Connect the Doyfe union of the inflation line 20 fig. 8b to the stem of the inner tube valve and inflate it slightly by pressing the *Pedal* 2 fig. 9c. During inflation, try to position the inner tube as close as possible to its definitive position.
- Operate the *Lever* 7 fig. 9b to guide the tool head into the working zone to mount the top bead. While the head is moving push or pull the *Switch* 4 fig. 9b to prepare the fixed tool 7 fig. 8a to mount the top bead. Move the fixed tool forward to the limit position and lower it until it is between the rim's top shoulder and the top bead of the tyre. The fixed tool is in the correct vertical position when the mark on it, indicated by the groove, is visible in line with the top edge of the rim's shoulder - A fig. 20.
- Place the top bead breaker unit in the working position (axis of the arm horizontal) by lowering it by hand using the fixed gripper lever provided. Operate the *Lever* 1 fig. 9b so that the disc presses on the tyre. Lower the disc further, pushing the tyre beneath the level of the shoulder (fig. 20).
- Apply the *bead pressing gripper(s)* 1 fig. 20 to the rim's shoulder to ensure that the top bead remains inside the drop centre. To avoid possible risks if the bead comes away suddenly, fasten the tie on the centring handle.
- Press the *Pedal* 1 fig. 9b. The bead breaker disc is lowered slightly and the wheel rotates, completely inserting the top bead beyond the shoulder.
- Remove the *bead pressing gripper(s)* from the shoulder of the rim.
- Operate the *Lever* 7 fig. 9b to remove the fixed tool from the working area. The tool head must be lifted away from the wheel and moved completely back.
- Operate the *Lever* 1 fig. 9b to return to entire bead breaker unit upward, removing it from the working area. Also return the top bead breaker unit to the rest position by operating the mobile lever 11 fig. 8a underneath the arm of the unit by hand from the operator side.

# INFLATION



## WARNING

Inflation is well known to be a dangerous operation. It must be carried out in accordance with the instructions below. Safety goggles with plain lenses and safety footwear must be worn.



## ATTENTION

During this operation, noise levels assessed at 85 dB(A) may occur. We therefore recommend that the operator wears ear protectors.



## DANGER

Although the machine limits the pressure, it does not provide sufficient protection if the tyre bursts during inflation.

Failure to comply with the instructions below will make tyre inflation dangerous.



## DANGER

**NEVER** exceed the pressure recommended by the tyre manufacturer. Tyres may burst if they are inflated beyond these limits or their structures may incur serious damage not visible at the time. **KEEP THE HANDS AND THE WHOLE BODY WELL AWAY FROM THE TYRE DURING INFLATION.** Make sure you are concentrated during this operation and check the tyre pressure continuously to avoid excess inflation. A bursting tyre can cause serious injury or even death.

## Inflating tubeless

- Make sure that the wheel on which the tyre has been mounted is firmly clamped to the self-centring turntable using the centring handle 4 fig. 8a. Also make sure that the tool head 6 fig. 8a and the top and bottom bead breaker units 9-13 fig. 8a are well clear of the working area, if possible in the rest position.
- Fix a new valve to the rim.
- Connect the Doyfe union of the inflation line 20 fig. 8b to the stem of the valve, after removing the cap. Inflate the tyre by pressing *Pedal 2* fig. 9c. The tyre expands, bringing the beads into the position where they create a seal.
- Continue inflating up to the maximum value of 3.5 bar to position the tyre correctly on the rim. Make sure you are concentrated during this operation and check the tyre pressure on the *Air pressure display pressure gauge 1* fig. 9a continuously to avoid over-inflating. Inflation of tubeless tyres requires a higher air flow-rate to allow the beads to pass over the humps in the rim - see types of profiles of tubeless tyre rims in fig. 21; to provide this, the internal mechanism of the valve should be removed. In terms of anchoring of the bead in its seat, the hump (H) and double hump (H2) versions provide greater safety in use, even if the inflation pressure is slightly lower than recommended.
- Check from the position of the centring ridges that the beads are properly positioned on the rim, and otherwise deflate, break the beads as described in the relevant section, lubricate and turn the tyre on the rim. Repeat the mounting operation described

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previously and check again.

- Replace the internal mechanism of the valve.
- Bring the pressure to the operating value by pressing the *Inflation button* 5 fig. 9a.
- Fit the cap on the valve to protect its internal mechanism from dust and ensure an airtight seal.
- Press the *Pedal* 3 fig. 9c to release the turntable clamping system. Take hold of the centring handle and remove it. Release the *Pedal* 3 fig. 9c.
- Operate the *Lever* 8 fig. 9b and remove the wheel from the working area. With the wheel lift on the ground, take the wheel ready for fitting on the vehicle.

### **Inflating tube-type tyres**

- Make sure that the wheel on which the tyre has been mounted is firmly clamped to the self-centring turntable using the centring handle 4 fig. 8a. Also make sure that the tool head 6 fig. 8a and the top and bottom bead breaker units 9-13 fig. 8a are well clear of the working area, if possible in the rest position.

- Connect the Doyfe union of the inflation line 20 fig. 8b to the stem of the inner tube valve, after removing the cap. Inflate the tyre by pressing the relative *Pedal* 2 fig. 9c in short bursts.

The inner tube gradually expands inside the tyre. As this happens, push the inner tube valve inward to allow the air left between the tube and the tyre to escape; this prevents deflation and possible damage to the tube.

- Inflate, taking great care that the pressure shown on the *Air pressure display gauge* 1 fig. 9a NEVER exceeds the pressure levels recommended by the tyre producer.
- Fit the cap on the valve to protect its internal mechanism from dust and ensure an airtight seal.
- Press the *Pedal* 3 fig. 9c to release the turntable clamping system. Take hold of the centring handle and remove it. Release the *Pedal* 3 fig. 9c.
- Operate the *Lever* 8 fig. 9b and remove the wheel from the working area. With the wheel lift on the ground, take the wheel ready for fitting on the vehicle.

### **Inflation pressures**

Maintaining correct pressure values is of the greatest importance for safe use of the vehicle.

Insufficient pressure causes overheating and may drastically shorten the life of the tyre; it reduces roadholding and may cause uneven wear (tread wear concentrated on the shoulders of the tyre) and internal damage, and the tyre may even collapse. It also increases the vehicle's fuel consumption.

Excessive pressure makes the tyre more liable to damage in case of knocks and causes uneven wear (wear concentrated along the centre of the tread).

The inflation pressure must be checked regularly, at least every two weeks and before long journeys, not forgetting the spare wheel.

The pressure must only be checked with the tyres cold, since the pressure increases when the tyres heat up during use.

Never reduce the pressure of tyres when they are hot.

Tyres which have not been used for at least one hour, or have travelled not more than 2 or 3 kilometres at low speed, can be considered cold.

The inflation pressures when cold must be those specified for the car by the car or tyre

producer.

For heavy-duty operating conditions (e.g. continuous high speeds, towing trailers, etc.), where this is not already specified by the car's handbook, the recommended cold pressures should be increased by 0.3 bar.

## MAINTENANCE



### WARNING

The “Spare Parts” manual does not authorise the user to do any work on the machine except for that specifically described in the operator's manual, but does enable the user to provide accurate information to the after-sales service, in order to reduce service times.



### WARNING

CORGIH declines all liability for claims deriving from the use of non-original spares or accessories.



### WARNING

Any operation intended to modify the setting value of the relief valve or pressure limiter is forbidden.

The manufacturer declines all liability for damage resulting from tampering with these valves.



### WARNING

Before making any adjustments or carrying out maintenance, disconnect the electricity and compressed air supplies from the machine and make sure that all moving parts are suitably immobilised.



### WARNING

Do not remove or modify any part of this machine (except for servicing).



### DANGER

When the machine is disconnected from the air supply system, the devices marked with the warning sign shown above may remain pressurised.

- The filter-regulator-lubricator is equipped with a semiautomatic condensation drain device. This device operates automatically whenever the compressed air supply to the machine is cut off. Drain the condensation by hand (button 1, fig. 22) when the level rises above the mark X fig. 22.
- Check daily that the travel screws of the tool head and each bead breaker unit are operating correctly. The build-up of dirt in this area may impair operation and cause a hazard.

- Clean the top plate of the self-centring turntable every week: remove any accumulated dirt and clean with environment-friendly solvents.
- Monthly checks:
  - Clean the arms of the tool head and each bead breaker unit, and the relative travel screws, and lubricate, using environment-friendly solvents only.
  - Check the oil level in the air lubricator (fig. 22) and top up if necessary with SAE 20 non-detergent oil to the level Z marked.
  - Clean with a dry cloth. Avoid contact with solvents.
  - Check the oil flow-rate through the transparent cap K (correct flow-rate: 1 drop of oil every 4 bead breaking cycles). Adjust if necessary by turning the adjuster screw Y (fig. 22).



### ATTENTION

**Keep the working area clean.**

**Never use compressed air, jets of water or solvent to remove dirt or residues from the machine.**

**When cleaning, take care to avoid creating and raising dust as far as possible.**



### WARNING

**If the electricity supply fails with the MOUNT/DEMOUNT tool positioned between the rim and the tyre, proceed as follows:**

- Restart the machine without resetting it.
- Use the bead breakers, operating them up and down, to make enough room for the MOUNT/DEMOUNT tool to be released from the tyre.

## LIST OF DISPLAY SIGNALS

- "E1": X AXIS LIMIT MESSAGE**  
 APPEARS IN CASE OF EXCESS CURRENT ABSORPTION BY THE LINEAR ACTUATOR.  
 If the command is reversed, the signal disappears.
- "E2": Y AXIS LIMIT MESSAGE**  
 APPEARS IN CASE OF EXCESS CURRENT ABSORPTION BY THE MOTOR WHICH POWERS VERTICAL TRAVEL OF THE HEAD.  
 If the command is reversed, the signal disappears.
- "E3": GENERAL MACHINE LOW POWER MESSAGE**  
 APPEARS WHEN THE MAINS VOLTAGE IS TOO LOW FOR THE MACHINE TO OPERATE CORRECTLY.  
 Switch off the machine and check the mains voltage.
- "TOE": "ENCODER TIME-OUT" MESSAGE.**  
 APPEARS IF THE CIRCUIT BOARD HAS NOT RECEIVED ANY SIGNALS FROM THE ENCODER FOR TWO SECONDS AFTER THE RESET TO 26 INCHES.  
 It may be necessary to replace the actuator, the circuit board or the encoder cable.

**“ENC”:** “ENCODER” MESSAGE.

APPEARS IF THE CIRCUIT BOARD HAS NOT RECEIVED ANY SIGNALS FROM THE ENCODER DURING THE RESET TO 26 INCHES.

It may be necessary to replace the actuator, the circuit board or the encoder cable.

IN CASE OF “TOE” AND “ENC” THE MACHINE SWITCHES TO MANUAL MODE, SO THE WHEEL SUPPORT CAN ONLY MOVE IF THE INCREASE OR DECREASE BUTTON IS KEPT DEPRESSED.

It may be necessary to replace the actuator, the circuit board or the encoder cable.

**“EFC”:** “LIMIT SWITCH ERROR” MESSAGE:

APPEARS WHEN THE X AND Y AXIS LIMIT MICROSWITCHES MALFUNCTION.

Check that the limit stop microswitches are connected and that neither of them has failed.

**“ROT”:** COUNTER-ROTATION MESSAGE:

APPEARS WHEN THE ENCODER CHANNEL CONNECTIONS HAVE BEEN SWAPPED; REVERSE THE CONNECTIONS.

Reverse the poles of the encoder power supply cable.

## ENVIRONMENTAL INFORMATION

Following disposal procedure shall be exclusively applied to the machines having the

crossed-out bin symbol on their data plate



This product may contain substances that can be hazardous to the environment or to human health if it is not disposed of properly.

We therefore provide you with the following information to prevent releases of these substances and to improve the use of natural resources.

Electrical and electronic equipments should never be disposed of in the usual municipal waste but must be separately collected for their proper treatment.

The crossed-out bin symbol, placed on the product and in this page, remind you of the need to dispose of properly the product at the end of its life.

In this way it is possible to prevent that a not specific treatment of the substances contained in these products, or their improper use, or improper use of their parts may be hazardous to the environment or to human health. Furthermore this helps to recover, recycle and reuse many of the materials used in these products.

For this purpose the electrical and electronic equipment producers and distributors set up proper collection and treatment systems for these products.

At the end of life your product contact your distributor to have information on the collection arrangements.

When buying this new product your distributor will also inform you of the possibility to return free of charge another end of life equipment as long as it is of equivalent type and

has fulfilled the same functions as the supplied equipment.

A disposal of the product different from what described above will be liable to the penalties prescribed by the national provisions in the country where the product is disposed of.

We also recommend you to adopt more measures for environment protection: recycling of the internal and external packaging of the product and disposing properly used batteries (if contained in the product).

With your help it is possible to reduce the amount of natural resources used to produce electrical and electronic equipments, to minimize the use of landfills for the disposal of the products and to improve the quality of life by preventing that potentially hazardous substances are released in the environment.

## **OIL - WARNINGS AND RECOMMENDATIONS**

### **Disposing of used oil**

Do not dispose of used oil in sewers, storm drains, rivers or streams; collect it and consign it to an authorised disposal company.

### **Oil spills and leaks**

Contain spills with soil, sand or another absorbent material.

The contaminated area must be degreased with solvents, taking care to disperse solvent fumes, and the residual cleaning material must be disposed of as prescribed by law.

### **Precautions when using oil**

- Avoid contact with the skin.
- Avoid the formation or diffusion of oil mists in the atmosphere.
- Apply the following elementary health precautions:
  - protect against oil splashes (appropriate clothing, protective guards on machines);
  - wash frequently with soap and water; do not use cleaners or solvents which irritate the skin or remove its natural protective oil;
  - do not dry hands with dirty or greasy rags;
  - change clothing if impregnated with oil, and in any case at the end of every working shift;
  - do not smoke or eat with greasy hands.
- Also apply the following preventive and protective measures:
  - gloves resistant to mineral oils, with lining;
  - goggles, in case of splashes;
  - aprons resistant to mineral oils;
  - screens to protect against oil splashes.

### **Mineral oil: first aid procedures**

- **Swallowing:** seek medical attention, providing the characteristics of the type of oil swallowed.

- **Inhalation:** in case of exposure to high concentrations of fumes or mists, move the affected person into the open air and seek medical attention immediately.
- **Eyes:** bathe with plenty of running water and seek medical attention immediately.
- **Skin:** wash with soap and water.

## RECOMMENDED FIRE-EXTINGUISHING DEVICES

When choosing the most suitable fire-extinguisher refer to the table below:

Dry materials		Flammable liquids	Electrical equipment
Water	YES	NO	NO
Foam	YES	YES	NO
Powder	YES*	YES	YES
CO2	YES*	YES	YES
YES*	<i>Use only if more suitable extinguishers are not on hand or for small fires.</i>		



### WARNING

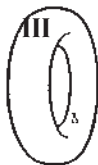
The indications in this table are of a general nature and are intended to provide users with guidelines only. The applications of each type of extinguisher will be illustrated fully by the respective manufacturers on request.

# GLOSSARY

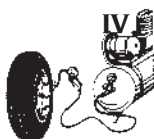
I



III



II



## Tyre

The tyre is a combination of the following items: **I-tyre**, **II-rim** (wheel), **III-inner tube** (in tube-type tyres), **IV-pressurised air**.

The tyre must:

- support the load,
- ensure the transmission of the drive forces,
- steer the vehicle,
- contribute to roadholding and braking,
- contribute to the vehicle's suspension.

**I - Tyre.** The tyre is the main element of the wheel-tyre combination which is in contact with the road and is therefore required to withstand the internal air pressure and all the other stresses generated by use.

A cross-section view of the tyre shows all its constituent parts:

**1 - Tread.** It is so-called because it comes into contact with the ground as the wheel turns. It consists of a rubber blend and of a "pattern" designed to ensure both good resistance to abrasion and a good grip on the ground in wet and dry conditions, as well as low running noise.

**2 - Edge or reinforcement.** A woven metal or fabric insert on the outside of the bead; it protects the carcass plies from rubbing against the rim.

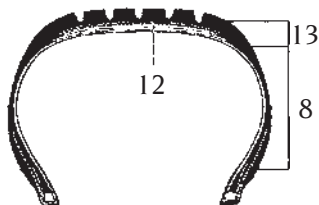
**3 - Carcass.** It provides the main resistant body of the tyre and consists of one or more layers of rubber-coated fabric, or plies. The way in which the plies which make up the carcass are arranged gives the name to the tyre's structure. There are the following different structural types:

**Bias ply:** the plies are laid at angles and arranged so that the strands in one ply form a criss-cross pattern with those of the next ply. The tread, which is the part of the tyre touching the ground, is in a single piece with the sidewalls and so as the wheel turns any flexural movements of the sidewall are transmitted to the tread.

**Radial:** The carcass consists of one or more plies with the cords arranged in a radial direction.

A radial carcass in the purest sense is relatively unstable; to make it stable and prevent stray mo-

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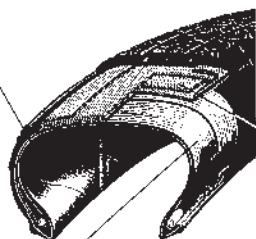


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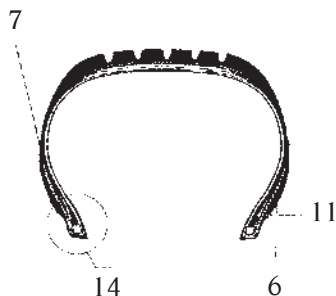
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5

3

vements of the tread in the footprint, on the carcass and underneath the tread an annular reinforcing structure generally known as a belt is used. The tread and the sidewall work with different rigidities and independently, so as the wheel turns flexural movements of the sidewall are not transmitted to the tread.



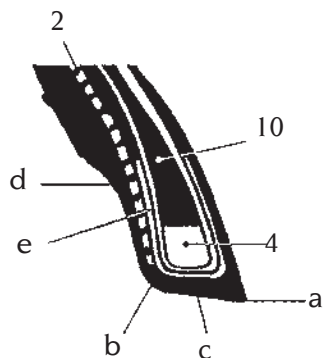
4 - *Loop*. This is a loop of metal consisting of several steel wires. The carcass plies are anchored to the loop.

5 - *Belt*. This is a non-extensible circumferential structure consisting of plies criss-crossed at very narrow angles, located underneath the tread, in order to stabilise the carcass in the footprint area.

6 - *Centring ridge*. This is a small ridge running around the circumference of the top of the bead groove, which serves as reference to ensure that the tyre is centred exactly on the rim after mounting.

7 - *Guard ridge*. This is a ridge running around the circumference of the part of the sidewall most at risk of accidental rubbing.

8 - *Sidewall*. This is the zone between the shoulder and the centring ridge. It consists of a layer of rubber of varying thickness, intended to protect the carcass plies against knocks from the side.



9 - *Liner*. This is a sheet of airtight rubber blend, vulcanised onto the inside of tubeless tyres.

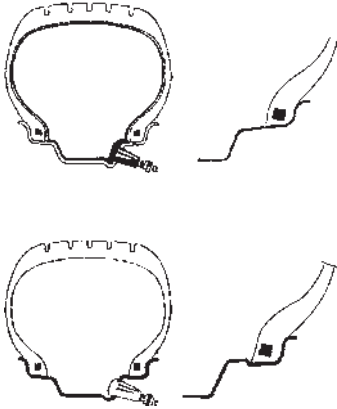
10 - *Filling*. A rubber profile, generally triangular in cross-section, above the loop; it ensures the rigidity of the bead and provides a gradual compensation of the sudden change in thickness caused by the loop.

11 - *Turn-up*. This is the edge of the carcass ply which is wrapped around the loop and placed against the carcass in order to fix the ply in place and prevent it from fraying.

12 - *Sole or foot*. This is the innermost layer of the tread, in contact with the belt or, where there is no belt (bias ply tyres), with the last ply of the carcass.

13 - *Shoulder*. The outermost part of the tread, between the edge and the start of the sidewall.

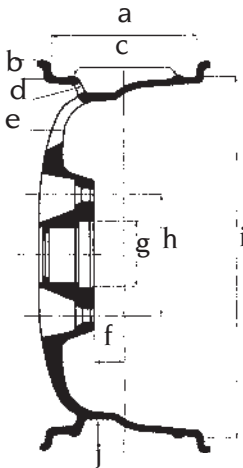
14 - *Bead*. The part where the tyre fits onto the rim. The tip of the bead (a) is its inner edge, while the spur (b) is the outermost part of the bead. The base (c) is the zone in contact with the rim. The cavity (d) is the concave part on which the shoulder of the rim rests.



**Tube type tyres** Since the tyre must be able to contain the pressurised air for a relatively long time, an inner tube is used inside the tyre. In this case, the valve used to insert, retain, check and top up the pressurised air forms part of the inner tube itself.

**Tubeless tyres** The tubeless tyre consists of a tyre the inside of which is coated with a thin layer of airtight rubber known as a liner. This helps to ensure that the pressurised air inside the carcass is retained. This type of tyre has to be mounted on a special rim, to which the valve is fixed directly.

**II -Rim (Wheel).** The wheel is the rigid metal element which provides the fixed but not permanent connection between the hub of the vehicle and the tyre.

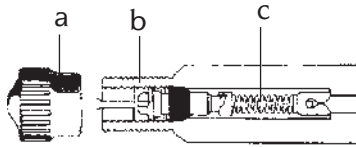


**Rim profile.** The profile of the rim is the shape of the section of it which comes into contact with the tyre. It may have various geometrical shapes intended to ensure: ease of mounting of the tyre (insertion of the bead into the drop centre) and safety in operation, terms of anchoring of the bead into its seat.

A cross-section view of the rim shows a number of its constituent parts: a) rim width - b) shoulder height - c) humps for anchoring tubeless tyres - d) valve hole - e) ventilation openings - f) off set - g) centre hole diameter - h) distance between fixing holes - i) keying diameter - j) drop centre.

**III - Inner tube (in tube type tyres).** The inner tube is a rubber casing in an endless loop, fitted with a valve, which contains the pressurised air.

**Valve.** The valve is a mechanical device which allows inflation/deflation and retention of the pressurised air inside an inner tube (or a tyre in the case of tubeless tyres). It consists of three parts: the valve cap (a) (to protect the internal mechanism from dust and ensure an airtight seal), an internal mechanism (b) and the base (c) (outer coating).



**Tubeless Inflator.** An inflation system which simplifies the inflation of tubeless tyres.

**Bead insertion.** Operation which takes place during inflation and ensures perfect centring between the bead and the edge of the rim.

**Bead pressing gripper** A tool intended for use during mounting of the top bead. It is fitted so that it grips the shoulder of the rim and holds the tyre's top bead inside the drop centre. It is generally used for mounting low profile tyres.

**Discharge regulator.** Union allowing regulation of the air flow.

**Bead breaking** Operation in which the bead of the tyre is detached from the edge of the rim.

**GB**

# WIRING DIAGRAM

**Fig. 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30**

S1	Illuminated mains switch
Z1	Interference filter
TC1	AP2 Power supply transformer
TC2	Autotransformer

# PNEUMATIC DIAGRAM

## General pneumatic plant diagram

Sheet N° 463529 Fig. 31

### A - DISC PENETRATION CONTROL

12	3/2 valve – normally closed
13	Top hexagonal locking plate cylinder
14	Bottom hexagonal locking plate cylinder
15	Silencer filter
26	Discharge regulator

### B - TOP BEAD BREAKER CONTROL

15	Silencer filter
16	5/3 valve – normally closed
17	Top bead breaker cylinder

### C - BOTTOM BEAD BREAKER CONTROL

15	Silencer filter
16	5/3 valve – normally closed
18	Bottom bead breaker cylinder

### D - TOOL HEAD MOVEMENT

19	3/2 valve – normally open
20	3/2 valve – normally closed
21	Tool head movement cylinder

### E - TOOL HEAD ROTATION

22	3-way valve
23	Tool rotation cylinder

### F - HEAD HORIZONTAL MOVEMENT CONTROL

15	Silencer filter
24	3-way solenoid valve
25	Head horizontal movement cylinder

### G - PEDAL CONTROL UNIT

6	3/2 valve – normally closed
7	3/2 valve – normally closed
8	Rapid discharge valve

### H - SELF-CENTERING DEVICE

9	Self-centering single-effect cylinder
---	---------------------------------------

### I - INFLATION

## **L - MANUAL DEFLATION**

- 11 Manual deflation valve
- 1 Female fast coupling
- 2 Regulator filter unit
- 3 Lubricator
- 4 Pressure gauge
- 5 Inflation limiter
- 10 Inflation pressure gauge

### **Lifting unit pneumatic plant diagram**

**Sheet N° 463532 Fig. 31**

- 1 5/3 valve
- 2 Silencer filter
- 3 Check valve
- 4 3-way valve
- 5 Lifting cylinder
- 6 Rotation cylinder
- 7 3-way valve
- 8 Two-way flow regulator valve
- 9 3-way valve
- 10 Cut-off valve

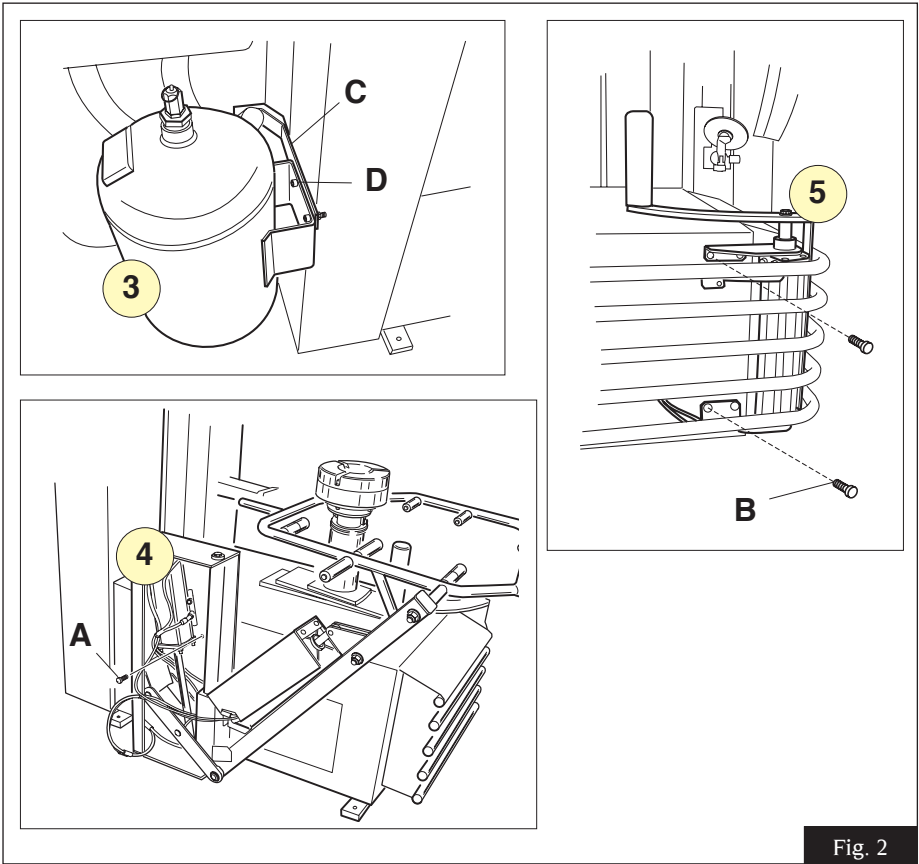
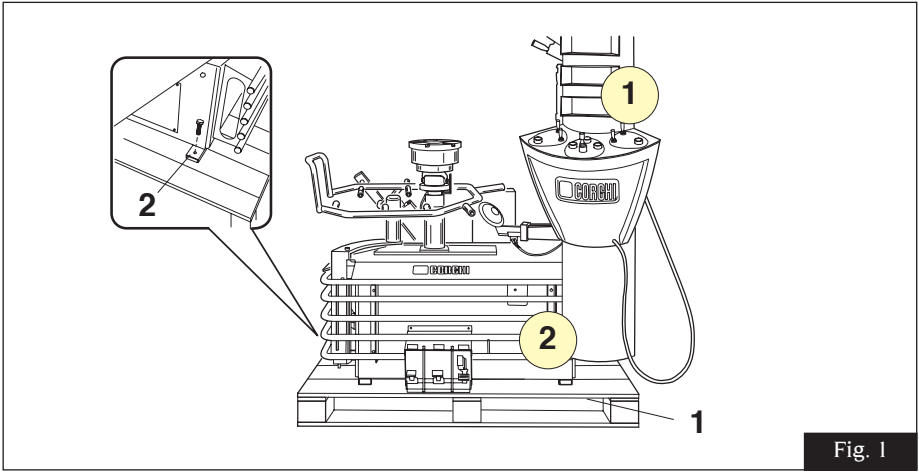
### **Bead lifter pneumatic plant diagram**

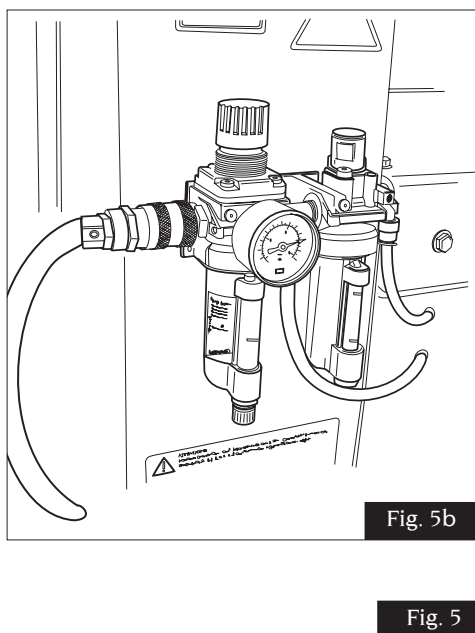
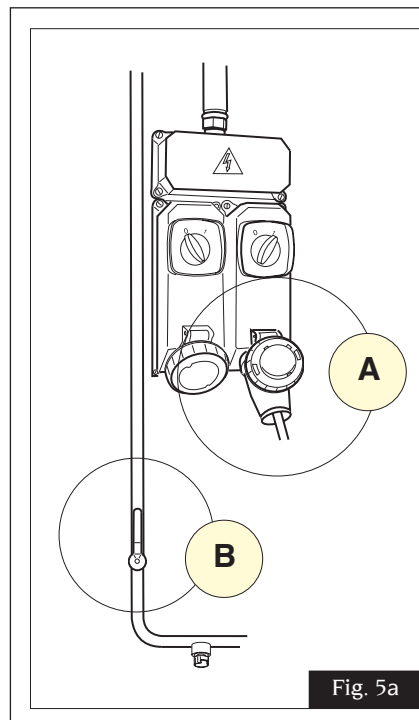
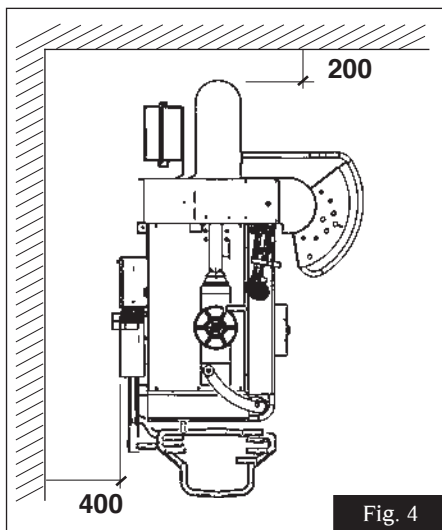
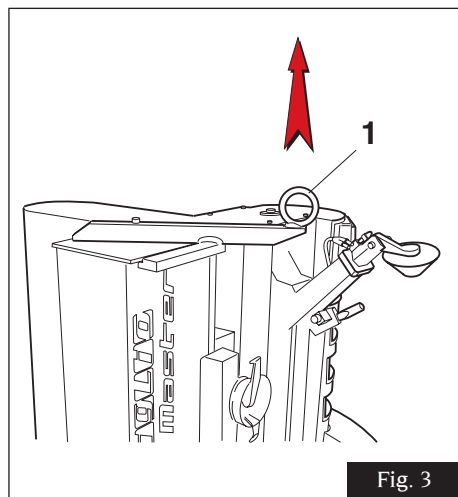
**Sheet N° 463533 Fig. 32**

- 1 3-way valve with closed centre
- 2 Silencer filter
- 3 Bead lifter cylinder

**GB**

[illegible]





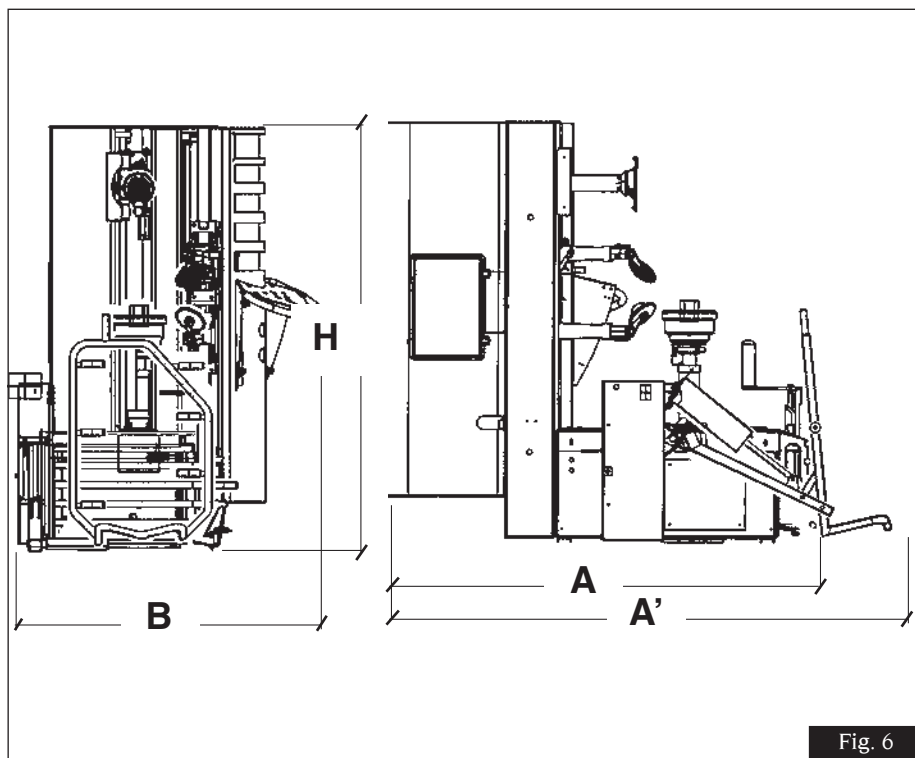


Fig. 6

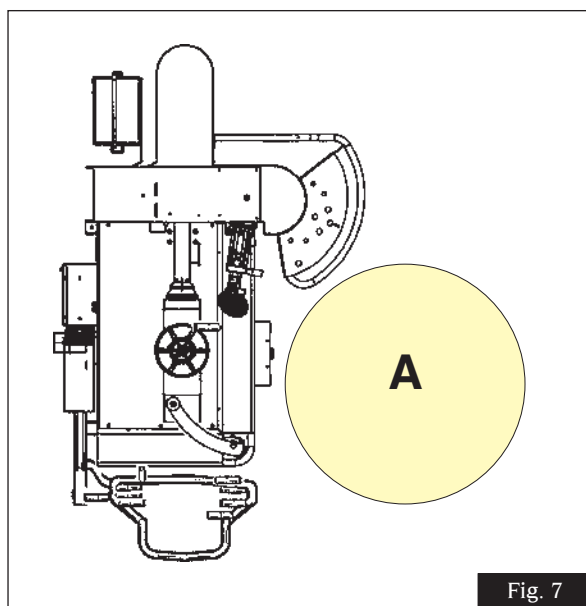


Fig. 7

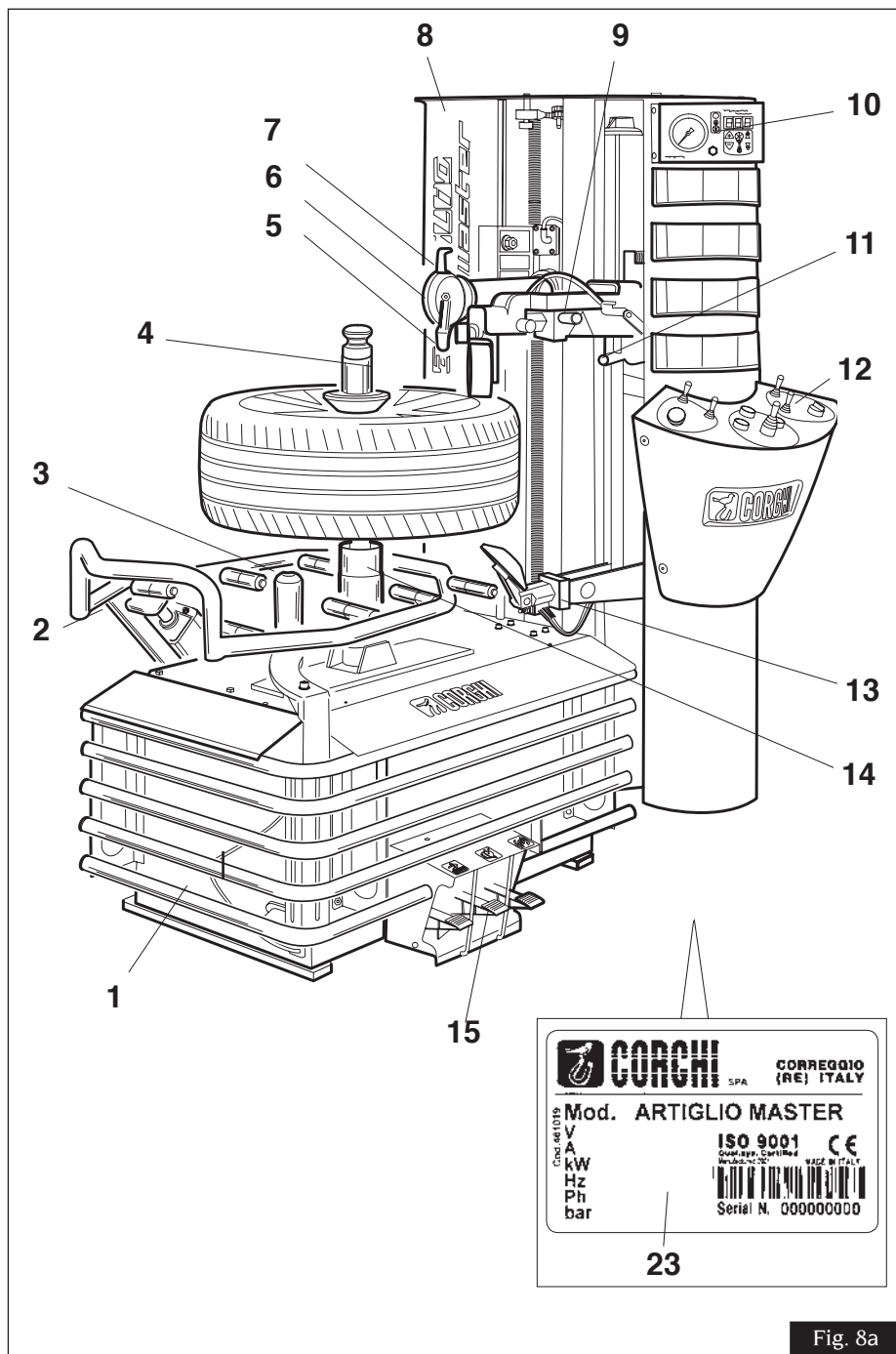
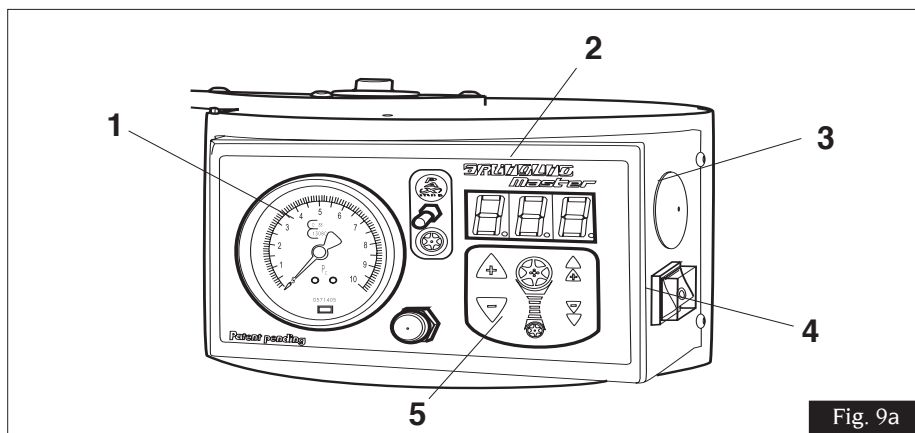
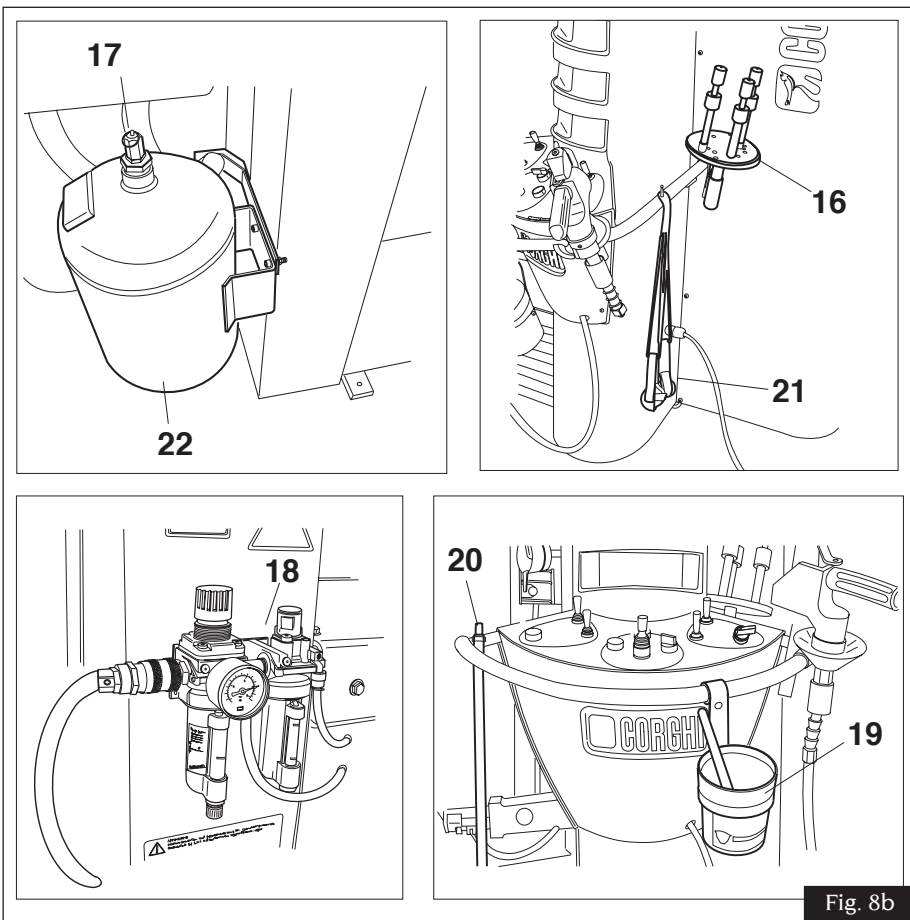
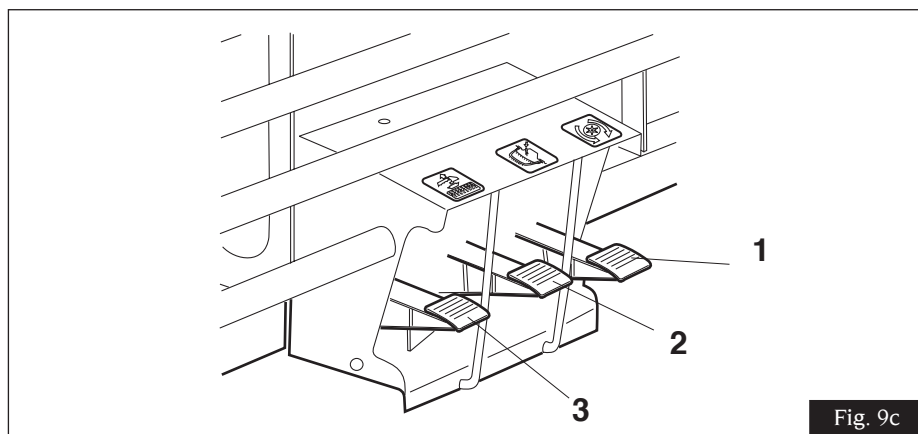
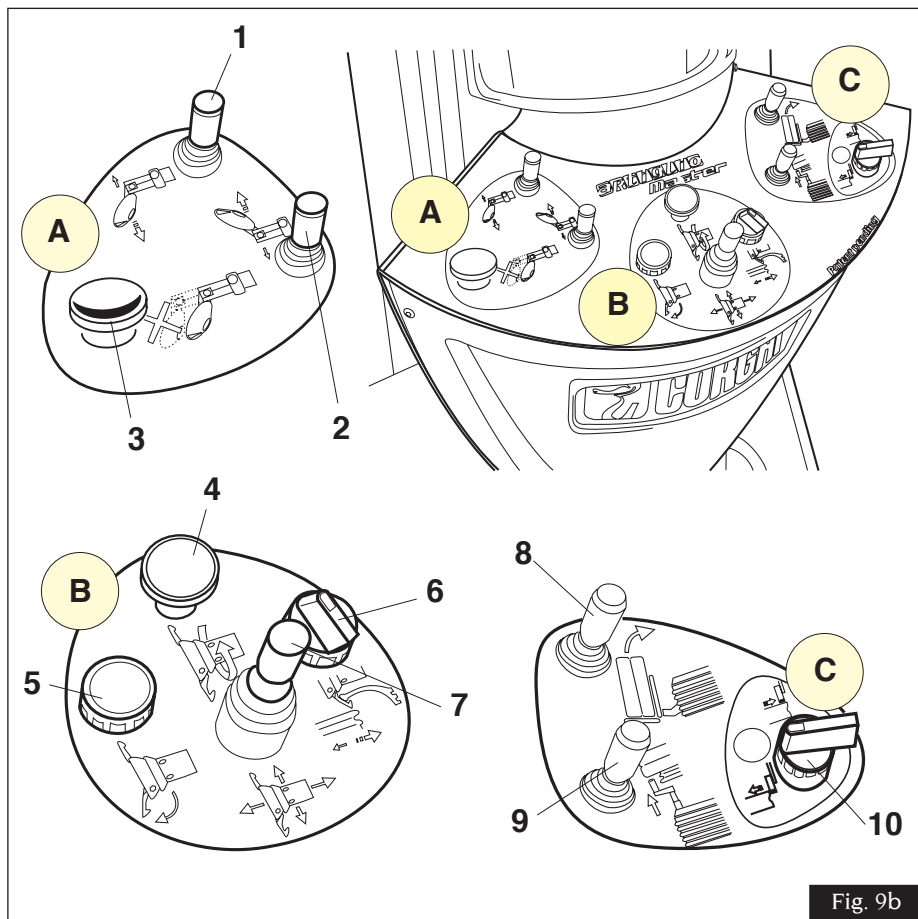
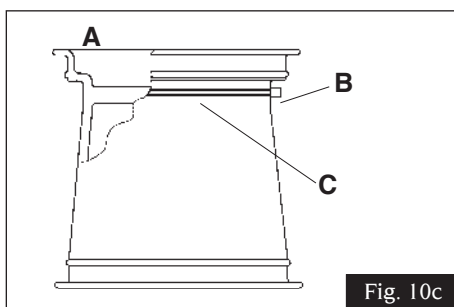
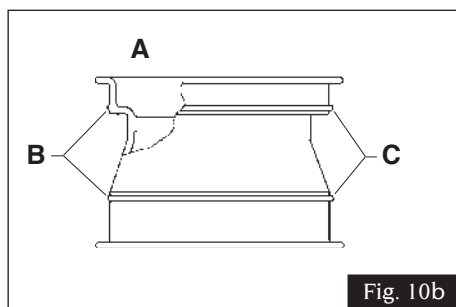
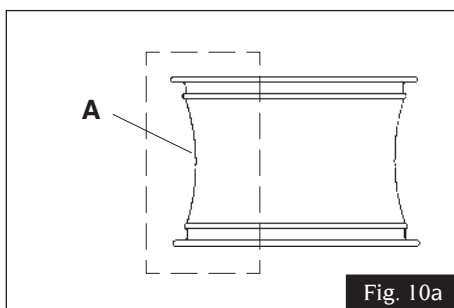
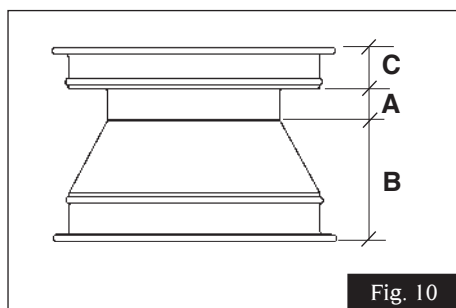
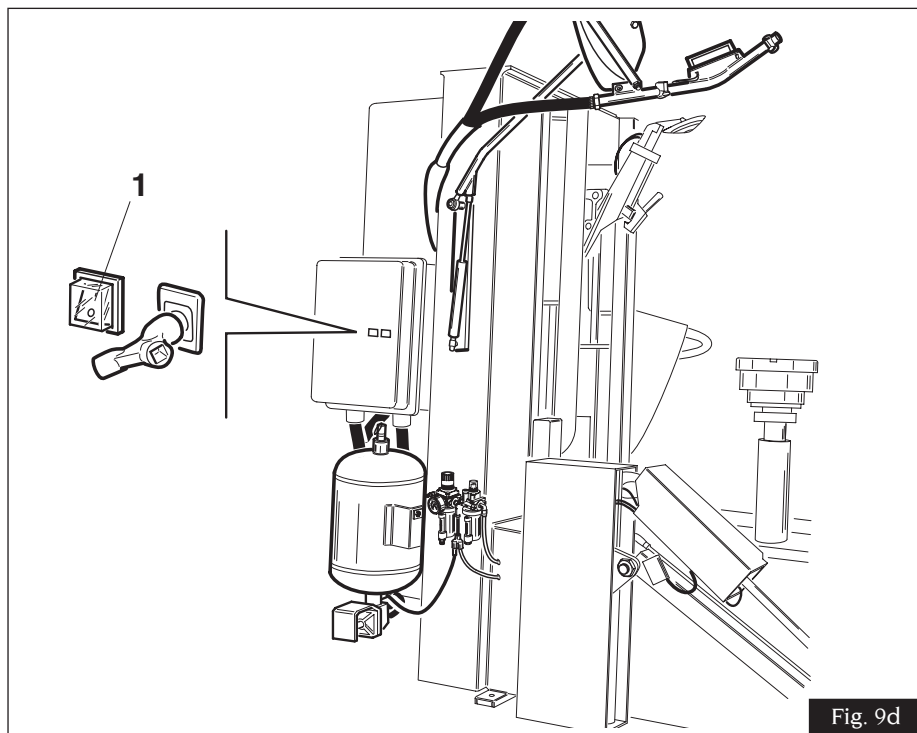


Fig. 8a







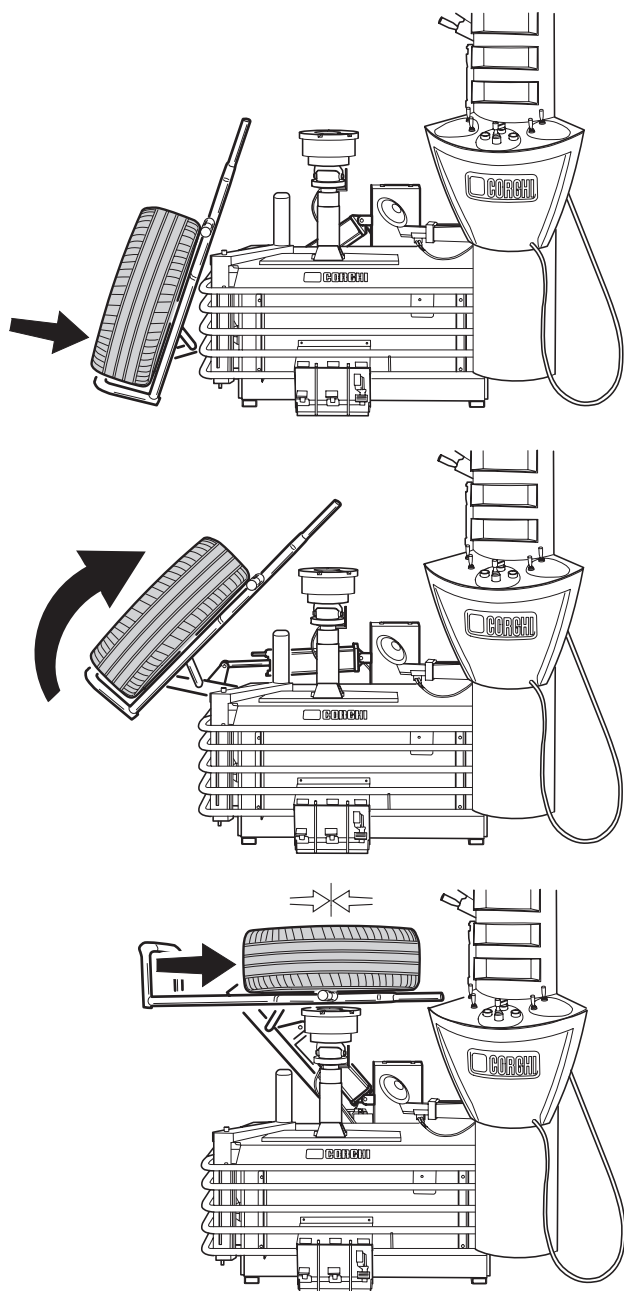


Fig. 11

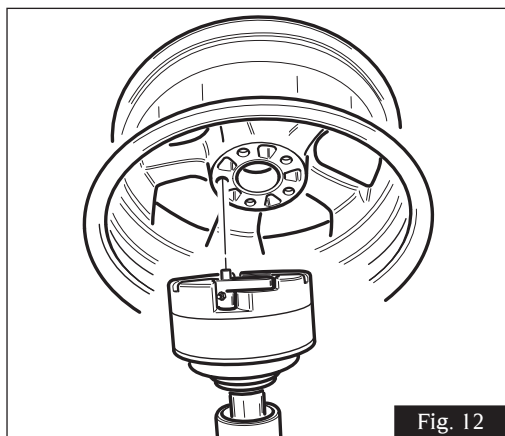


Fig. 12

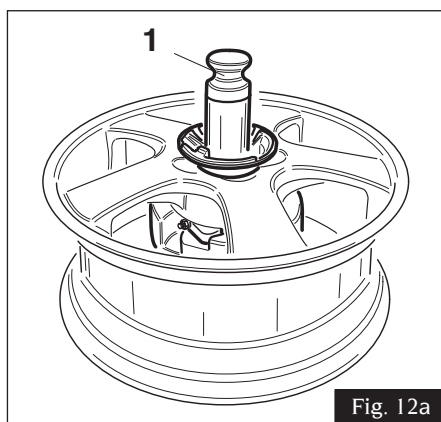


Fig. 12a

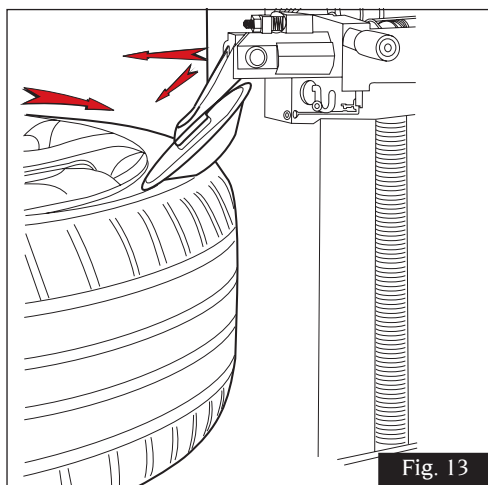


Fig. 13

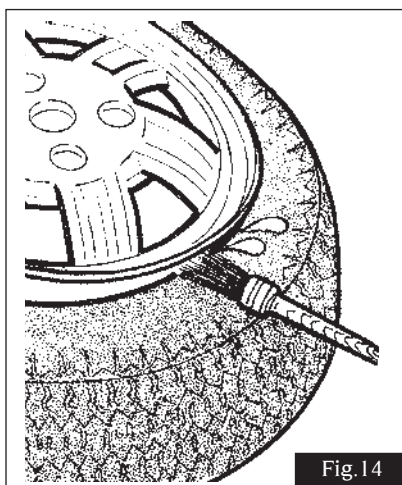


Fig. 14

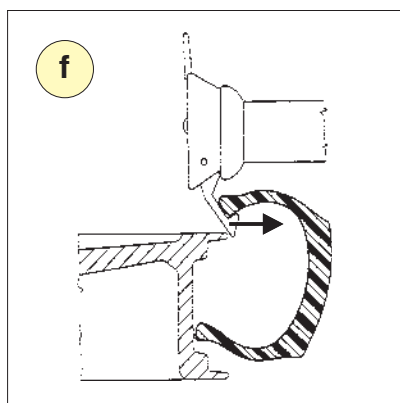
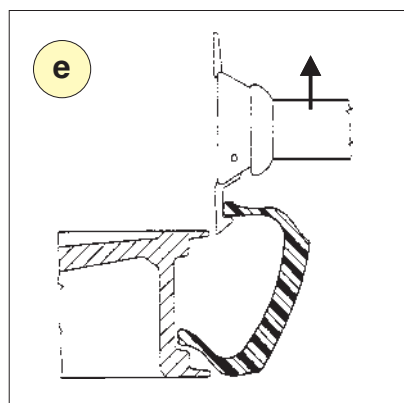
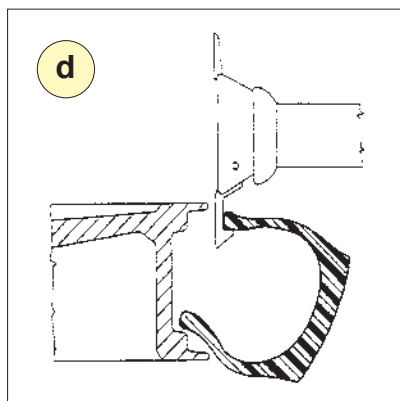
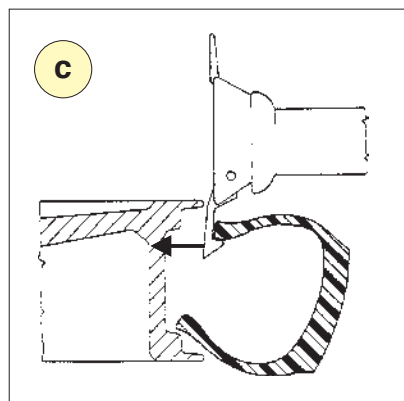
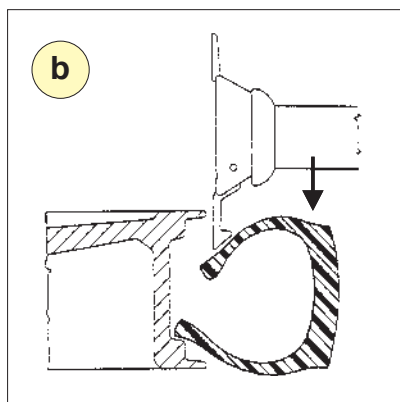
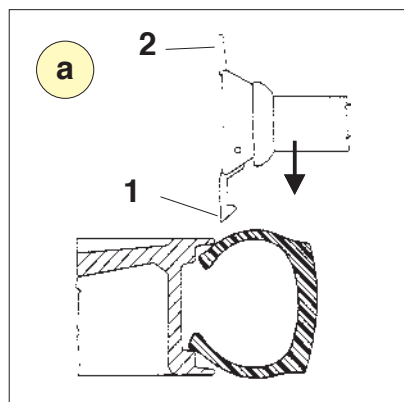
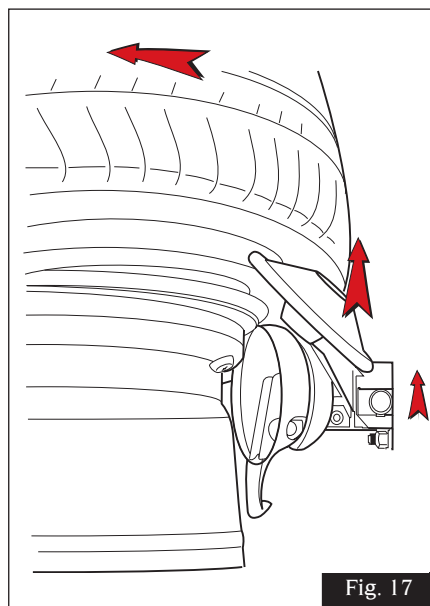
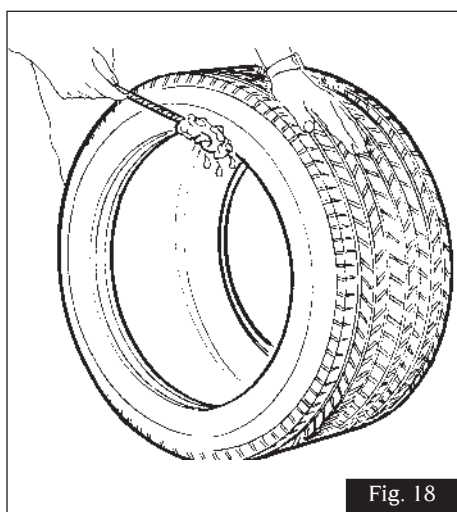
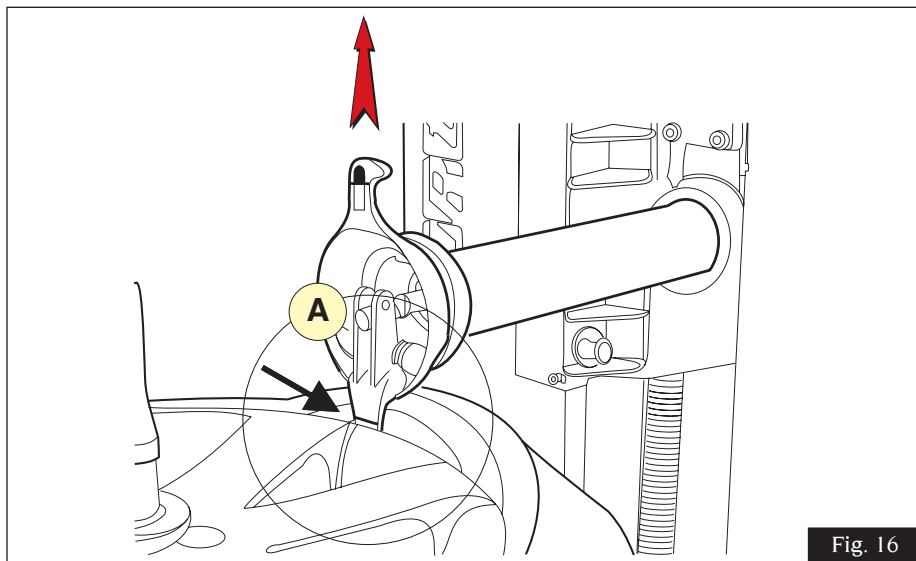
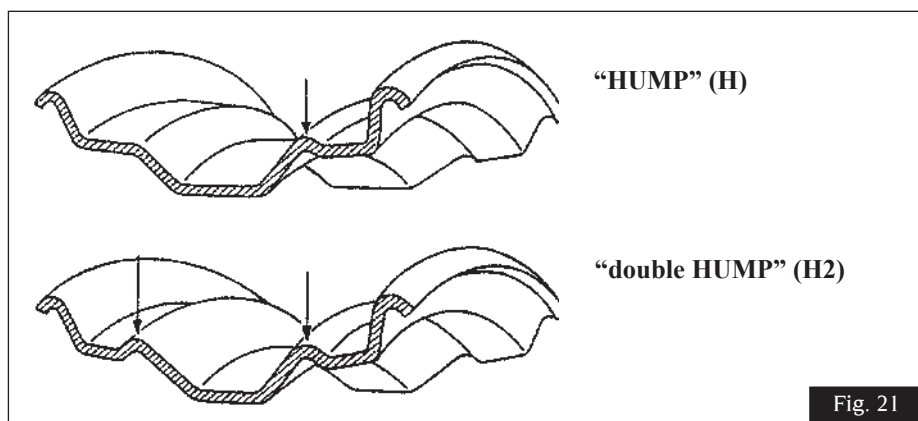
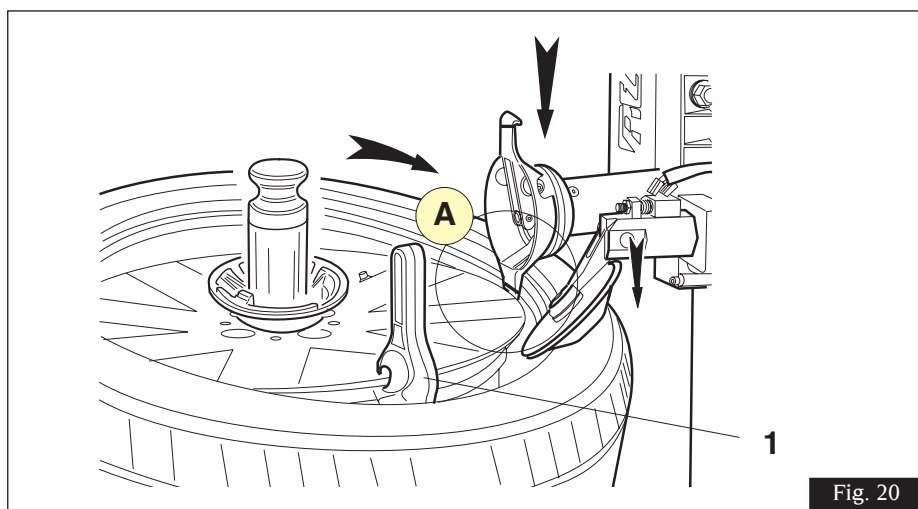
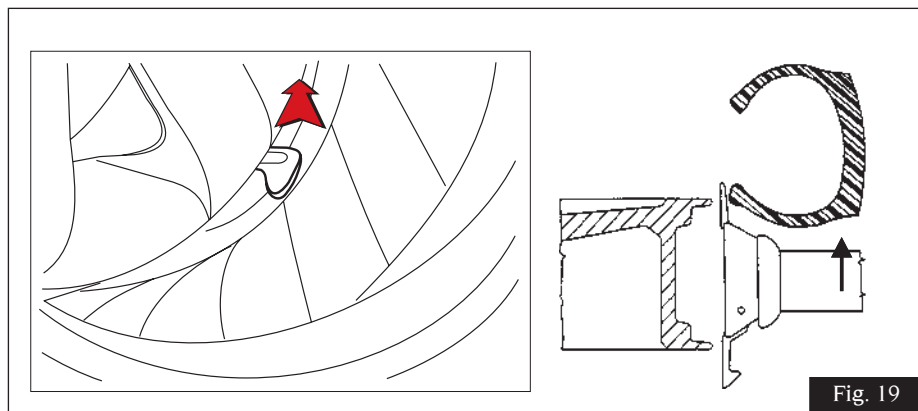


Fig. 15





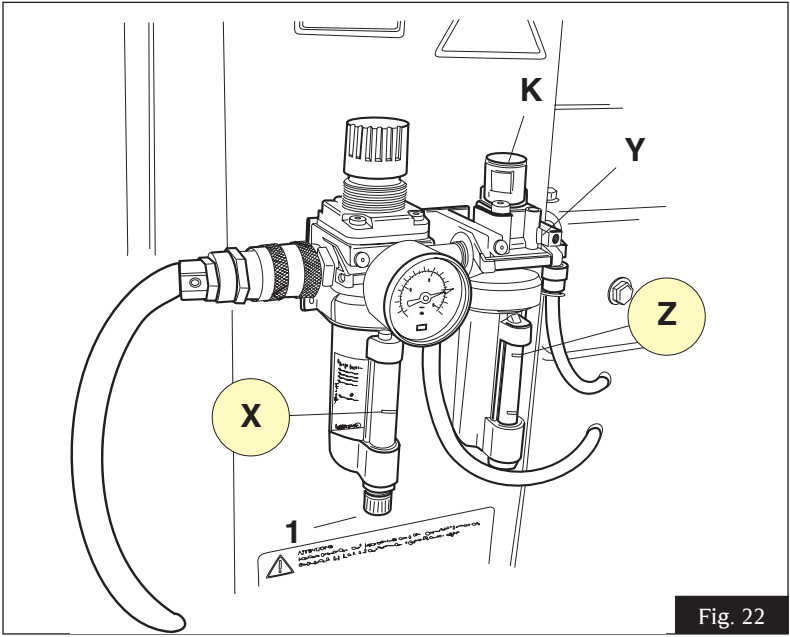
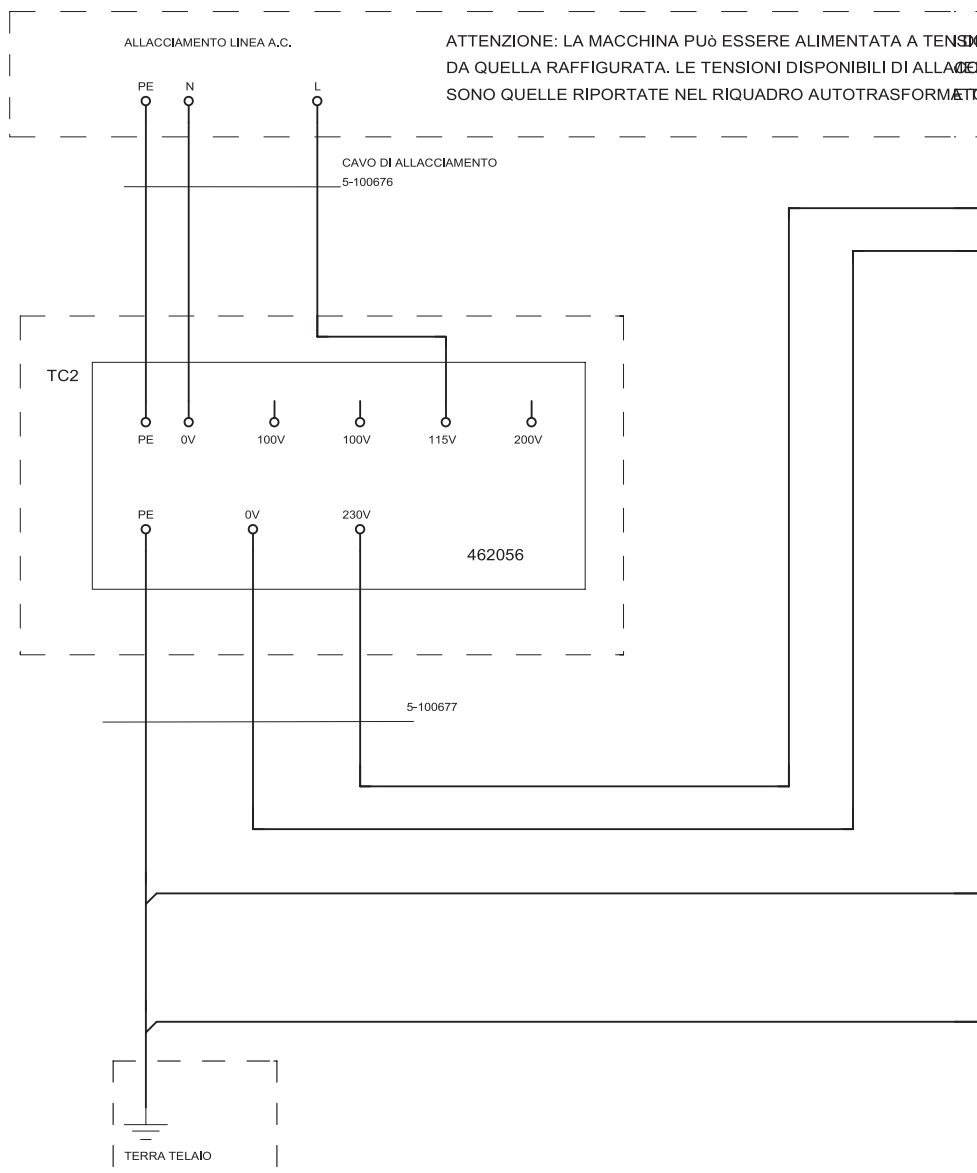


Fig. 23



**110-200V**

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NATO  
OFF

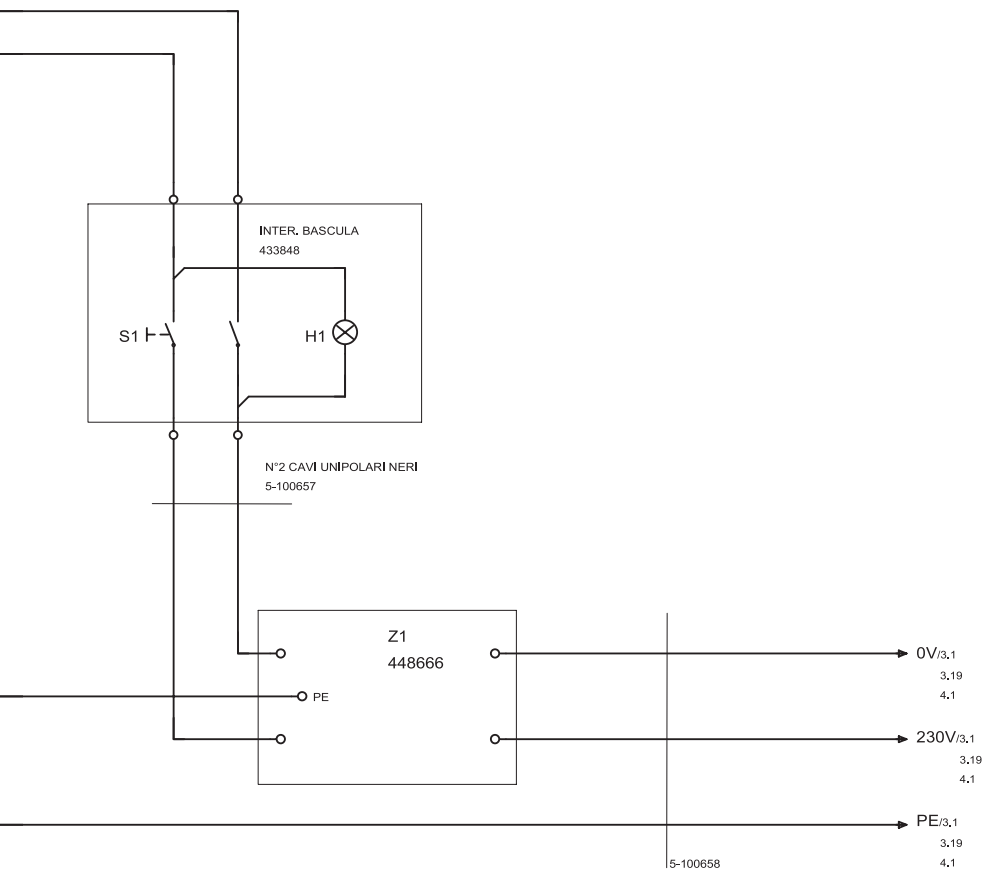


Fig. 24

2,19/230V

2,19/0V

2,19/PE

PEDALIERA

JP5-PED,  
5-100650

MOTORE  
AUTO  
CENTRANTE

PE

26194

110-200V

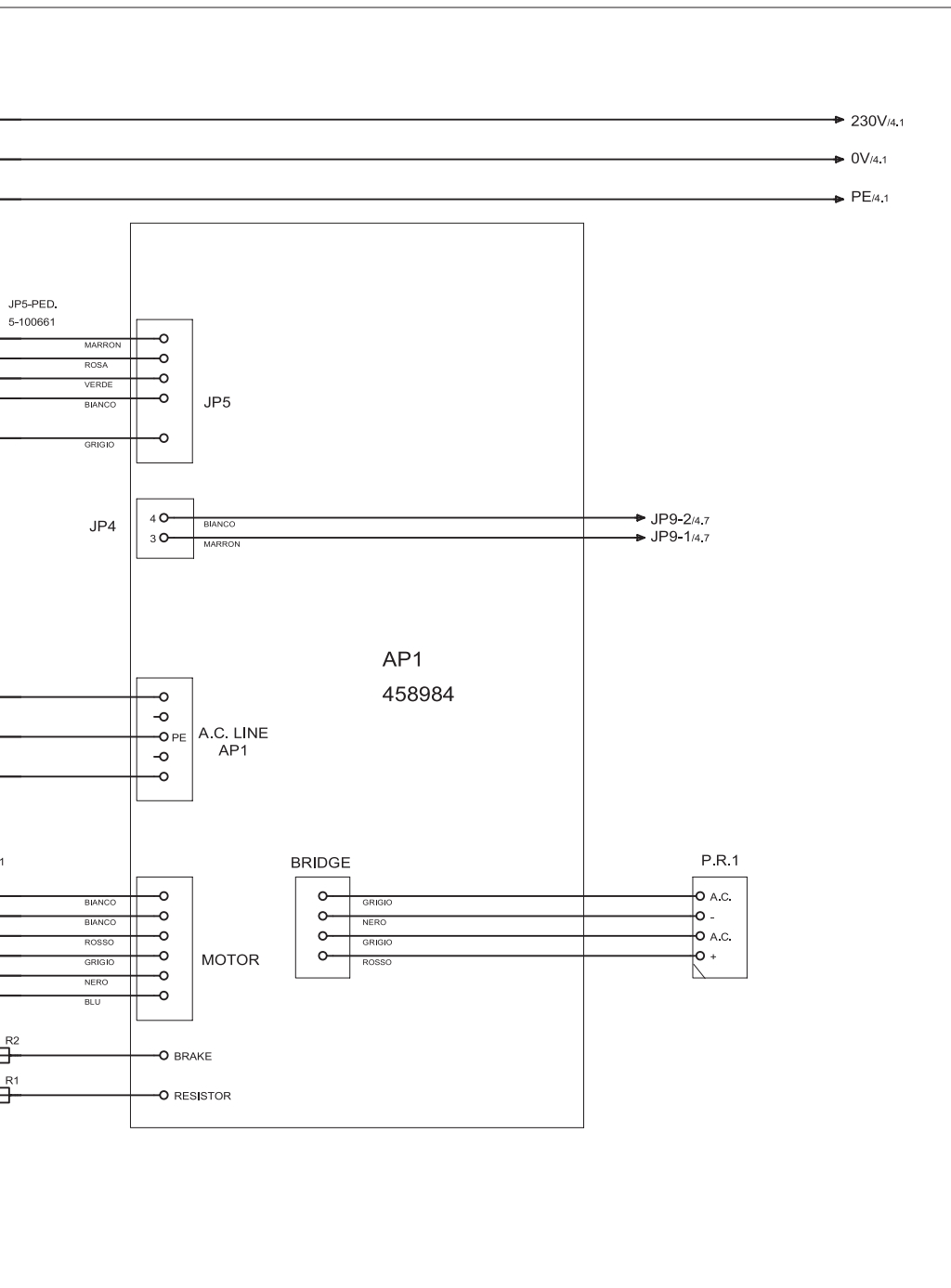
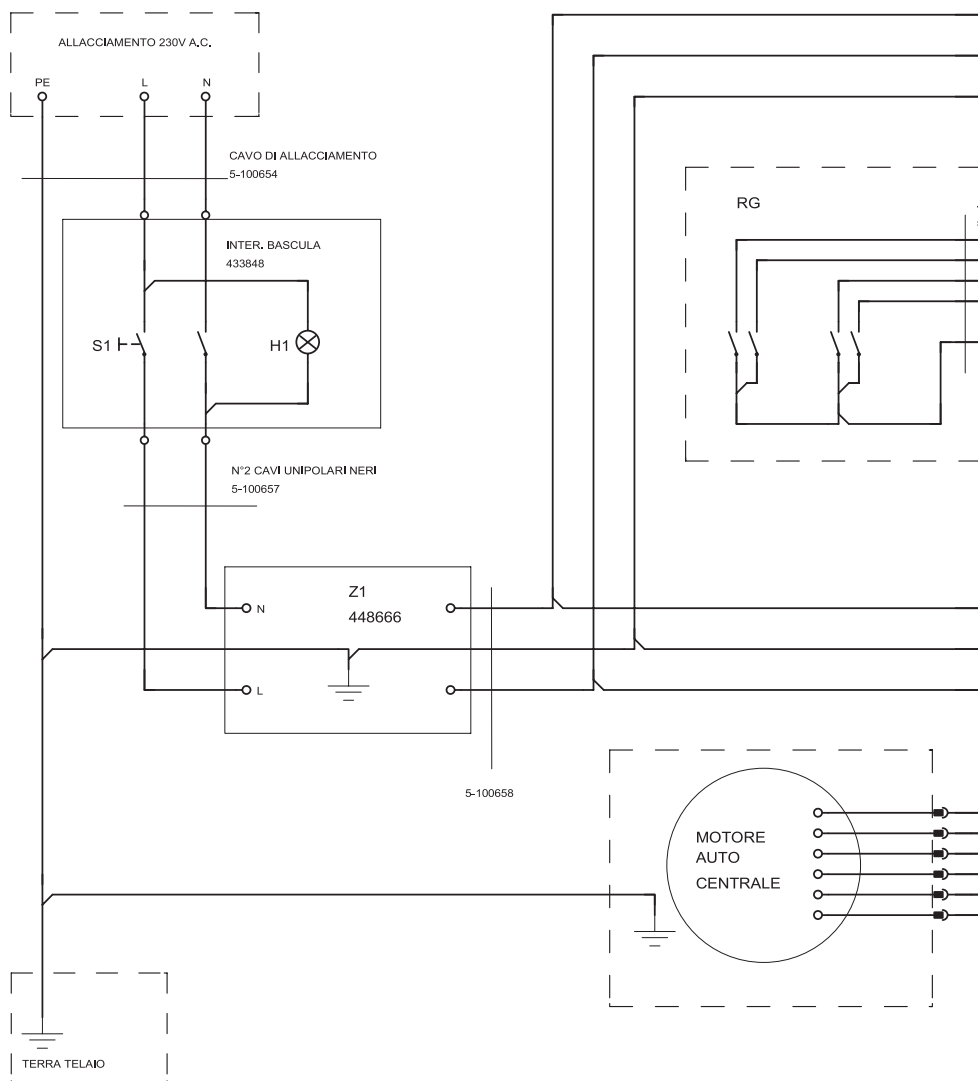


Fig. 25



**230V**

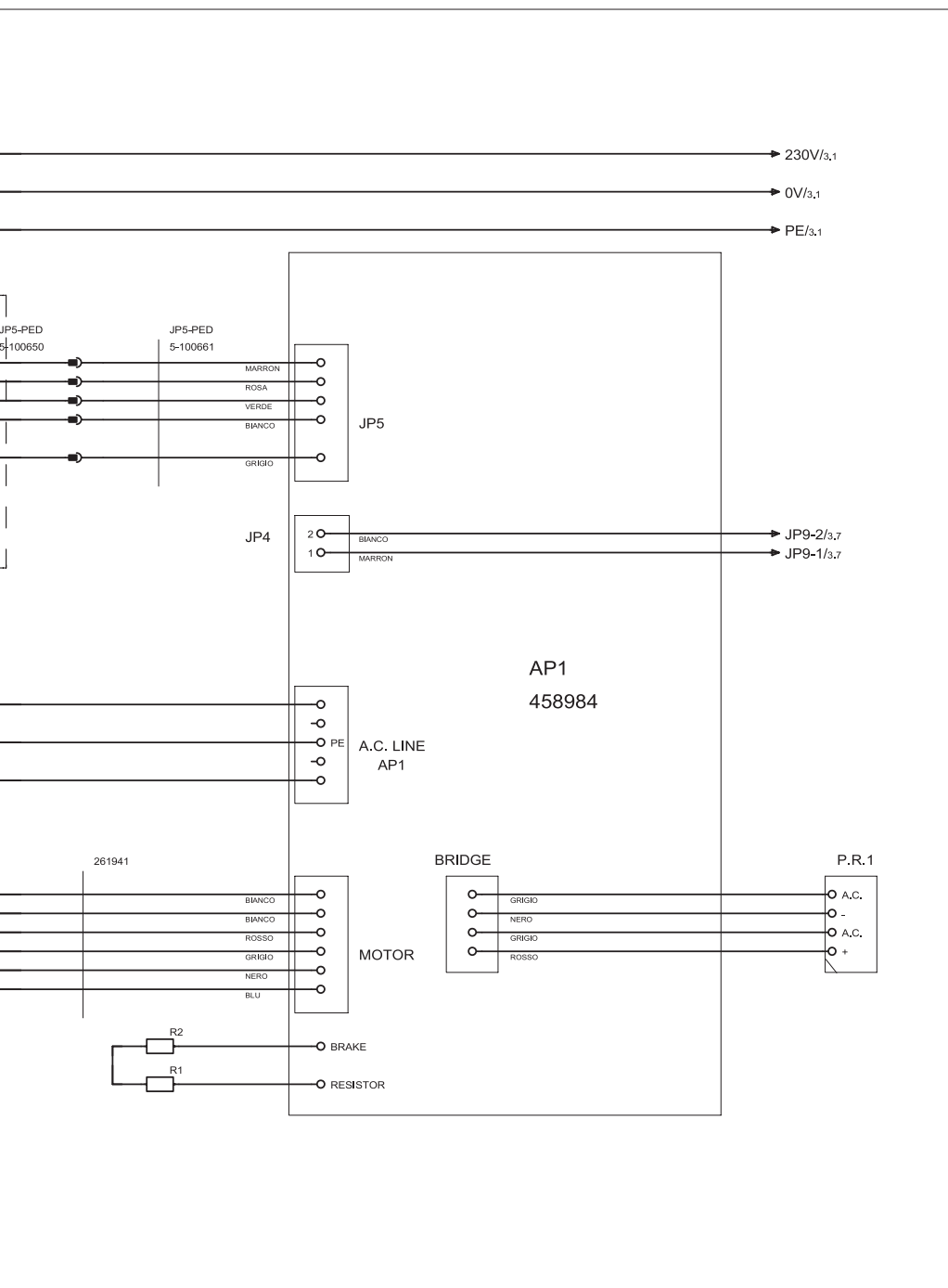
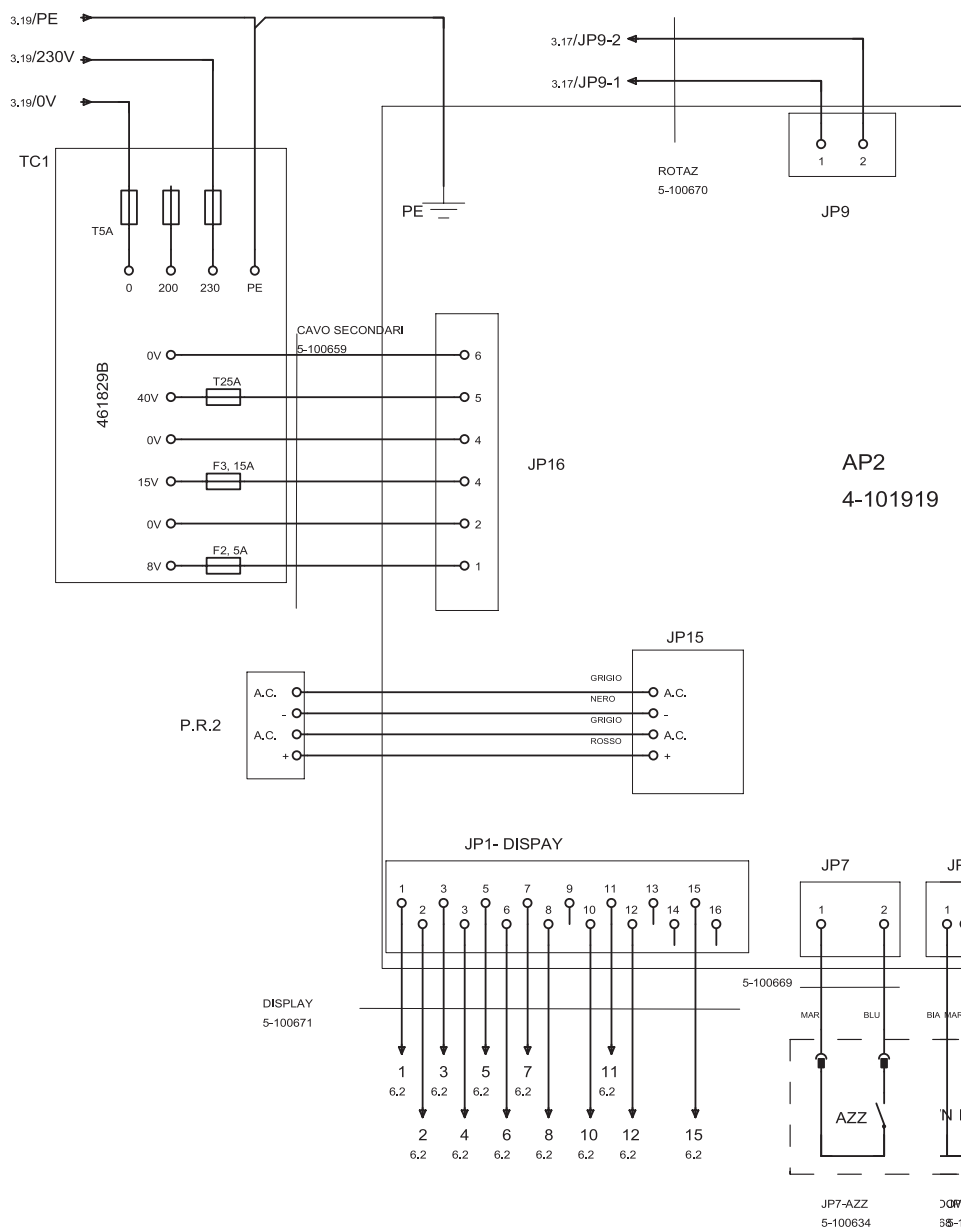


Fig. 26



110-200-230V

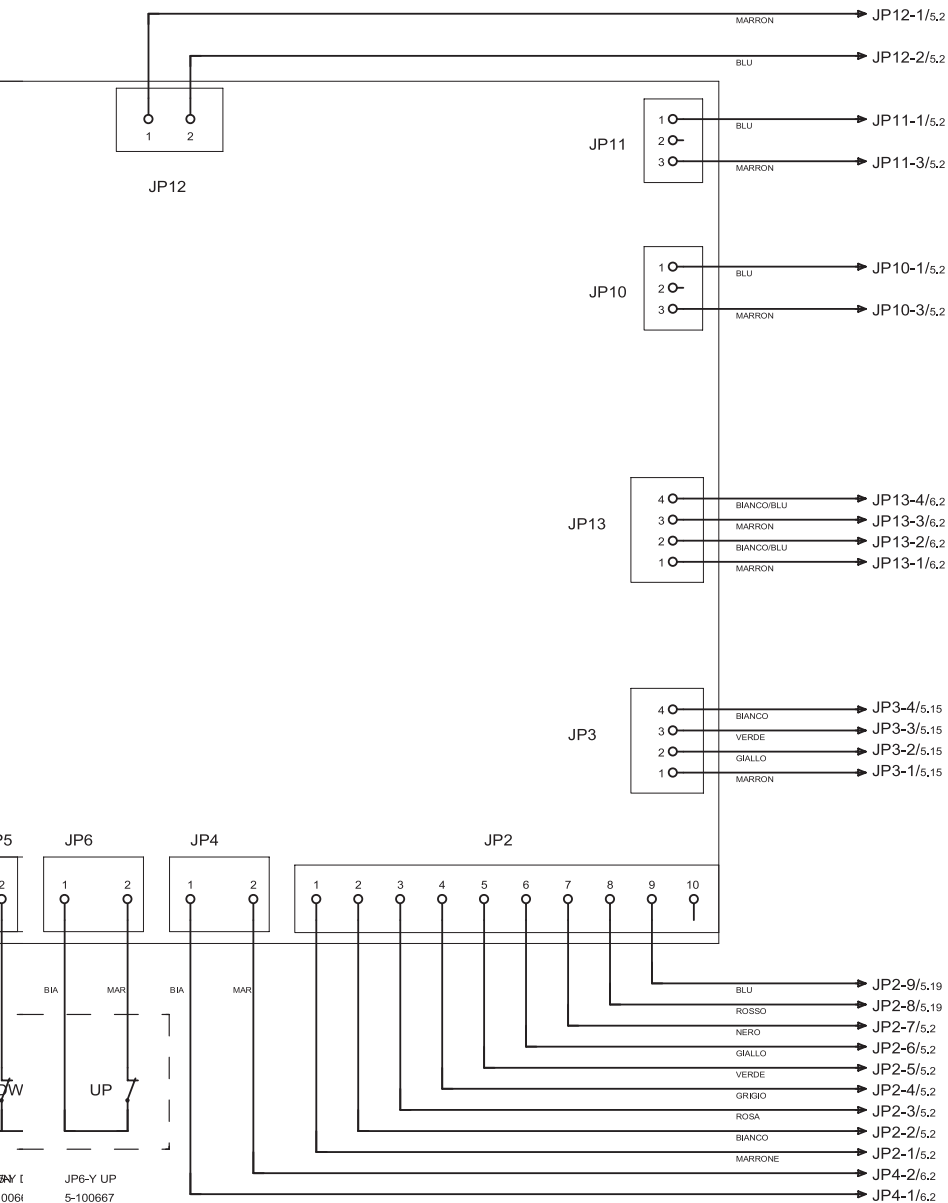
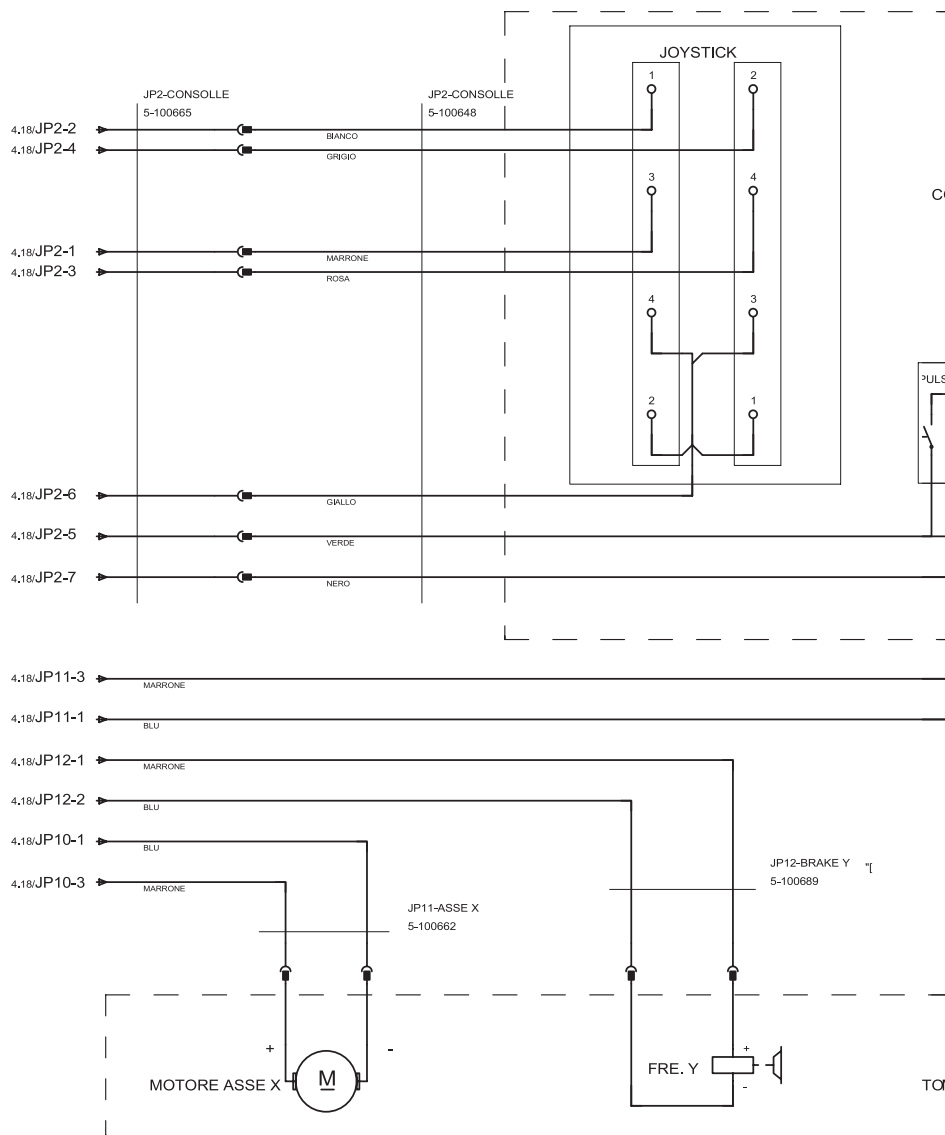


Fig. 27



110-200-230V

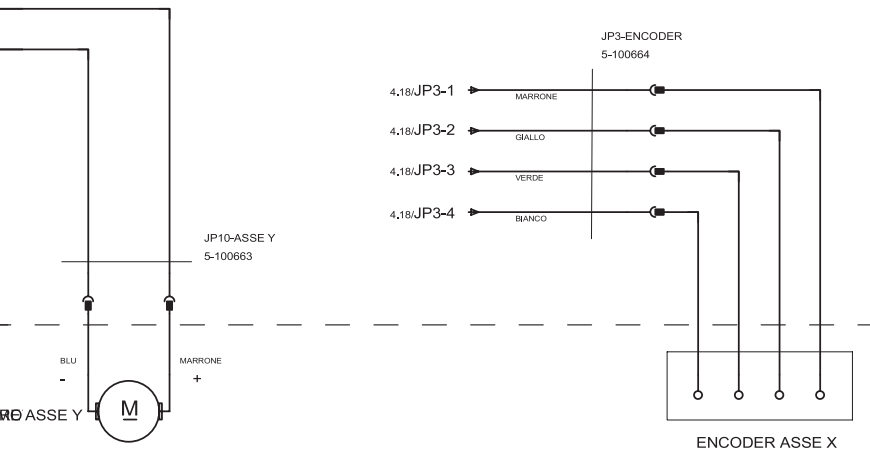
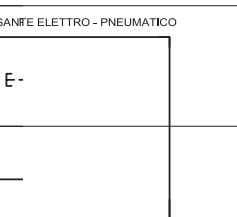
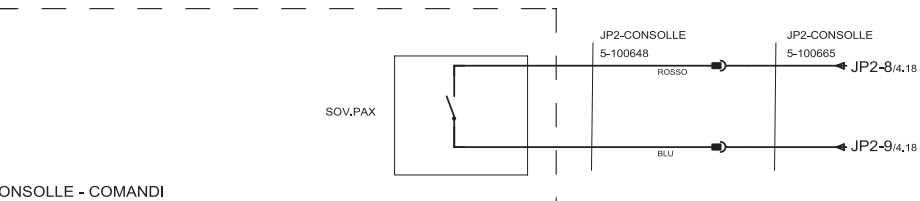
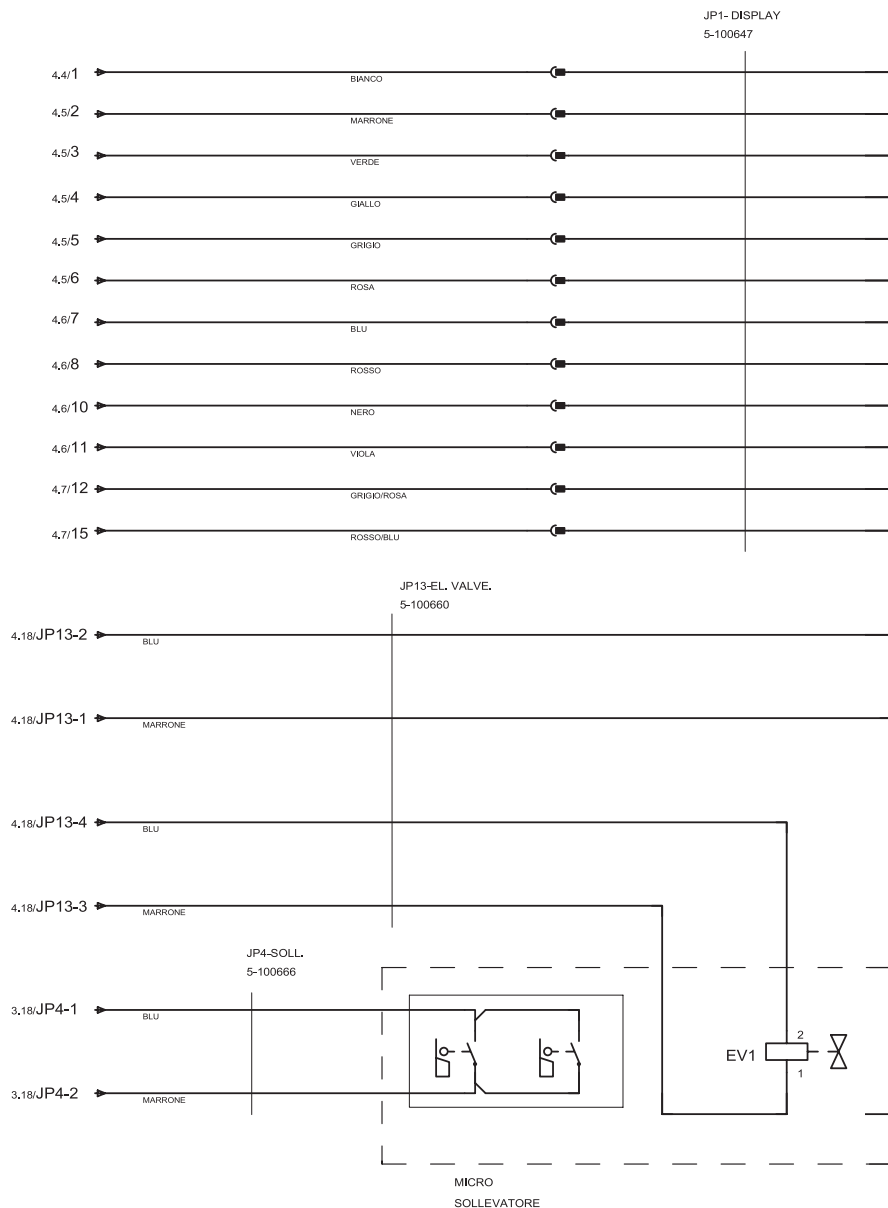


Fig. 28



110-200-230V

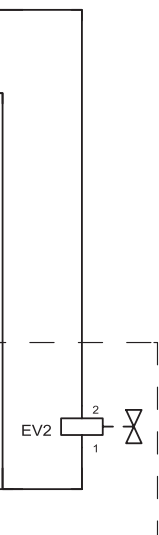
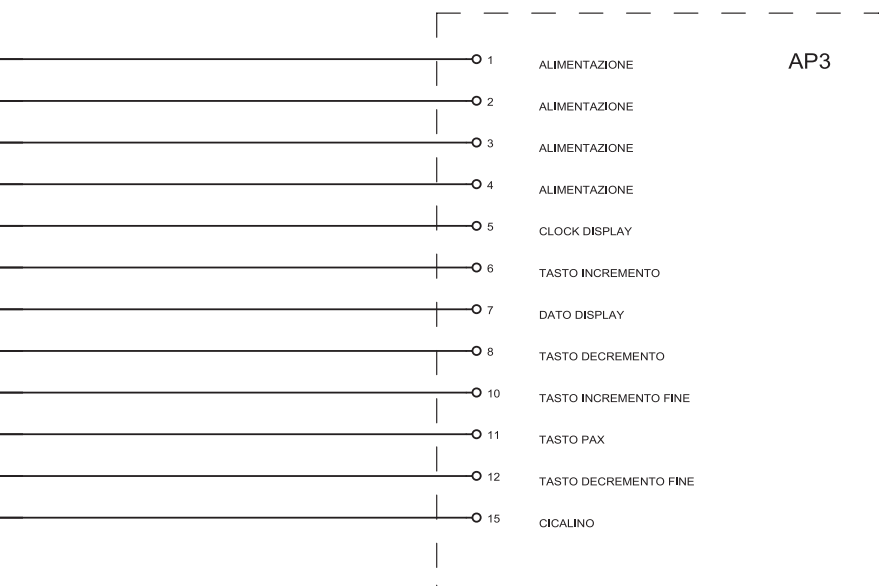
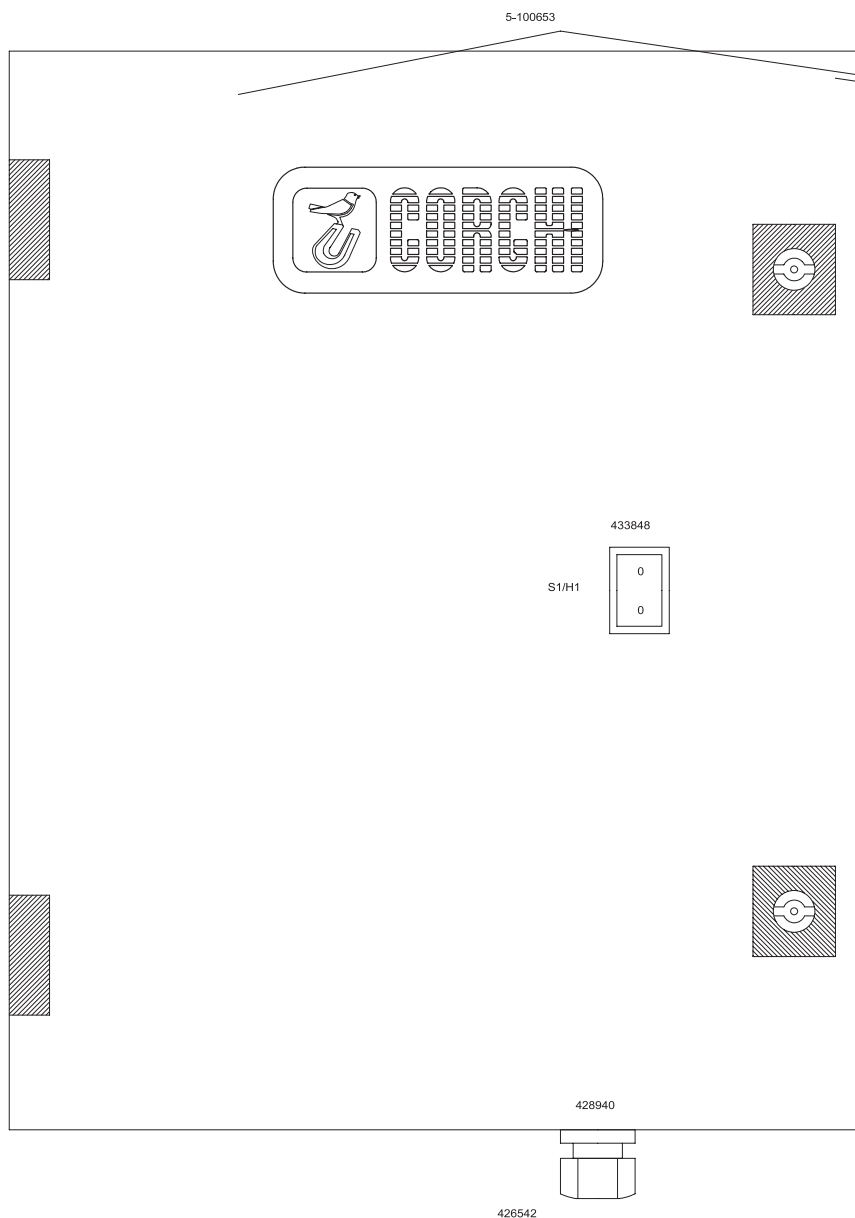


Fig. 29



**110-200-230V**

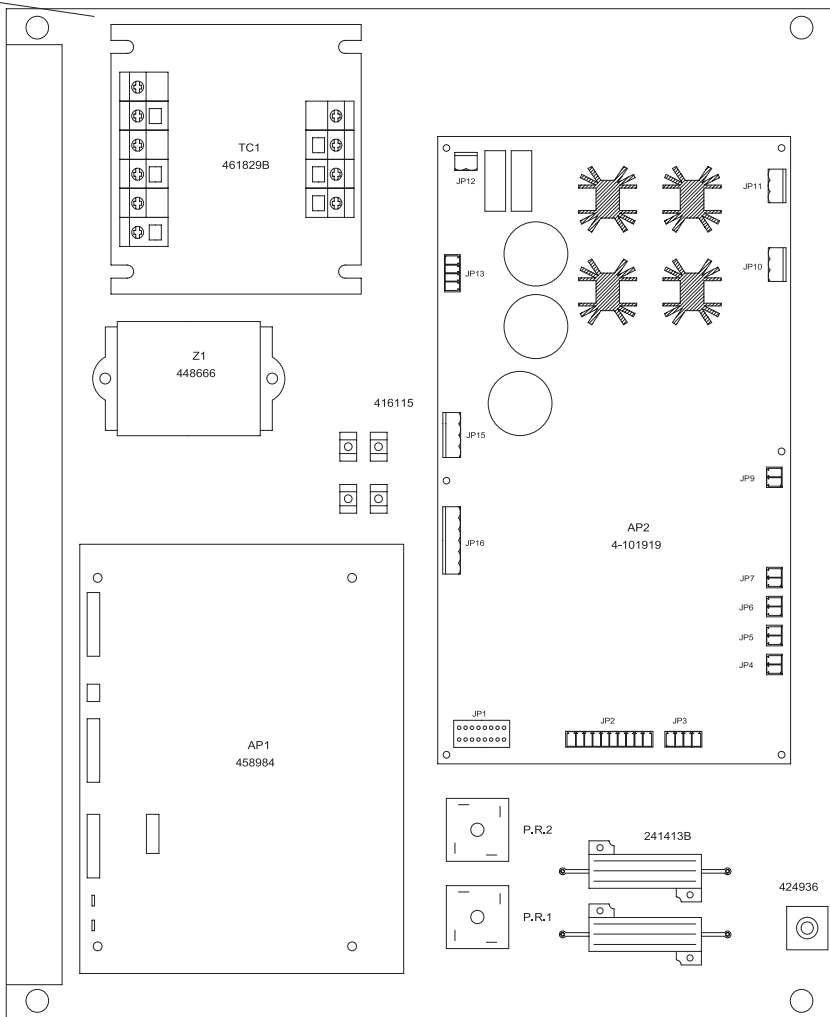
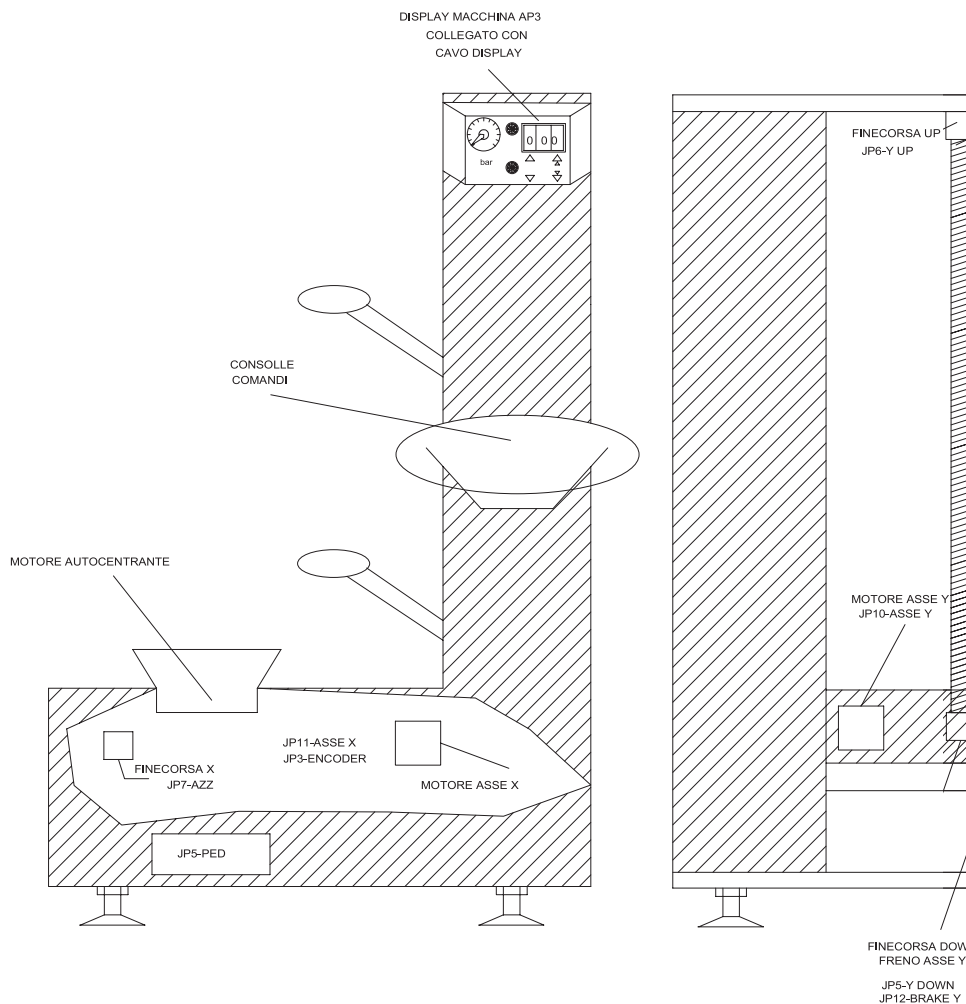


Fig. 30



110-200-230V

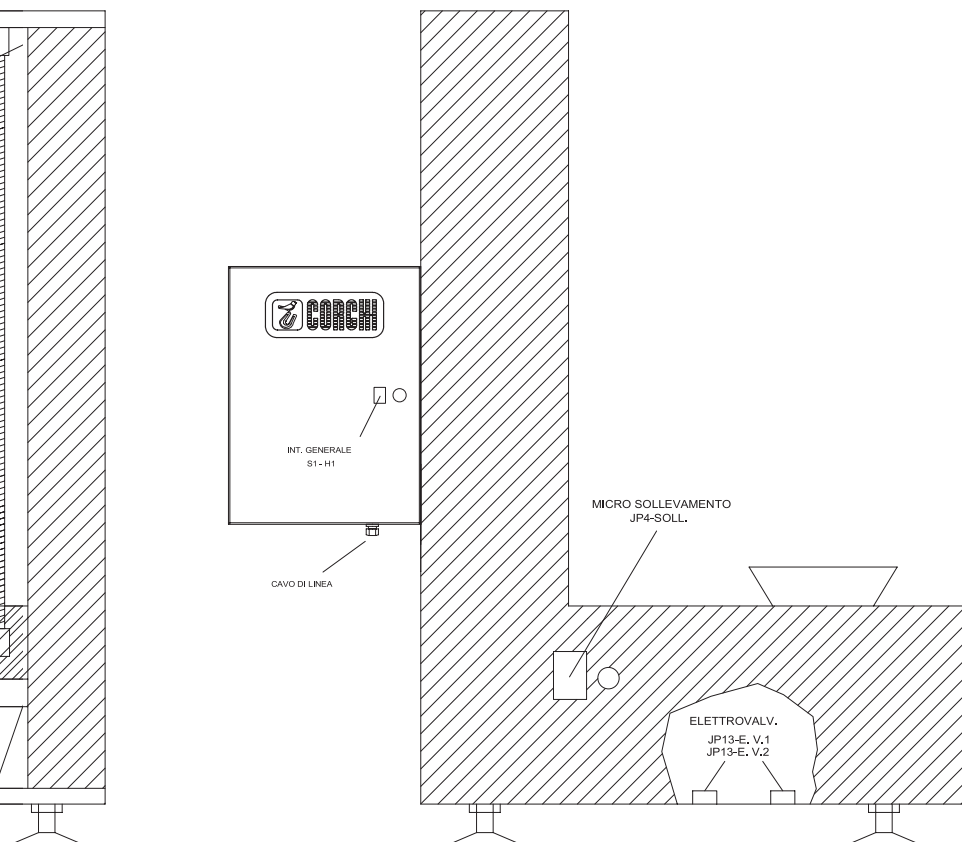
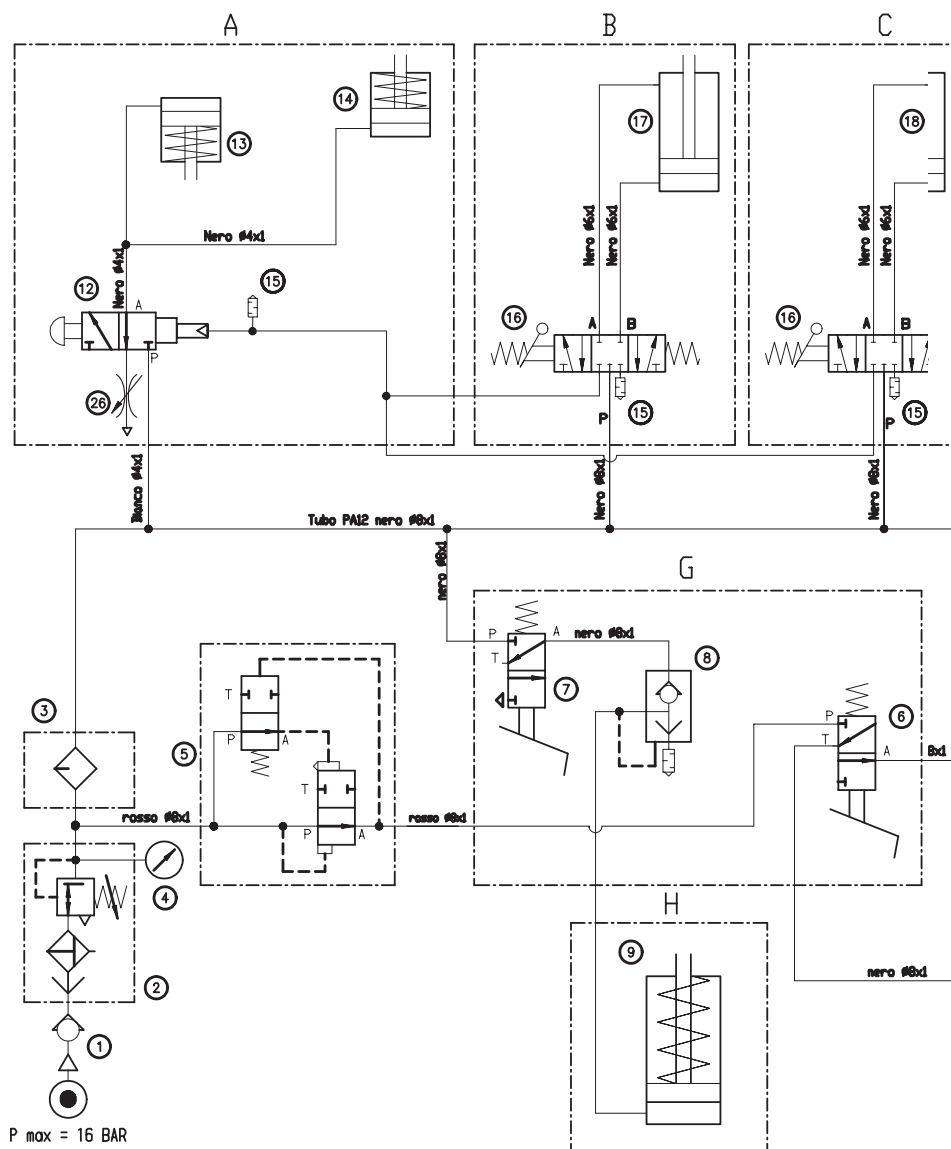
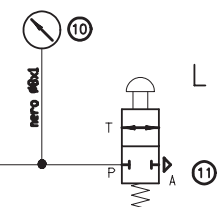
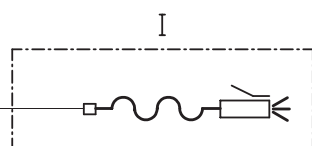
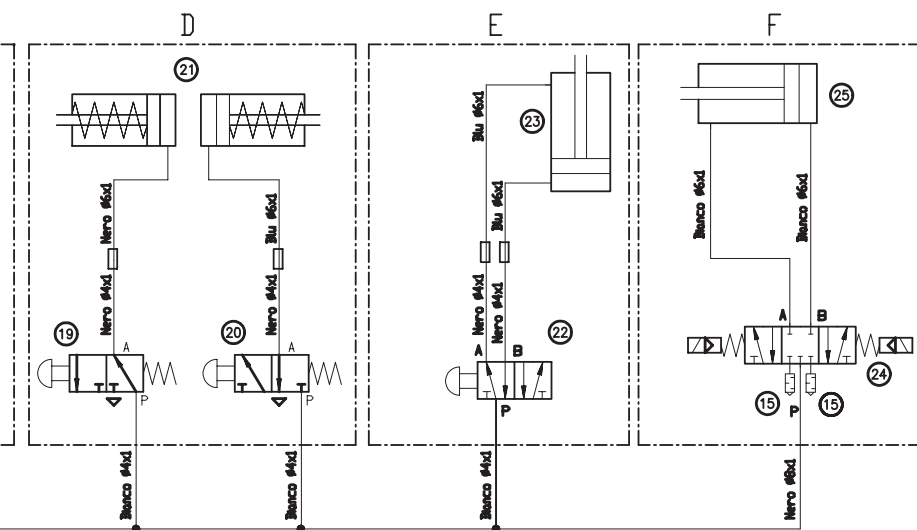


Fig. 31

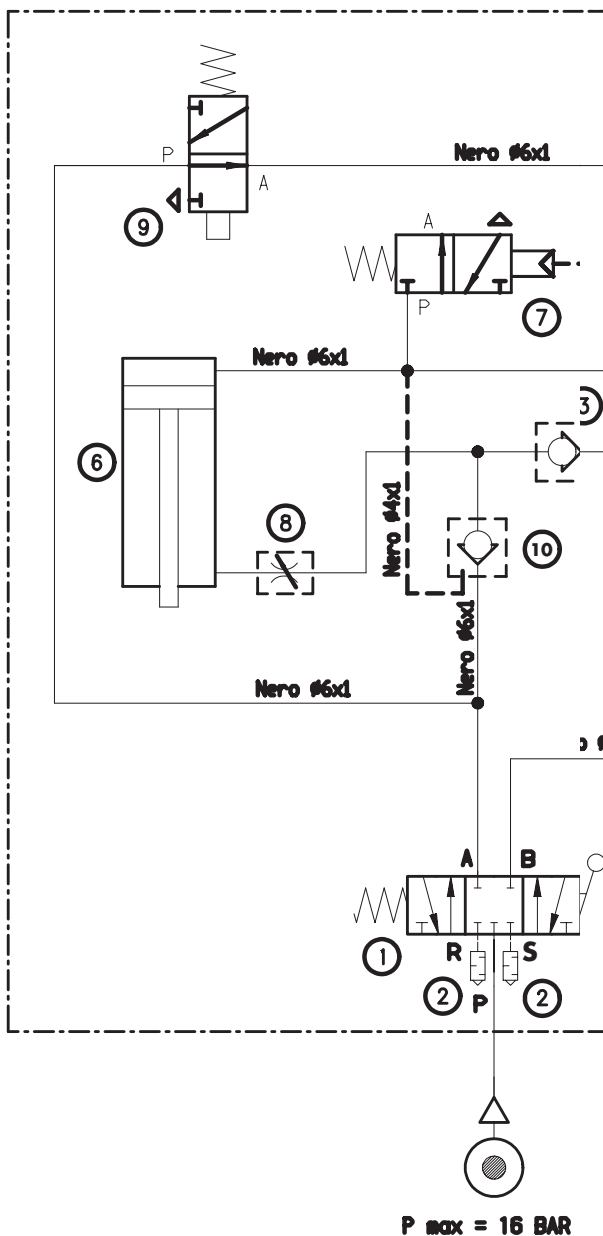


Cod. 463529

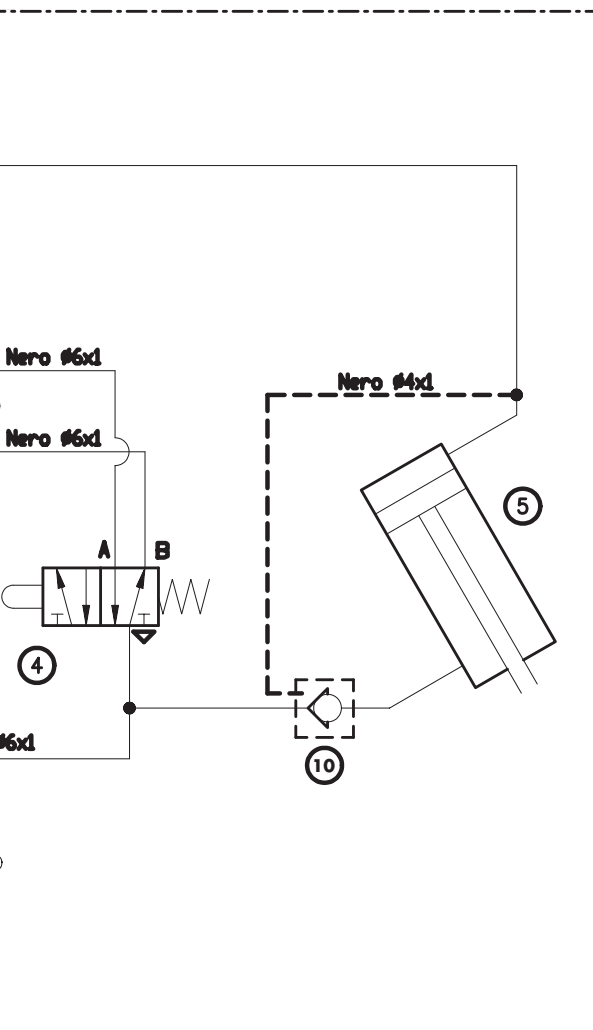


**Cod. 463529**

Fig. 32

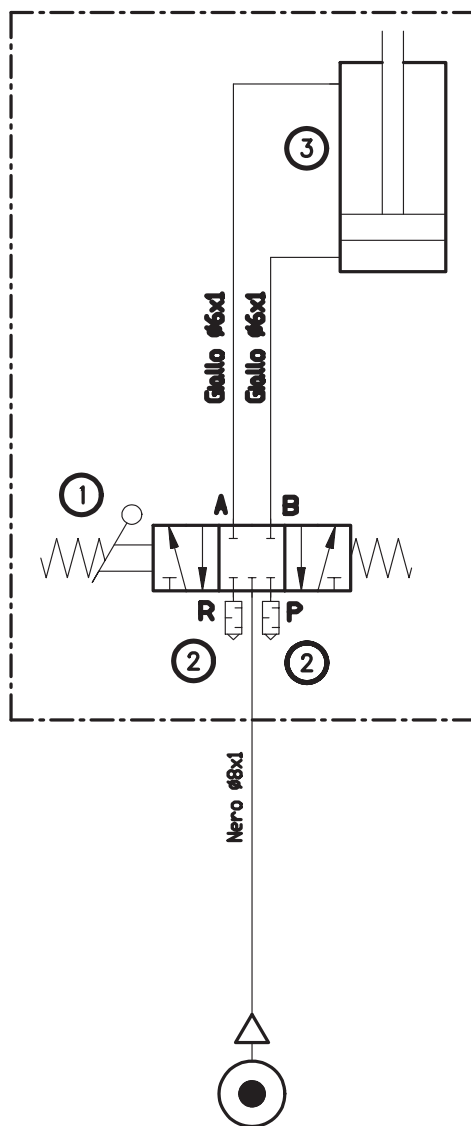


Cod. 463532



**Cod. 463532**

Fig. 33



**Cod. 463533**

## EC statement of conformity

We, CORGHI SPA, Via per Carpi n°9, Correggio (RE), ITALY, do hereby declare, that the product

### ARTIGLIO MASTER tyre changer

to which this statement refers, conforms to the following standards or to other regulatory documents:

EN 292 of 09/91

DIR. 87/404/EEC of 25/06/87 amended with

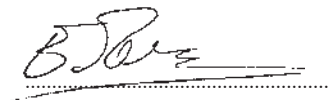
DIR. 93/68/EEC of 22/07/93

DIR. 86/217/EEC of 26/05/86

according to directives:

- 98/37/EC;
- 73/23/EEC amended with directive 93/68/EEC;
- 89/336/EEC amended with directives 92/31/EEC, 93/68/EEC, 93/97/EEC.

Correggio, 03 / 07 / 04



CORGHI S.p.A.

E. Santoro

**IMPORTANT: The EC Conformity Declaration is cancelled if the machine is not used exclusively with CORGHI original accessories and/or in observance of the instructions contained in the user's manual.**

The form of this statement conforms to EN 45014 specifications.

## Déclaration CE de conformité

Nous, CORGHI SPA, Via per Carpi, n° 9, Correggio (RE) Italy, déclarons que le matériel

### démonte-pneus ARTIGLIO MASTER

objet de cette déclaration est conforme aux normes et/aux documents légaux suivants:

EN 292 du 09/91

DIR. 87/404/CEE du 25/06/87 modifié par la

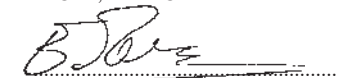
DIR. 93/68/CEE du 22/07/93

DIR. 86/217/CEE du 26/05/86

Sur la base de ce qui est prévu par les directives:

- 98/37/CE;
- 73/23/CEE modifié par la directive 93/68/CEE;
- 89/336/CEE modifié par les directives 92/31/CEE, 93/68/CEE, 93/97/CEE.

Correggio, 03 / 07 / 04



CORGHI S.p.A.

E. Santoro

**IMPORTANT : La déclaration CE de conformité est considérée comme nulle et non avenue dans le cas où la machine ne serait pas utilisée exclusivement avec des accessoires originaux CORGHI et/ou, dans tous les cas, conformément aux indications contenues dans le Manuel d'utilisation.**

Le modèle de la présente déclaration est conforme à ce qui est prévu par la EN 45014.

## CE - Konformitätserklärung

CORGHI SPA, Via per Carpi, Nr. 9, Correggio (RE), ITALY, erklärt hiermit, daß das Produkt

### Reifenmontiermaschine ARTIGLIO MASTER

worauf sich die vorliegende Erklärung bezieht, den Anforderungen folgender Normen und/oder normativer Dokumente entspricht:

EN 292 vom 09.91

RIC. 87/404/EWG vom 25.06.87 mit Änderung durch die

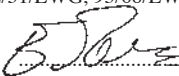
RIC. 93/68/EWG vom 22.07.93

RIC. 86/217/EWG vom 26.05.86

auf Grundlage der Vorgaben durch die Richtlinien:

- 98/37/CE;
- 73/23/EWG mit Änderung durch die Richtlinien 93/68/EWG;
- 89/336/EWG mit Änderung durch die Richtlinien 92/31/EWG, 93/68/EWG, 93/97/EWG.

Correggio, 03 / 07 / 04

  
.....  
CORGHI S.p.A.  
E. Santoro

**WICHTIG: Die CE-Konformitätserklärung verliert ihre Gültigkeit, falls die Maschine nicht ausschließlich mit CORGHI-Originalzubehör und/oder unter Mißachtung der in der Betriebsanleitung aufgeführten Gebrauchsanweisungen verwendet wird.**

Das Modell der vorliegenden Erklärung entspricht den Anforderungen der in EN 45014 aufgeführten Vorgaben.

## Declaración CE de conformidad

La mercantil CORGHI SpA abajo firmante, con sede en Via per Carpi n° 9, Correggio (RE), Italia, declara que el producto:

### desmontagoma ARTIGLIO MASTER

al cual se refiere la presente declaración, se conforma a las siguientes normas y/o documentos normativos:

EN 292 de 09/91

DIR. 87/404/CEE de 25/06/87 modificada por la

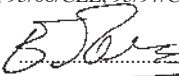
DIR. 93/68/CEE de 22/07/93

DIR. 86/217/CEE de 26/05/86

a tenor de lo dispuesto en la Directiva:

- 98/37/CE;
- 73/23/CEE modificada por la Directiva 93/68/CEE;
- 89/336/CEE modificada por la Directiva 92/31/CEE, 93/68/CEE, 93/97/CEE.

Correggio, 03 / 07 / 04

  
.....  
CORGHI S.p.A.  
E. Santoro

**IMPORTANTE: La declaración de conformidad CE deja de tener validez en el caso en que la máquina no sea utilizada exclusivamente con accesorios originales CORGHI y/o, en cualquier caso, con arreglo a las indicaciones contenidas en el Manual de Empleo.**

El modelo de la presente declaración se conforma a lo dispuesto en la EN 45014.

## Dichiarazione CE di conformità

Noi CORGHI SPA, Via per Carpi n°9, Correggio (RE), ITALY,  
dichiariamo che il prodotto

### **smontagomme ARTIGLIO MASTER**

al quale questa dichiarazione si riferisce è conforme alle seguenti  
norme e/o documenti normativi:

EN 292 del 09/91

DIR. 87/404/CEE del 25/06/87 modificata con la

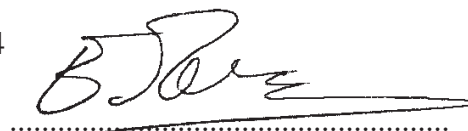
DIR. 93/68/CEE del 22/07/93

DIR. 86/217/CEE del 26/05/86

in base a quanto previsto dalle direttive:

- 98/37/CE;
- 73/23/CEE modificata con la direttiva 93/68/CEE;
- 89/336/CEE modificata con le direttive 92/31/CEE, 93/68/CEE, 93/97/CEE.

Correggio, 03 / 07 / 04



**CORGHI S.p.A.**

*E. Santoro*

**IMPORTANTE:** La dichiarazione CE di conformità decade nel caso in cui la macchina non venga utilizzata unicamente con accessori originali CORGHI e/o comunque in osservanza delle indicazioni contenute nel Manuale d'uso.

Il modello della presente dichiarazione è conforme a quanto previsto nella EN 45014.



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