



**7102-M004-5\_BMW**

**G1045.ELBMW**

INSTRUCTION MANUAL

**GB**

TRANSLATION FROM THE  
ORIGINAL INSTRUCTIONS

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

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

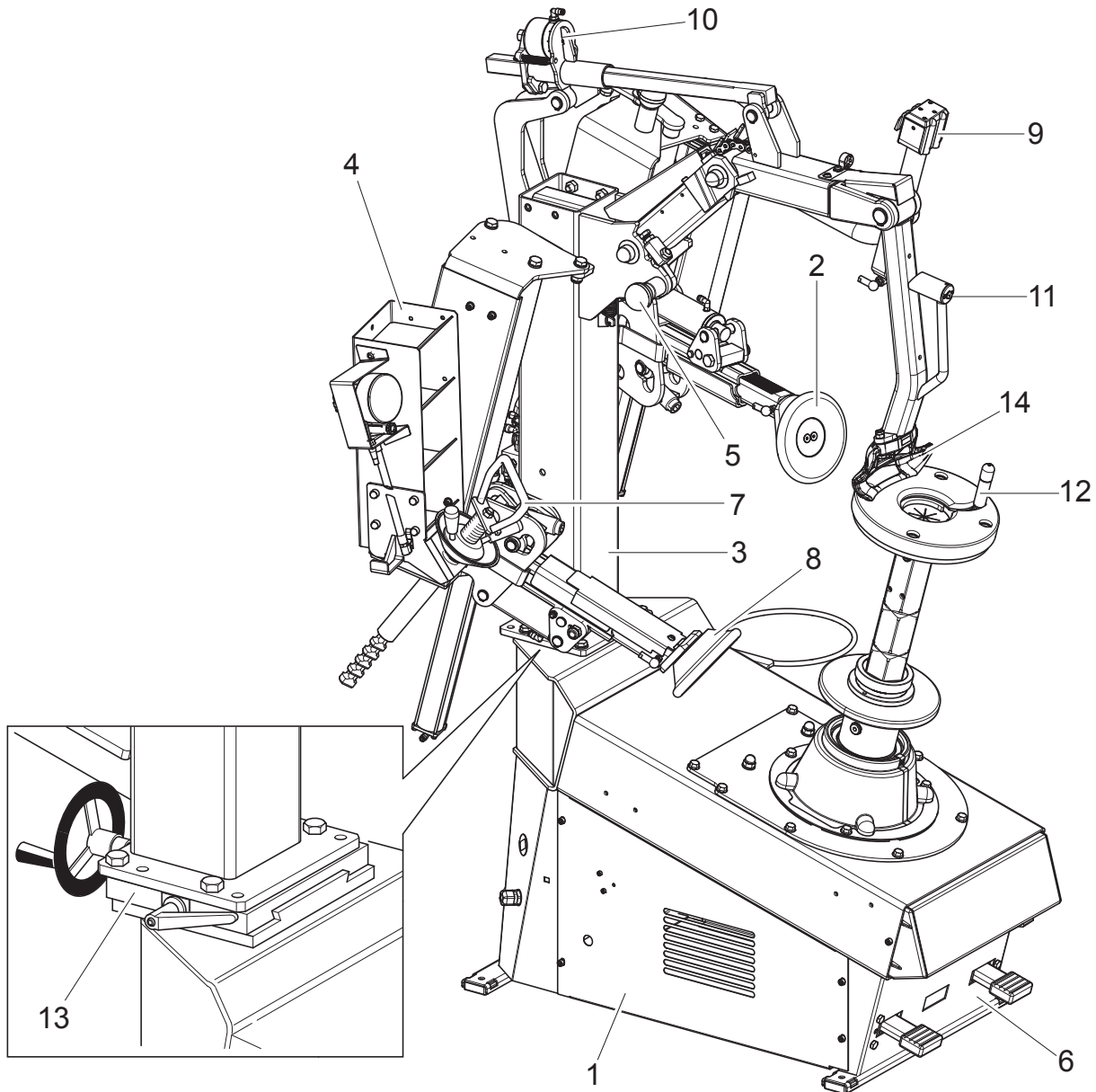
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**FIG. 1 - G1045.ELBMW**









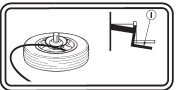




**KEY**

- 1 - Machine base
- 2 - Upper bead breaker
- 3 - Column unit
- 4 - Tool box
- 5 - Arm-lock side control
- 6 - Control pedal
- 7 - Locking device
- 8 - Lower bead breaker
- 9 - Control unit
- 10 - Tool arm locking device
- 11 - Tool arm unlock push button
- 12 - Central locking spindle
- 13 - Column movement device (optional)
- 14 - Mounting/demounting tool

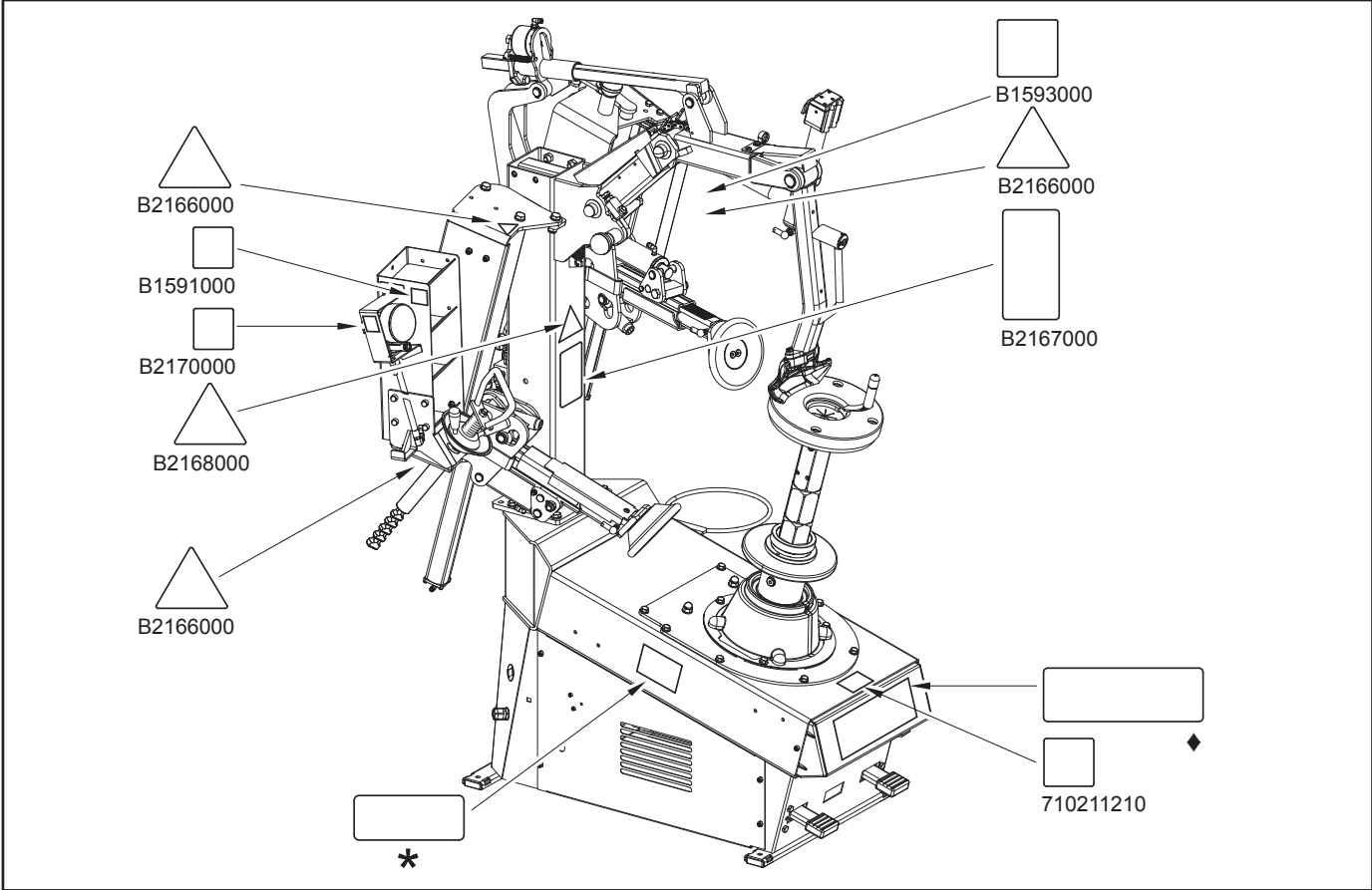
**SYMBOLS USED IN THE MANUAL AND ON THE MACHINE**

Symbols	Description
	Read instruction manual.
	FORBIDDEN!
 2167000	Wear work gloves.
	Wear work shoes.
 2167000	Wear safety goggles.
	Wear safety earcaps.
 99990758	Shock hazard.
 4244000	Danger! Moving mechanical parts.
	Caution: hanging loads.
	Mandatory. Operations or jobs to be performed compulsorily.
	Warning. Be particularly careful (possible material damages).

Symbols	Description
	Danger! Be particularly careful.
	Move with fork lift truck or pallet truck.
	Lift from above.
 2168000	Tyre burst danger.
 710211210	Spindle rotation direction.
 2166000	Hands crushing danger.
 1541000	General danger.
 2170000	Max inflation pressure rating.
 3691000	Inflation pedal.
	Technical assistance necessary. Do not perform any intervention.
	Note. Indication and/or useful information.



**INFORMATION PLATE LOCATION TABLE**



**Code numbers of plates**

<b>B1591000</b>	<i>Red pipe indicating plate</i>
<b>B1593000</b>	<i>Locking plate</i>
<b>B1594000</b>	<i>Date indicating plate</i>
<b>B1595000</b>	<i>Lubrication plan plate</i>
<b>B1636000</b>	<i>Black pipe indicating plate</i>
<b>B2166000</b>	<i>Hand crushing danger plate</i>
<b>B2167000</b>	<i>Obligation to wear protective clothing plate</i>
<b>B2168000</b>	<i>Tyre burst plate</i>
<b>B4221000</b>	<i>Grounding plate</i>
<b>B4244000</b>	<i>Rotating parts danger plate</i>
<b>99990758</b>	<i>Electricity danger plate</i>
<b>999916790</b>	<i>WDK label</i>
<b>710211210</b>	<i>Rotation direction plate</i>
<b>999912460</b>	<i>Supply pressure indicating plate</i>
<b>999914160</b>	<i>Voltage 230V 50/60 Hz 1 Ph plate</i>
*	<i>Serial number plate</i>
<b>999916310</b>	<i>Rubbish skip label</i>
◆	<i>Machine nameplate</i>
•	<i>Manufacturer name plate</i>



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



**NOTE: SOME OF THE PICTURES PRESENT IN THIS MANUAL HAVE BEEN OBTAINED FROM PICTURES OF PROTOTYPES, THEREFORE THE STANDARD PRODUCTION MACHINES CAN BE DIFFERENT IN SOME COMPONENTS.**

## 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 in particular it 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 **G1045.ELBMW** machines in their different versions are tyre changing machines for motor vehicle wheels intended to be used exclusively for the mounting, demounting and inflation of wheels with dimensions of max. diameter of 45" (50" with column movement device - optional) 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 Staff training

**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

- **Anti-tilt protection for the arm**

This device prevents the arm from hitting the operator.

- **Bead breaker lock**


A device preventing the upper bead-breaker from coming out when the motor turns clockwise.

- **Fixed guards and shelters**

The machine is fitted with a number of fixed guards intended to prevent potential crushing, cutting and compression risks.

These protections have been realized after risks evaluation and after all machine operative situations have been considered.

All protections, specially the rubber ones, have to be periodically checked in order to evaluate their wear state.

	<b>PERIODICALLY CARRY OUT THE MAINTENANCE OF THE PROTECTIONS, SHELTERS AND SAFETY DEVICES IN GENERAL, AS INDICATED IN CHAPTER 13. ROUTINE MAINTENANCE.</b>
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- **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). For other details, see the chap. 14 "Fault-Finding".

- **Maximum pressure valve.**

This prevents excessive supply to the tyre. Air input is regulated at 10 bar max. This valve is set by the manufacturer and can not be re-set.

- **Non-adjustable pressure limiter.**

This allows inflation of tyres in reasonable safety. Inflation of tyres to over  $4,2 \pm 0,2$  bar (60 PSI) is not allowed.

### 3.1 Residual risks


The machine was subjected to a complete analysis of risks according to reference standard EN ISO 12100. Risks are as reduced as possible in relation with technology and product functionality.

This manual stresses possible residual risks, also highlighted in pictograms on the present manual and adhesive warning signals placed on the machine: their location is represented in "PLATE LOCATION ON MACHINE INFORMATION TABLE" on 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.

	<b>THE MANUFACTURER DENIES ANY RESPONSIBILITY IN CASE OF DAMAGES CAUSED BY UNAUTHORIZED MODIFICATIONS OR BY THE USE OF NON ORIGINAL COMPONENTS OR EQUIPMENT.</b>
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- 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 miss-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 kept clean, dry and not exposed to atmospheric agents. Make sure that the working premises are properly lit. The machine can be operated by a single operator. Unauthorized personnel must remain outside the working area, as shown in **Fig. 4**. 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 edge.
- Never activate the inflation device (only on models with tubeless inflation) if the tyre has not been correctly locked.
- During inflation always stay to the side of the machine and never in front of it.



**IN CASE OF A CHANCE SUPPLY FAILURE (WHETHER ELECTRICITY OR COMPRESSED AIR), MOVE THE PEDALS TO THE NEUTRAL POSITION.**

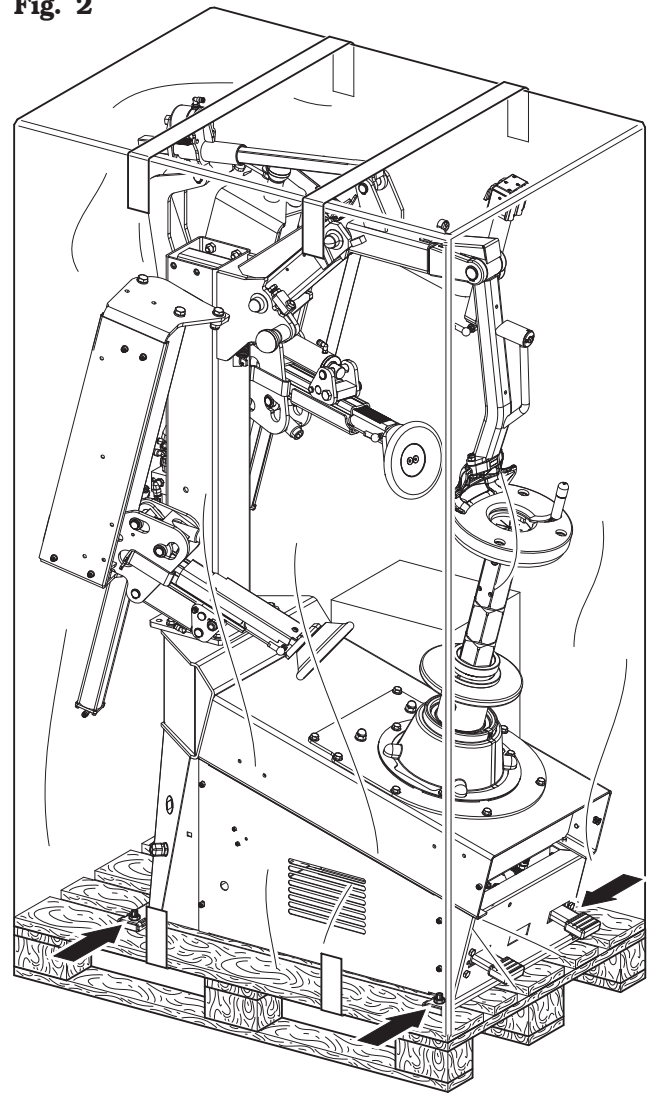
## 5.0 PACKING AND MOBILIZATION FOR TRANSPORT



**HAVE THE MACHINE HANDLED BY SKILLED PERSONNEL ONLY. THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE PACKED MACHINE (see paragraph TECHNICAL SPECIFICATIONS).**



The packed machine is partially assembled in its main components. The cardboard box containing it has dimensions of 2300x2300x1450 and it is fixed on a special reinforced pallet. Movement must be by pallet-lift or fork-lift trolley. The fork lifting points are indicated on the packing.

**Fig. 2**





## 6.0 UNPACKING

**DURING UNPACKING, ALWAYS WEAR GLOVES TO PREVENT ANY INJURY CAUSED BY CONTACT WITH PACKAGING 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 unnailed 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 the machine is packed dismantled into its principal parts, after removing the packing, lay the individual parts on the floor and check them for any missing components, damage, or irregularity.





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 FIXTURES IS CONTAINED IN THE WRAPPING. DO NOT THROW IT AWAY WITH THE PACKING.**

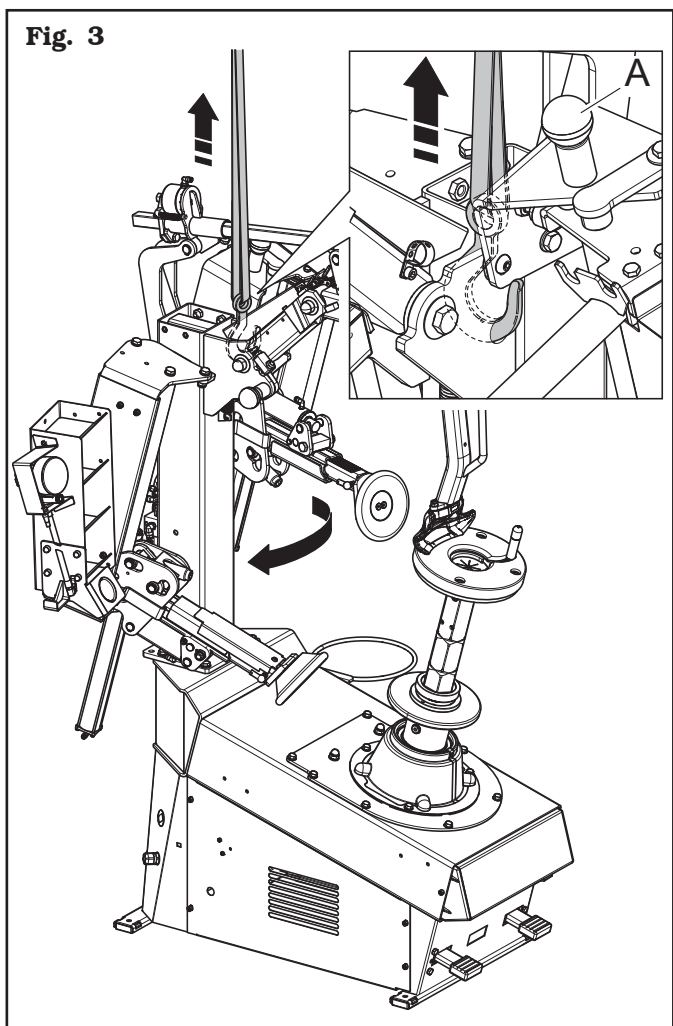
## 7.0 MOBILIZATION

**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.
- Disconnect all machine power supply sources.
- Lift and transport with suitable device with adequate dimensions.
- Use knob A to lock the free movement of the bead-breaker.
- Sling with a 100 cm long belt, with a capacity load greater than 1000 kg as shown in **Fig. 3**.



## 8.0 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.

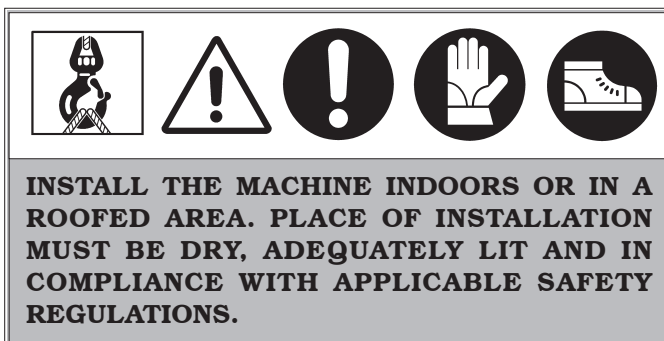
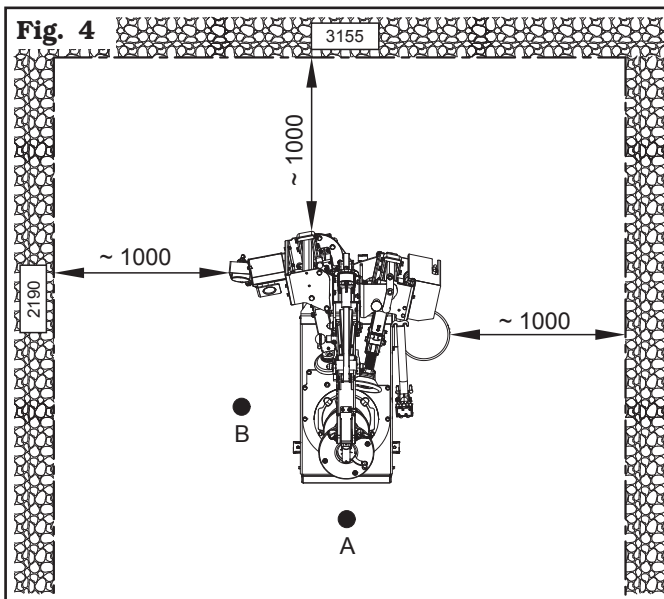
### 8.1 Working position

In **Figure 4** it is possible to identify working positions **A** and **B**.

Position **A** is the main positions for wheel fitting and removal with the chucking table, while position **B** is ideal to follow tyre inflation operations.

Working in these positions allows better precision and speed during operating phases as well as greater safety for the operator.

### 8.2 Installation space



The location of the machine requires a usable space of mm 3280x2470, (as indicated in **Figure 4**). 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 yielding 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<sup>2</sup>. The depth of the solid floor must be sufficient to guarantee that the anchoring bolts hold.

### 8.3 Lighting

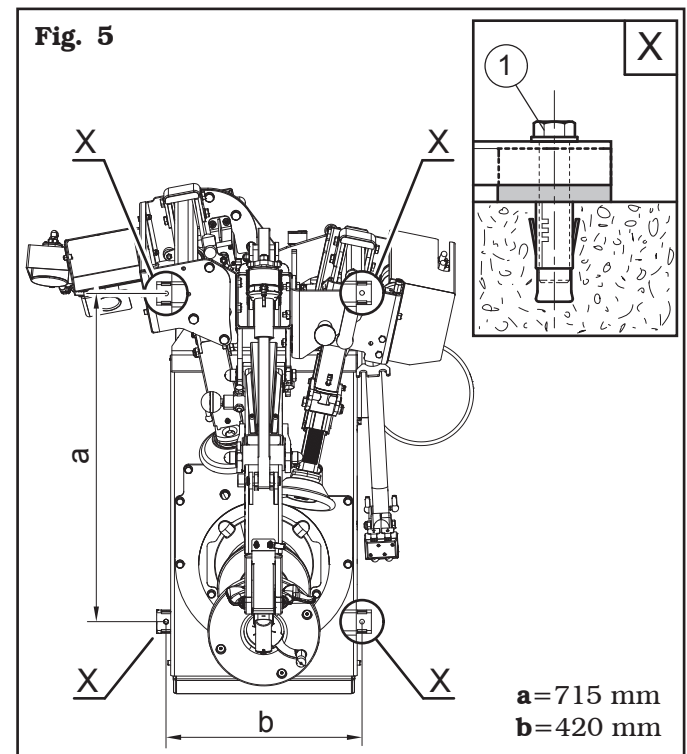
The machine does not require its own lighting for normal working operations. However, it must be placed in an adequately lit environment.

For correct lighting, use lamps having total power 800/1200 Watt as envisaged by UNI 10380.

## 9.0 ANCHORING SYSTEM

The packed machine is fixed to a pallet by support feet. These feet are also utilized for fixing the machine to the floor in the work area.

Secure the machine to ground using the anchoring bolts as shown in **Fig. 5**.



The holes in the solid floor must be about 10 cm deep with a diameter of 8 MA.

The small blocks (**Fig. 5 ref. 1**) must be inserted in the holes pre-arranged and fully tightened until reaching the system full seal.

## 10.0 ASSEMBLY AND PREPARATION FOR USE

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.

### 10.1 Fixtures contained in the packing

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

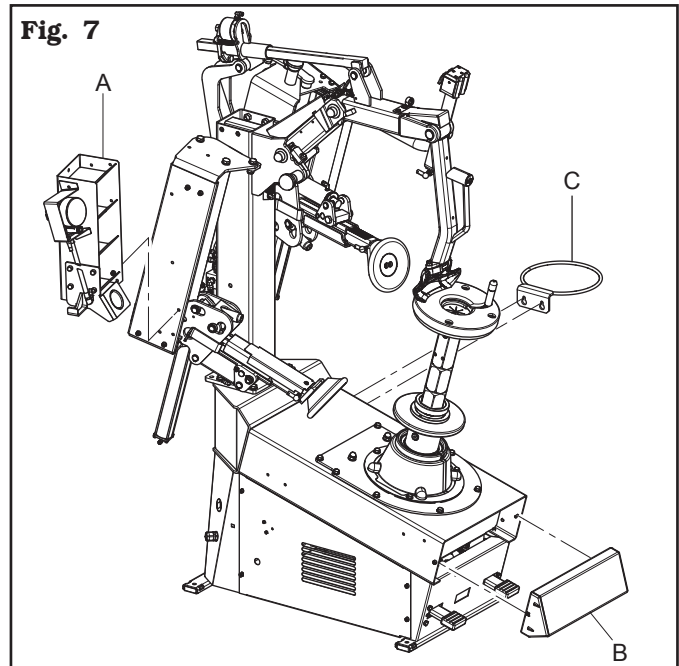
Code	Description	N.
<b>G1000A86</b>	Mirror	1
<b>206019</b>	TCEI M6x16 screw	4
<b>236004</b>	Flat washer 6,4	3
<b>222007</b>	M6 high nut	1
<b>B1157000</b>	Two-faced burnished cone	1
<b>710013421</b>	Reverse wheels protection	1
<b>790011620</b>	Bead sliding foil	1
<b>710090223</b>	Quick coupling	1
<b>B0326001</b>	Lever protection	1
<b>G1000A52</b>	Bead lifting lever	1
<b>B1205900</b>	Rimsled, mobile insert	2
<b>G1000A100K</b>	Bead_sliding_foil	1
<b>G1000A80/S</b>	Coupling with quick ring nut	1
<b>G800A37R</b>	Mounting grease	1
<b>G800A38</b>	Brush	1
<b>G1000A72</b>	Universal flange for closed centre	1
<b>G1000A81K</b>	Rubber protections for support plate	1
<b>G800A32</b>	Run Flat bead protection	1



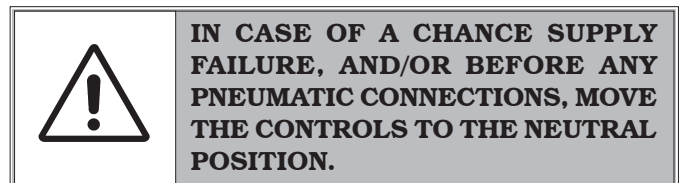
**Fig. 6**

## 10.2 Assembly procedures

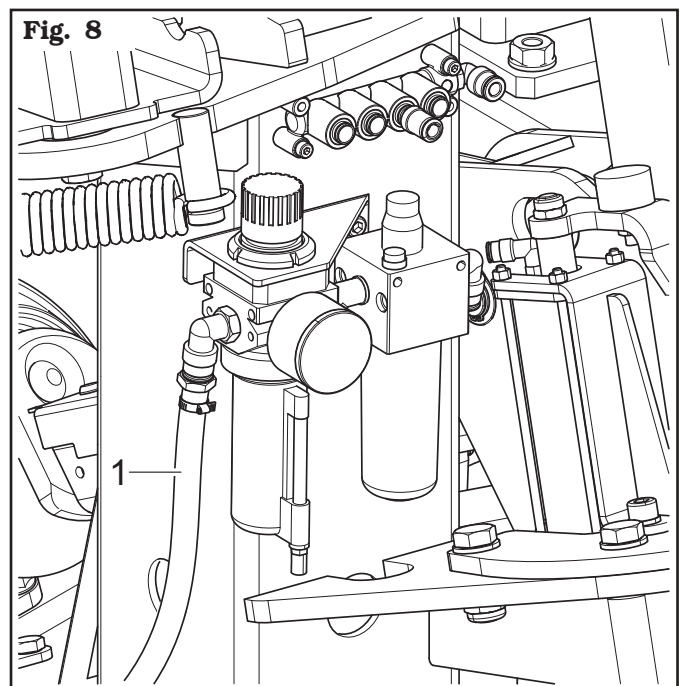
Assemble the machine with the help of the following illustration.



1. Remove the packing from the tool box (A) and take the piece off the wrapping.



- 2 - Connect the main pneumatic supply (Fig. 8 ref. 1) by linking connection on the machine filter unit. The pressurized pipe coming from the mains must have a section of 10x19 (see Fig. 8).



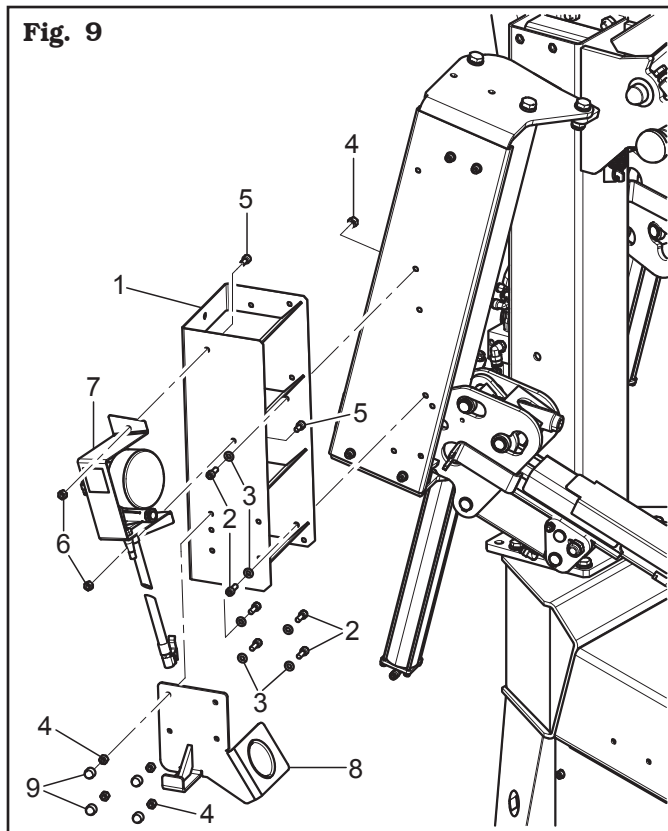
**Fig. 8**



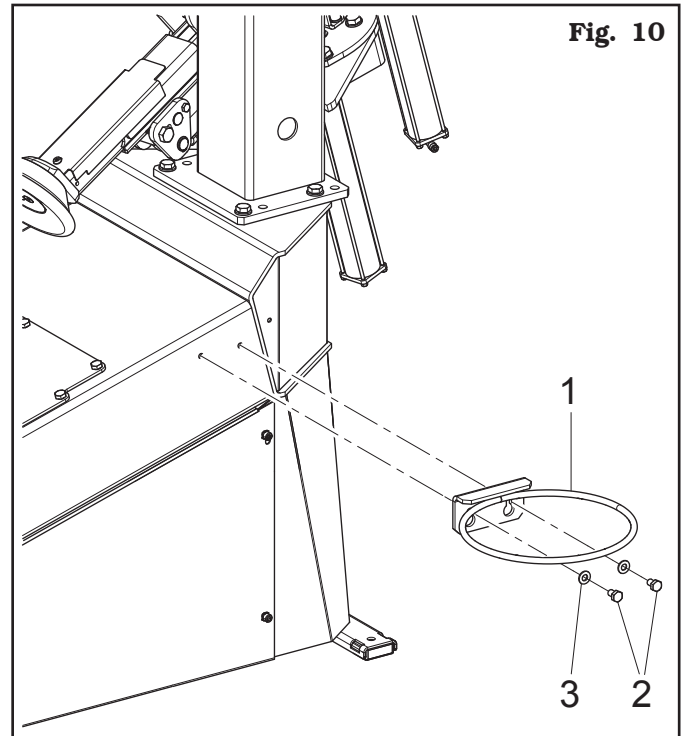


**IF OTHER PNEUMATIC CONNECTIONS SHOULD BE EXECUED, REFER TO THE PNEUMATIC DIAGRAMS ILLUSTRATED IN CHAPTER 19.**

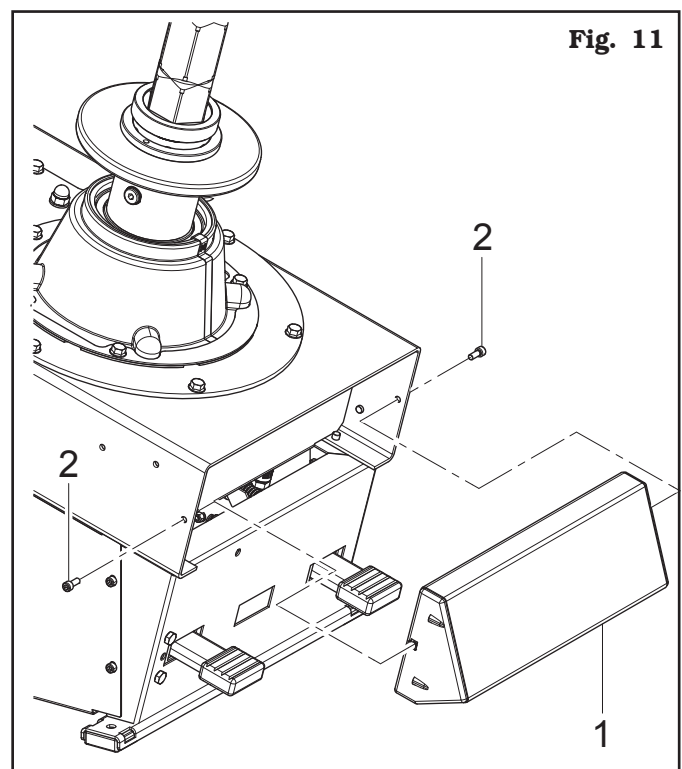
3. Fit the tool box (**Fig. 9 ref. 1**) and (**Fig. 7 ref. A**) to the lower bead breaker, using the screws (**Fig. 9 ref. 2**) (# 206019), the washers (**Fig. 9 ref. 3**) (# 236004) and the M6 nut (**Fig. 9 ref. 4**) (# 222007). Assemble the Device with pressure gauge (**Fig. 9 ref. 7**) to the box using the screws (**Fig. 9 ref. 5**) (# 206188) and the nuts (**Fig. 9 ref. 6**) (# 222007). Assemble the quick-coupling support (**Fig. 9 ref. 8**) to the tool box by using the screws (**Fig. 9 ref. 2**) (# 206019), the washers (**Fig. 9 ref. 3**) (# 236004), the M6 nuts (**Fig. 9 ref. 4**) (# 222007) and the plugs (**Fig. 9 ref. 9**) (# B2175000). Then connect the 8x6 rilsan red pipe from the rod to the union of the inflation device assembled on the column.


**Fig. 9**

4. Mount the ring (# B0223000) (**Fig. 10 ref. 1**) and (**Fig. 7 ref. C**), holding the grease bucket, contained in the fixture box, with the 2 screws provided (# 203129) (**Fig. 10 ref. 2**) and the washers (# 236006) (**Fig. 10 ref. 3**) already in place on machine body. The grease holder ring can be mounted in three different positions depending on the requirements of the user.



**Fig. 10**

5. Fix the front guard (**Fig. 11 ref. 1**) and (**Fig. 7 ref. B**) with the 2 screws provided (# 206019) (**Fig. 11 ref. 2**), already prearranged on machine body.


**Fig. 11**



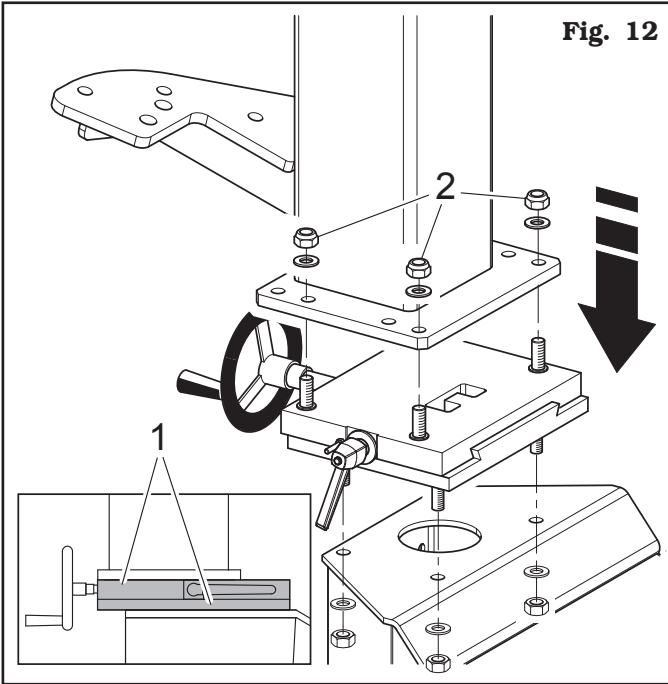
**ONCE THE ASSEMBLY OPERATIONS HAVE BEEN ENDED, CHECK ALL MACHINE FUNCTIONS.**



**CARRY OUT A DAILY CHECK OF MAINTAINED-TYPE CONTROLS CORRECT FUNCTIONING, BEFORE STARTING MACHINE OPERATION.**

**Column movement device assembly (optional)**

Fix the post to the column movement device screwing up the nuts and bolts loosely, these are tightened later to set the correct positioning (see **Fig. 12**). Place the two column movement device plates perfectly one upon the other (see **Fig. 12 ref. 1**). Maintain this position, tighten the four post nuts (**Fig. 12 ref. 2**) with a spanner dynamometrically set at 65 Nm. Then close by fitting the rear guard already separated.



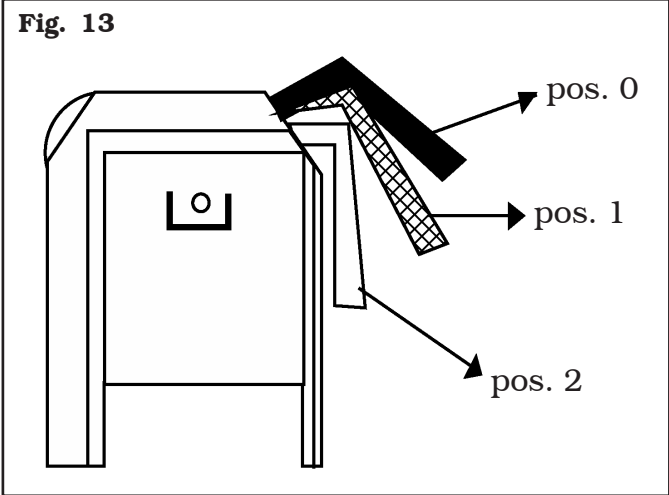
**Fig. 12**

**11.0 CONTROLS**

**11.1 Bead breaking control unit**

It consists of two push buttons with a different function, inserted on a single control block. The unit can be gripped for moving the bead-breakers and positioning them for operation. The bead-breaking control unit therefore governs all the movements necessary for a complete bead-breaking operation.

- Manual shift movement of the bead breakers.
- Push and pull movement of the command unit for the manual setting of the wheel diameter. The diameter indication is shown on the scale provided on the handle support.
- The two pneumatic buttons on the unit control the upper and lower bead-breaking arms.
- Each button has three positions. The first one is rest position (the bead-breaker arms are open).
- The second position of each button, of held activation type, generates a movement in the bead breaking arm. The right button moves the upper arm downwards. The left button moves the lower arm upwards.
- The third position operates with continuous pressure. This means that when the right button is pressed again, it activates a hydraulic pump, which moves the upper bead-breaker roller. Vice versa, pressing the left button again starts the hydraulic movement of the lower roller. Releasing the pressure on the buttons stops the movement, the arms remain in the position reached (see **Fig. 13**).



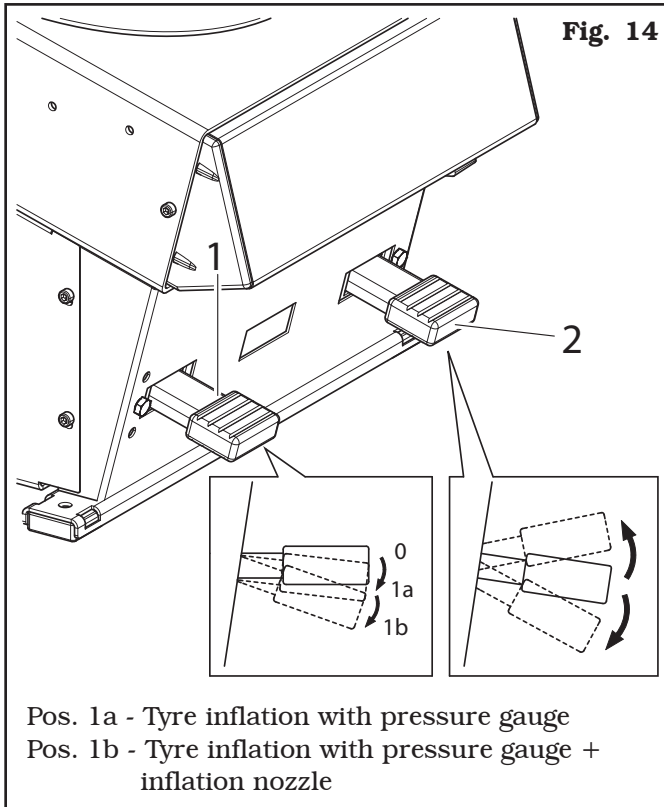
**Fig. 13**



### 11.2 Pedal board

The inflation “**Pedal 1**” has only one function. A continuous pressure supplies air at a controlled pressure (max  $4.2 \pm 0,2$  bar 60 PSI).

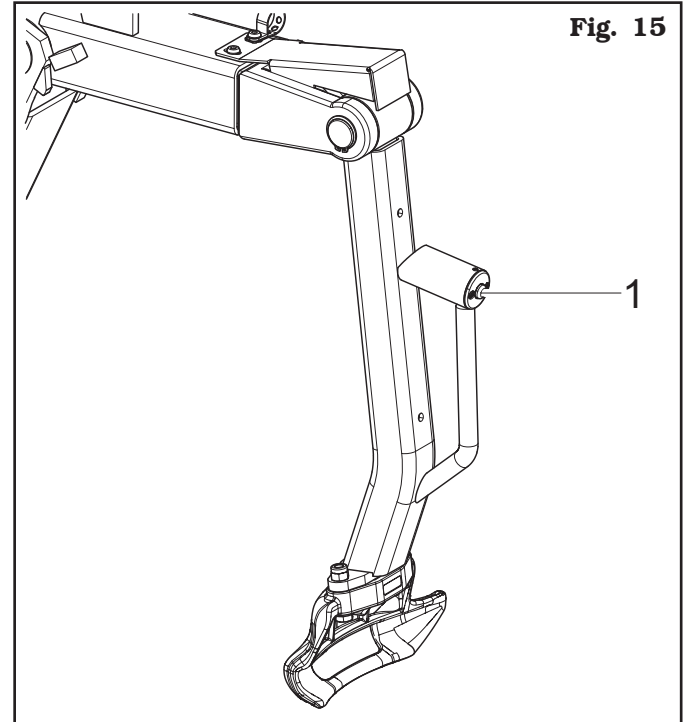
“**Pedal 2**” has two maintained action operative positions. When it is pushed downwards it controls the spindle motor clockwise rotary movement. When the pedal is lifted upwards it operates the opposite movement.



### 11.3 Vertical arm control

This is done completely manually. The mounting tool is positioned for work.

In order to manually adjust the tool arm, it's necessary to keep the unlocking push button (Fig. 15 ref. 1) on the handle pressed.



## 12.0 USING THE MACHINE

### 12.1 Precaution measures during tyre removal and fitting



Before fitting a tyre, observe the following safety rules:

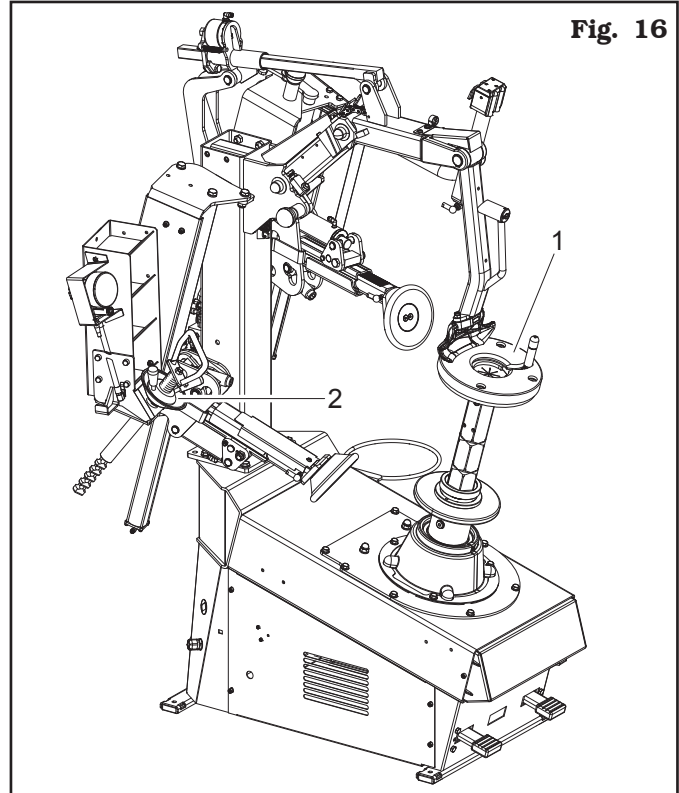
- always use clean, dry and in good condition rims and tyres; in particular, if necessary, clean the rims after all the balancing weights (as well as the adhesive weights on the inner side) have been removed, and make sure that:
  - neither the bead nor the tread of the tyre are damaged.
  - the rim does not produce dents and/or deformation (especially for alloy rims, dents can cause internal micro-fractures, that pass unobserved at visual inspection, and can compromise the solidity of the rim and constitute danger even during inflation);
- adequately lubricate the contact surface of rim and tyre bead. Use specific tyre lubricants only.
- replace the inner tube valve with a new valve. If the tyre tube has a metal valve, replace the grommet.
- make sure that the tyre is the right size for the rim. Never fit a tyre unless you are sure it is the right size (the rated size of the rim and tyre is usually printed directly on each of them).
- do not use compressed air or water jets to clean the wheels on the machine.

### 12.2 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 groove.
- Find the rim locking point.
- Try to establish the special types of wheels, such as "TD" and "AH", in order to improve locking, bead breaking, assembly and disassembly performances.

### 12.3 Wheel clamping

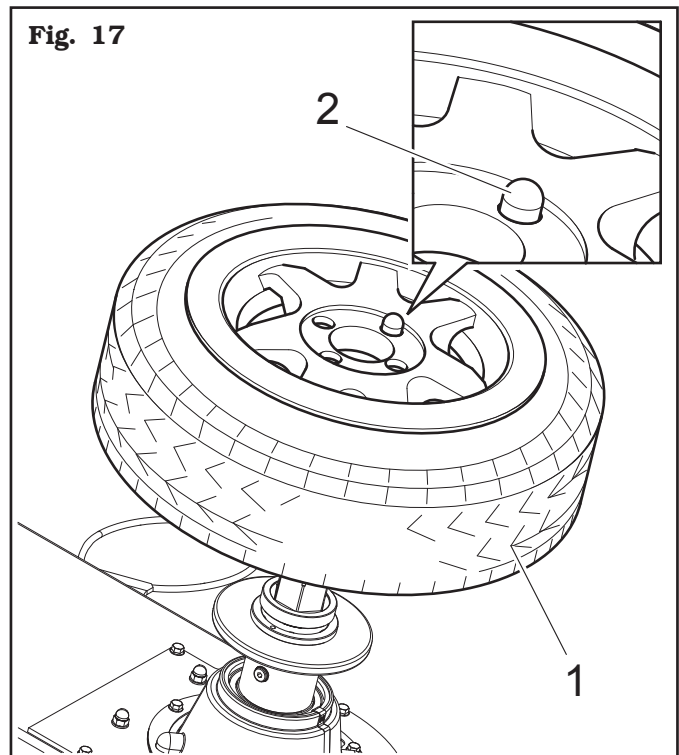
All rims must be locked on the rubber plate (**Fig. 16 ref. 1**) through the central hole using the proper locking device (**Fig. 16 ref. 2**).



**Fig. 16**

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

1. Dowel the wheel (**Fig. 17 ref. 1**) on the locking platform and check that the dragging pin (**Fig. 17 ref. 2**) enter in a hole placed on the rim hub.



**Fig. 17**



2. If the wheel hub is higher than the dragger (**Fig. 18 ref. 2**), use the extension (**Fig. 18 ref. 1**) supplied on issue.

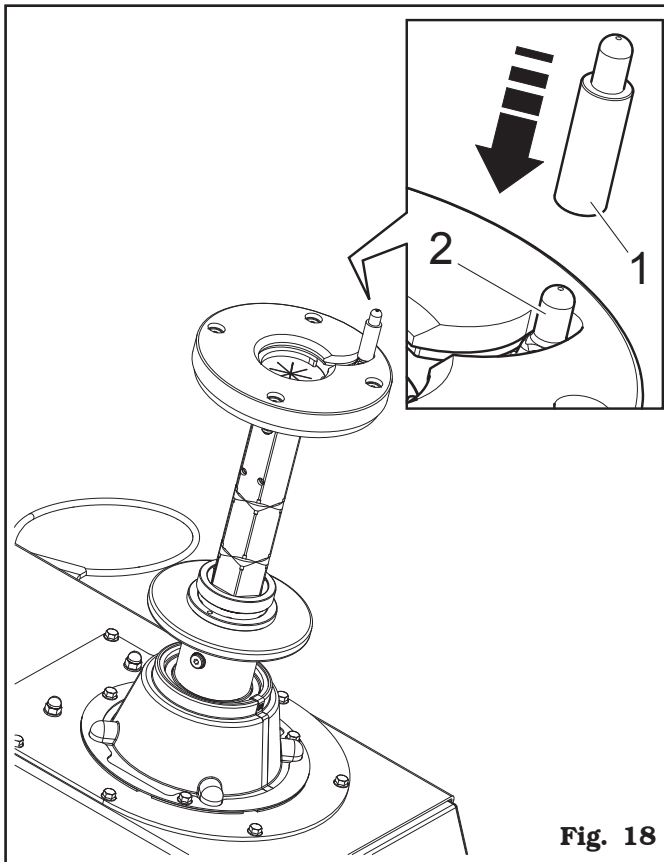


Fig. 18

3. Insert the shaft complete with cone (**Fig. 19 ref. 1**) on the rim (**Fig. 19 ref. 2**).

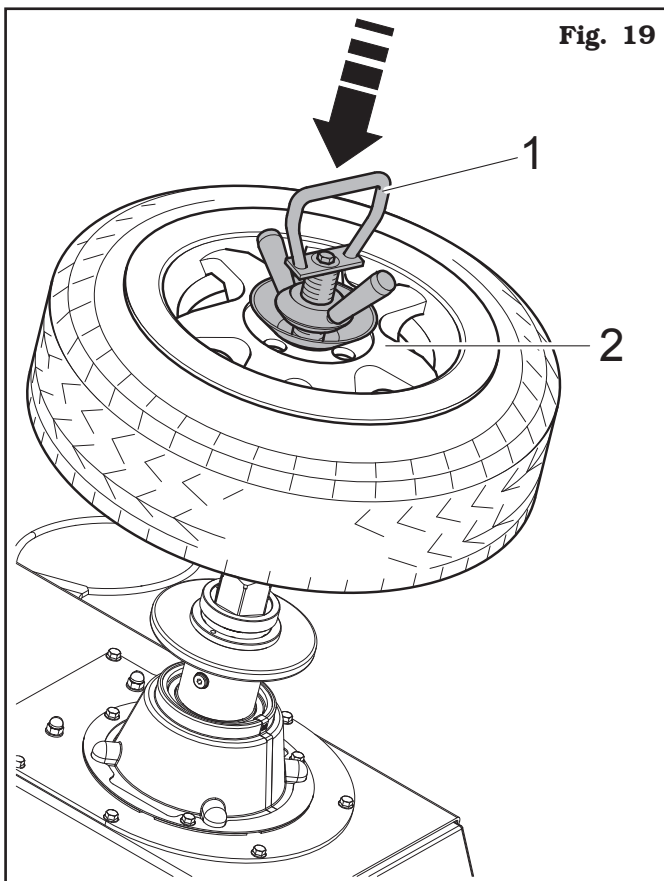


Fig. 19

4. Turn through 90° (**Fig. 20 ref. 1**) and lift the shaft (**Fig. 20 ref. 2**) in order to hook it inside the hole.

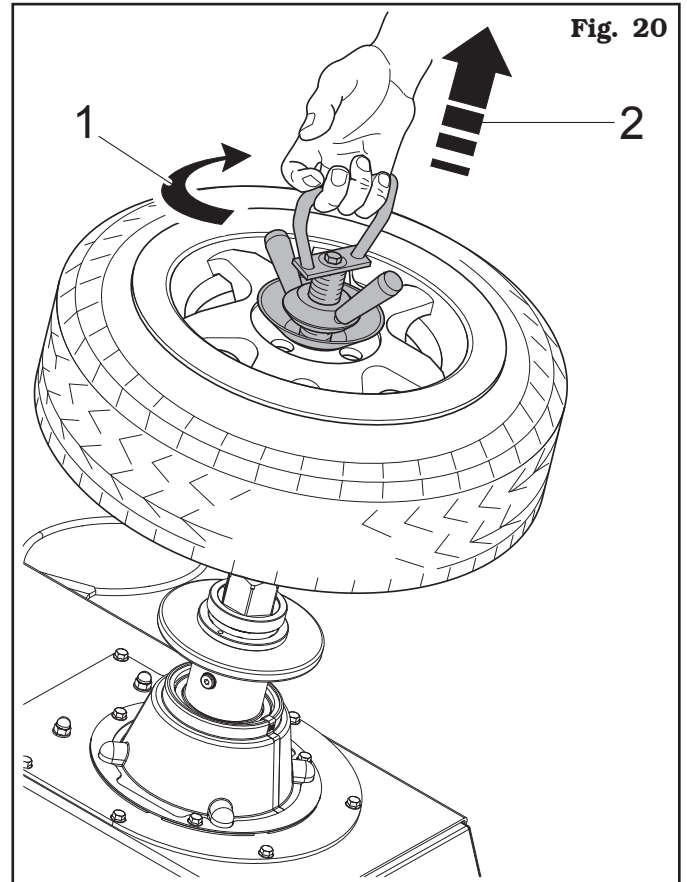


Fig. 20

5. Keeping the shaft lifted (**Fig. 21 ref. 1**) through the handle provided (**Fig. 21 ref. 2**), rotate the ring nut (**Fig. 21 ref. 3**) up to the complete tightening of the cone (**Fig. 21 ref. 4**) on the wheel (**Fig. 21 ref. 5**).

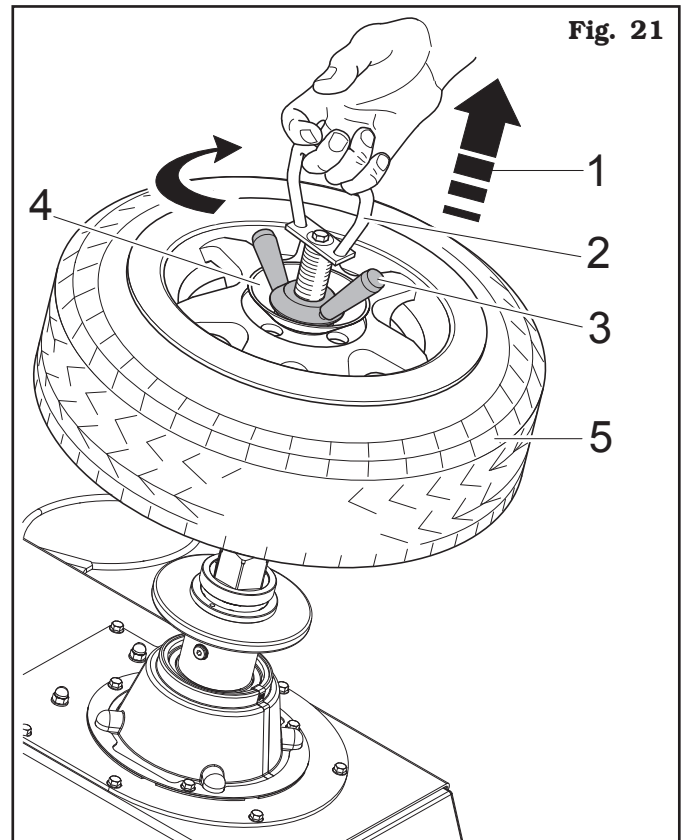
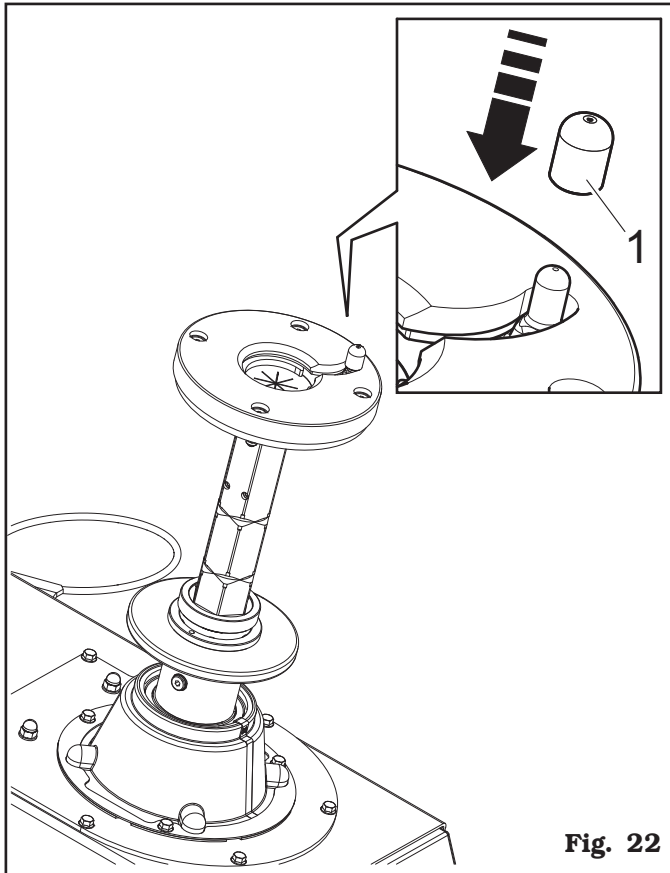


Fig. 21



6. For wheels with alloy rims, use a proper plastic guard (**Fig. 22 ref. 1**).



**Fig. 22**

To release the wheel, carry out the previously operations on the contrary way.

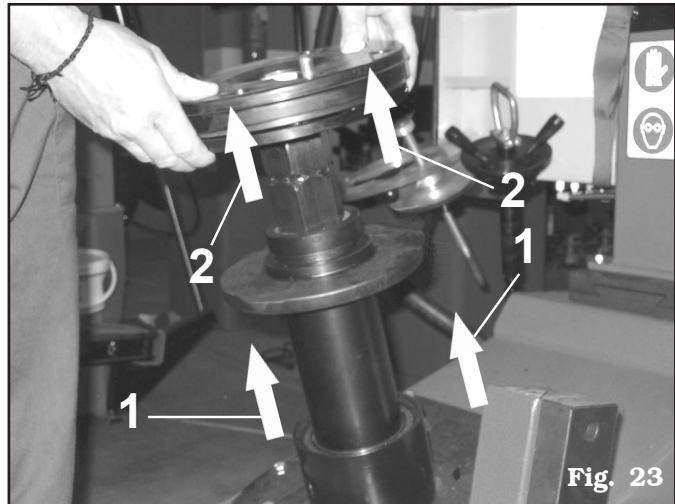
**12.3.1 Chuck height adjustment (version with mobile chuck)**

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. 23 ref. 1**).
- 2 - In the same time release and lift the wheel support as the arrows indicated (**Fig. 23 ref. 2**).
- 3 - Check that the flange return into the coupler position.

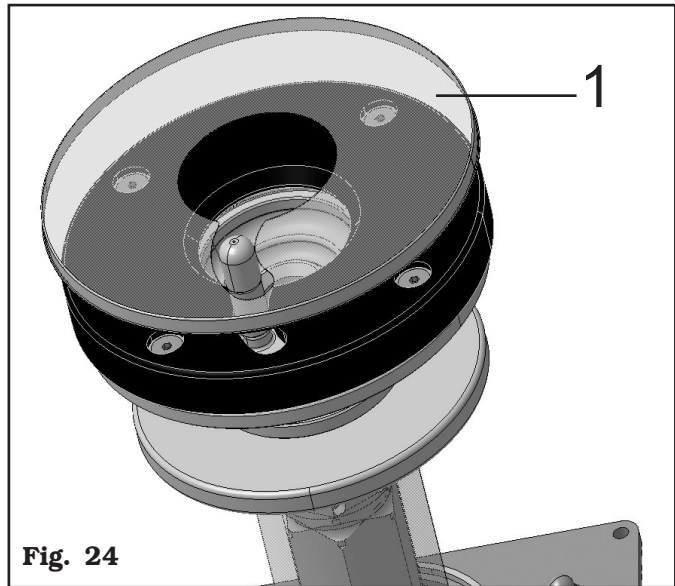
Now it's possible to place the tyre in the right way with the working tools.



**Fig. 23**

**12.3.2 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. 24 ref. 1**). We suggest a constant replacement of it and in any case if there are visible damages (see **Fig. 24**).



**Fig. 24**

### 12.3.3 Column mobilization device (optional)

It is possible to adjust the bead breaker in order to adapt the use range of the tyre changing machine to the wheel different dimensions. The column unit (**Fig. 25 ref. 3**) can move back (**Fig. 25 ref. A**) (for big wheels) or forward (**Fig. 25 ref. B**) (for small wheels) by means of a sliding guide, which is adjusted by a handwheel (**Fig. 25 ref. 1**); it has to be rotated only after the lever slackening (**Fig. 25 ref. 2**) as shown by the arrow **C** in order to unlock the device. After the column unit positioning (**Fig. 25 ref. 3**), proceed with the device block by turning the lever as shown by the arrow **D**.

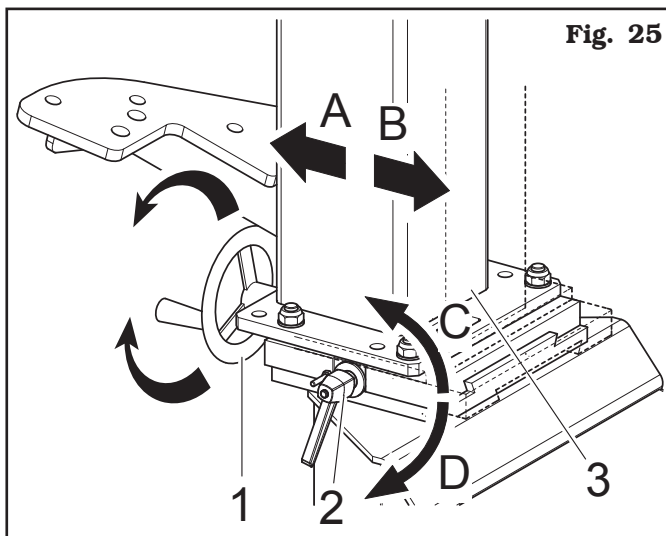


Fig. 25

### 12.4 Bead breaking by means of vertical rolls

- After having locked the wheel, move the upper bead-breaker to its work position.
- Set the wheel diameter by moving the control backwards or forwards referring to the diameter scale on the control unit. This scale is purely **indicative** since rims of equal diameter are not all the same.
- Move the upper bead breaker roller down until it touches the tyre using the button on the right side of the control unit and set it in position on the side of the rim (see **Fig. 26**).

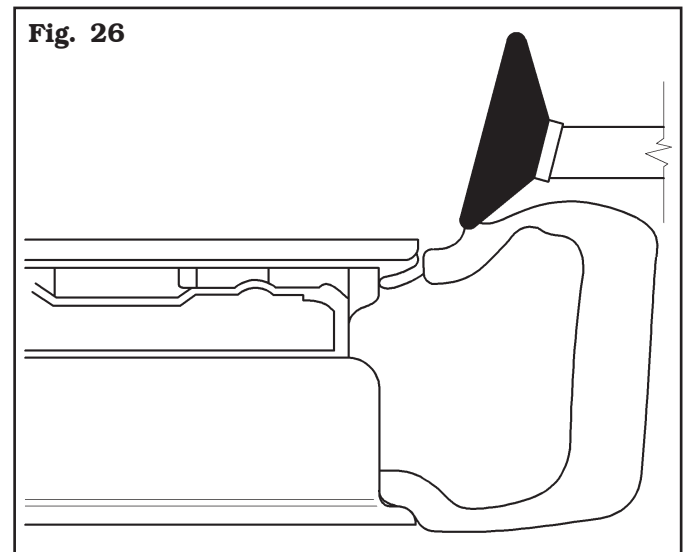


Fig. 26

- Start the hydraulic pump, again with the right button until the roller locks on the tyre. (The locking is complete when the roller is seen to move forward).
- Move the lower bead breaker roller up by pressing the left button until it touches the tyre.
- Start the hydraulic pump, again with the left button, until the roller locks onto the tyre.
- Rotate the wheel anti-clockwise pushing the relative pedal upwards and simultaneously pressing the left button to bead-break the bottom (it is possible to follow the operation using the magnetic mirror mounted on the lower bead breaker).
- After bead-breaking the bottom, the lower bead breaker roller is moved back to the rest position by moving the left button position to "0".
- Proceed to bead-break the upper edge in the same way, but using the right control unit button.

**Instructions for bead-Breaking “TD” and “AH” tyres and rims**

**Tyres and rims type “TD”**

- Bead-break one bead at a time starting with the upper bead.
- Position the roller 1cm from the edge of the rim.
- Rotate the wheel anti-clockwise and simultaneously press the right button of the upper bead-breaker to activate the hydraulic pump.
- Keep the hydraulic pump in operation until there is space enough between tyre and rim to lubricate the bead.
- Continue with the pump until the bead is completely broken.
- Rotate the wheel to bead it from the lower side. It may happen that the bead reverses. In this case, remove the roller and start again re-positioning the roller against the edge of the rim and use the full power of the machine until the bead is broken.

**Tyres and rims type “AH”**

After having locked the rim proceed as follows:

- Lubricate the edge of the tyre.
- Position the rollers as normal.
- Bead-break one bead at a time starting from the lower bead.

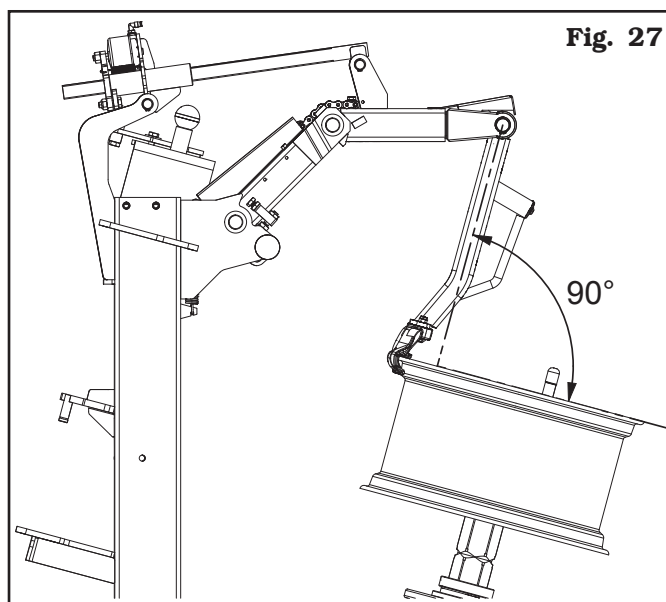
For “TD” and “AH” wheels it is advisable that the air supply pressure never falls below 8 bar.

**12.5 Demounting the tyre**

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

1. Press the pedal to rotate the wheel clockwise until the valve stem reaches “hour 1” position.
2. Press the push button on the handle and position the mounting/demounting arm on the rim outer edge.

It is important to position the mounting arm correctly (there are 2 possible positions). The two positions are set using the knob on the rod and, keeping the push button on the handle pressed, manually moving the arms until they are locked in the required position. The correct position is achieved when the angle between the tool holder arm and the rim plate is 90° (see **Fig. 27**).



This position is important because:

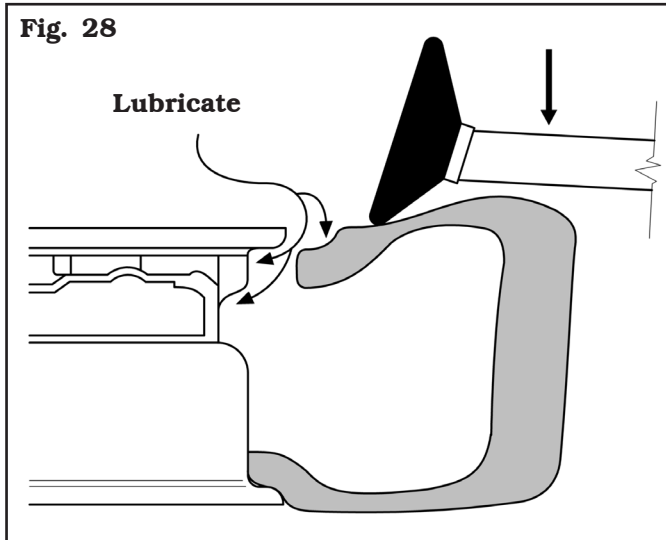
- It reduces the tension during mounting/demounting.
- It spreads the force applied to the mounting tool over the largest area possible.
- It significantly reduces the wear on the tool.



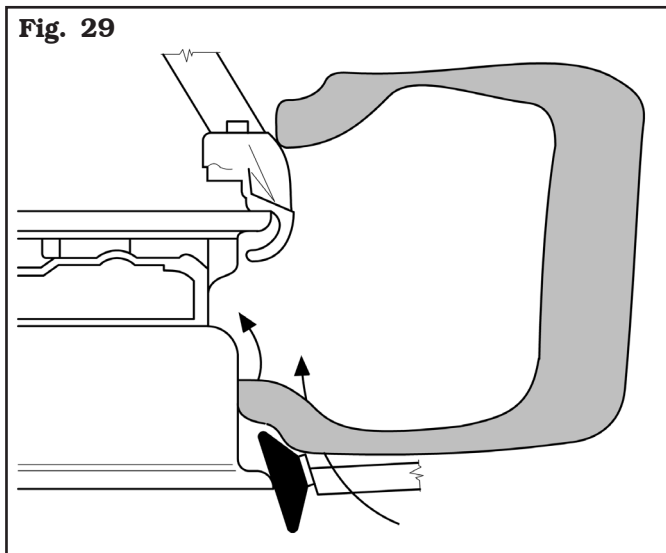
**WITH ROUNDED OR FLAT EDGE RIMS, THE ARM SHOULD HAVE AN ANGLE OF 100°/110°.**

3. Move the lever protector (# B0326001) to the pointed end of the bead lifting lever. Use the same lever to lift the bead onto the right end of the mounting tool and position it parallel with the rim plate at the same time pressing on the side of the tyre at “6 o'clock” position.
4. Press the pedal to turn the wheel clockwise until the whole bead has been lifted from the rim. During the rotation of the wheel, the bead lifting tool slides away from the mounting tool moving onto the rim edge. The plastic protector prevents the lever from scratching the rim.
5. Lift the tyre and repeat the operation on the other bead.

On heavy low-profile tyres, for an easier and safer demounting, once the upper bead has been broken, it is advisable to keep pressing until obtaining enough space to lubricate the groove, the bead seating, and the bead itself. (see **Fig. 28**). Failure to lubricate might cause friction between the mounting tool and the tyre, and would cause damage to the tyre and/or the bead.

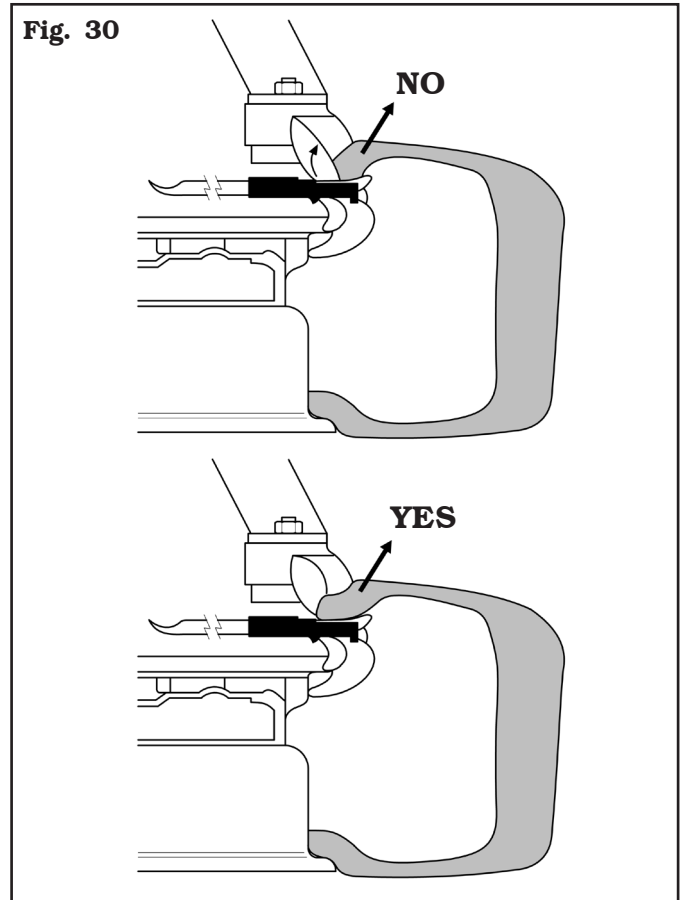


When the upper bead is being demounted, it might happen that the lower bead re-sets in the rim. In this case use the lower roller to bead-break again, and if the tyre is very wide push it up to the mounting tool (see **Fig. 29**).



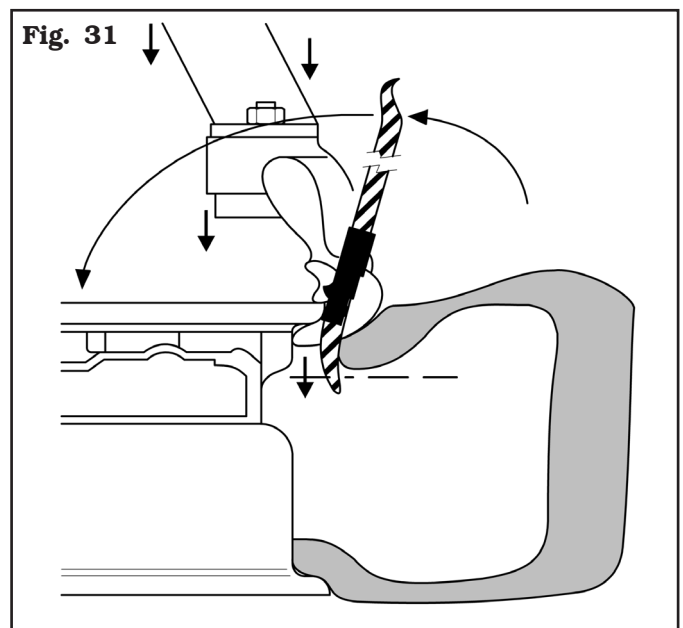
When demounting hard tyres, it may happen that the bead comes onto the mounting tool with the lip turned. This causes the bead to slide from the lever when clockwise rotation begins. To avoid this problem rotate the wheel slightly anti-clockwise until the bead flattens. Now the clockwise demounting cycle can begin (see **Fig. 30**).

**Fig. 30**



When demounting hard low-profile tyres, it might happen that the bead pushes up the mounting tool. It may be found useful to use the upper bead-breaking roller to push the bead down to create enough space to position the lever and at the same time pushing up the tool holder arm down (**Fig. 31**).

**Fig. 31**





If the motor slows down or stops during tyre demounting and mounting, make the following checks:

- Check that the bead has been lubricated.
- Check that the bead has been pushed into the well.
- Check that the right side of the rim has been chosen for demounting or mounting the tyre.
- Check that the supply pressure is not below 8 bar.
- Check that the rim well is not off-centre.

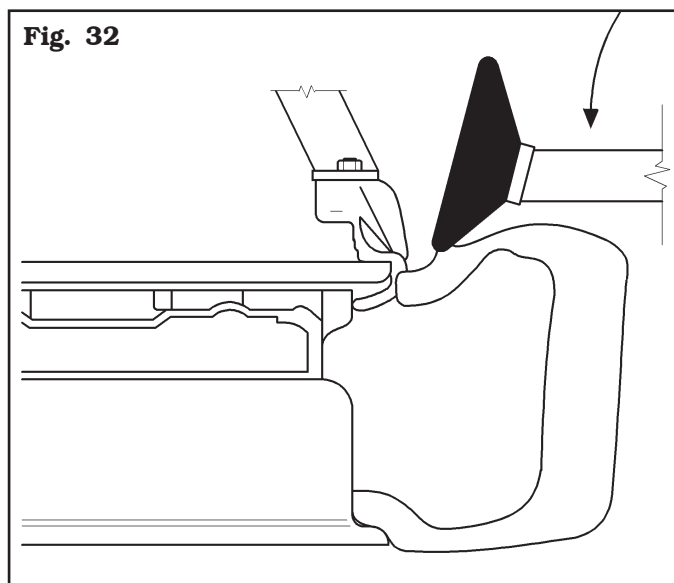
There are rims on the market for which it is difficult to check the position of the groove with the tyre mounted. A useful method for checking is to use the bead-breaker rollers, pressing on the tyre sufficiently to see the inside of the rim.

### 12.6 Tyre assembly

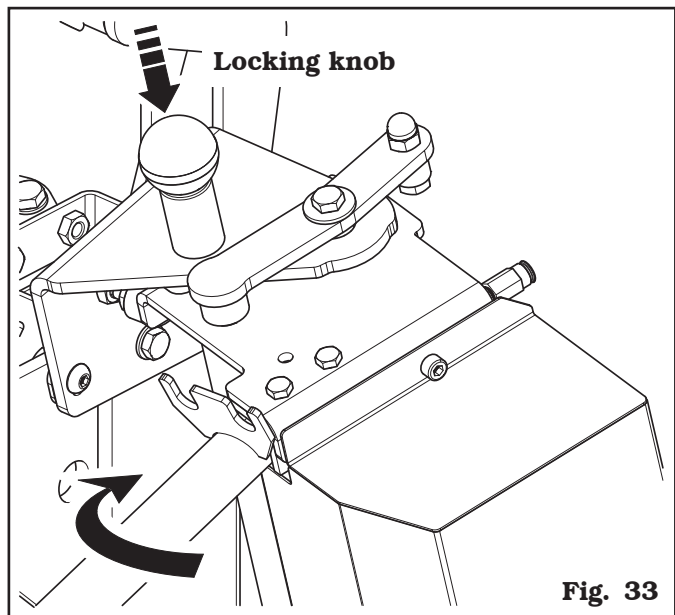
To mount the tyre, proceed as follows:

1. Lubricate the tyre's beads.
2. Position the tyre on the rim and lower the arm (after it has been released with the relevant push button) to position the mounting tool on the rim outside edge, checking the inclination.
3. Position the lower rim edge on the left side of the mounting tool and press the pedal to rotate clockwise.
4. Repeat the operation on the upper bead, taking care first to position the valve insert at "5-6 o'clock".

When mounting hard low-profile tyres, it may be useful to use the upper bead-breaker roll to push the bead into the well (see **Fig. 32**).



To carry out this operation it is necessary to bring the upper bead breaker to working position (the locking knob automatically engages), to move the roller towards the tyre edge, and to start the hydraulic pump while simultaneously turning the motor clockwise (see **Fig. 33**).



At the end of the operations, lift the locking knob and bring the support of the bead breaker arm to rest position.

### **12.7 For rims with spoke end raised compared to the rim-edge**

#### **(Disassembly)**

1. Clamp the wheel (preventively deflate the tyre completely and remove the balancing counterweights on both sides of the wheel).
2. Carry out tyre bead breaking with the standard procedure.
3. Use the upper bead breaker roller to lubricate with an approved lubricant the tyre bead, the lip, the bead seat and the EDGE of the RIM.
4. Position the demount/mount arm on the edge of the rim. Move forward the tool so that it penetrates between the rim and the tyre. While this operation is being effectuated, the tool rotates around the rim edge until it hooks the tyre bead.
5. Raise the lower bead breaker roller to reduce the tension of the tyre on the mounting tool.
6. Rotate the wheel in clockwise direction pushing the pedal provided.
7. Lift the lower bead onto the mounting tool and rotate in clockwise direction in order to complete demounting.

#### **(Assembly)**

1. Lubricate both tyre-beads with an approved lubricant.
2. Lubricate the inner part of the mounting tool and also the rim-edge.
3. Complete mounting procedure following the standard procedure.

### **12.8 Tyre inflation with machine without tubeless inflation**

Connect the inflation device to the tyre valve and inflate the tyre using the pedal provided (**Fig. 14 ref. 1**).



**A SAFETY DEVICE IS PRESENT FOR THE ADJUSTMENT OF THE MAXIMUM PRESSURE OF THE SUPPLIED AIR (4,2 ± 0,2 BAR / 60 PSI).**

Well lubricated beads and rims make the beading in and inflation much safer and easier.

**In case the beads are not seated at 4.2 ± 0.2 bar, release all the air from the wheel, remove it from the tyre changer and put it in a safety cage to complete the inflation procedure.**

### **12.9 Tyre inflation with machine with tubeless inflation**

Some types of tyres can be difficultly inflated if the beads are not in contact with the rim. The tubeless inflation device supplies a jet of high-pressure air from the nozzle, which encourages the correct positioning of the bead against the rim, and therefore normal inflation.

In order to carry out the inflation of the tyre follow these indications:

- Connect the inflation terminal to the valve of the tyre.
- Press the nozzle against the rim edge.
- Lift the lower bead while the pedal, is pushed at its second stage, supplying that way the air jet required for bead insertion.
- Continue to inflate the tyre up to the required pressure keeping the provided pedal pressed.

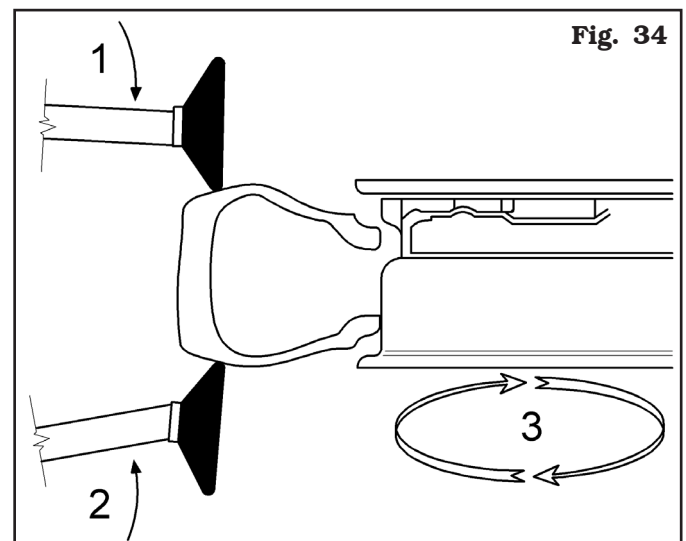


**IN ORDER TO ALLOW THE AIR JET TO BREAK BOTH BEADS, DO NOT KEEP THE BEAD LIFTED FORCING IT.**

### **12.10 Special use of the bead breakers**

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

- Clamp the tyre between the bead breaker rollers.
- Turn the motor counterclockwise until the reference point on the tyre coincides with the reference point on the rim (usually the valve) (see **Fig. 34**).



**Fig. 34**

### 13.0 ROUTINE MAINTENANCE



**BEFORE CARRYING OUT ANY ROUTINE MAINTENANCE PROCEDURE, DISCONNECT THE MACHINE FROM ITS POWER SUPPLY SOURCES, TAKING SPECIAL CARE OF THE ELECTRICAL PLUG/SOCKET CONNECTION.**



**BEFORE CARRYING OUT ANY MAINTENANCE OPERATIONS, MAKE SURE THERE ARE NO WHEELS CLAMPED ON THE SPINDLE AND THAT ALL SUPPLIES TO THE MACHINE HAVE BEEN DISCONNECTED.**

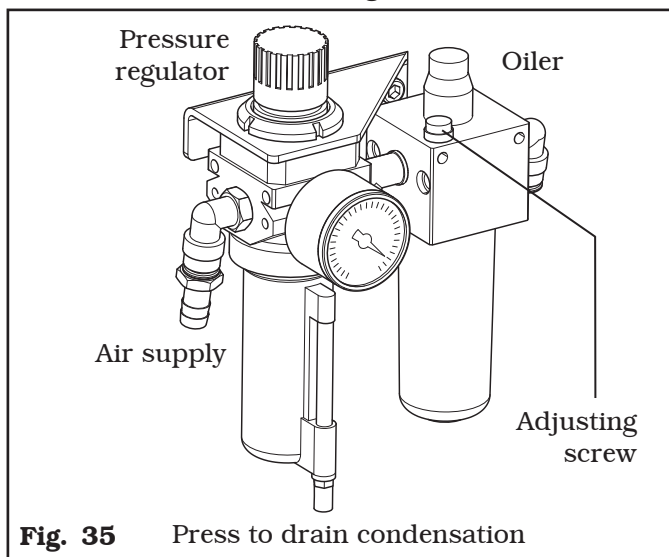
To guarantee the efficiency and correct functioning of the machine, it is essential to carry out daily or weekly cleaning and weekly routine maintenance, as described below.

Cleaning and routine maintenance must be conducted by authorized personnel and according to the instructions given below.

- Disconnect the mains power supply before starting any cleaning or routine maintenance operations.
- 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 oil/pressure regulator.
- The condensation in the pressure regulator reservoir must be drained **daily**. Press the connector at the bottom of the regulator to discharge the water. (see **Fig. 35**).
- Periodically check the calibration of lubricator of pressure/oiler gauge unit: 1 oil drop every 11-15 revolutions of self-centering chuck motor.



**Fig. 35** Press to drain condensation



**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:**

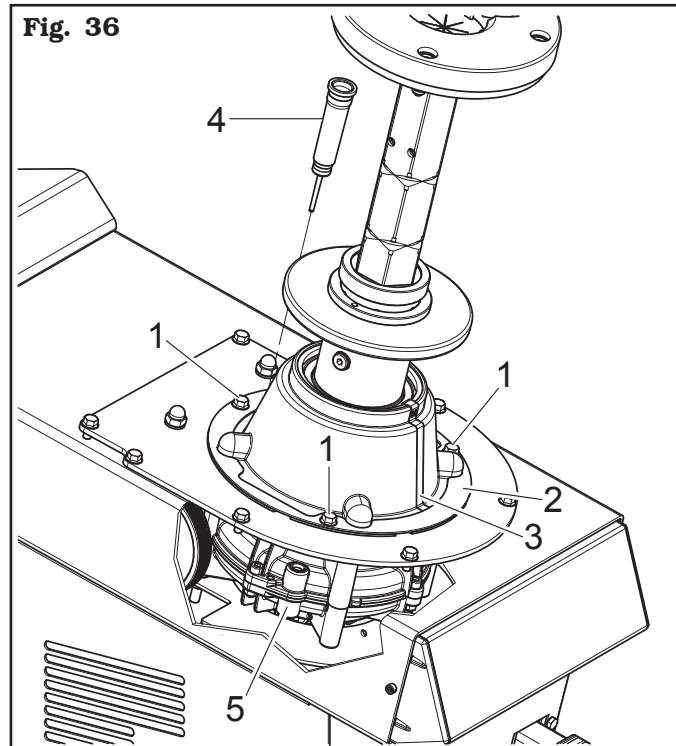
- EXEMPT FROM THE LUBRICATING OIL OF THE COMPRESSOR;
- EXEMPT FROM HUMIDITY;
- EXEMPT FROM IMPURITY.

- 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.
- Immediately replace worn parts, bead breaking roller, assembly tool.
- At regular intervals, (at least every 100 working hours) check reduction gear (**Fig. 36 ref. 5**) lubricating oil level. Such operation must be effectuated unscrewing the screws (**Fig. 36 ref. 1**), removing the flange (**Fig. 36 ref. 2**), the guard (**Fig. 36 ref. 3**) and the plug (**Fig. 36 ref. 4**) on the reduction gear.

**Fig. 36**



**ANY DAMAGE TO THE MACHINE DEVICES RESULTING FROM THE USE OF LUBRICANTS OTHER THAN THOSE RECOMMENDED IN THIS MANUAL WILL RELEASE THE MANUFACTURER FROM ANY LIABILITY!!**







## 14.0 TROUBLESHOOTING TABLE

Possible troubles which might occur to the tyre-changer are listed below. The manufacturer disclaims all responsibility for damages to people, animals or objects due to improper operation by non-authorized personnel. In case of trouble, call Technical Service Department for instructions on how to service and/or adjust the machine in full safety to avoid any risk of damage to people, animals or objects.

In an emergency and before maintenance on tyre-change machine, set the main switch to "0" and lock it in this position.



**CONTACT AUTHORIZED TECHNICAL SERVICE**  
**Do not try and service alone.**

<b>Problem</b>	<b>Possible cause</b>	<b>Remedy</b>
The upper bead-breaker arm remains down.	Compressed air supply pressure below 6 Bar.	Check supply pressure. Call for technical assistance. 
The bead-breaker hydraulic pump jams.	The bead-breaker lubricator is empty.	Top up the reservoir with suitable oil having first disconnected the mains supply. Call for technical assistance. 
The nozzle doesn't supply air when the inflation pedal is pressed (Model with tubeless inflation).	The inflation pedal is badly adjusted.	Call for technical assistance. 
No movements take place when the pedals are pressed.	1. Supply missed. 2. Inflation pedal unit not set correctly.	1. Check power supply. 2. Call for technical assistance. 
The mandrel doesn't rotate.	Inverter overload alarm <i>Or</i> Inverter undervoltage alarm <i>Or</i> Inverter overvoltage alarm	Shorten the length of a possible machine extension cable or increase the conductors section (disconnect and connect again). Lift the motor pedal and wait for the automatic reset.
	Overtemperature alarm.	Wait until the motor system cools (the machine does not restart if the temperature level does not go below the set safety threshold).
The mandrel does not reach the maximum rotation speed.	The mechanical resistance of the gearmotor system has increased.	Turn the mandrel without wheel for a few minutes so that the system heats, thus reducing frictions. If in the end the mandrel does not accelerate again, call for technical assistance. 
The spindle does not turn in the clockwise or counter clockwise direction in one of the allowed speed.	Microswitch breakage.	Check cables <i>or</i> Replace microswitch. 

**15.0 TECHNICAL DATA**

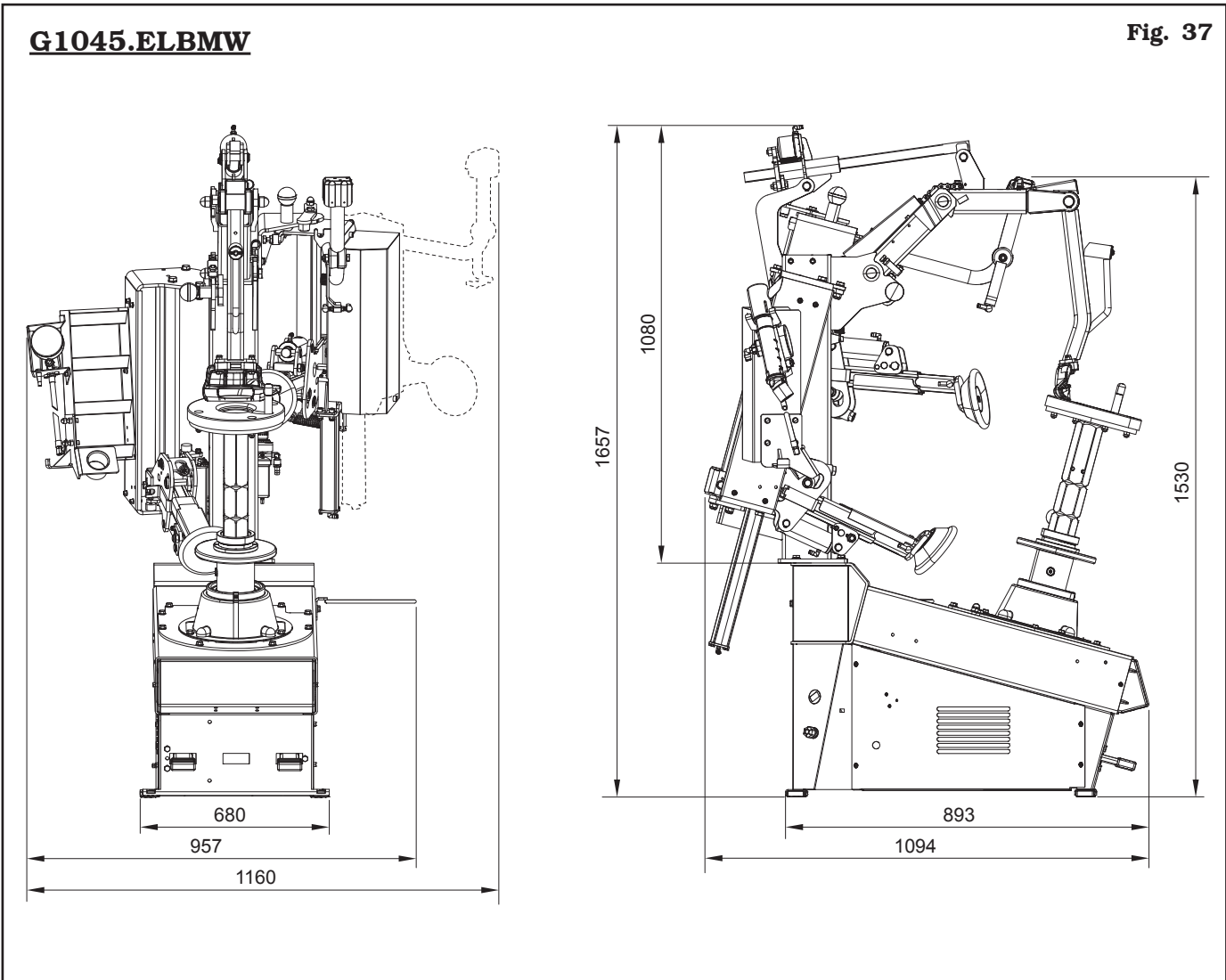
**15.1 Technical data**

Recommended air supply pressure ..... **8 - 10 bar**  
 Inveomotor Speed ..... **15 rpm**  
 Inveomotor power ..... **1,5 kw**  
 Recommended electric supply  
 single-phase ..... **200÷265V - 50/60 Hz**  
 Maximum wheel diameter ..... **45"**  
 with column movement device ..... **50"**  
 Wheel max. width ..... **15"**  
 Bead-breaker power per roller ..... **1900 kg**  
 Vertical bead breaker max. opening ..... **19"**  
 Gear noise ..... **dBA 85**

**15.2 Weight**

G1045.ELBMW ..... **234 Kg**

**15.3 Dimensions**





## 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.

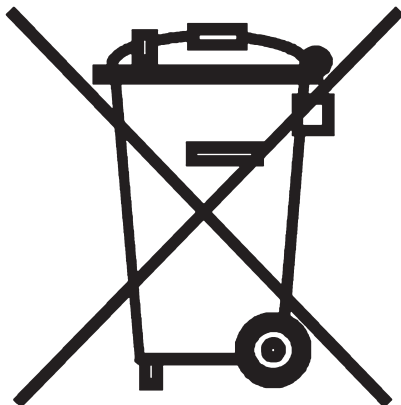
## 17.0 SCRAPPING

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 symbol on the product showed below 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.

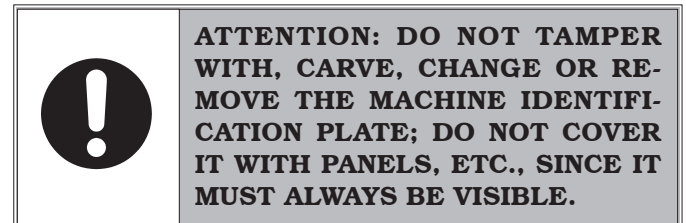
**Fig. 38**



## 18.0 REGISTRATION PLATE DATA



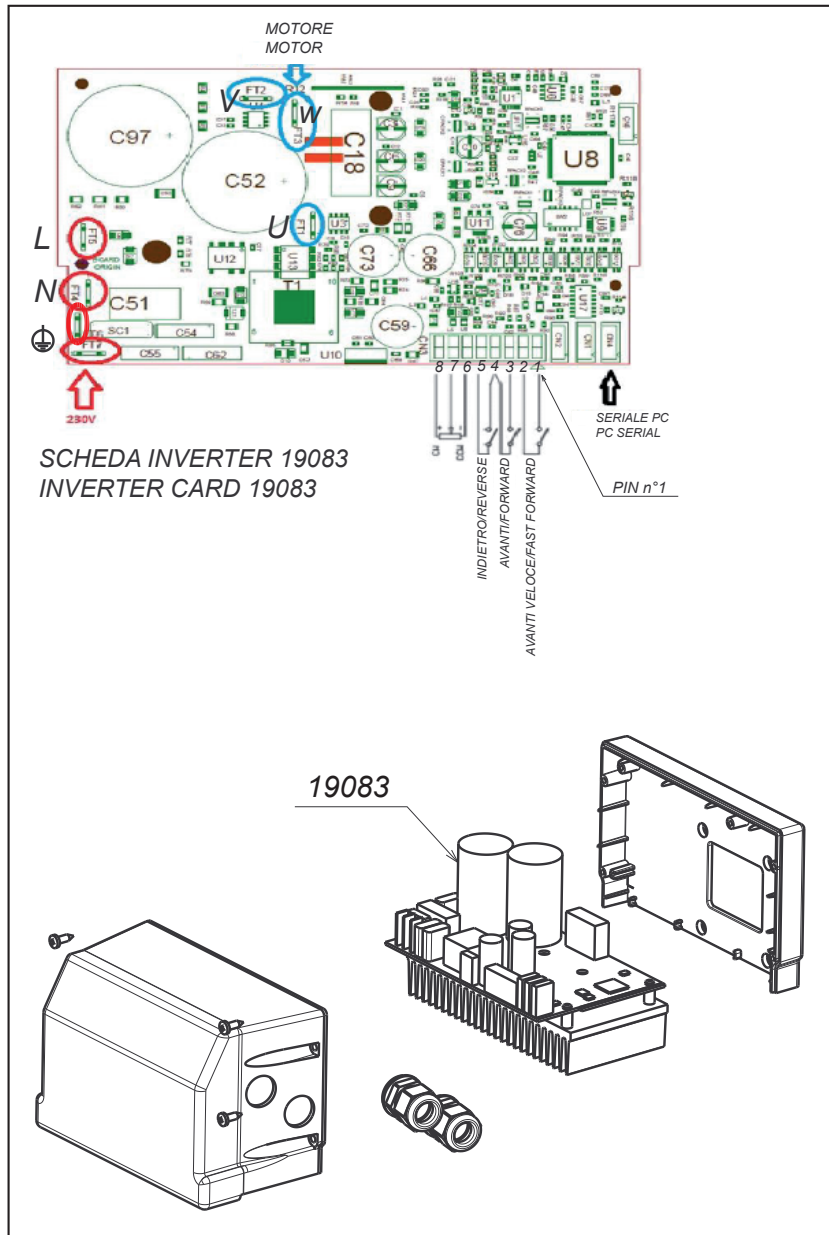
**The validity of the Conformity Declaration enclosed to this manual is also extended to products and/or devices the machine model object of the Conformity Declaration can be equipped with. Said plate must always be kept clean from grase residues or filth generally.**



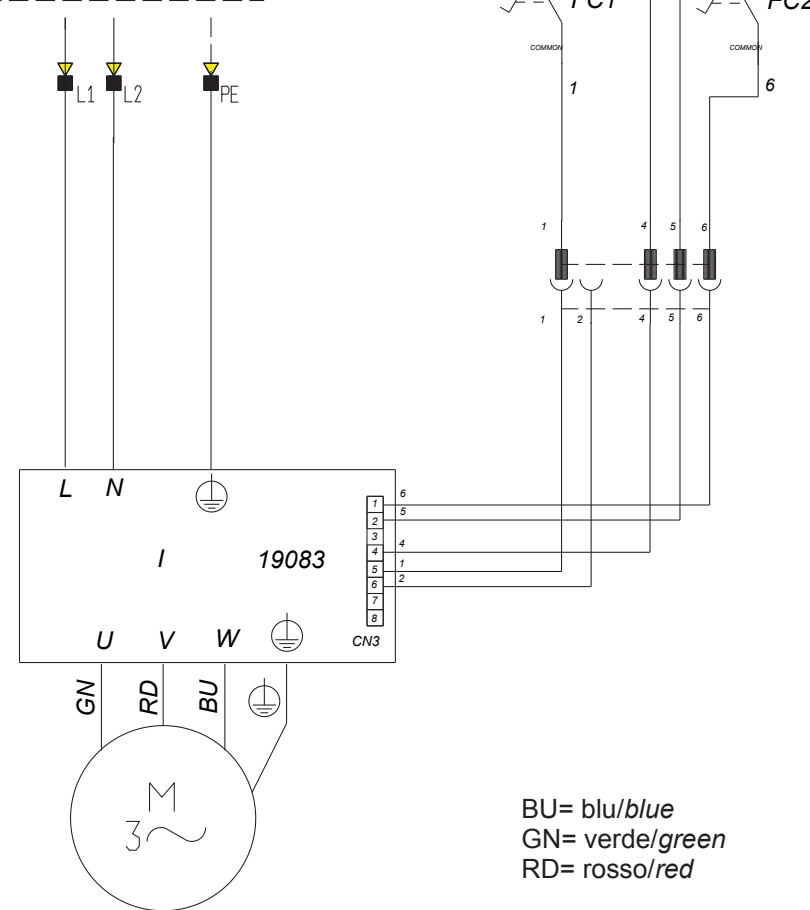
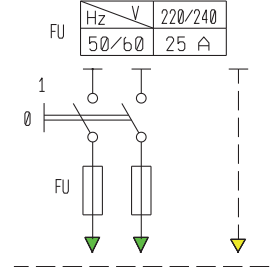
*WARNING: Should the plate be accidentally damaged (removed from the machine, damaged or even partially illegible) inform immediately the manufacturer.*

## 19.0 FUNCTIONAL DIAGRAMS

Here follows a list of the machine functional diagrams.



MONOFASE CAVO ALIMENTAZIONE 2P+TERRA x 6 mmq  
SUPPLY CABLE MONOPHASE 2P+GROUND x 6 mmq  
EINPHASEN KABEL SPEISUNG 2P+ERDE x 6 mmq  
UNIPHASE CABLE ALIMENTATION 2P+TERRE x 6 mmq  
MONOFÁSICO CABLE ALIMENTACION 2P+TIERRA x 6 mmq



RAVAGLIOLI S.p.A.

LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE  
LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS

Tavola N°A - Rev. 1

710205553

SCHEMA ELETTRICO  
ELECTRICAL SCHEME  
SCHALTPLAN  
SCHEMA ELECTRIQUE  
ESQUEMA ELECTRICO

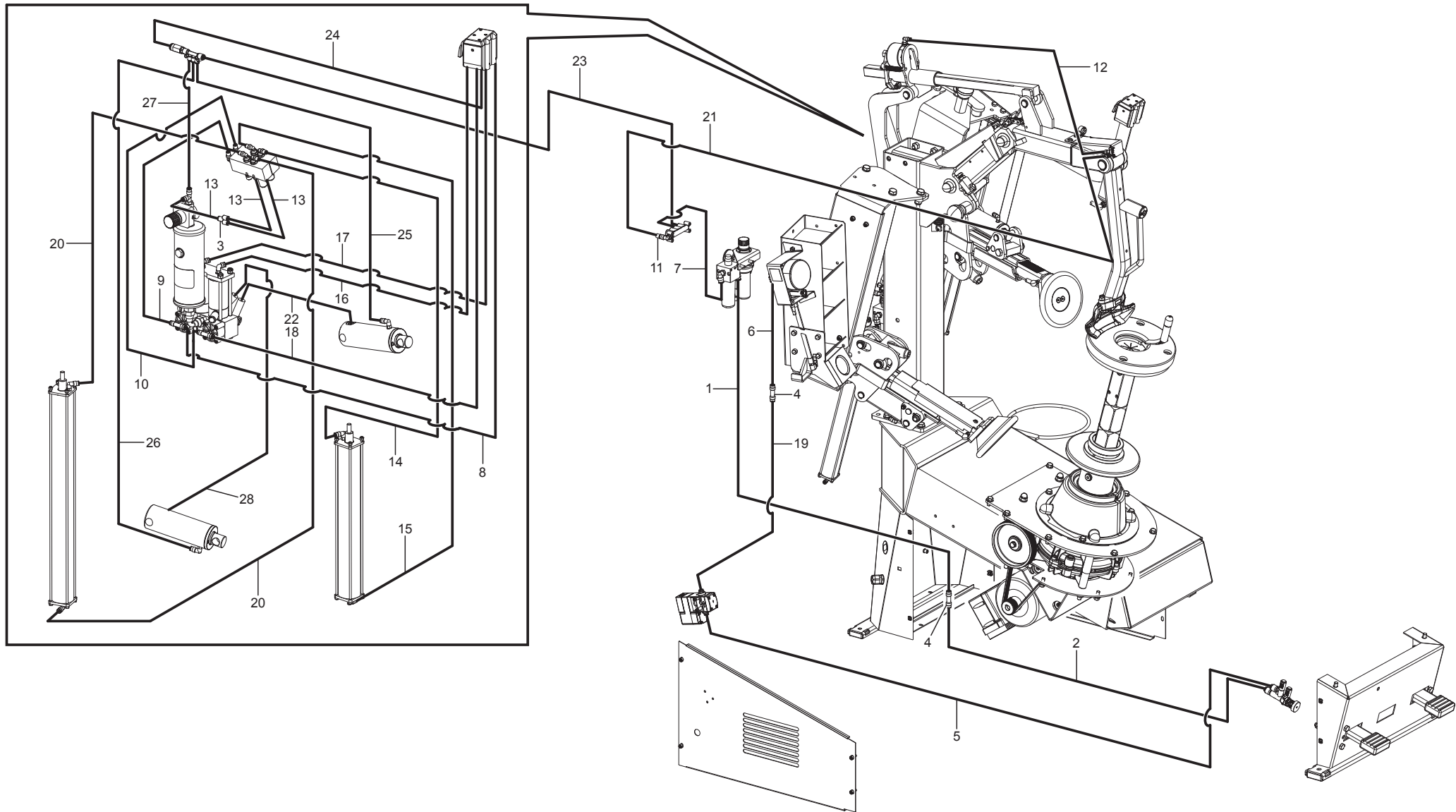
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G1045.ELBMW

7102-M004-8\_BMW







RAVAGLIOLI S.p.A.

LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE  
 LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS

Tavola N°B - Rev. 1

SCHEMA PNEUMATICO  
 PNEUMATIC DIAGRAM  
 PNEUMATISCHER SCHEMA  
 SCHEMA PNEUMATIQUE  
 ESQUEMA NEUMÁTICO

Pag. 29 di 30

G1045.ELBMW



**7900-M003-1**

**AX - LECTRA - EL - ERGOLOCK**

MANUALE DI ISTRUZIONE  
INSTRUCTION MANUAL  
BETRIEBSANLEITUNG

<b>ITALIANO</b>	.....	<b>2</b>	<b>I</b>
<b>ENGLISH</b>	.....	<b>13</b>	<b>GB</b>
<b>DEUTSCH</b>	.....	<b>24</b>	<b>D</b>

## SOMMARIO

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## 1.0 OPERAZIONI PRELIMINARI - PREPARAZIONE DELLA RUOTA

- Togliere i contrappesi d'equilibratura su entrambi i lati della ruota.
- Togliere il gambo della valvola e lasciar sgonfiare completamente il pneumatico.
- Verificare da quale lato si dovrà smontare il pneumatico, guardando dove si trova il canale.
- Verificare il punto di bloccaggio del cerchio.
- Verificare il tipo di pneumatico e lo spessore del cerchio (vedi **Fig. 1**) ed eventualmente il tipo di sensore. La temperatura del pneumatico non può essere inferiore a 15°C.

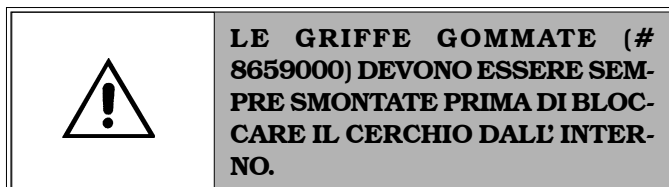


Fig. 1

## 2.0 BLOCCAGGIO DELLA RUOTA

### 2.1 Bloccaggio della ruota con bracci autocentranti a „Tulipano“ (AX - Lectra)

Tutte le ruote devono essere bloccate dall'interno con i tamponi in gomma. Detti tamponi devono posizionarsi nella parte interna del cerchio.



**LE GRIFFE GOMMATE (# 8659000) DEVONO ESSERE SEMPRE SMONTATE PRIMA DI BLOCCARE IL CERCHIO DALL'INTERNO.**

E' consigliabile bloccare il cerchio il più in alto possibile.

Per procedere al bloccaggio della ruota seguire le seguenti istruzioni:

1. Chiudere i bracci autocentranti azionando il relativo pedale verso l'alto.
2. Mettere la ruota sul dispositivo di centraggio a molla, e premere il pedale verso il basso fino a quando i tamponi in gomma non si sono posizionati sul punto del cerchio dove si vuole bloccare.

3. Premere il pedale fino in fondo fino al bloccaggio completo della ruota.
4. Verificare che il cerchio sia bloccato e centrato correttamente per evitare lo scivolamento del cerchio stesso durante le operazioni successive.



**LA RUOTA DEVE SEMPRE ESSERE FISSATA CON UN DISPOSITIVO DI SICUREZZA E LIBERATA DA DETTO DISPOSITIVO SOLO ALLA FINE DI TUTTE LE OPERAZIONI.**

Per il montaggio del dispositivo di sicurezza (**Fig. 2**) attenersi alle seguenti istruzioni:

- Con la ruota bloccata, far scorrere il dispositivo di sicurezza attraverso il foro centrale della ruota fino ad inserirsi nel centraggio molla.
- Incastrare la spina di fermo, montata sul fondo del dispositivo, sul bullone con innesto, montato sul motore, ruotando leggermente il dispositivo stesso.
- Abbassare, inclinando, la ghiera di bloccaggio verso la piastra.
- Metterla in posizione orizzontale e bloccare ruotandolo in senso orario (**Fig. 2**).

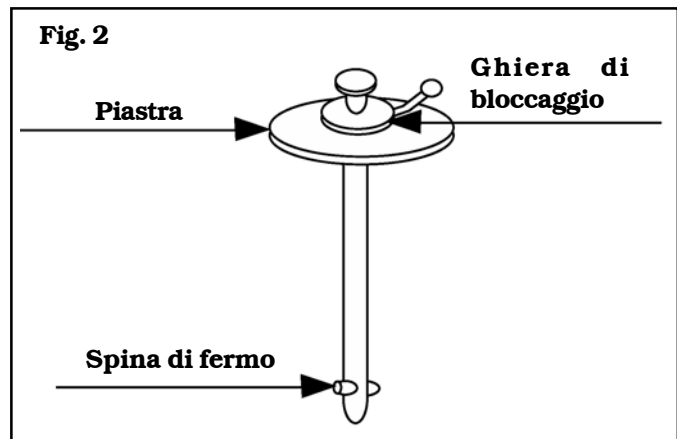


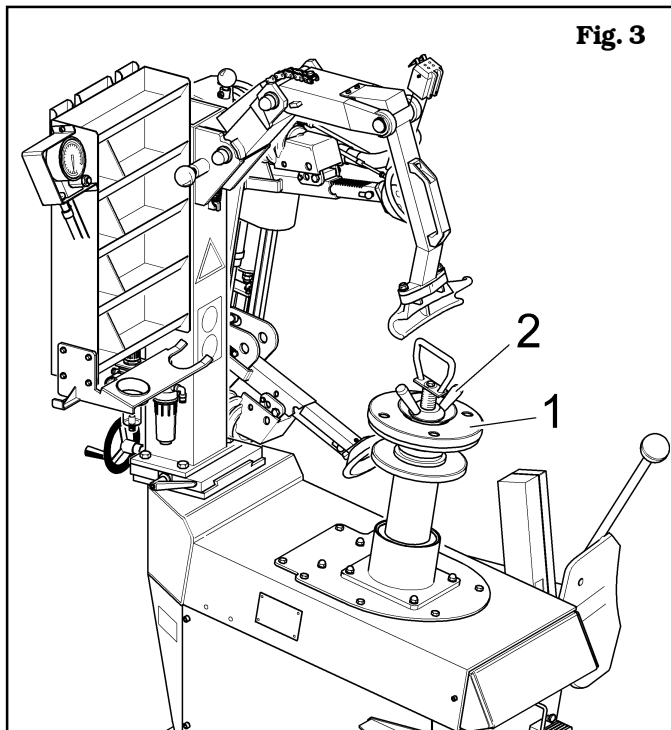
Fig. 2

Per ruote con canale rovesciato procedere attenendosi alle seguenti istruzioni:

1. Bloccare la ruota dall'interno come precedentemente illustrato.
2. Stallonare entrambi i talloni.
3. Sbloccare la ruota e girarla.
4. Aprire i bracci autocentranti.
5. Fissare le griffe gommate.
6. Posizionare la ruota e bloccarla come descritto nel punto 1.

## 2.2 Bloccaggio della ruota sul piatto (Ergolock)

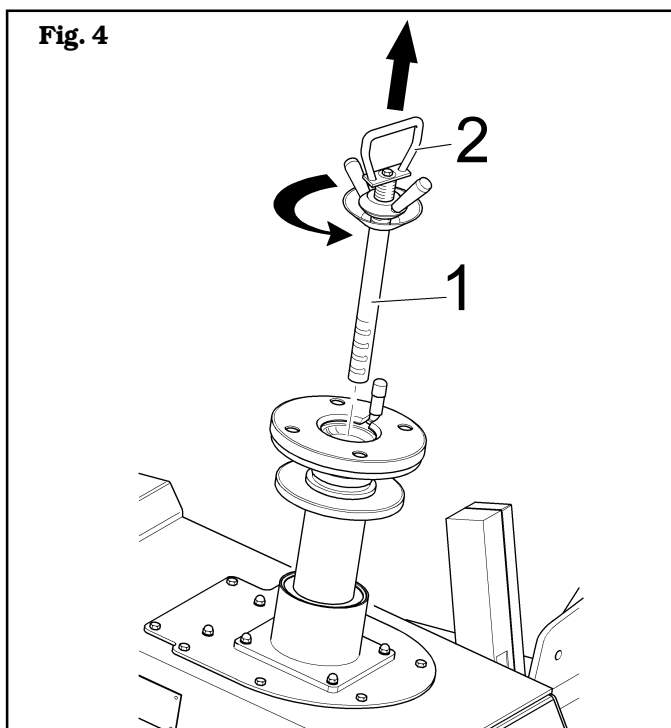
Tutte le ruote devono essere bloccate sul piatto gommato (Fig. 3 pos. 1) tramite l'apposito dispositivo di bloccaggio (Fig. 3 pos. 2).



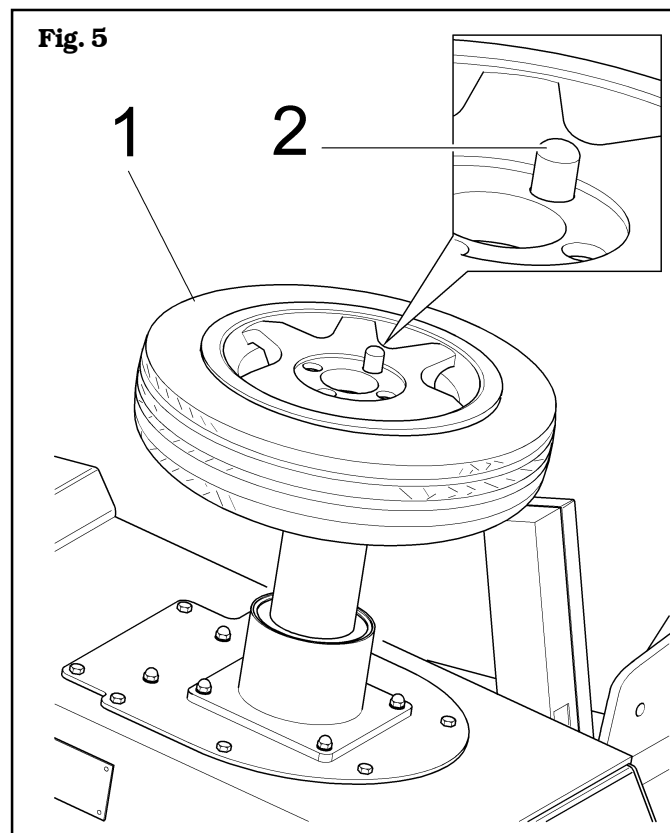
**NOTA:** in caso di utilizzo di cerchi senza foro centrale occorre utilizzare l'apposito accessorio (disponibile a richiesta).

Per procedere al bloccaggio della ruota, seguire le seguenti indicazioni:

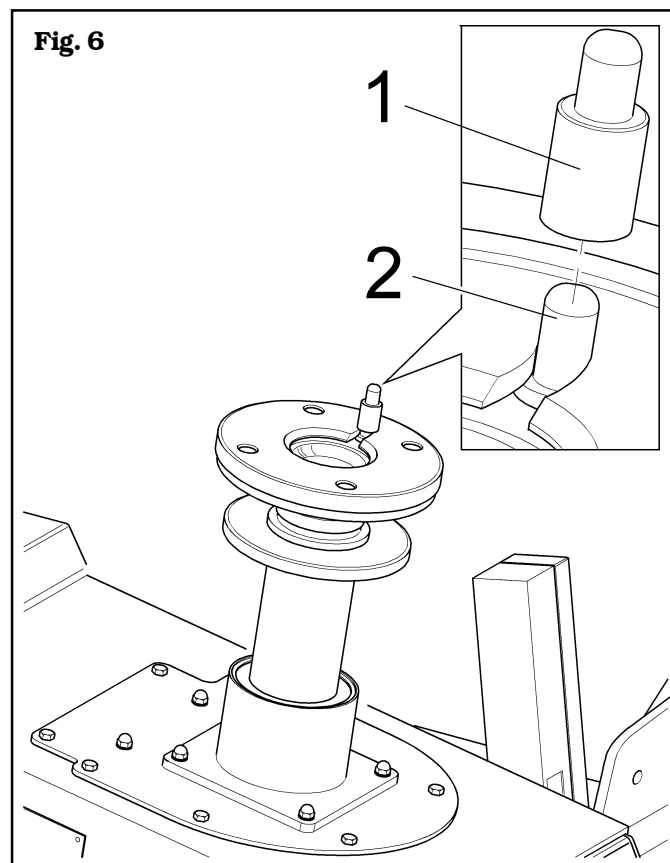
1. Sfilare il dispositivo di bloccaggio con protezioni (Fig. 4 pos. 1) tramite l'apposita maniglia (Fig. 4 pos. 2) e, nell'eventualità, ruotarlo per facilitarne l'estrazione.



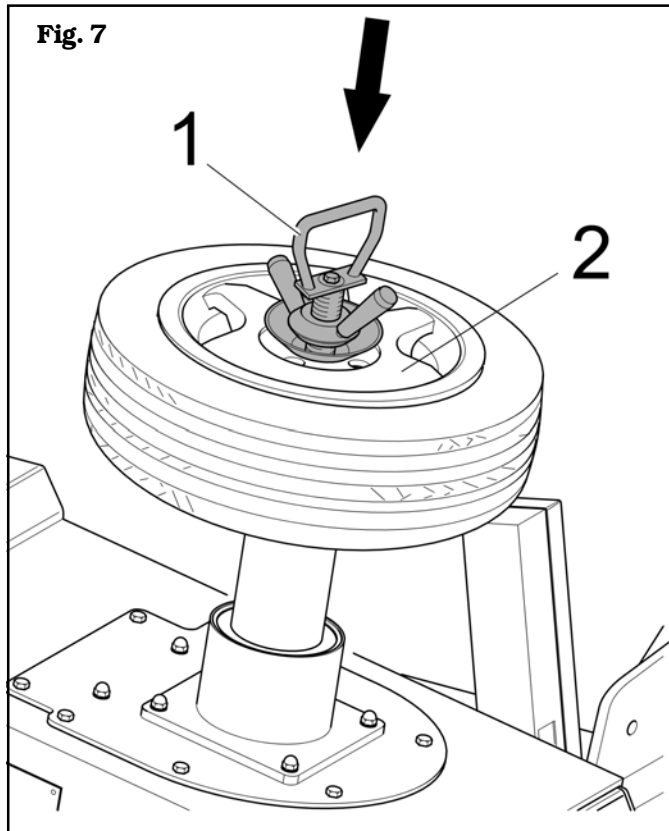
2. Posizionare la ruota sul piatto gommato (Fig. 5 pos. 1) facendo in modo che il perno trascinatore (Fig. 5 pos. 2) si impegni in uno dei fori presenti sul mozzo del cerchio.



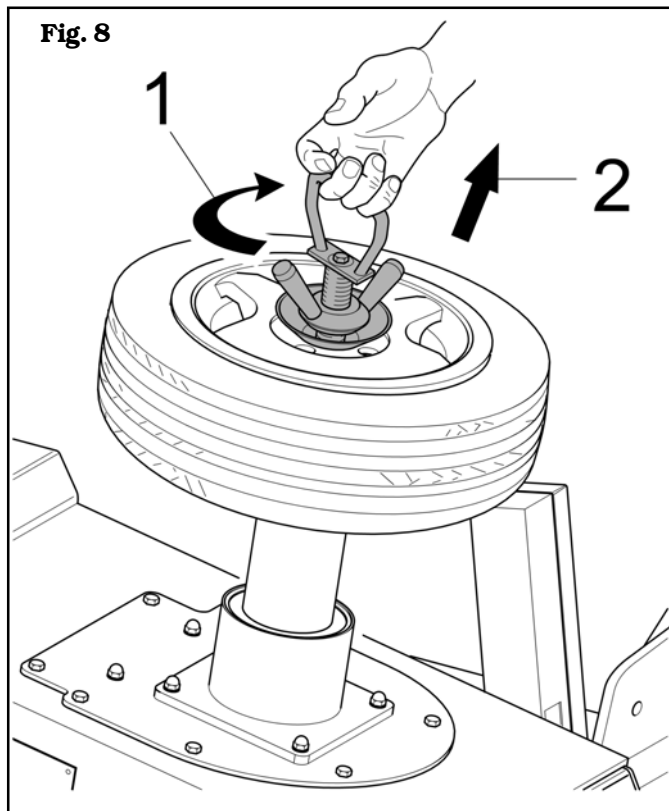
3. Qualora il mozzo della ruota fosse troppo alto rispetto al trascinatore (Fig. 6 pos. 2), utilizzare la prolunga (Fig. 6 pos. 1) fornita in dotazione.



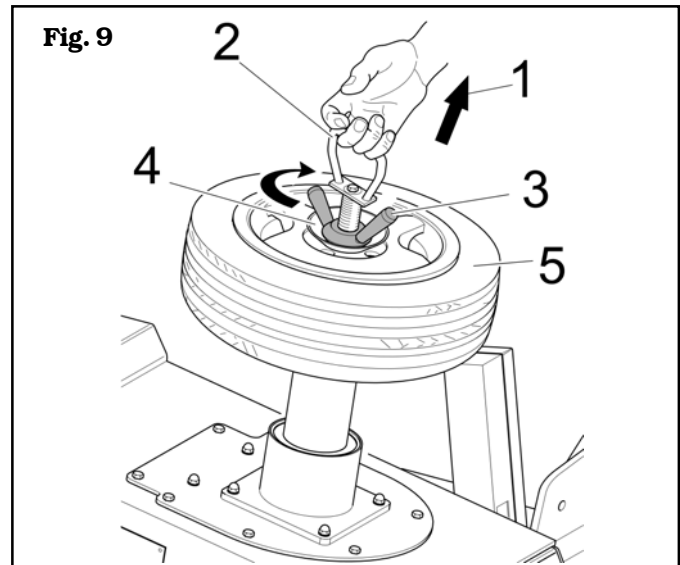
4. Infilare l'albero di bloccaggio con protezione (Fig. 7 pos. 1) sul cerchio (Fig. 7 pos. 2).



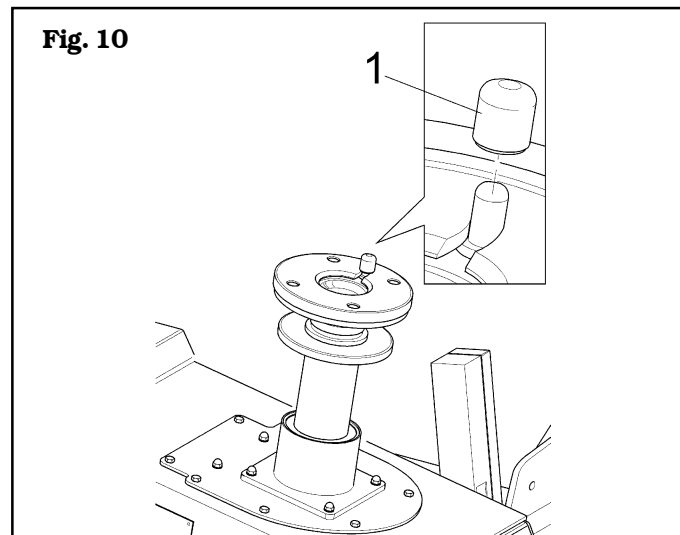
5. Ruotare di 90° (Fig. 8 pos. 1) e sollevare l'albero di bloccaggio (Fig. 8 pos. 2) per agganciarlo all'interno del foro.



6. Mantenendo sollevato l'albero di bloccaggio (Fig. 9 pos. 1) tramite l'apposita maniglia (Fig. 9 pos. 2), ruotare la ghiera (Fig. 9 pos. 3) fino al completo serraggio del cono (Fig. 9 pos. 4) sulla ruota (Fig. 9 pos. 5).



7. Per ruote con cerchi in lega utilizzare l'apposita protezione in plastica (Fig. 10 pos. 1).



Per sbloccare la ruota, eseguire le operazioni elencate in precedenza al contrario.



**PER LA PROCEDURA DETTAGLIATA DI UTILIZZO DEI COMANDI, RIFERIRSI AL CAPITOLO COMANDI DEL LIBRETTO DI ISTRUZIONI USO E MANUTENZIONE FORNITO IN DOTAZIONE ALLA MACCHINA.**

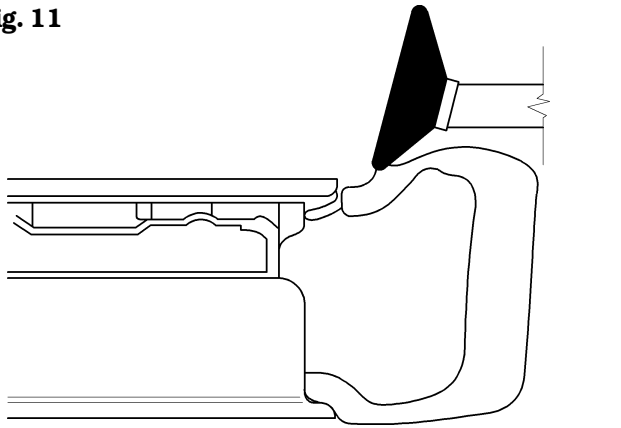
### 3.0 STALLONATURA MEDIANTE I RULLI VERTICALI



**PER LA PROCEDURA DETTAGLIATA DI UTILIZZO DEI COMANDI, RIFERIRSI AL CAPITOLO COMANDI DEL LIBRETTO DI ISTRUZIONI USO E MANUTENZIONE FORNITO IN DOTAZIONE ALLA MACCHINA.**

1. Dopo aver bloccata la ruota, portare lo stallonatore nella sua posizione di lavoro.
2. Impostare il diametro della ruota tramite il movimento del braccio stallonatore.  
Il braccio stallonatore deve essere bloccato attraverso il movimento verso il basso della testa.
3. Azionando il pulsante sinistro dell'unità di comando, portare verso il basso il rullo superiore mantenendo una distanza di circa 5 mm dal bordo del cerchio (vedi Fig. 11).

Fig. 11



4. Azionare la pompa idraulica, sempre con il pulsante sinistro, fino a bloccare il rullo sul pneumatico. (Il bloccaggio avviene quando si vede il rullo spostarsi in avanti).
5. Portare verso l'alto il rullo inferiore, schiacciando il pulsante destro.
6. Azionare la pompa idraulica, sempre con il pulsante destro, fino a bloccare il rullo sul pneumatico.
7. Far girare la ruota in senso antiorario azionando il relativo pedale verso l'alto e contemporaneamente azionare il pulsante destro per stallonare la parte inferiore (controllare l'operazione utilizzando lo specchio predisposto).
8. Ingrassare bene il tallone, il cerchio e i bracci autocentranti (vedi Fig.12).

Fig. 12



9. Terminata la stallonatura del tallone inferiore, si riporta il rullo inferiore nella posizione di riposo azionando il pulsante destro fino alla posizione 0.
10. Premere il tasto sinistro dell'unità di comando per stallonare il tallone superiore.

11. Ingrassare bene il tallone e il cerchio (vedi Fig.13).

Fig. 13



**DURANTE LA LUBRIFICAZIONE NON PREMERE TROPPO IN PROFONDITÀ IL FIANCO DEL PNEUMATICO. POSIZIONARE LA CINGHIA INTORNO AL PNEUMATICO SOLO DOPO AVER LUBRIFICATO IL TALLONE E DOPO AVER RIPORTATO I RULLI STALLONATORI IN POSIZIONE DI RIPOSO.**

#### 4.0 SMONTAGGIO DEL PNEUMATICO

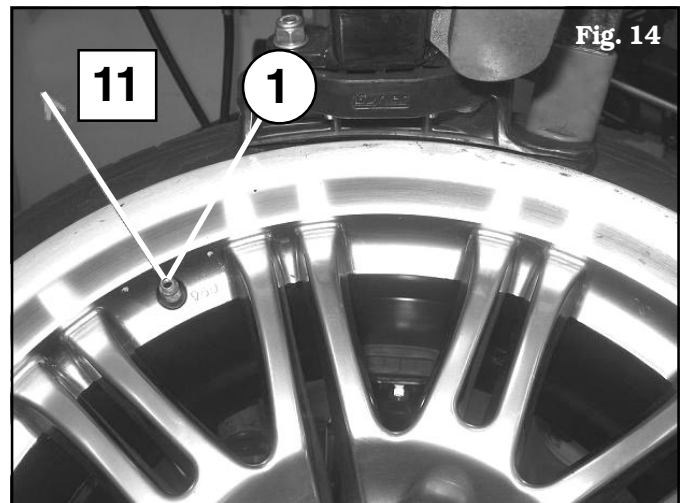


**PER LA PROCEDURA DETTAGLIATA DI UTILIZZO DEI COMANDI, RIFERIRSI AL CAPITOLO COMANDI DEL LIBRETTO DI ISTRUZIONI USO E MANUTENZIONE FORNITO IN DOTAZIONE ALLA MACCHINA.**

Dopo aver stallonato entrambi i talloni, si procede allo smontaggio del pneumatico come descritto di seguito:

1. Schiacciare il pedale per far girare la ruota in senso orario fino a quando il gambo della valvola non abbia raggiunto la posizione di "ore 11" (vedi Fig. 14).

Fig. 14

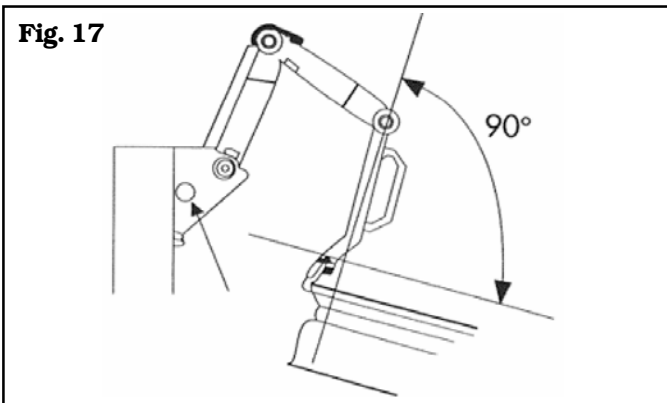




2. Posizionare la testa di montaggio sul bordo del cerchio.
3. Nel caso di cerchi in acciaio e cerchi in lega, posizionare la protezione del bordo del cerchio in plastica (vedi **Fig. 15** o **Fig. 16**) per evitare danneggiamenti al tallone.

**Fig. 15****Fig. 16**

Ci sono quattro possibili posizioni dell'angolo tra il braccio di montaggio e il cerchio. La posizione corretta è quella che si ottiene formando un angolo di 90° tra il braccio portautensile e il disco del cerchio (vedi **Fig. 17**).

**Fig. 17**

Questo angolo è importante in quanto:

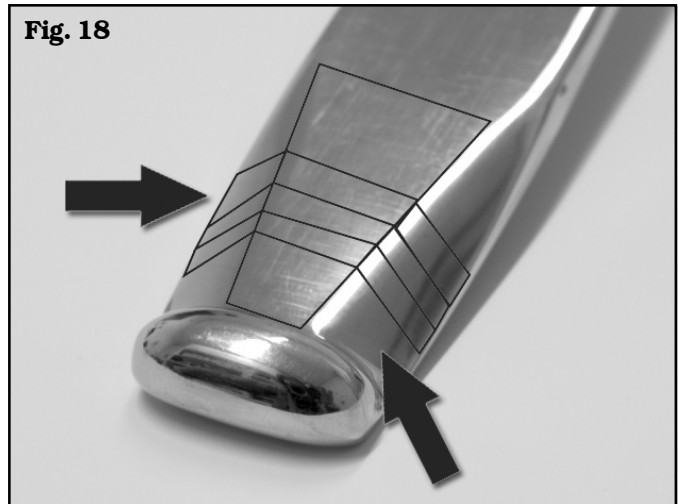
- Diminuisce la tensione in fase di montaggio/smontaggio.
- Ripartisce al meglio la forza applicata sulla testa di montaggio
- Diminuisce sensibilmente l'usura della testa di montaggio.



**NEL CASO DI CERCHI CON UN BORDO BOMBATO O PIATTO, IL BRACCIO DEVE AVERE UN ANGOLO DI 100°/110°.**

4. Portare la protezione leva (# B0326001) in posizione.

**Nota:** per lo smontaggio di pneumatici UHP (Ultra High Performance) e RF (Run Flat) è necessario usare la nuova leva HM con l'estremità arrotondata (vedi **Fig. 18**).

**Fig. 18**

5. Sollevare il tallone al di sopra della parte destra della testa di montaggio e posizionarla premendo contemporaneamente sul lato del cerchio (in posizione di "ore 6").
6. Utilizzare il moltiplicatore di forza premendo verso il basso la testa di montaggio sul bordo del cerchio. Se la pressione manuale sul pneumatico a "ore 6" non è sufficiente a portare il tallone nel canale, è necessario utilizzare il dispositivo spingitallone.

#### **4.1 Utilizzo del moltiplicatore di forza**

1. Dopo aver posizionato l'utensile di montaggio, utilizzare il moltiplicatore di forza premendo verso il basso

**Fig. 19**

2. Tirare la leva del moltiplicatore di forza verso il basso, fino a quando l'utensile di montaggio venga a contatto con il bordo cerchio.

Fig. 20



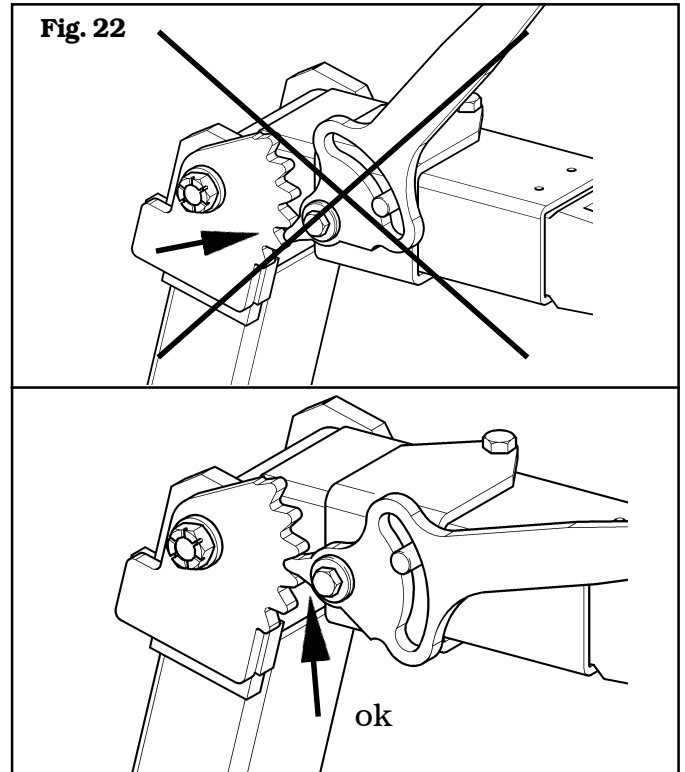
3. Utilizzando l'utensile di montaggio, portare il tallone del pneumatico sul lato destro della testa di montaggio.

Fig. 21



4. Qualora la leva non incontri il settore dentato (come mostrato nella figura seguente), sollevare leggermente (5 - 7 cm) il braccio verticale fino a farlo combaciare con la dentatura.

Fig. 22



**PER OTTIMIZZARE IL FUNZIONAMENTO DEL MOLTIPLICATORE DI FORZA OCCORRE CHE I DENTI E LA LEVA SIANO CORRETTAMENTE POSIZIONATI.**

Per ruote RFT e UHP se la pressione manuale sul pneumatico a "ore 6" non è sufficiente a portare il tallone nel canale, bisogna usare il dispositivo spingitallone.



**NEL CASO DI UN CERCHIO EH2 O EH2+ BISOGNA UTILIZZARE BLOCCHETTI EH2 (FIG. 23).**

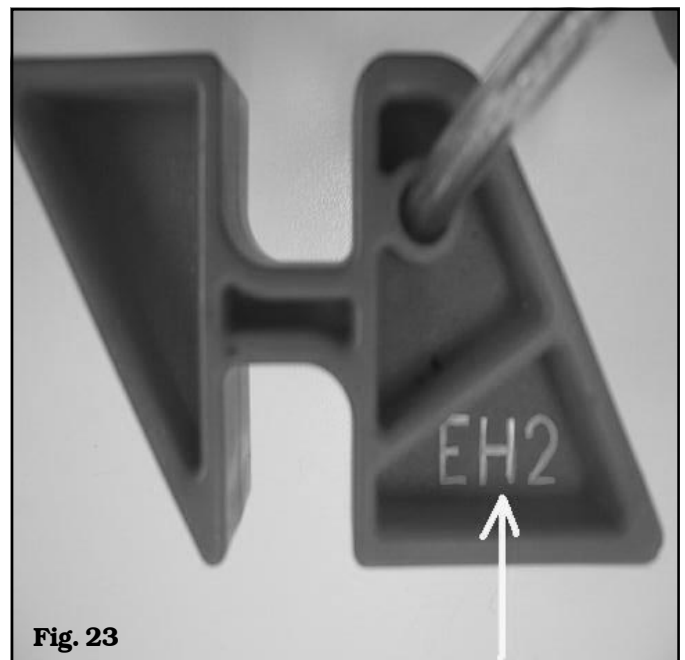
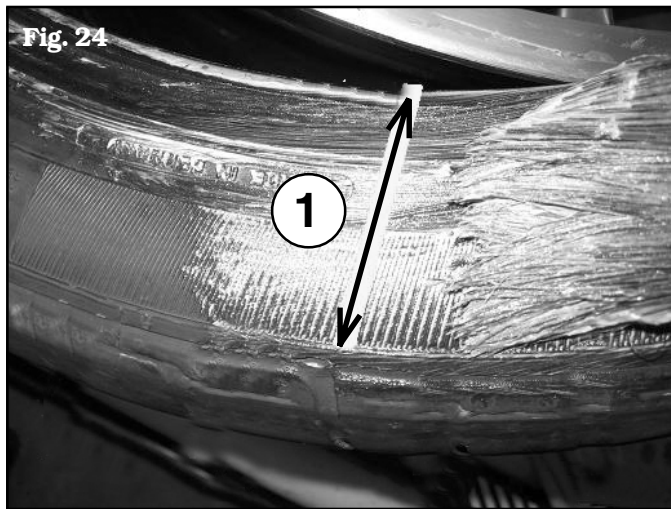


Fig. 23

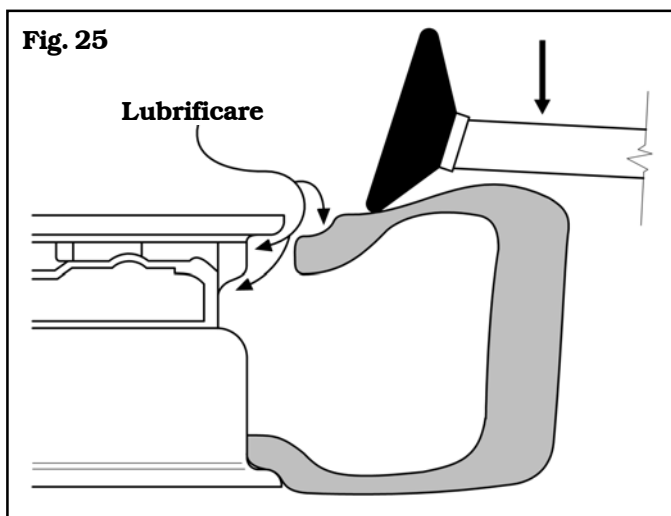
Usare il rullo stallonatore superiore per inserire i blocchetti dopo aver ingrassato il fianco del pneumatico dove spingono i blocchetti stessi (vedi **Fig 24 pos. 1**).



5. Far girare la ruota in senso orario fino a che il primo tallone è completamente smontato. Durante la rotazione della ruota l'utensile di montaggio scivola dalla testa di montaggio sul bordo del cerchio. La protezione di plastica impedirà di graffiare il cerchio. Se necessario, inserire il rullo inferiore spingendo verso l'alto la ruota per ridurre al minimo lo stress sul pneumatico durante lo smontaggio.

6. Sollevare il pneumatico e ripetere l'operazione sul secondo tallone.

Sui grossi pneumatici ribassati, per avere uno smontaggio più agevole e sicuro, una volta stallonato il tallone superiore, continuare a spingere fino ad ottenere spazio sufficiente per lubrificare il canale, la sede del tallone ed il tallone stesso. (vedi **Fig. 25**). La mancata lubrificazione potrebbe causare un attrito tra l'utensile di montaggio ed il pneumatico e ciò provocherebbe il danneggiamento del pneumatico e/o del tallone.



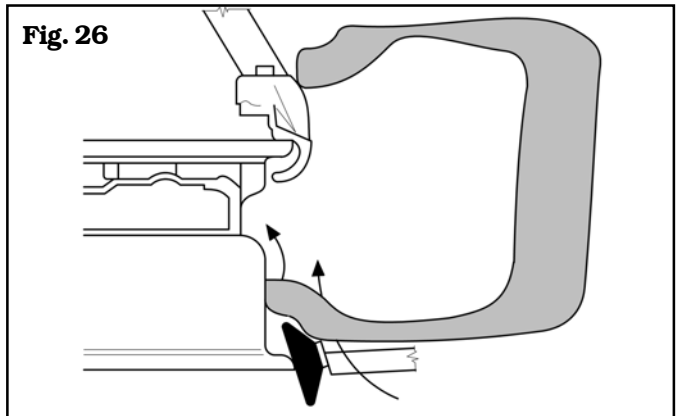
**DURANTE LA LUBRIFICAZIONE  
NON PREMERE IN PROFONDITÀ  
IL FIANCO DEL PNEUMATICO.  
NON INSERIRE LA CINGHIA.**

In fase di smontaggio del tallone superiore, potrebbe verificarsi la condizione che il tallone inferiore si riposizioni sul cerchio. In questo caso utilizzare il rullo inferiore dello stallonatore per un'ulteriore stallonatura e, se il pneumatico fosse molto largo, spingerlo fino all'utensile di montaggio (**Fig. 26**).



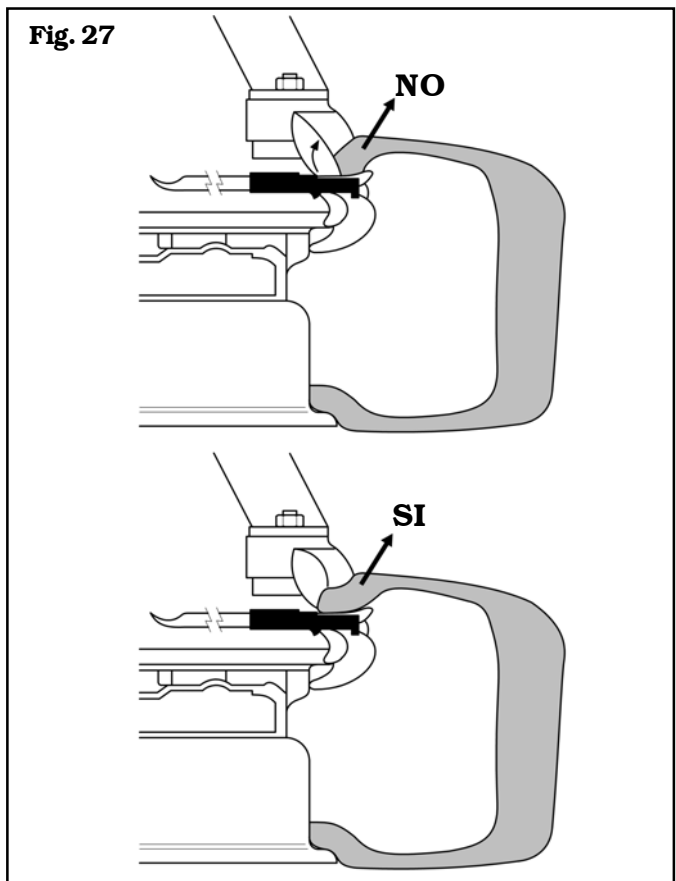
**NON PREMERE IN PROFONDITÀ  
IL FIANCO DEL PNEUMATICO.  
NON INSERIRE LA CINGHIA.**

**Fig. 26**

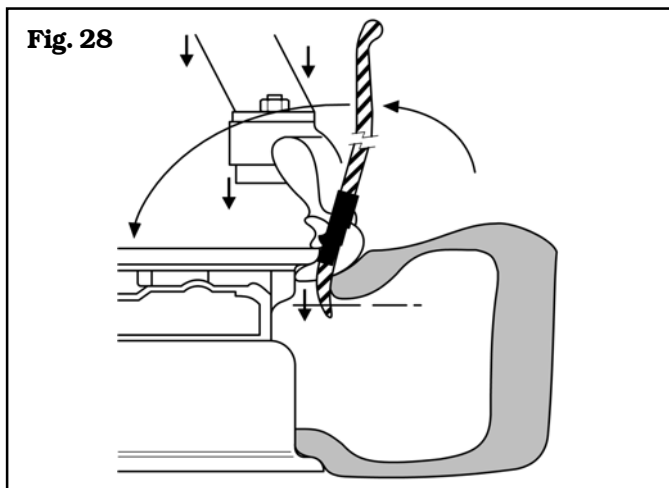


In fase di smontaggio di pneumatici duri, può accadere che il tallone si posizioni, sull'utensile di montaggio, con il labbro girato. Ciò provoca lo scivolamento, del tallone stesso, dalla leva quando s'inizia la rotazione in senso orario. Per ovviare a quest'inconveniente bisogna girare leggermente la ruota in senso antiorario fino a quando il labbro non si distende. A questo punto iniziare lo smontaggio in senso orario (vedi **Fig. 27**).

**Fig. 27**



In fase di smontaggio di pneumatici duri a profilo ribassato, può verificarsi che il tallone spinga fuori posizione la testa di montaggio. Allora può essere utile usare il rullo stallonatore superiore per spingere il tallone verso il basso, creando lo spazio necessario per posizionare la leva e contemporaneamente spingere verso il basso il braccio portautensile (Fig. 28).



Nel caso in cui, durante la fase di smontaggio e montaggio del pneumatico, il motore rallenti o si fermi, effettuare i seguenti controlli:

- Controllare che il tallone sia stato lubrificato.
- Controllare che il tallone sia stato spinto nel canale.
- Controllare che sia stato scelto il lato giusto del cerchio per lo smontaggio o montaggio del pneumatico.
- Controllare che la pressione d'alimentazione non sia inferiore a 8 bar (versione con motore pneumatico).

Sul mercato esistono dei cerchi cui è difficile controllare la posizione del canale, con il pneumatico montato. Per la verifica è opportuno farsi aiutare dai rulli dello stallonatore schiacciando il pneumatico quanto basta per avere la visione completa della parte interna del cerchio.

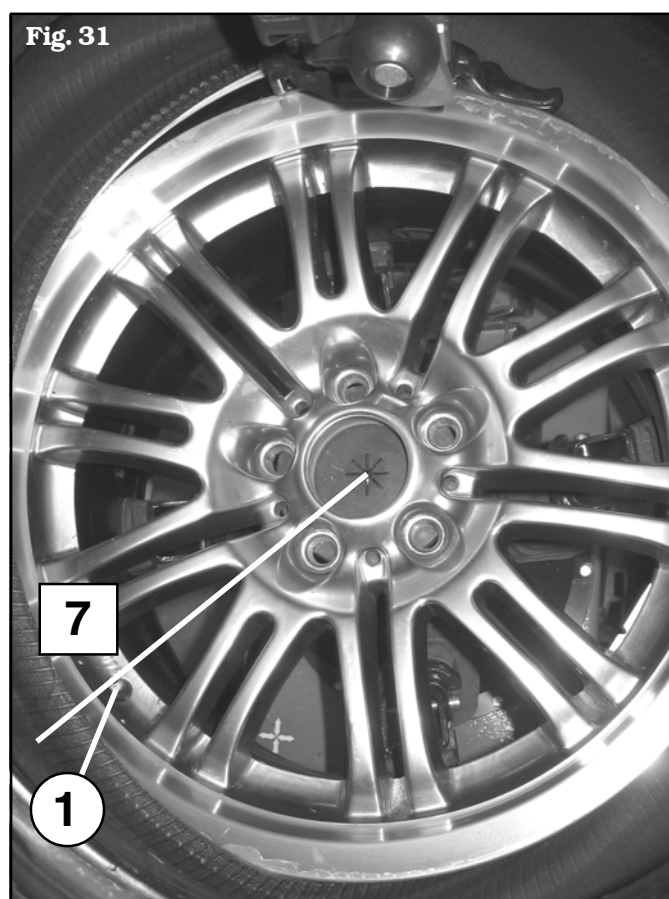
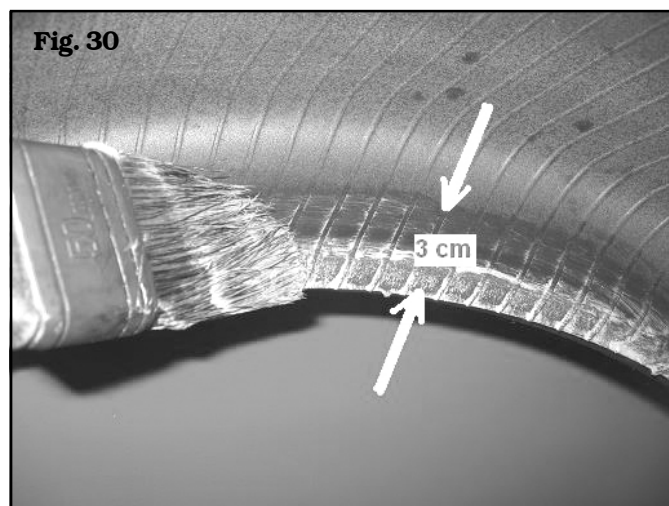
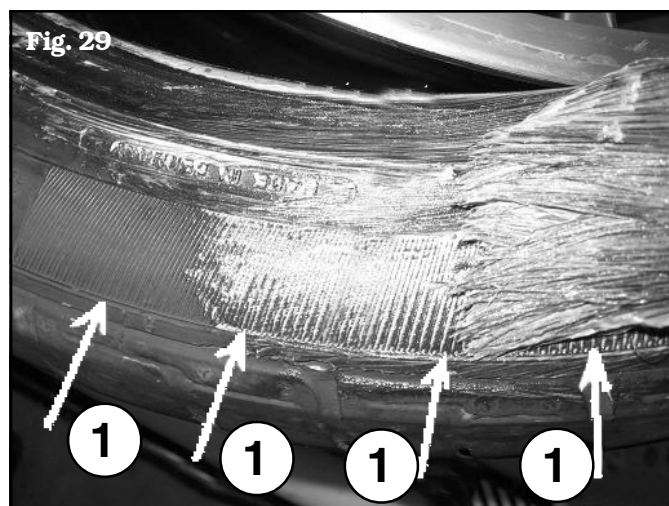
## 5.0 MONTAGGIO DEL PNEUMATICO



**PER LA PROCEDURA DETTAGLIATA DI UTILIZZO DEI COMANDI, RIFERIRSI AL CAPITOLO COMANDI DEL LIBRETTO DI ISTRUZIONI USO E MANUTENZIONE FORNITO IN DOTAZIONE ALLA MACCHINA.**

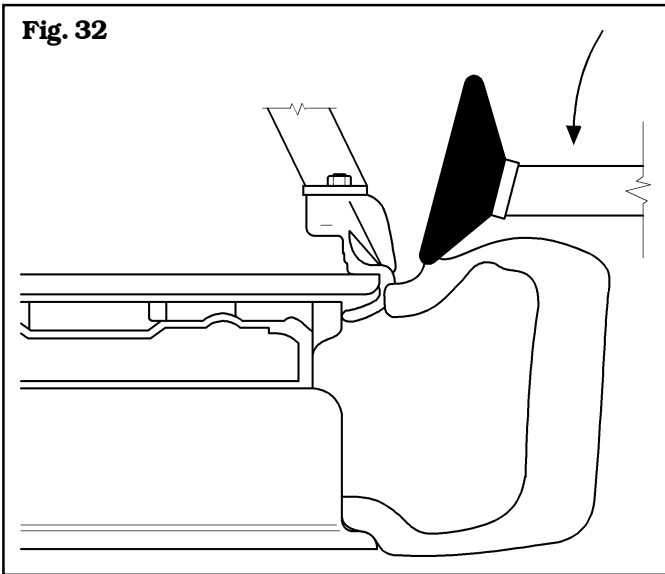
Per eseguire il montaggio del pneumatico procedere secondo le seguenti operazioni:

1. Lubrificare i talloni del pneumatico e nel caso del tallone superiore anche il fianco del pneumatico fino alla linea di decorazione (Fig. 29 pos. 1) e la parte inferiore del tallone per 3 cm (vedi Fig. 30). Anche il cerchio, comprensivo della parte contenuta nel canale, va lubrificato in tutte le sue parti. Non lubrificare il sensore. Ruotare il sensore e/o la valvola a "ore 7" per il montaggio del tallone inferiore (vedi Fig. 31 pos. 1).



2. Posizionare il pneumatico sul cerchio e la testa di montaggio sul bordo del cerchio stesso controllando l'inclinazione del braccio.
3. Posizionare il bordo del tallone inferiore sulla parte sinistra della testa di montaggio e schiacciare il pedale per la rotazione in senso orario. Il sensore/valvola deve trovarsi sempre ad una distanza massima di 15 cm dal punto di trazione.
4. Ripetere l'operazione sul tallone superiore avendo cura di posizionare prima il gambo della valvola alle "ore 5-6".

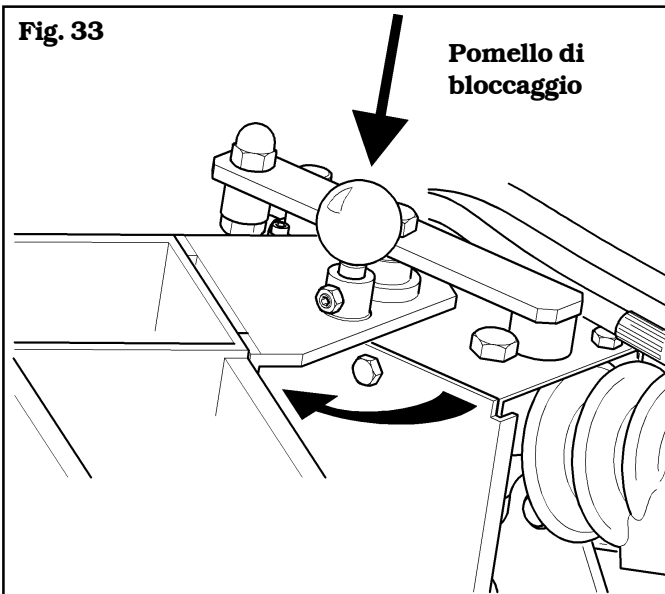
In fase di montaggio di pneumatici duri a profilo ribassato, può essere utile usare il rullo superiore dello stallonatore per spingere il tallone nel canale (**Fig. 32**).

**Fig. 32**

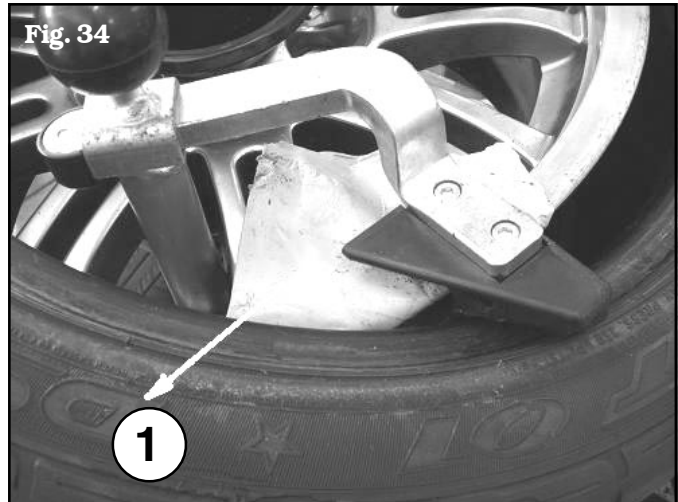
Bloccare lo stallonatore con il relativo pomolo nella sua posizione di lavoro; posizionare il rullo stallonatore sul lato e premerlo leggermente verso il basso. (vedi **Fig. 33**).

**Fig. 33**

**Pomello di bloccaggio**



5. Inserire il trascinatore nel cerchio e posizionare sul bordo la protezione (**Fig. 34 pos. 1**) per evitare eventuali tagli al tallone.

**Fig. 34**

- 6) Ruotare gradualmente la ruota a "ore 11" e inserire i distanziali EH2 uno dopo l'altro (**Fig. 35**).

**Fig. 35**

7. Quando il punto di trazione si trova a "ore 5", arrestare il motore e estendere la cinghia fino ad arrivare a "ore 11" bloccandola con un piccolo strappo. Bisogna posizionarla sul battistrada vicino al fianco superiore (**Fig. 36**).
8. Far ruotare il tallone fino al suo inserimento nel canale e utilizzare la cinghia fino a quando il punto di trazione raggiunge "ore 7".
9. Togliere l'utensile con l'aiuto del rullo stallonatore.

**Fig. 36**



## 6.0 GONFIAGGIO DEL PNEUMATICO

1. Togliere il gambo dalla valvola.
2. Collegare il tubo di gonfiaggio alla valvola del pneumatico e gonfiare il pneumatico stesso azionando il pedale posto sul lato sinistro della macchina.



**E' PRESENTE UN SISTEMA DI SICUREZZA PER LA REGOLAZIONE DELLA MASSIMA PRESSIONE DELL'ARIA EROGATA (4 BAR  $\pm$  0,2 / 60 PSI).**

**Nel caso in cui l'intallonatura non avvenga a  $4 \pm 0,2$  bar, occorre lasciar sgonfiare la ruota, rimuoverla dallo smontagomme e metterla in una gabbia di sicurezza per completare la procedura di gonfiaggio.**

## SUMMARY

<b>1.0</b>	<b>PRELIMINARY OPERATIONS - PREPARING THE WHEEL</b>	<b>14</b>
<b>2.0</b>	<b>WHEEL LOCKING</b>	<b>14</b>
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## 1.0 PRELIMINARY OPERATIONS - PREPARING THE WHEEL

- Remove the 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 dismounted, checking the position of the drop center.
- Check the rim locking points.
- Check the tyre type and the rim thickness (see **Fig. 1**) and the sensor type. The tyre temperature can't be lower than 15°C.



## 2.0 WHEEL LOCKING

### 2.1 Wheel locking with "Tulip" self-centering chuck arm (AX - Lectra)

All wheels must be locked from the inside, using rubber protections. These protections must be positioned on the inner part of the rim.



**THE RUBBER JAWS (# 8659000) HAVE ALWAYS TO BE REMOVED BEFORE CLAMPING THE RIM FROM INSIDE.**

It is advisable to lock the rim as high as possible. To lock the wheel proceed as follows:

1. Close the self-centering chuck arms by moving the relative pedal upwards.
2. Put the wheel on the spring centering device and push the pedal downwards until the rubber protections are at the point on the rim that is to be locked.
3. Then, push down on the pedal to completely lock the wheel.

4. Check that the rim is locked and centred correctly so as to avoid its slipping during successive operations.

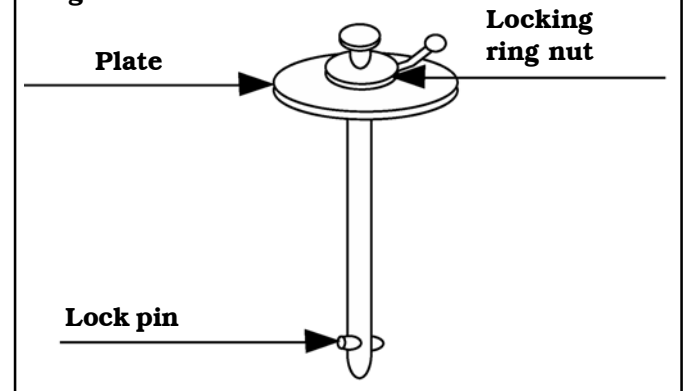


**THE WHEEL MUST BE ALWAYS FIXED WITH A SAFETY DEVICE AND RELEASED FROM THE DEVICE ONLY AFTER THE COMPLETION OF ALL THE OPERATIONS.**

Follow the instructions to mount the safety device (**Fig. 2**):

- When the wheel is locked, slide the safety device through the central hole of the wheel until it is inserted into the spring centering system.
- Engage the locking pin, on the bottom of the device, into the bolt with connector mounted on the motor, by slightly rotation of the device.
- Tilting the locking ring nut, move it down to the plate.
- Set it horizontally and lock by rotating clockwise (**Fig. 2**).

**Fig. 2**

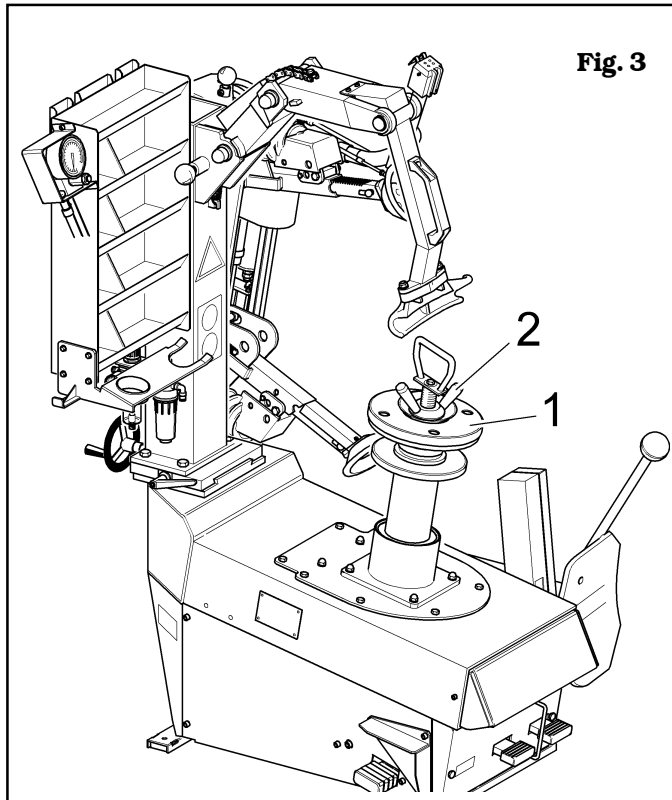


For wheel with a reversed drop center, proceed as follows:

1. Lock the wheel from the inside as previously shown.
2. Carry out bead-breaking of both beads.
3. Unlock the wheel and turn it.
4. Open the self-centering chuck arms.
5. Fix the rubber jaws.
6. Position the wheel and lock it as described into the point 1.

**2.2 Wheel locking on the plate (Ergolock)**

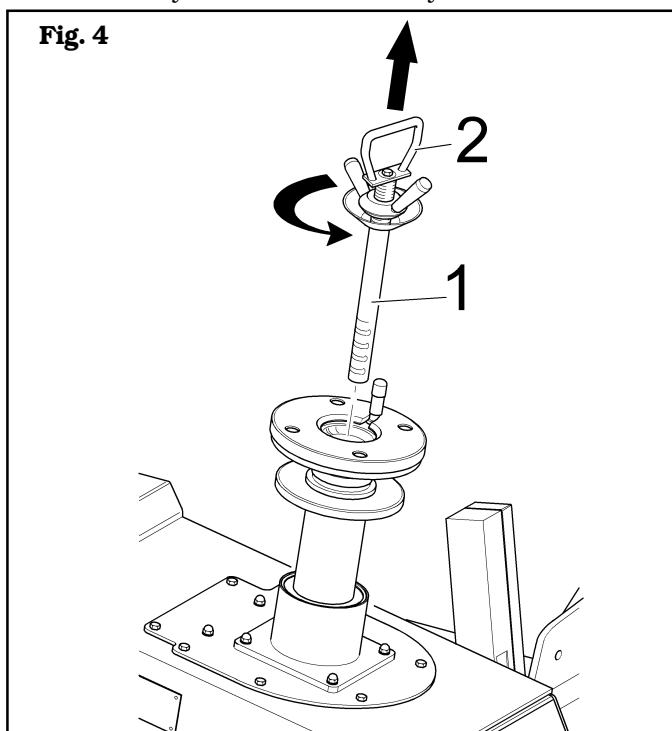
All wheels must be locked on the rubber plate (**Fig. 3 pos. 1**) through the proper locking device (**Fig. 3 pos. 2**).



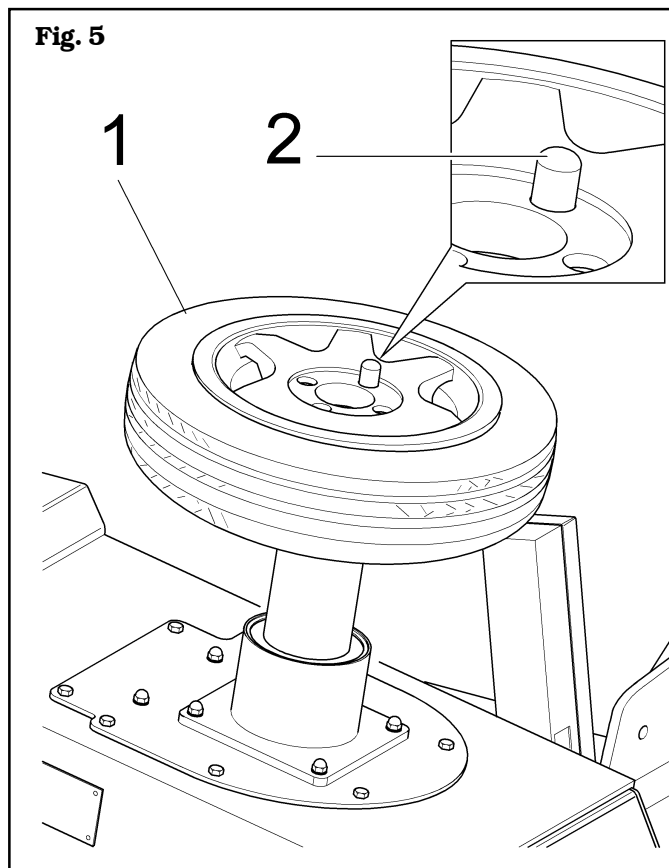
**NOTE:** in case of use of rims without central hole, it's necessary to use the proper device (available on demand)

To lock a wheel proceed as follows:

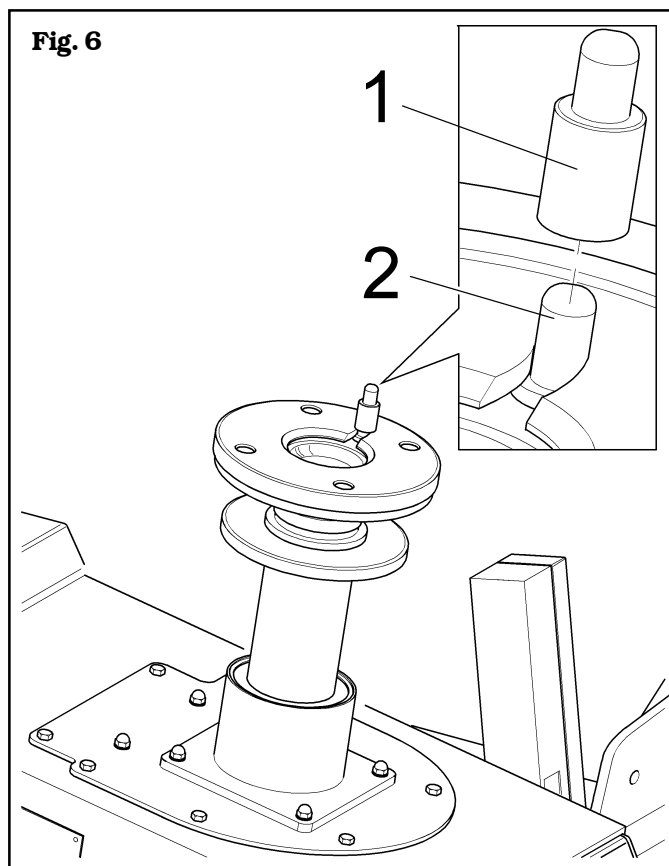
1. Extract the locking device with protections (**Fig. 4 pos. 1**) through the proper handle (**Fig. 4 pos. 2**) and, if necessary, turn it to make easy the extraction.



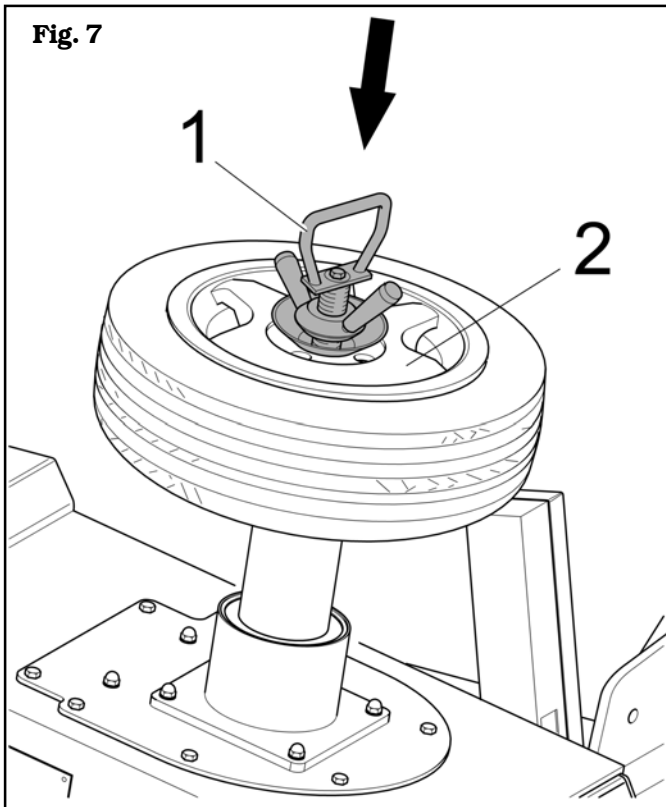
2. Place the wheel (**Fig. 5 pos. 1**) on the rubber plate and check that the lug pin (**Fig. 5 pos. 2**) enters the bolt hole.



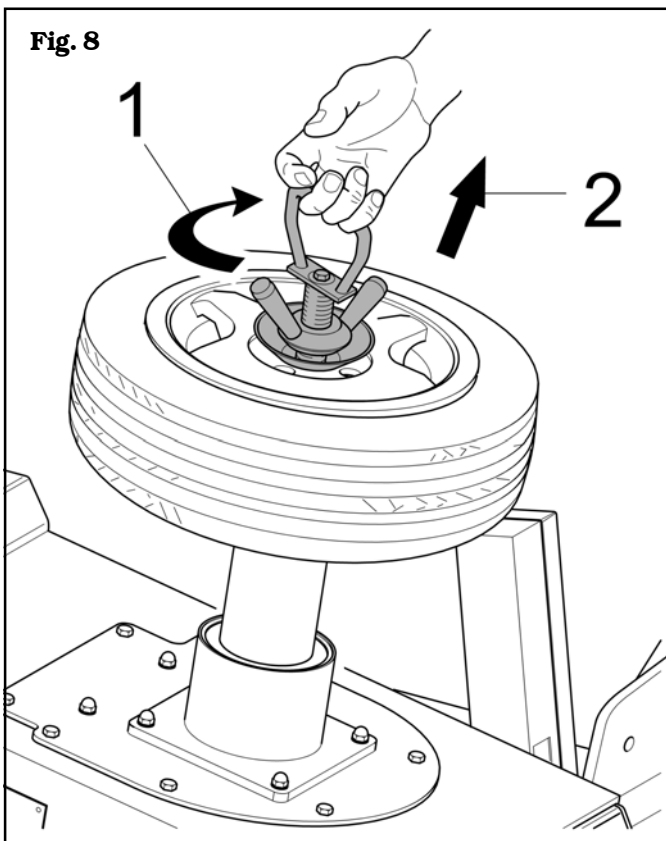
3. If the wheel hub is higher than the lug pin (**Fig. 6 pos. 2**), use the extension (**Fig. 6 pos. 1**) supplied as standard.



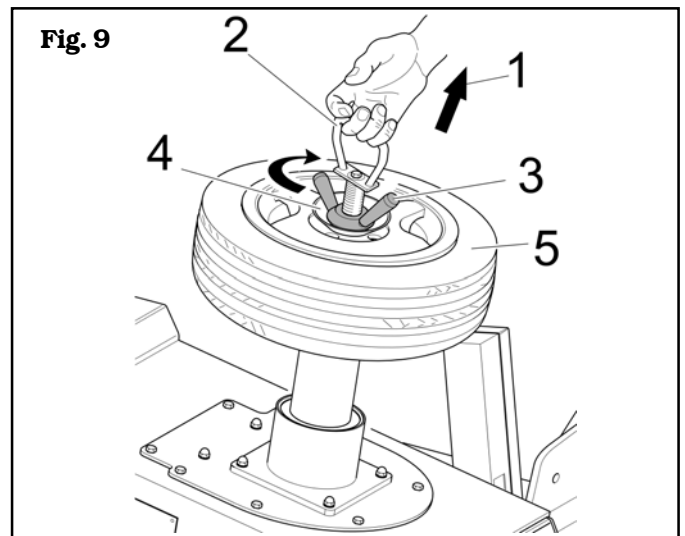
4. Insert the locking shaft with protection (Fig. 7 pos. 1) on the rim (Fig. 7 pos. 2).



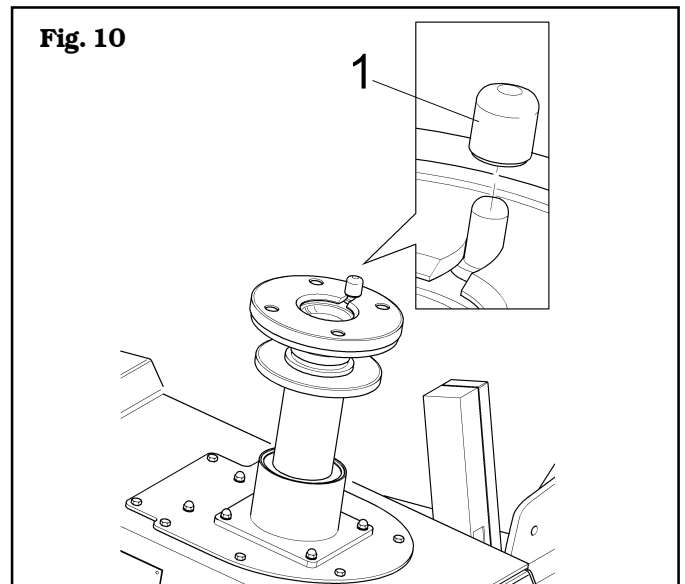
5. Turn of 90° (Fig. 8 pos. 1) and lift the locking shaft (Fig. 8 pos. 2) to hook it inner the hole.



6. Lifting the locking shaft (Fig. 9 pos. 1) through the proper handle (Fig. 9 pos. 2), turn the ring nut (Fig. 9 pos. 3) until the cone (Fig. 9 pos. 4) clamps the wheel (Fig. 9 pos. 5).



7. For alloy rims, use a proper plastic guard (Fig. 10 pos. 1).



To release the wheel, carry out the previously operations on the contrary way.



**FOR THE DETAILED PROCEDURE OF THE CONTROLS, SEE THE CONTROLS CHAPTER CONTAINED INTO THE INSTRUCTIONS AND MAINTENANCE MANUAL SUPPLIED WITH THE MACHINE.**

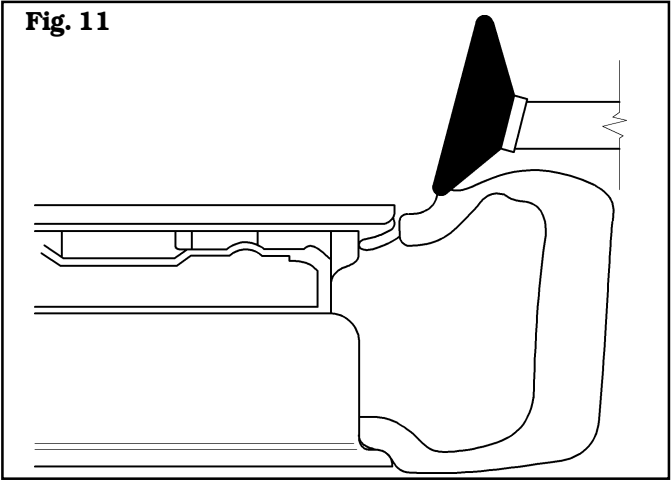
### 3.0 BEAD BREAKING VERTICAL ROLLERS



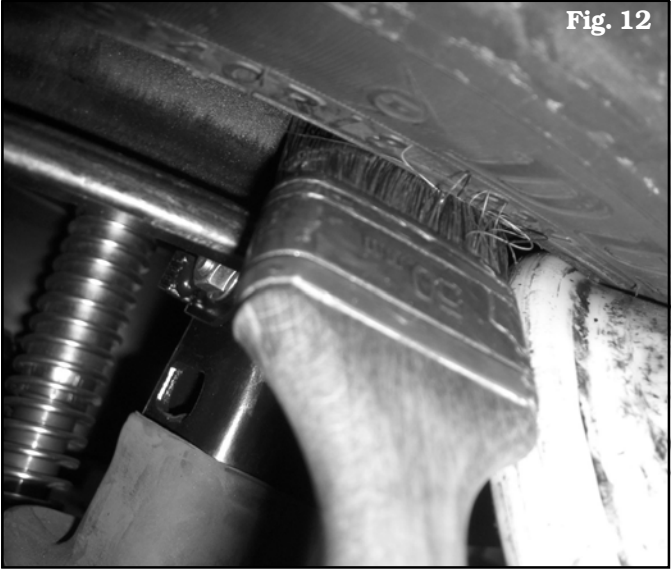
**FOR THE DETAILED PROCEDURE OF THE CONTROLS, SEE THE CONTROLS CHAPTER CONTAINED INTO THE INSTRUCTIONS AND MAINTENANCE MANUAL SUPPLIED WITH THE MACHINE.**



1. After locking the wheel, move the bead-breaker to its work position.
2. Set the wheel diameter by moving the bead-breaking arm. The bead-breaking arm must be locked through a head downwards movement.
3. Move the upper roller down using the left button on the control unit with a distance of 5 mm from the rim edge (see **Fig. 11**).




4. Start the hydraulic pump, again with the left button, until the roller locks onto the tyre. (The locking is complete when the roller is seen to move forward).
5. Move the lower roller up by pressing the right button.
6. Start the hydraulic pump, again with the right button until the roller locks on the tyre.
7. Rotate the wheel counterclockwise pushing the relative pedal up and simultaneously pushing the right button to bead-break the lower part (check the operation using the mirror mounted on the bead-breaker).
8. Lubricate the bead, the rim and the self-centering chuck arm (see **Fig.12**).



9. After bead-breaking the lower bead, the lower roller is moved back to the rest position by changing the right button to position "0".
10. Proceed to bead-break of the upper bead by pushing the left button on the control unit.


11. Lubricate the bead and the rim (see **Fig.13**).





**DURING LUBRICATION, DO NOT PUSH TOO DEEP ON THE SIDEWALL AVOIDING ANY DEFORMATION. BEFORE INSERTING THE BELT, LUBRICATE THE TYRE BEAD AND POSITION THE ROLLERS IN REST POSITION.**

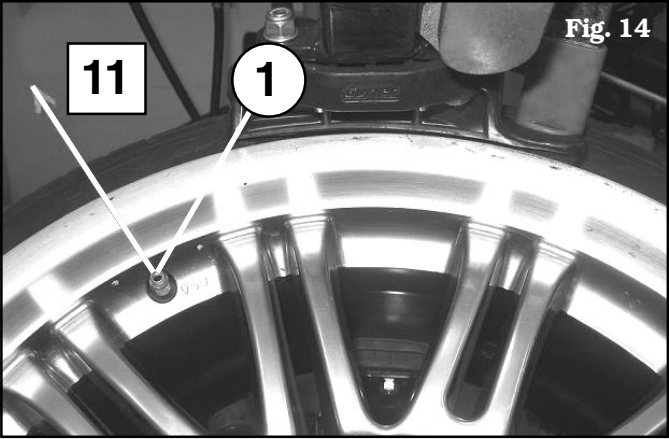
**4.0 DISMOUNTING THE TYRE**



**FOR THE DETAILED PROCEDURE OF THE CONTROLS, SEE THE CONTROLS CHAPTER IN THE INSTRUCTIONS AND MAINTENANCE MANUAL SUPPLIED WITH THE MACHINE.**

When both beads are broken, the tyre can be dismantled as follow:

1. Press the pedal to rotate the wheel clockwise until the valve stem reaches the "eleven o'clock" position (see **Fig. 14**).



2. Position the mounting head on the rim edge.
3. In case of steel or alloy rims, place the plastic rim edge protection (see **Fig. 15** or **Fig. 16**) to avoid bead damage.

Fig. 15

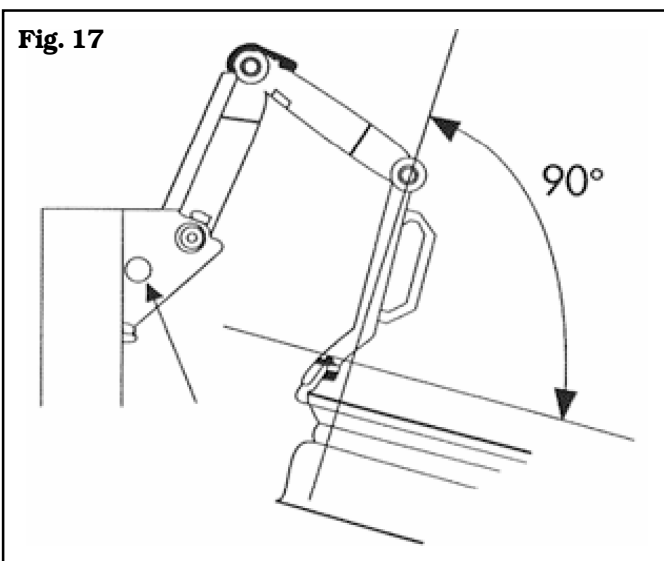


Fig. 16



There are 4 possible positions of the angle between the mounting arm and the rim. The correct position is achieved when the angle between the tool holder arm and the rim plate is 90° (See Fig. 17).

Fig. 17



This angle is important because:

- it reduces the tension during assembling/dismounting.
- It spreads the force applied to the mounting head.
- It significantly reduces the wear on the mounting head.

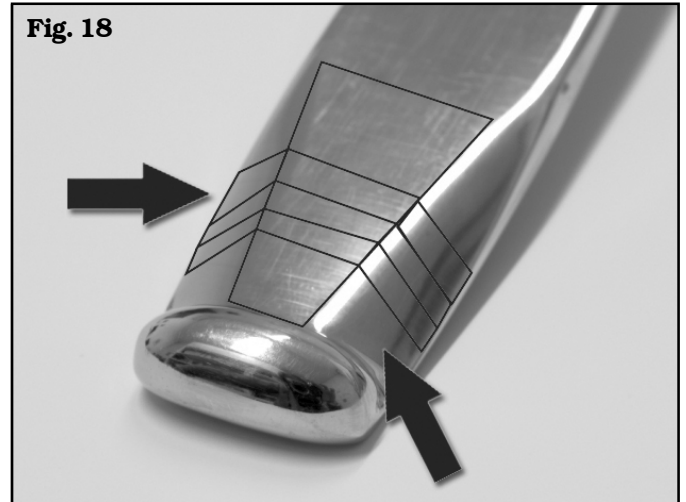


**WITH ROUNDED OR FLAT EDGE RIMS, THE ARM SHOULD HAVE AN ANGLE OF 100°/110°.**

4. Move the lever protection (# B0326001) in position.

**Note:** for the dismounting of the UHP (Ultra High Performance) and RF (Run Flat) tyres, it's necessary to use the new HM lever with rounded end parts (see Fig. 18).

Fig. 18



5. Lift the bead onto the right end of the mounting head and position it pushing on the side of the rim (at the "6 o'clock" position).

6. Use the force multiplier kit pushing the mounting head downwards on the rim edge. If the manual pressure on the tyre at the "6 o'clock" it's not enough to move the bead on the drop center, it's necessary to use the bead-breaking device.

#### 4.1 Using the force multiplier kit

1. After having positioned the mounting tool, use the force multiplier kit pushing the head on the rim edge downwards.

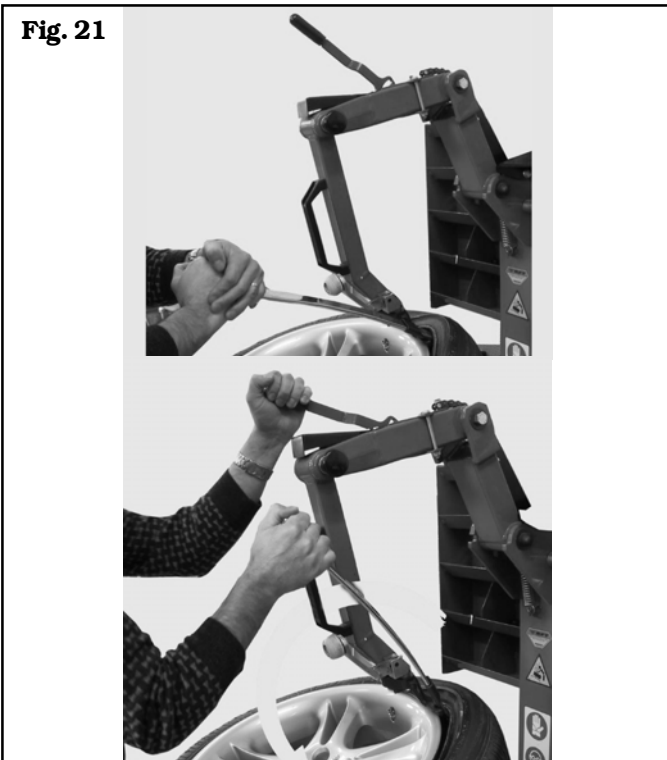
Fig. 19



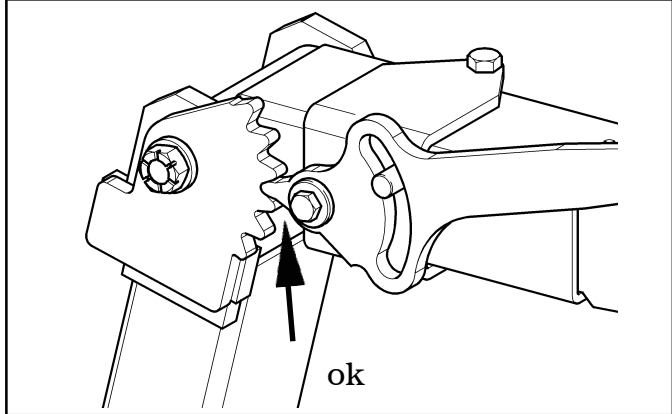
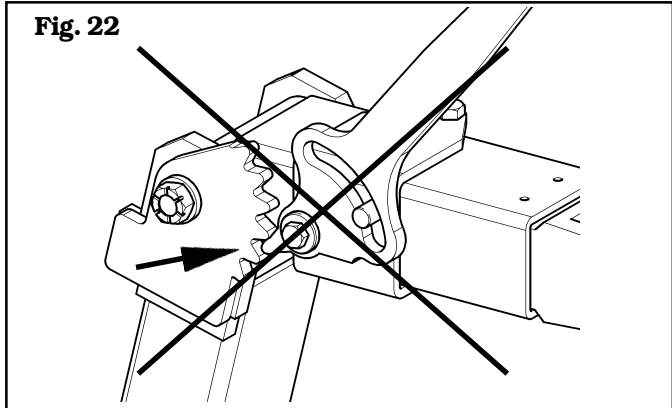
2. Pull the lever of the force multiplier kit downwards until the mounting tool is touching the rim edge.




3. Using the mounting tool, pull the tyre bead on the right side of the mounting head.




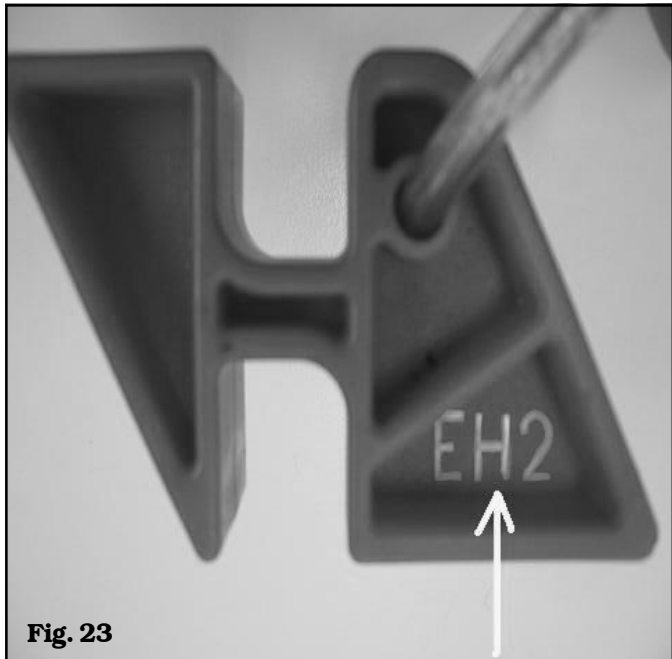
4. If the lever is not meeting the toothed plate (as shown in the following picture), rise slightly the vertical arm (5 - 7 cm) until the lever meet the toothed plate.



 **IN ORDER TO OPTIMIZE THE FORCE MULTIPLIER KIT'S WORK IT'S NECESSARY TO PLACE PROPERLY THE TEETH AND THE LEVER.**

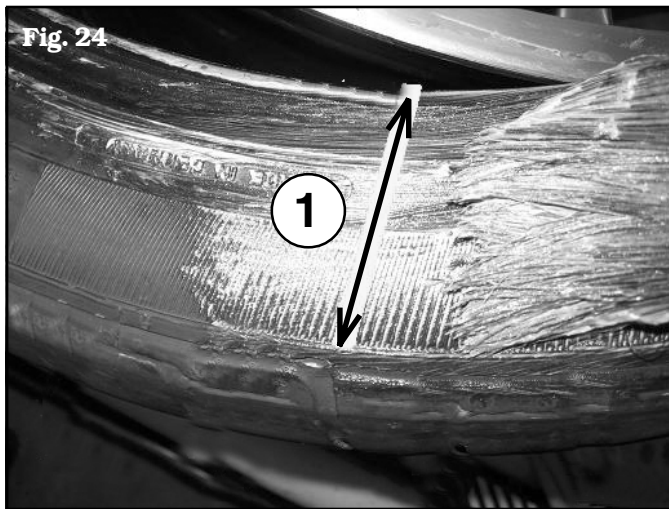
RFT and UHP wheels: if the manual pressure on the tyre at "6 o'clock" is not enough to move the bead into the drop center, it's necessary to use the bead-breaking device.

 **IN CASE OF EH2 OR EH2+ RIM, IT'S NECESSARY TO USE EH2 BLOCKS (FIG. 23).**



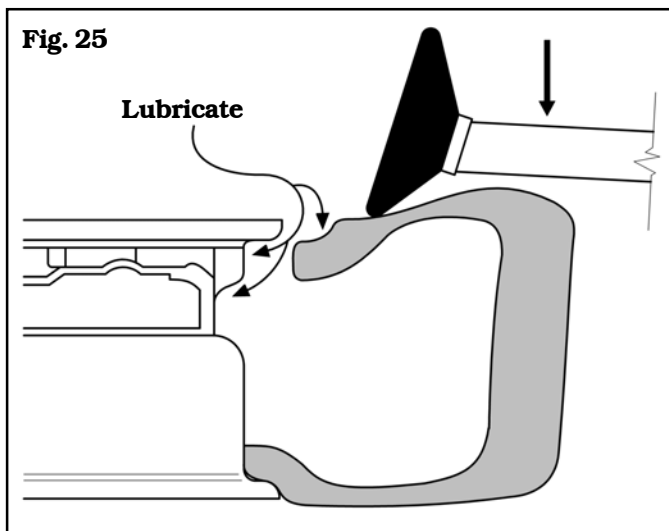
**Fig. 23**

Use the upper bead breaking roller to insert blocks after greasing the tyre side where the blocks push (see **Fig 24 pos. 1**).



5. Turn the wheel clockwise until the whole first bead is dismounted. During the rotation of the wheel, the mounting tool slides away from the mounting head moving onto the rim edge. The plastic protection prevents from scratching the rim. If necessary, insert the lower roller pushing the wheel upwards to reduce the stress on the tyre during the dismounting.

6. Lift the tyre and repeat the operation on the second bead. On heavy low-profile tyres, for an easy dismounting, keep on pressing down, after the bead-breaking, in order to obtain enough space for the drop center, the bead seating, and the bead itself lubrication (See **Fig. 25**). Lack of lubrication could result in friction between the mounting tool and the tyre which could damage the tyre and/or the bead.



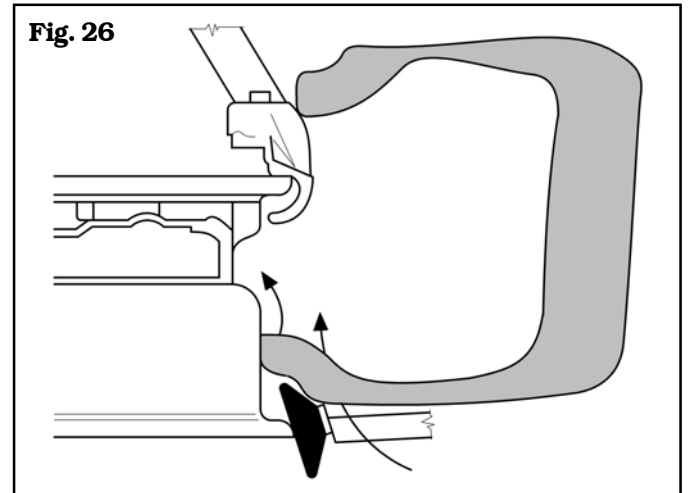
**DURING THE LUBRICATION DO NOT PUSH DEEPLY THE TYRE SIDE. DO NOT INSERT THE BELT.**

When the upper bead is being dismounted, it may happen that the lower bead re-sets in the rim. In this case use the lower roller to bead-break again, and if the tyre

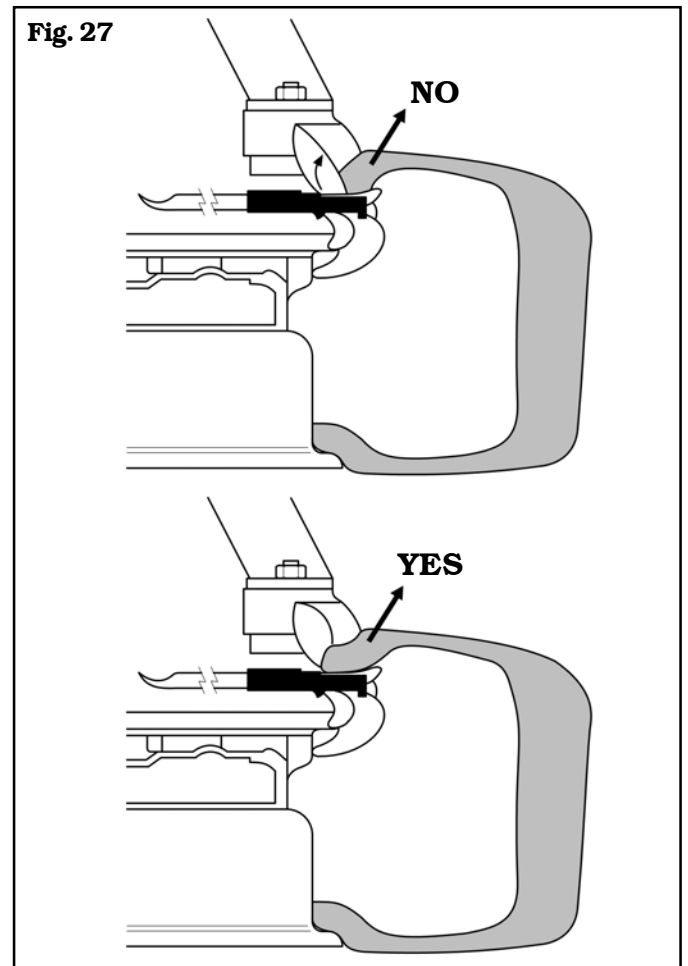
is very wide push it up to the mounting tool (See **Fig. 26**).



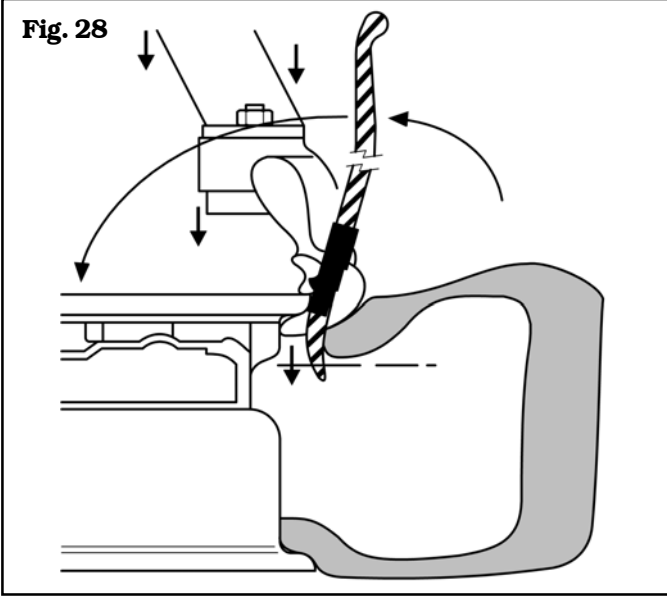
**DURING THE LUBRICATION DO NOT PUSH DEEPLY THE TYRE SIDE. DO NOT INSERT THE BELT.**



When dismounting hard tyres, it may happen that the bead comes onto the mounting tool with the lip turned. This causes the bead sliding from the lever when the clockwise rotation begins. To avoid this problem rotate the wheel slightly counterclockwise until the bead flattens. Now the clockwise dismounting can begin (See **Fig. 27**).



When dismantling hard low-profile tyres, it may happen that the bead pushes up the mounting tool. Then it may be useful to use the upper bead-breaking roller to push the bead down creating enough space to place the lever and at the same time pushing down the tool-holder arm (Fig. 28).



If the motor slows or stops during tyre mounting or disassembling, check that:

- the bead has been lubricated;
- the bead has been pushed into the drop center;
- the right side of the rim has been chosen for the tyre mounting or dismounting;
- the supply pressure is not below 8 bar (version with pneumatic motor).

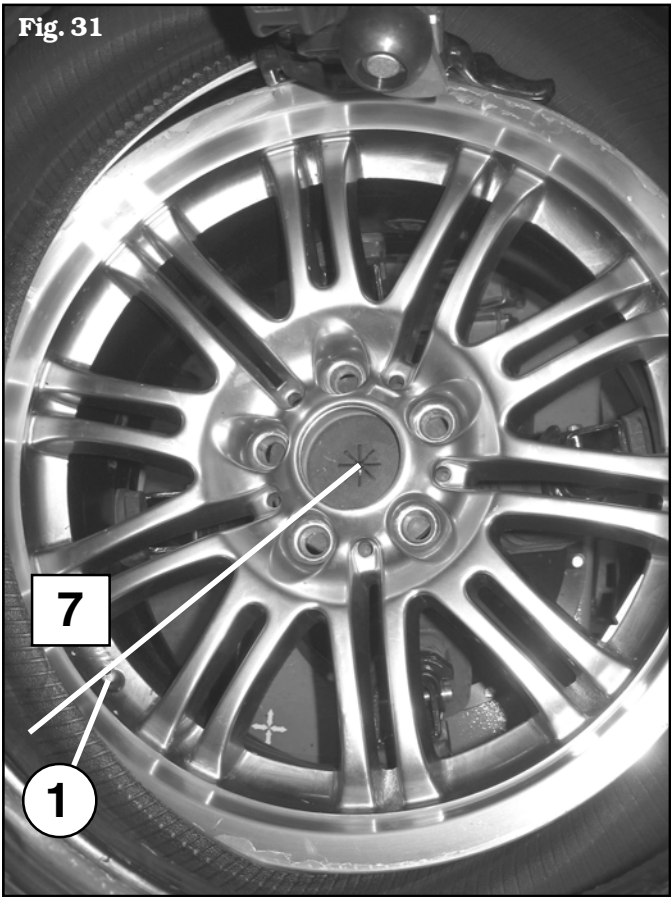
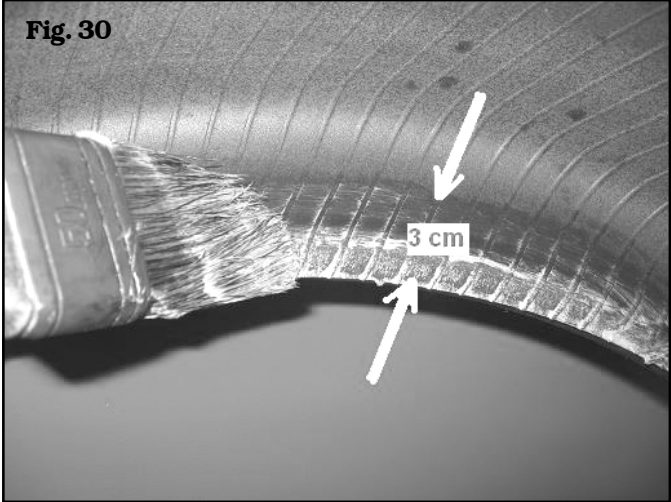
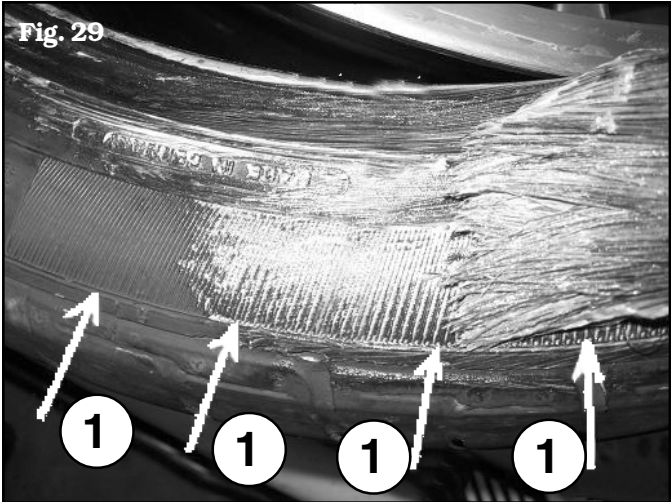
In some cases it's difficult to check the position of the drop center when the tyre is mounted because of special rims on the market. It is useful to make a test by pushing on the tyre enough to see the inside of the rim helped by the bead-breaker rollers.

**5.0 TYRE MOUNTING**

	<p><b>FOR THE DETAILED TESTS' PROCEDURE, SEE THE CONTROLS CHAPTER IN THE INSTRUCTIONS AND MAINTENANCE MANUAL SUPPLIED WITH THE MACHINE.</b></p>
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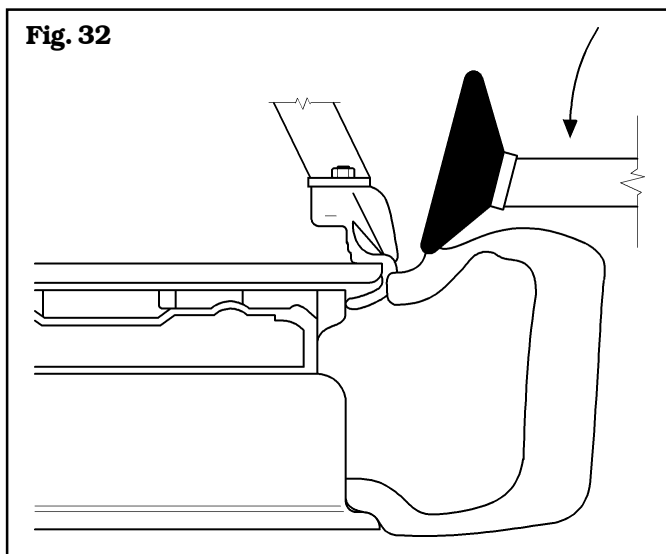
To mount tyres, proceed as follows:

1. Lubricate the tyre bead and in case of upper bead, lubricate the tyre side as well, up to the decoration line (see Fig. 29 pos. 1) and the upper part of the bead for 3 cm (see Fig. 30). Also the rim and its part on the drop center must be lubricated. Don't lubricate the sensor. Turn the sensor and/or the valve at "7 o'clock" to mount the lower bead (see Fig. 31 pos. 1).

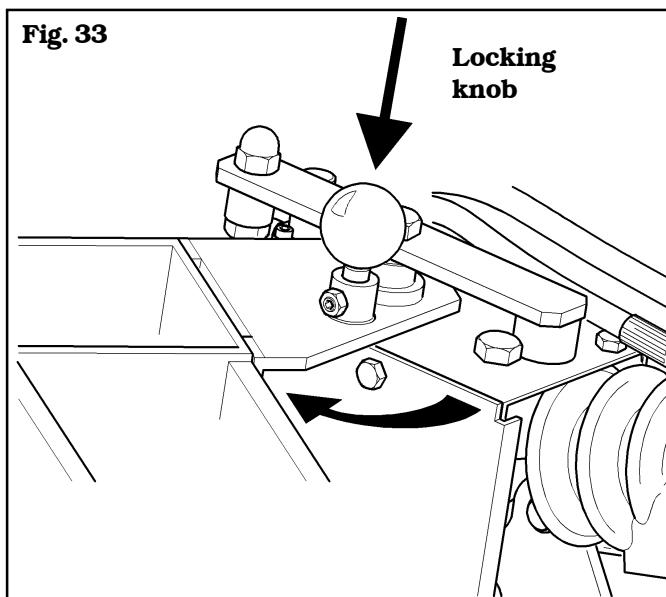




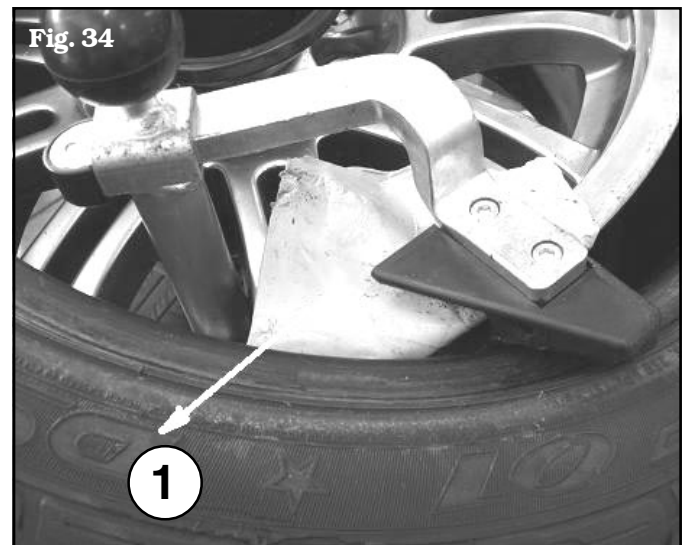
2. Place the tyre on the rim and the mounting head on the rim checking the arm angle.
  3. Place the lower bead edge on the left side of the mounting head and press the pedal to rotate clockwise. The sensor/valve must be always at 15 cm of distance from the traction.
  4. Repeat the operation on the upper bead, taking care to place first the valve stem between 5 and 6 "o'clock".
- When mounting hard low-profile tyres it may be useful to push the bead into the drop center (See **Fig. 32**) using the upper bead-breaker roller.



Lock the bead-breaking with the proper handle on its work position: place the bead-breaker roller on side and push it downwards (See **Fig. 33**).



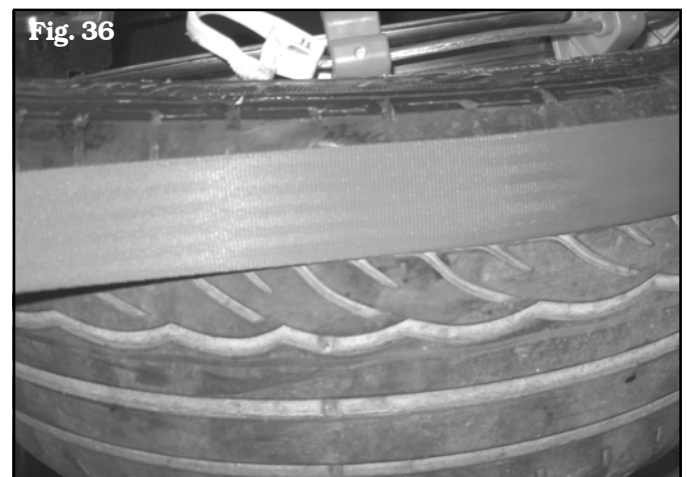
5. Insert the dragger into the rim and place the protection (**Fig. 34 pos. 1**) on the edge in order to avoid cuts in the bead.



- 6) Gradually turn the wheel at "11 o'clock" and insert the EH2 spacers one by one (**Fig. 35**).



7. When the traction point is at "5 o'clock", stop the motor and extend the belt up to "11 o'clock" and lock it with a little tearing (**Fig. 36**).
8. Turn the bead till it goes in the drop center and use the belt until the traction point has reached "7 o'clock" position.
9. Remove the tool using the bead-breaking roller.



## 6.0 TYRE INFLATION

1. Remove the valve stem.
2. Connect the inflation pipe to the tyre valve and inflate the tyre using the pedal placed on the left side of the machine.



**A SAFETY DEVICE IS PRESENT FOR THE ADJUSTMENT OF THE AIR SUPPLY LINE MAXIMUM PRESSURE (4 ± 0,2 BAR/60 PSI).**

**In case that the beads are not set at 4±0,2 bar, deflate the wheel, remove it from the tyre changer and put it in a safety cage to complete the inflation procedure.**

## INHALT

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## 1.0 VORBEREITENDE MAßNAHMEN - VORBEREITUNG DES RADES

- Die Auswuchtgewichte auf beiden Seite des Rades entfernen.
- Den Ventileinsatz entfernen und den Reifen vollkommen entleeren.
- Überprüfen, wo sich das Tiefbett befindet und auf welcher Seite der Reifen montiert werden muss.
- Überprüfen wie die Felge aufgespannt wird.
- Reifen und Felgengröße überprüfen (**Abb. 1**) und das eventuelles Modell des Sensors. Die Temperatur des Reifens darf nicht unter 15°C sein.

Abb. 1



## 2.0 AUFSPANNEN DES RADES

### 2.1 Aufspannen des Rades mit "Tulipan" Spannarmen (AX - Lectra)

Alle Räder müssen von innen mit Gummipuffern aufgespannt werden. Diese Puffer müssen flach auf der Oberfläche der Felgeninnenseite aufliegen.



**DIE GUMMIERTE KLAUEN FUER AUSSPANNUNG (# 8659000) MÜSSEN IMMER DEMONTIERT SEIN, BEVOR DIE FELGE GESpannt WIRD.**

Es ist empfehlenswert, die Felge so weit oben wie möglich zu positionieren.

Folgen Sie beim Aufspannen des Rades den folgenden Anweisungen:

1. Die Aufspannarmlen schließen, indem man das betreffende Pedal nach oben zieht.
2. Das Rad auf dem Federteller legen und das Pedal nach unten drücken, bis die Gummipuffer sich auf die Punkte der aufzuspannenden Felge auflegen.
3. Das Pedal wieder drücken bis das Rad komplett blockiert ist.

4. Überprüfen, ob die Felge richtig aufgespannt und zentriert ist, um zu vermeiden, dass die Felge während der folgenden Arbeitsschritte verrutscht.

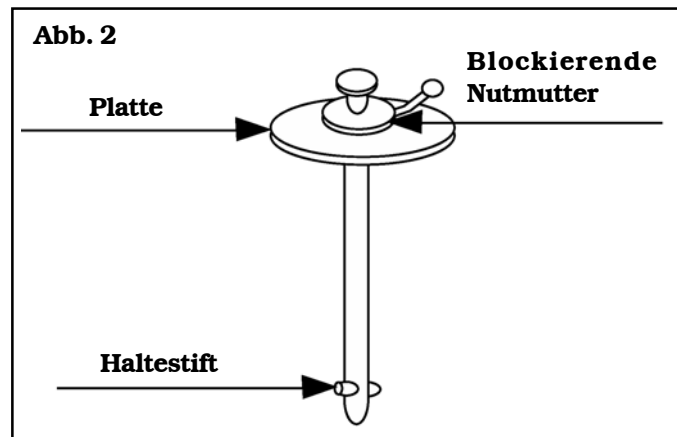


**DAS RAD MUß STETS MIT DER SICHERHEITSVORRICHTUNG BEFESTIGT WERDEN UND DIESE DARF ERST NACH BEENDEN SÄMTLICHER ARBEITSSCHRITTE GELÖST WERDEN.**

Folgen Sie bei der Anbringung der Sicherheitsvorrichtung (**Abbildung 2**) den folgenden Anweisungen:

- Mit aufgespanntem Rad die Sicherheitsvorrichtung durch die mittlere Bohrung des Rades stecken, bis sie in die Zentrierfeder eingreift.
- Den Haltestift am unteren Ende der Sicherheitsvorrichtung durch leichtes Drehen derselben in die auf dem Motor angebrachte Einsteckschraube einhaken.
- Die Sperrmutter neigen und auf die Platte absenken.
- In horizontale Stellung bringen und durch Drehen in Uhrzeigerichtung anziehen (**Abbildung 2**).

Abb. 2

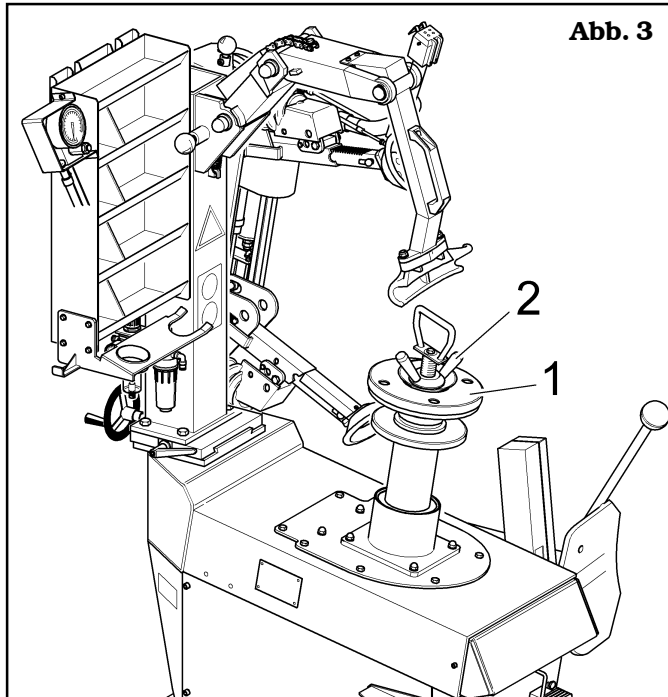


Bei Felgen mit versetztem Tiefbett wie folgt vorgehen:

1. Das Rad wie zuvor beschrieben von innen aufspannen.
2. Beide Wülste abdrücken.
3. Das Rad lösen und drehen.
4. Die Arme des öffnen.
5. Gummierten Klauen befestigen.
6. Das Rad positionieren und von außen spannen.

## 2.2 Aufspannen des Rades auf dem Teller (Ergolock)

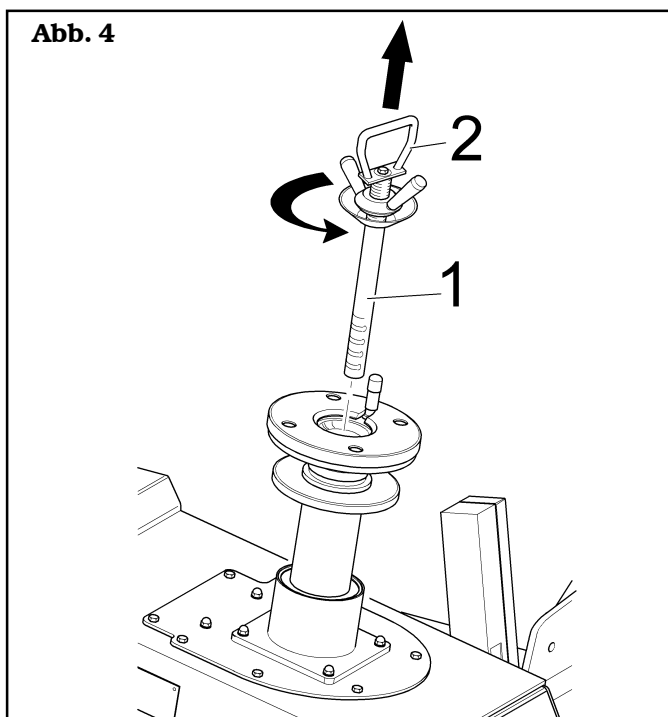
Alle Reifen müssen auf dem gummierten Teller (Abb. 3 Pkt. 1) mittels die vorgesehene Blockiervorrichtung blockiert werden (Abb. 3 Pkt. 2).



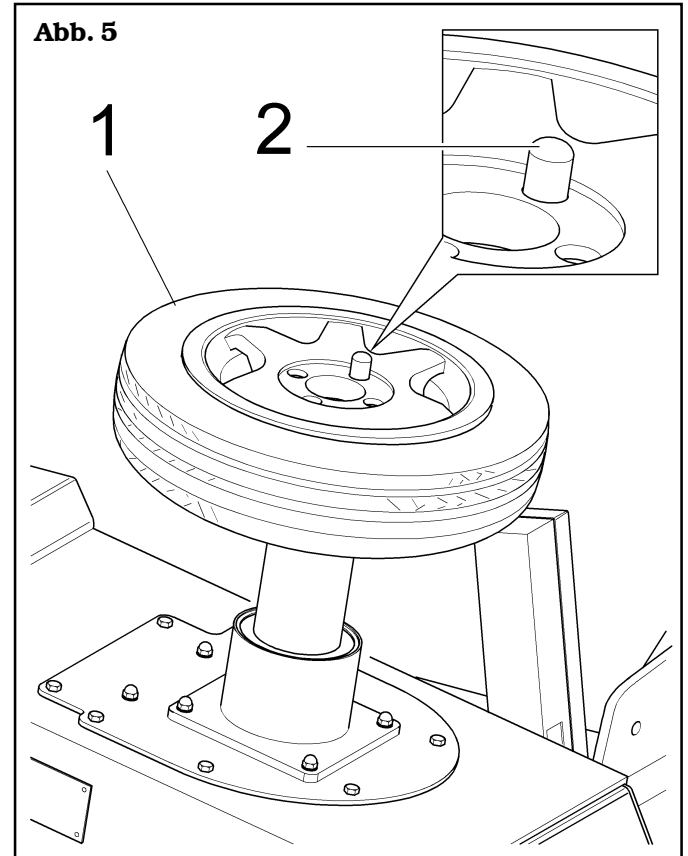
**ACHTUNG:** Für geschlossene Felgen muss das dafür vorgesehene Zubehör (auf Anfrage erhältlich) eingesetzt werden.

Folgen Sie beim Aufspannen des Rades den folgenden Anweisungen:

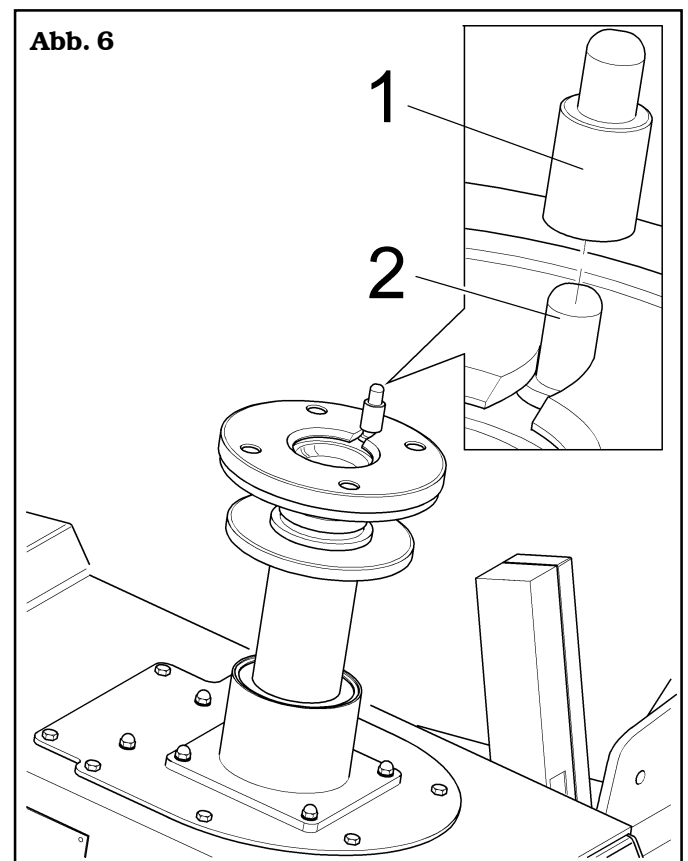
1. Aufspannvorrichtung mit Schutz (Abb. 4 Pkt. 1) mit dem vorgesehenen Griff (Abb. 4 Pkt. 2) herausnehmen und wenn nötig drehen, um das Herausziehen zu erleichtern.



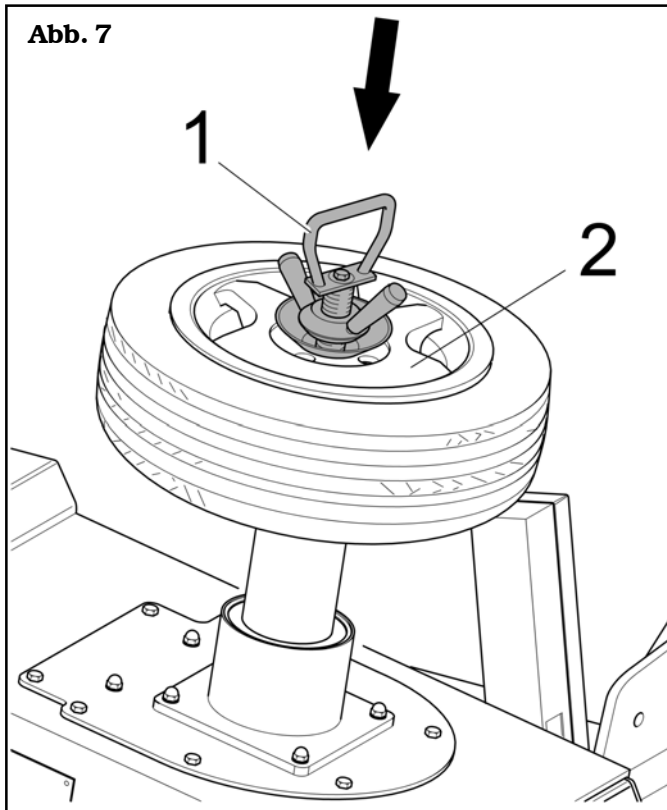
2. Das Rad auf den gummierten Teller positionieren (Abb. 5 Pkt. 1) und dafür sorgen das der Mitnahmestift in ein Radbolzenloch (Abb. 5 Pkt. 2) eingeführt wird.



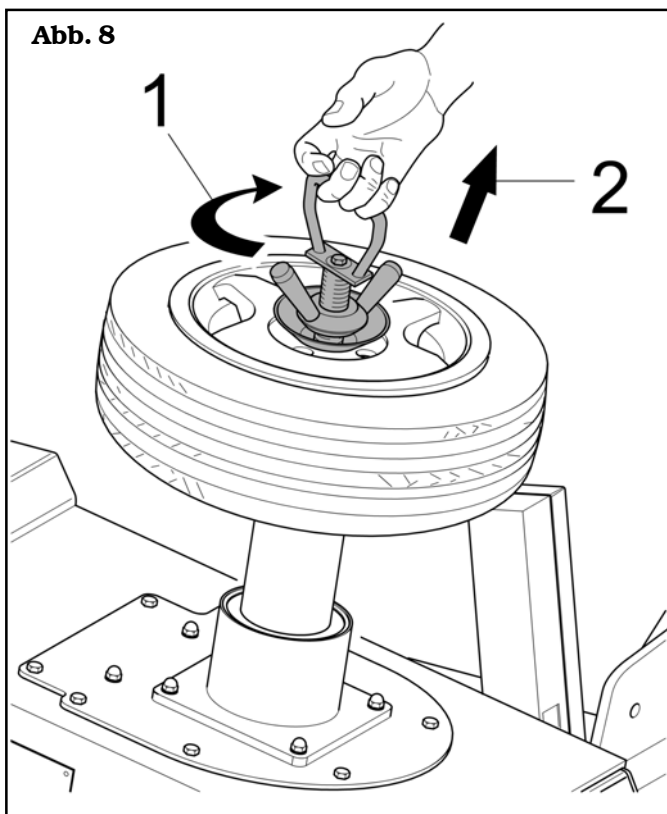
3. Falls nötig (Abb. 6 Pkt. 2), die mitgelieferte Verlängerung verwenden (Abb. 6 Pkt. 1).



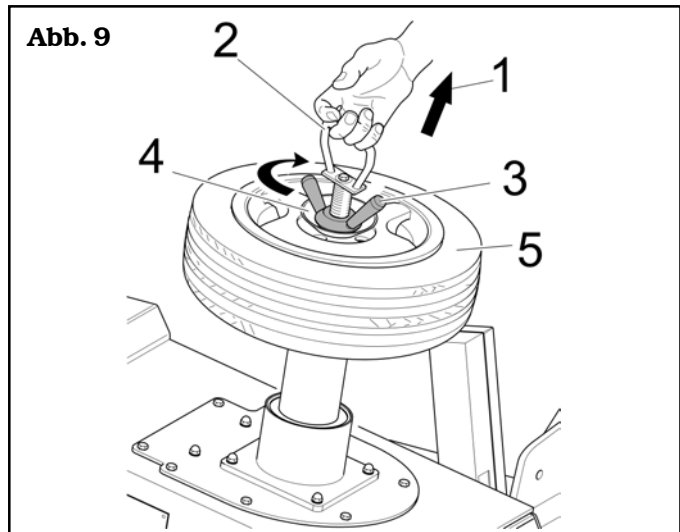
4. Das Aufspannmittel mit Schutz (**Abb. 7 Pkt. 1**) in die Felge (**Fig. 7 Pkt. 2**) einführen.



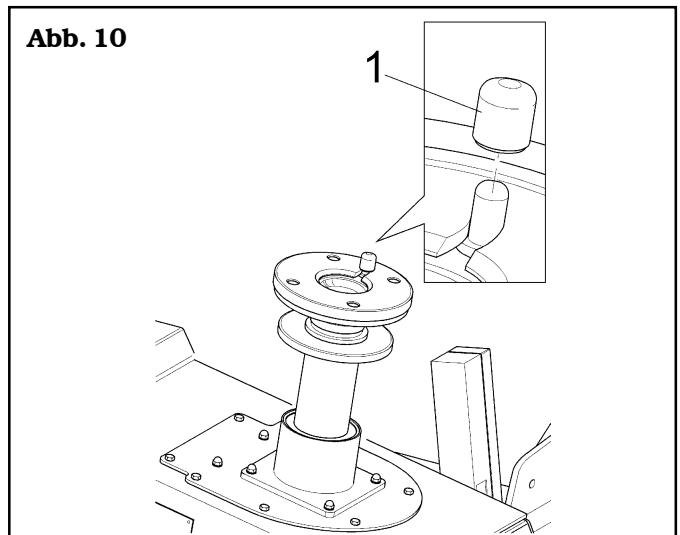
5. Um 90° drehen (**Abb. 8 Pkt. 1**) und die Aufspannvorrichtung anheben (**Abb. 8 Pkt. 2**).



6. Das Aufspannmittel weiterhin anheben (**Abb. 9 Pkt. 1**), dafür den vorgesehenen Griff verwenden (**Abb. 9 Pkt. 2**), die Nutmutter drehen (**Abb. 9 Pkt. 3**) bis der Konus (**Abb. 9 Pkt. 4**) das Rad (**Abb. 9 Pkt. 5**) vollkommen befestigt hat.



7. Für Alu - Räder den vorgesehenen Plastikschatz verwenden (**Abb. 10 Pkt. 1**).



- Um das Rad zu lösen, die oben aufgelisteten Arbeitsschritte in verkehrter Reihenfolge ausführen.



FÜR DAS DETAILLIERTE VERFAHREN ZUR VERWENDUNG DER BEFEHLE, BEZUG NEHMEN AUF DAS KAPITEL „BEFEHLE“, IN DER GEBRAUCHSANWEISUNG, DIE GEMEINSAM MIT DER MASCHINE GELIEFERT WURDE.

### 3.0 ABDRÜCKEN MIT DEN VERTIKALEN ROLLEN



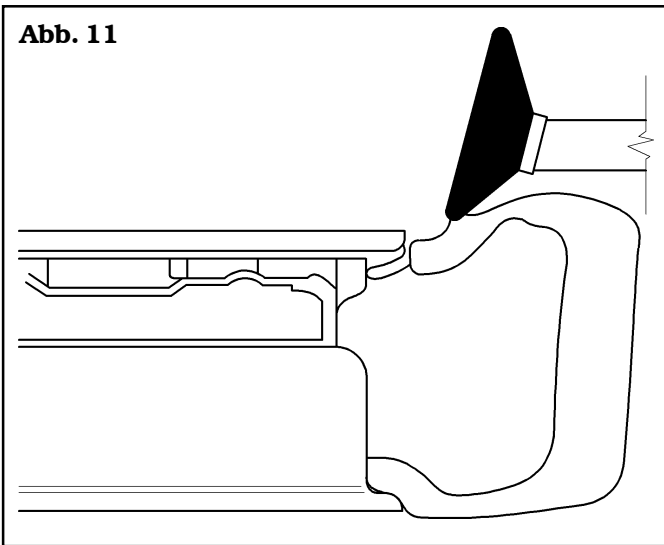
FÜR DAS DETAILLIERTE VERFAHREN ZUR VERWENDUNG DER BEFEHLE, BEZUG NEHMEN AUF DAS KAPITEL „BEFEHLE“, IN DER GEBRAUCHSANWEISUNG, DIE GEMEINSAM MIT DER MASCHINE GELIEFERT WURDE.

1. Nach dem Aufspannen des Rades den Abdrücker in seine Arbeitsposition schwenken.



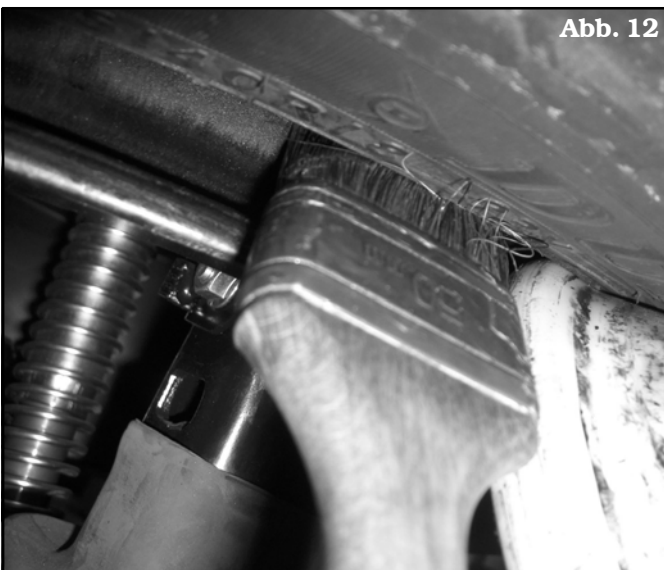
- Den Durchmesser des Rades durch Verschieben des Abdrückarmes einstellen.  
Den Abdrückarm durch Herunterdrücken des Kopf verriegeln !!!!!!!!
- Durch Betätigung der linken Taste der Bedienungseinheit die obere Rolle mit einem Abstand von etwa 5 mm von dem oberen Felgenhorn positionieren (sehen **Abbildung 11**).

Abb. 11



- Aktivieren Sie die Hydraulikpumpe ebenfalls mit der linken Taste, bis die Rolle sich nach vorne bewegt.
- Bringen Sie durch Drücken der rechten Taste die untere Rolle in Position.
- Betätigen Sie die Hydraulikpumpe ebenfalls mit der rechten Taste, bis die Rolle sich nach vorne bewegt.
- Durch Anheben des betreffenden Pedals das Rad gegen Uhrzeigersinn drehen und gleichzeitig den rechten Knopf drücken um den unteren Wulst abzudrücken: (im Spiegel beobachten)
- Den Wulst und die Felge während des Abdrücken gut einschmieren (sehen **Abb.12**).

Abb. 12



- Nach Beendigung des Abdrückens des unteren Wulstes die untere Rolle in Ruhestellung stellen, in dem die rechte Taste auf „0“ gestellt wird.

- Die linke Taste der Bedienungseinheit drücken um den oberen Wulst abzudrücken.
- Den Wulst und die Felge gut einschmieren (sehen **Abb. 13**).

Abb. 13



WÄHREND DES SCHMIERENS DARAUFGAHTEN, DIE SEITE DES REIFENS NICHT ZU TIEF HERUNTERTU DRÜCKEN. DEN RIEMEN ERST UM DEN REIFEN LEGEN, WENN DER WULST GESCHMIERT IST UND NACHDEM DIE ABDRÜCKWALZE WIEDER AUF RUHESTELLUNG STEHT.

#### 4.0 DEMONTAGE DES REIFENS

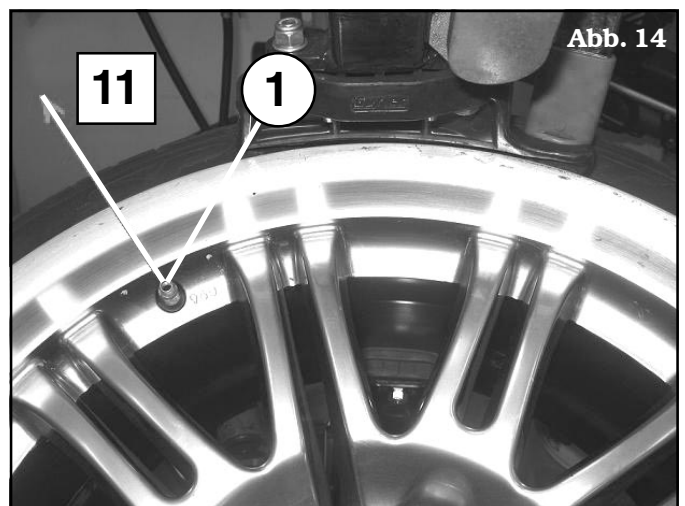


FÜR DAS DETAILLIERTE VERFAHREN ZUR VERWENDUNG DER BEFEHLE, BEZUG NEHMEN AUF DAS KAPITEL „BEFEHLE“, IN DER GEBRAUCHSANWEISUNG, DIE GEMEINSAM MIT DER MASCHINE GELIEFERT WURDE.

Nach dem Abdrücken beider Wulste wird der Reifen wie folgt demontiert:

- Das Reifenventil auf die, 11-Uhr-Position drehen (**Abb. 14 Pkt. 1**).

Abb. 14



- Den Montagekopf auf den Felgenhorn positionieren.
- Bei Stahlfelgen und Leichtmetallfelgen, den Plastik Hornschutz eingesetzt (**Abb. 15** und **Abb. 16**) um Wulstschäden zu vermeiden.

Abb. 15



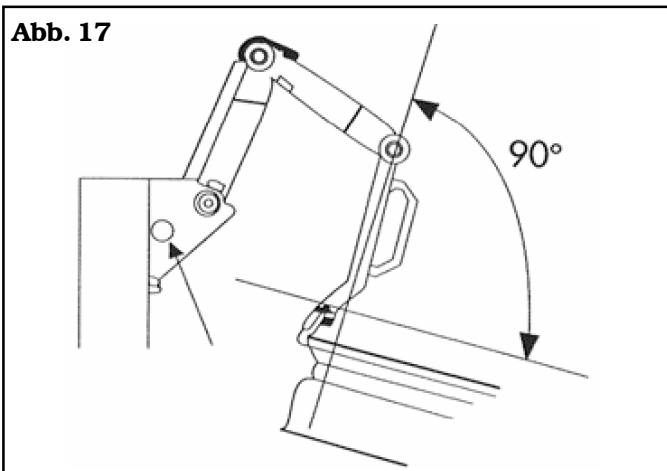
Abb. 16



Es gibt vier mögliche Winkelpositionen zwischen Montagearm und Felge.

Bei der korrekten Stellung beträgt der Winkel zwischen Werkzeugarm und Felgenschibe  $90^\circ$  (sehen **Abbildung 17**).

Abb. 17



Dieser Winkel ist wichtig, denn:

- Die Spannung während der Montage/ Demontage wird verringert.
- Sie gewährleistet eine bessere Kraftverteilung auf der Montagekopf.
- Sie verringert den Verschleiß der Montagekopf beträchtlich.

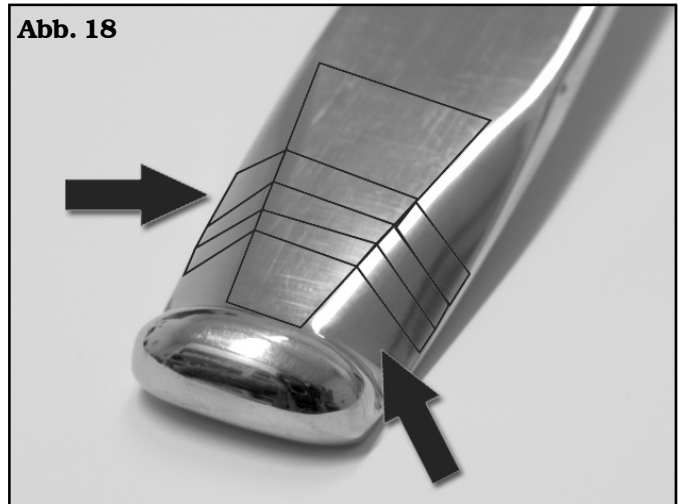


**BEI FELGEN MIT GEWÖLBTEM ODER FLACHEM RAND MUß DER WINKEL DES ARMS  $100^\circ/110^\circ$  BETRAGEN .**

- Bringen Sie den Hebelschutz (# 0326001) in Position.

**ACHTUNG:** Für die Demontage des Reifes UHP (Ultra High Performance) und RF (Run Flat), den neuen Hebel mit abgerundete Endstück HM verwenden (**Abb. 18**).

Abb. 18



- Den Wulst über den rechten Teil des Montagekopfes hebeln und gleichzeitig auf die Seitenwand des Reifens gegenüber (in "6-Uhr-Stellung") drücken.
- Der Kraftmultiplikator verwenden um den Montagekopf auf das Felgenhorn unter zudrücken. Wenn die Handdruck am den Felgen in "6-Uhr-Stellung" ist nicht genügend für der Wulst im Kanal tragen, Wulstniederhalterträger gebrauchen.

#### 4.1 Verwendung des Kraftmultiplikators

- Nachdem man das Montiereisen positioniert hat...Kraftmultiplikator verwenden um den Montagekopf auf das Felgenhorn unter zudrücken.

Abb. 19

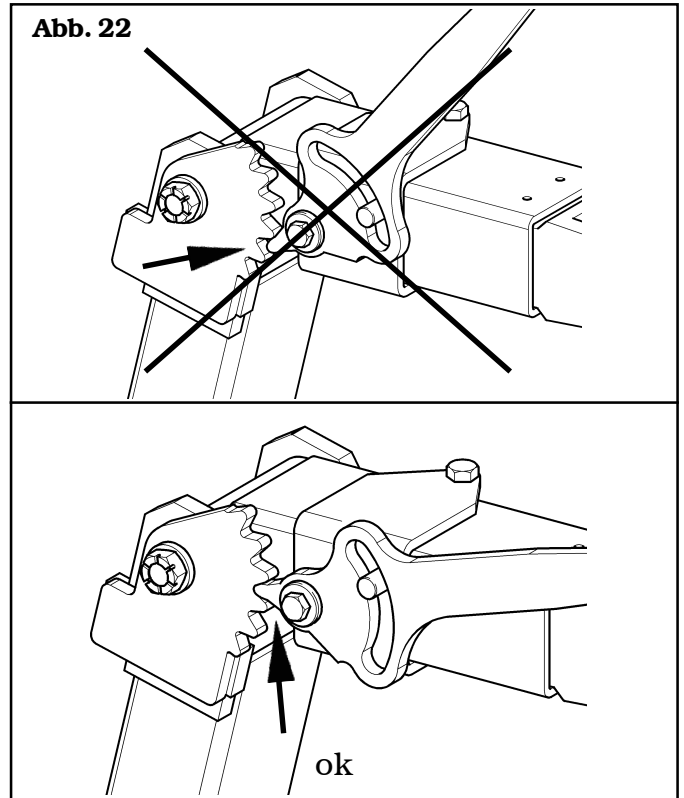


2. ....den Hebel des Kraftmultiplikators nach unten ziehen, bis das Montagewerkzeug Kontakt mit dem Felgenreand hat.

Abb. 20



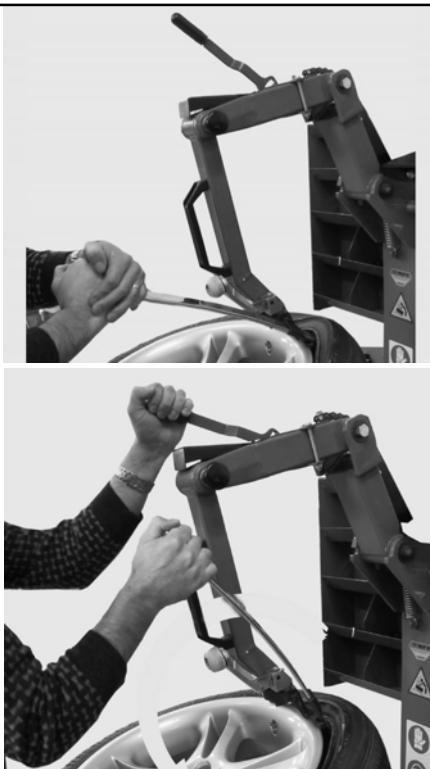
Abb. 22



ZUR OPTIMIERUNG DES KRAFTMULTIPLIKATORS MÜSSEN DIE HEBELZÄHNE KORREKT POSITIONIERT SEIN.

3. Den Reifenwulst mit das Montiereisen auf die rechten Seite des Montagekopfes ziehen.

Abb. 21



Bei RFT und UHP Reifen den Wulstboy verwenden wenn der Handdruck auf die Reifenflanke in "6-Uhr Stellung" nicht reicht um die Wulst in das Tiefbett zu drücken.



BEI FELGEN MIT EH2 ODER EH2+ MÜSSEN DIE EH2 KLÖTZE VERWENDET WERDEN. (ABB. 23).

4. Falls der Hebel den gezahnten Sektor nicht trifft (**Abb. 22**), den vertikalen Arm leicht anheben (5 - 7 cm) bis er mit der Verzahnung übereinstimmt.

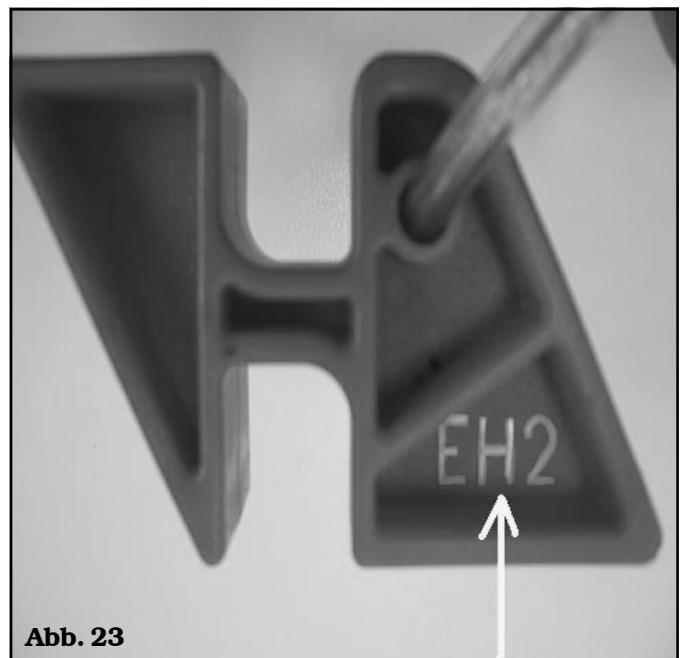
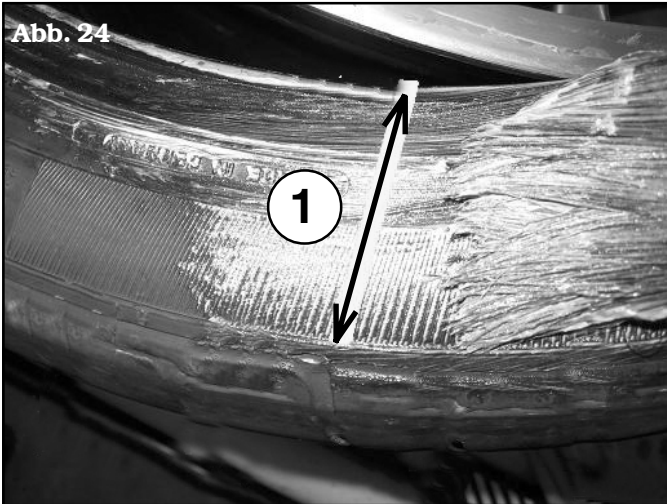


Abb. 23

Die obere Abdruckrolle verwenden um die Keile des Wulstboys einzuführen nachdem die Reifenflanke in dem Bereich in dem die Keile drücken reichlich eingeschmiert worden ist. Achtung, die Gürtelkante nicht verdrücken oder stauchen (**Abb. 24 Pkt. 1**).

Abb. 24

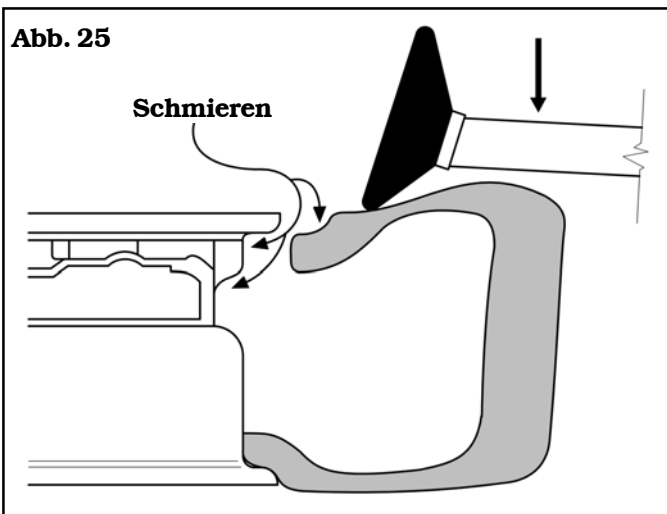


5. Das Rad im Uhrzeigersinn drehen bis die erste Wulst komplett demontiert ist. Beim Drehen des Rades rutscht das Montiereisen vom Montagekopf auf des Felgenhorn. Der Plastikschutz verhindert, dass die Felge zerkratzt wird. Falls nötig kann die untere Rolle eingesetzt werden um den Reifen hoch zudrücken um den Demontagestress zu minimalisieren.

6. Den Reifen anheben und den gleichen Arbeitsschritt mit dem zweiten Wulst wiederholen.

Bei großen Niederquerschnittsreifen nach dem Abdrücken des oberen Wulstes weiter drücken, bis genügend Platz zum Schmieren des Kanals, des Sitzes des Wulstes und des Wulstes selbst vorhanden ist (**Abb. 25**). Ein nicht schmieren könnte eine hohe Reibung zwischen Werkzeug und Reifen verursachen, die zu einer Beschädigung des Reifens und/oder der Felge führt.

Abb. 25



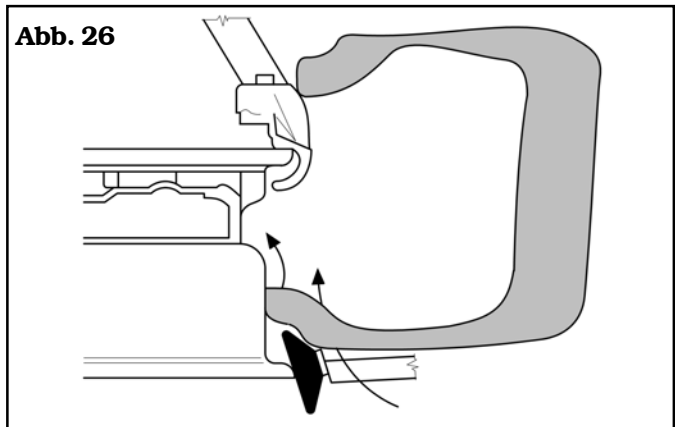
**WÄHREND DAS EINSCHMIEREN  
DARAUF ACHTEN, DIE SEITE  
DES REIFENS NICHT ZU TIEF ZU  
DRÜCKEN. GÜRTEKANTE NICHT  
STAUCHEN.**

Beim Demontieren des oberen Wulstes kann es vorkommen, dass der untere Wulst sich wieder auf die Felge setzt. Benutzen Sie in diesem Fall die untere Rolle des Abdrückers für ein weiteres Abdrücken und drücken sie den Reifen bis zum Aufziehwerkzeug, falls er sehr breit ist (**Abb. 26**).



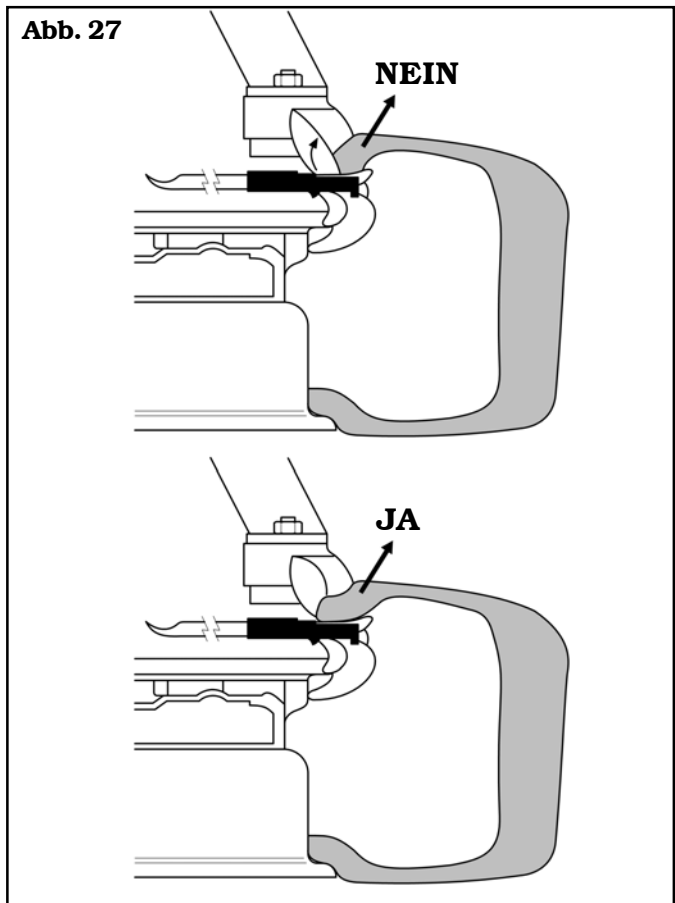
**DARAUF ACHTEN, DIE SEITE  
DES REIFENS NICHT ZU TIEF ZU  
DRÜCKEN. GÜRTEKANTE NICHT  
STAUCHEN.**

Abb. 26

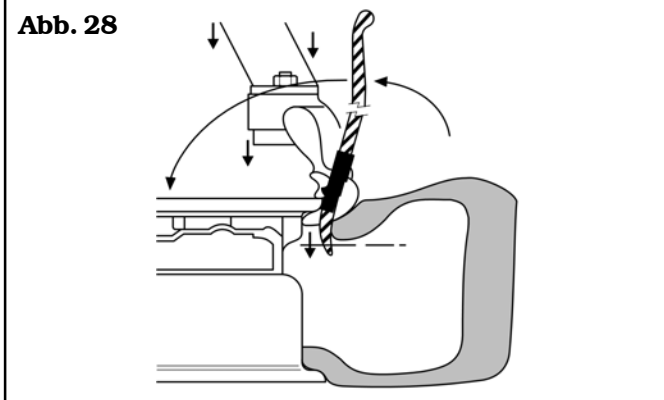


Beim Demontieren von harten Reifen kann es vorkommen, dass die Wulstzehe der Reifen nach innen gedreht ist. Dadurch rutscht der Wulst vom Hebel, wenn man mit der Rotation im Uhrzeigerrichtung beginnt. Zur Vermeidung muss der Reifen etwas in Gegenuhrzeigerichtung gedreht werden, bis die Wulstzehe sich umdreht (**Abb. 27**).

Abb. 27



Beim Abziehen von harten Niederquerschnittsreifen kann es vorkommen, dass der Reifenwulst nicht in Position bleibt auf den Montagekopf. Dabei kann die Verwendung des Kraftmultiplikators und die obere Rolle nützlich sein, um den Wulst nach unten zu drücken und um so den erforderlichen Platz für das Ansetzen des Hebels zu schaffen und gleichzeitig den Werkzeugarm nach unten zu schieben (**Abb. 28**).



Falls beim Montieren oder Demontieren der Motor langsamer wird oder stehen bleibt, sind die folgenden Kontrollen durchzuführen:

- Kontrollieren, ob der Wulst geschmiert worden ist.
- Kontrollieren, ob der Wulst in den Kanal gedrückt worden ist.
- Kontrollieren, ob die richtige Seite der Felge für das Auf- oder Abziehen gewählt worden ist.
- Kontrollieren, ob der Zufuhrdruck nicht unter 8 bar liegt (Version mit pneumatisch Motor).

Es befinden sich einige Felgen auf dem Markt, bei denen sich bei montiertem Reifen nur schwer feststellen lässt, auf welcher Seite sich das Tiefbett befindet. Zur Überprüfung mit Hilfe der Rollen des Abdrückers den Reifen so weit drücken, bis der Innenraum der Felge vollständig zu sehen ist.

## 5.0 MONTAGE DES REIFENS

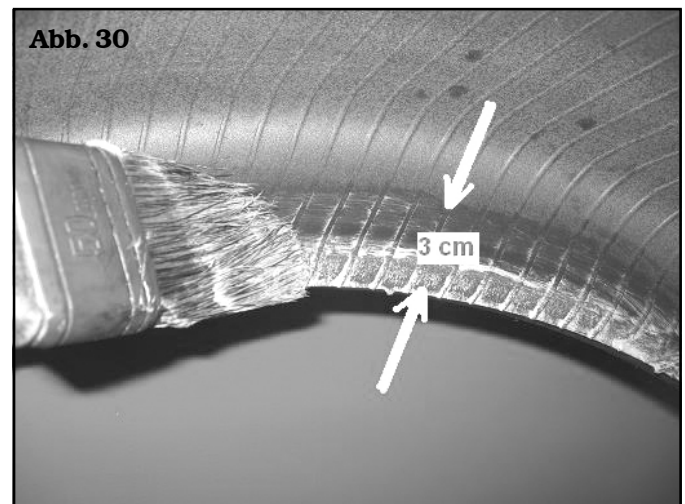
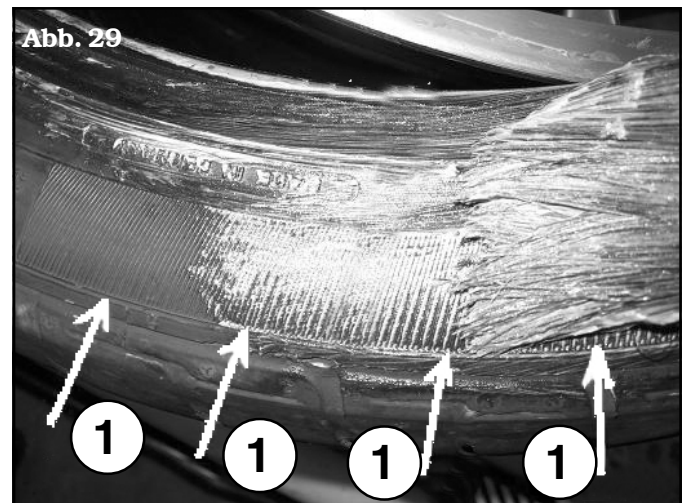


FÜR DAS DETAILLIERTE VERFAHREN ZUR VERWENDUNG DER BEFEHLE, BEZUG NEHMEN AUF DAS KAPITEL „BEFEHLE“, IN DER GEBRAUCHSANWEISUNG, DIE GEMEINSAM MIT DER MASCHINE GELIEFERT WURDE.

Folgen Sie beim Montieren des Reifens den folgenden Anweisungen:

1. Die Wulste des Reifens einschmieren; für den oberen Wulst, auch die Seite des Reifens bis der Dekorlinie (**Abb. 29 Pkt. 1**) und das innere Teil des Wulstes für 3 cm (**Abb. 30**).

Auch die Felge, im Bereich des inneren Felgenbett muss eingeschmiert werden. Falls ein Sensor montiert ist, dieser nicht einschmieren. Der Sensor und/oder das Ventil in die "7-Uhr-Stellung" positionieren für die Montage des unteren Wulstes (**Abb. 31 Pkt. 1**).



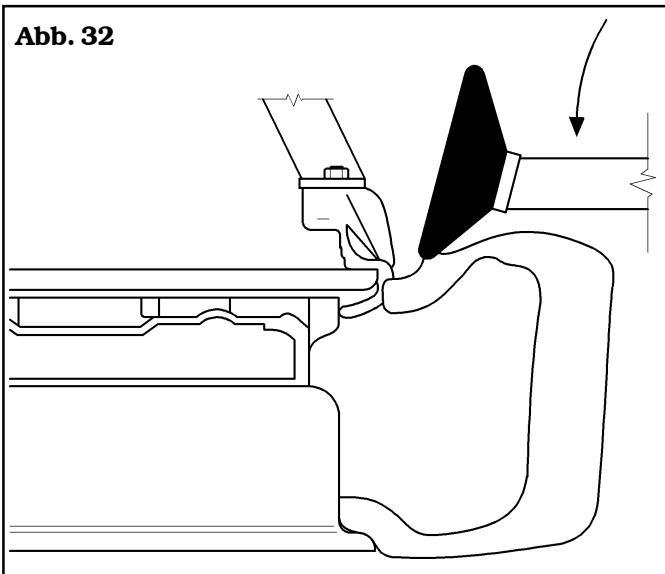


- Den Reifen auf der Felge legen und den Montagekopf auf den Felgenhorn positionieren und die Neigung des Armes kontrollieren.
- Den unteren Wulst auf dem linken Teil des Montagekopfes positionieren und das Pedal drücken, um in Uhrzeigerrichtung zu drehen. Der Sensor/Ventil muss sich mit max. 15cm vor dem Traktionspunkt befinden.

- Den Montagekopf an der oberen Wulst positionieren und dabei darauf achten, dass der Sensor/Ventil zuvor auf die „5-6-Uhr-Stellung“ gebracht wird.

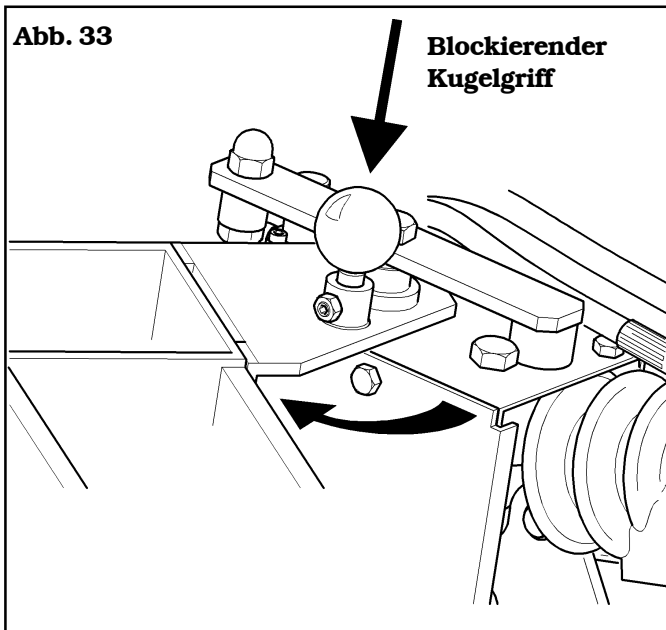
Die Verwendung der oberen Rolle des Abdrückers um den Wulst ins Tiefbett zu drücken ist notwendig (**Abb. 32**).

Abb. 32



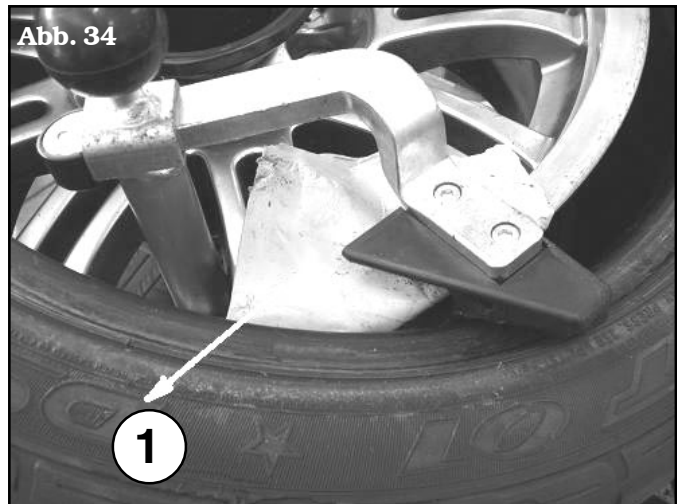
Der Abdrücker mit dem entsprechenden Knopf in seine Arbeitsposition blockieren; die obere Abdrückrolle auf die Reifenflanke positionieren und leicht unter drücken (**Abb. 33**).

Abb. 33



- Den Mitnehmer in der Felge einsetzen und den Hornschutz vor den Mitnehmer positionieren (**Abb. 34 Pkt. 1**) um eventuelle Wulstbeschädigungen zu vermeiden.

Abb. 34



- Das Rad schrittweise im Uhrzeigersinn drehen lassen und die EH2 Keile eins nach dem anderen einfügen (**Abb. 35**).

Abb. 35



- Den Motor stoppen sobald das Traktionspunkt die 5-Uhr-Position erreicht. Den Gurt rausziehen und in das obere Teil von die Lauffläche bis zum 11-Uhr-Stelle um den Reifen legen. Den Gurt mit ein kurzen Ruck "blockieren" (**Abb. 36**).

- Das Rad im Uhrzeigersinn drehen lassen und der Gurt loslassen sobald das Traktionspunkt die 7-Uhr-Stelle erreicht hat. Langsam stufenweise weiter drehen bis der Wulst komplett montiert worden ist. Dem Reifen dabei Zeit lassen um zu entspannen.

- Die Werkzeugen entfernen mit der Hilfe der Abdruckrolle.

Abb. 36





## 6.0 AUFPUMPEN DES REIFENS

1. Der Ventileinsatz entfernen.
2. Den Aufpumpschlauch an das Ventil des Reifens anschließen und den Reifen mit dem Pedal auf der linken Seite der Maschine aufpumpen.



**ES GIBT EIN SCHUTZSYSTEM FÜR DIE EINSTELLUNG DER HÖCHSTDRUCK DER GELIEFERTEN LUFT (4 BAR ± 0,2 / 60 PSI).**

**Falls der Wulst nicht springt bei ein Druck von  $4 \pm 0,2$  bar, der Reifen leer laufen lassen und entfernen von das Montagegerät und es in einer Sicherheitskäfig stellen um das Aufpumpverfahren zu wiederholen.**