



Artiglio 50

Code 4-130273 - 06/2013

User Manual

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The information contained herein may be subject to modifications without prior notice.

Thank you for choosing our Tyre Changer

CORGHI

Dear Purchaser

Thank you for purchasing your Corghi Tyre Changer.

Your Tyre Changer has been designed to provide years of safe and dependable service, as long as it is used and maintained in accordance with the instructions provided in this manual.

All persons who will use and/or maintain this Tyre Changer must read, understand and follow all warnings and instructions provided in this manual, and be properly trained.

This Owner's Manual should be considered an internal part of your Tyre Changer and should remain with the Tyre Changer. However, nothing in this manual, and none of the devices installed on the Tyre Changer, substitute for proper training, careful operation, good judgement and safe work practices.

Always be sure that your Tyre Changer is in optimum working order. If you suspect that anything is not working properly, or that a dangerous situation may exist, immediately shut down the Tyre Changer and remedy any condition before you proceed.

If you have any questions concerning the proper use or maintenance of your Tyre Changer, please call your authorized Corghi representative.

Sincerely,
Corghi SpA

OWNER INFORMATION

Owner

Name_____

Owner

Address_____

Model

Number_____

Serial

Number_____

Date

Purchased_____

Date

Installed_____

Service and Parts

Representative_____

Phone

Number_____

Sales

Representative_____

Phone

Number_____

TRAINING CHECKLIST

	Trained	Declined
<u>Safety Precautions</u>		
Warning and Caution Labels	<input type="checkbox"/>	<input type="checkbox"/>
Pinch Points and Other Potential Hazards	<input type="checkbox"/>	<input type="checkbox"/>
Safe Operating Procedures	<input type="checkbox"/>	<input type="checkbox"/>
<u>Maintenance and Performance Checks</u>		
Mounting Head Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Adjustment and Lubrication	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance, errors and instructions	<input type="checkbox"/>	<input type="checkbox"/>
<u>Clamping</u>		
Steel / Alloy Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Reverse Drop Centre Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Close Centre Wheels	<input type="checkbox"/>	<input type="checkbox"/>
<u>Bead Breaking</u>		
Standard Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Low Profile Wheels	<input type="checkbox"/>	<input type="checkbox"/>
<u>Demounting</u>		
Bead Lubrication During Removal of Low Profile Tyres	<input type="checkbox"/>	<input type="checkbox"/>
Reverse Drop Centre Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Full Seating of Mount/Demount Head to Prevent Head Failure	<input type="checkbox"/>	<input type="checkbox"/>
<u>Mounting</u>		
Standard Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Mounting of Stiff, Low Profile Tyres	<input type="checkbox"/>	<input type="checkbox"/>
Reverse Drop Centre Wheels	<input type="checkbox"/>	<input type="checkbox"/>
Proper Bead Lubrication for Mounting Protection	<input type="checkbox"/>	<input type="checkbox"/>
WDK procedure	<input type="checkbox"/>	<input type="checkbox"/>
<u>Accessories</u>		
Instructions for the Correct Use of Accessories	<input type="checkbox"/>	<input type="checkbox"/>
Bead Sealing and Seating	<input type="checkbox"/>	<input type="checkbox"/>
<u>Inflation</u>		
Safety Precautions	<input type="checkbox"/>	<input type="checkbox"/>
Lubrication and Removal of Valve Core	<input type="checkbox"/>	<input type="checkbox"/>
Bead Sealing and Seating	<input type="checkbox"/>	<input type="checkbox"/>



Individuals and Dates Trained

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1. GETTING STARTED

1.1 INTRODUCTION

1.1.a. PURPOSE OF THE MANUAL

The purpose of this manual is to provide the instructions necessary for optimum operation, use and maintenance of your machine. If you sell this machine, please deliver this manual to the new owner. In addition, so we can contact our customers with any necessary safety information, please ask the new owner to complete and return to Corghi the change of ownership form attached to the previous page of this manual. Alternatively, the new owner can send an email to service@corghi.com.

This manual presumes that the technician has a thorough understanding of rim and tyre identification and service. He/she must also have a thorough knowledge of the operation and safety features of all associated tools (such as the rack, lift, or floor jack) being utilized, and have the proper hand and power tools necessary to work in a safe manner.

The first section provides the basic information to safely operate the ARTIGLIO 50 tyre changer family. The following sections contain detailed information about equipment, procedures, and maintenance. "Italics" are used to refer to specific parts of this manual that provide additional information or explanation.

These references should be read for additional information to the instructions being presented. The owner of the tyre changer is solely responsible for enforcing safety procedures and arranging technical training. The tyre changer is to be operated only by a qualified and trained technician. Maintaining records of personnel trained is solely the responsibility of the owner or management.

The ARTIGLIO 50 tyre changer family is intended for mounting, demounting, and inflating tyres of lightweight vehicles (cars, not trucks or motorcycles) with maximum dimensions of 47 inches in diameter and 16 inches in width.

Copies of this manual and of the documents accompanying the machine may be obtained from Corghi by specifying the type of machine and its serial number.

NOTICE: Design details are subject to change. Some illustrations may vary slightly in appearance from the machine you have.

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1.2 FOR YOUR SAFETY

HAZARD DEFINITIONS

These symbols identify situations that could be detrimental to your safety and/or cause equipment damage.

	DANGER
	DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING



WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION



CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

NOTICE: Used without the safety alert symbol, indicates a potentially hazardous situation, which, if not avoided, may result in property damage.

1.2.a. GENERAL WARNING AND INSTRUCTIONS



WARNING

Avoid Personal Injury. Carefully read, understand and follow the warnings and instructions given in this manual. This manual is an essential part of the product. Keep it with the machine in a safe place for future reference.

1. If the use and maintenance procedures provided in this manual are not properly performed, or the other instructions in this manual are not followed, an accident could occur. Throughout this manual reference is made that “an accident” could occur. Any accident could cause you or a bystander to sustain severe personal injury or death, or result in property damage.
2. Overinflated tyres can explode, producing hazardous flying debris that may result in an accident.
3. Tyres and rims that are not the same diameter are “mismatched.” Never attempt to mount or inflate any tyre and rim that are mismatched. For example, never mount a 16.5” tyre on a 16” rim and vice versa. This is very dangerous. A mismatched tyre and rim could explode, resulting in an accident.



WARNING

Avoid Personal Injury. Carefully read, understand and follow the warnings and instructions given in this manual. This manual is an essential part of the product. Keep it with the machine in a safe place for future reference.

4. Never exceed the bead setting pressure provided by the tyre manufacturer, as stated on the sidewall of the tyre. Carefully monitor the gauge on the air hose.

5. If tires being mounted require more than the tire manufacturer's maximum bead seating pressure and , the wheel should be removed from the tire changer, placed in an inflation cage, and inflated per manufacturer's instructions



6. The use of inflation devices (e.g. guns) connected to power sources outside of the machine is not permitted

7. Never place your head or any part of your body over a tyre during the inflation process or when attempting to seat beads. This machine is not intended to be a restraining device for exploding tyres, tubes or rims.

8. Always stand back from the tyre changer when inflating, never lean over.



DANGER

An exploding tyre and rim may be propelled upward and outward with enough force to cause serious injury or death.

Never mount any tyre unless the tyre size (molded into the sidewall) matches the rim size (stamped into the rim) exactly or if the rim or tyre are defective.

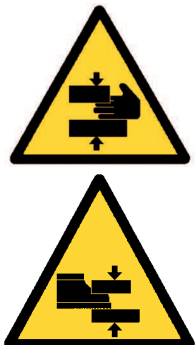
Never exceed the tyre pressure recommended by the tyre manufacturer.

This tyre changer is not a safety device and will not restrain exploding tyres and rims. Keep the area clear of bystanders.

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9. Crushing Hazard. Moving Parts Present. Contact with moving parts could result in an accident.

- Only one operator may work with the machine at a time.
- Keep all bystanders clear of tyre changer.
- Keep hands and fingers clear of rim edge during the demounting and mounting process.
- Keep hands and fingers clear of mount/demount head during operation.
- Keep hands, feet and other body parts away from moving parts.
- Do not use tools other than those supplied with tyre changer.
- Use proper tyre lubricate to prevent tyre binding.
- Pay attention while moving tyre/rim or lever.



10. Electric Shock Hazard.

- Never hose down or power wash electric tyre changers.
- Do not operate the machine with a damaged power cord
- If an extension cord is necessary, a cord with a current rating equal to or greater than that of the machine must be used. Cords rated for less current than the machine can overheat, resulting in a fire.
- Care should be taken to arrange the cord so that it will not be tripped over or pulled.



11. Risk of Eye Injury. Flying debris, dirt and fluids may be discharged during bead seating and the inflation process. Remove any debris from the tyre tread and wheel surfaces. Wear OSHA, CE or other approved safety glasses during mount and demount procedures.



12. Always inspect the machine carefully before using it. Missing, broken, or worn equipment (including warning stickers) must be repaired or replaced prior to operation.

13. Never leave nuts, bolts, tools or other equipment on the machine. They may become trapped between moving parts and cause a malfunction.

14. NEVER install or inflate tyres that are cut, damaged, rotten or worn. NEVER install a tyre on a cracked, bent, rusted, worn, deformed or damaged rim.

15. If a tyre becomes damaged during the mounting process, do not attempt to finish mounting. Remove from the service area and properly mark the tyre as damaged.

16. To inflate tyres, use short bursts while carefully monitoring the pressure, tyre, rim and bead. NEVER exceed the tyre manufacturer's pressure limits.

17. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapours (gasoline, paint thinners, solvents, etc.). This machine should not be located in a recessed area or below floor level.

18. Never operate the machine if you are under the effects of alcohol, medications and/or drugs. If you are taking prescription or over the counter medication, you must consult a medical professional regarding any side effects of the medication that could hinder your ability to operate the machine safely.



19. Always use OSHA, CE or other approved and mandated Personal Protective Equipment (PPE) during use of the machine. See your supervisor for more instructions.



20. Remove jewellery, watches, loose clothing, ties and restrain long hair before using the machine.

21. Wear non-slip safety footwear when operating the tyre changer.



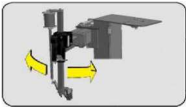




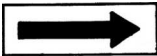
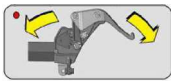


22. Wear proper back support and employ a proper lifting technique when placing, moving, lifting or removing wheels from the tyre changer.

23. This machine may only be used, maintained or repaired by properly trained employees of your company. Repairs should only be performed by qualified personnel. Your CORGHI service representative is the most qualified person. The employer is responsible for determining if an employee is qualified to safely make any repairs to the machine should repair be attempted by users.




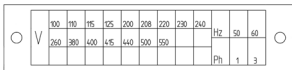






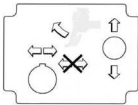

24. The user should understand all warning decals affixed to this equipment before operating.


25. Lock the rim on the turntable during inflation.

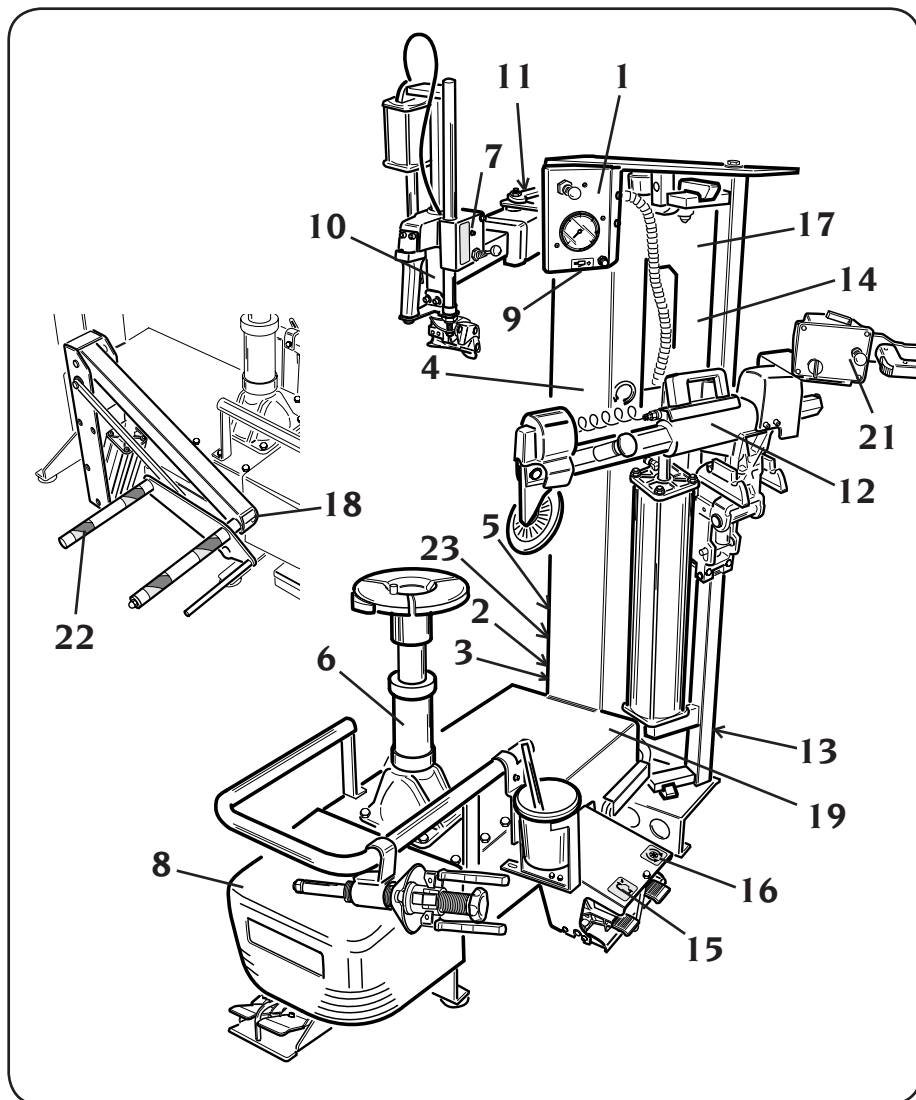
1.2.b. DECAL PLACEMENT

No.	Part Number	Drawing	Description
1	4-103720		DECAL, ARM MOVEMENTS
2	446429		DECAL, MAX. INLET PRESSURE 16 BAR
3	446442		DECAL, WARNING UNDER PRESSURE TANK
4	4-104288		DECAL, ARTIGLIO 50
5	4-113355		DECAL, FILTER
6	418135		DECAL, DIRECTION OF ROTATION
7	4-103904		DECAL, LEVER LESS CONTROL
8	4-104346		DECAL, WHEEL LIFTER CONTROL
9	446436		DECAL, INFLATION VALVE



No.	Part Number	Drawing	Description
10	446435		DECAL, HAND CRUSHING HAZARD
11	4-104920		DECAL, ARM MOVEMENT HAZARD
12	462081A		DECAL, HAND CRUSHING HAZARD
13	446388		DECAL, CORRECT FEEDING NETWORK
14	446430		DECAL, SAFETY INSTRUCTIONS
15	461933		DECAL, INFLATING PEDAL
16	461932		DECAL, TURNTABLE ROTATION PEDAL
17	462080		DECAL, ACOUSTIC AND VISUAL PROTECTION
18	461930		DECAL, FOOT CRUSHING HAZARD
19	4-115872		DECAL, WDK APPROVED
21	4-103803A		DECAL, BEAD BREAKER ARM CONTROLS
22	346885		DECAL, SAFETY STRIP

No.	Part Number	Drawing	Description
23			DECAL, MODEL SERIAL NUMBER



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DANGER WARNING DECALS



part nr 462081. Crushing Hazard.



part nr 461930. Crushing hazard.



part nr 446435. Crushing hazard.



part nr 446442. EXPLOSION HAZARD. Do not puncture.
Danger - pressurised container.



part nr 4-104920. Crushing hazard.
Only one operator may operate and use the machine.



part nr 446430. Safety instructions.

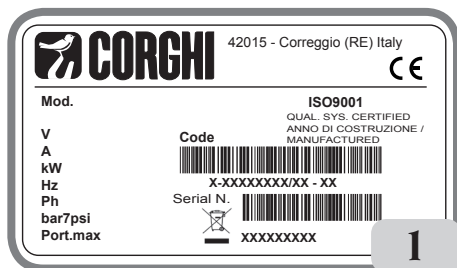


part nr 425083. Earth ground terminal.

1.2.c. ELECTRICAL AND PNEUMATIC CONNECTIONS

The dimensions of the electric hook-up used must be suitably sized in relation to:

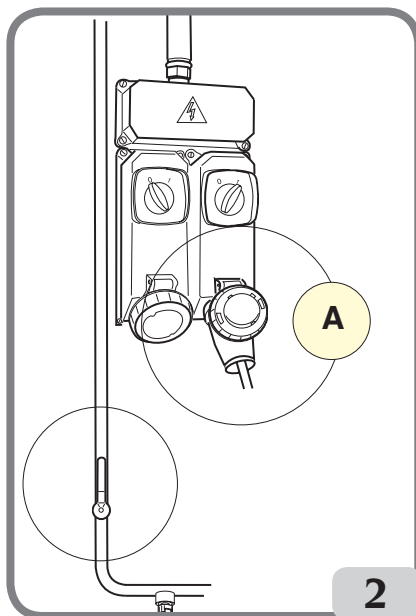
- the electric power absorbed by the machine, indicated on its data plate (Fig. 1);



- the distance between the machine and the power supply hook-up point, so that voltage drops under full load do not exceed 4% (10% during start-up) compared with the rated voltage specified on the data plate.

- The operator must:

- fit a power plug on the power supply lead in compliance with the relevant safety standards;
- connect the machine to its own electrical connection - A, Fig. 2 - and fit a differential safety circuit-breaker with 30 mA residual current;
- fit fuses to protect the power supply line, rated as indicated on the general wiring diagram in this manual;
- connect the machine to an industrial socket; the machine must not be connected to domestic sockets.



NOTICE

An effective grounding connection is essential for correct operation of the machine.

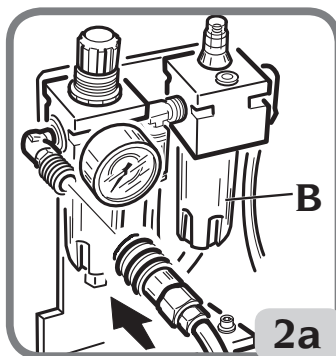
Make sure the available pressure and the rendered capacity of the compressed air system are compatible with those required for correct machine operation - see the "Technical Data" section. For correct machine operation, the compressed air supply line must provide a pressure range from no less than 8.5 bar to no more than 16 bar and guarantee an air flow rate greater than the average consumption of the machine, which is equal to 100 NI/min.

NOTICE

For correct equipment operation, the air produced must be suitably treated (not above 5/4/4 according to ISO 8573-1)

Check that the Lubricator unit B fig. 2a contains air lubricating oil; top up if necessary. Use SAE20 oil.

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



WARNING

Before operating any command, follow the instructions affixed to the machine.
See also Section 3.3, "FIRST INSTALLATION"



1.2.d TECHNICAL DATA

- Tyre types processed .. CONVENTIONAL - LOW PROFILE - RUN FLAT - BALOON - BSR
- Wheel dimension range:
 - rim diameter from 12" to 30"
 - maximum tyre diameter 1200 mm (47")
 - maximum tyre width 15" (from wheel support surface)
- Turntable:
 - tools positioning in relation to rim..... manual
 - resting side..... flanged
 - centring..... on cone
 - clamping.....mechanical-manual
 - drive system..... 2-speed motor-inverter unit
- Bead Breaker Unit:
 - bead breaking cylinder force7600N
- Power supply:
 - compressed air operating power:8÷10 bar

- min. air operating flow:..... 100 Nl/min

- Electric motor rating

Motor Rating	kW	Rotation speed rpm	Torque Nm	Weight of electric/ electronic part kg
200-230V/1ph 50/60Hz	0.75	7-20	1200	10.2
115V/1ph 60Hz	0.75	7-20	1200	10.2

- Wheel lift:

- lifting capacity:..... 85 Kg

- Weight..... 320 kg (with wheel lifter)

- Noise level

- Weighted noise level A (LpA) in working position < 70 dB (A)

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

1.2.e. AIR PRESSURES

The machine is equipped with an internal pressure limiting valve to minimize the risk of over inflating the tyre.




DANGER

- EXPLOSION HAZARD**
- Never exceed the tyre pressure recommended by the tyre manufacturer. Never mismatch tyre size and rim size.
- Avoid personal injury or death

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1. Never exceed these pressure limitations:

- Supply line pressure (from compressor) is 220 psi (15 bar).
- Operating pressure (gauge on regulator) is 150 psi (10 bar).

Bead setting pressure (gauge on hose) is the tyre manufacturer's maximum pressure as stated on the sidewall of the tyre

MAXIMUM INLET PRESSURE (From Compressor) 220 PSI
OPERATING PRESSURE (Gauge On Regulator) 150 PSI

2. Activate air inflation jets only when sealing the bead.
3. Bleed air pressure system before disconnecting supply line or other pneumatic components. Air is stored in a reservoir for operation of inflation jets.
4. Only activate the air inflation jets if the rim securing device is locked in place and the tyre is properly clamped (when possible).

1.3. SPECIAL RIM/TYRE CONSIDERATIONS

NOTICE

Wheels equipped with low tyre pressure sensors or special tyre and rim designs may require special procedures. Consult wheels and tyre manufacturers' service manuals.

1.4. INTENDED USE OF THE MACHINE

This machine must be used only to remove and replace an automotive tyre on an automotive rim, using the tools with which it is equipped. Any other use is improper and can result in an accident.

The machine can not work on motorcycle wheels.

1.5. EMPLOYEE TRAINING

1. The employer is obligated to provide a programme to train all employees who service rim wheels in the hazards involved in servicing those rim wheels and the safety procedures to be followed. Service or servicing means the mounting and demounting of rim wheels, and related activities such as inflating, deflating, installing, removing and handling.

- The employer shall insure that no employee services any rim wheel unless the employee has been trained and instructed in correct procedures of servicing the type of wheel being serviced, and in safe operating procedures.
- Information to be used in the training programme shall include, at a minimum, the applicable information contained in this manual.

2. The employer shall ensure that each employee demonstrates and maintains the ability to service rim wheels safely, including performance of the following tasks:

- Demounting tyres (including deflation).
- Inspecting and identifying rim wheel components.
- Mounting tyres.
- Using any restraining device, cage, barrier, or other installation.
- Handling rim wheels.
- Inflating the tyre.
- Understanding the necessity to stand back from the tyre changer during tyre inflation and during inspection of the rim wheel following inflation, never leaning over.
- Installing and removing rim wheels.

3. The employer shall evaluate each employee's ability to perform these tasks and to service rim wheels safely, and shall provide additional training as necessary to assure that each employee maintains his or her proficiency.

1.6. PRE-USE CHECKS

Before beginning work, carefully check that all components of the machine, especially rubber or plastic parts, are in place, in good condition and working properly. If the inspection reveals any damage or excessive wear, no matter how slight, immediately replace or repair the component.

1.7. DURING USE

In the event you hear any strange noise or feel unusual vibration, if a component or system is not operating properly, or if there is anything unusual at all, stop using the machine immediately.

- Identify the cause and take any necessary remedial action.
- Contact your supervisor if necessary.

Never allow any bystander to be within 20 feet of the machine during operation.

To stop the machine in an emergency:

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

2. TRANSPORT, STORAGE AND HANDLING

Conditions for transporting the machine

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

- Packing dimensions:

- width 1320 mm
- depth 760 mm
- height 1830 mm

- Weight of wooden packing:

- STD version kg 320
- TI version kg 335

Machine storage and shipping specifications

Temperature: -25° - +55°C.

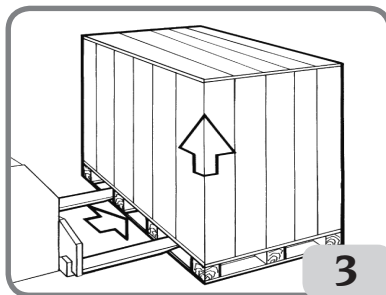
NOTICE

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

Handling

To move the packing, insert the tines of a fork-lift truck into the slots on the base of the packing itself (pallet) (Fig.3).

Before moving the machine, refer to the HOISTING/HANDLING section.



NOTICE

Keep the original packing in good conditions to be used if the equipment has to be shipped in the future.

2.1. UNPACKING

Remove the upper part of the packing and make sure the machine has not been damaged during transportation.

3. UNPACKING/ASSEMBLY



WARNING

Take the utmost care when unpacking, assembling, hoisting and installing the machine as described below.

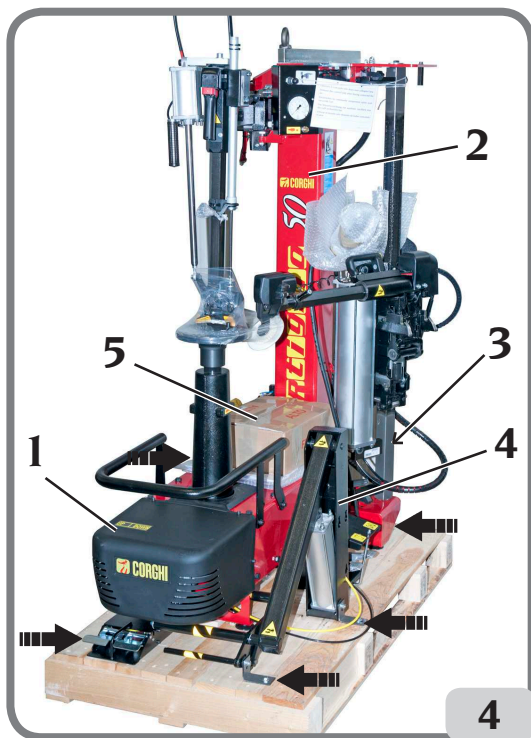
Failure to observe these instructions can damage the machine and compromise the operator's safety.

NOTICE

Before removing the machine from the pallet, make sure the items shown below have been removed from the pallet.

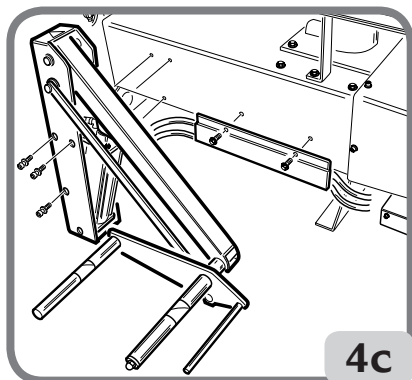
3.1. ASSEMBLY

- Remove the top part of the cardboard packaging. Make sure that the machine has not been damaged in transit, and identify the points at which it is anchored to the pallet (fig. 4), ready to remove the machine.
- The machine comprises five main sections (fig.4):
 1. Body with pedal unit and turntable.
 2. Column with bead breaking unit and tool arm.

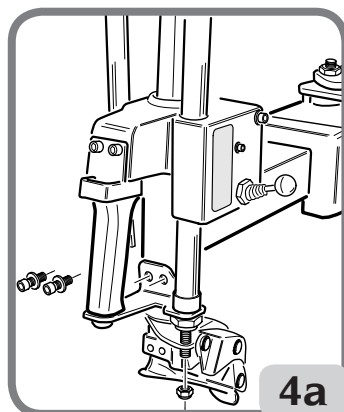


4

- Screw back on the bracket which supports the bead breaker drive unit (fig. 4b).



4c

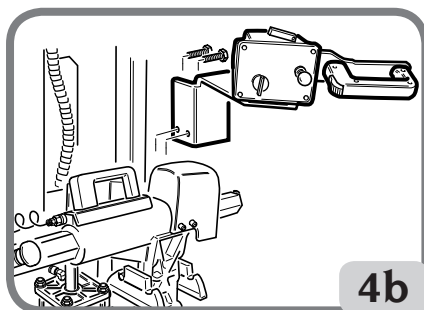


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- 3. Air tank (T.I. version only).
- 4. Wheel lift (Optional).
- 5. Accessories box.

- Remove the packaging from the air tank and and/or any optional units, and place them in a position where they cannot fall over and be damaged.

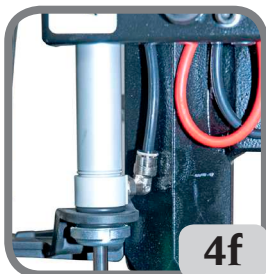
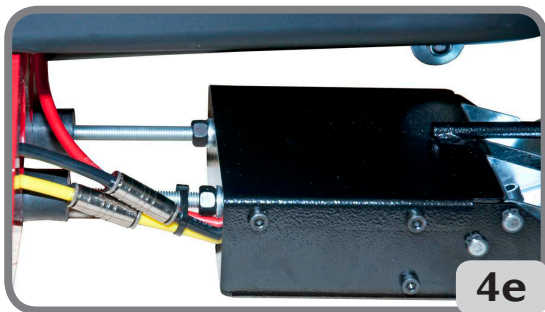
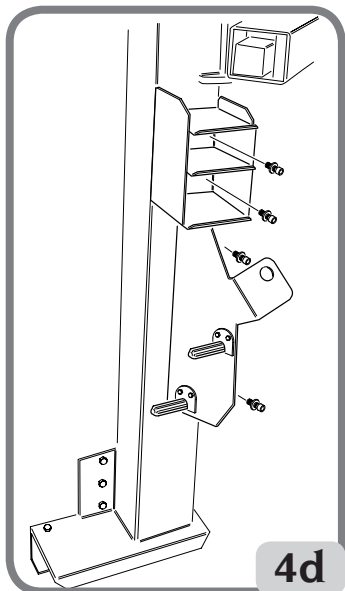
- Reassemble the tool head lifting cylinder as shown in figure 4a.



4b

- Fit the wheel lift (fig. 4c) using the three screws.
- Connect the tank as described on relative TI manual supplied with the accessory. (T.I. version only).

UK

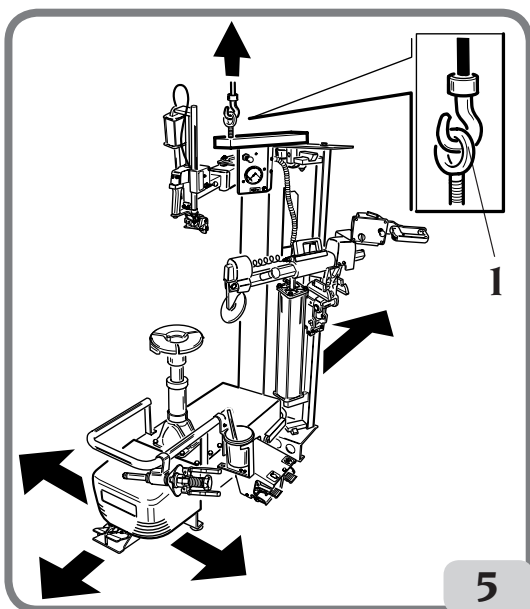


- Position the drawer units and rear tool tray using the screws as shown in figure 4d.
- Connect the pneumatic hose to the pedals unit respecting the correspondence of the colors (fig. 4e).
- Connect the pneumatic red hose to the tool drive cylinder (fig. 4f).
- Connect the pneumatic black hose to the tool head lifting cylinder (fig. 4g).

3.2. HOISTING/HANDLING

To remove the machine from the pallet connect to it by means of the lifting bracket 1 provided, as shown in fig. 5.

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



4. INSTALLATION

4.1. INSTALLATION CLEARANCES

WARNING

The machine must be installed in accordance with all applicable safety regulations, including but not limited to those issued by OSHA.

DANGER

RISK OF EXPLOSION OR FIRE. Never use the machine in an area where it will be exposed to flammable vapours (gasoline, paint thinners solvents, etc.). Never install the machine in a recessed area or below floor level.

IMPORTANT: for the correct and safe operation of the machine, the lighting level in the place of use should be at least 300 lux.

CAUTION

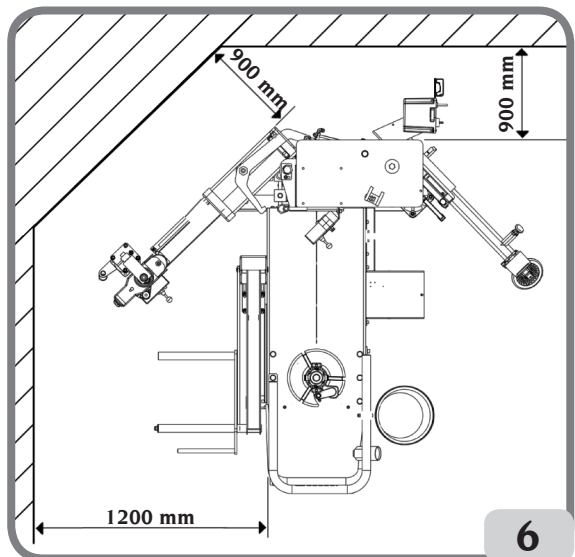
Do not install the machine outdoors. It is designed for use in an indoor, sheltered area.

Install the tyre changer in the chosen work position, complying with the minimum clearances shown in Fig.6.

The surface must have a load-carrying capacity of at least 1000 kg/m².

Work environment conditions

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



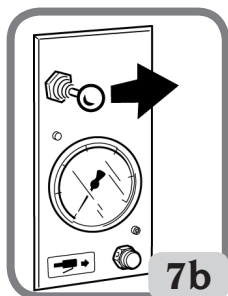
UK

4.2. FIRST INSTALLATION

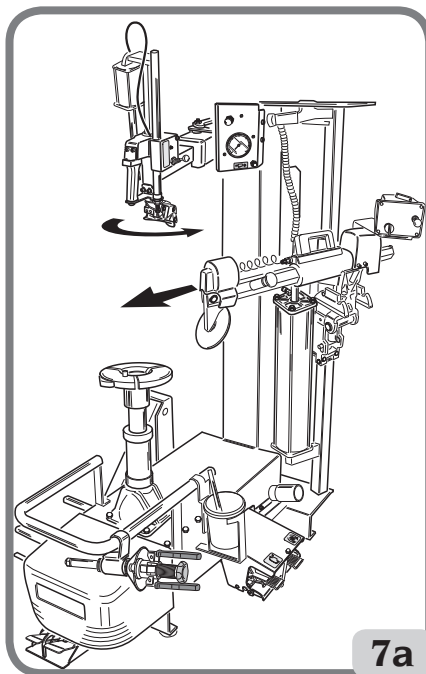


WARNING

Normally, the machine is supplied in the configuration as shown in fig. 7a: tool holder arm closed and arm opening control valve to the right (see fig. 7b), bead breaker arm fully forward.



7b



7a

These configurations may move during transport and the air can be released from the actuating pneumatic cylinders.

Before making the connection to the pneumatic network, check the configuration of the arms and controls as described in **fig. 7a-7b**.

NOTICE

No movement is obtained with this operation, but the pressure in the cylinders is restored; the operations can be carried out after this initial phase.



WARNING

Each time the machine remains disconnected from the pneumatic line for long periods, check the direct operation of the controls with the relative arm, following the pressure restoration procedure. Carry out the first control operation very slowly.

5. ARTIGLIO 50 DESCRIPTION

The ARTIGLIO 50 is a universal electro-pneumatic tyre changer for car, off-road vehicle and van wheels.

It is designed to work effectively on:

- Conventional wheels;
- Reverse rim wheels or wheels without central well - (using optional kit);
- Runflat tyres with reinforced sidewall - runflat tyres with internal support*.



WARNING

Special working procedures have been specifically studied for these wheels' systems. N.B. Clamping and/or demounting wheels in the vintage car category (cars out of production for more than 30 years) and some types of rally wheels and wheels of cars approved only for off-road use may be difficult and occasionally even impossible.

The ARTIGLIO 50 allows extremely easy bead breaking, demounting and mounting of any type of tyre in the aforesaid categories having rim diameter from 12" to 30 ".

In all stages, the ARTIGLIO 50 works with the wheel horizontal, clamped and perfectly centred on the turntable.

Wheel loading and unloading operations are simplified by an ergonomic wheel lift (optional kit) which reduces the operator effort required.

The key feature of the ARTIGLIO 50 is the elimination of the bead lifter lever.

Its absolutely innovative operating principle comprises:

- An effective system which clamps the wheel by means of its central well (an optional clamping kit is available for closed centre rims). This clamping system, manual in the basic version or pneumatic in the optional versions, allows the wheel to be centred and clamped using a simple handle, supporting a cone. Moreover, since the wheel rests on the contact zone only, breaking the bead on the underside with the wheel in the horizontal working position becomes much easier.
- A pneumatic bead breaker unit comprising a single arm fitted with the tilting bead breaker disc. This arm, with vertical travel, has two-way swing. The disc is placed on the top edge of the rim by hand, and once it has been clamped in position the 180° swinging movement also allows perfect positioning on the bottom edge. Bead breaking is assured and simplified by the manually operated controlled-penetration disc movement.
- A mount/demount head installed on a mobile arm which swings out to the side. The mount/demount head consists of one fixed supporting element used for mounting and another, mobile element, hinged onto the fixed part, which allows optimal demounting of the tyre without the use of the bead lifter lever*

* In a very few cases, a manual "help" accessory supplied as standard may be of use in simplifying demounting where excessive lubricant has been applied and/or where tyres are combined with unusual rims.

- A pedal-controlled pneumatically operated wheel lift (optional) which loads and unloads the wheel to and from the working position

UK

Thanks to this machine, the following goals are also achieved:

- Reduction of the physical effort on the part of the operator
- Protection of the rim and tyre

Each machine has a data plate Fig. 8, with information about the machine and some technical data.

As well as the manufacturer's details, the plate indicates:

Mod. - Machine model;

V - power supply voltage in Volts;

A - Input voltage in Amperes;

kW - Absorbed power in kW;

Hz - Frequency in Hz;

Ph - Number of phases;

bar - Operating pressure in bar;

Serial No. - Machine serial number;

ISO 9001 - Certification of the company's Quality System;

CE - EC marking.

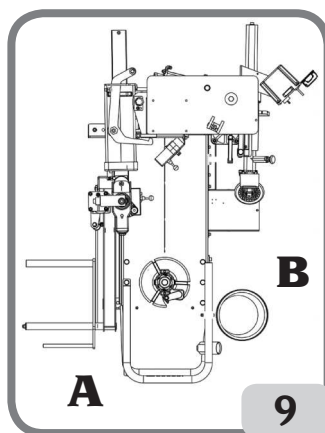


5.1. OPERATOR POSITION

Figure 9 shows the operator's positions during the various work phases:

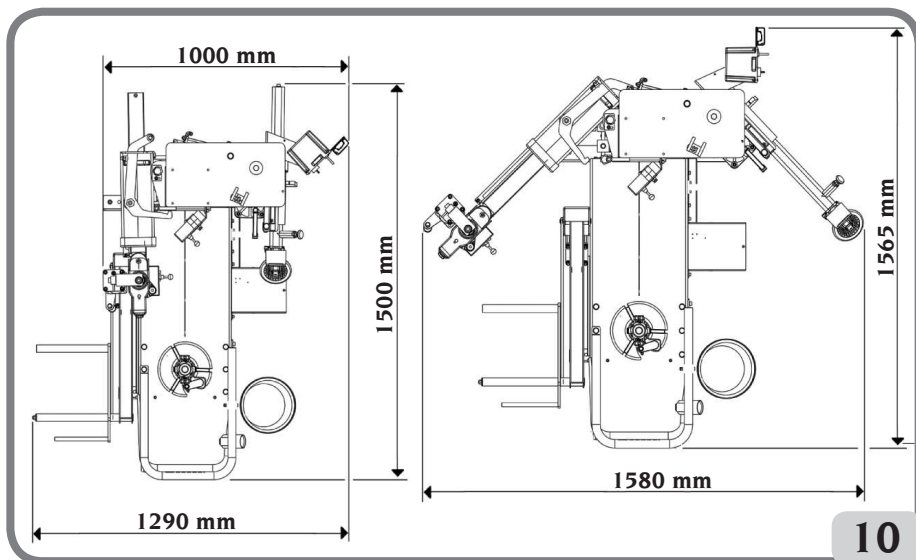
- A Wheel lifter operations
- B Bead breaker, tyre demounting and mounting, inflating area

In these conditions, the operator can carry out, monitor and check the outcome of all tyre change operations and take action in the case of any unforeseen events



5.2. OVERALL DIMENSIONS

- Length.....A = 1500 mm
- Length when fully open.....A1 = 1565 mm
- WidthB = 1000 mm
- Width (with wheel lift)B1 = 1290 mm
- Max width when fully open.....B2 = 1580 mm
- Height max.....H = 2000 mm



5.3. EQUIPMENT COMPONENTS

(MAIN WORKING ELEMENTS OF THE MACHINE) - FIG. 11

WARNING

Get to know your machine: knowing exactly how the machine works is the best way to guarantee safety and machine performance.

Learn the function and location of all commands.

Carefully check that all controls on the machine are working properly.

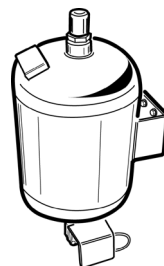
The machine must be installed properly, operated correctly and serviced regularly in order to prevent accidents and injuries.

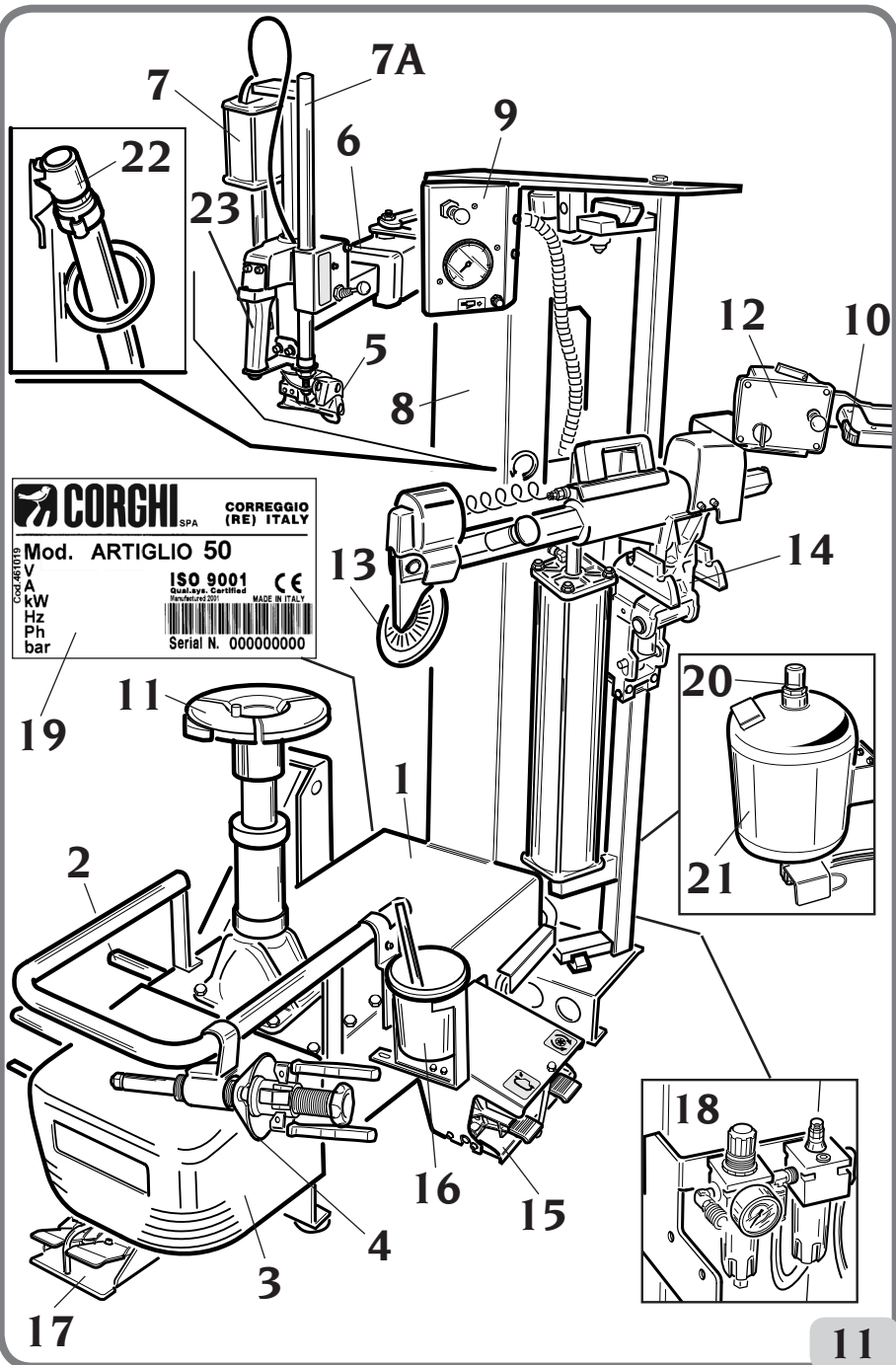
UK

WARNING

EXPLOSION HAZARD

For technical characteristics, warnings, maintenance and any other information about the air tank (optional), consult the relevant operator and maintenance manual provided with the accessory documentation.





The machine's main operating parts are shown in fig. 11.

- 1 Body.
- 2 Wheel lift.
- 3 Motor guard.
- 4 Centring handle.
- 5 Mobile mount/demount head.
- 6 Side-swinging tool head arm.
- 7 Demount tool control cylinder.
- 7a Tool head descent cylinder.
- 8 Supporting column.
- 9 Panel with arm swing control and pressure gauge.
- 10 Bead breaker unit disengagement control.
- 11 Wheel support and centring unit.
- 12 Bead breaker unit control console.
- 13 Bead breaker disc.
- 14 Tilting bead breaker unit.
- 15 Pedal control unit.
- 16 Grease container.
- 17 Wheel lift control.
- 18 Filter Regulator + Lubricator unit.
- 19 Dataplate.
- 20 Relief valve.
- 21 Air tank .
- 22 Doyfe union.
- 23 Vertical arm up/down handle.



A Up
B Down
C Blocked

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5.4. CONTROLS

5.4.a. SWING CONTROL AND PRESSURE GAUGE PANEL (Fig. 12a)

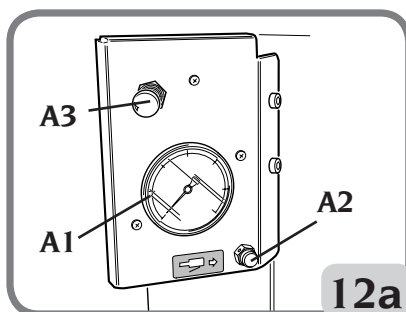
A1 Wheel pressure gauge



A2 Deflation button



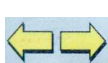
A3 Tool arm opening control valve



5.4.b. BEAD BREAKER DISC UNIT FUNCTIONAL CONTROLS (Fig. 12b)



B1 Bead breaker disc penetration control

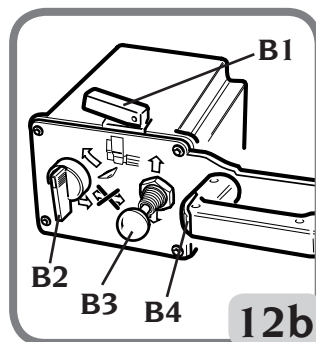


B2 Bead breaker disc positioning locking/release control

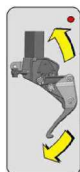


B3 Lever controlling vertical movement of the bead breaker unit

B4 Bead breaker unit release control

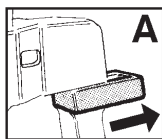


5.4.c. DEMOUNTING/MOUNTING UNIT FUNCTIONAL CONTROL (Fig. 12c)



C1 - Demount head control

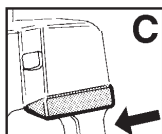
C2 - Control for locking the demount head in the ideal position



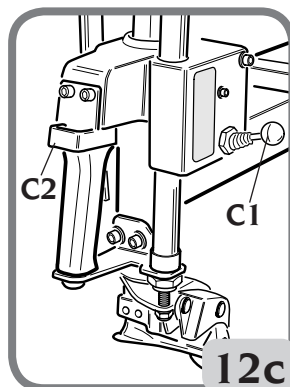
To lift the tool head arm and unlock horizontal arm



To lower the tool head arm

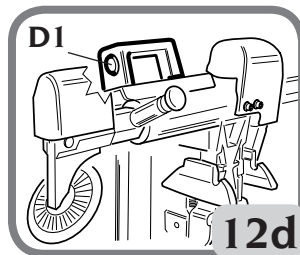


To lock the tool head arm and horizontal arm



5.4.d. BEAD BREAKER UNIT TILTING CONTROL (Fig. 12d)

D1 Bead breaking unit tilting handle.



5.4.e. PEDAL UNIT (Fig. 12e)



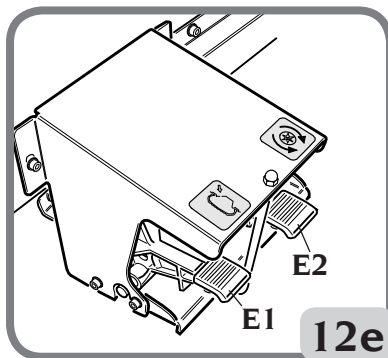
E1 - Inflation pedal



E2 - Turntable rotation pedal

The pedal has 4 different operating positions, corresponding to 4 different rotation speeds:

- Pedal raised (unstable position): slow anti-clockwise rotation. If the pedal is kept raised for more than 4 seconds, rotation gets faster (always anticlockwise).
- Pedal in the rest position (stable position): turntable stopped.
- Pedal gently pressed downwards (unstable position): slow clockwise rotation.
- Pedal pressed entirely downwards (unstable position): fast clockwise rotation.



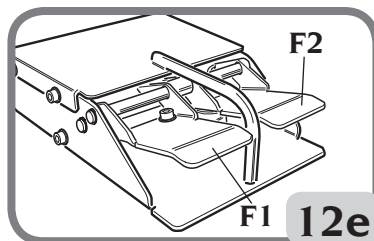
5.4.f. WHEEL LIFTER CONTROL PEDAL (Fig. 12f)

UP

F1 Wheel lifting pedal

DOWN

F2 Wheel lowering pedal



UK

5.5. OPTIONAL ACCESSORIES

For a complete list of optional accessories supplied on request, see the document "ORIGINAL ACCESSORIES FOR THE ARTIGLIO 50 TYRE CHANGER".

6. BASIC PROCEDURES - USE



WARNING

CRUSHING HAZARD:

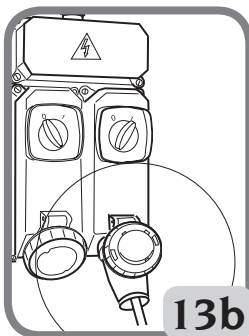
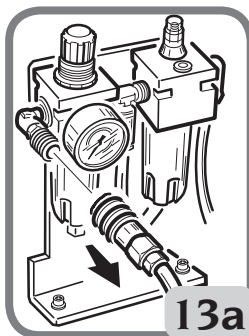
Some parts of the machine, such as the head, the bead breakers and turntable moves during operations.
Do not approach moving parts of the machine.



WARNING

AVOID PERSONAL INJURY Before working on the machine:

- disconnect the power supply plug (13a);
- isolate the compressed air line by disconnecting the shutoff valve (quick-release connector) (fig. 13b).



WARNING

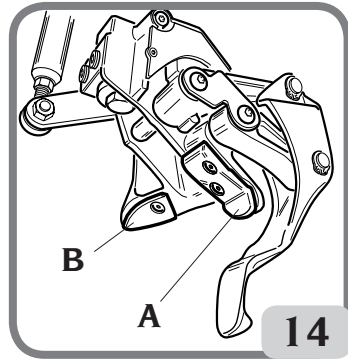
Avoid unintended machine movement or failure. Use only original CORGHI tools and equipment.

6.1. PRELIMINARY CHECKS

Check that there is a pressure of at least 8 bar on the Filter Regulator pressure gauge.
If the pressure is lower, the operation of some automatic procedures is not guaranteed.
After the correct pressure has been restored, the machine will function properly.
Check that the machine has been adequately connected to the power mains.

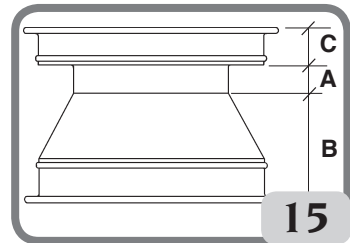
NOTICE

To avoid damage to the rims, we recommend to replace the plastic inserts beneath the head (fig. 14 A-B) every 2 months, or sooner in case of excessive wear and tear. The inserts for the replacement are supplied with the machine.



6.2. DECIDING FROM WHICH SIDE OF THE WHEEL THE TYRE MUST BE DEMOUNTED

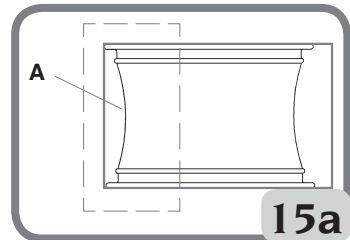
See Fig. 15. Find the position of rim well A on the wheel rim. Find the largest width B and the smallest width C. The tyre must be mounted and demounted with the wheel on the turntable with the smallest width side C facing upwards.



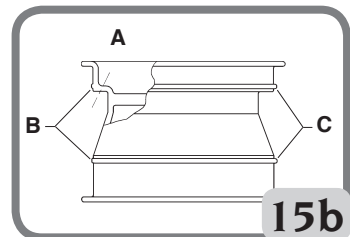
SPECIAL WHEELS

Alloy rim wheels: some alloy rim wheels have minimal rim wells A or no rim wells at all - Fig. 15a. These rims are not approved by DOT (Department of Transportation) standards.

The initials DOT certify that tyres comply with the safety standards adopted by the United States and Canada (these wheels cannot be sold on these markets).

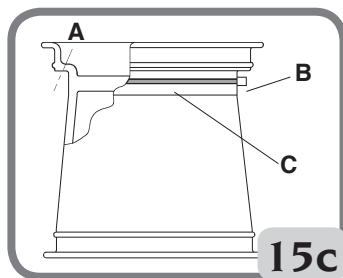


High-performance wheels (asymmetric curvature) - Fig. 15b: Some European wheels have rims with a very pronounced curvature C, except in the area of the valve hole A where the curvature is less pronounced B. On these wheels the bead must first be broken in the area of the valve hole, on both the top and bottom sides.



UK

Wheels with pressure sensor - Fig. 15c. To operate correctly on these wheels and avoid damaging the sensor (which is incorporated in the valve, fixed with the belt, glued inside the tyre, etc.) appropriate mounting/demounting procedures should be followed (ref. Approved mounting/demounting procedure for runflat and UHP tyres)



NOTICE

See the section “TABLE FOR USING CENTRING AND CLAMPING ACCESSORIES ACCORDING TO RIM TYPE” in this manual.

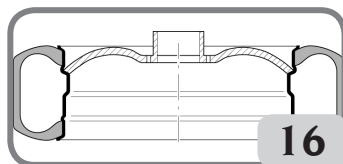


WARNING

AVOID PERSONAL INJURY

It is forbidden pairs or uses centring and clamping accessories other than those specified in the “tables for using centring and clamping accessories according to rim type”

When working with “easily deformable” rims (i.e. a central hole with thin, projecting edges - see Fig. 16) we recommend using the universal turntable for blind rims (see the section “TABLE FOR USING CENTRING AND CLAMPING ACCESSORIES ACCORDING TO RIM TYPE” on this manual).



NOTICE

The TPMS device (optional accessory) can be used to check the proper operation of pressure sensors.

NOTICE

Remove any old balancing weights from the rim.

6.3. LOADING AND CLAMPING THE WHEEL

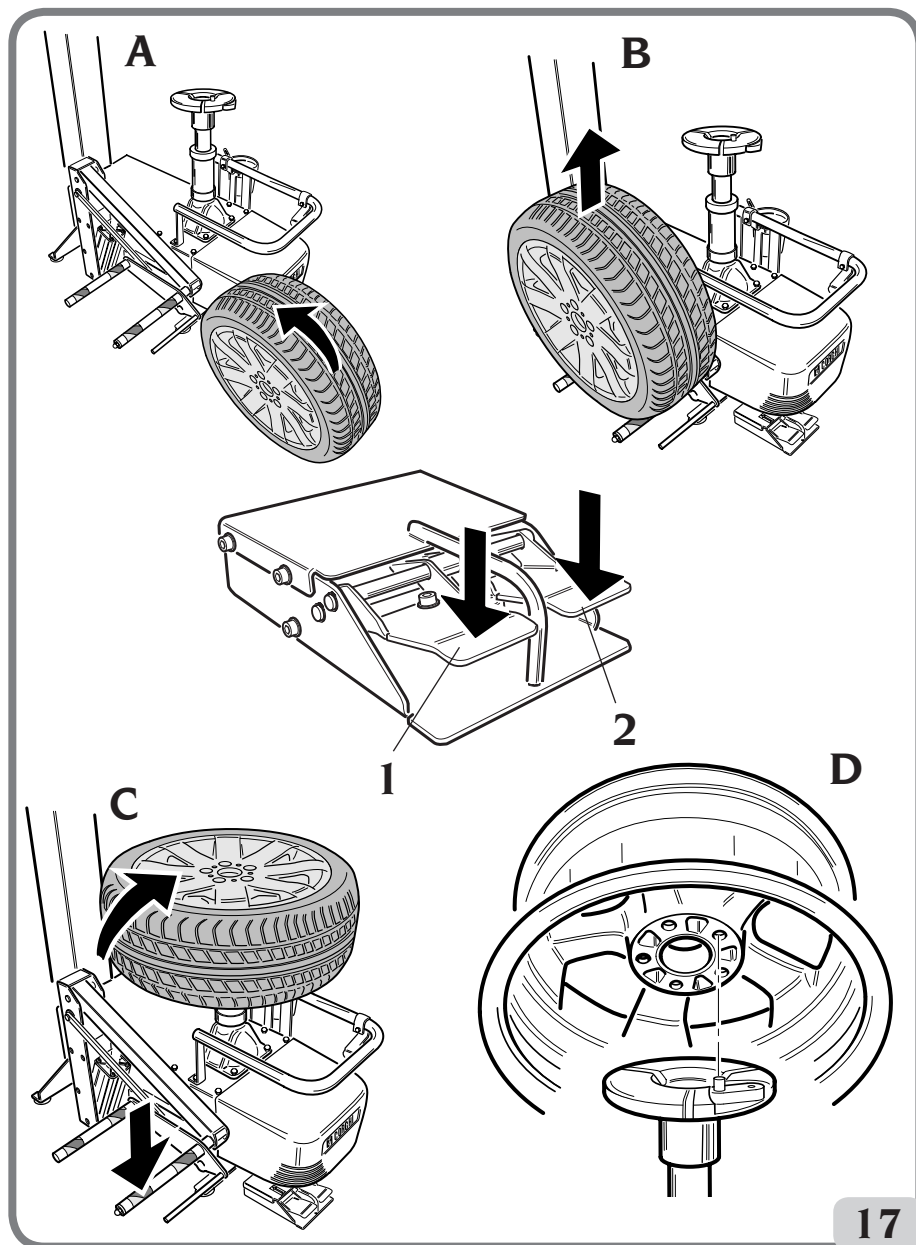
Loading the wheel (fig.17)

A - Place the wheel on the lift.

B - Lift the wheel by operating the pedal (1).

C - Transfer the wheel to the turntable by hand and lower the lift by operating the pedal (2).

D - When positioning the wheel on the turntable, also take care to align the mobile pin, on the edge of the turntable, in one of the fixing bolt holes in the rim.



UK

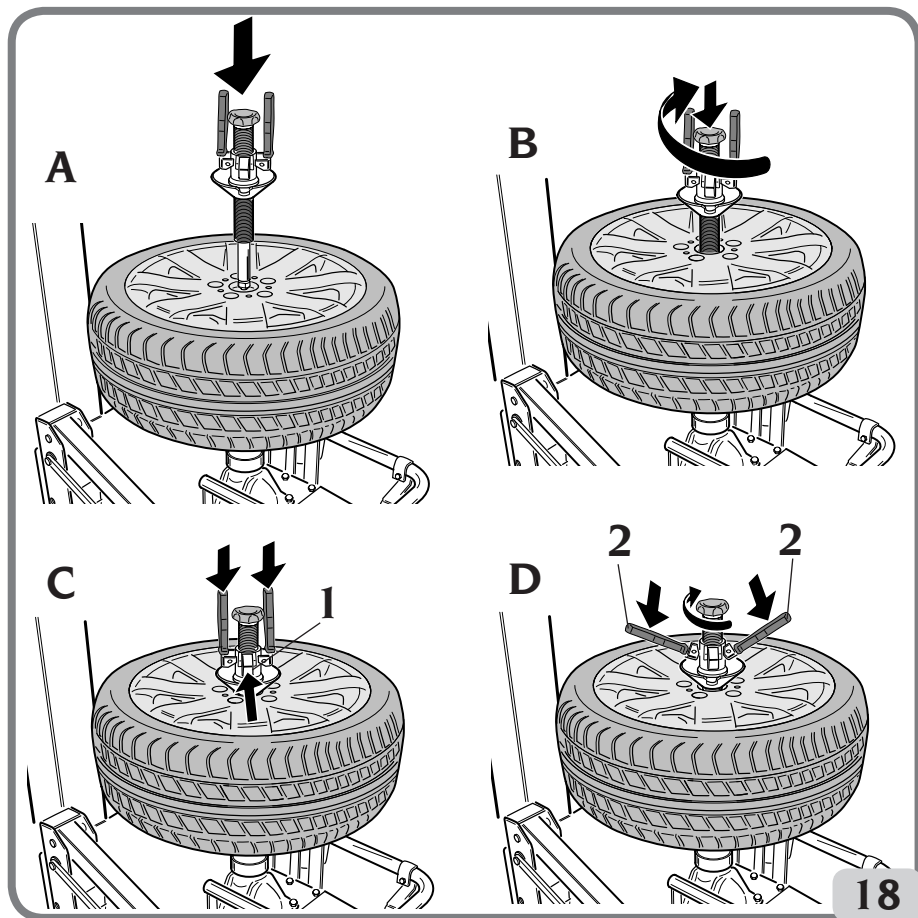
Clamping the wheel on the turntable (fig.18)

A - Fit the clamping device into the drop centre of the wheel.

B - Turn clockwise the device for correct engagement with the turntable.

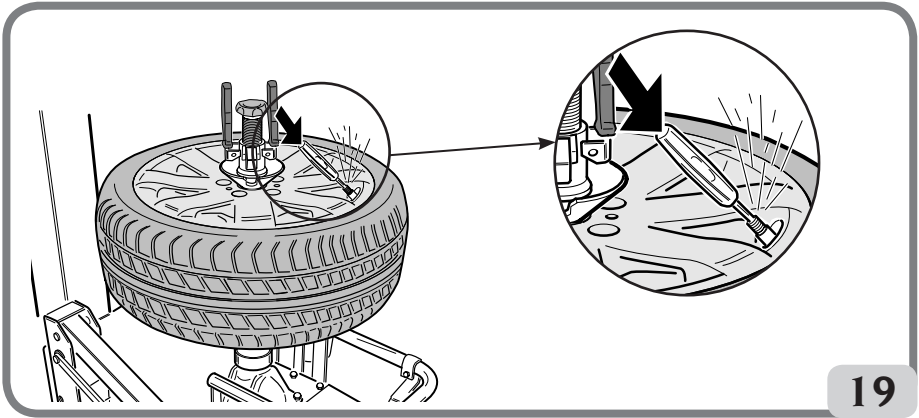
C - By hand, move the centring cone into pos. on the rim by moving the retainers 1.

D - Tighten the clamping device by turning the handles 2 clockwise.



6.4. DEFLATING THE TYRE

Remove valve core to fully deflate the tyre (Fig. 19).



6.5. BEAD BREAKING

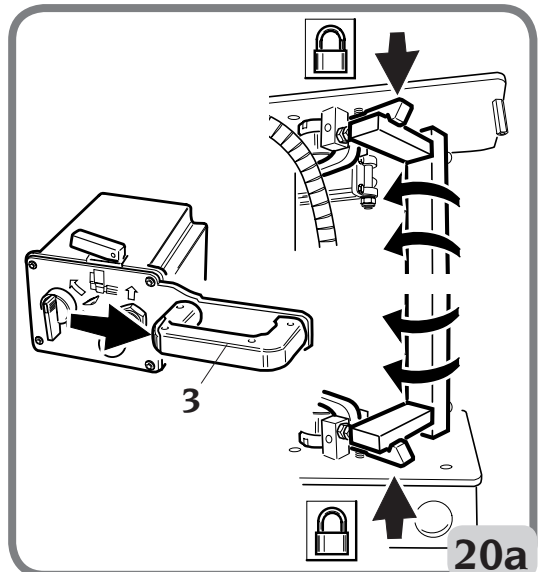


WARNING

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

Positioning the bead breaker

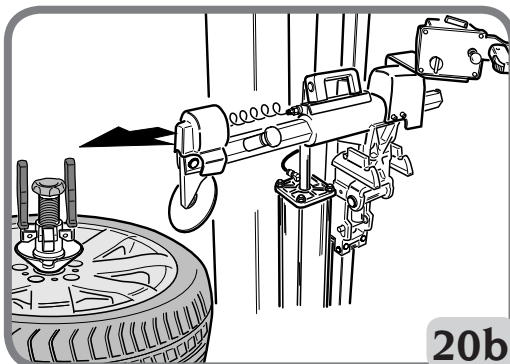
- Move the bead breaker unit from the rest position to the working position by using the handle 3 (fig. 20a).



UK

-Move the disc towards the rim:

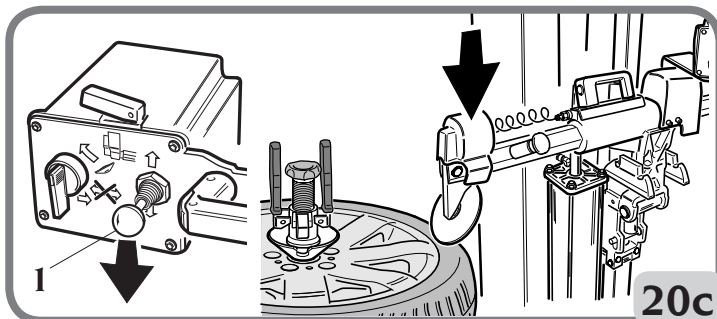
- swing horizontally by hand (fig. 20b)



20b

- move verti-

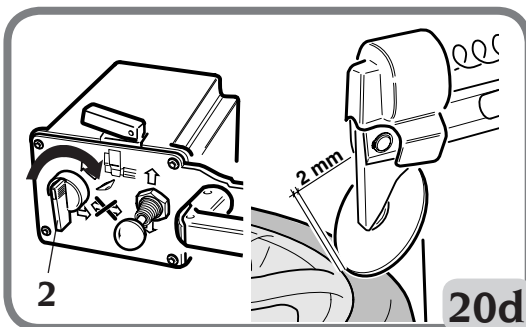
cally using control (1, fig. 20c)



20c

- When the chosen distance is reached (a gap of **2-3 mm** should be left between the edge of the rim and the bead breaker disc, op-

erate the control (2, fig. 20d) to prevent further horizontal movement.



20d

Breaking the top bead



- Preload the bead breaker disc using control (2, Fig. 21). The tyre should be pressed down by about 5 mm.



- Start disc penetration (1, Fig. 21) and then start wheel rotation (3,



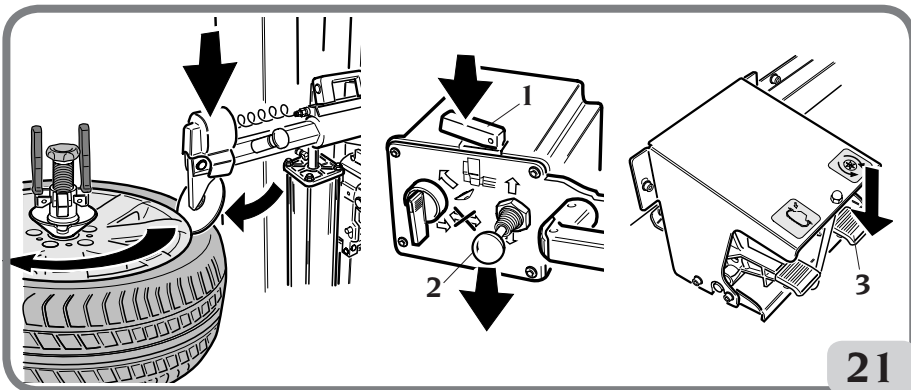




Fig. 21), while at the same time lowering the bead breaker disc a little at a time (using

control  (2, Fig. 21).

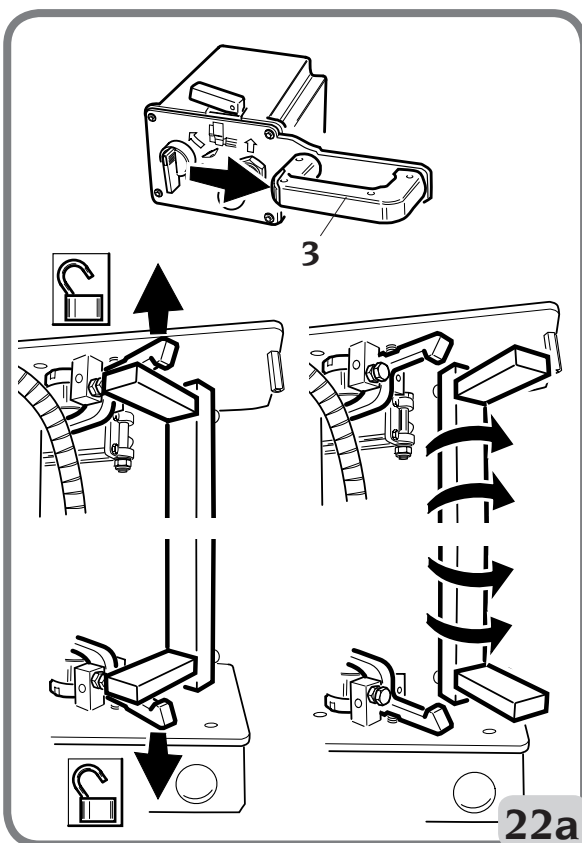
- Perform at least one complete revolution to break the bead. The rim bead should be greased during rotation.

- Release the penetration

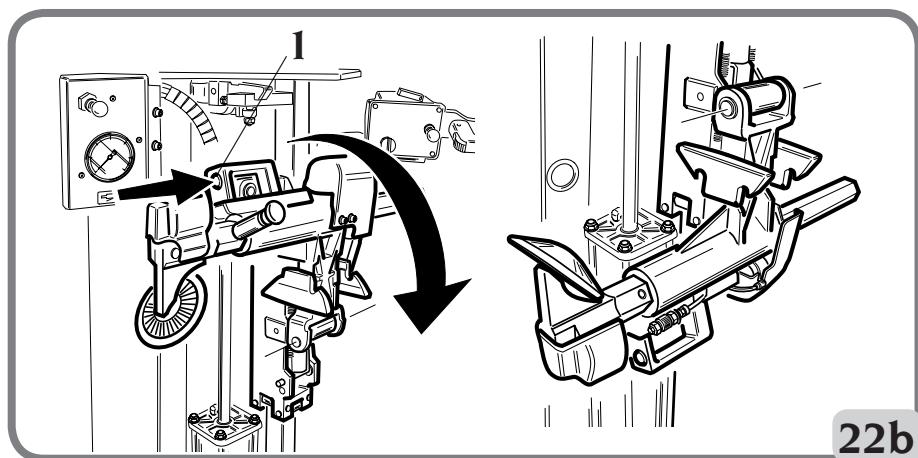
control  (1, Fig. 21).

Tilting the bead breaker unit

- Move the bead breaker unit from the working position to the rest position by using the handle 3 (fig. 22a).



- Press the button (1, Fig. 22b) and guide the bead breaker unit during rotation through 180° until it engages again.



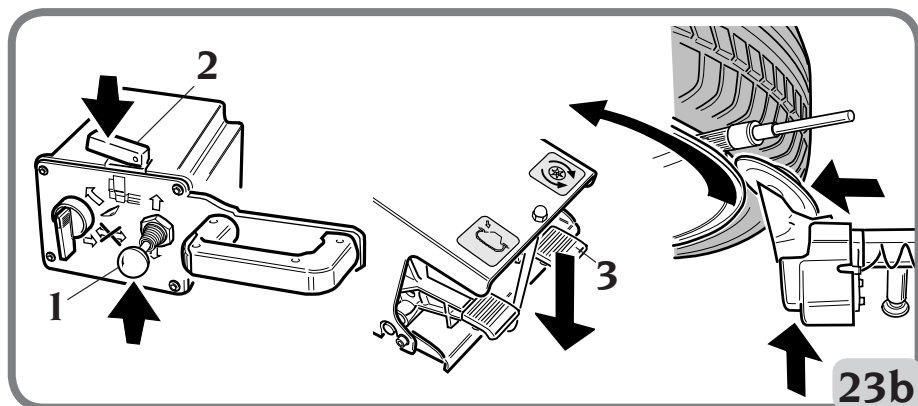
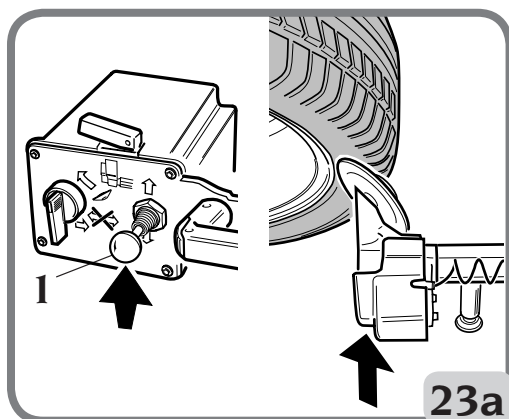
- Return the bead breaker unit to the working position.

Breaking the bottom bead


- Apply pressure to the tyre with the



disc using control (1, Fig. 23a). The tyre should be pressed down by about 5 mm.



- Obtain disc penetration by keeping button  (2, Fig. 23b) pressed, start to

rotate the wheel  (3, Fig. 23b) and at the same time raise the bead breaker disc a little at a time



(1, Fig. 23b) until the bead is completely broken (B). The rim bead should be greased during rotation.

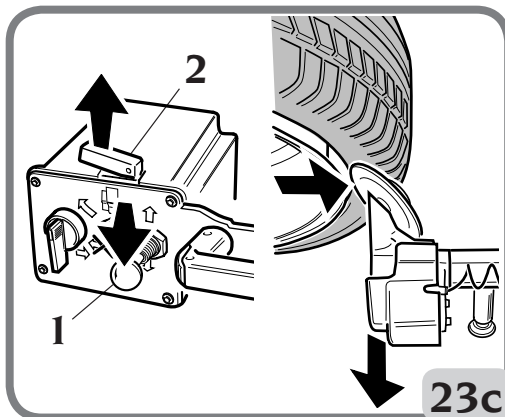
- Release the penetration button



(2, Fig. 23c) and lower the disc using control

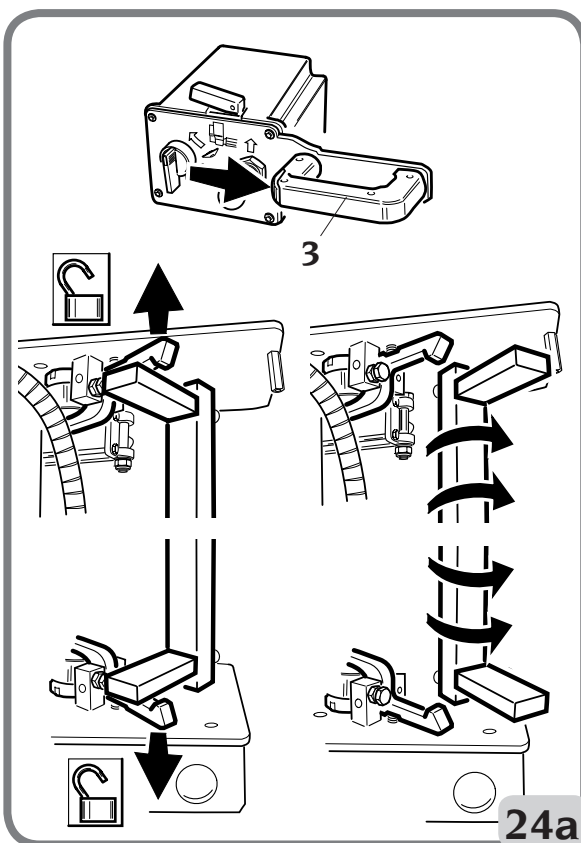


(1, Fig. 23c).



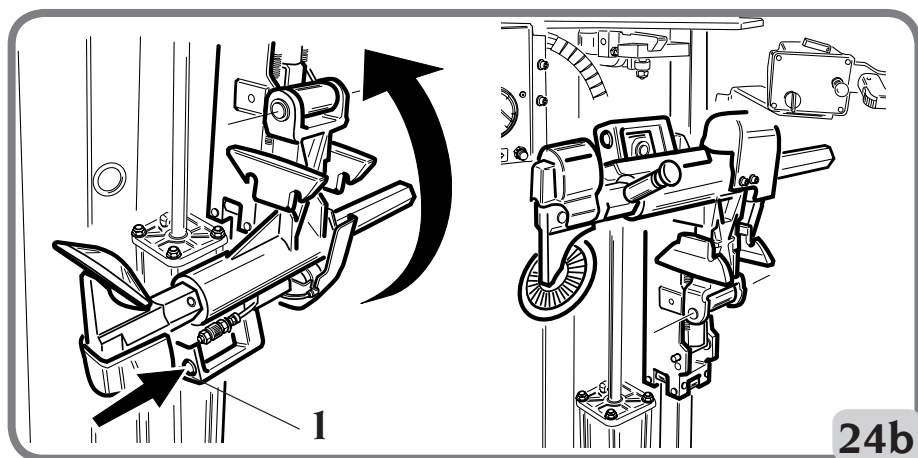
Tilting the bead breaker unit

- Move the bead breaker unit from the working position to the rest position by using the handle 3 (fig. 24a).



UK

- Press the button (1, Fig. 24b) and guide the bead breaker unit during rotation through 180° until it engages again.



- Return the bead breaker unit to the working position.

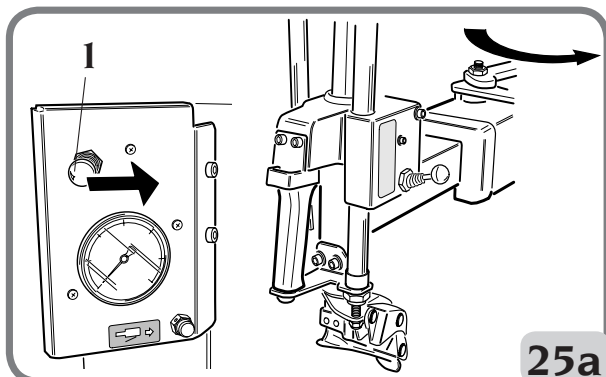
6.6. DEMOUNTING

Positioning the tool

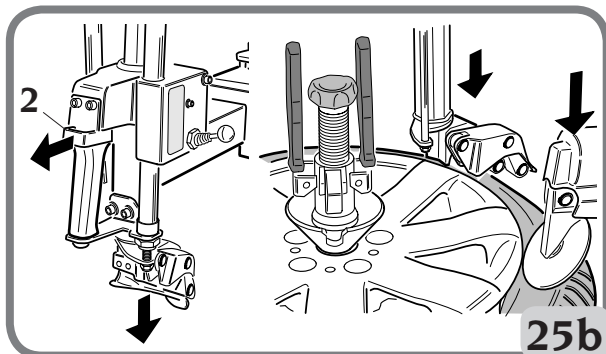
- Move the tool head into the working position



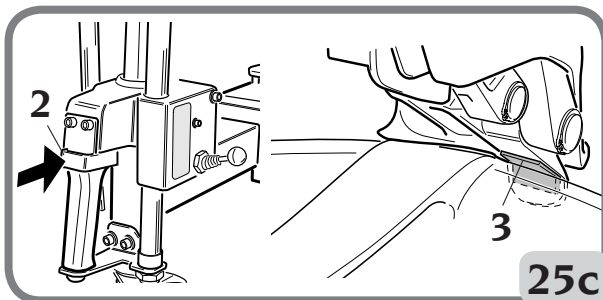
(1, Fig. 25a).



- It may be useful to press the tyre down to make room for the tool.
- Release the tool by pulling block (2, Fig. 25b) towards you.



- For correct tool positioning, the insert (3, Fig. 25c) must be against the edge of the rim in the point where the vertical wall starts.
- Press the block (2, Fig. 25c) to fix the tool position.



Engaging the top bead

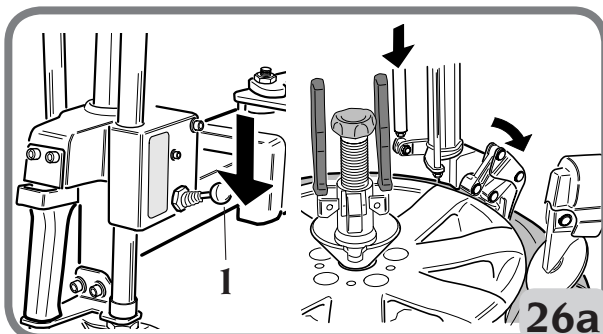
- Maintaining the pressure of the bead breaker disc on the tyre, create enough space to allow the demount tool to be rocked.



- Using control (1, Fig. 26a) rock the demount tool.
- It is important to rotate the

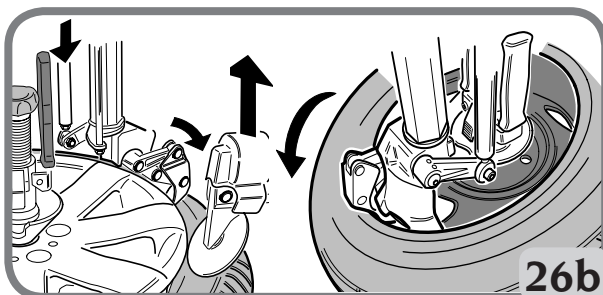


turntable slightly to facilitate engagement of the bead.



- For easier bead engagement, it might be very helpful to use the bead breaker disc on the underside of the tyre (Fig. 26b).

- To do this, repeat the steps up to point **"Tilting the bead breaker unit."** (Fig. 24b).



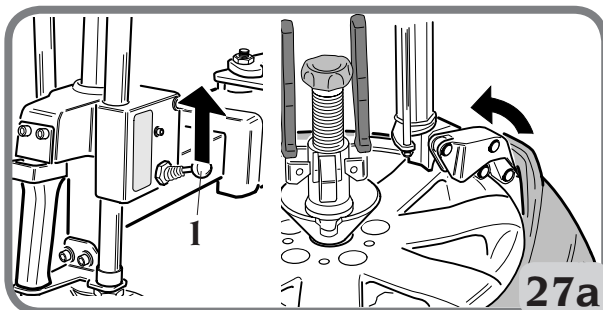
UK

Demounting the top bead

- Check that the tool has engaged with the tyre bead.



- Operate control (1, Fig. 27a) to prepare for the



subsequent demounting.

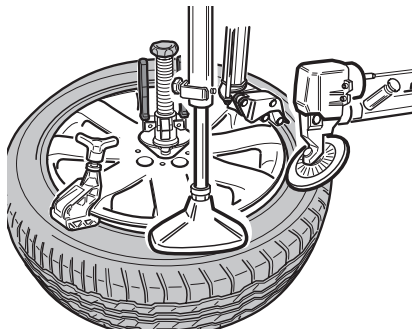


WARNING

This must be done with the wheel at a standstill and not rotating.

NOTICE

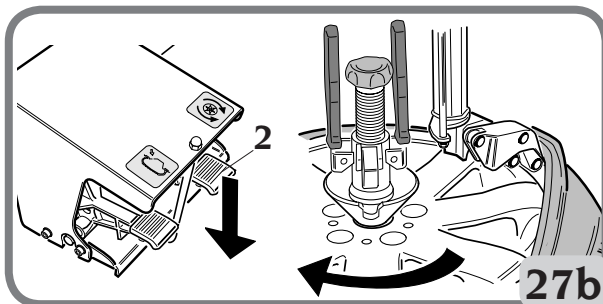
During demounting, if the tool is unable to completely overturn the tyre bead to allow demounting to start, the tyre bead may still be, or just have been, inserted at 180° to the demounting zone. In this case it is essential to restore the ideal condition, with the tyre bead inside the well of the rim. This operation can be assisted with any tool you wish (clamp provided, pliers, bead presser or lever).



- Now, and only now, operate

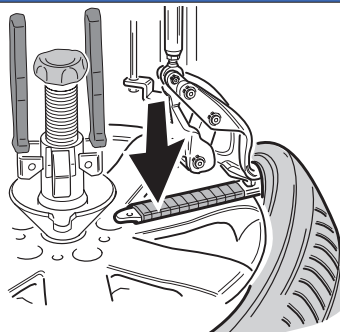


ate the pedal (2, Fig. 27b) until the bead is completely demounted.



NOTICE

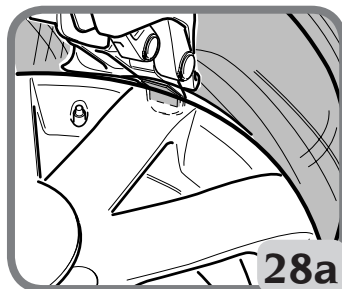
During demounting, over-lubrication and/or an unusually shaped rim edge may cause the tyre to slip on the rim, making demounting difficult. First, try using the bead breaker disc in an upward direction to raise the tyre. Otherwise, to speed up the procedure simply place the PTS accessory between the tyre and the edge of the rim. This will allow the bead to be lifted quickly off the rim so that it can be demounted.



- Here again, it might be helpful to use the bead breaker disc on the underside of the tyre.

Engaging the bottom bead (Demounting using the tool head)

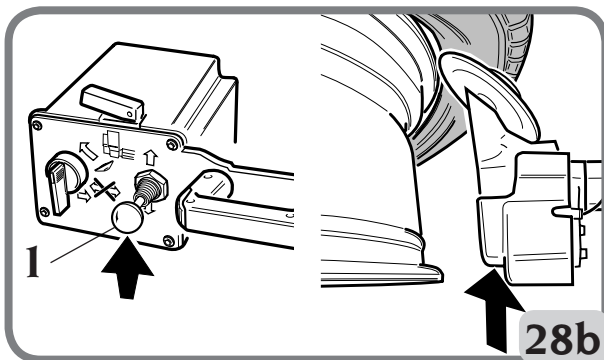
- Place the tool on the edge of the rim (Fig. 28a).



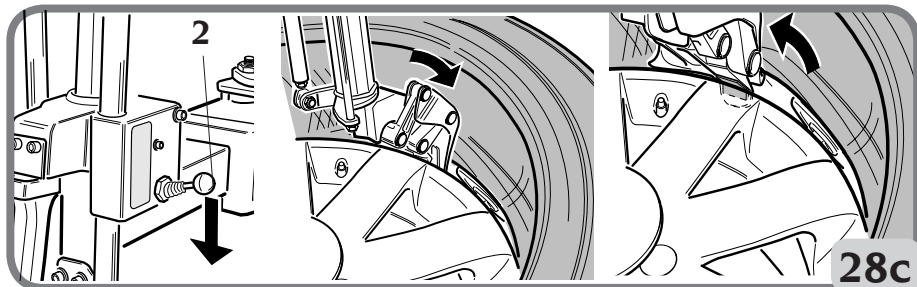
- Push the bead breaker disc against the bottom bead



(B) using control (1, Fig. 28b).

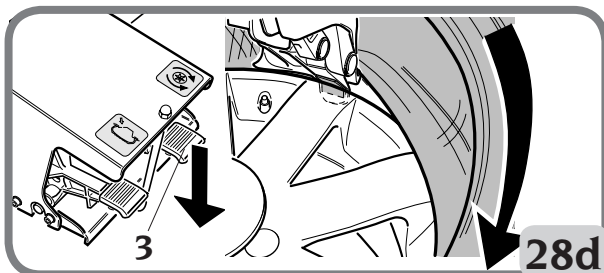


- Using control (2, Fig. 28c) operate the hook and engage the bottom bead of the tyre.



UK

- Operate the pedal (3, Fig. 28d) to rotate the wheel until the tyre is completely demounted from the rim.

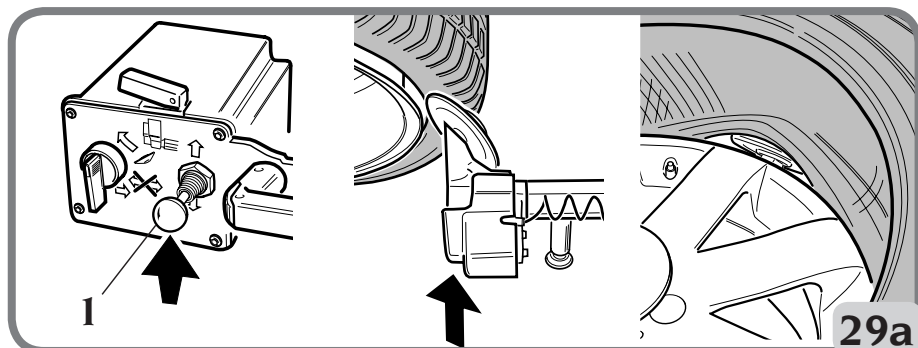


NOTICE

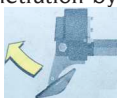
Any noise heard when the tool head engages with the tyre is normal. The noise is made by the mechanical return of the tool and not because the tool has hit the rim. Even if the tool does touch the rim as the tyre is engaged, this will not damage the rim in any way. The pressure applied is very low.

Demounting the bottom bead (Rapid system when possible)

- Operate control 1 and raise the bottom bead of the tyre (A) until it is level with the top bead of the rim (B).



- Obtain disc penetration by keeping button (2, Fig. 29b) pressed.



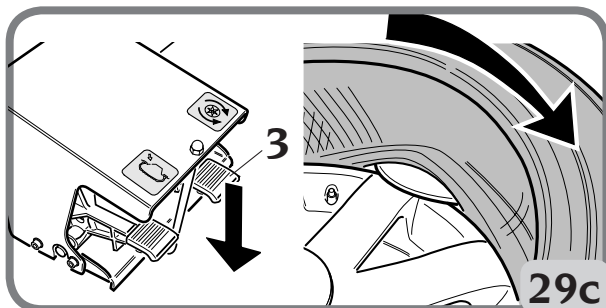
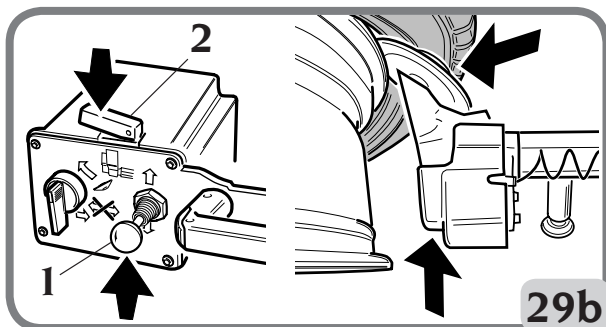
- Keep button (2, Fig. 29b) pressed, start to rotate the wheel by pressing



pedal (3, Fig. 29c) and at the same time raise the disc a little at a time

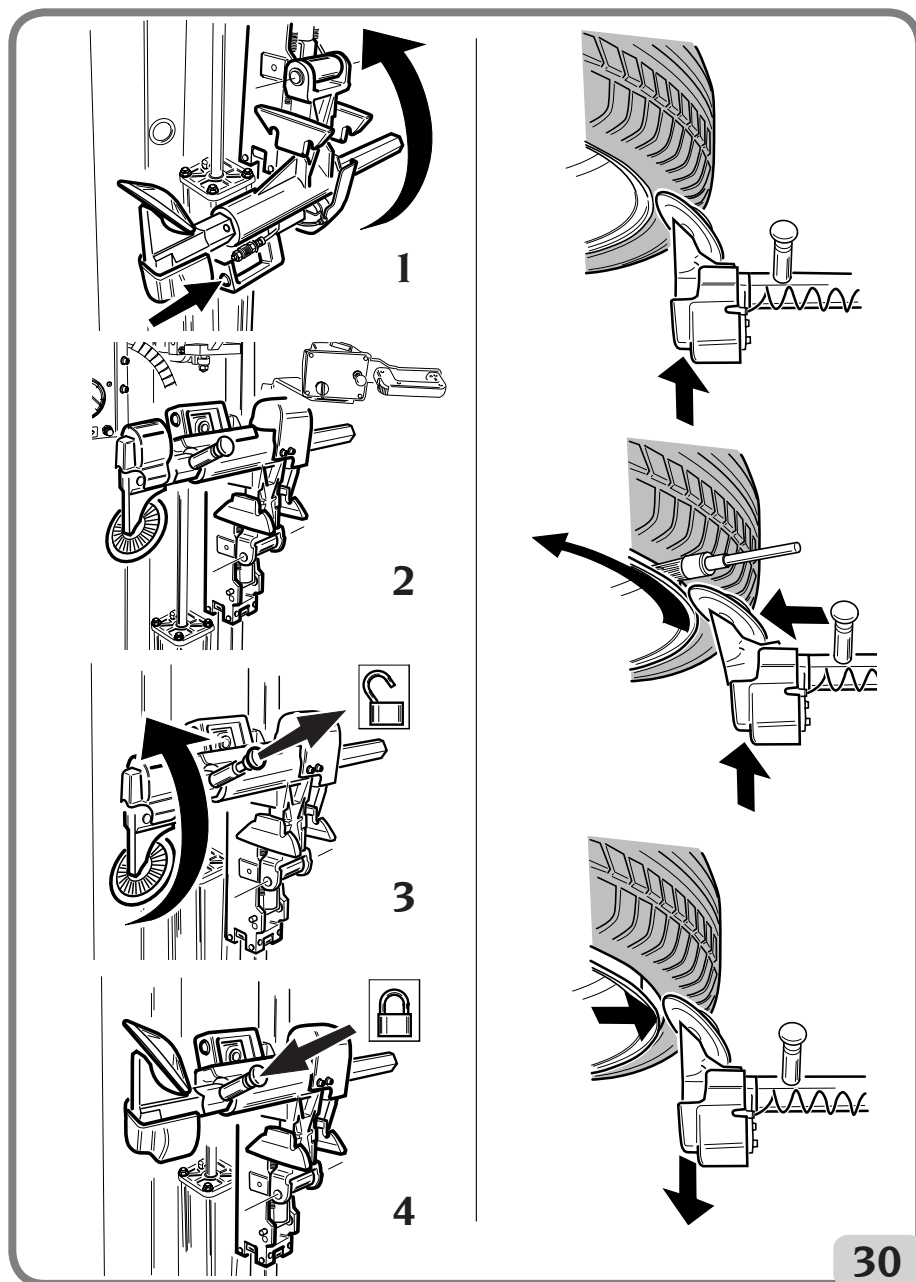


using control (1, Fig. 29b). Rotate until the tyre is completely demounted.



Demounting the bottom bead (fig.30)

- For reverse rims the disc stroke range can be increased by turning the bead breaker and tipping the disc over. (3-4, Fig. 30).

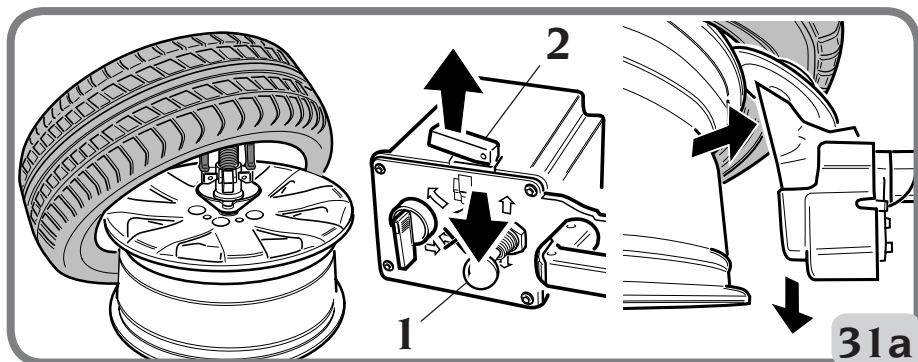


UK

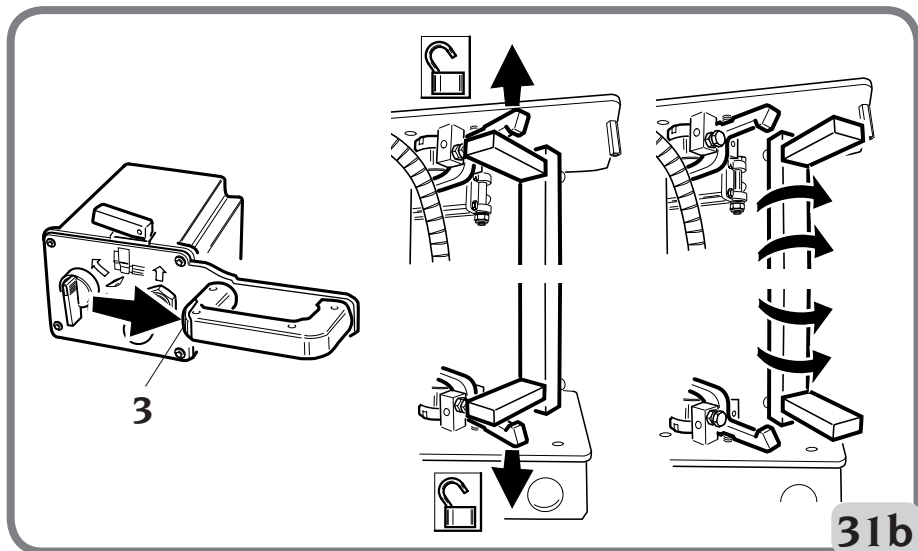
Demounting completed

- When demounting is completed release the penetration button  (2, Fig. 31a)

and lower the bead breaker disc using control  (1, Fig. 31a).



- Bring the bead breaker unit to the rest position by pressing button 3, Fig. 31b.



6.7. MOUNTING



DANGER

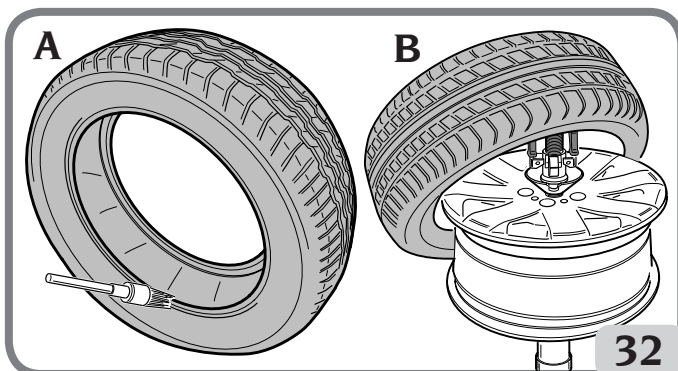
EXPLOSION HAZARD. Always check that the tyre/rim combination is correct in terms of compatibility (tubeless tyre on tubeless rim, tube type tyre on tube type rim) and geometrical size (keying diameter, cross-section width, Off-Set and shoulder profile) before mounting.

AVOID PERSONAL INJURY OR DEATH.

Also check that rims are not deformed, that their fixing holes have not become oval, that they are not encrusted or rusty and that they do not have sharp burrs on the valve holes. Check that the tyre is in good condition with no signs of damage.

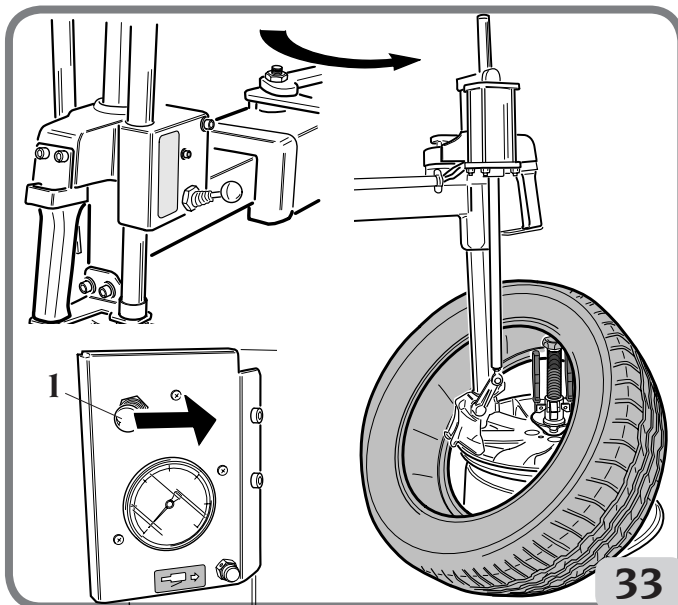
Preparing the tyre (Fig. 32)

- Grease both the tyre beads (A).
- Place the tyre on the rim (B).



Positioning the tool head (Fig.33)

- Operate control 1, Fig. 33 to move the tool head into the working position. The tool is already in the correct position for mounting the tyre, unless the type of rim has been changed.



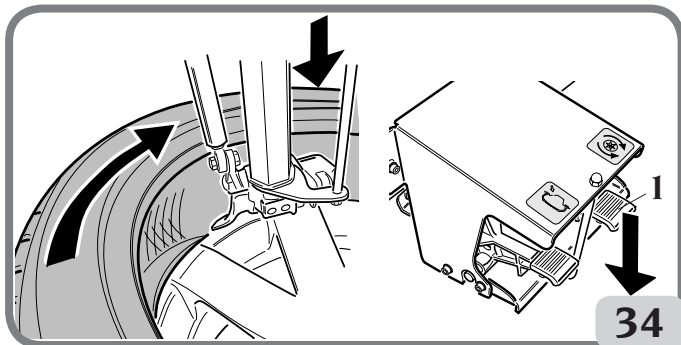
UK

Mounting the bottom bead (Fig.34)

- Place the bottom bead of the tyre underneath the tool and at the same time apply a little pressure to the tyre by hand while starting to rotate the



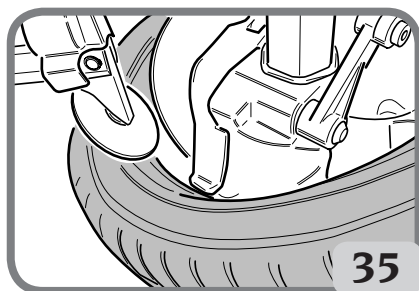
wheel (1, Fig. 34) for easier bead insertion.



- Rotate until tyre mounting is complete.

Positioning the top bead (Fig.35)

- Position the top bead of the tyre as clearly shown in fig. 35.

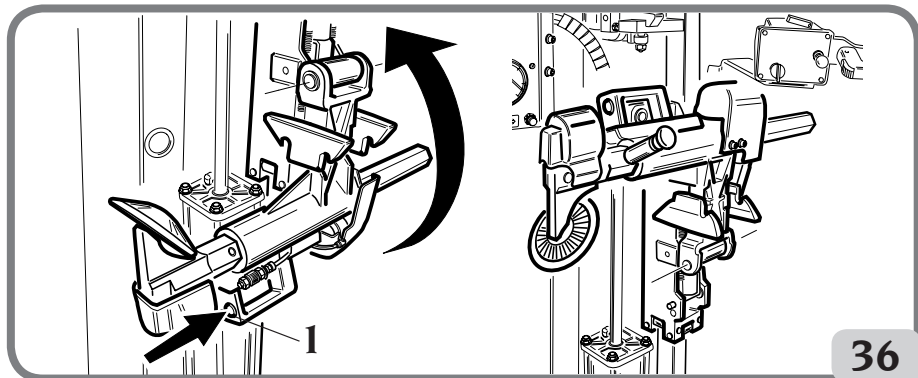


NOTICE

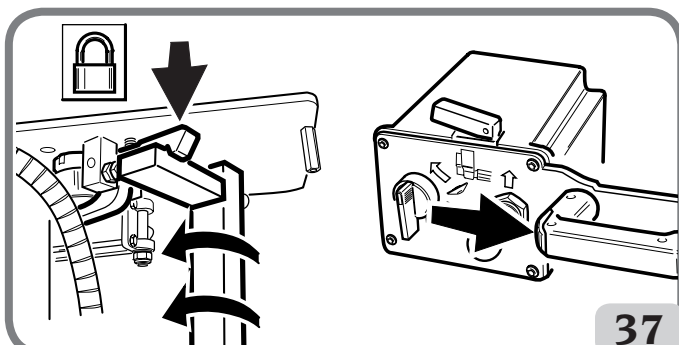
Take care that the tyre does not slip underneath the tool.

Tilting the bead breaker unit (fig.36)

- Press the button (1, Fig. 36) and move the bead breaker unit into the top working position.



Return the bead breaker unit to the working position (fig.37)



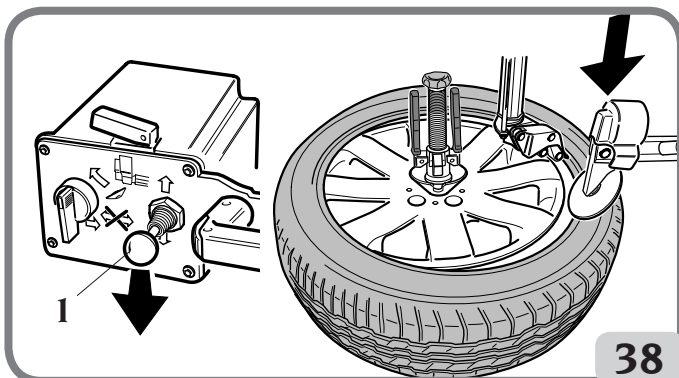
37

Positioning the bead breaker disc (fig.38)

- Lower the bead



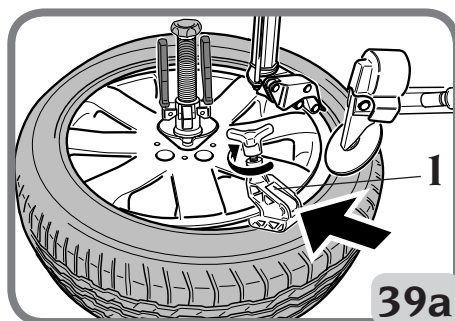
breaker disc (1, Fig. 38) until it is level with the well of the rim and make enough room for the clamp to be inserted.



38

Mounting the top bead

- Fit the clamp (1, Fig. 39a) in the space created by the bead breaker disc.

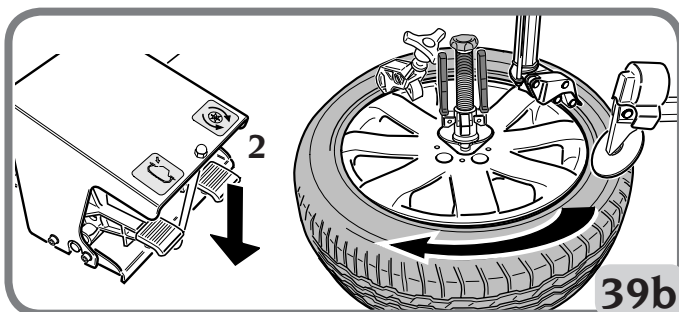


39a

- Start rotation



(2, Fig. 39b) to mount the bead until the clamp is close to the tool.





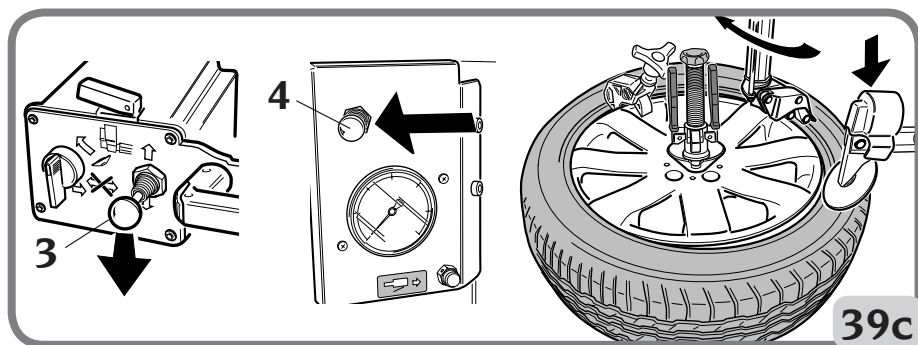
39b


UK


NOTICE

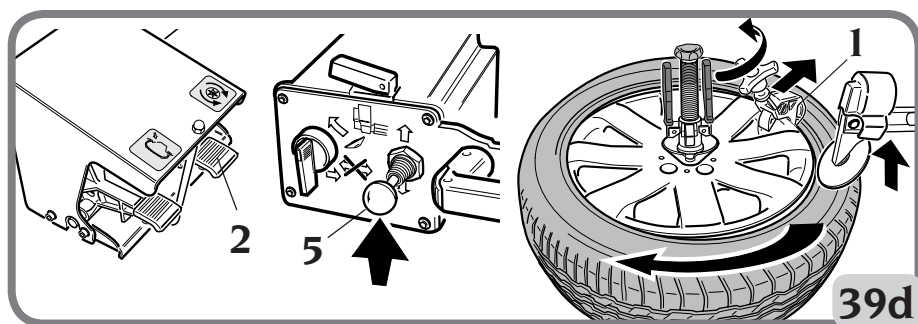
For large (over 19") or particularly difficult wheels, a second clamp may be useful.

- Apply more pressure to the tyre using control  (3, Fig. 39c) and move the tool head to the rest position using control  (4, Fig. 39c).

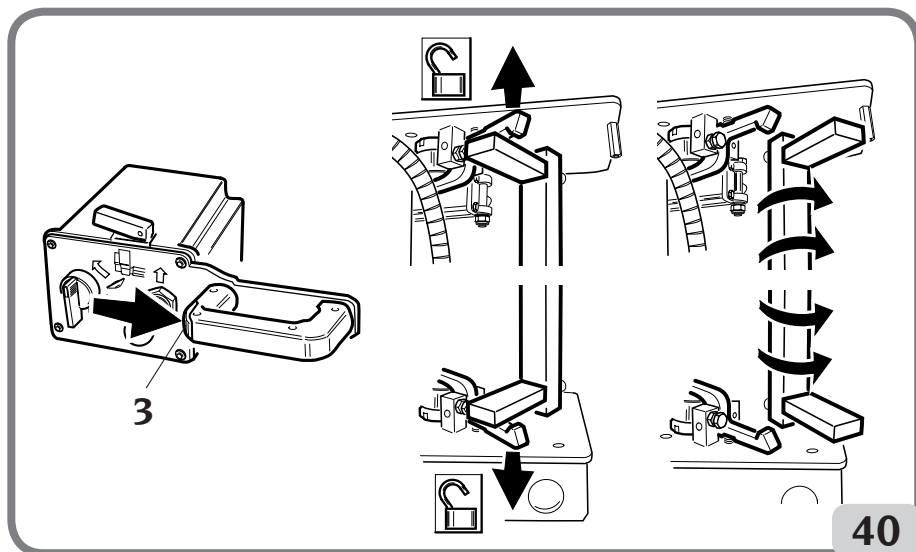


- Start rotation again  (2, Fig. 39d) until the clamp (1, Fig. 39d) is close to the bead breaker disc and remove the clamp.

- When mounting is complete, raise the bead breaker disc using control  (5, Fig. 39d).



- Bring the bead breaker unit to the rest position by pressing button 3, Fig. 40

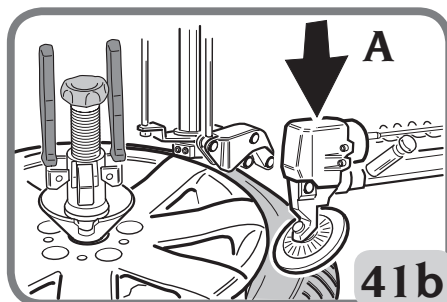
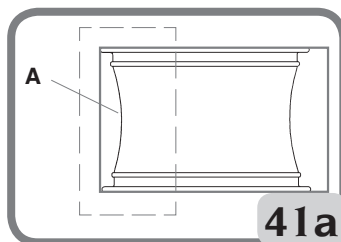


Tyre inflation

- For inflation, see “INFLATION” section

6.8. “EXTRAORDINARY” MOUNTING PROCEDURE

- One variation of the mounting procedure explained above may be adopted in case of rims with very small or non-existent drop centre (fig.41a). In these exceptional cases, the mounting procedure can be facilitated by using a variant of the normal procedure.
- The first bead is mounted in the usual way. To mount the second bead, position the mobile tool as during the demounting search stage (fig.41b).
- This reduces the stresses, leaving more space for the tyre. The following operations illustrated from fig.39a onward remain unchanged.



UK

6.9. APPROVED UHP AND RUN FLAT TYRE DEMOUNTING AND MOUNTING PROCEDURE

For this type of tyre please refer to the instructions in the manual prepared by WDK (German Tyre Industry Association).

6.10. NOT APPROVED UHP AND RUN FLAT TYRE DEMOUNTING AND MOUNTING PROCEDURE

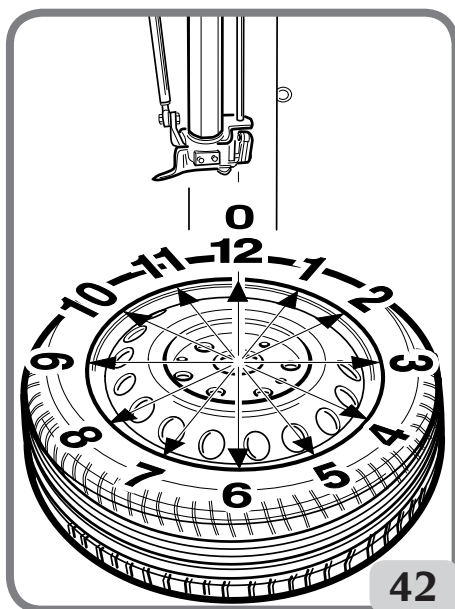
N.B.: if the sensor is on the tyre valve.

TYRE DEMOUNTING

- Remove the valve plunger and allow all the air to discharge from the tyre.
- N.B.: If necessary, remove the valve fixing nut and allow the sensor to drop into the tyre.
- Place the sensor at 3 o'clock.
- Lower the bead breaker disc and start the rotational bead breaking stage.
- Lubricating the bead, continue rotational upper bead breaking until the sensor is at 12 o'clock and not beyond.
- Raise the bead breaker disc.
- Move the sensor to 6 o'clock (valve at 12 o'clock).
- Push in the bead breaker disk and fit the gripper at 2 o'clock.
- Apply plenty of lubricant and then break the lower bead.
- Move the gripper to 2 o'clock.
- Position the demounting unit (tool head).
- Lower the swing tool to find the bead.
- Rotate clockwise so that the gripper is at 6 o'clock (sensor at 10 o'clock).
- The bead is now engaged.
- Engage the bead with the demounting head.
- Rotate clockwise to demount the tyre, with the bead breaker disk in the down position.
- Remove the gripper.
- Now demount the underside of the tyre, taking care not to damage the sensor.

MOUNTING

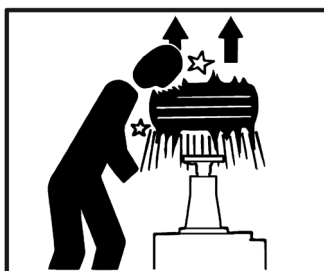
- Reinstall the valve sensor (if removed).
- Lubricate both tyre beads.
- Place the sensor at 5 or 6 o'clock.
- Set the tyre at an angle of about 45 degrees.
- Turn the tyre so that it is touching the tyre mounting head and is starting to be mounted on the rim.
- Turn the tyre until the lower bead is mounted.
- Turn the sensor to 4 or 5 o'clock.



- Lower the bead breaker to allow a bead presser gripper to be inserted at 3 o'clock.
- Lower the bead breaking arm by about 5 cm (2 or 3 inches) to keep the upper bead of the tyre inside the open centre during rotation.
- Rotate the tyre and make the necessary adjustments until the upper bead has been mounted.
- It may be useful to assist the operation with a second RunFlat gripper and/or the bead presser accessory, if available.
- Using the bead breaker disc, remove the RunFlat grippers used.
- Connect the inflation line to the valve for bead insertion.

6.11. TYRE INFLATION

6.11.a. SAFETY INDICATIONS



DANGER

- **EXPLOSION HAZARD**
- **Never exceed tire pressure recommended by tire manufacturer. Never mismatch tire size and rim size.**
- **Avoid personal injury or death**



DANGER

The use of inflation devices (e.g. guns) connected to power sources outside of the machine is not permitted.

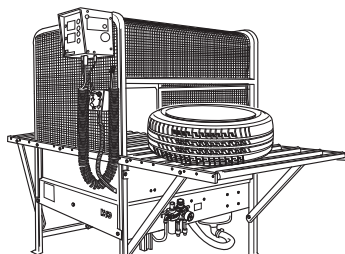
NOTICE

Always comply with national safety regulations as they could be more restrictive than what is indicated in the manual, according to the principle that a more restrictive standard takes precedence over the less restrictive one.



DANGER

If tires being mounted require more than the tire manufacturer's maximum bead seating pressure and , the wheel should be removed from the tire changer, placed in an inflation cage, and inflated per manufacturer's instructions.



UK

Verify that both upper and lower tyre beads and the rim bead seat have been properly lubricated with an approved mounting paste.

Safety goggles with plain lenses and safety footwear must be worn.

Lock the rim on the turntable during inflation.

Remove the valve stem core if not already done.

Connect the inflation hose to the valve stem.

Step down partially on the pedal to inflate the tyre and seal beads with the inflation hose. Frequently stop to check bead seating pressure on the gauge.



WARNING

Avoid personal injury. Carefully read, understand and follow all instructions.

1. Overinflated tyres can explode, producing hazardous flying debris that may result in an accident.

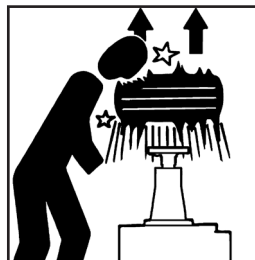
2. Tyres and Rims that are not the same diameter are “mismatched”. Never attempt to mount or inflate any tyre and rim that are mismatched. For example, never mount a 16” tyre on a 16.5” rim (or vice versa). This is very dangerous. A mismatched tyre and rim could explode, resulting in an accident.

3. Never exceed the bead setting pressure (gauge on hose) provided by the tyre manufacturer, as stated on the sidewall of the tyre.

4. Never place your head or any part of your body over a tyre during the inflation process or when attempting to seat beads.

This machine is not intended to be a restraining device for exploding tyres, tubes or rims.

5. Always stand back from the tyre changer when inflating, never lean over.



WARNING



During this operation, noise levels assessed at 85 dB(A) may occur. Wear hearing protection devices.

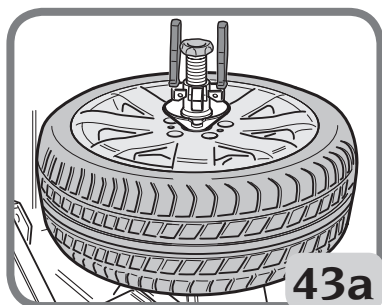


DANGER

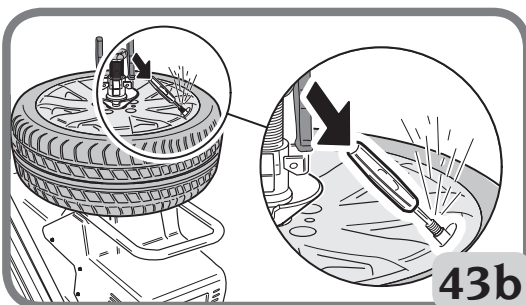
EXPLOSION HAZARD. An exploding tyre and rim may be propelled upward and outward with enough force to cause serious injury or death.

Do not mount any tyre unless the tyre size (molded into the sidewall) matches the rim size (stamped into the rim) exactly or if the rim or tyre are defective or damaged.

This tyre changer is not a safety device and will not restrain exploding tyres and rims. Keep the area clear of bystanders.



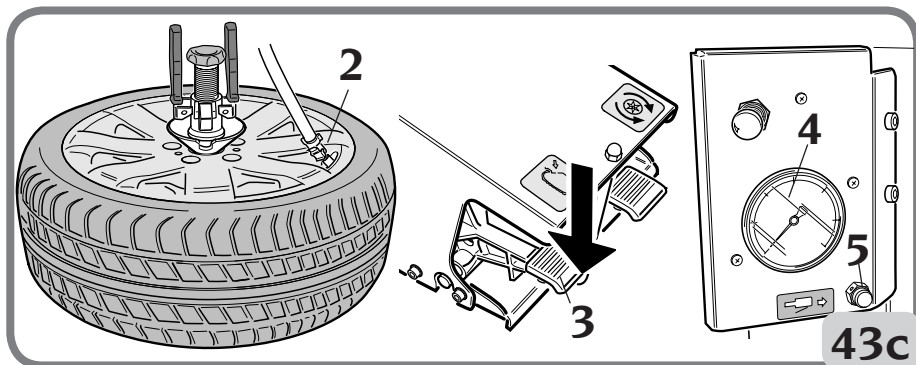
43a



43b


6.11.b. INFLATING TYRES

1. Make sure the wheel on which the tyre is fitted is securely clamped on the turntable by the centring handle (Fig. 43a).
2. Make sure the tool head and the bead breaking unit are not near the work area, and if possible are in the rest position.
3. Remove the valve stem core if not already done (Fig. 43b).
4. Connect the air hose Doyfe inflator chuck to the valve stem (2, Fig. 43c).



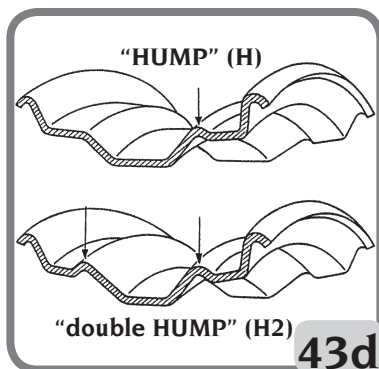
43c

UK

. Press  to inflate the tyre. The tyre will expand, and the beads will seat.

If necessary:

6. Continue inflating up to the maximum value of 3.5 bar to position the tyre correctly on the rim. Avoid distractions during this operation, and continually check tyre pressure on the air pressure gauge (4, Fig. 43c) to prevent excessive inflation. Inflating tubeless tyres requires a higher air flow-rate to allow the beads to bypass the rim HUMPS - see types of rim profiles for mounting without a camera in Fig. 43d.



43d

7. From the position of the centring ridges check that the beads are properly positioned on the rim; otherwise, deflate the tyre, break the beads as described in the relevant section, lubricate and turn the tyre on the rim. Repeat the mounting operation described previously and check again.

8. Replace the internal mechanism of the valve.

9. Bring the pressure to the operating value by pressing the Inflation push-button (5, Fig. 43c).

10. Fit the cap to the valve.

6.11.c. SPECIAL PROCEDURE (TI VERSION)



WARNING

Before carrying out operations described below, always make sure that there is no dirt, dust or other impurities on the jaws near the air outlet holes.

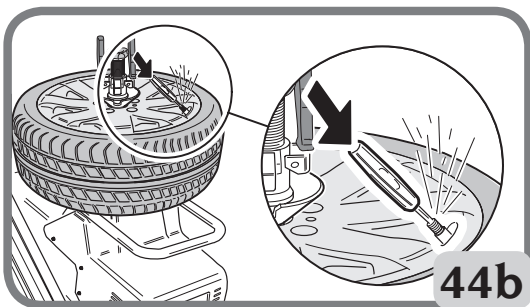
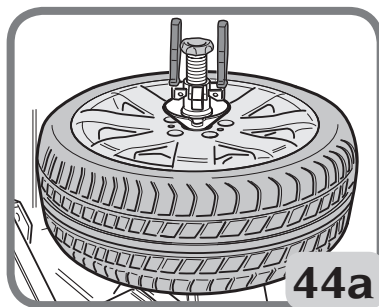
If, during inflation, the tyre does not seat on the rim because of the excessive gap between the tyre/rim, it is possible to use an air-pressure airblast through the jaws on the TI accessory.

Verify that both upper and lower tyre beads and the rim bead seat have been properly lubricated with an approved mounting paste.

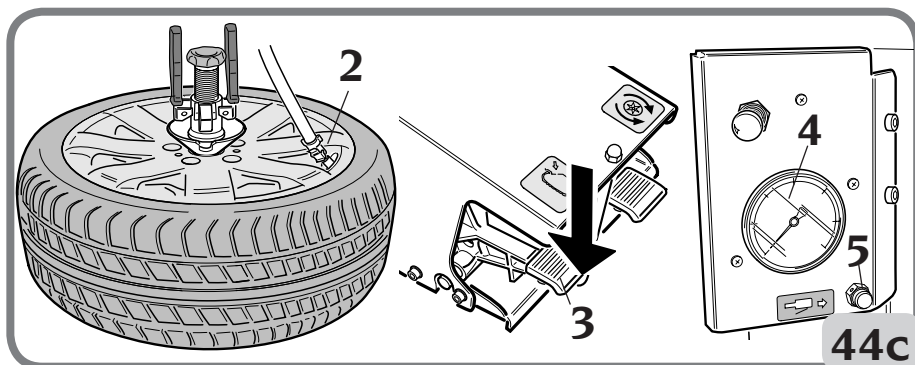
1. Make sure the wheel on which the tyre is fitted is securely clamped on the turntable by the centring handle (Fig. 44a).

2. Make sure the tool head and the bead breaking unit are not near the work area, and if possible are in the rest position.

3. Remove the valve stem core if not already done (Fig. 44b).



4. Connect the air hose Doyfe inflator chuck to the valve stem (2, Fig. 44c).



5. Pull up on the tyre lightly to reduce the gap between the upper bead and the rim (Fig. 44d).

6. Step down on the air inflation pedal (3, Fig. 44c) and at the same time press the 2 buttons on the accessory to release a high-pressure air blast through the four jets to assist in seating the beads of the tyre (Fig. 44e).



NOTICE

To increase the effectiveness of the inflation jets, always liberally lubricate beads and raise the lower bead while activating inflation jets.

NOTICE

To improve the operation of the tubeless tyre inflation system the compressed air line pressure must be between 8/10 bar.

Step down on the pedal to inflate tire and seal beads with inflation hose. Frequently stop to check bead seating pressure gauge.



WARNING

Explosion hazard. Do not exceed the manufacturer's maximum pressure as stated on the sidewall of the tyre when seating beads.

If tires being mounted require more than the tire manufacturer's maximum bead seating pressure and , the wheel should be removed from the tire changer, placed in an inflation cage, and inflated per manufacturer's instructions.

Reinstall valve stem core into the valve stem after beads have been seated, and then inflate tire to vehicle manufacturer recommended pressure.



WARNING

Activate air inflation jets only when sealing the bead. Do not point jets towards people.

Bleed air pressure from system before disconnecting supply line or other pneumatic components. Air is stored in a reservoir for operation of inflation jets.



WARNING

Only activate the air inflation jets if the rim securing device is locked in place and the tire is properly clamped.



WARNING

ESPLOSION HAZARD. Never mount a tire to a rim that is not the same diameter (e.g., 16 1/2 inch tire mounting on a 16 inch rim).

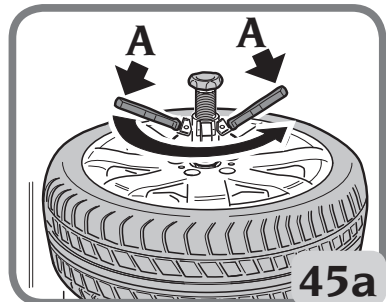
If the tyre is over-inflated, air may be removed from the tyre by pressing the brass manual air release button located below the air pressure gauge.

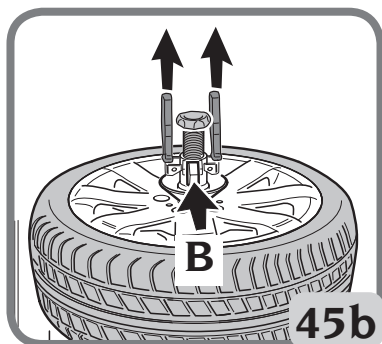
Disconnect the inflation hose from the valve stem.

6.12. UNCLAMPING AND UNLOADING THE WHEEL

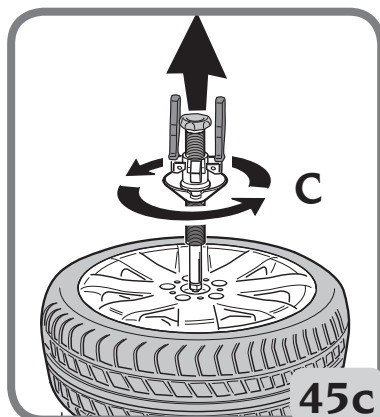
Releasing the wheel from the turntable

A - Undo the device by turning the handles anti-clockwise (Fig. 45a).



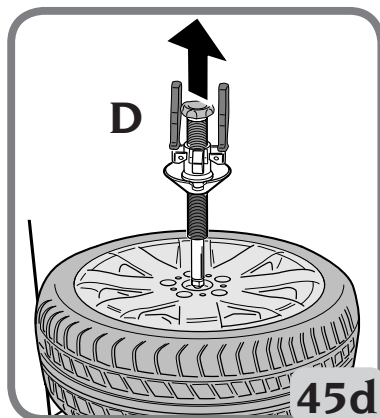


B - Press the retainers and move the centring cone away from the rim by hand (Fig. 45b).



C - Turn the clamping device anti-clockwise to release it from the turntable (Fig. 45c).

D - Remove the device from the rim (Fig. 45d).

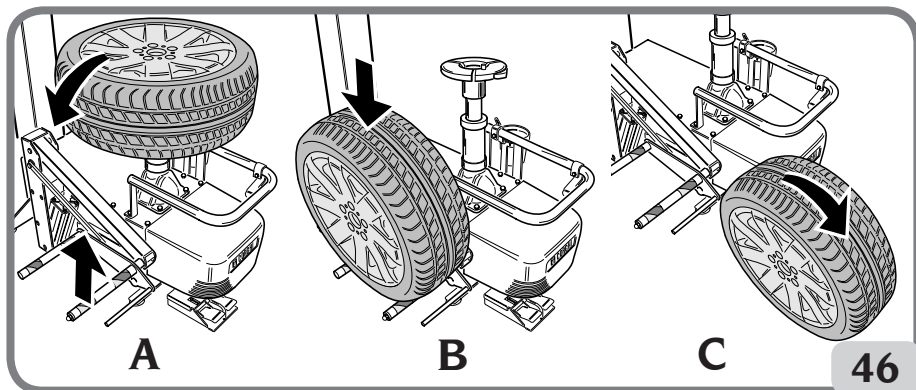


Unloading the tyre (Fig. 46)

A - Lift the wheel lift **UP** and position the wheel on it by hand.

B - Lower the lift **DOWN**

C - Remove the wheel from the lift.



7. TROUBLE SHOOTING



WARNING

Avoid personal injury or death.

The “Spare parts” handbook does not authorise the user to carry out any work on the machine other than the operations specifically described in the User Manual, and is only intended to enable the user to provide the technical assistance service with precise information in order to minimise response times.

Table top will not rotate

Power cord conductor shorting to ground.

- ➡ Check the wiring.

Motor shorted.

- ➡ Renew the motor.
- ➡ Replace motor-inverter unit circuit board.
- ➡ Check pedal unit microswitch.

Belt broken.

- ➡ Replace belt.

Rotation control pedal fails to return to the central position

Control spring broken.

- ➡ Renew the spring.

Bead breaker unit not working

No vertical travel

- ➡ Check for bent hoses.
- ➡ Check operation of raising-lowering valve.
- ➡ Check for jammed rollers.

Bead breaker unit is underpowered, it does not break the bead and is leaking air

Perform the checks in the previous point: “Bead breaker unit not working”.

Cylinder seals worn.

- ➡ Renew seals.
- ➡ Renew bead breaker cylinder.

Bead breaker cylinder leaks air around the rod

Air seal worn.

- ➡ Renew seals.
- ➡ Renew bead breaker cylinder.

Gear unit noisy. The table top makes 1/3 of a revolution and then stops

Gear unit seizing.

- ➡ Renew gear unit.

Table top fails to clamp wheels

Handle engagement unit faulty.

- Check that it is synchronised properly.
- Replace the plate in the turntable.
- Check that there are no burrs.
- Replace the clamping handle.

Table top mounts or demounts tyres with difficulty

Insufficient belt tension.

- Adjust belt tension or renew it.

Vertical slide lifts too little or too far from rim

Clamping plate not adjusted.

- Adjust plate.
- Recalibrate.

The vertical slide has difficulty rising

Defective clamping plate.

- Renew plate.

Clamping plate not adjusted.

- Adjust plate.

Vertical and horizontal limit stops do not operate

No air passing through clamping handle / valve.

- Check the hose circuit.
- Replace handle / valve.

Column does not tilt

Column tilting cylinder faulty.

- Replace column tilting cylinder.

No air supply to cylinder.

- Bends in hoses.
- Replace valve.
- Check tightness of slide pivot.

Locking arm cylinders leak air

Faulty piston or seals.

- Replace pistons and seals.

The column tilts violently or too slowly

Incorrect release valve setting.

- Adjust vent regulators on control valve.

Tyre pressure gauge needle fails to return to 0

Pressure gauge faulty or damaged.

- Renew pressure gauge.

The wheel lift is not working

Control out of operation.

- ➔ Check pedal unit.

Rises slowly or has insufficient force.

- ➔ Check for bent hoses.
- ➔ Adjust vents on pedal unit.
- ➔ Replace the valve on the wheel lift control unit control device.

Cylinder leaking air.

- ➔ Replace cylinder gasket.
- ➔ Replace cylinder.

8. MAINTENANCE

WARNING

Any operation intended to modify the setting valve of the relief valve or pressure limiter is forbidden. The manufacturer declines all liability for damage resulting from tampering with these valve

WARNING



Before adjusting or servicing the machine, disconnect the electricity and compressed air supplies and ensure that all moving parts are suitably immobilised.

WARNING



Do not remove or alter any part of this machine (only technical assistance personnel is permitted to do so).

WARNING



When the machine is disconnected from the air supply, the devices bearing the sign shown above may remain pressurised.

WARNING

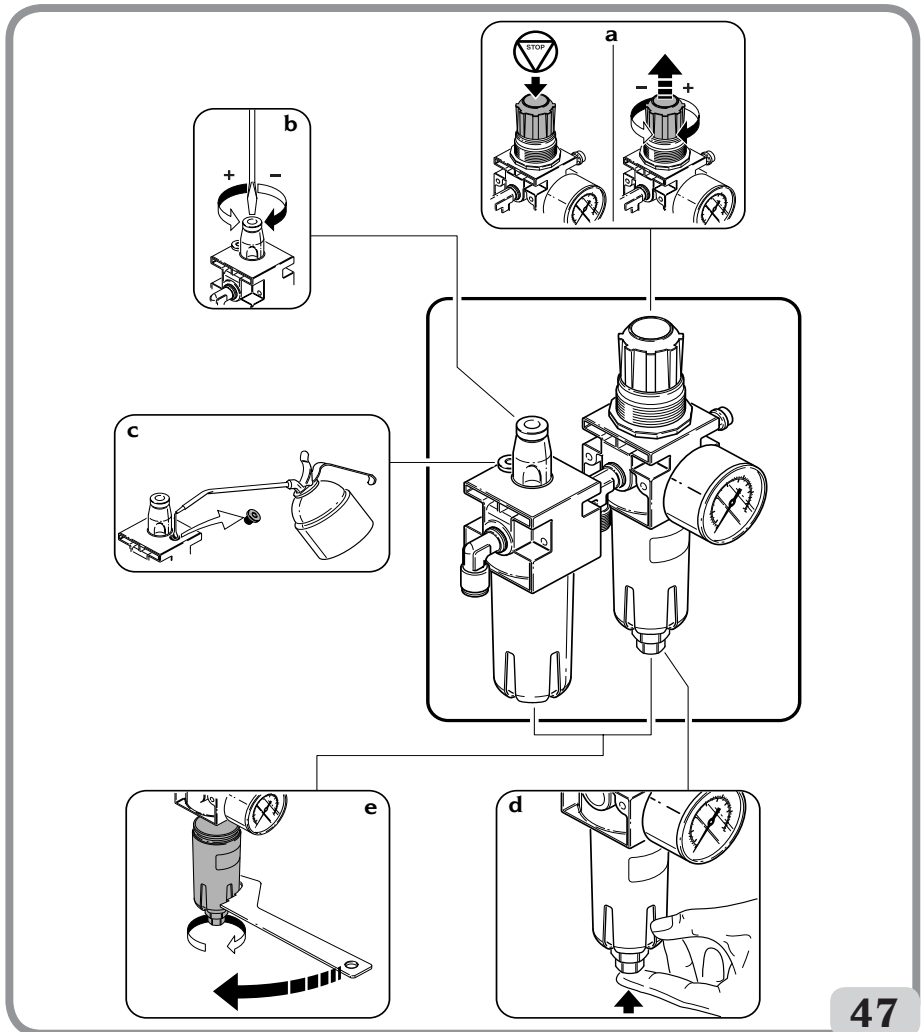
Before carrying out any maintenance operation or topping up with lubricant, disconnect the machine from the compressed air supply line.

NOTICE

To increase the effectiveness of the inflation jets, always liberally lubricate beads and raise the lower bead while activating inflation jets.

The purpose of the regulator filter unit plus lubricator (FRL) is to filter the air, adjust the pressure and lubricate it.

The “FRL” unit supports a maximum input pressure of 18 bar and has an adjustment range of 0.5 to 10 bar. The setting may be modified by pulling the handle out and then turning. After adjusting, return the handle to the locked position by pushing down (fig.47a).



UK

The lubricant flow-rate is adjusted by turning the screw on part “L”, (fig.47b); normally this unit is precalibrated to a pressure of 10Bar, with SAE20 viscosity lubricant in order to make a drop of lubricant come out, which can be seen from the specific cover, every 4 times the bead breaker is operated.

Periodically check the lubricant level through the specific windows and top up as shown in fig.47c. Top up only with non-detergent SAE20 oil equal to 50cc.

The filter regulator “FR” has an automatic condensation drain system, therefore in conditions of normal use special maintenance is not required. The condensate may however be drained manually at any time (fig.47d).

Normally the cups do not need to be removed, but check if this is necessary for maintenance operations after a long period of use. If a manual operation is not sufficient, use the specific key provided (fig.47e).

Clean with a dry cloth. Avoid contact with solvents.

NOTICE

Keep the work area clean.

Never use compressed air, water jets or solvents to remove dirt or deposits from the machine. When cleaning the area, take steps to avoid building up and raising dust as far as possible.

9. INFORMATION ABOUT SCRAPPING

If the machine is to be scrapped, remove all electrical, electronic, plastic and metal parts. Dispose of them separately, as provided for by local regulations in force.

10. ENVIRONMENTAL INFORMATION

The following disposal procedure must be applied to the machines having the crossed-

out bin symbol on their data plate



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

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

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

The crossed-out bin symbol, placed on the product and on this page, reminds the user that the product must be disposed of properly at the end of its life.

This prevents the inappropriate disposal of the substances which this product contains, or the improper use of some of them, from having hazardous consequences for the environment and human health. Furthermore, this helps to recover, recycle and reuse many

of the materials contained in these products.

To this end, electrical and electronic manufacturers and distributors have set up proper collection and treatment systems for these products.

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

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

Anyone disposing of the product otherwise than as described above will be liable to prosecution under the legislation of the country where the product is scrapped.

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

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

11. INFORMATION AND WARNINGS ABOUT HYDRAULIC FLUID

Disposing of spent fluid

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

Fluid leaks or spills

Contain the spilt product from spreading using soil, sand or any other absorbent material. The contaminated zone must be degreased with solvent, taking care not to allow vapours to form or stagnate, and the residual material from the cleaning process must be disposed of as envisaged by law.

Precautions for the use of hydraulic fluid

- Avoid contact with the skin.
- Avoid the formation or spreading of oil mists in the atmosphere.
- The following fundamental health precautions must therefore be adopted:
 - avoid spatters (suitable clothing, protective shields on machines);
 - wash frequently with soap and water; do not use cleaning products or solvents that irritate the skin or remove its natural protective oil;
 - do not dry your hands using soiled or greasy rags;
 - change your clothes if soaked and, in any case, at the end of the work shift;

UK

- do not smoke or eat with greasy hands.
- Also adopt the following preventive and protective equipment:
 - mineral oil resistant gloves with plush lining;
 - goggles, in case of splatters;
 - mineral oil resistant aprons;
 - protective shields, in case of splatters.

Mineral oil: first aid indications

- Swallowing: go to Casualty with the characteristics of the type of oil swallowed.
- Inhalation: in case of exposure to strong concentration of vapours or mists, take the affected person out into the open air and then to Casualty.
- Eyes: rinse with plenty of water and go to Casualty as soon as possible.
- Skin: wash with soap and water.

12. FIREFIGHTING MEANS USABLE

For guidance on the most suitable type of extinguisher, refer to the table below:

	Dry materials	Inflammable liquids	Electrical equipment
Water	YES	NO	NO
Foam	YES	YES	NO
Powder	YES*	YES	YES
CO2	YES*	YES	YES
YES*	<i>Use only if more appropriate extinguishers are not on hand or when the fire is small.</i>		



WARNING

The indications given in this table are of a general nature and should be used as a general guide. All the applications of each type of extinguisher must be obtained from the relevant manufacturer.

13. GLOSSARY

Tyre

A tyre consists of: **I-the actual tyre**, **II- the rim** (wheel), **III-the air chamber** (in tube type tyres), **IV-pressurised air**.

The tyre must:

- withstand a load,
- ensure driving power,
- steer the vehicle,
- aid handling and braking,
- aid vehicle suspension.

I - Tyre The actual tyre is the main part of the overall tyre in contact with the road and is therefore designed to withstand internal air pressure and all other stress arising from use.

A tyre section shows the various parts it consists of:

1 - *The tread*. This is the part in contact with the ground when the tyre rolls. It comprises a rubber compound and a "pattern" that is suitable for ensuring good resistance to abrasion and good grip in dry and wet conditions, as well as quiet operating conditions.

2 - *Edge or bracing*. This is a metal fabric or textile insert, in the area of the outer bead part. It protects the casing plys from rubbing against the rim.

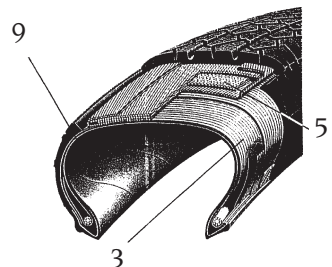
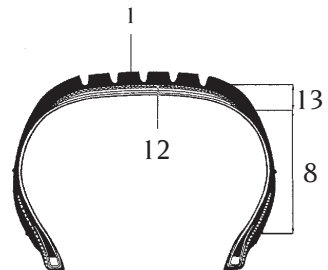
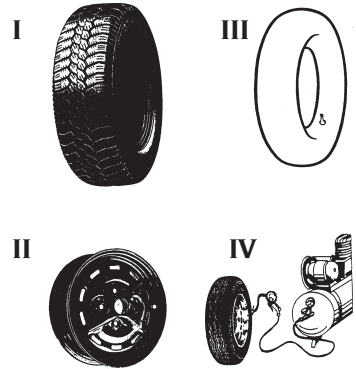
3 - *Casing*. This is the resistant structure and comprises one or more layers of rubber plys. The way the plys comprising the casing are arranged give the structure its name. The following structures are possible:

Conventional: the plys are inclined and arranged so that the strands comprising a ply overlap with those of the adjacent ply. The tread, which is the part of the tyre in contact with the ground, is part of the sidewalls and so during rolling, sidewall flexure is transmitted to the tread.

Radial: the casing consists of one or more plys with the cords in a radial direction.

A radial casing in itself is quite unstable. To make it stable and prevent bad tread movement in the area of contact with the ground, the casing and the undertread are reinforced with an annular structure, usually called belt. The tread and sidewall work with different, independent rigidities, so during rolling, sidewall flexure is not transmitted to the tread.

4 - *Side ring*. This is a metal ring comprising several steel strands. The casing plys are secured to the side ring.



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5 - **Belt**. This is a non-flexible circumferential structure comprising cross-plys at very low angles, positioned below the tread, to stabilise the casing in the footprint area.

6 - **Centring band**. This is a small marking which indicates the circumference of the top part of the bead and is used as a reference to check exact tyre centring on the rim after mounting.

7 - **Protective band**. This is a circumferential marking in the area of the sidewall which is more exposed to accidental rubbing.

8 - **Sidewall**. This is the area between the shoulder and the centring band. It consists of a more or less thin layer of rubber, which protects the casing plys from lateral impact.

9 - **Liner**. This is a vulcanised, compound sheet, impermeable to air, inside tubeless tyres.

10 - **Filling**. This is a generally triangular rubber profile, above the side ring; it provides rigidity for the bead and gradually offsets the abrupt uneven thickness caused by the side ring.

11 - **Flap**. This is the part of the casing ply around the side ring and placed against the casing, to secure the ply and prevent it from slipping.

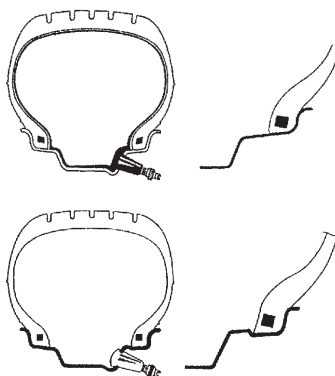
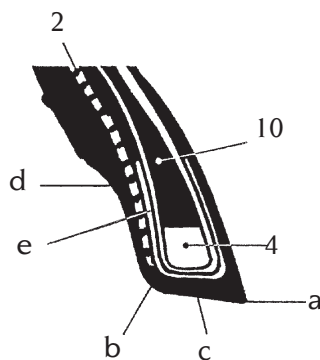
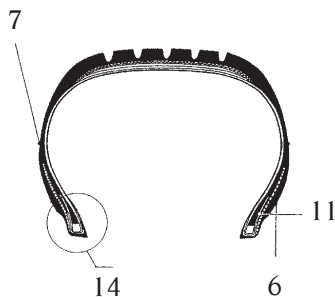
12 - **Foot**. This is the innermost layer of the tread in contact with the belt, or if the latter is not present (conventional tyre) with the last casing ply.

13 - **Shoulder**. This is the outer part of the tread, between the corner and start of the sidewall.

14 - **Bead**. This is the part joining the tyre to the rim. The bead point (a) is the inner corner. The spur (b) is the outer part of the bead. The base (c) is the area resting against the rim. The groove (d) is the concave part against which the rim shoulder rests.

Tube type tyres. As a tyre has to contain pressurised air for a fairly long time, an air chamber is used. The valve for adding air and maintaining, controlling and restoring air pressure is part of the chamber in this case.

Tubeless tyres. Tubeless tyres consist of a tyre with inner sidewall lined with a thin layer of special impermeable rubber, called *liner*. This liner helps to maintain air pressure in the casing. This kind of tyre must be mounted on

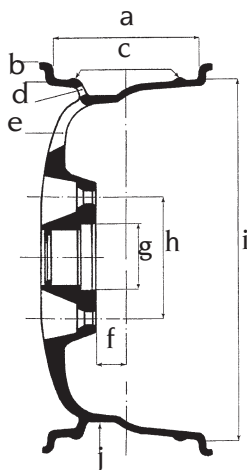


a specific rim, to which the valve is directly fixed.

II - Rim (Wheel). The wheel is the rigid metal part which connects the vehicle hub to the tyre, on a fixed but non-permanent basis.

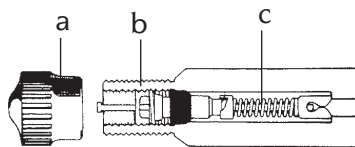
Rim profile. The rim profile is the form of the section in contact with the tyre. It comprises different geometric forms, which ensure: easy tyre mounting (bead insertion in the rim well); safe driving, in terms of the bead anchored in its seat.

The rim section shows its various parts: a) rim width – b) shoulder height – c) tubeless anchoring (HUMP) – d) valve hole – e) ventilation opening – f) off set – g) central hole diameter – h) attachment hole centre to centre i) keying diameter – j) rim well.



III - Air chamber (tube type tyres). The air chamber is a closed ring-like rubber structure with valve, which contains pressurised air.

Valve. The valve is a mechanical device to inflate/deflate the tyre and maintain air pressure inside the air chamber (or tyre in the case of tubeless tyres). It consists of three parts: the valve closing cap (a) (to protect the internal mechanism from dust and guarantee air tightness), an internal mechanism (b) and the base (c) (the outer lining).



Tubeless Inflator. Inflation system that makes the inflation of tubeless tyres easier.

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

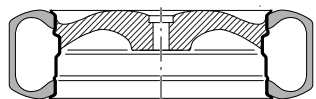
Bead pressing gripper. A tool intended for use when mounting the upper bead. It is fitted so that it grips the shoulder of the rim and holds the tyre upper bead inside the rim well. It is generally used for mounting low profile tyres.

Air delivery regulator. Union allowing regulation of the air flow.

Bead breaking. Operation that allows the tyre bead to be detached from the rim edge.

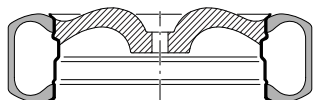


TABLE FOR USING CENTRING AND CLAMPING ACCESSORIES ACCORDING TO RIM TYPE



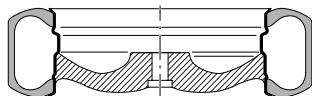
A

Standard rim



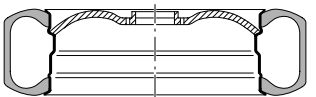
B

Dropped centre hole rim



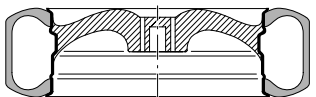
C

Reversed rim



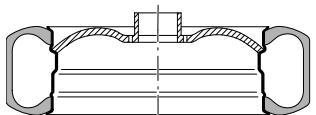
D

Pick-up rim



E

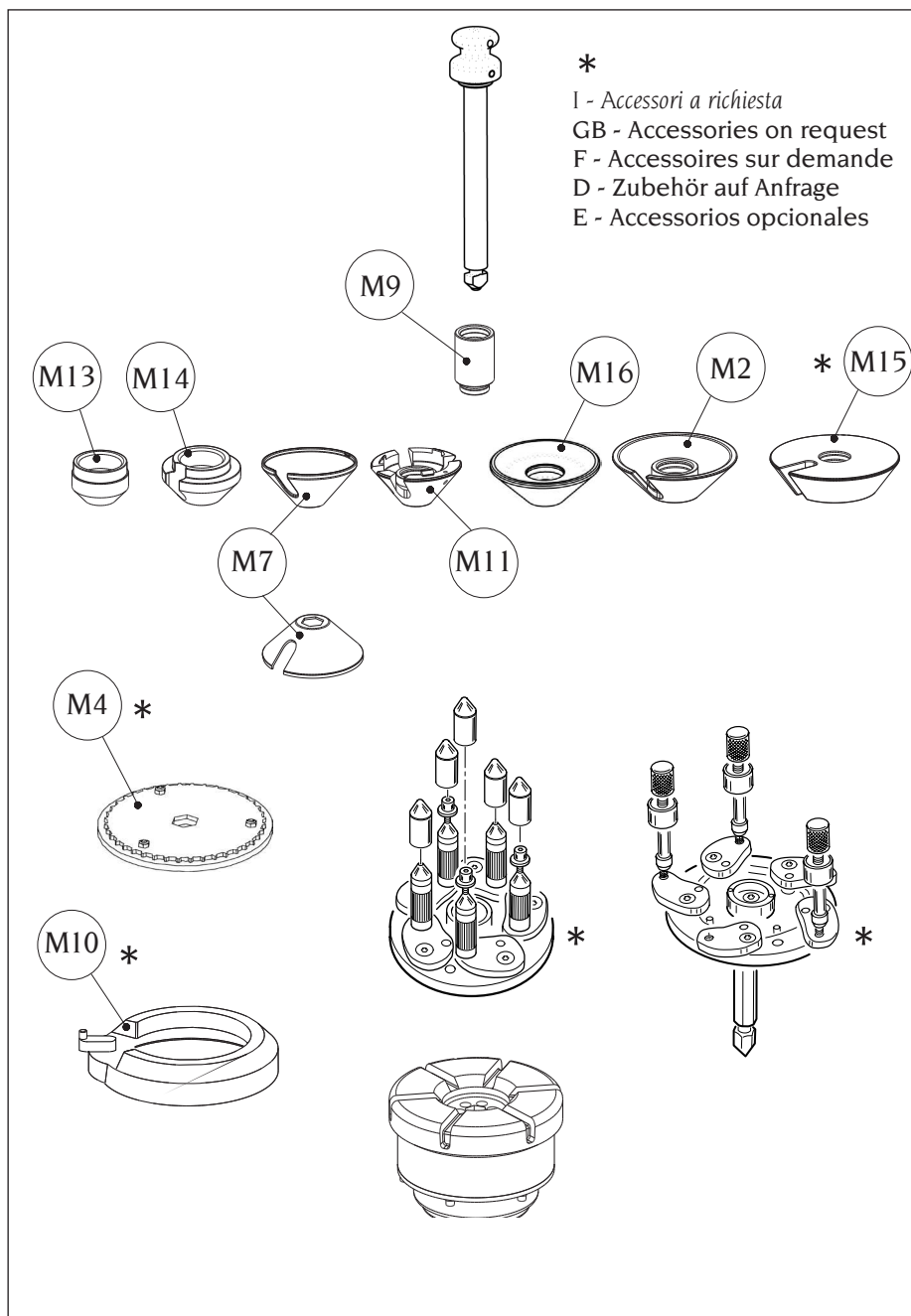
Closed centre rim



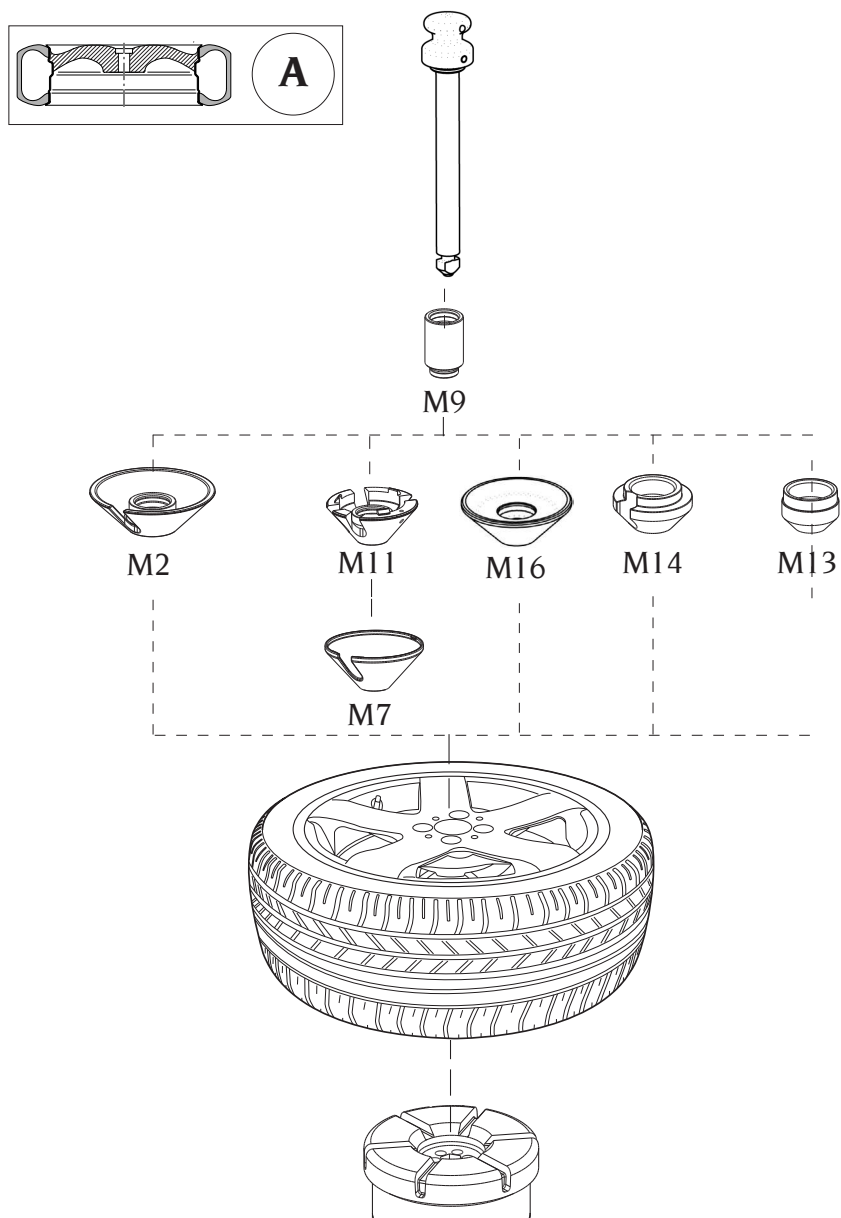
F

Open centre rim

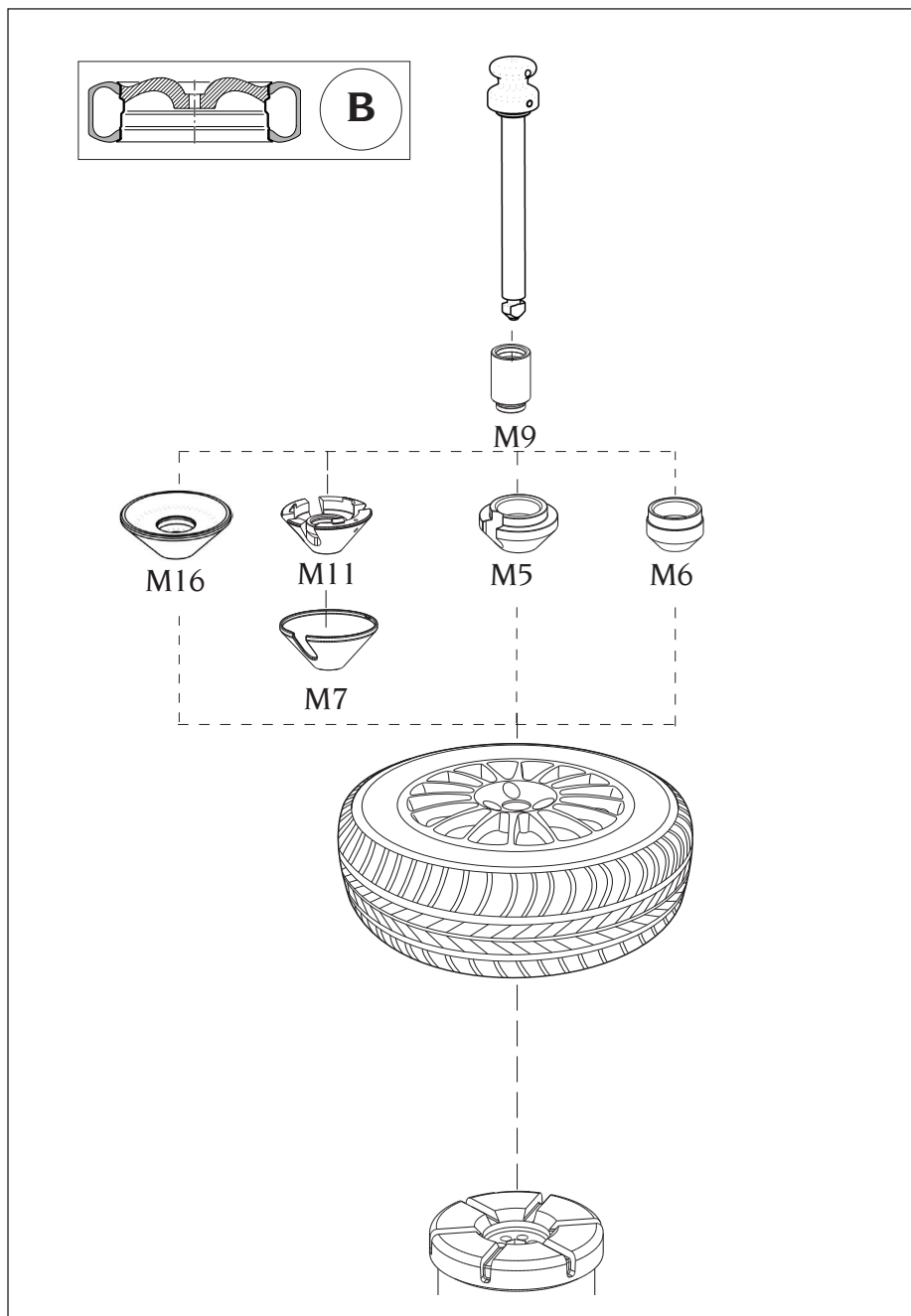
CLAMPING ACCESSORIES



STANDARD RIM

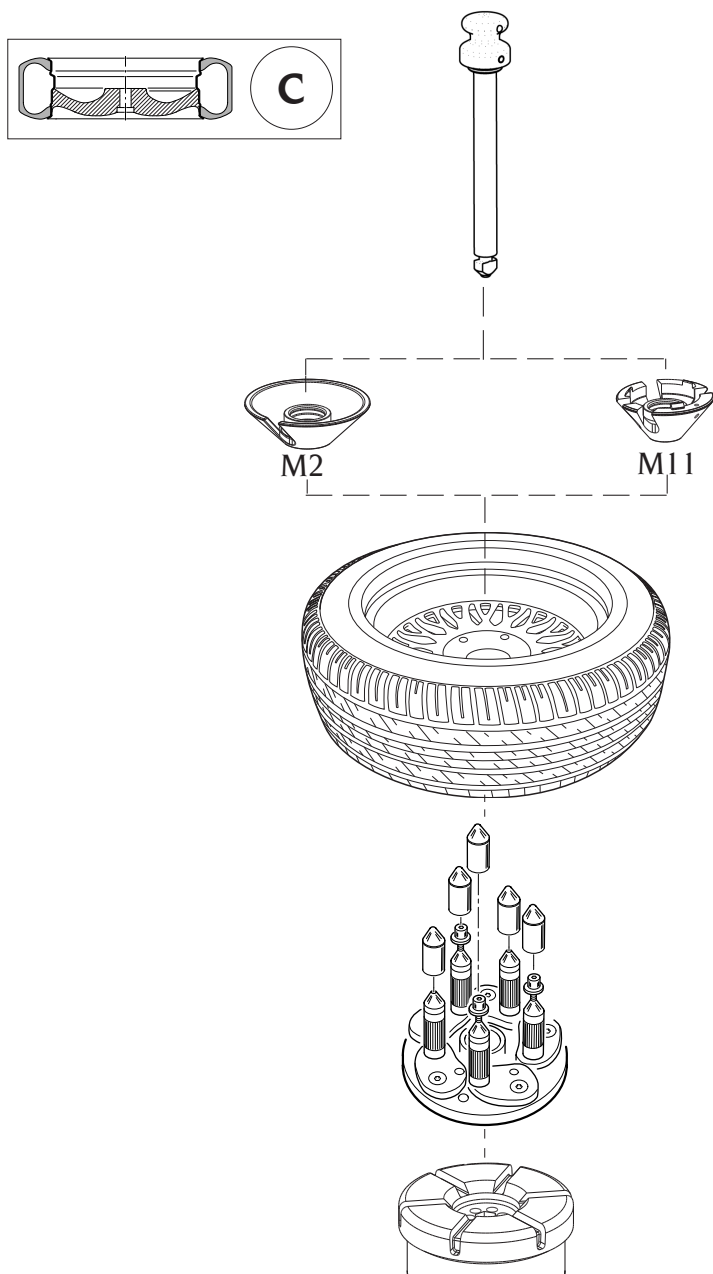


DROPPED CENTRE HOLE RIM

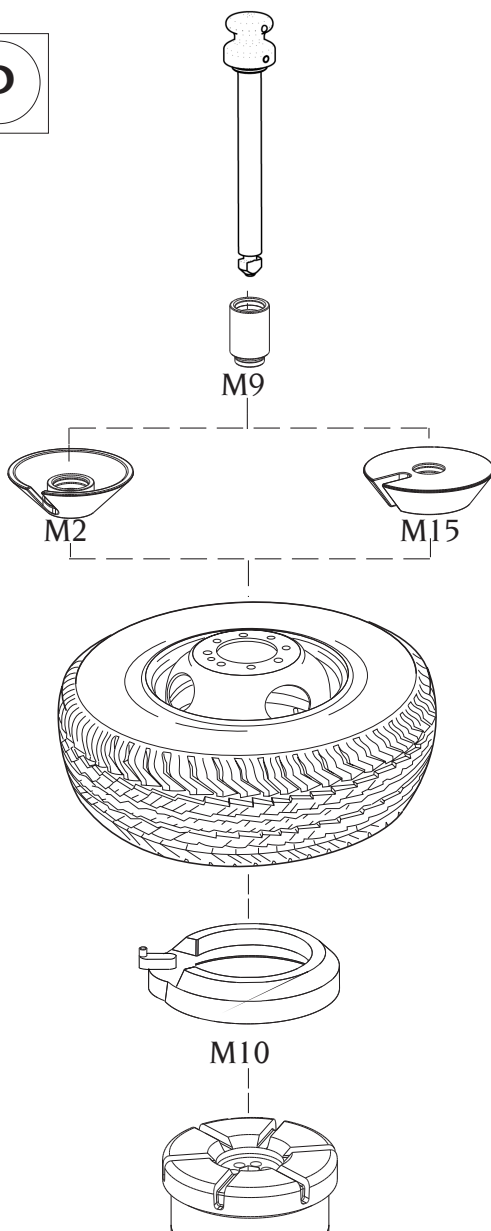
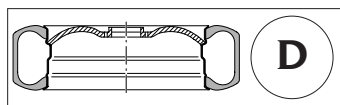


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REVERSED RIM

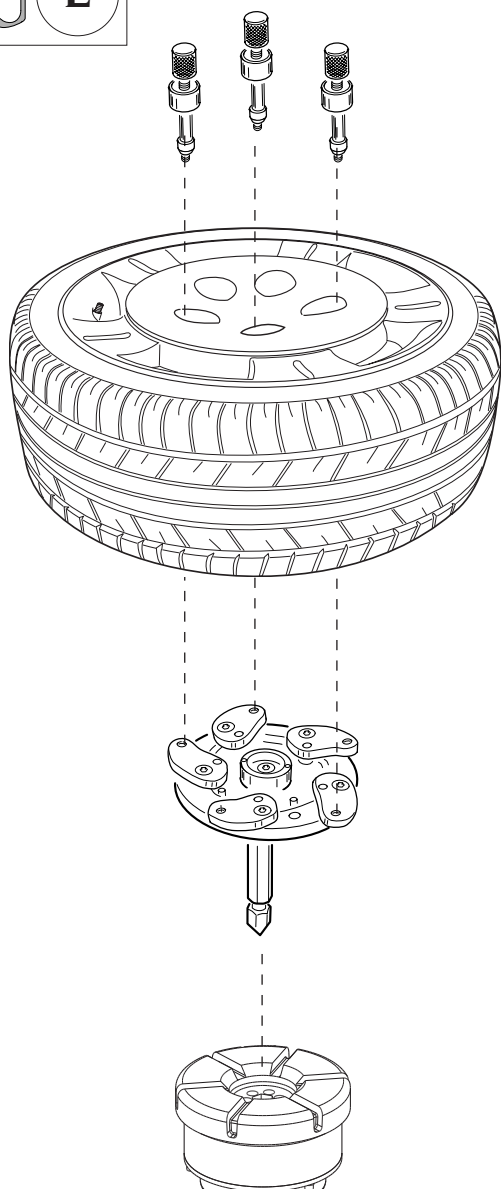
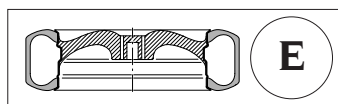


PICK-UP RIM

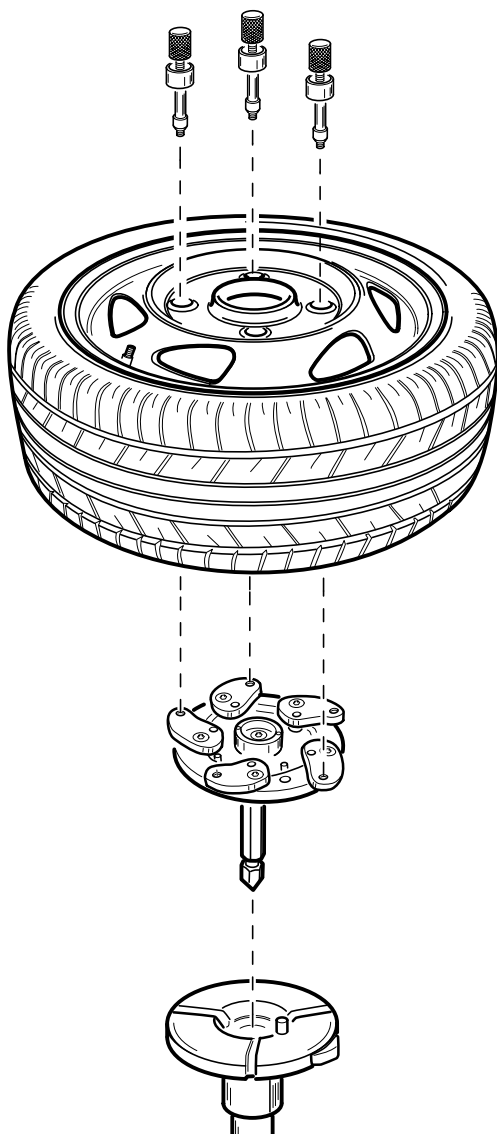
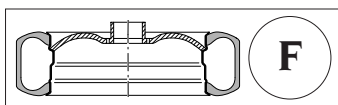


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CLOSED CENTRE RIM



OPEN CENTRE RIM

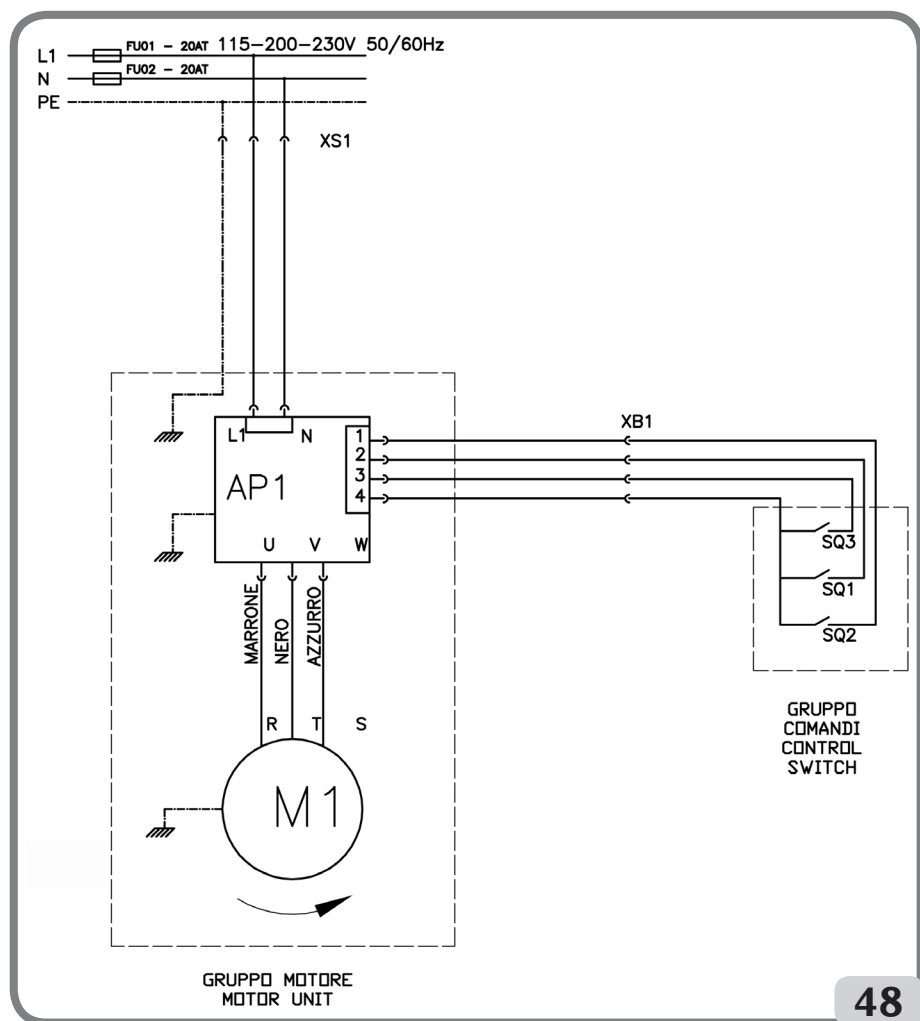


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ELECTRICAL DIAGRAM

Table N° 4-104805A Fig. 48

AP1	Single / two-speed motor circuit board
M1	Motor
SQ1	Two-speed microswitch
SQ2	Microswitch (CLOCKWISE rotation)
SQ3	Microswitch (ANTI-CLOCKWISE rotation)
XB1	Connector



PNEUMATIC SYSTEM DIAGRAM

Table N° 4-104134A Fig. 49

A - BEAD BREAKER CONTROL

- 1 Bead breaker cylinder
- 2 Valve 5/3 NC
- 3 Silencer filter

B - BEAD BREAKER DISC PENETRATION CYLINDER CONTROL

- 4 Valve 3/2 NO
- 5 Penetration cylinder

C - HORIZONTAL LOCKING PLATE CYLINDER CONTROL

- 6 Valve 3/2 NC
- 7 Locking plate cylinder

D - BEAD BREAKER ARM RELEASE CYLINDER CONTROL

- 8 Valve 3/2 NC
- 9 Release cylinder

E - COLUMN TILTING CYLINDER CONTROL

- 10 Valve 5/2 NO
- 11 Tilting cylinder

F - TOOL DRIVE CYLINDER CONTROL

- 12 Valve 5/2 NO
- 13 Tool drive cylinder

G - PEDAL UNIT

- 14 Valve 3/2 NC
- 15 Pedal

H - TOOL ARM CLAMPING HANDLE CONTROL

- 16 Valve 5/3
- 27 Regulator valve

I - INFLATION

L - MANUAL DEFLATION

- 17 Pressure gauge
- 18 Manual deflation valve 2/2 NC

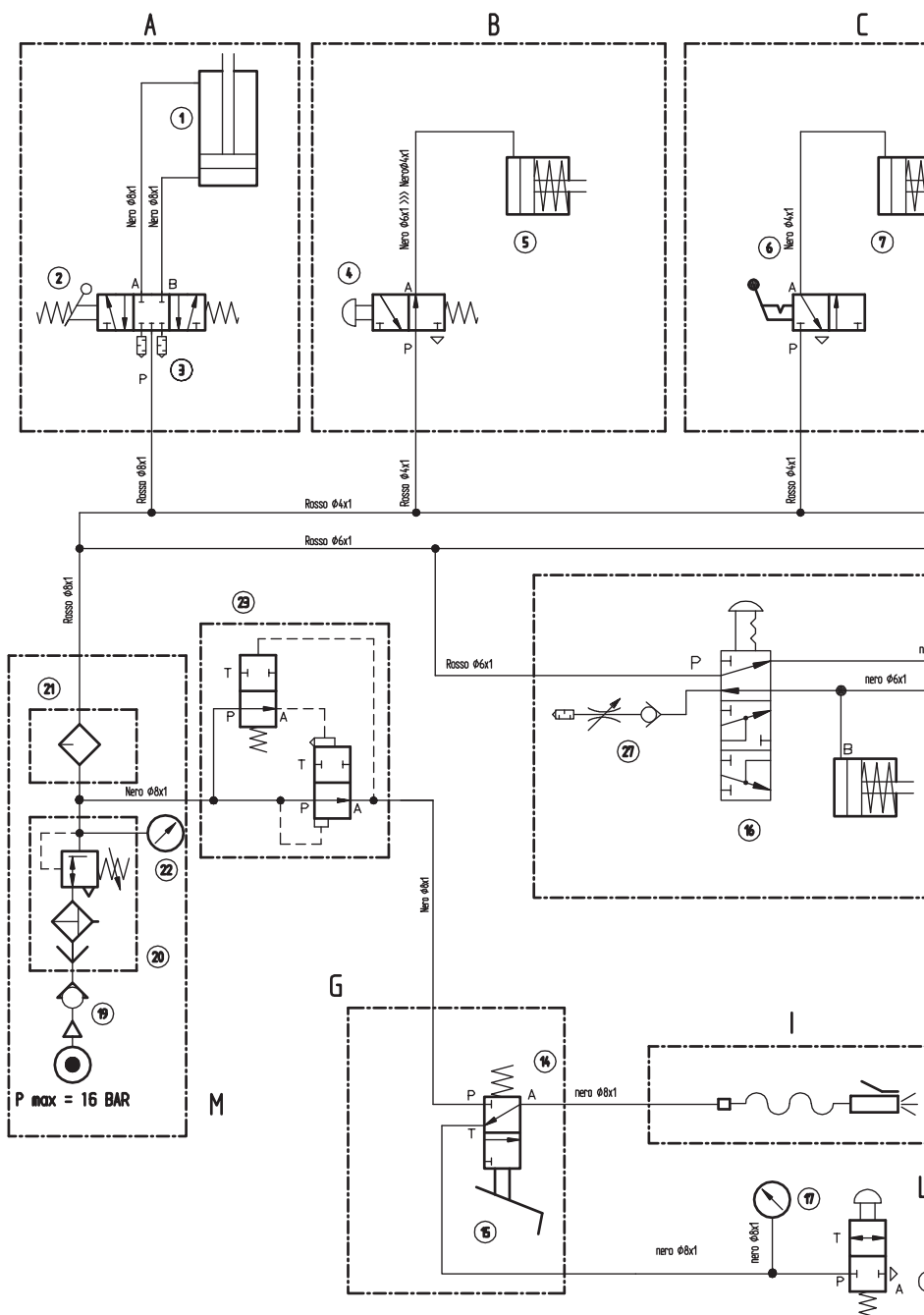
M - FILTER REGULATOR UNIT

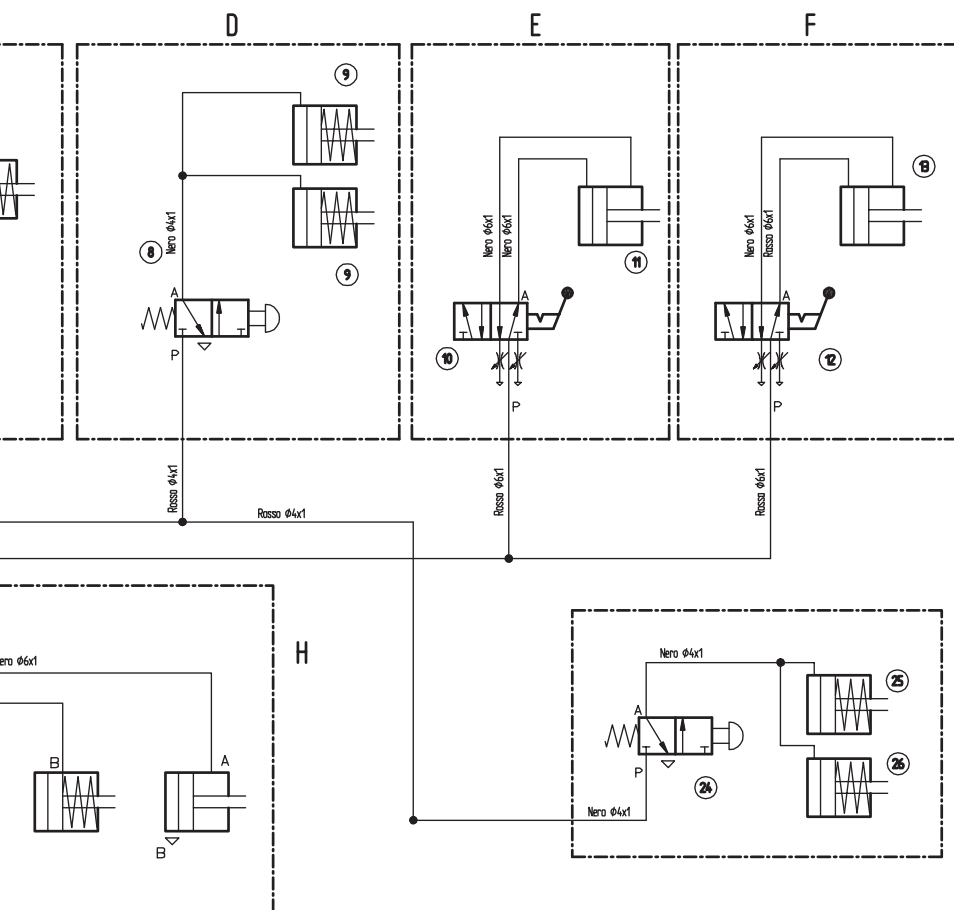
- 19 FEMALE SNAP COUPLING
- 20 FILTER REGULATOR UNIT
- 21 LUBRICATOR
- 22 PRESSURE GAUGE
- 23 PEDAL CONTROL UNIT INFLATION LIMITER

N - BEAD BREAKER LOCKING UNIT

- 24 VALVE 2/3 NC
- 25 UPPER RELEASE CYLINDER
- 26 LOWER REL

UK







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