



7522-M008-00

**TYRE-CHANGER SERIES
NAV51.15 and G10156.15**

INSTRUCTION MANUAL
Applicable to the following models
ROT.N5115.201829
RAV.G0156.206251

EN

ORIGINAL INSTRUCTIONS

For spare parts drawings refer to the document "LIST OF COMPONENTS" to be requested from the manufacturer.

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

VEHICLE SERVICE GROUP ITALY S.r.l

Via Filippo Brunelleschi, 9 - 44020 Ostellato - Ferrara - Italy

Phone (+39) 051 6781511 - Fax (+39) 051 846349 - e-mail: aftersales.emea@vsgdover.com

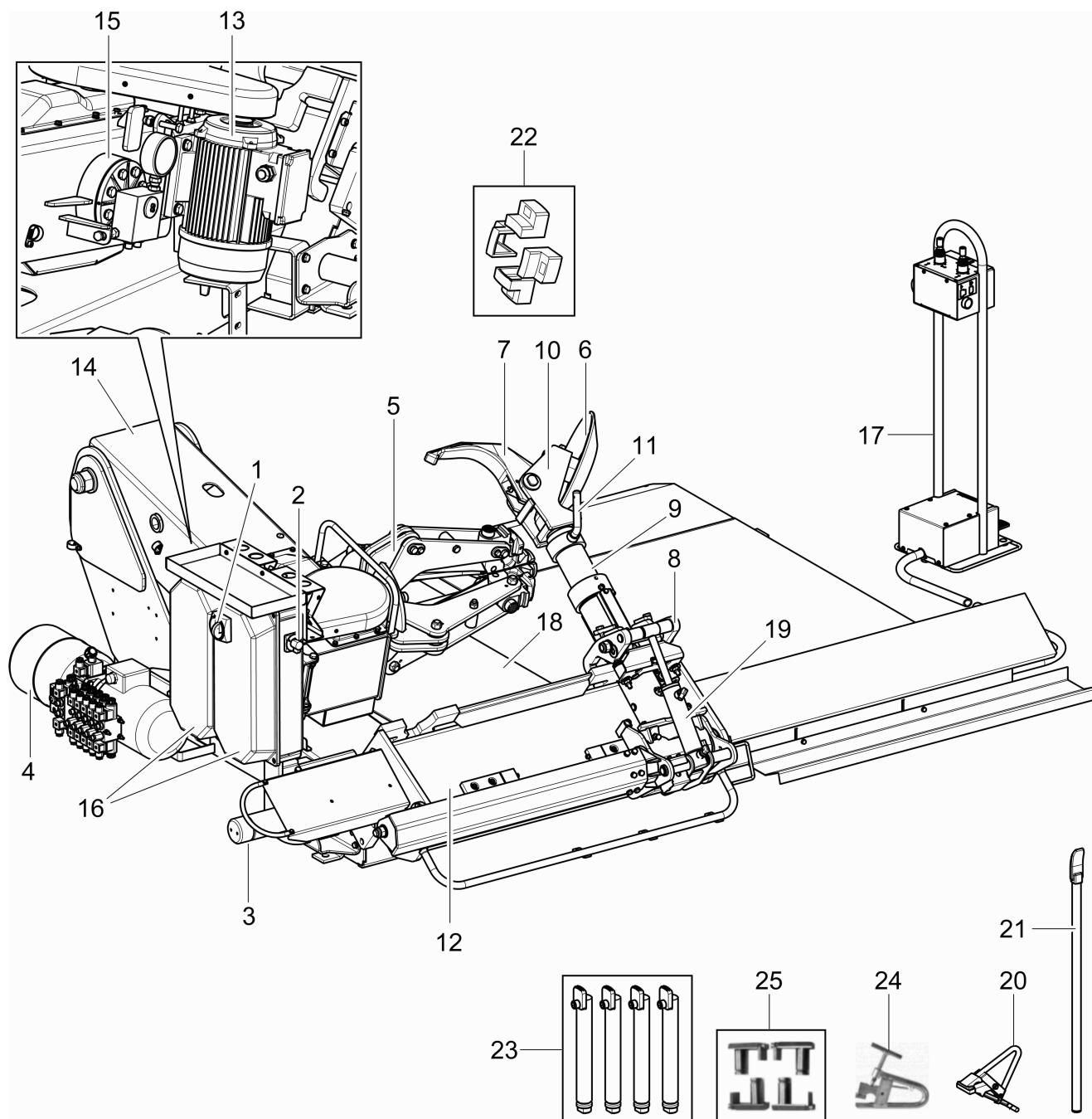
7522-M008-00 - Rev. n. 00 (09/2023)

SUMMARY

GENERAL DESCRIPTION _____	3	12.0 USE OF THE EQUIPMENT _____	17
SYMBOLS USED IN THE MANUAL _____	4	12.1 Precaution measures during tyre removal and fitting _____	17
PLATES LOCATION DRAWING _____	5	12.2 Preliminary operations _____	18
1.0 GENERAL INTRODUCTION _____	7	12.3 Preparing the wheel _____	18
1.1 Introduction _____	7	12.4 Wheel clamping _____	19
2.0 INTENDED USE _____	7	12.5 Functioning of tool holder arm _____	21
2.1 Training of personnel _____	7	12.5.1 Tools rotation _____	22
3.0 SAFETY DEVICES _____	8	12.5.2 Tools assembly extraction/in- sertion _____	22
3.1 Residual risks _____	9	12.6 Tubeless tyres _____	22
4.0 IMPORTANT SAFETY INSTRUCTIONS _____	9	12.6.1 Bead breaking _____	22
4.1 General safety rules _____	10	12.6.2 Demounting _____	23
5.0 PACKING AND MOBILIZATION FOR TRANSPORT _____	11	12.6.3 Mounting _____	25
6.0 UNPACKING _____	11	12.7 Tyres with inner tube _____	27
7.0 MOBILIZATION _____	12	12.7.1 Bead breaking _____	27
8.0 WORKING ENVIRONMENT CONDITIONS _____	12	12.7.2 Demounting _____	27
8.1 Work position _____	12	12.7.3 Mounting _____	28
8.2 Installation space _____	12	12.8 Wheels with bead wire _____	30
8.3 Lighting _____	13	12.8.1 Beading and demounting _____	31
9.0 ASSEMBLY AND PREPARATION FOR USE _____	13	12.8.2 Mounting _____	32
9.1 Anchoring system _____	13	13.0 ROUTINE MAINTENANCE _____	33
9.2 Accessories contained in the packing _____	13	14.0 TROUBLESHOOTING TABLE _____	36
10.0 ELECTRICAL CONNECTIONS _____	14	15.0 TECHNICAL DATA _____	38
10.1 Oil check on oil-pressure power unit _____	15	15.1 Technical electrical data _____	38
10.2 Check of motor rotation direction _____	15	15.2 Technical mechanical data _____	38
10.3 Electrical checks _____	15	15.3 Dimensions _____	39
11.0 CONTROLS _____	16	16.0 STORING _____	40
11.1 Control box assembly _____	16	17.0 SCRAPPING _____	40
		18.0 REGISTRATION PLATE DATA _____	40
		19.0 FUNCTIONAL DIAGRAMS _____	40
		Table A - Wiring diagram _____	41
		Table B - Hydraulic diagram _____	46
		CONTENT OF THE EC DECLARATION OF CONFORMITY _____	48
		CONTENT OF THE UK DECLARATION OF CONFORMITY _____	49

GENERAL DESCRIPTION








Fig. 1









KEY (Fig. 1)

- | | |
|---|---|
| 1 – Main switch | 14 – Chuck arm |
| 2 – Selector 1-0-2 self-centring
chuck speed control | 15 – Chuck opening/closing cylinder |
| 3 – Tools carriage movement cylinder | 16 – Electric cabinet |
| 4 – Hydraulic power unit | 17 – Control box assembly |
| 5 – Self-centring chuck | 18 – Movable footboard |
| 6 – Bead breaker disc | 19 – Tool holder arm release cylinder |
| 7 – Hook tool | 20 – Bead locking clamp |
| 8 – Jack | 21 – Long lever |
| 9 – Tool holder arm | 22 – Standard clamp adapters for alloy rims (op-
tional) |
| 10 – Tools assembly | 23 – Chuck grip extensions (optional) |
| 11 – Tools assembly positioning lever | 24 – Bead locking clamp (optional) |
| 12 – Tools carriage | 25 – Adapters with increased grip (optional) |
| 13 – Chuck rotation motor | |

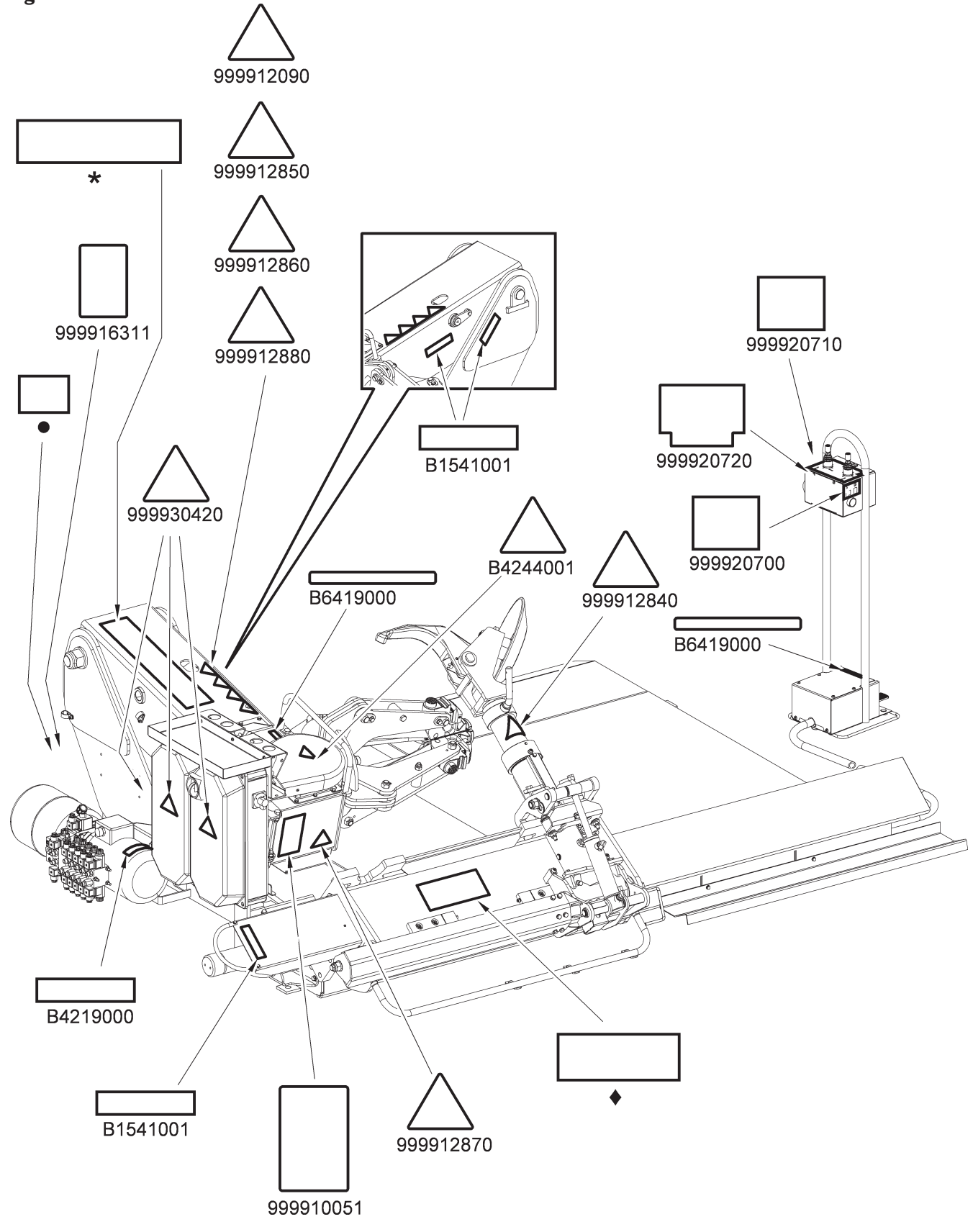
SYMBOLS USED IN THE MANUAL

Symbols	Description
	Read instruction manual.
	Wear work gloves.
	Wear work shoes.
	Wear safety goggles.
	Mandatory. Operations or jobs to be performed compulsorily.
	Warning. Be particularly careful (possible material damages).
	Danger! Be particularly careful.

Symbols	Description
	Note. Indication and/or useful information.
	Move with fork lift truck or pallet truck.
	Lift from above.
	Technical assistance necessary. Do not perform any maintenance.
	Risk of crushing and collisions (tools holder shaft).
	Danger: tyre could fall.

PLATES LOCATION DRAWING

Fig. 2



Code numbers of nameplates

B1541001	<i>Danger nameplate</i>
B4219000	<i>Rotation indicating nameplate</i>
B4244001	<i>Rotating parts danger nameplate</i>
B6419000	<i>Rotation nameplate</i>
999910051	<i>Protection device use nameplate</i>
999912090	<i>Tyre fall danger nameplate</i>
999912840	<i>Danger nameplate 1</i>
999912850	<i>Danger nameplate 2</i>
999912860	<i>Danger nameplate 3</i>
999912870	<i>Danger nameplate 4</i>
999912880	<i>Danger nameplate 5</i>
999916311	<i>Rubbish skip nameplate</i>
999920700	<i>Double speed nameplate</i>
999920710	<i>Chuck open/close nameplate</i>
999920720	<i>Control nameplate</i>
999930420	<i>Electric shock danger nameplate</i>
*	<i>Equipment nameplate</i>
.	<i>Serial number nameplate</i>
♦	<i>Manufacturer nameplate</i>



IF ONE OR MORE NAMEPLATES ARE MISSING FROM THE EQUIPMENT OR BECOMES DIFFICULT TO READ, REPLACE IT AND QUOTE ITS/THEIR PART NUMBER/S WHEN REORDERING.



SOME OF THE PICTURES IN THIS MANUAL HAVE BEEN OBTAINED FROM PICTURES OF PROTOTYPES, THEREFORE THE STANDARD PRODUCTION EQUIPMENT AND ACCESSORIES CAN BE DIFFERENT THAN PICTURED.

1.0 GENERAL INTRODUCTION

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

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



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



THE MANUFACTURER CAN NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE SHOP, EQUIPMENT OR CUSTOMER WHEEL/TYRE THAT MAY OCCUR WHEN THE INSTRUCTIONS GIVEN IN THIS MANUAL ARE NOT FOLLOWED. DISREGARDING THESE INSTRUCTIONS MAY CAUSE INJURY OR DEATH.

1.1 Introduction

Thanks for purchasing this tyre changer! The tyre changer is designed and built for professional garages. The tyre changer is easy to use with safety in mind. Following the care and maintenance outlined in this tyre changer manual your tyre changer will provide years of service.

2.0 INTENDED USE

The equipment described in this manual is a tyre changer that uses two systems:

- an electric motor coupled to a gearbox to handle the tyre rotation, and
- a hydraulic pump system to manage the locking and movement of the hydraulic cylinders with multiple assembly/disassembly tools.

The equipment is to be used only for the mounting and demounting of any type of wheel with the whole rim (drop centre and with bead) with diameters and width values mentioned in "Technical specifications" chapter. The equipment is NOT intended to be used for tyre inflation.



THIS EQUIPMENT MUST ONLY BE USED FOR THE PURPOSE FOR WHICH IT IS SPECIFICALLY DESIGNED. ANY OTHER USES ARE TO BE CONSIDERED IMPROPER AND THEREFORE UNACCEPTABLE.



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

2.1 Training of personnel

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

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



CAREFULLY READING THIS INSTRUCTION MANUAL AND A SHORT PERIOD OF TRAINING BY SKILLED PERSONNEL REPRESENT A SATISFACTORY FORM OF TRAINING.

3.0 SAFETY DEVICES



DAILY CHECK THE INTEGRITY AND THE FUNCTIONALITY OF THE SAFETY AND PROTECTION DEVICES ON THE EQUIPMENT.

The equipment is equipped with:

- **hold-to-run-controls** (immediate stop of operation when the control is released);
- **controls logic disposition:**
to prevent the operator from making dangerous mistakes;
- **thermal magnetic switch** on the supply line of the oil-pressure power unit motor:
avoids the motor overheating in case of intensive use;
- **controlled check valves** on:
 - opening of chuck jaws;
 - chuck arm lifting;
 - tool holder arm tilting (for versions foreseeing such operation only).
 These valves have been fit in order to avoid unexpected movements of the jaws, hook tool or chuck arm (and, as a consequence, the wheel fall) caused by accidental oil drippings;



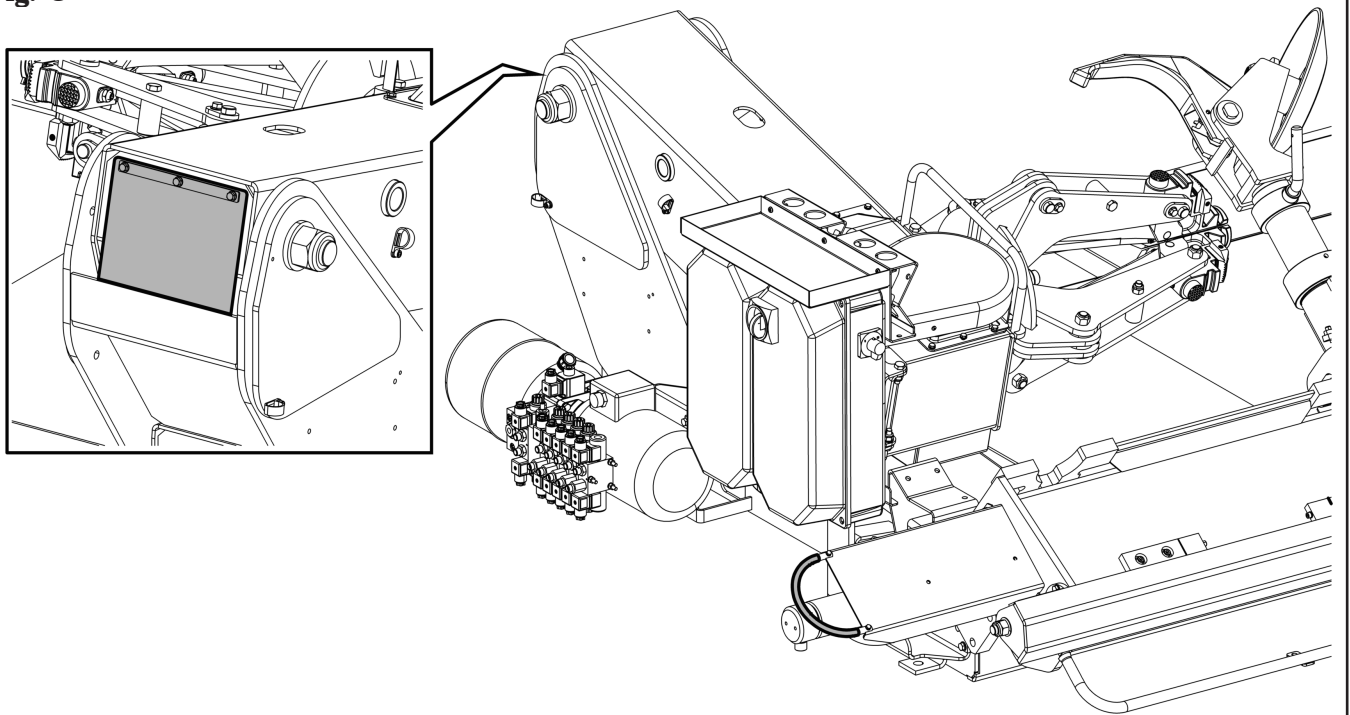
NO MODIFICATION OR CALIBRATION OF THE OPERATING PRESSURE OF THE MAXIMUM PRESSURE VALVE OR OF THE HYDRAULIC CIRCUIT PRESSURE LIMITER IS PERMITTED.

- **fuses** on the power supply line of the chuck motor;
- **automatic power supply disconnection** with the opening of the electric cabinet.
- **chuck self-braking motor** (standard on some models);
- **Fixed protections and guards.**

This equipment has permanent guards installed to avoid potential risks of getting crushed, cut or squeezed. These protections have been realized after risks evaluation and after all equipment operative situations have been considered.

These protections can be identified in **Fig. 3**.

Fig. 3



3.1 Residual risks

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

Any residual risks have been highlighted in this manual through pictograms and adhesive warning signals placed on the equipment: their location is represented in "PLATE LOCATION DRAWING" (see **Fig. 2**).

4.0 IMPORTANT SAFETY INSTRUCTIONS

When using your garage equipment, basic safety precautions should always be followed, including the following:


1. Read all instructions.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.
4. Do not let a cord hang over the edge of the table, bench, or counter or come in contact with hot manifolds or moving fan blades.
5. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
6. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
7. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
8. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
9. Adequate ventilation should be provided when working on operating internal combustion engines.
10. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
11. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
12. Use only as described in this manual. Use only manufacturer's recommended attachments.
13. **ALWAYS WEAR SAFETY GLASSES.** Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.




SAVE THESE INSTRUCTIONS

4.1 General safety rules





- Any tampering with or modification to the machine not previously authorized by the manufacturer exempts the latter from all responsibility for damage caused by or derived from said actions.
- Removing of or tampering with the safety devices or with the warning signals placed on the equipment leads to serious dangers and represents a transgression of European safety standards.
- The equipment may be used only in areas free from the danger of explosion or fire.
- The use of only original accessories and spare parts is advised. Our equipment is designed to function only with original accessories.
- The installation must be performed by qualified personnel in full compliance with the instructions given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the equipment if it malfunctions and contact the customer service of the authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, isolate the equipment from energy sources by disconnecting the electrical and/or pneumatic power supply using the main switch.
- Ensure that the area around the equipment is free of potentially dangerous objects and that the area is oil free since this could damage the tyre. Oil on the floor is also a slipping hazard for the operator.

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


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

- The equipment handles and operating grips must be kept clean and free from oil.
- The workshop must be kept clean and dry and not in an out doors location. Make sure that the working premises are properly lit. The equipment can be operated by a single operator at a time. Unauthorized personnel must remain outside the working area, as shown in **Fig. 6**. Avoid any hazardous situations. Do not use this equipment when the shop is damp or the floor slippery and do not use this equipment out doors.
- When operating and servicing this equipment, carefully follow all in force safety and accident-prevention precautions. The equipment must not be operated by untrained personnel.

	THE EQUIPMENT OPERATES WITH PRESSURIZED HYDRAULIC FLUID. MAKE SURE ALL FITTINGS AND HOSES ARE LEAK FREE AND IN GOOD CONDITION. ANY PRESSURIZED LEAKS MAY CAUSE SERIOUS INJURIES.
--	---

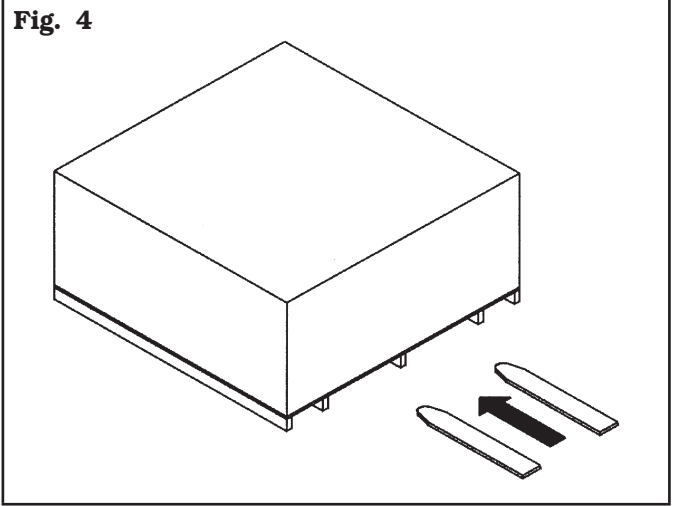
	ALWAYS KEEP THE HYDRAULIC CONTROLS IN THE NEUTRAL POSITION.
--	--

5.0 PACKING AND MOBILIZATION FOR TRANSPORT




HAVE THE EQUIPMENT HANDLED BY SKILLED PERSONNEL ONLY. THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE PACKED EQUIPMENT (SEE PARAGRAPH "TECHNICAL SPECIFICATIONS").

The equipment is supplied completely assembled, packed in a cardboard box. Movement must be by pallet-lift or fork-lift trolley. Lift the packaging as indicated in **Fig. 4** (forks introduced in the middle to ensure a correct loads distribution).




6.0 UNPACKING



DURING UNPACKING, ALWAYS WEAR GLOVES TO PREVENT ANY INJURY CAUSED BY CONTACT WITH PACKAGING MATERIAL (NAILS, ETC.).

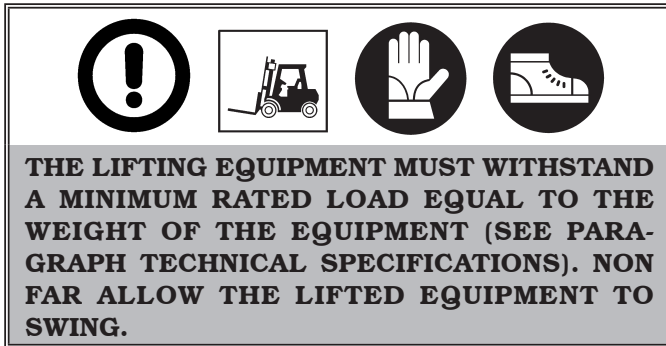
After removing the packing, and in the case of the equipment packed fully assembled, check that the machine is complete and that there is no visible damage. If in doubt **do not use the equipment** and refer to professionally qualified personnel (to the seller). The packaging elements (plastic bags, polystyrene foam, nails, bolts, wood, etc.) must be collected up and disposed of through according to the in force laws, except for the pallet, which could be used again for subsequent equipment handling.



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

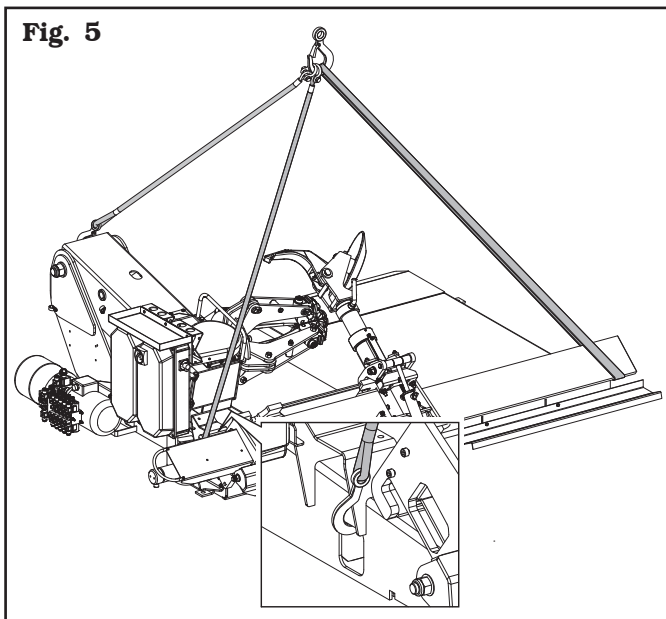
7.0 MOBILIZATION

If the equipment has to be moved.



If the equipment has to be moved from its normal work post the transport must be conducted by following the instructions listed below.

- Protect the exposed corners with suitable material (bubble wrap/cardboard).
- Do not use metallic cables for lifting.
- Move the chuck to completely lowered position and in the centre of the equipment in order to ensure a correct load balancing.
- Move the tool holder carriage to limit switch towards the chuck.
- Disconnect all equipment power supply sources;
- Sling with three sufficiently long belts (300 cm - 118.11" at least) and with capacity load at least equal to equipment weight (see **Fig. 5**).
- Lift and transport with suitable device with adequate dimensions.



8.0 WORKING ENVIRONMENT CONDITIONS

The equipment must be operated under proper conditions as follows:

- temperature: +5 °C - +40 °C (+41 °F - +104 °F);
- relative humidity: 30 - 95% (dew-free);
- atmospheric pressure: 860 - 1060 hPa (mbar) (12.5 - 15.4 psi).

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

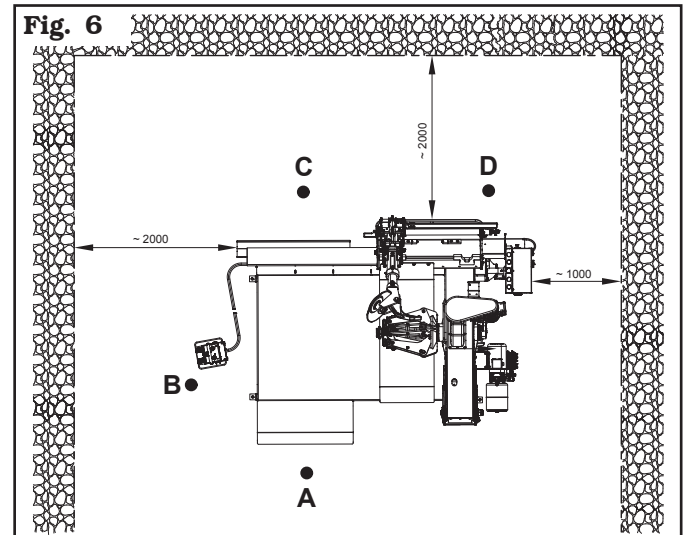
8.1 Work position

In **Fig. 6** it's possible to define work positions **A**, **B**, **C**, **D**, which will be referred to in the description of equipment operative phases.

Positions **A** and **B** must be considered as main positions for tyre mounting and demounting and for wheel clamping on the chuck, while positions **C** and **D** are the best positions to follow tyre bead breaking and demounting operations.

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

8.2 Installation space



The location of the equipment requires a usable space as indicated in **Fig. 6**. The positioning of the equipment must be executed according to the distances shown. From the control position the operator is able to observe all the equipment and surrounding area. Operator must prevent unauthorized personnel or objects that could be dangerous from entering the area. The equipment must be secured to a flat floor surface, preferably of cement or tiled. Avoid yielding or irregular surfaces.

The equipment base floor must be able to support the loads transmitted during operation. This surface must have a capacity load of at least 500 kg/m² (100 lb/ft²). The depth of the solid floor must guarantee the tightness of the anchor plugs.

8.3 Lighting

The equipment must be placed in a sufficiently lit environment in compliance with current regulations.

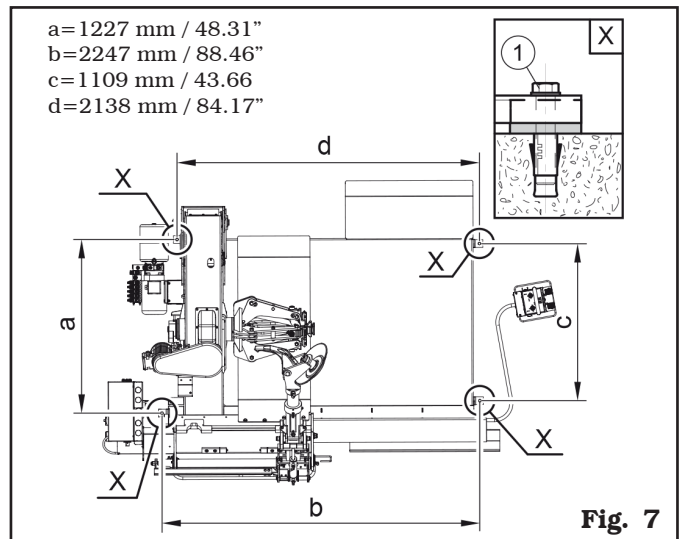
9.0 ASSEMBLY AND PREPARATION FOR USE



ALL EQUIPMENT ASSEMBLY OR ADJUSTMENTS MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED STAFF.

9.1 Anchoring system

The packed equipment is secured to the support pallet through the holes on the frame and indicated in the figure below. These holes can be used to secure the equipment to the floor, using suitable concrete anchors (not included). Before concrete anchoring to floor, check that all the anchor points are flat, or level in contact with the floor. If not, shim between the equipment and the floor, as indicated in **Fig. 7**.



- To secure the equipment to the floor, use anchoring bolts/studs (**Fig. 7 ref. 1**) with a threaded shank M12 (UNC 1/2-13) suitable for the floor on which the tyre changer will be secured and in a number equal to the number of mounting holes on the bottom frame;
- drill holes in the floor, suitable for inserting the chosen anchors, in correspondence with the holes on the bottom frame;
- insert the anchors into the holes drilled in the floor through the holes on the bottom frame and tighten the anchors;
- tighten the anchors on the base frame and torque as indicated by the manufacturer of the anchors.

9.2 Accessories contained in the packing

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

Description	Qty
Clamp	1
Long lever	1

10.0 ELECTRICAL CONNECTIONS



ALL ELECTRICAL CONNECTIONS ARE TO BE DONE BY QUALIFIED PERSONNEL ONLY.



BEFORE CONNECTING THE EQUIPMENT MAKE SURE THAT:

- POWER LINE SPECIFICATIONS CORRESPOND TO EQUIPMENT REQUIREMENTS AS SHOWN ON THE MACHINE NAMEPLATE;
- ALL MAIN POWER COMPONENTS ARE IN GOOD CONDITION;
- THE ELECTRICAL SYSTEM IS PROPERLY GROUNDED (GROUND WIRE MUST BE THE SAME CROSS-SECTION AREA AS THE LARGEST POWER SUPPLY CABLES OR GREATER);
- MAKE SURE THAT THE ELECTRICAL SYSTEM FEATURES A PADLOCKABLE MAIN SWITCH AND A CUTOUT WITH DIFFERENTIAL PROTECTION SET AT 30 mA.

The equipment is supplied with a cable. A plug corresponding to the following requirements must be connected to the cable:



FIT A TYPE-APPROVED (AS REPORTED BEFORE) PLUG TO THE EQUIPMENT CABLE (THE GROUND WIRE IS YELLOW/GREEN AND MUST NEVER BE CONNECTED TO ONE OF THE PHASE LEADS OR TO THE NEUTRAL).



MAKE SURE THAT THE ELECTRICAL SYSTEM IS COMPATIBLE WITH THE RATED POWER REQUIREMENTS SPECIFIED IN THIS MANUAL AND APT TO ENSURE THAT VOLTAGE DROP UNDER FULL LOAD WILL NOT EXCEED 4% OF RATED VOLTAGE (10% UPON START-UP).



FAILURE TO OBSERVE THE ABOVE INSTRUCTIONS WILL IMMEDIATELY INVALIDATE THE WARRANTY AND MAY DAMAGE THE EQUIPMENT.

Model	Conformity standard	Voltage	Amperage	Poles	Minimum IP rating
ROT.N5115.201829	IEC 309	400V	16A	3 Poles + Ground	IP 44
RAV.G0156.206251	IEC 309	400V	16A	3 Poles + Ground	IP 44

10.1 Oil check on oil-pressure power unit



THE OIL-PRESSURE POWER UNIT IS DELIVERED WITHOUT HYDRAULIC OIL, THEREFORE MAKE SURE THE TANK PROVIDED IS FILLED WITH AN APPROXIMATE AMOUNT OF OIL OF 5 LITRES (1.3 GALLONS), ALWAYS BEING CAREFUL NOT TO SPILL IT OUTSIDE THE TANK.

USE HYDRAULIC OIL WITH A VISCOSITY DEGREE APPROPRIATE TO THE AVERAGE TEMPERATURES IN THE INSTALLATION COUNTRY AND IN PARTICULAR:

- VISCOSITY 32 (OR COUNTRIES WITH ROOM TEMPERATURE FROM 0 °C - +30 °C (+32 °F - +86 °F));
- VISCOSITY 46 (FOR COUNTRIES WITH ROOM TEMPERATURE ABOVE +30 °C (+86 °F)).

10.2 Check of motor rotation direction

Once the last electrical connection has been completed, power the equipment with the main switch. Make sure the motor of the hydraulic power unit rotates in the direction indicated by the arrow (**Fig. 8 ref. B**) visible on the electric motor cap. If rotation should occur in the opposite direction, the equipment must be immediately stopped and phase inversion must be executed inside the plug connection in order to reset the correct rotation direction.



FAILURE TO OBSERVE THE ABOVE INSTRUCTIONS WILL IMMEDIATELY INVALIDATE THE WARRANTY.

10.3 Electrical checks



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



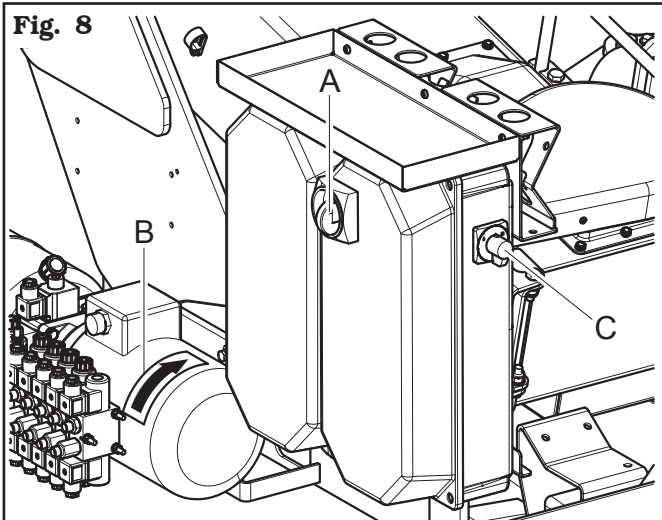
CARRY OUT A DAILY CHECK OF THE HOLD-TO-RUN CONTROL CONTROLS FOR PROPER FUNCTIONING, BEFORE STARTING EQUIPMENT OPERATION.

Once the plug/socket connection has been made, turn on the equipment using the main switch (**Fig. 8 ref. A**).

The product is equipped with a device for the interruption of the communication between the control and the electrical cabinet, when more than 6 hours have passed after the last executed control. In this case, just repeat the turning on operations described in the "Electrical checks" chapter.



ONCE THE ASSEMBLY OPERATIONS HAVE BEEN COMPLETED, CHECK ALL EQUIPMENT FUNCTIONS.



KEY

A - Main switch

B - Rotation direction of power unit motor

C - Selector 1-0-2 self-centring chuck speed control

11.0 CONTROLS

11.1 Control box assembly

The control (handle control) can be moved according to the positioning necessities of the operator. The operator should place the control in a zone free from obstacles in order to see clearly and completely the operative zone.



MAKE SURE THERE ARE NO PERSONS OR OBJECTS HIDDEN TO THE OPERATOR VISUAL FIELD BY THE WHEEL SIDE (ESPECIALLY IN CASE OF WHEELS WITH LARGE DIMENSIONS).

“Lever **A**” has four hold-to-run control operative positions:

- Lever towards the right or left: it operates respectively hook tool towards the right or towards the left repositioning on the carriage.
- Lever upwards or downwards: it respectively lowers or lifts the tool holder arm.

“Lever **B**” has four hold-to-run control operative positions:

- Lever upwards or downwards: it operates respectively the rising and the lowering of the chuck holder arm.
- Lever towards the right or left: it moves the chuck holder carriage towards the right or towards the left.

“Push button **C**” has one hold-to-run control operative position, and when pressed it rotates the hook tool holder head counterclockwise (from behind the tool).

“Push button **D**” has one hold-to-run control operative position, and when pressed it rotates the tools holder head clockwise (from behind the tool).

“Push button **E**” has one hold-to-run control operative position and when pressed, it operates the self-centring chuck opening.

“Push button **F**” has one hold-to-run control operative position, and when pressed it operates the self-centring chuck closing.

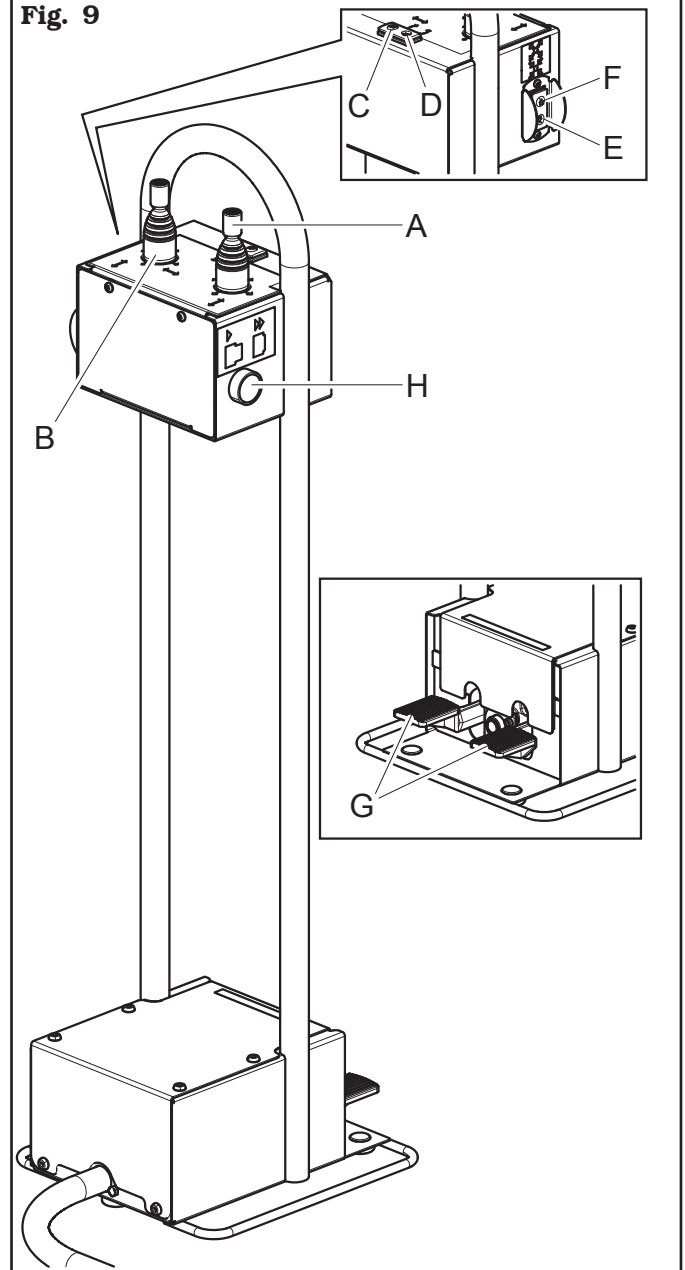
“Pedal **G**” controls chuck clockwise and counterclockwise rotation.

“Push button **H**” pressed together with the lever “**A**” horizontally, doubles the movement speed of the tool holder carriage.



THE HANDLE MUST NOT BE PLACED WHERE WATER STANDS.

Fig. 9



12.0 USE OF THE EQUIPMENT

12.1 Precaution measures during tyre removal and fitting



Before fitting a tyre, observe the following safety rules:

- rim and tyre must always be clean, dry and in good condition; if necessary, clean the rims and check that:
 - neither the beads, the sidewalls nor the tread of the tyre are damaged;
 - the rim does not have any dents and/or deformations;
- adequately lubricate the contact surface of rim and the tyre beads, using specific tyre lubricants only;
- replace the inner tube or rim valve with a new valve, if the tyre pipe has a metal valve, replace the grommet;
- always make sure that tyre and rim sizes are correct for their coupling; never fit a tyre unless you are sure it is of the right size (the rated size of rim and tyre is usually printed directly on them);
- do not use compressed air or water jets to clean the wheels on the equipment.



FITTING A TYRE WITH A DAMAGED BEAD, TREAD AND/OR SIDEWALL ON A WHEEL RIM REDUCES THE SAFETY OF A VEHICLE AND CAN LEAD TO TRAFFIC ACCIDENTS, SERIOUS INJURY OR EVEN DEATH.

IF A TYRE BEAD, TREAD OR SIDEWALL IS DAMAGED DURING REMOVAL, NEVER REFIT THE TYRE ONTO A WHEEL.

IF YOU SUSPECT THAT A BEAD, TREAD OR SIDEWALL OF A TYRE MAY HAVE BEEN DAMAGED DURING FITTING, REMOVE THE TYRE AND INSPECT IT CAREFULLY.

NEVER REFIT IT TO A WHEEL IF A BEAD, TREAD OR SIDEWALL IS DAMAGED.



INADEQUATE LUBRICATION OF THE TYRE, THE RIM, THE HOOK TOOL AND/OR THE LEVER CAN CAUSE AN ABNORMAL FRICTION BETWEEN THE TYRE AND THESE ELEMENTS DURING THE DISASSEMBLY AND/OR ASSEMBLY OF THE TYRE AND CAUSE DAMAGE TO THE TYRE ITSELF, REDUCING THE SAFETY OF A VEHICLE EQUIPPED WITH THE TYRE.

ALWAYS LUBRICATE THESE ELEMENTS THOROUGHLY USING A SPECIFIC LUBRICANT FOR TYRES, FOLLOWING THE INDICATIONS CONTAINED IN THIS MANUAL.



THE USE OF AN INADEQUATE, WORN OR OTHERWISE DAMAGED LEVER TO REMOVE TYRE BEADS MAY LEAD TO DAMAGE TO A BEAD AND/OR A TYRE SIDEWALL, REDUCING THE SAFETY OF A VEHICLE EQUIPPED WITH THE TYRE ITSELF.

ONLY USE THE LEVER SUPPLIED WITH THE EQUIPMENT AND CHECK ITS CONDITION BEFORE EACH DISASSEMBLY.

IF IT IS WORN OR OTHERWISE DAMAGED, DO NOT USE IT TO REMOVE THE TYRE, BUT REPLACE IT WITH A LEVER SUPPLIED BY THE EQUIPMENT MANUFACTURER OR ONE OF ITS AUTHORIZED DISTRIBUTORS.



FAILURE TO INSERT A SUITABLE SECTION OF A BEAD INSIDE THE RIM DROP CENTRE, AS INDICATED IN THIS MANUAL DURING THE FITTING OR REMOVAL OF THE BEAD, RESULTS IN AN ABNORMAL TENSION ON THE BEAD.

THIS CAN CAUSE DAMAGE TO THE BEAD AND/OR THE SIDEWALL OF THE TYRE TO WHICH THE BEAD IS CONNECTED, REDUCING THE SAFETY OF A VEHICLE EQUIPPED WITH THE TYRE.

ALWAYS FOLLOW THE DIRECTIONS IN THE MANUAL REGARDING ALIGNMENT OF A SECTION OF A BEAD TO THE RIM DROP CENTRE.

DO NOT PROCEED WITH THE REMOVAL OR INSTALLATION OF A BEAD IF YOU ARE NOT ABLE TO ALIGN A SECTION OF A BEAD WITH THE RIM DROP CENTRE AS INDICATED IN THIS MANUAL.

12.2 Preliminary operations

In view of the tyre changer structure and of its intended use, the operator must work with wheels with large diameter (up to 2550 mm - 100.39") and heavy wheels (up to 2300 kg - 5071 lbs).

The utmost care while moving the wheels is recommended: make use of other operators, properly trained and with suitable clothes.



THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 8 REF. C).

LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT.

THE CAREFUL LUBRICATION OF THE TYRE BEADS IS ALSO RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.

12.3 Preparing the wheel

- Remove the wheel balancing weights from both sides of the wheel.



REMOVE THE VALVE STEM AND ALLOW THE TYRE TO COMPLETELY DEFLATE.

- Establish from which side the tyre should be demounted, checking the position of the drop centre.
- Find the rim locking type.

12.4 Wheel clamping



DUE TO THE SIZE AND WEIGHT OF THE WHEEL/TYRE, MAKE USE OF A SECOND OPERATOR TO HOLD THE WHEEL INTO VERTICAL POSITION, IN ORDER TO ENSURE SAFE OPERATIVE CONDITIONS.



WHEN HANDLING WHEELS WEIGHING MORE THAN 500 Kg (1102 lbs) A FORK-LIFT TRUCK OR A CRANE SHOULD BE USED.



MAKE SURE THAT RIM CLAMPING IS DONE PROPERLY AND THAT THE GRIP IS SECURE, TO PREVENT THE WHEEL FROM FALLING DURING MOUNTING OR REMOVAL OPERATIONS.



DO NOT CHANGE THE SET OPERATING PRESSURE VALUE USING THE MAXIMUM PRESSURE VALVES. THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR INJURY OR DAMAGE ARISING FROM UNAUTHORIZED CHANGES.

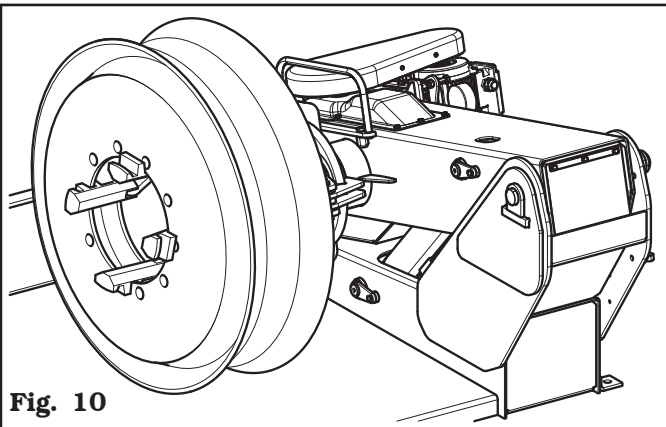
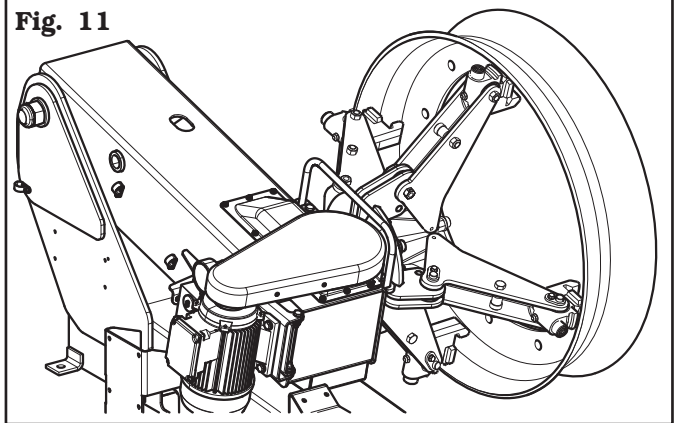


Fig. 10

Clamping on the central hole

Fig. 11



Clamping on bead seat



OPENING/CLOSING MOVEMENT OF THE SELF-CENTRING CHUCK CAN GENERATE DANGER OF SQUASHING, CUTTING, COMPRESSING. DURING WHEEL LOCKING/UNLOCKING PHASE, AVOID THAT PARTS OF HUMAN BODY COME INTO CONTACT WITH MOVING PARTS OF THE MACHINE.

All wheels must be clamped from the inside.
Clamping on the central flange is always safest.



FOR WHEELS WITH DROP CENTRE RIMS SECURE THE WHEEL SO THAT THE DROP CENTRE IS FACING OUTWARDS COMPARED TO THE CHUCK.

If it is not possible to clamp the rim in the hole of the disc, clamp on the bead seat close to the disc.



TO SECURE WHEELS WITH ALLOY RIMS ADDITIONAL PROTECTIVE JAWS ARE AVAILABLE. THEY ALLOW YOU TO WORK ON THE RIMS WITHOUT DAMAGING THEM. THE PROTECTIVE JAWS ARE FITTED ONTO THE CHUCK'S NORMAL JAWS USING A BAYONET CONNECTION.

To clamp the wheel proceed as follows:

- move the tool holder arm (**Fig. 14 ref.1**) to “out of work” position, manually or with the help of the provided controls, according to the model of tyre changer which is being used;
- move the movable footboard (**Fig. 1 ref. 18**) outside. Make the wheel rotate on the same footboard;

- place the lock chuck (**Fig. 1 ref. 5**) approximately in the centre of the wheel; move the footboard towards the chuck and centre the wheel on it, in the most suitable position using the corresponding control levers;
- adjust the opening of the self-centring chuck through the corresponding control (**Fig. 7 ref. E**) according to the type of rim to be locked;
- lock the rim with the lock chuck (**Fig. 1 ref. 5**);
- make sure the rim is always correctly locked and centred, and the wheel is lifted from the equipment platform, in order to prevent the rim from slipping in the following operations.

Whenever the rim exceeds the 42", in the locking point, use the appropriate extensions (optional). To avoid damages or scratches on light alloy rims, the special jaws should be used (optional).



AFTER COMPLETION OF TYRE MOUNT/DEMOUNT OPERATIONS DO NOT LEAVE THE WHEEL CLAMPED ON THE SELF-CENTRING CHUCK AND NEVER LEAVE IT UNATTENDED.



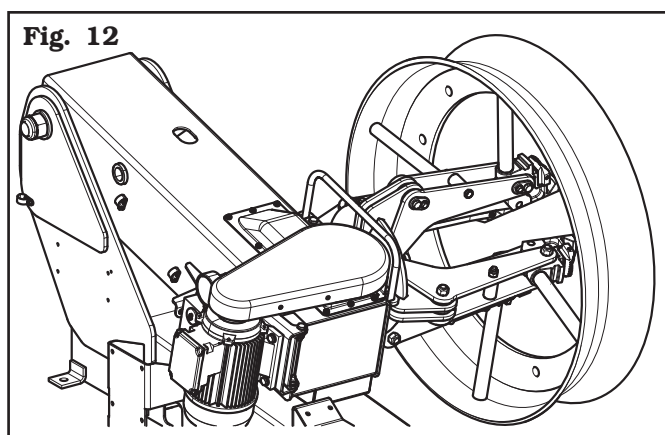
KEEP ON OPERATING RIM CLAMPING CONTROL, UNTIL REACHING THE MAX. OPERATING PRESSURE (180 bar - 2610 psi), WHICH CAN BE CHECKED USING THE PRESSURE GAUGE.



THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 8 REF. C). LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT. THE CAREFUL LUBRICATION OF THE TYRE BEADS IS ALSO RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.



THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 8 REF. C). LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT. THE CAREFUL LUBRICATION OF THE TYRE BEADS IS ALSO RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.



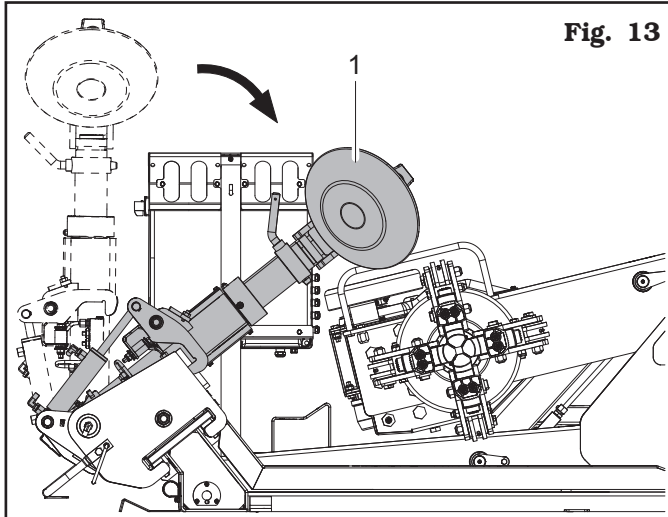
Locking with extensions

12.5 Functioning of tool holder arm

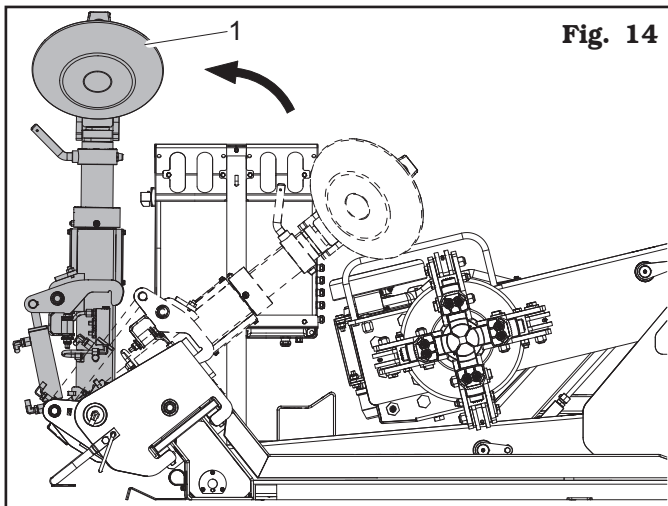
During the working phases, the tool holder arm can maintain two positions, that is:

- 1) "Working" position;
- 2) "out of work" position.


In "working" position (**Fig. 13 ref. 1**) the tool holder arm is lowered towards the chuck and from this position it executes the various tyre bead breaking, demounting and mounting operations.



In "out of work" position (**Fig. 14 ref. 1**): the tool holder arm is in vertical position and has to be brought in this position every time it is not in use and in order to be shifted from one tyre side to another, during the different working phases.



The tool holder arm moves from "out of work" position to "work position" through hydraulic cylinder.

	<p>IN WORK POSITION, THE SAFETY JACKS (FIG. 1 REF. 8) MUST BE HOOKED TO THE TOOL HOLDER CARRIAGE (FIG. 1 REF. 12).</p>
--	---

To shift from "working" position to "out of work" position, the tool holder arm moves by the handle control that activates the cylinder (**Fig. 1 ref. 19**).

When the tool holder arm is to "out of work" position, it can be laterally shifted in automatic mode in one of the two pre-set positions on the carriage, so that it can better positioned (according to the operations to be performed afterwards) before it reaches "working" position again.

12.5.1 Tools rotation

Tools holder head 180° rotation is automatic, and it takes place through handle control operation (Fig. 9 ref. C).

12.5.2 Tools assembly extraction/insertion

The tools holder head has two work positions.



THE FOLLOWING OPERATIONS MUST BE CARRIED OUT WITH THE TOOLS HEAD IN "OUT OF WORK" POSITION.

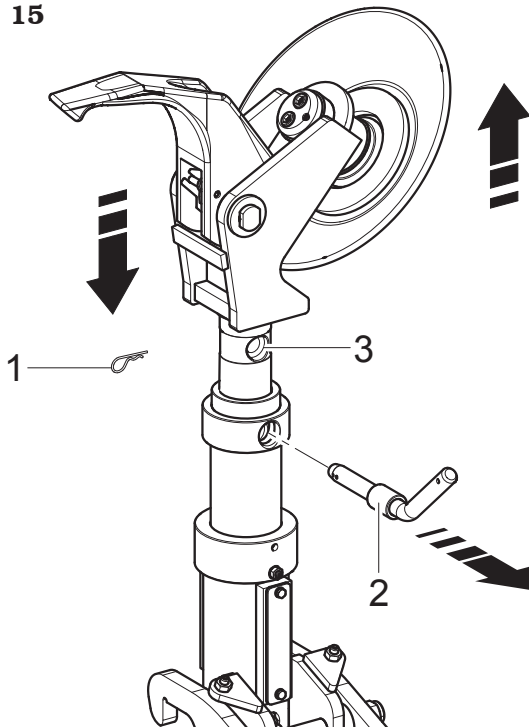
Remove the safety split pin (Fig. 15 ref. 1) and manually extract the lever (Fig. 15 ref. 2) to change from one position to another. Manually lift or lower the tools holder head until the locking holes match (Fig. 15 ref. 3).



WHEN THE TOOLS HOLDER HEAD IS LOWERED, MOVE THE HEAD ITSELF DOWNWARDS WITH THE FREE HAND.

When the new position has been reached, insert the lever again (Fig. 15 ref. 2) in the provided hole and assemble the safety split pin (Fig. 15 ref. 1) again.

Fig. 15



12.6 Tubeless tyres

12.6.1 Bead breaking



NEVER PLACE ANY PART OF YOUR BODY BETWEEN THE TOOLS ASSEMBLY AND THE TYRE.



THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

- Lock the wheel on the chuck as described in the previous paragraph.
- Remove all balancing weights from the rim. Extract the valve and let air out of tyre.
- Move to work position C (Fig. 6).
- Lower tool holder arm to work position (hooked safety jack) (Fig. 13).



ALWAYS MAKE SURE THAT THE ARM IS CORRECTLY HOOKED TO CARRIAGE.

- Place as shown in Fig. 16 the bead breaker disc (Fig. 16 ref. 1) using the control lever (Fig. 9 ref. A); the outer profile of the rim (Fig. 16 ref. 2) must almost touch the bead breaker disc.

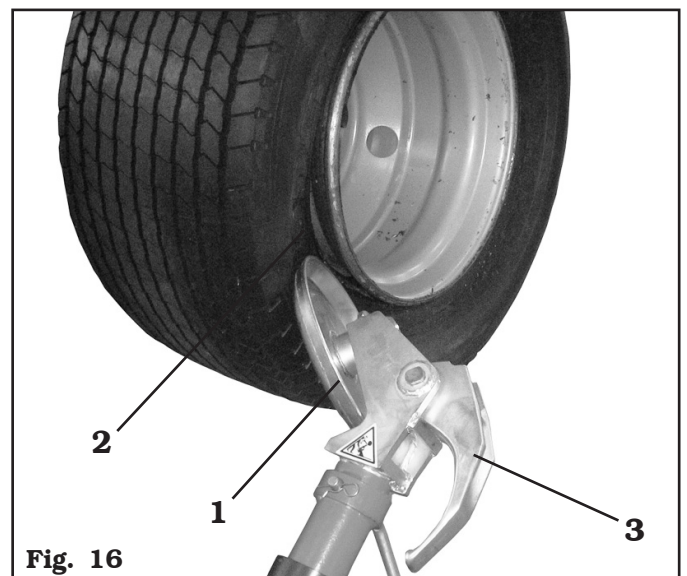



Fig. 16




THE BEAD BREAKER DISC MUST NOT EXERT PRESSURE ON THE RIM BUT ON THE TYRE BEAD.

F. Turn the chuck counterclockwise and, at the same time, gradually move the tool carrier inwards to bead the tyre. Keep turning the chuck while generously lubricating the tyre rim and bead with a suitable lubricant. To avoid risks, lubricate the beads by turning clockwise if you are working on the outer side or counterclockwise if you are working on the inner side. The more the wheel adheres to the rim, the slower should the beading disc advance.

 **USE ONLY TYRE LUBRICANTS. SUITABLE LUBRICANTS CONTAIN NO WATER, HYDROCARBONS, OR SILICON.**

G. Once external beading has been carried out, unhook and lift the tool holder arm placing it to “out of work” position (**Fig. 14 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel, then place it in working “position” (**Fig. 13 ref. 1**) and secure it with the special safety jack.

 **PAY ATTENTION WHEN REPOSITIONING THE TOOL HOLDER ARM TO AVOID CRUSHING HANDS.**

H. Carry out the tools holder head 180° rotation according to the descriptions of the relevant paragraph, so that the beading disc (**Fig. 17 ref. 1**) is placed against the rim edge (**Fig. 17 ref. 2**).

I. Move to work position **D** (**Fig. 6**) and repeat the operations described in points **E, F** until the tyre has been completely beaded.

Throughout beading operations it is advisable to bend the hook tool (**Fig. 16** and **Fig. 17 ref. 3**) back to itself to avoid obstacles during the operating phases.

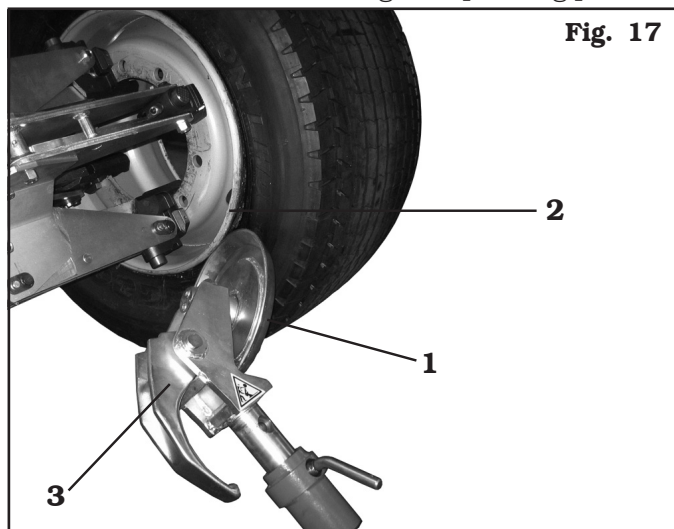



Fig. 17

12.6.2 Demounting

 **THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).**

Tubeless tyres can be removed in two ways:

A. If the wheel does not present particular problems, continuing beading operation will completely dislodge the beads from the rim. The inner bead, pushed by the disc, presses against the outer one till it has been completely removed (see **Fig. 18**).

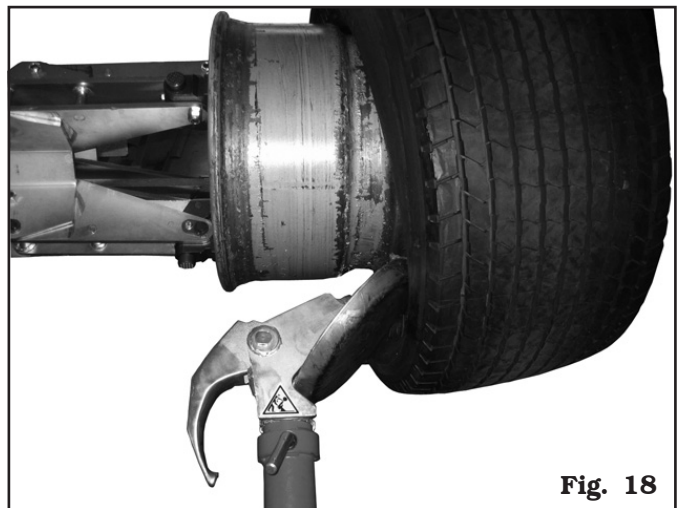


Fig. 18

B. If the wheel is especially hard, it is not possible to carry out the procedure described in point **A**. A different procedure will be necessary: use the hook tool and follow this sequence of operations:

- move to work position **C** (**Fig. 6**).
- Position the tool holder arm on the outer side of the wheel and bring forward the hook tool, inserting it between rim and bead up to it is secured to the bead itself (see **Fig. 19**).

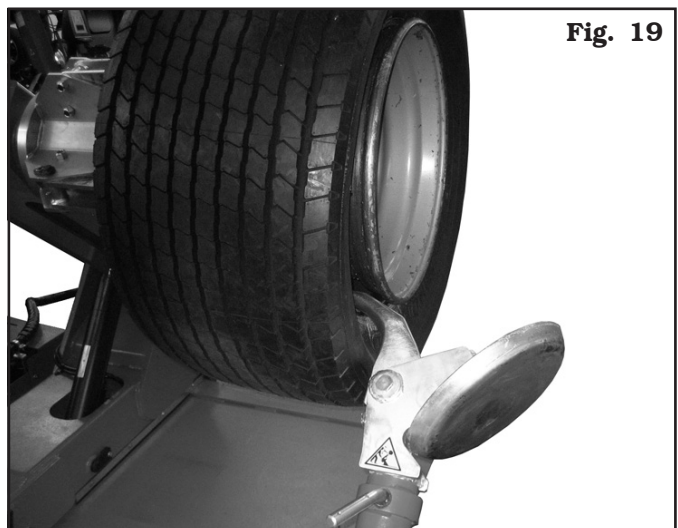
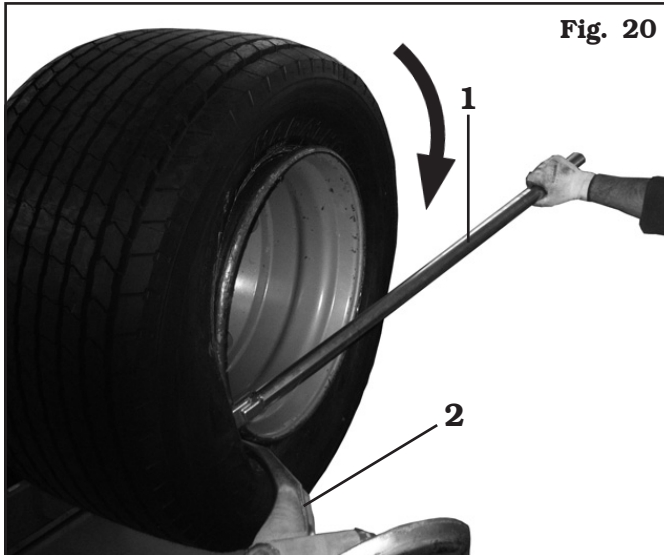


Fig. 19

- Move the rim away from the hook tool by about 4-5 cm (1.57" -1.97") to avoid possible unhooking of the bead from the same tool.
- Move to work position **A** (**Fig. 6**).
- Translate the hook tool outwards (**Fig. 20 ref. 2**) to allow easy insertion of lever (**Fig. 20 ref. 1**) between the rim and the bead; insert lever (**Fig. 20 ref. 1**) between the rim and the bead on the right-hand side of the hook tool (**Fig. 20 ref. 2**).



- Keeping the lever pressed, lower the wheel until the edge of the rim is 5 mm distant (0.2") from the hook tool.
- Turn the wheel clockwise keeping lever pressed (**Fig. 20 ref.1**) until the bead has gone completely out.
- Once the external bead has been removed, move tool holder arm away from the wheel, unhook it and lift it bringing it to "out of work" position (**Fig. 14 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then place it to "working" position again (**Fig. 13 ref. 1**) and secure with the safety hook provided.



PAY ATTENTION WHEN REPOSITIONING THE TOOL HOLDER ARM TO AVOID CRUSHING HANDS.



ALWAYS MAKE SURE THAT THE ARM IS CORRECTLY HOOKED TO CARRIAGE.

- Move to work position **D** (**Fig. 6**).
- Carry out the tool holder head 180° rotation in order to insert the hook tool (**Fig. 21 ref. 1**) between the rim edge and the tyre bead.

Fig. 21



- Move the rim away from the hook tool by about 4-5 cm (1.57" -1.97") to avoid possible unhooking of the bead from the same tool.
- Move to work position **B** (**Fig. 6**).
- Translate the hook tool outwards to allow easy insertion of the lever between the rim and the bead on the tool left. Keeping the lever pressed, lower the wheel until the edge of the rim is 5 mm (0.2") distant from the hook tool then turn the chuck counterclockwise until the tyre has been completely removed.



WHEN THE BEADS COME OUT OF THE RIM THE TYRE MAY FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING IN THE WORK AREA.



WHEN DEMOUNTING VERY HEAVY TYRES LOOK AT THE PROCESS AND AREA AROUND THE CHANGER CLOSELY BEFORE COMPLETING THE OPERATION.

12.6.3 Mounting



WHEN DEMOUNTING VERY HEAVY TYRES, IT IS IMPORTANT TO MOVE THE WHEEL AS CLOSE AS POSSIBLE TO THE BASE BEFORE COMPLETING THE OPERATION.



THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

Tubeless tyre fitting is normally done with the disc tool; if the wheel is especially hard to fit, use the hook tool.

With bead breaker disc

Proceed as follows:

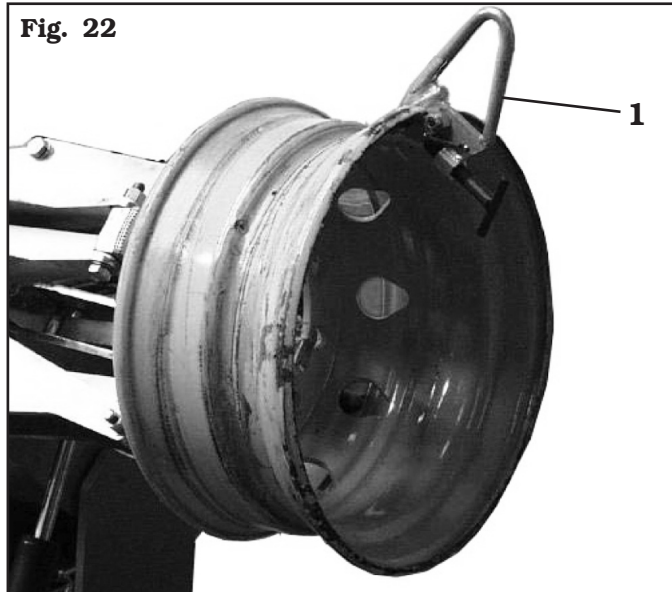
- Secure the rim to the chuck according to the procedure described in paragraph "WHEEL CLAMPING".
- Adequately lubricate tyre beads and rim bead seats with a suitable lubricant using the supplied brush.



USE ONLY TYRE LUBRICANTS. SUITABLE LUBRICANTS CONTAIN NO WATER, HYDROCARBONS, OR SILICON.

- Mount clamp (**Fig. 22 ref.1**) on the external edge of the rim at the highest point as shown in **Fig. 22**.

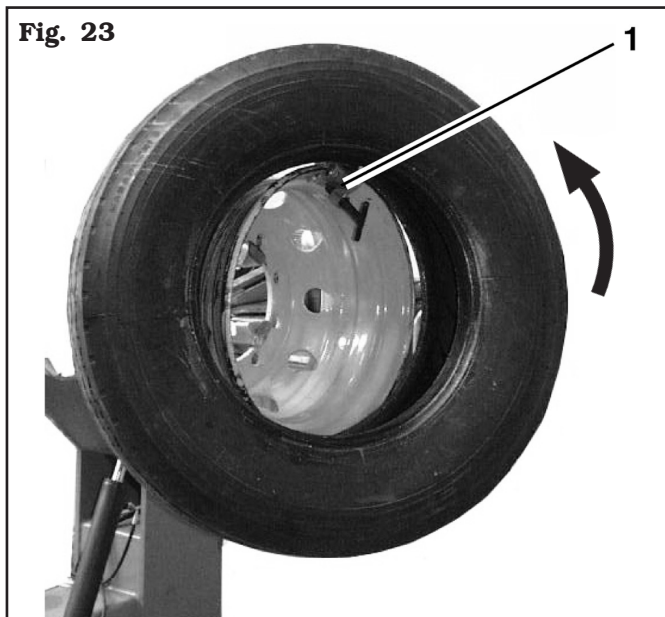
Fig. 22



THE CLAMP MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

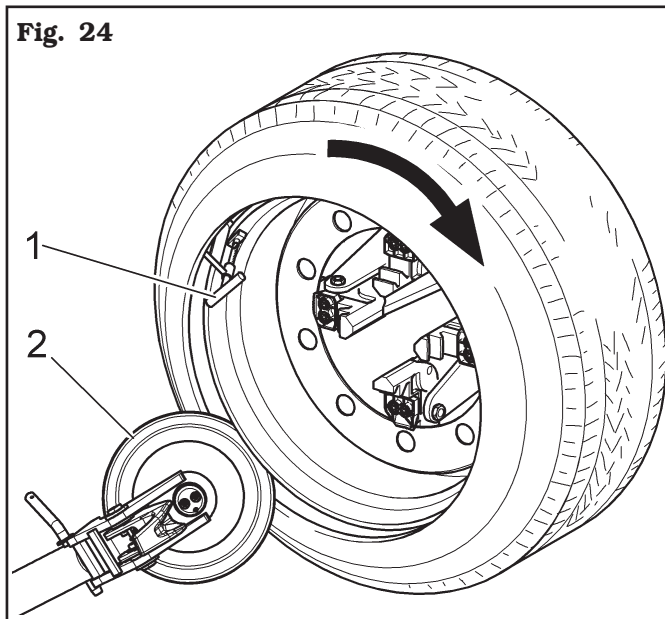
- Move to work position **B** (**Fig. 6**).
- Lower the chuck arm completely. Roll the tyre on the platform and hook it to clamp (**Fig. 22 ref. 1**).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm (5.91"-7.87"); the tyre will position itself sideways in relation to the rim (see **Fig. 23**).

Fig. 23

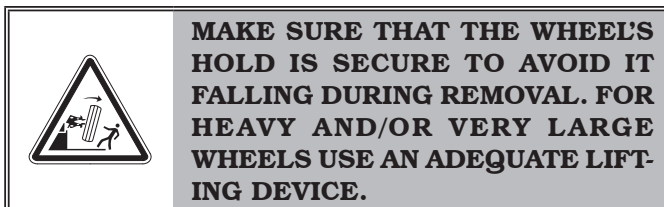


- Move to work position **C** (**Fig. 6**).
- Position bead breaker disc (**Fig. 24 ref. 2**) so that it is at approximately 1.5 cm (0.59") from the edge of the rim. Fitting clamp (**Fig. 24 ref. 1**) is at 11 o'clock. Turn the chuck until the clamp reaches the lowest point ("6 o'clock").

Fig. 24



- Move the bead breaker disc away from the wheel.
- Remove the clamp and fit it in the same position (“6 o’clock”) outside the second bead.
- Turn the chuck 90° clockwise up to the clamp is at “9 o’clock”.
- Move the bead breaker disc forward until it is inside the edge of the rim by about 1-2 cm (0.39”-0.79”), making sure it is approximately 5 mm (0.2”) from rim edge. Start clockwise rotation making sure that, after a 90° turn, the second bead begins sliding in the rim drop centre.
- Once insertion is completed, move the hook tool away from the wheel, turn it over into “out of work” position and remove the clamp.
- Lower the chuck up to the wheel rests on the foot-board.
- Move to work position **A (Fig. 6)**.
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.

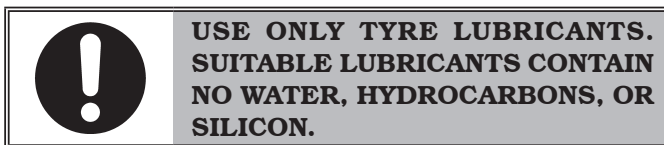


- Translate the movable footboard to release the wheel from the same chuck. With especially soft tyres, simultaneously insert both beads on the jaw so that bead insertion in the tyre is done only once; this single operation is ideal for saving time.

With hook tool

Proceed as follows:

- Secure the rim to the chuck according to the procedure described in paragraph “WHEEL CLAMPING”.
- Adequately lubricate tyre beads and rim bead seats with a suitable lubricant using the supplied brush.



- Mount the clamp (**Fig. 22 ref. 1**) on the external edge of the rim at the highest point.



- Move to work position **B (Fig. 6)**.
- Lower the chuck arm completely. Roll the tyre on the platform and hook it to clamp (**Fig. 23 ref. 1**).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm (5.91”-7.87”); the tyre will position itself sideways in relation to the rim (see **Fig. 23**).
- Place the tool holder arm to “out of work” position (**Fig. 14 ref. 1**); translate it to the inner side of the tyre and hook it again into “working” position (**Fig. 13 ref. 1**).
- Carry out the tools head 180° rotation up to the hook tool is moved onto the tyre side (see **Fig. 25**).



- Move to work position **D (Fig. 6)**.
- Move the hook tool forward until the reference notch matches the external edge of the rim coincide at about 5 mm (0.2”) from the rim itself.
- Move to work position **C (Fig. 6)**.
- From the external side of the wheel, check the exact position of the hook tool and, if necessary, correct it, then, turn the chuck clockwise until the clamp reaches the lowest point (6 o’clock). The first bead should now be inserted in the rim.
- Remove clamp.
- Move to work position **D (Fig. 6)**.
- Remove the hook tool from the tyre.
- Place the tool holder arm to “out of work” position (**Fig. 14 ref. 1**); translate it to the outer side of the tyre and hook it again into “working” position (**Fig. 13 ref. 1**).
- Carry out the tools head 180° rotation up to the hook tool is moved onto the tyre side (see **Fig. 19**).
- Mount clamp in the lowest point (“6 o’clock”) outside the second bead.

- Move to work position **C** (**Fig. 6**).
- Turn the chuck about 90° clockwise up to clamp is at “9 o'clock”.
- Move the hook tool forward until the axis of the reference notch matches that of the external edge of the rim at about 5 mm (0.2") from the rim itself (**Fig. 19**). Begin clockwise rotation making sure that, after a 90° turn, the second bead begins to slide in the rim drop centre. Turn the chuck until the clamp reaches the lowest point (“6 o'clock”). The second bead should now be inserted in the rim.
- move the hook tool away from the wheel, turn it over into “out of work” position and remove the clamp.
- Lower the chuck up to the wheel rests on the footboard.
- Move to work position **A** (**Fig. 6**).
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.



MAKE SURE THAT THE WHEEL'S HOLD IS SECURE TO AVOID IT FALLING DURING REMOVAL. FOR HEAVY AND/OR VERY LARGE WHEELS USE AN ADEQUATE LIFTING DEVICE.

- Translate the movable footboard to release the wheel from the same chuck.

12.7 Tyres with inner tube

12.7.1 Bead breaking



REMOVE THE RING NUT OF THE INNER TUBE VALVE TO ALLOW ITS EXTRACTION DURING TYRE REMOVAL PHASES; REMOVE THE NUT WHEN DEFLATING THE TYRE.

The beading procedure is the same one described for tubeless tyres.



WHEN BEADING WHEELS WITH INNER TUBES, INTERRUPT THE FORWARD MOVEMENT OF THE BEAD BREAKER DISC AS SOON AS THE BEADS HAVE BEEN DISLODGED TO AVOID DAMAGE TO THE INNER PIPE OR TO THE VALVE.

12.7.2 Demounting



THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

- Tilt up tool holder arm, unhook it and lift it setting it to “out of work” position (**Fig. 14 ref. 1**); use the handle control to position the tool holder arm on the outer side of the wheel then set it in work position (**Fig. 13 ref. 1**) and secure with the safety hook provided (**Fig. 1 ref. 8**).



PAY ATTENTION WHEN REPOSITIONING THE TOOL HOLDER ARM TO AVOID CRUSHING HANDS.



ALWAYS MAKE SURE THAT THE ARM IS CORRECTLY HOOKED TO CARRIAGE.

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the hook tool by about 4-5 cm (1.57" -1.97") to avoid possible unhooking of the bead from the same tool.
- Translate the hook tool outwards until the reference notch matches the external edge of the rim.
- Move to work position **A** (**Fig. 6**).
- Insert lever (**Fig. 26 ref. 1**) between the rim and the bead on the right-hand side of the hook tool.

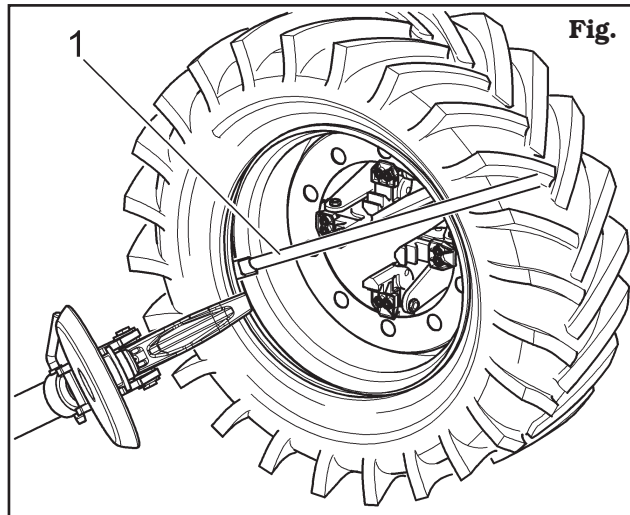


Fig. 26

- Keeping the lever pressed lower the wheel until the edge of the rim is 5 mm (0.2") distant from the hook tool.
- Turn the wheel clockwise by keeping lever pressed until the bead has gone completely out.
- Move the tool holder arm away to "out of work" position (**Fig. 14 ref. 1**); lower the chuck until the tyre rests on the movable footboard; exert a certain pressure on it so that when the movable footboard is moved outwards slightly, this will create the space required to extract the inner tube.
- Extract the inner tube and lift the wheel again.
- Move to work position **D** (**Fig. 6**).
- Tilt up tool holder arm, unhook it and lift it setting it to "out of work position" (**Fig. 14 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then set it to work position (**Fig. 13 ref. 1**) and secure with the safety hook provided (**Fig. 1 ref. 8**).
- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the hook tool by about 4-5 cm (1.57" -1.97") to avoid possible unhooking of the bead from the same tool.
- Move to work position **A** (**Fig. 6**).
- Translate the hook tool outwards until the reference notch is 3 cm (1.18") inside the rim.
- Insert the lever (**Fig. 27 ref. 1**) between rim (**Fig. 27 ref. 2**) and bead (**Fig. 27 ref. 3**) on the hook tool right.

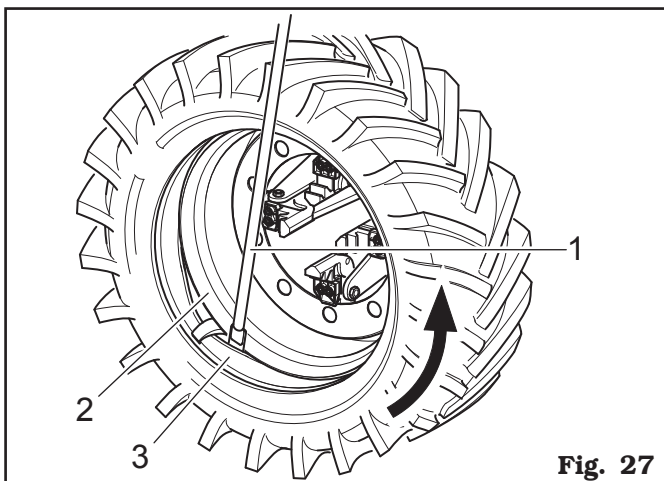


Fig. 27

- Keeping the lever pressed, lower the wheel until the edge of the rim is approximately 5 mm (0.2") distant from the hook tool then turn the chuck counterclockwise keeping the lever (**Fig. 27 ref. 1**) pressed until the tyre has been completely dislodged from the rim.



WHEN THE BEADS COME OUT OF THE RIM THE TYRE MAY FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING IN THE WORK AREA.



WHEN DEMOUNTING VERY HEAVY TYRES, IT IS IMPORTANT TO MOVE THE WHEEL AS CLOSE AS POSSIBLE TO THE BASE BEFORE COMPLETING THE OPERATION.

12.7.3 Mounting



THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

- Secure the rim to the chuck according to the procedure described in paragraph "WHEEL CLAMPING".
- Adequately lubricate tyre beads and rim bead seats with a suitable lubricant using the supplied brush.



USE ONLY TYRE LUBRICANTS. SUITABLE LUBRICANTS CONTAIN NO WATER, HYDROCARBONS, OR SILICON.

- Mount clamp (**Fig. 22 ref. 1**) on the external edge of the rim at the highest point as shown in **Fig. 22**.



THE CLAMP MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

- Move to work position **B** (**Fig. 6**).
- Position the tyre on the footboard and lower the chuck (make sure the clamp is at the highest point) to hook the first tyre bead (internal bead).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm (5.91" -7.87"); the tyre will position itself sideways with respect to the rim.

- Tilt up tool holder arm, unhook it and lift it setting it to “out of work” position (**Fig. 14 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then set it to work position (**Fig. 13 ref. 1**) and secure with the safety hook provided.



PAY ATTENTION WHEN REPOSITIONING THE TOOL HOLDER ARM TO AVOID CRUSHING HANDS.



ALWAYS MAKE SURE THAT THE ARM IS CORRECTLY HOOKED TO CARRIAGE.

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move to work position **D** (**Fig. 6**).
- Move the hook tool forward until the axis of the reference notch matches that of the external edge of the rim at about 5 mm (0.2”) from the rim itself (see **Fig. 28**).

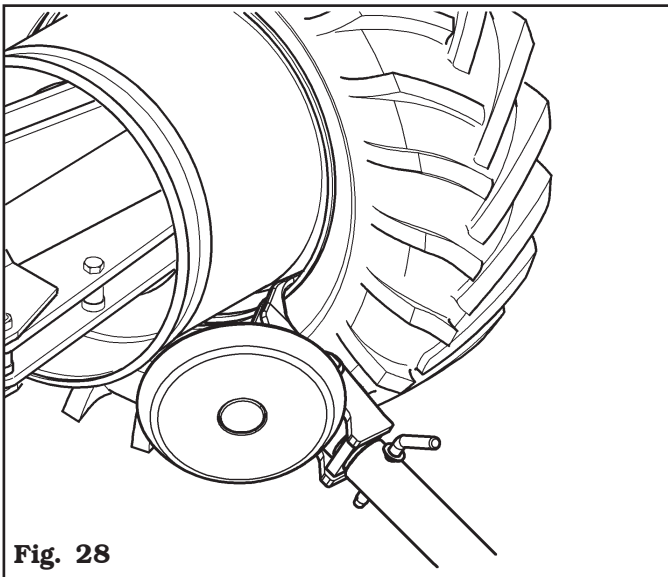


Fig. 28

- Move to work position **C** (**Fig. 6**).
- From the external side of the wheel, check the exact position of the hook tool and, if necessary, correct it, then, turn the chuck clockwise until the clamp reaches the lowest point (6 o'clock). The first bead should now be inserted in the rim, then remove clamp.
- Move to work position **D** (**Fig. 6**).
- Extract the tool hook from the tyre.
- Place the tool holder arm to “out of work” position (**Fig. 14 ref. 1**) and translate it to the outer side of the tyre.

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph.
- Move to work position **B** (**Fig. 6**).
- Turn the chuck to position the hole to insert the valve downward (“6 o'clock”).
- Position movable footboard (**Fig. 1 ref. 18**) directly above the wheel and lower the chuck until the wheel rests on the platform. Translate the movable footboard outwards to create enough space between the tyre edge and the rim to insert the inner tube.



THE VALVE HOLE COULD BE IN AN ASYMMETRIC POSITION WITH RESPECT TO THE CENTRE OF THE RIM. IN THIS CASE IT IS NECESSARY TO POSITION AND INTRODUCE THE INNER TUBE AS SHOWN IN FIG. 29.

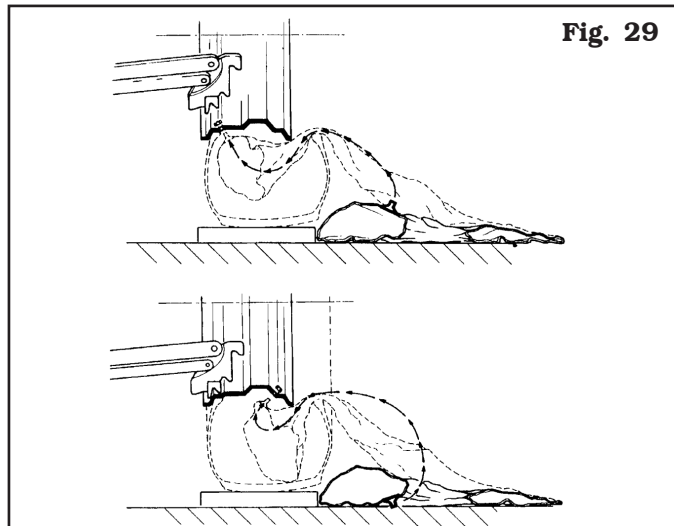
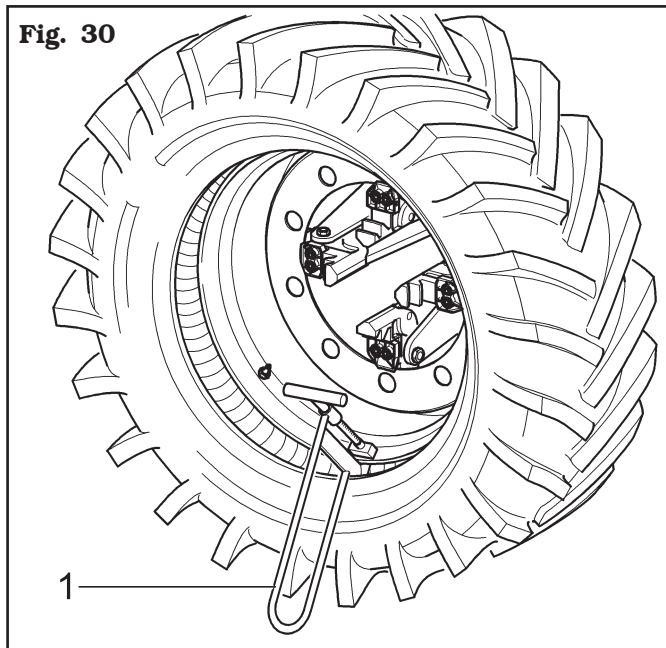


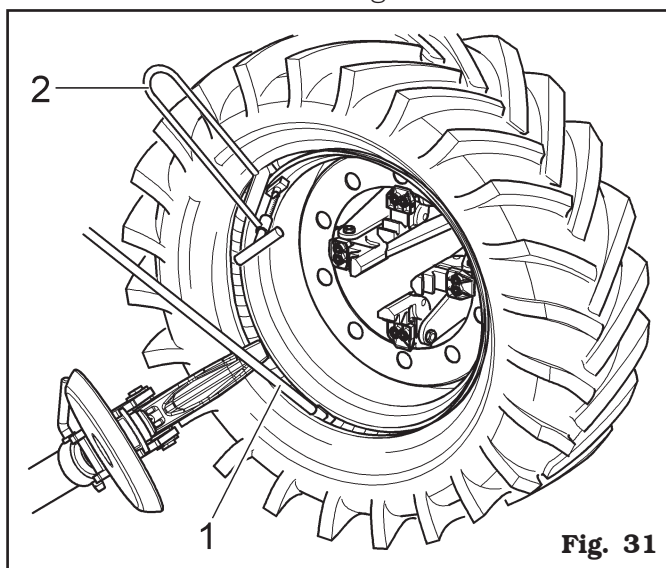
Fig. 29

Introduce the valve in the hole and secure it with the provided ring nut. Introduce the inner tube in the drop centre of the rim (to make this operation easier, it is advisable to simultaneously turn the chuck clockwise).

- Turn the chuck and position the valve downwards (“6 o'clock”).
- To avoid damaging the inner tube, slightly inflate it when inserting the second bead.
- To avoid damaging the valve when securing the second bead, remove the fixing ring nut and mount an extension on the same valve.
- Move to work position **C** (**Fig. 6**).
- Lift the chuck and mount the clamp (**Fig. 30 ref. 1**) on the rim outside the second bead at about 20 cm (7.87”) from the inflating valve on the right;
- Turn the chuck clockwise until clamp (**Fig. 30 ref. 1**) is positioned at “9 o'clock”.



- Place the tool holder arm to “working” position (**Fig. 13 ref. 1**) on the outer side of the tyre.
- Set the hook tool to work position and bring the tool holder arm forward until the axis of the reference notch matches that of the outer edge of the rim at a distance of 5 mm (0.2”).
- Turn the chuck clockwise until lever (**Fig. 31 ref. 1**) is introduced in the housing obtained on the hook tool.
- Turn the chuck with lever (**Fig. 31 ref. 1**) hooked up to the complete insertion of the tyre outer bead.
- Remove lever (**Fig. 31 ref. 1**), clamp (**Fig. 31 ref. 2**) and extract the hook tool by turning the chuck counterclockwise and translating it outwards.



- Tilt up tool holder arm placing it to “out of work” position (**Fig. 14 ref. 1**) after it has been unhooked.

- Position movable footboard (**Fig. 1 ref. 18**) directly under the wheel and lower the chuck until the wheel is resting on the platform.
- Move to work position **B** (**Fig. 6**).
- Check the condition of the tyre valve and centre it in the rim hole if necessary, by slightly turning the chuck; secure the valve with the supplied ring nut after removing the protective extension.
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.

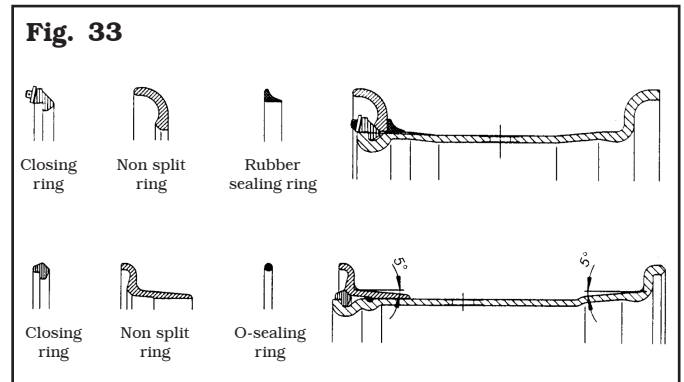
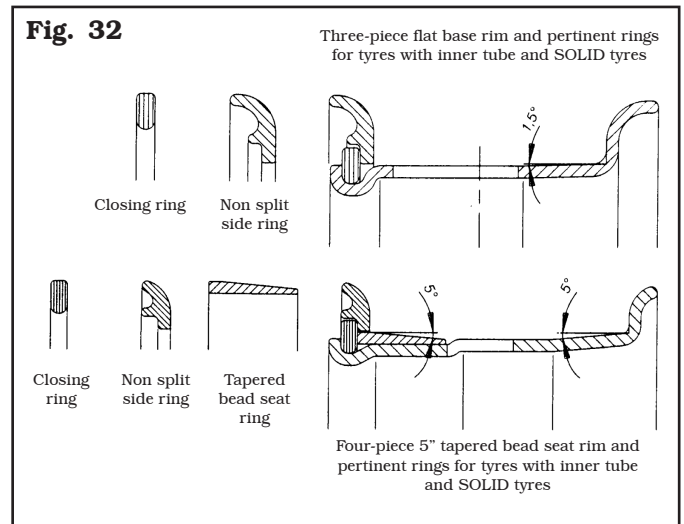


MAKE SURE THAT THE WHEEL'S HOLD IS SECURE TO AVOID IT FALLING DURING REMOVAL. FOR HEAVY AND/OR VERY LARGE WHEELS USE AN ADEQUATE LIFTING DEVICE.

- Translate the movable footboard to release the wheel from the same chuck.

12.8 Wheels with bead wire

As an example **Fig. 32** and **Fig. 33** illustrate sections and compositions of types of wheels with bead wire currently being sold.



12.8.1 Beading and demounting



NEVER STAND IN FRONT OF THE WHEEL WHILE THE INFLATION RING IS BEING EXTRACTED FROM THE BEAD WIRE, SINCE IT MAY BE EJECTED VIOLENTLY, CAUSING SERIOUS INJURIES OR WOUNDS.



THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

- Mount the wheel on the chuck as described in “WHEEL CLAMPING” and make sure it is deflated.
- Move to work position **D** (Fig. 6).
- Set the tool arm to “work position” (Fig. 13 ref. 1) in the tyre inner side, and make sure it is locked by the provided safety stop (Fig. 1 ref. 8).
- Position the bead breaker disc on rim edge (see Fig. 34).

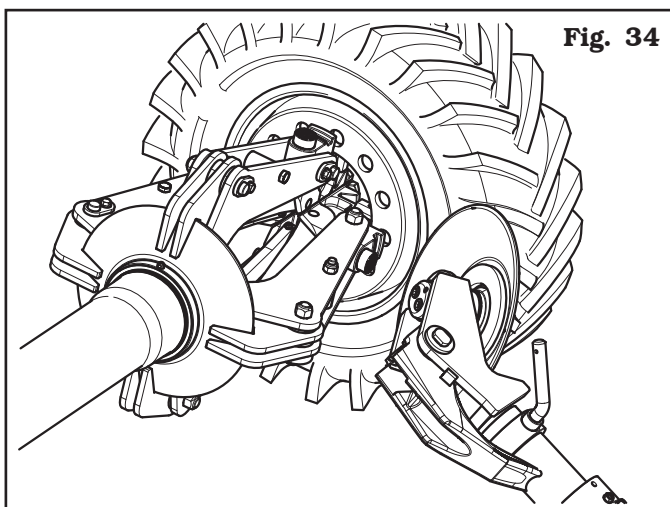


Fig. 34

- Turn the chuck and smear the entire bead seat of the rim with lubricant. While doing this, jerk the bead breaker disc forward until the first bead is removed (as these wheels feature inner tubes, carry out the operation carefully, paying special attention to when the bead dislodges, trying to stop disc advance immediately to avoid compromising the integrity of the inner pipe and valve).
- Place the tool holder arm to “out of work” position (Fig. 14 ref. 1), operate the handle control in order to position the tools holder arm on the wheel outer side, then place it to “working” position (Fig. 13 ref. 1) again and lock it with the safety hook provided.

- Carry out tools holder head 180° rotation according to the description of the relevant paragraph, in order to let the bead breaker disc come into contact with the tyre outer side (see Fig. 35).

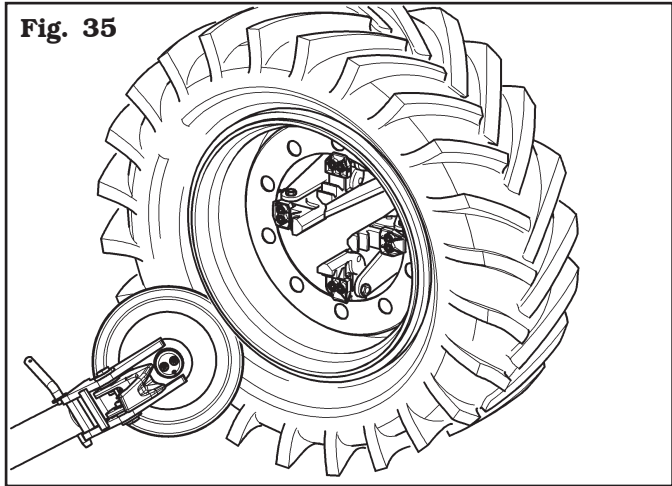


Fig. 35

- Turn the chuck and smear the entire bead seat of the rim with lubricant.
- While doing this, jerk the bead breaker disc forward until bead is removed.
- Repeat the operation, making the bead breaker disc move forward against the bead wire (see Fig. 36) up to the stop ring is released (Fig. 36 ref. 1). It will be then extracted through lever (Fig. 36 ref. 2).

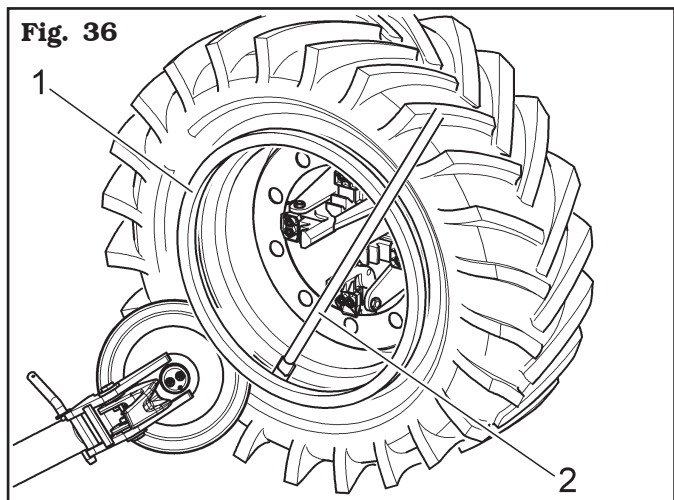


Fig. 36

- Remove the bead wire.
- Remove the O-Ring, when featured.
- Tilt up tool holder arm placing it to “out of work” position (Fig. 14 ref. 1) after it has been unhooked.
- Lower the chuck until the wheel rests on the foot-board.
- Move to work position **B** (Fig. 6).
- Translate the movable footboard outwards until the tyre is completely dislodged from the rim (in case of tyres with inner tube, make sure that the valve hasn't been damaged during removal).



WHEN THE BEADS COME OUT OF THE RIM THE TYRE MAY FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING BY ACCIDENT IN THE WORK AREA.



WHEN DEMOUNTING VERY HEAVY TYRES, IT IS IMPORTANT TO MOVE THE WHEEL AS CLOSE AS POSSIBLE TO THE BASE BEFORE COMPLETING THE OPERATION.



PAY ATTENTION WHEN REPOSITIONING THE TOOL HOLDER ARM TO AVOID CRUSHING HANDS.



ALWAYS MAKE SURE THAT THE ARM IS CORRECTLY HOOKED TO CARRIAGE.

12.8.2 Mounting

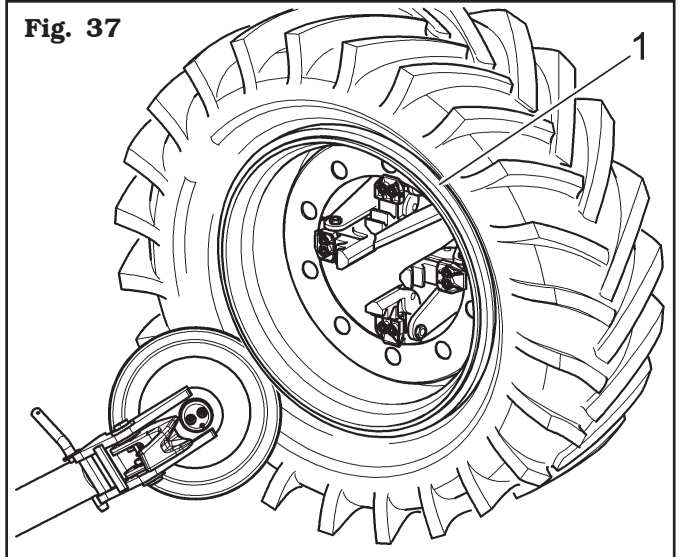


THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (180 bar - 2610 psi).

- Place the tool “holder arm in “out of work” position (**Fig. 14 ref. 1**); if it has been removed, secure the rim to the chuck as described in “WHEEL CLAMPING” paragraph. If the wheel features an inner tube, position the rim with the valve slot facing downwards (at “6 o’clock”).
- Lubricate the entire bead seat of the rim and the tyre beads.
- Move to work position **B (Fig. 6)**.
- Position the movable footboard (**Fig. 1 ref. 18**) so as to allow the upward motion of the tyre (if the wheel features an inner tube, position the rim with the valve slot facing downwards at 6 o’clock).
- Place the chuck in order to centre the rim on the tyre.
- Operate the movable footboard forward movement in order to insert the rim in the tyre (in case of tyres with inner tube, make the valve re-enter not to damage it). Move forward until the rim is completely inserted in the tyre.

- Insert the bead wire on the rim with the stop ring fitted (if the rim and bead wire feature fixing slits, they must be in phase with each other).
- Move to work position **C (Fig. 6)**.
- Place the tool holder arm on the external side then lower it into “working” position (**Fig. 13 ref. 1**) with the bead breaker disc facing the wheel. If the outer edge ring is not sufficiently fitted on the rim, position the chuck until the bead wire is near the bead breaker disc. Move the bead breaker disc forward and then turn the chuck until the housing of the O-Ring (if featured) is found.
- Lubricated the O-Ring and place it in its housing.
- Move to work position **B (Fig. 6)**.
- Position the bead wire (**Fig. 37 ref. 1**) on the rim, fit the stop ring with the help of the bead breaker disc as shown in **Fig. 37**.

Fig. 37



- Tilt up tool holder arm placing it to “out of work” position (**Fig. 14 ref. 1**) after it has been unhooked.
- Position movable footboard (**Fig. 1 ref. 18**) directly under the wheel and lower the chuck until the wheel is resting on the platform.
- Close the chuck jaws completely and translate the footboard outwards until the rim has been completely removed, making sure the wheel is held up to avoid dropping.



CLOSING THE CHUCK CAUSES THE WHEEL TO FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING IN THE WORK AREA.

13.0 ROUTINE MAINTENANCE



BEFORE CARRYING OUT ANY ROUTINE MAINTENANCE OR ADJUSTMENT PROCEDURE, DISCONNECT THE EQUIPMENT FROM THE ELECTRICITY SUPPLY USING THE SOCKET/PLUG COMBINATION AND CHECK THAT ALL MOBILE PARTS ARE AT A STANDSTILL.



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



BEFORE REMOVING HYDRAULIC CIRCUIT FITTING OR HOSES, MAKE SURE THAT THERE ARE NO PRESSURISED FLUIDS PRESENT. PRESSURISED OIL SPILLS MAY CAUSE SERIOUS WOUNDS OR INJURIES.



BEFORE CARRYING OUT ANY MAINTENANCE WORK ON THE HYDRAULIC CIRCUIT, SET THE EQUIPMENT IN THE REST CONDITION.

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

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

- Disconnect the equipment from the electrical and pneumatic power supplies before carrying out any cleaning operations.
- Remove deposits of tyre powder and other waste materials with a vacuum.
- **NEVER BLOW WITH COMPRESSED AIR.**
- Periodically (preferably once a month) make a complete check on the controls, ensuring that they provide the specified actions.
- Every 100 working hours lubricate the tool carriage sliding guides.
- Periodically (preferably once a month), grease all moving parts of the equipment (see **Fig. 38**).

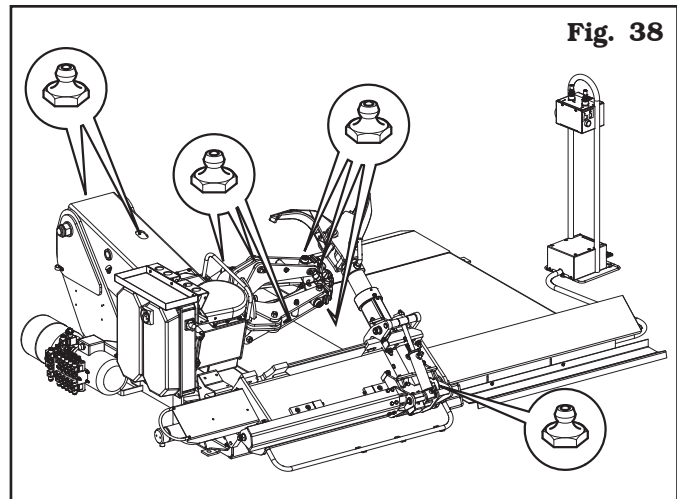


Fig. 38

- Check periodically the oil level of the oil-pressure unit and, in case, carry out the filling up with hydraulic oil having a viscosity degree suitable for the average temperatures of the country where the machine is installed and in particular:

- viscosity 32 (or countries with room temperature from 0 °C - +30 °C (+32 °F - +86 °F));
- viscosity 46 (for countries with room temperature above 30 °C (+86 °F)).

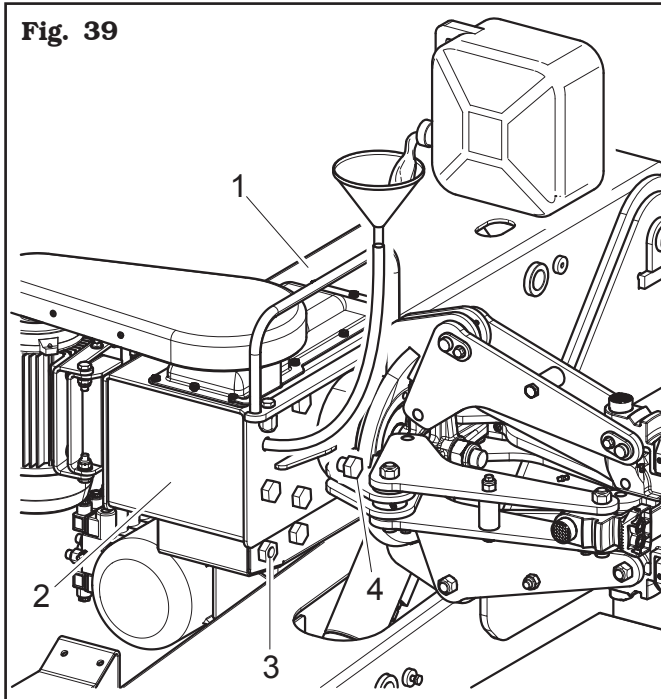
At least once a year it is advisable to replace the hydraulic oil of the unit;



CARRY OUT THIS CONTROL WITH THE EQUIPMENT COMPLETELY CLOSED (WITH HYDRAULIC PISTONS IN).

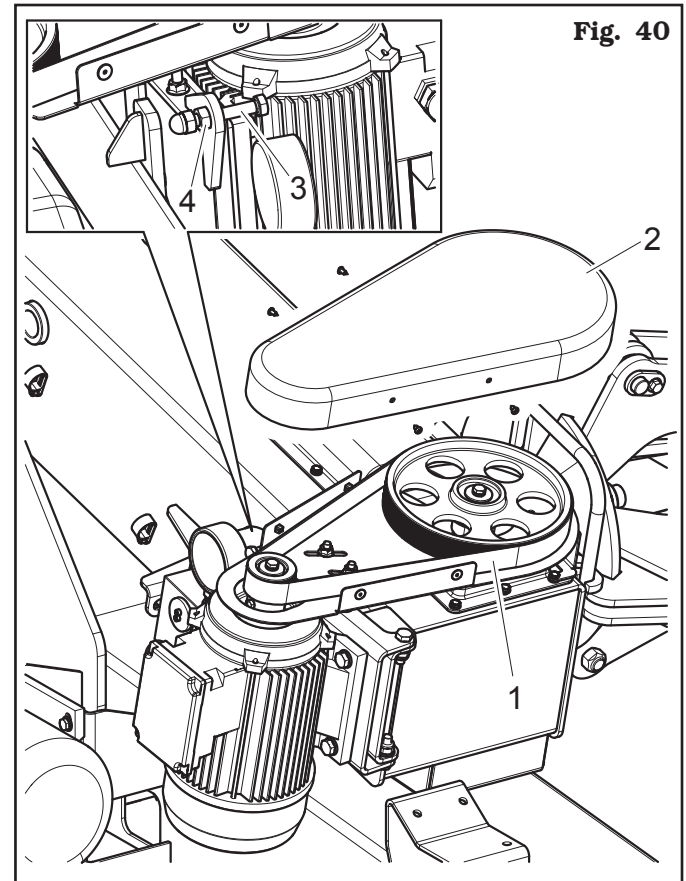
- Periodically (about every 100 hours), check the oil level of the reduction gear and eventually reset the level.
- Check operation of the safety devices every week.
- Periodically (every 50 working hours approximately), clean the (inner and outer) guides of the tool carriage.

A. Place the whole support (**Fig. 39 ref. 1**) in horizontal position, then check the reduction gear oil level (**Fig. 39 ref. 2**); the level indicator window (**Fig. 39 ref. 3**) must be covered with lubricant, otherwise, remove a closing plug (**Fig. 39 ref. 4**) and top up, using appropriate lubricants until the level is reset.

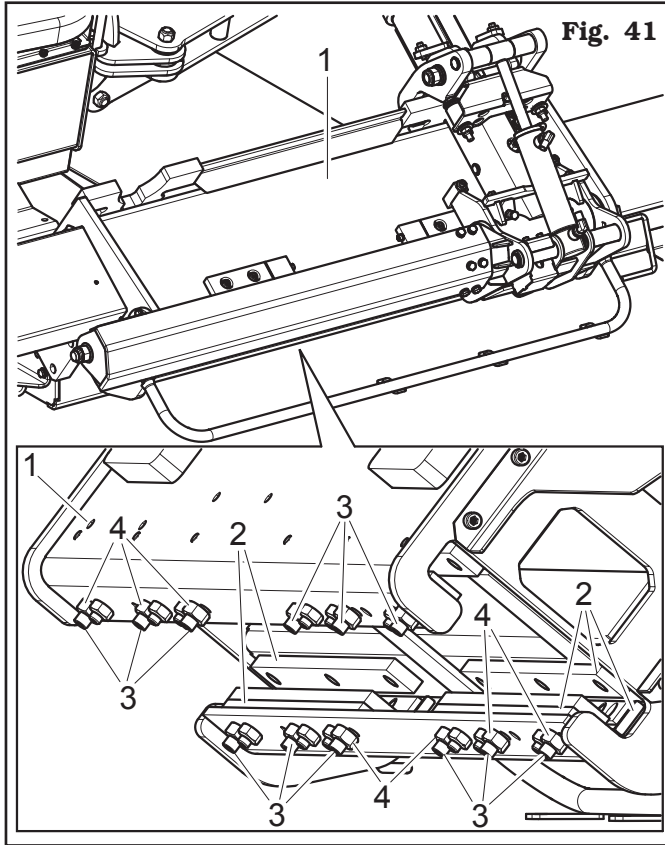


B. Check belt tensioning (**Fig. 40 ref. 1**):

- Remove upper guard (**Fig. 40 ref. 2**) by removing the provided fixing bolts;
- stretch the belt (**Fig. 40 ref. 1**) using the bolt (**Fig. 40 ref. 3**) after the nut (**Fig. 40 ref. 4**) has been slackened.
- tighten the fixing nut (**Fig. 40 ref. 4**) after the adjustment operations, then assemble the protection guard (**Fig. 40 ref. 2**) again.



C. Adjust the play of slide (**Fig. 41 ref. 1**) using the adjustment bolts (**Fig. 41 ref. 3**) of the sliding blocks (**Fig. 41 ref. 2**), after slackening the nuts (**Fig. 41 ref. 4**).



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



ANY EXTRAORDINARY MAINTENANCE OPERATION MUST BE CARRIED OUT EXCLUSIVELY BY PROFESSIONALLY QUALIFIED PERSONNEL.



OPERATION TO BE CARRIED OUT ONLY IN CASE THE CARRIAGE MOVES IN A NON-LINEAR WAY (TRIGGER ACTION).

14.0 TROUBLESHOOTING TABLE








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




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



CONTACT AUTHORIZED TECHNICAL SERVICE

do not try and service alone

Problem	Possible cause	Remedy
Pump motor does not work but wheel holder chuck motor works perfectly.	a) Hydraulic control unit damaged.	a) Call Technical Service Dept. 
When main switch is turned on, wheel holder chuck does not turn whereas the pump motor works.	a) Gearmotor change-over switch damaged.	a) Call Technical Service Dept. 
Power drop during wheel holder chuck rotation.	a) Timing belt too loose.	a) Tension up the belt.
No pressure in the hydraulic system.	a) Pump damaged.	a) Replace pump. 
The chuck opening pressure does not go down.	a) Pressure limiting valve jammed	a) Download chuck (remove wheel), completely undo adjusting handle. Perform many opening and closing cycles up to jam release. 
The equipment does not start.	a) No power supply. b) Overload cutouts not set. c) Transformer fuse blown.	a) Connect the power supply. b) Set the overload cutouts. c) Change the fuse.
Fluid leaks from fitting or pipeline.	a) Fitting not tightened correctly. b) Pipeline cracked.	a) Tighten the fitting. b) Call the after-sales service. 
A control device is remaining on.	a) The switch has broken. b) A solenoid valve has jammed.	a) Call the after-sales service. b) Call the after-sales service. 
The self-centring chuck cylinder is losing pressure.	a) The directional control valve is leaking. b) The gaskets are worn.	a) Call the after-sales service. b) Call the after-sales service. 
The motor stops during operation.	a) Overload cutout tripped.	Open the electrical cabinet and re-set the overload cutout tripped.

Problem	Possible cause	Remedy
When a control device is operated the equipment does not move at all.	<ul style="list-style-type: none"> a) Solenoid valve not receiving power. b) Solenoid valve jammed. c) Transformer fuse blown. d) Control box assembly is badly adjusted. 	<ul style="list-style-type: none"> a) Call the after-sales service. b) Call the after-sales service. c) Change the fuse. d) Call the after-sales service. 
No pressure in hydraulic circuit.	<ul style="list-style-type: none"> a) Power unit motor turning in wrong direction. b) Power unit pump has failed. c) No oil in power unit tank. 	<ul style="list-style-type: none"> a) Restore correct rotation direction by changing socket connection. b) Call the after-sales service. c) Fill power unit tank with oil 
The equipment operates in jerks.	<ul style="list-style-type: none"> a) Not enough fluid in power unit tank. b) Control box assembly switch is broken. 	<ul style="list-style-type: none"> a) Top up with oil. b) Call the after-sales service. 

15.0 TECHNICAL DATA

15.1 Technical electrical data

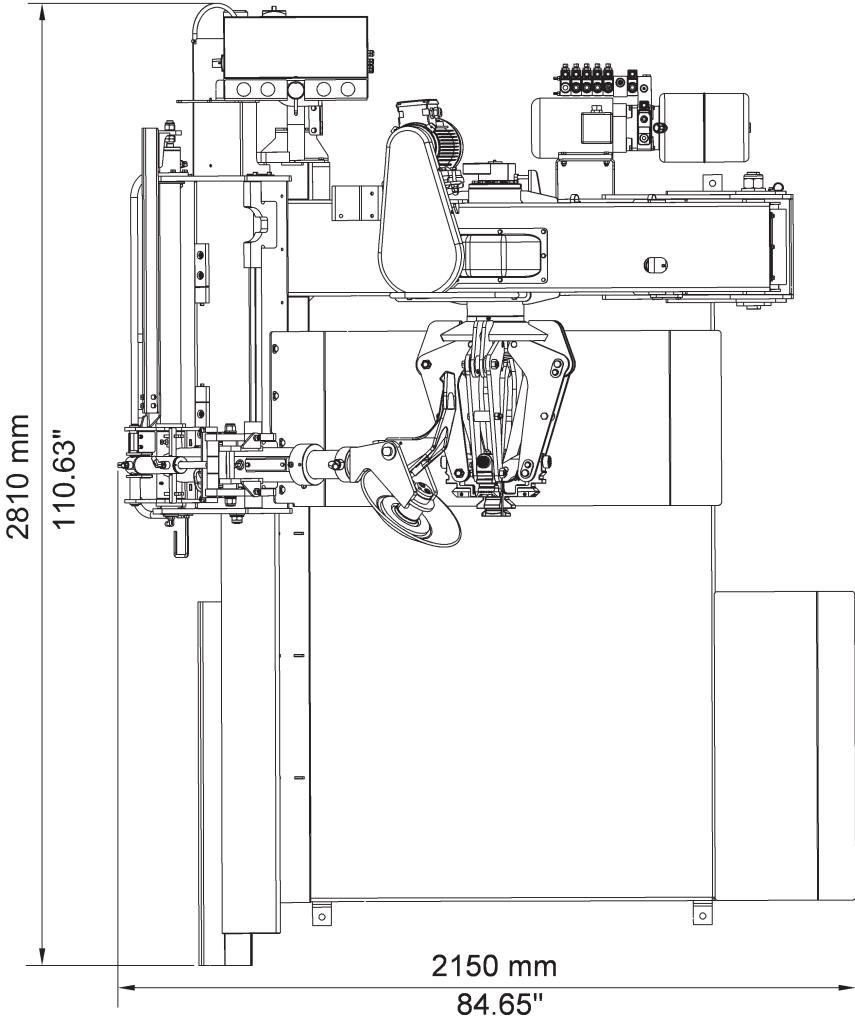
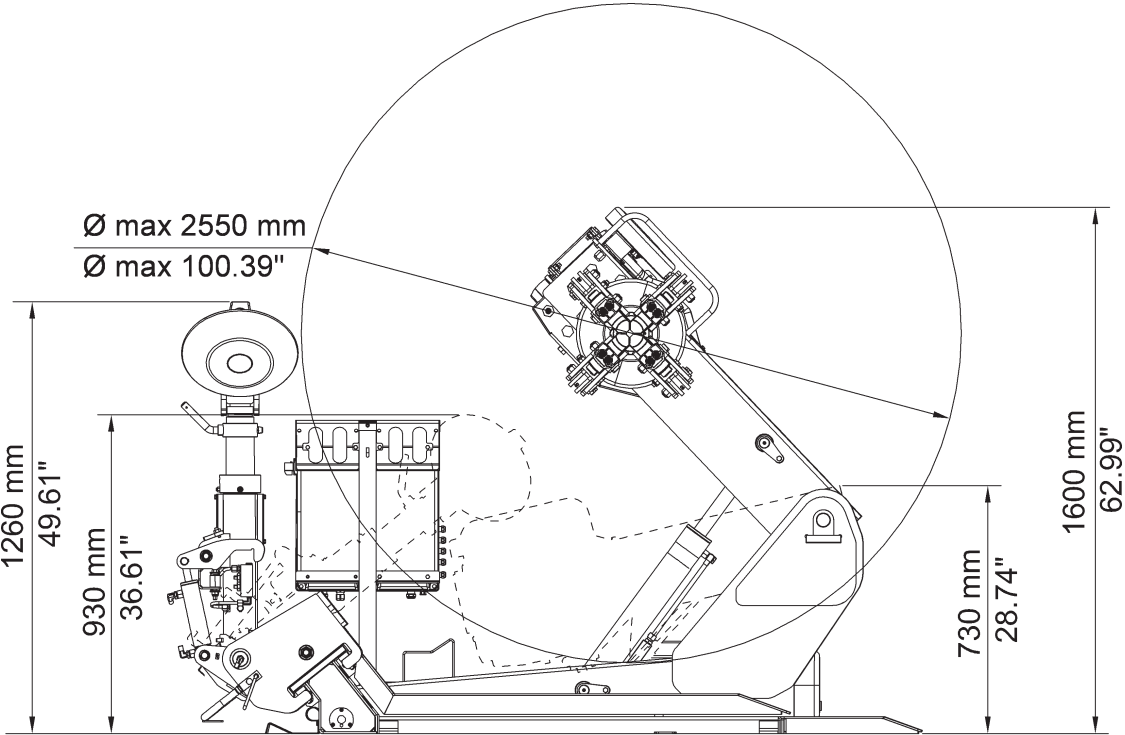
		ROT.N5115.201829	RAV.G0156.206251
Chuck motor power (kW)		1.35 - 1.85 (1.8 - 2.5 Hp)	1.35 - 1.85 (1.8 - 2.5 Hp)
Power supply	Voltage (V)	400	400
	Number of phases	3	3
	Frequency (Hz)	50	50
Hydraulic drive unit motor (kW)		1.8 - 2.5 (2.4 - 3.3 Hp)	1.8 - 2.5 (2.4 - 3.3 Hp)
Power supply	Voltage (V)	400	400
	Phases	3	3
	Frequency (Hz)	50	50
Typical current draw (A)		13	13
Self-centring chuck rotation speed (rev/min)		4 - 8	4 - 8

15.2 Technical mechanical data

Tyre maximum diameter (mm)	2550 (100")
Wheel max. width (mm)	1500 (59")
Max. rotation torque (Nm)	5300 (3909 ft·lbs)
Wheel max. weight (kg)	2300 (5071 lbs)
Self-centring lock (inches)	11 - 56 (with extensions)
Minimum locking hole (mm)	90 (3.54")
Chuck minimum height from the ground (mm)	300 (11.81")
Bead-breaking force (N)	34000 (7644 lbf)
Gear noise (dB) (A)	< 80
Operating pressure (bar)	180 (2610 psi)
Weight (kg)	1178 (2597 lbs)

15.3 Dimensions

Fig. 42



16.0 STORING

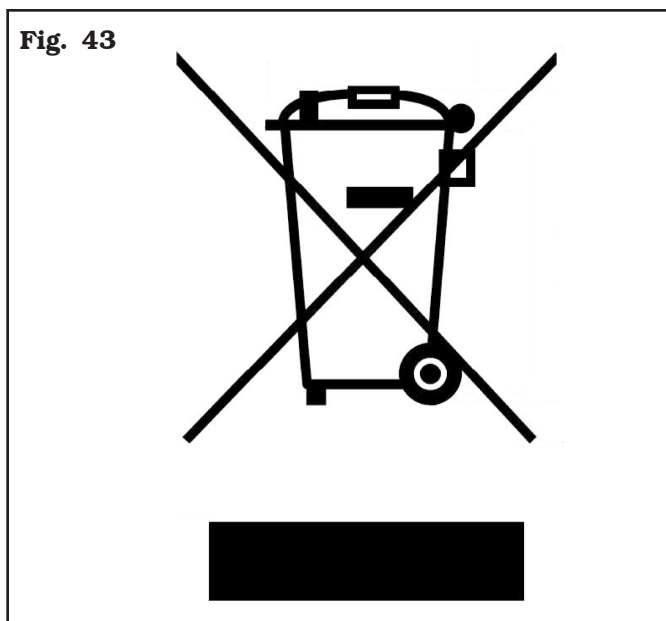
If storing for long periods (6 months or longer) disconnect the main power supply and take measures to protect the equipment from dust build-up. Lubricate parts that could be damaged from drying out. When putting the equipment back into operation replace the rubber pads and the hook tool. Also provide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

17.0 SCRAPPING

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

Instructions for the correct management of waste from electric and electronic equipment (WEEE) according to the Italian legislative decree 49/14 and subsequent amendments.

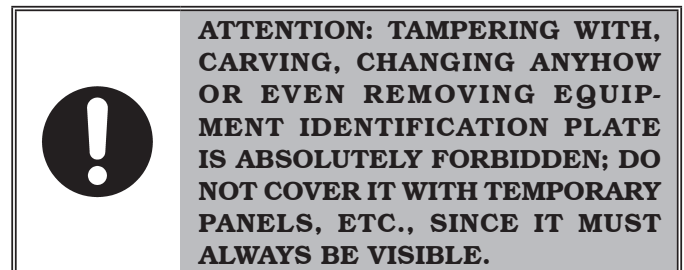
In order to inform the users on the correct way to dispose the equipment (as required by the article 26, paragraph 1 of the Italian legislative decree 49/14 and subsequent amendments), we communicate what follows: the meaning of the crossed dustbin symbol reported on the equipment indicates that the product must not be thrown among the undifferentiated rubbish (that is to say together with the “mixed urban waste”), but it has to be managed separately, to let the WEEE go through special operations for their reuse or treatment, in order to remove and dispose safely the waste that could be dangerous for the environment and to extract and recycle the raw materials to be reused.



18.0 REGISTRATION PLATE DATA

TYRE CHANGER MODEL		SERIAL N°	MONTH-YEAR
AMPERAGE	BAR	POWER SUPPLY	

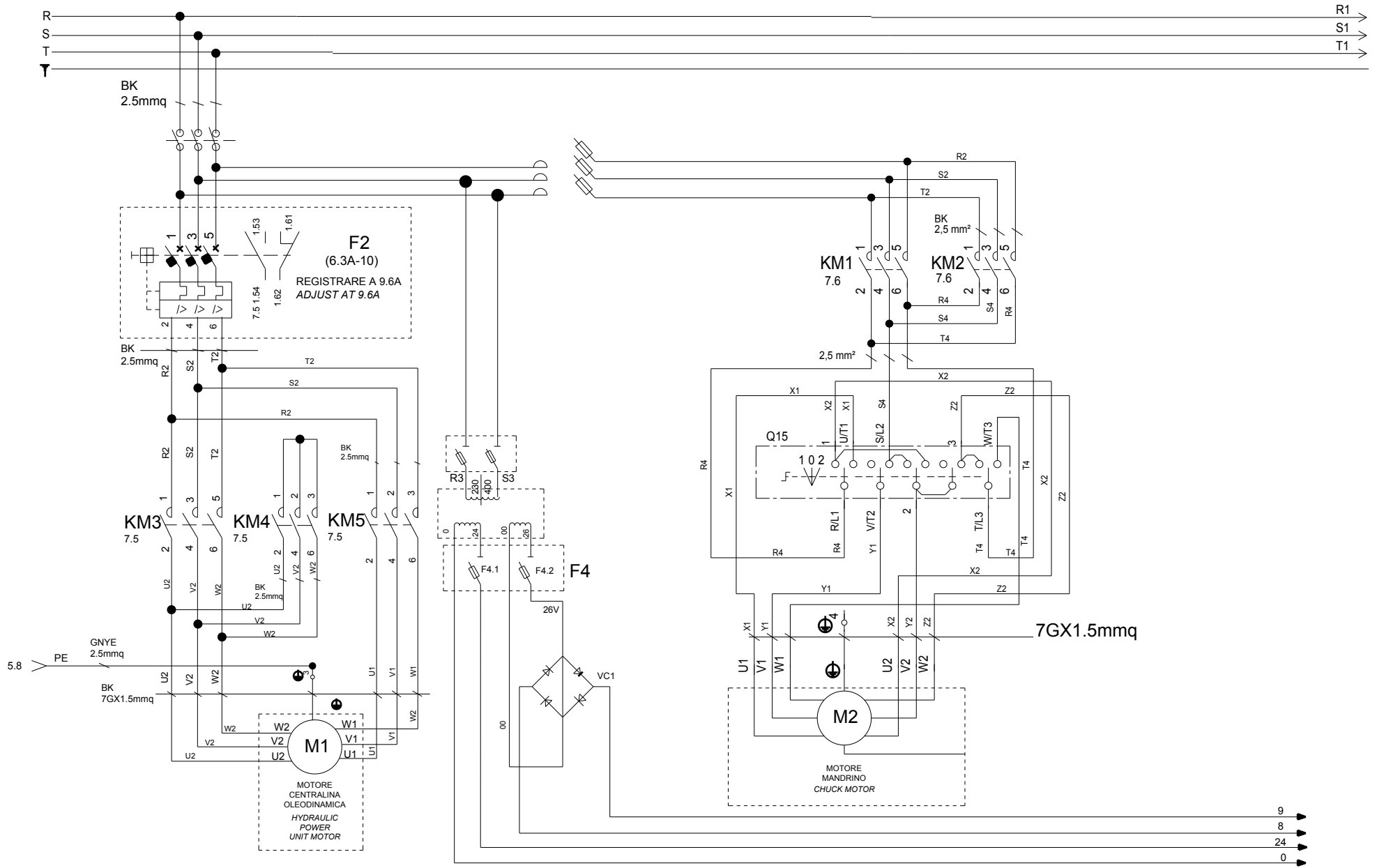
The validity of the Conformity Declaration enclosed to this manual is also extended to products and/or devices the equipment model object of the Conformity Declaration can be equipped with. Said plate must always be kept clean from grease residues or filth generally.

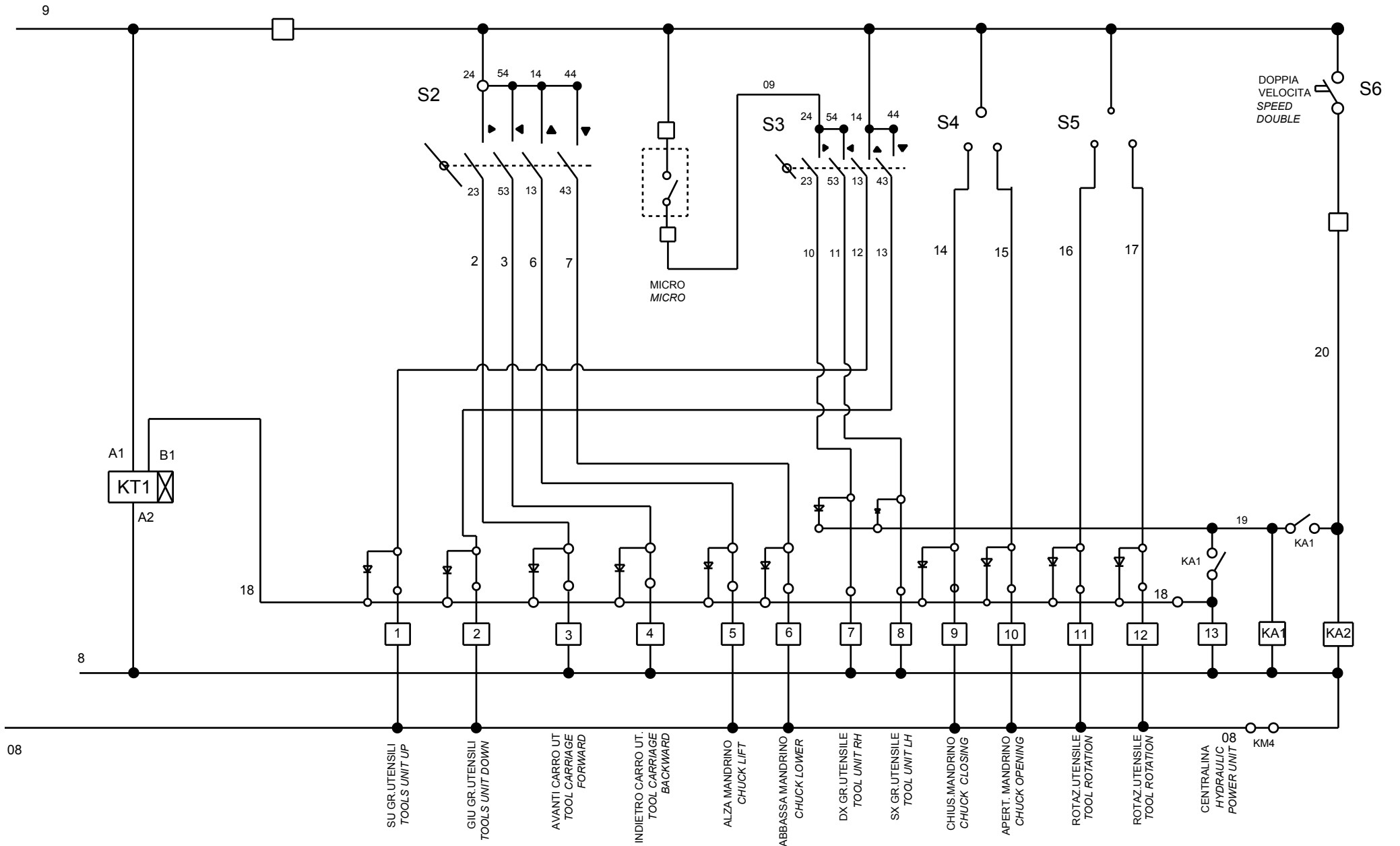


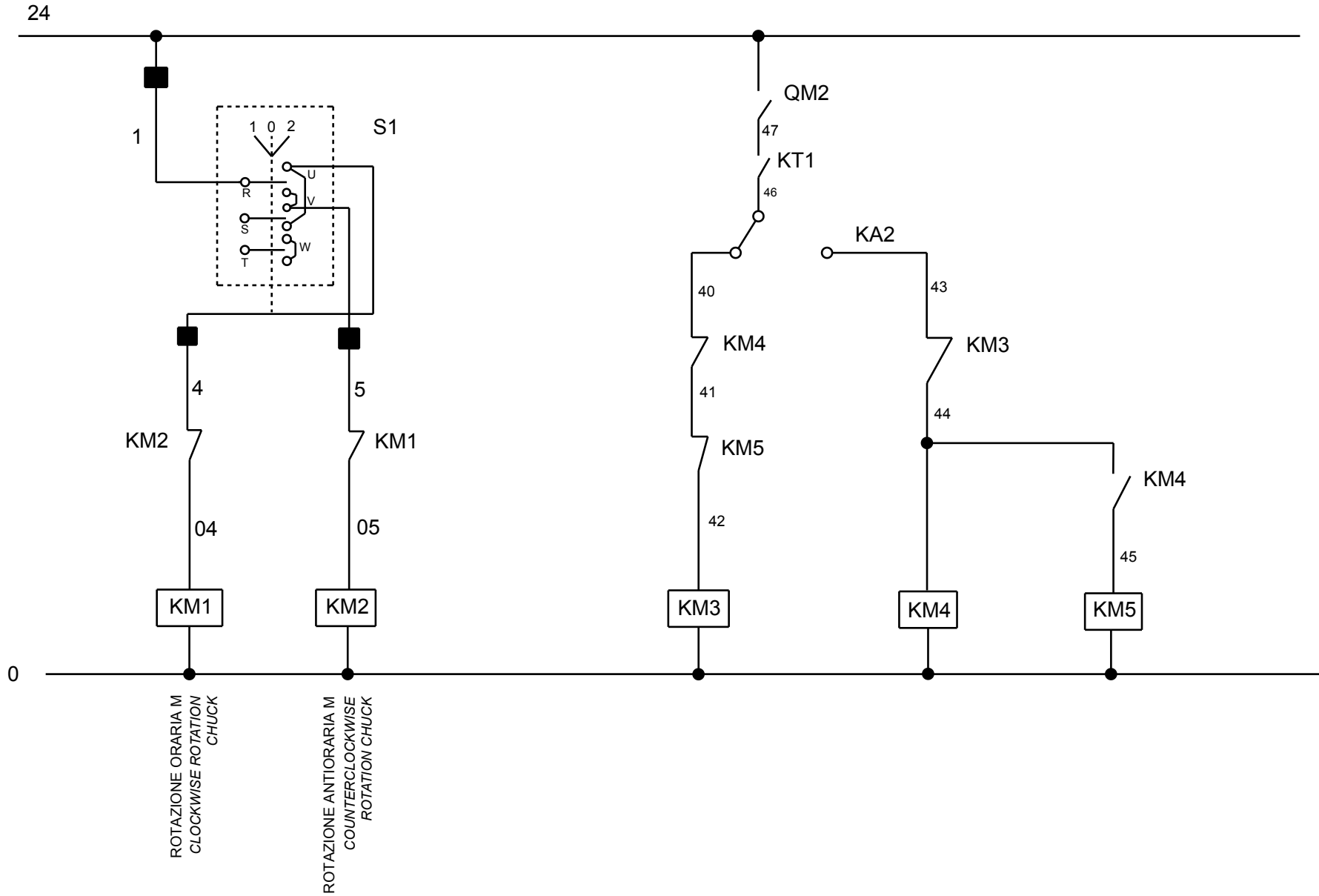
WARNING: Should the plate be accidentally damaged (removed from the equipment, damaged or even partially illegible) inform immediately the manufacturer.

19.0 FUNCTIONAL DIAGRAMS

Here follows a list of the equipment functional diagrams.







RIFERIMENTO	DESCRIZIONE	DATI TECNICI	QUANTITA
Q14	SEZIONATORE 16A 3 POLI	ART.SE163003B 16A 3P BL/POR	1
	MANOPOLA GIALLO/ROSSA GIOVENZ	a.012/0001-1 LUCCHETTO	1
KT1	TIMER RIT.DISECCIT.	TIMER RIT.DISECCIT. 12 240 AC DC	1
Q15	COMMUTATORE 20A	20A C0013.09.11	1
F1	PORTAFUSIBILE	3 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	10,3x38 6A 500V aM RITARDATO	3
F2	INTERRUTT.6-10A SLVAMOTORE	4-6.3A ART.GV2 ME14SCHNEIDER	1
F3	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	10,3X38 2A 500V aM RITARDATO	2
F4	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	10,3X38 2A 500V aR RAPIDO	1
	FUSIBILE	10,3X38 8A 500V aR RAPIDO	1
KM4	INSIEME CONTATTORE KM4	CONTATTORE BF09 01 A024 LOVATO + CONTATTI AUSILIARI BFX10 11	1
KM1-KM2-KM3- -KM5	CONTATTORE TRIPOLARE	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	5
	CONTATTI AUSILIARI BFX 10 11 1N0 1NC		1
K3	MORS.2,5 C/DIOD.1N5408	MORS.2,5 C/DIOD.1N5408 PHOENIX ST2,5-4 DIO 1N 5408K/R-L	12
K4	MORSETTO 2,5mmq ST 2,5-	MORSETTO 2,5mmq ST 2,5- PHOENIX cod.3031306 (molla) 4C	13
K5	MORSETTO G/V 4mmq art.UT 4-PE +PIASTRA TERMIN.art.D-UT 2,5/10	MORSETTO G/V PHOENIX COD.3044128 (vite)+PIASTRA TERMIN.art.D-UT 2,5/10 PHOENIX cod.3047028 (2,5 /10)	4
VC1	PONTE RADDRIZZATORE VC1	-	1
	CONDENSATORE C1-C2		1
	INS.CAVO ALIMENTAZIONE QUADRO		1
	INS.CAVO MOTORE MANDRINO		1
	INS.CAVO MOTORE CENTRALINA	-	1
	INS.CAVO MANIPOLATORE		1
INS.CAVO ELETTROVALV.Q1-Q2- Q3-Q4-Q5-Q6-Q8-Q9-Q10-Q11- Q12-Q13			1
			1
			1
			1
			1
			1
			1
KA1-KA2 + ZOCOLO	RELE'A 2 CONTATTI +	8A 24VAC	2
	ZOCOLO A 2 CONTATTI		2
S2/S3	MANIPOLATORE	4 POS.+CENTR.TEMPORANEE Ø22	2
S4/S5	PULSANTE BASCULANTE	-	2
S6	PULSANTE DOPPIA VELOCITA'		
S1	INVERTITORE TRIPOLARE		1
T1	TRASFORMATORE	160 VA	1
M1	MOTORE CENTRALINA	M.E.1.8-2.5T400 SX B3-B14 50HZ	1
M2	MOTORE MANDRINO	MEKW1.35/1.85T400/50B3G90L 450 2800/1400 RPM	1



LIST OF COMPONENTS

Drawing N°A - Rev. 0

752205711

WIRING DIAGRAM 4/5

Page 44 of 49

TYRE-CHANGER SERIES
NAV51.15 and G10156.15

REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	QUANTITY
Q14	16A 3 POLES CUT-OUT SWITCH	ART.SE163003B 16A 3P BL/POR	1
	GIOVENZ YELLOW/RED KNOB	a.012/0001-1 PADLOCK	1
KT1	TIMER	TIMER RIT.DISECCIT. 12 240 AC DC	1
Q15	20A COMMUTATOR	20A C0013.09.11	1
F1	FUSE HOLDER	10,3x38 32A 690V 3 POLES SECTIONABLE	1
	FUSE	10,3x38 6A 500V aM DELAYED	3
F2	6-10A OVERLOAD CUOUT SWITCH	4-6.3A ART.GV2 ME14SCHNEIDER	1
F3	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	1
	FUSE	10,3X38 2A 500V aM DELAYED	2
F4	FUSE HOLDER	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSE	10,3X38 2A 500V aR RAPID	1
	FUSE	10,3X38 8A 500V aR RAPID	1
KM4	KM4 CONTACTOR ASSEMBLY	BF09 01 A024 LOVATO CONTACTOR + BFX10 11 AUXILIARY CONTACTS	1
KM1-KM2-KM3-KM5	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	5
	BFX 10 11 1N0 1NC AUXILIARY CONTACTS		1
K3	1N5408 2.5 C/DIODO CLAMP	2,5 CLAMP C/DIOD.1N5408 PHOENIX ST2,5-4 DIO 1N 5408K/R-L	12
K4	2,5mmq ST 2,5- CLAMP	2,5mmq CLAMP ST 2,5- PHOENIX cod.3031306 (spring) 4C	13
K5	CLAMP Y/G 4mmq art.UT 4-PE +TOOL PLATE art.D-UT 2,5/10	CLAMP Y/G PHOENIX COD.3044128 (screw) + TOOL PLATE TERMIN.art.D-UT 2,5/10 PHOENIX cod.3047028 (2,5 /10)	4
VC1	RECTIFIER BRIDGE VC1	-	1
	CONDENSER C1-C2		1
	SQUARE FEEDING CABLE ASSEMBLY		1
	CHUCK UNIT MOTOR CABLE ASSEMBLY		1
	HYDR.POWER UNIT MOTOR CABLE ASSEMBLY	-	1
	HANDLE CABLE ASSEMBLY		1
	Q1-Q2-Q3-Q4-Q5-Q6-Q8-Q9-Q10-Q11- Q12-Q13 SOLENOID VALVE CABLE ASSEMBLY		1
			1
			1
			1
			1
			1
KA1-KA2 + ZOCOLO	RELAY 2 CONTACTS + 2 CONTACTS SOCKET	8A 24VAC	2 + 2
S2/S3	HANDLE	4 POS.+CENTRAL TEMPORARY Ø22	2
S4/S5	PUSHBUTTON	-	2
S6	DOUBLE SPEED PUSHBUTTON		
S1	THREE-POLE INVERTER		1
T1	TRANSFORMER		1
M1	HYDRAULIC POWER UNIT MOTOR	M.E.1.8-2.5T400 SX B3-B14 50HZ	1
M2	CHUCK MOTOR	MEKW1.35/1.85T400/50B3G90L 450 2800/1400 RPM	1



LIST OF COMPONENTS

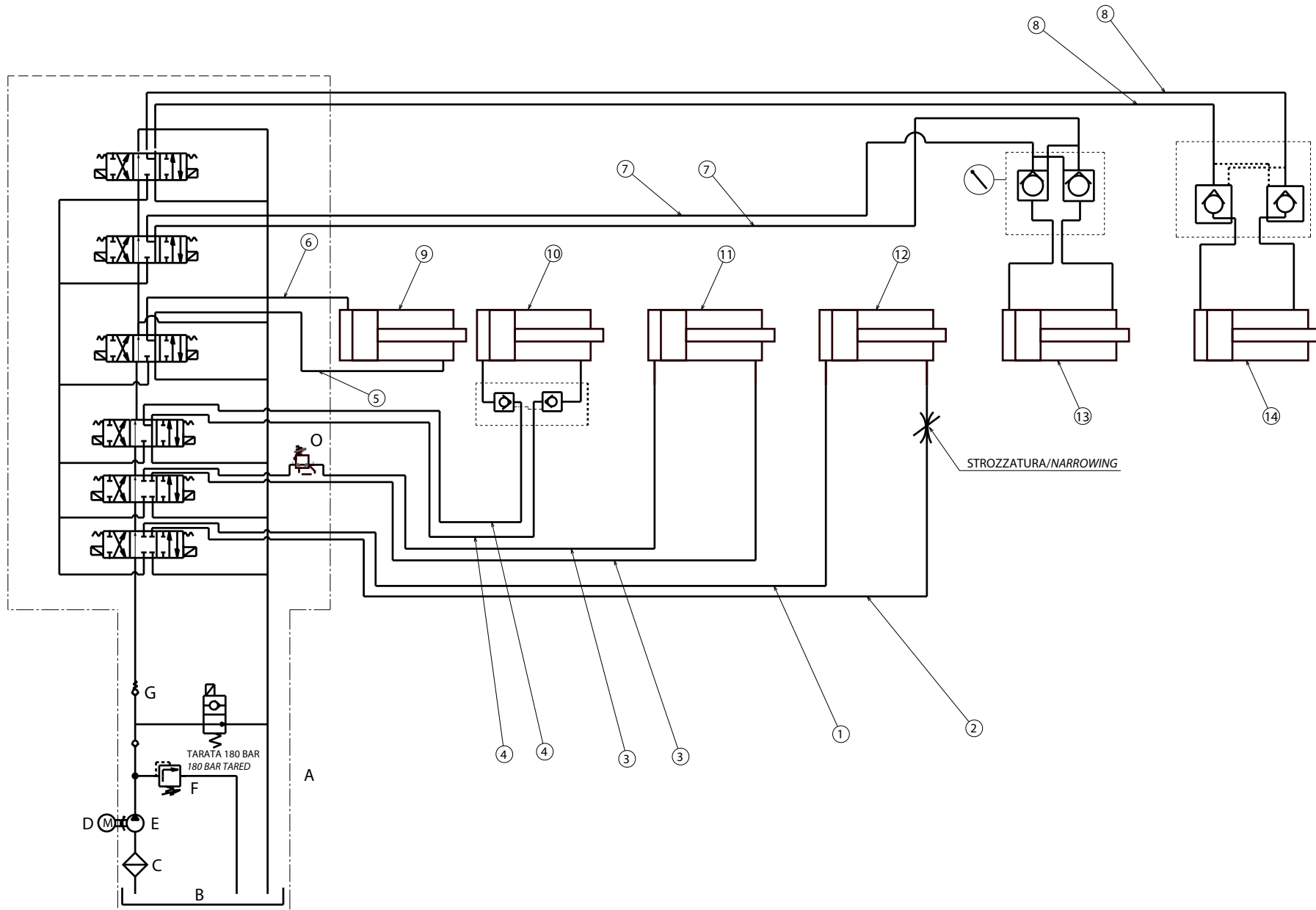
Drawing N°A - Rev. 0

752205711

WIRING DIAGRAM 5/5

Page 45 of 49

**TYRE-CHANGER SERIES
NAV51.15 and G10156.15**



Content of the declaration of conformity (with reference to Schedule 2, Part 1, Annex I, point 1.7.4.2, letter c) of UK Statutory Instrument 2008 No. 1597)

With reference to schedule 2 annex I, part1, section A of UK Statutory Instrument 2008 No. 1597, the declaration of conformity accompanying the machinery contains:

1. the business name and full address of the manufacturer and, where applicable, its authorised representative;
Manufacturer: see the first page of the manual.
 Authorised representative:
VEHICLE SERVICE GROUP UK LTD
3 Fourth Avenue - Bluebridge Industrial Estate - Halstead
Essex CO9 2SY - United Kingdom
2. name and address of the person authorised to compile the technical file;
It coincides with the authorized representative, see point 1
3. description and identification of the machine, including generic name, function, model, type, serial number, trade name;
See the first page of the manual
4. a sentence expressly declaring that the machinery fulfils all the relevant provisions of these Regulations and where appropriate, a similar sentence declaring the conformity with other enactments or relevant provisions with which the machinery complies;
The machinery complies with the following applicable UK Statutory Instruments:
The Supply of Machinery (Safety) Regulations 2008
The Electrical Equipment (Safety) Regulations 2016
The Electromagnetic Compatibility Regulations 2016
5. where appropriate, the name, address and identification number of the approved body which approved the full quality assurance system referred to in Annex X (Part 10 of this Schedule);
N/A
6. where appropriate, the name, address and identification number of the approved body which approved the full quality assurance system referred to in Annex X (Part 10 of this Schedule);
N/A
7. where appropriate, a reference to the designated standards used;

BS EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction;
BS EN 60204-1:2018	Safety of machinery - Electrical equipment of machines. General requirements.
BS EN 61000-6-3:2007 +A1:2011 +AC:2012	Electromagnetic compatibility (EMC) - Part 6-3. Generic standards - Emission standard for residential, commercial and light-industrial environments.
BS EN 61000-6-2:2005 +AC:2005	Electromagnetic compatibility (EMC) - Part 6-2. Generic standards - Immunity for industrial environments.
8. where appropriate, reference to other standards and technical specifications applied;
N/A
9. place and date of declaration;
Ostellato, / /
10. identification and signature of the person authorised to draw up the declaration on behalf of the manufacturer or its authorised representative.
SIMONE FERRARI VP VSG Europe Managing Director