

7108-M007-0_B

**KARACTER.TLX
KARACTER.TLXFI**

INSTRUCTION MANUAL

GB TRANSLATION FROM THE
ORIGINAL INSTRUCTIONS

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

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

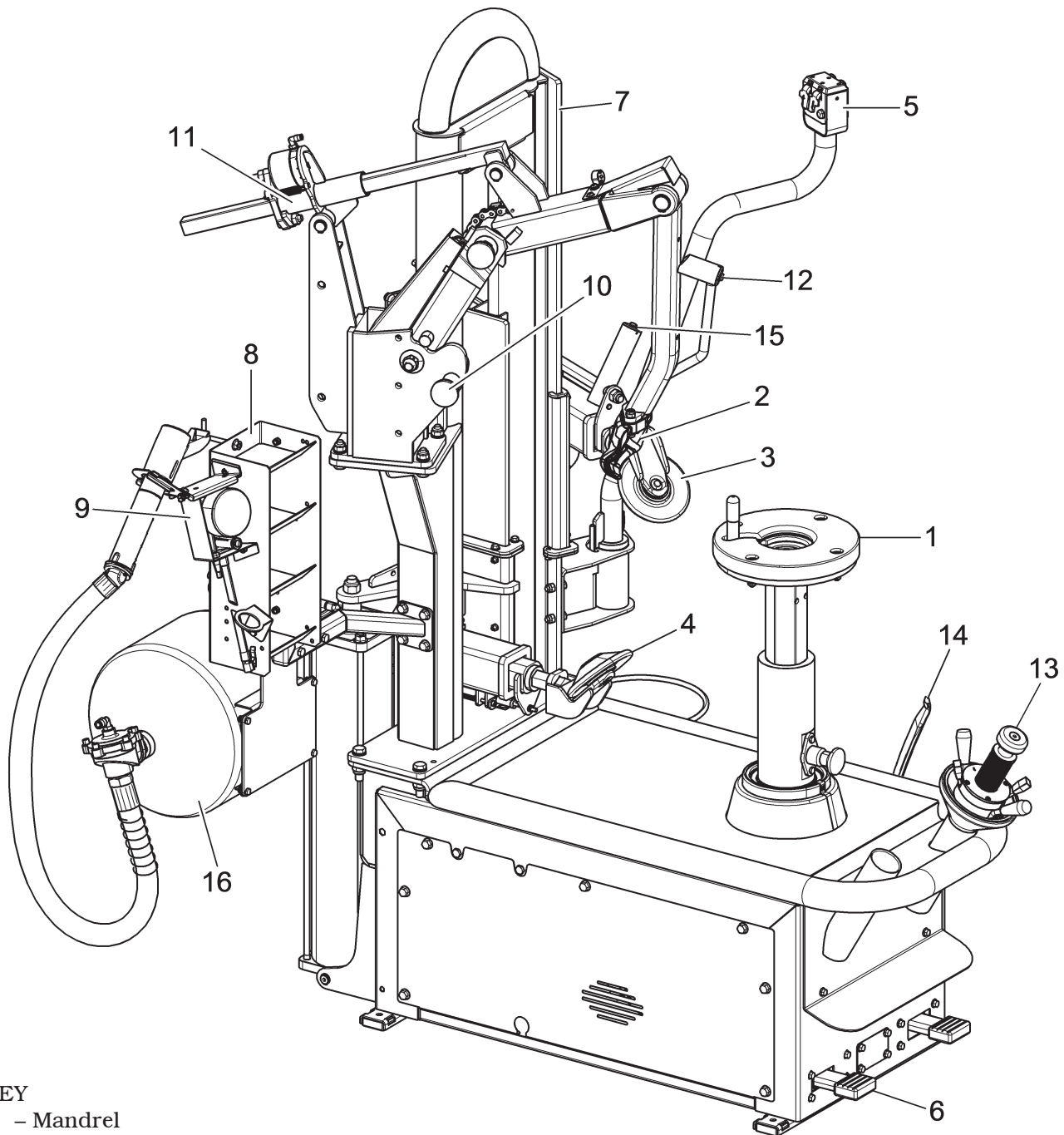
BUTLER ENGINEERING and MARKETING S.p.A. a s. u.
Via dell'Ecologia, 6 - 42047 Rolo - (RE) Italy
Phone (+39) 0522 647911 - Fax (+39) 0522 649760 - e-mail: Info@butler.it

7108-M007-0_B - Rev. n. 0 (06/2018)

SUMMARY

SYMBOLS USED IN THE MANUAL _____	4	13.2 Preliminary operations - Preparing the wheel _____	17
1.0 GENERAL INTRODUCTION _____	7	13.3 Mandrel height adjustment _____	18
1.1 Introduction _____	7	13.3.1 Reverse wheel pan protection _____	18
2.0 INTENDED USE _____	7	13.4 Wheel clamping _____	18
2.1 Training of personnel _____	7	13.5 Bead breaking through vertical rolls _____	20
3.0 SAFETY DEVICES _____	8	13.6 Demounting the tyre _____	22
3.1 Residual risks _____	8	13.7 Mounting the tyre _____	24
4.0 GENERAL SAFETY RULES _____	8	13.8 For rims with spoke end raised compared to the rim-edge _____	24
5.0 PACKING AND MOBILIZATION FOR TRANSPORT _____	9	13.9 Special use of the bead-breaker _____	25
6.0 UNPACKING _____	10	13.10 Tyre inflation with machine without tubeless inflation _____	25
7.0 MOBILIZATION _____	10	13.11 Tyre inflation with machine with tubeless inflation _____	25
8.0 WORKING ENVIRONMENT CONDITIONS _____	11	14.0 ROUTINE MAINTENANCE _____	26
8.1 Working position _____	11	14.1 Lubricants _____	27
8.2 Installation space _____	11	15.0 TROUBLESHOOTING TABLE _____	28
8.3 Lighting _____	11	16.0 TECHNICAL DATA _____	29
9.0 ANCHORING SYSTEM _____	12	16.1 Weight _____	29
10.0 ELECTRICAL CONNECTIONS _____	12	16.2 Dimensions _____	30
11.0 ASSEMBLY AND PREPARATION FOR USE _____	13	17.0 STORING _____	31
11.1 Fixtures contained in the packing _____	13	18.0 SCRAPPING _____	31
11.2 Assembly procedures _____	14	19.0 REGISTRATION PLATE DATA _____	31
12.0 CONTROLS _____	15	20.0 FUNCTIONAL DIAGRAMS _____	31
12.1 Control for bead breaking roll release _____	15	Table A - Electric diagram _____	32
12.2 Bead-breaking control unit _____	16	Table B - Pneumatic diagram (KARACTER.TLX) _____	36
12.3 Vertical arm control _____	16	Table C - Pneumatic diagram (KARACTER.TLXFI) _____	39
12.4 Pedalboard _____	16	21.0 LIST OF COMPONENTS	
13.0 USING THE MACHINE _____	17		
13.1 Precaution measures during tyre removal and fitting _____	17		







FIG. 1



KEY

- 1 - Mandrel
- 2 - Tool
- 3 - Upper bead breaker
- 4 - Lower bead breaker
- 5 - Control unit
- 6 - Inflation pedal
- 7 - Column unit
- 8 - Tool box
- 9 - Inflation pressure gauge unit
- 10 - Arm-lock side control
- 11 - Tool arm locking device
- 12 - Tool arm release push button
- 13 - Device for wheel clamping on mandrel
- 14 - Bead lifting lever
- 15 - Release push button for bead breaker roll horizontal translation
- 16 - Tubeless inflation unit (only for KARACTER.TLXFI model)

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).






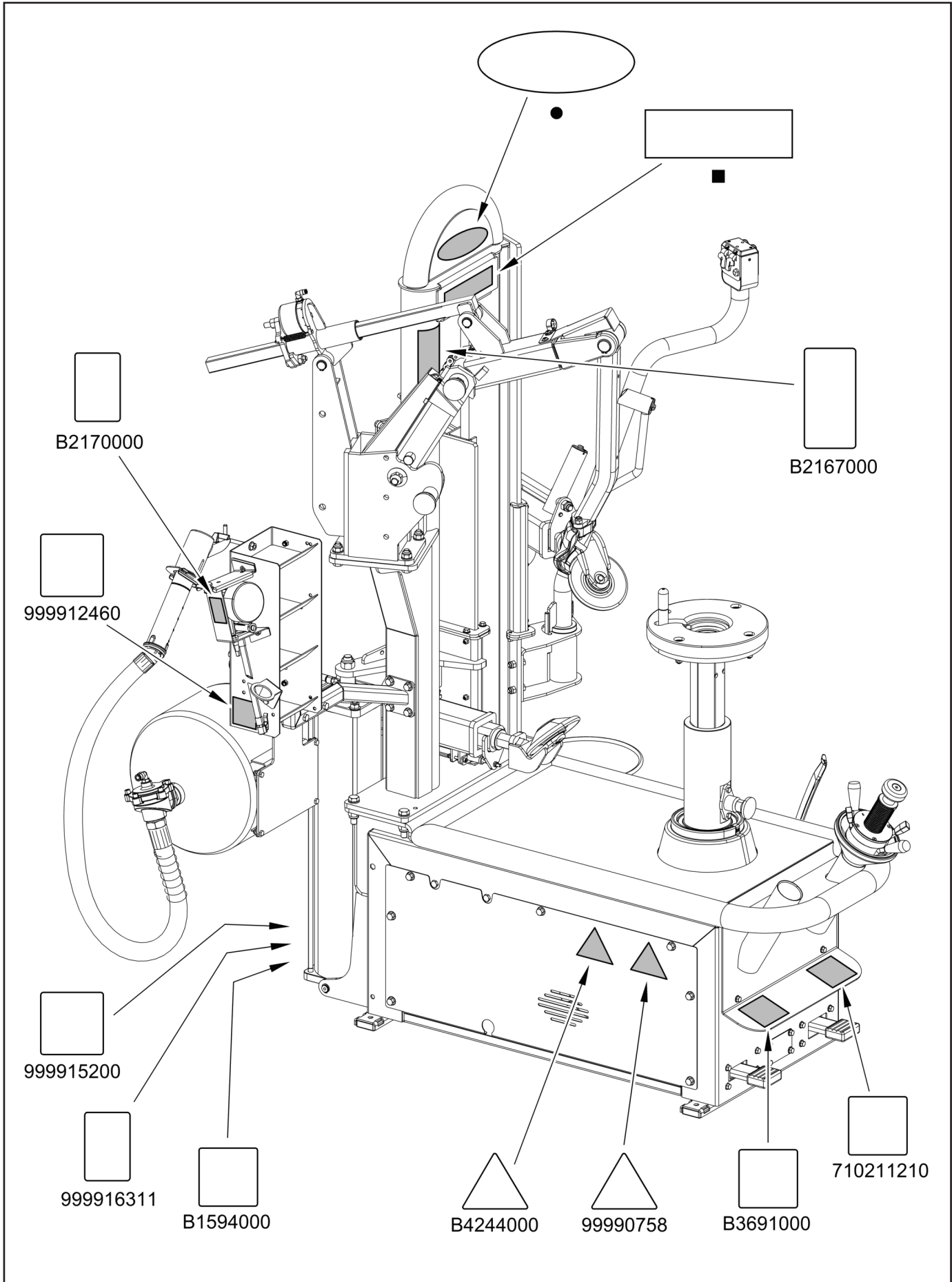
Symbols	Description
	Danger! Be particularly careful.
	Move with fork lift truck or pallet truck.
	Lift from above.
	Technical assistance necessary. Do not perform any intervention.
	Note. Indication and/or useful information.

PLATE LOCATION ON MACHINE INFORMATION TABLE



Code numbers of plates

B1594000	<i>Date indicating plate</i>
B2166000	<i>Bead breaker danger plate</i>
B2167000	<i>Obligation to wear protective clothing plate</i>
B2168000	<i>Tyre burst plate</i>
B2170000	<i>Max inflation pressure rating plate</i>
B3691000	<i>Inflation pedal plate</i>
B4244000	<i>Rotating parts danger plate</i>
710211210	<i>Rotation direction plate</i>
99990758	<i>Electricity danger plate</i>
999912460	<i>Supply pressure indicating plate</i>
999914160	<i>Voltage 230V 50/60 Hz 1 Ph plate</i>
999915200	<i>Serial number plate</i>
999916311	<i>Rubbish skip label</i>
•	<i>Manufacturer nameplate</i>
■	<i>Machine nameplate</i>



IF ONE OR MORE PLATES DISAPPEAR FROM THE MACHINE OR BECOMES DIFFICULT TO READ. REPLACE IT AND QUOTE ITS/THEIR CODE NUMBER/S WHEN REORDERING.



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

1.0 GENERAL INTRODUCTION

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

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



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



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

1.1 Introduction

Thank you for preferring this tyre-changer. We feel sure you will not regret your decision.

This machine has been designed for use in professional workshops and stands out for its reliability and easy, safe and rapid operation: with a minimum maintenance and care this tyre changer will operate for many years without problems, thus satisfying Your needs.

2.0 INTENDED USE

The machines described in this manual and their different versions, are tyre-changers for car tires projected to be used exclusively for the mounting, demounting, and inflation of wheels with dimensions of max. diameter of 46" and max. width of 15".



THIS ACCESSORY MUST ONLY BE USED FOR THE PURPOSE FOR WHICH IT IS SPECIFICALLY DESIGNED. ANY OTHER USE IS CONSIDERED IMPROPER AND THEREFORE UNACCEPTABLE.



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



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

2.1 Training of personnel

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

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



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

3.0 SAFETY DEVICES



PERIODICALLY, AT LEAST MONTHLY, CHECK THE INTEGRITY AND THE FUNCTIONALITY OF THE SAFETY AND PROTECTION DEVICES ON THE MACHINE.

All the machines are equipped with:

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

This device prevents the arm from hitting the operator.

- **Fixed guards and shelters**

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

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



PERIODICALLY CARRY OUT THE MAINTENANCE OF THE PROTECTIONS, SHELTERS AND SAFETY DEVICES IN GENERAL, AS INDICATED IN CHAPTER 13. ROUTINE MAINTENANCE.

- **“Operator attending” controls**

Immediate stop of operation when the control is released for all operating devices:

- mandrel rotation;
- tool translation;
- bead breaking roller translation.

- **Non-adjustable pressure limiter.**

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

- **Controls logic disposition**

Its function is to prevent the operator from dangerous mistakes.

- **Motor protection devices**

The new “Invemotor” motor is equipped with electronic protection devices. They stop the motor if working defected conditions appear to avoid that the motor itself can be damaged and that the operator safety can be compromised (overvoltage, overload, overtemperature). For other details, see the chapt. 14 “Fault-Finding”.

3.1 Residual risks

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

This manual stresses possible residual risks, also highlighted in pictograms and adhesive warning signals placed on the machine: their location is represented in “PLATE LOCATION ON MACHINE INFORMATION TABLE” on page 5.

4.0 GENERAL SAFETY RULES



- Any tampering with or modification to the machine not previously authorized by the manufacturer exempts the latter from all responsibility for damage caused by or derived from said actions.
- Removing of or tampering with the safety devices or with the warning signals placed on the machine leads to serious dangers and represents a transgression of European safety rules.
- The machine 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 machine is designed to function only with original accessories.
- Installation must be conducted only by qualified personnel exactly according to the instructions that are given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the machine if it malfunctions and contact the assistance service of an authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, disconnect all supplies to the machine by using the main switch.
- Ensure that the work area around the machine is free of potentially dangerous objects and that there is no oil since this could damage the tyre. Oil on the floor is also a potential danger for the operator.



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

- The machine handles and operating grips must be kept clean and free from oil.
- The workshop must be kept clean, dry and not exposed to atmospheric agents. Make sure that the working premises are properly lit. The machine can be operated by a single operator. Unauthorised personnel must remain outside the working area, as shown in **Figure 4**. Avoid any hazardous situations. Do not use air-operated or electrical equipment when the shop is damp or the floor slippery and do not expose such tools to atmospheric agents.
- During inflation do not lean on the tyre or remain above it. When beading in the tyre, keep hands away from tyre and the rim edge.
- During inflation always stay to the side of the machine and never in front of it.
- When operating and servicing this machine, carefully follow all applicable safety and accident-prevention precautions. The machine must not be operated by professionally unskilled persons.



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

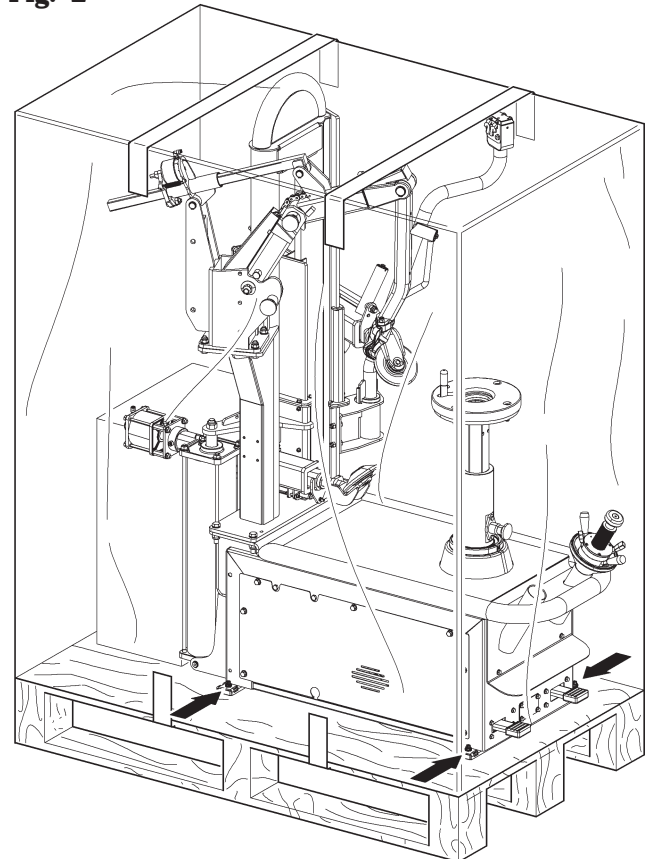
5.0 PACKING AND MOBILIZATION FOR TRANSPORT



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

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

Fig. 2



6.0 UNPACKING



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

The cardboard box is supported with plastic strapping. Cut the strapping with suitable scissors. Use a small knife to cut along the lateral axis of the box and open it like a fan.

It is also possible to unnailed the cardboard box from the pallet it is fixed to. After removing the packing, and in the case of the machine packed fully assembled, check that the machine is complete and that there is no visible damage.

If in doubt **do not use the machine** and refer to professionally qualified personnel (to the seller).

The packing (plastic bags, expanded polystyrene, nails, screws, timber, etc.) should not be left within reach of children since it is potentially dangerous. These materials should be deposited in the relevant collection points if they are pollutants or non biodegradable.



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

7.0 MOBILIZATION

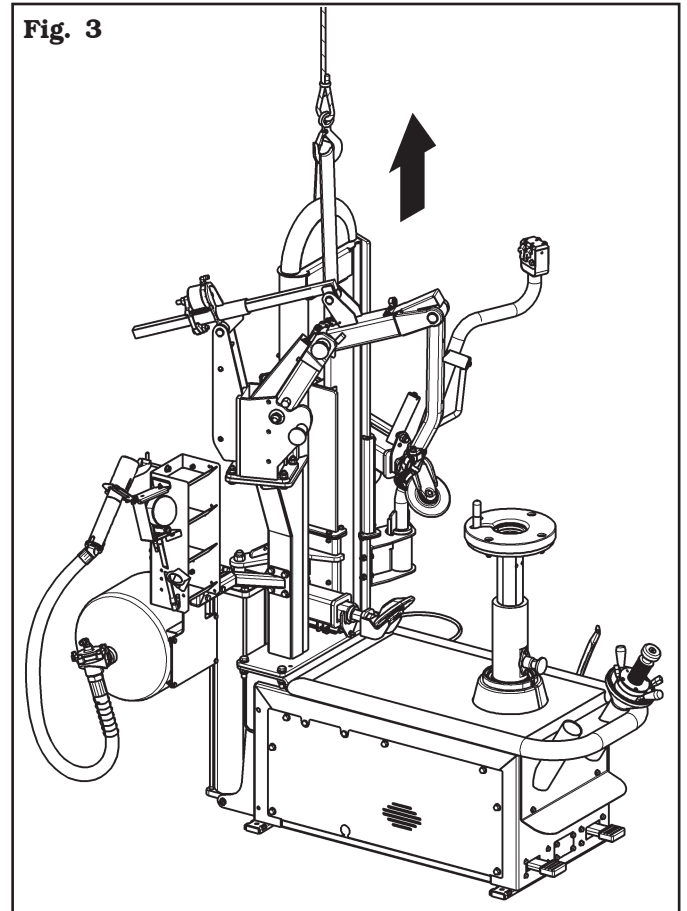


THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE MACHINE (SEE PARAGRAPH TECHNICAL SPECIFICATIONS). DO NOT ALLOW THE LIFTED MACHINE TO SWING.

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

- Protect the exposed corners with suitable material (Pluribol/cardboard).
- Do not use metallic cables for lifting.
- Make sure the electrical and pneumatic supply of the machine is not connected.
- Sling with belts long at least 450 cm and with a capacity load greater than 2500 kg.

Fig. 3



8.0 WORKING ENVIRONMENT CONDITIONS

The machine must be operated under proper conditions as follows:

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

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

8.1 Working position

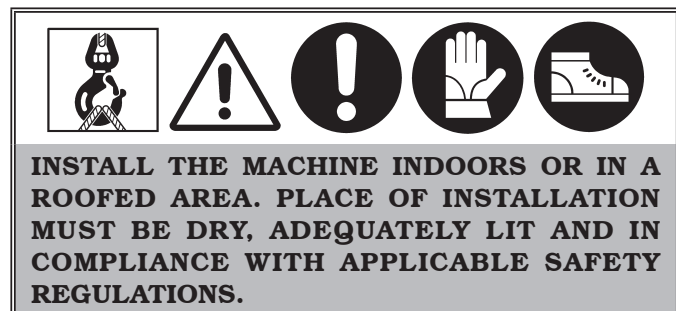
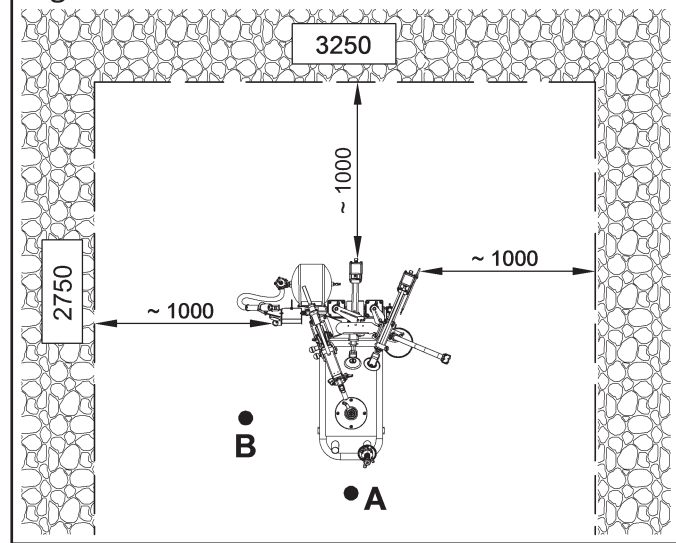
In **Fig. 4** it is possible to identify working positions **A** and **B**.

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

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

8.2 Installation space

Fig. 4



The location of the machine requires a usable space as indicated in **Fig. 4**. The positioning of the machine must be according to the distances shown. From the control position the operator is able to observe all the machine and surrounding area. He must prevent unauthorized personnel or objects that could be dangerous from entering the area.

The machine must be fixed on a flat floor surface, preferably of cement or tiled. Avoid yielding or irregular surfaces.

The base floor must be able to support the loads transmitted during operation. This surface must have a capacity load of at least 500 kg/m².

The depth of the solid floor must be sufficient to guarantee that the anchoring bolts hold.

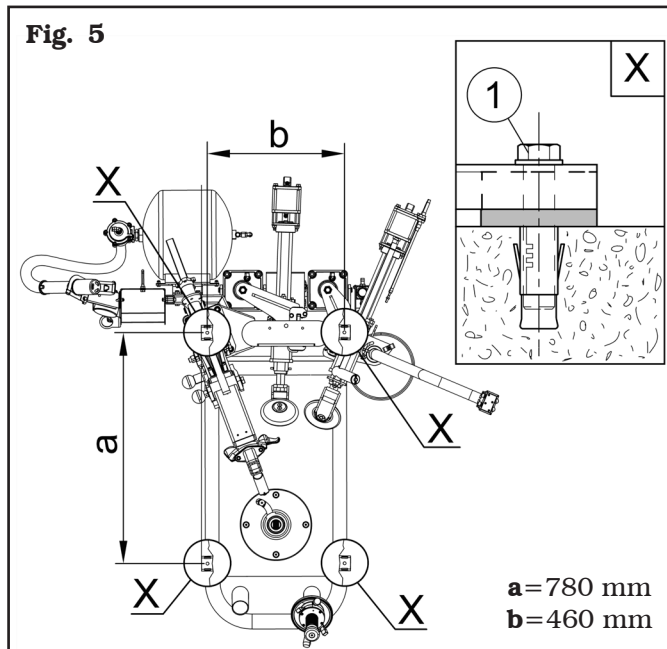
8.3 Lighting

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

In case of poor lighting, use lamps having total power 800/1200 Watt as envisaged by UNI 10380.

9.0 ANCHORING SYSTEM

The packed machine is fixed to the support pallet through the holes prearranged on the frame. Such holes can be used also to fix the machine to the ground, through floor anchor small blocks (excluded from supply). Before carrying out the definitive fixing, check that all the anchor points are laid down flat and correctly in contact with the fixing surface itself. If not so, insert shimming profiles between the machine and the fixing lower surface, as indicated in **Fig. 5**.



- Execute 4 holes with 10 mm diameter on the floor by the holes on the bottom floor;
- insert the small blocks (excluded from supply) into the holes;
- fix the machine to the ground with 4 M8x80 mm screws (excluded from supply) (**Fig. 5 ref. 1**) (or with 4 8x80 mm stud bolts (excluded from supply)). Tighten the screws with an approximate tightening torque of 70 Nm.

10.0 ELECTRICAL CONNECTIONS



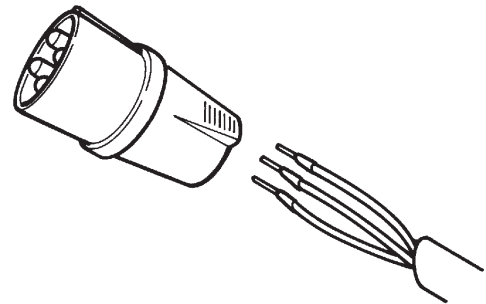
EVEN THE TINIEST PROCEDURE OF AN ELECTRICAL NATURE MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED STAFF.



BEFORE CONNECTING THE MACHINE MAKE SURE THAT:

- **THE MAIN POWER RATING CORRESPONDS TO THE MACHINE RATING AS SHOWN ON THE MACHINE PLATE;**
- **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 CUTOUT WITH DIFFERENTIAL PROTECTION SET AT 30 mA.**

As envisaged by the regulations in force, the machine is not equipped with a master circuit breaker, but simply has a plug-socket connection to the electrical mains.



The machine is supplied with 4 m of free cable. A plug corresponding to the following requirements must be connected to the cable:

- **Conformity to Norm IEC 309**
- **220/240 Volt – 25A**
- **2P + Ground**
- **IP 44**



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

On delivery, the machines are pre-set to operate at a single-phase voltage of 220/240 V - 50/60 Hz.



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

11.0 ASSEMBLY AND PREPARATION FOR USE

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

11.1 Fixtures contained in the packing

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

KARACTER.TLX

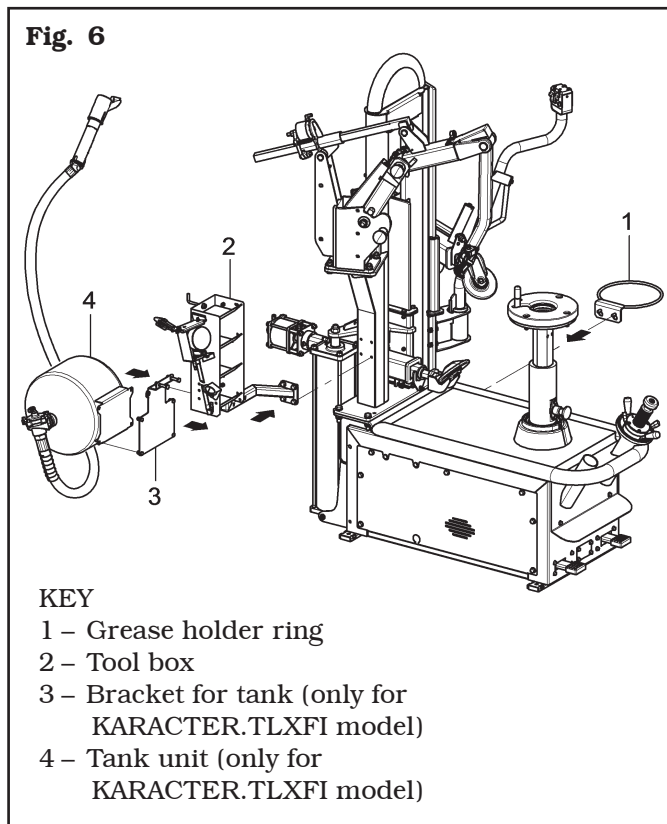
Code	Description	N.
B1157000	<i>Two-faced cone</i>	1
G1000A52	<i>Bead lifting lever</i>	1
G1000A86	<i>Mirror with magnetic support</i>	1
710013421	<i>Reverse wheels protection</i>	1
790011620	<i>Bead sliding foil</i>	1
B0326001	<i>Lever protection</i>	1
B1205900	<i>Rimsled, mobile insert</i>	2
B0223000	<i>Grease holding ring</i>	1
203035	<i>TE M8x20 screw</i>	2
272172	<i>TE M8x16 screw</i>	4

KARACTER.TLXFI

Code	Description	N.
B1157000	<i>Two-faced cone</i>	1
G1000A52	<i>Bead lifting lever</i>	1
G1000A86	<i>Mirror with magnetic support</i>	1
710013421	<i>Reverse wheels protection</i>	1
790011620	<i>Bead sliding foil</i>	1
B0326001	<i>Lever protection</i>	1
B1205900	<i>Rimsled, mobile insert</i>	2
B0223000	<i>Grease holding ring</i>	1
203035	<i>TE M8x20 screw</i>	2
272172	<i>TE M8x16 screw</i>	4
710811600	<i>Bracket for tank</i>	1
201044	<i>TE M8x45 screw</i>	2
228011	<i>M8 self-locking nut</i>	2
203019	<i>TE M6x16 screw</i>	4
228010	<i>M6 self-locking nut</i>	4

11.2 Assembly procedures

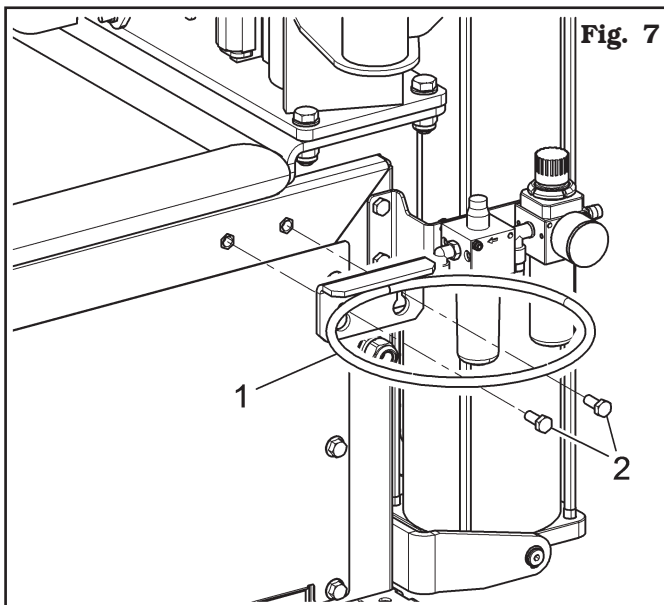
Assemble the machine with the help of the following illustration.



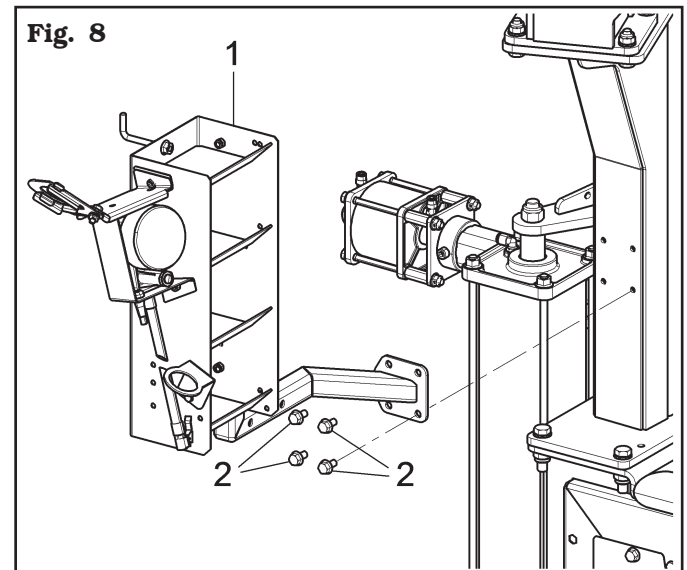
KEY

- 1 - Grease holder ring
- 2 - Tool box
- 3 - Bracket for tank (only for KARACTER.TLXFI model)
- 4 - Tank unit (only for KARACTER.TLXFI model)

- 1- Mount the grease holding ring (# B0223000) (**Fig. 7 ref. 1**), in the accessory box, using the 2 provided screws (**Fig. 7 ref. 2**) (# 203035), on the rivets already present on machine body.



2. Fit the tool box (**Fig. 8 ref. 1**) to machine column, using the 4 special screws provided (**Fig. 8 ref. 2**) (# 272172).

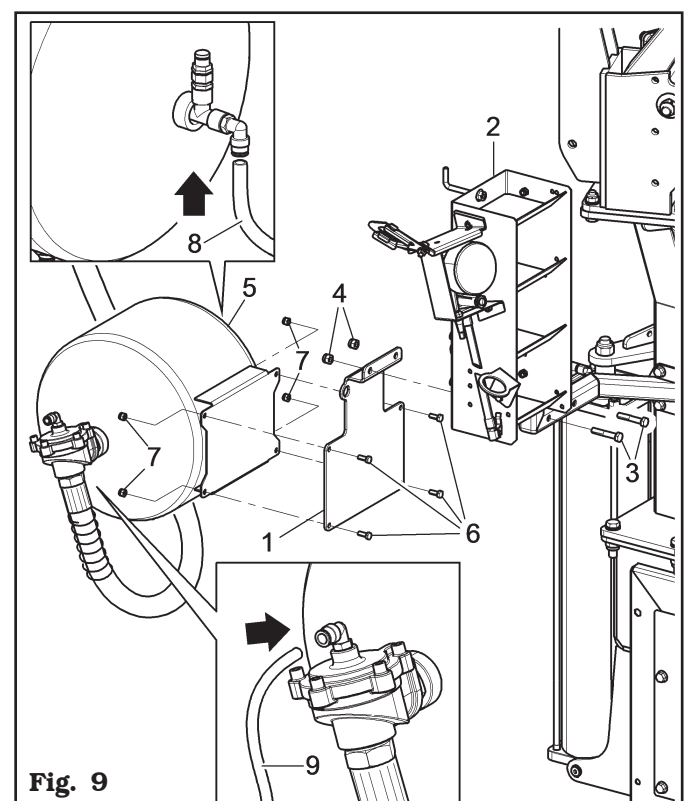


Only for KARACTER.TLXFI

3. Fit the bracket for tank (**Fig. 9 ref. 1**) (# 710811600) to the tool box (**Fig. 9 ref. 2**) using the 2 special screws (**Fig. 9 ref. 3**) (# 201044) and the nuts (**Fig. 9 ref. 4**) (# 228011), supplied.

Mount the tank unit (**Fig. 9 ref. 5**) to the bracket for tank (**Fig. 9 ref. 1**) with the 4 screws (**Fig. 9 ref. 6**) (# 203019) and the nuts (**Fig. 9 ref. 7**) (# 228010), supplied.

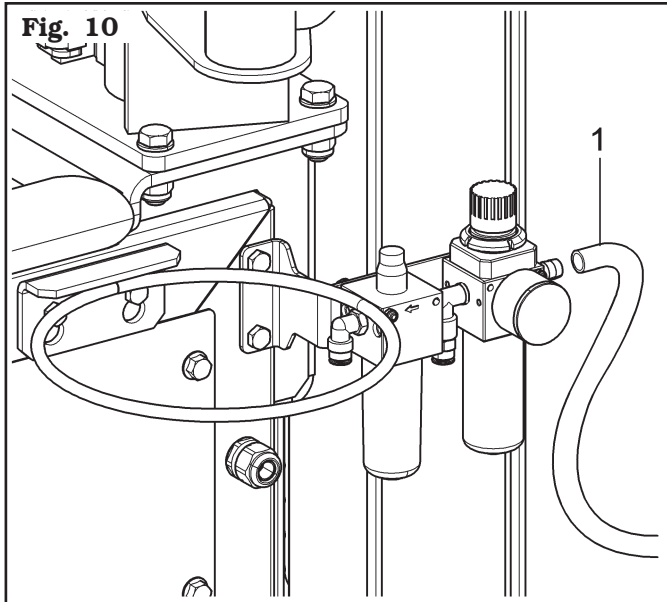
4. Connect the black pipe (**Fig. 9 ref. 8**) and the blue pipe (**Fig. 9 ref. 9**) on the provided quick couplings as shown in figure **Fig. 9**.





IN CASE OF A CHANCE SUPPLY FAILURE, AND/OR BEFORE ANY PNEUMATIC CONNECTIONS, MOVE THE CONTROLS TO THE NEUTRAL POSITION.

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



IF OTHER PNEUMATIC CONNECTIONS SHOULD BE EXECUTED, REFER TO THE PNEUMATIC DIAGRAMS ILLUSTRATED IN CHAPTER 20.

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

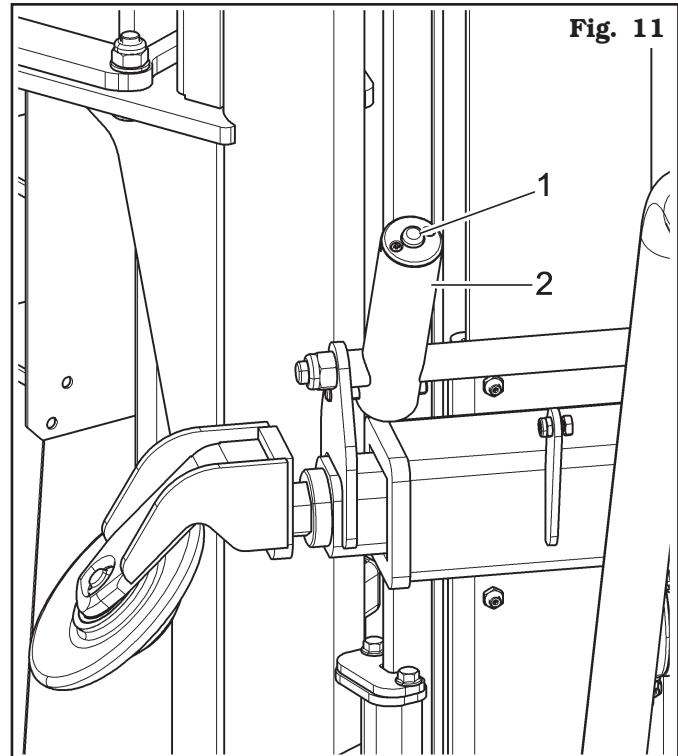


CARRY OUT A DAILY CHECK OF MAINTAINED-TYPE CONTROLS CORRECT FUNCTIONING, BEFORE STARTING MACHINE OPERATION.

12.0 CONTROLS

12.1 Control for bead breaking roll release

This is done completely manually. Press the release push button (**Fig. 11 ref. 1**), then operate the handle (**Fig. 11 ref. 2**), for the manual positioning of the bead breaker rolls on the correct diameter of the wheel fixed onto the mandrel, through a concurrent lever's thrust and return movement. Releasing the push button, the rolls lock into their current position.



12.2 Bead-breaking control unit

It consists of two levers (**Fig. 12 ref. A**) and of two push buttons (**Fig. 12 ref. B**) with different functions, fit onto a single control block.

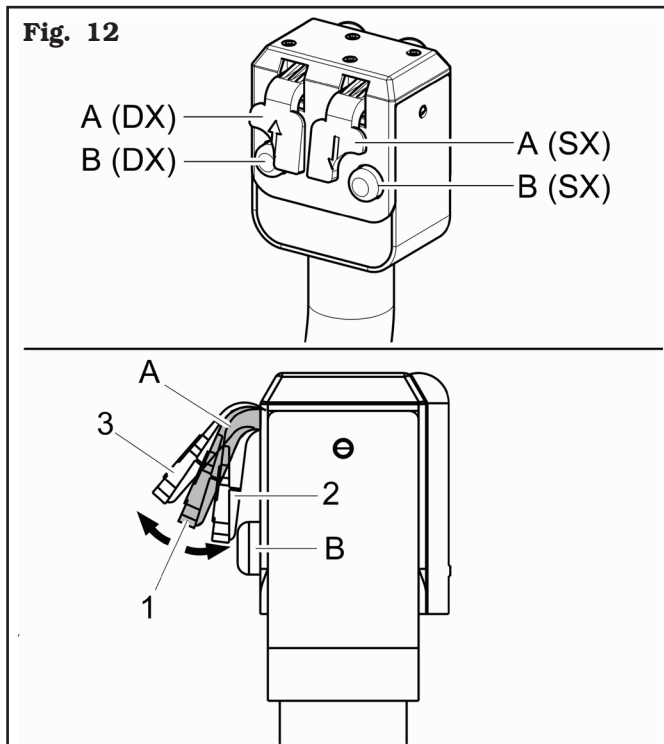
The unit can be gripped for moving the bead-breakers and positioning them for operation.

The bead-breaking control unit therefore governs all the movements necessary for a complete bead-breaking operation:

- bead breaker manual vertical shift movement.
 - introduction of the bead breaker rolls inside the rim.
- The lever and the right push button (RH) control the upper bead breaker roll, vice versa the lever and the left push button (LH) control the lower bead breaker roll. Each lever has three positions:

- the first one (**Fig. 12 ref. 1**) is rest position, that keeps the bead breaker rolls into their current position.
- the second one (**Fig. 12 ref. 2**) (pressed lever, maintained-type control) operates upper bead breaker roll's descent (RH lever) and/or lower bead breaker roll's rise (LH lever).
- the third one (**Fig. 12 ref. 3**) (lever's lifting) operates upper bead breaker roll's rise (RH lever) and/or lower bead breaker roll's descent (LH lever) up to the limit switch.

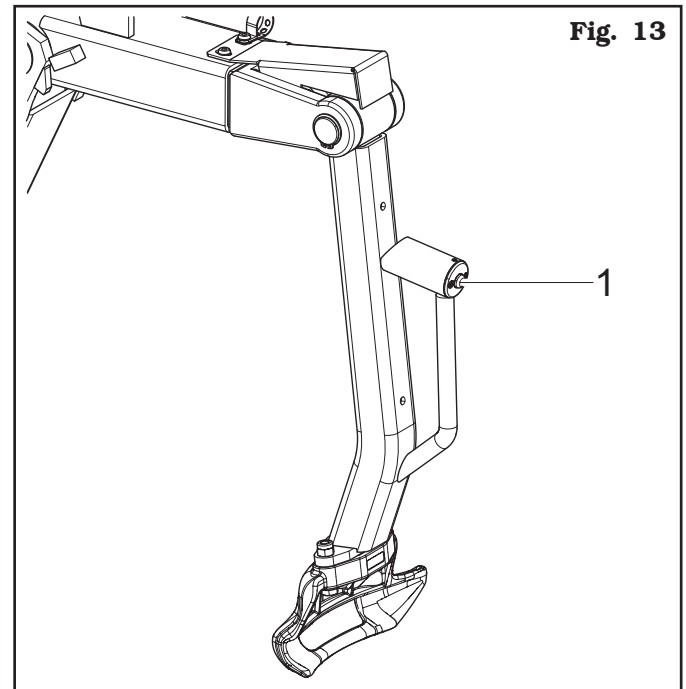
Pressing RH or LH, maintained-type, push button (**Fig. 12 ref. B**), the corresponding cam introduces the bead breaker roll in the rim.



12.3 Vertical arm control

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

In order to manually position the tool arm, it's necessary to keep the unlocking push button (**Fig. 13 ref. 1**) pressed, until the operation is completed.



12.4 Pedalboard

“Pedal 1” has two maintained action operative positions. When it is pushed downwards it controls mandrel motor clockwise rotary movement. When the pedal is lifted upwards it operates the opposite movement.



THE MANDREL UNIT SPEED CAN BE CONTINUOUSLY ADJUSTED UP TO THE MAXIMUM SPEED THROUGH A PROGRESSIVE PRESSURE ON THE PEDAL, ONLY IN CLOCKWISE DIRECTION.

“Pedal 2” has a different function according to machine version.

Version with inflation with pressure gauge

The inflation pedal in this version has only one function. A continuous pressure supplies air at a controlled pressure (max $4.2 \pm 0,2$ bar 60 PSI).



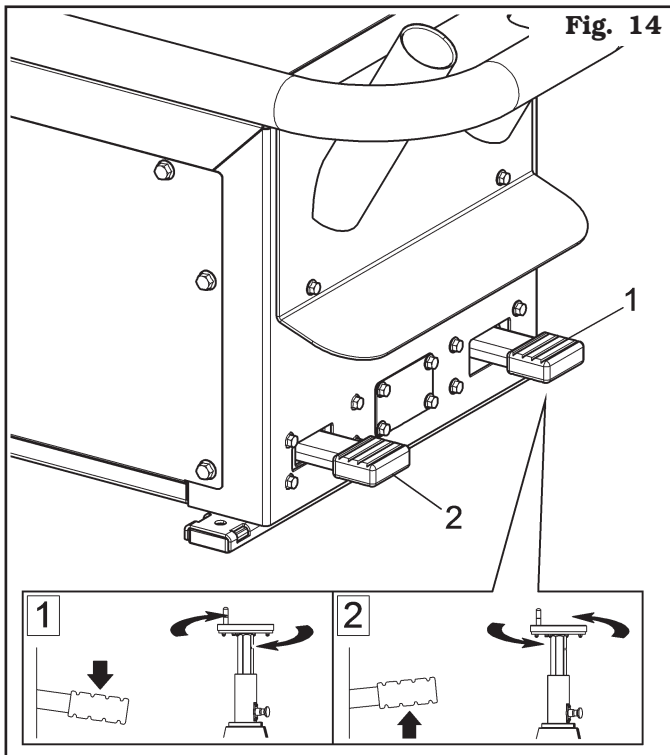
DO NOT CHANGE THE SET OPERATING PRESSURE VALUE BY MEANS OF THE MAXIMUM PRESSURE VALVES. THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR INJURY OR DAMAGE ARISING FROM UNAUTHORISED CHANGES.

Version with tubeless inflation

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



DO NOT CHANGE THE SET OPERATING PRESSURE VALUE BY MEANS OF THE MAXIMUM PRESSURE VALVES. THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR INJURY OR DAMAGE ARISING FROM UNAUTHORISED CHANGES.



13.0 USING THE MACHINE

13.1 Precaution measures during tyre removal and fitting



Before fitting a tyre, observe the following safety rules:

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

13.2 Preliminary operations - Preparing the wheel

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



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

- Establish from which side the tyre should be demounted, checking the position of the groove.
- Find the rim locking type.
- Try to establish the special types of wheels, such as "EH2" and "EH2+", in order to improve locking, bead breaking, assembly and disassembly performances.



WHEN HANDLING WHEELS WEIGHING MORE THAN 10 KG AND/OR WITH A FREQUENCY OF MORE THAN 20/30 WHEELS PER HOUR, A LIFTING DEVICE SHOULD BE USED.

13.3 Mandrel height adjustment

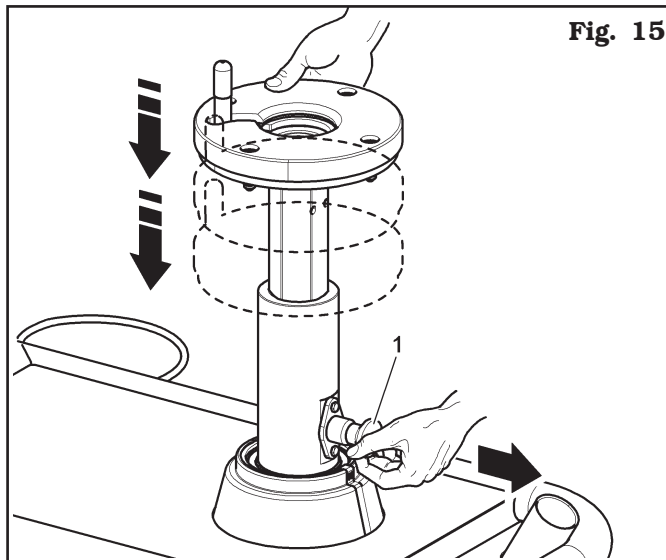
The mandrel with central locking has 3 different height modes, so that it is possible to operate with a wider range of wheels. A "quick release" system allows to remove the mandrel mobile part and to dowel the support plate at the required height.

In order to adjust the central support's height, pull the knob outwards (**Fig. 15 ref. 1**) and lift or lower the central support's plate up to the required height. Now it's possible to place the tyre in the right way with the working tools.

When employing wheels with oversize off-set, use the highest position.

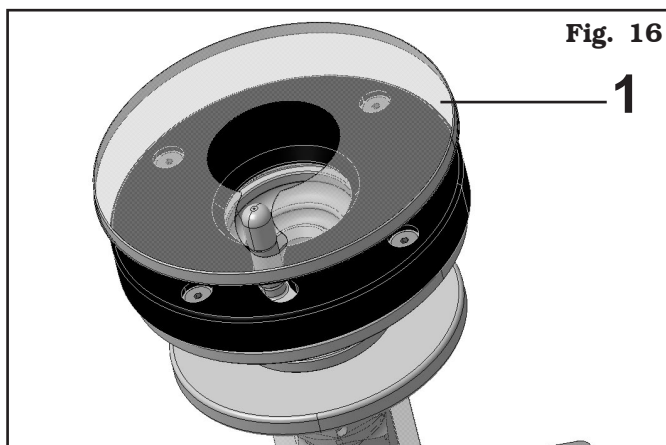
With the standard wheels, the average height is normally used

Finally, the lowest height is indicated for reverse "drop-center" wheels.

**Fig. 15**

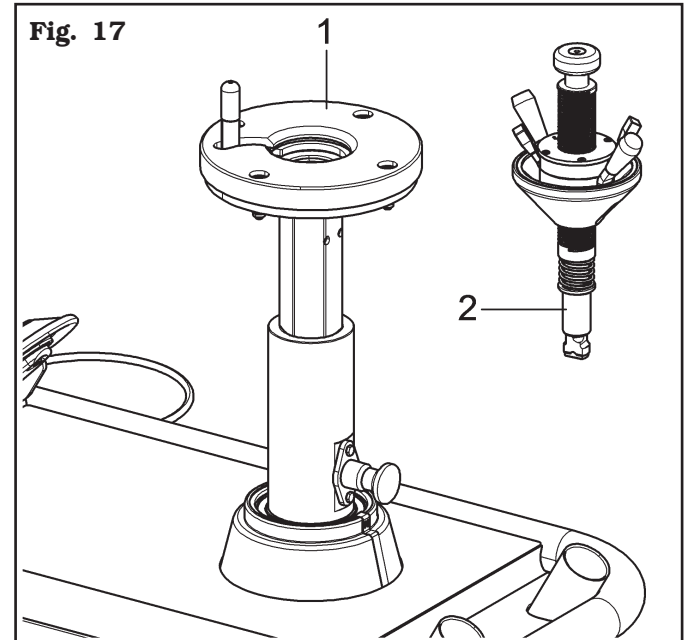
13.3.1 Reverse wheel pan protection

In case of use of reverse wheels, to protect the rim, apply on the rubber platform a protection made of a transparent plastic material available on demand (**Fig. 16 ref. 1**). We suggest a constant replacement of it and in any case if there are visible damages (see **Fig. 16**).

**Fig. 16**

13.4 Wheel clamping

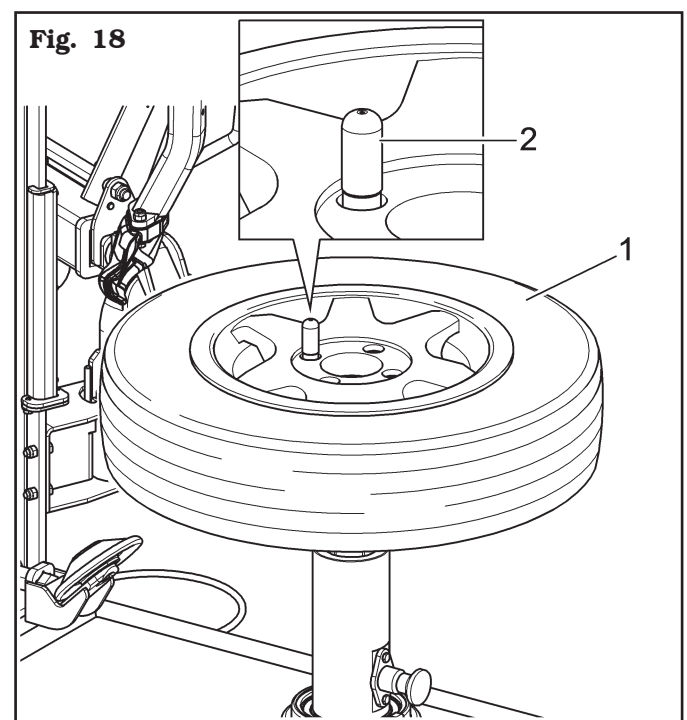
All wheels must be locked on the rubber plate (**Fig. 17 ref. 1**) through the central hole using the proper locking device (**Fig. 17 ref. 2**).

**Fig. 17**

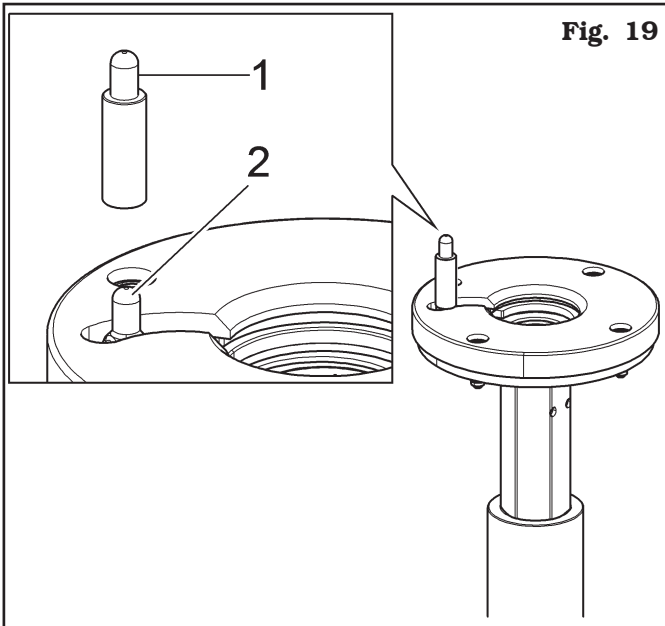
IN CASE OF USE OF RIMS WITHOUT CENTRAL HOLE, IT'S NECESSARY TO USE THE PROPER FIXTURE (AVAILABLE ON DEMAND).

To lock a rim proceed as follows:

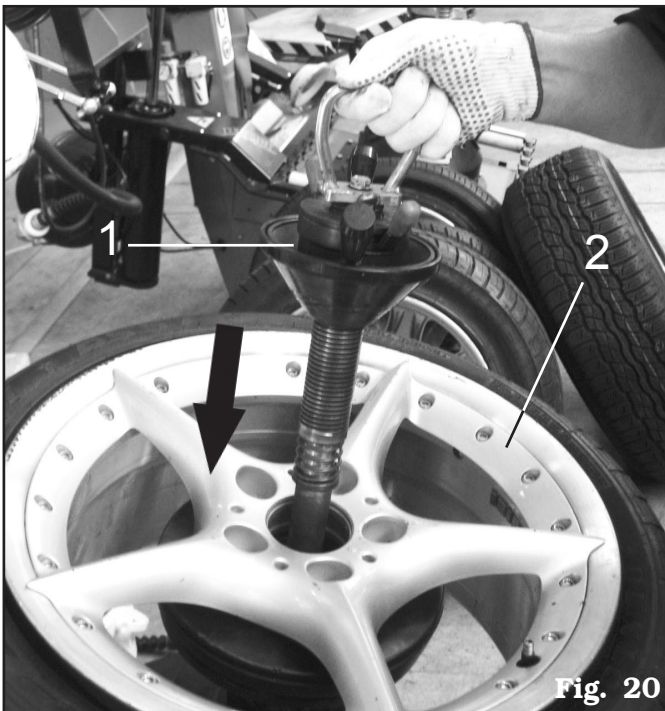
1. Dowel the wheel (**Fig. 18 ref. 1**) on the locking platform and check that the dragging pin (**Fig. 18 ref. 2**) enter in a hole placed on the rim hub.

**Fig. 18**

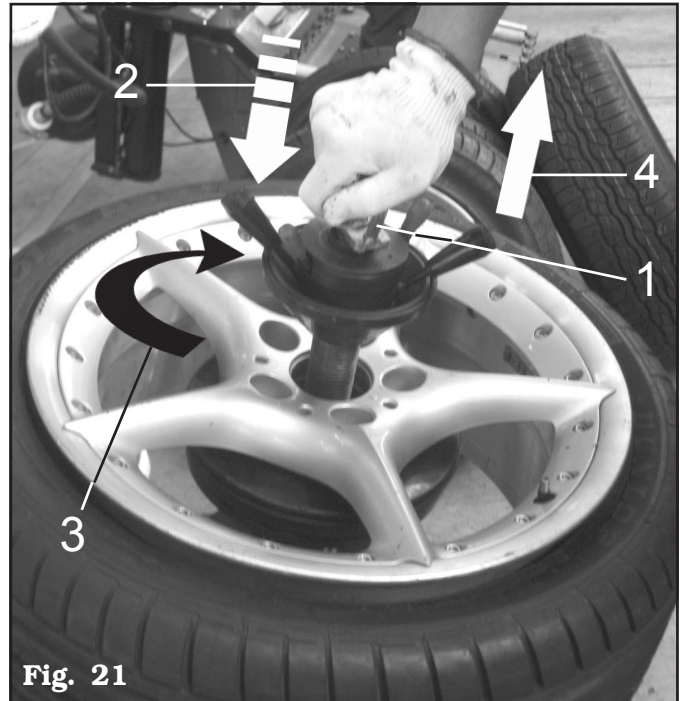
2. If the wheel hub is higher than the dragger (**Fig. 19 ref. 2**), use the extension (**Fig. 19 ref. 1**) supplied on issue.



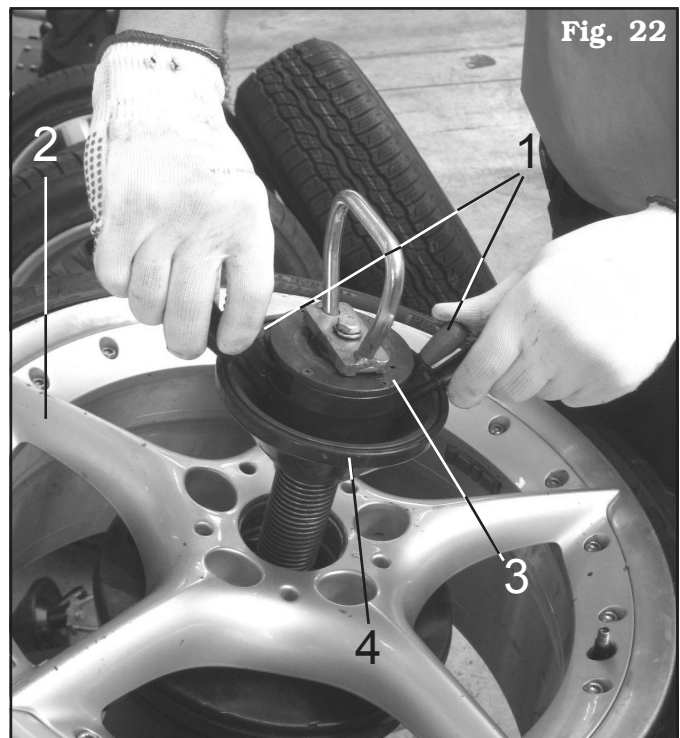
3. Insert the shaft complete with cone (**Fig. 20 ref. 1**) on the rim (**Fig. 20 ref. 2**).



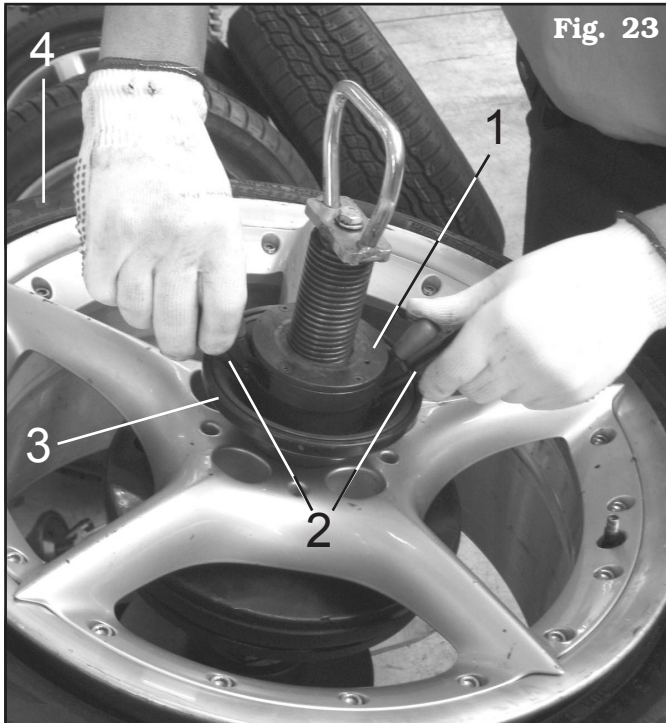
4. Through the proper handle (**Fig. 21 ref. 1**), push downwards (**Fig. 21 ref. 2**), turn it through 90° (**Fig. 21 ref. 3**) and lift the shaft (**Fig. 21 ref. 4**) to hook it into the hole.



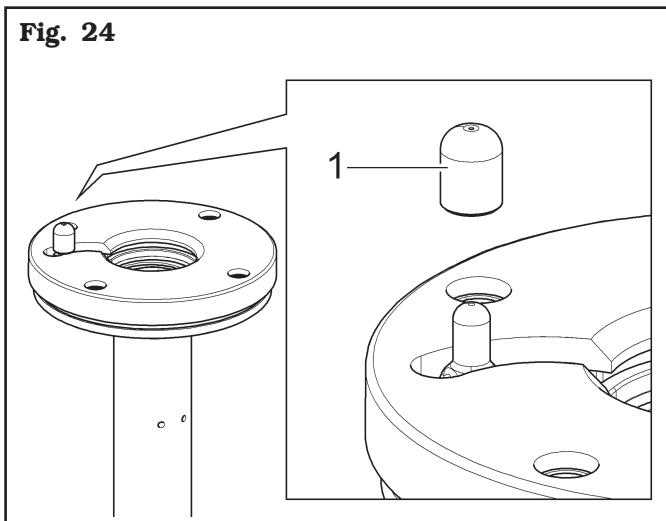
- 5 - Through the internal little levers (**Fig. 22 ref. 1**), loose the ring nut and approach the ring nut (**Fig. 22 ref. 3**) and cone (**Fig. 22 ref. 4**) to the rim (**Fig. 22 ref. 2**).



- 6 - Then, turn the ring nut (**Fig. 23 ref. 1**) through the external levers (**Fig. 23 ref. 2**) until the cone complete clamping (**Fig. 23 ref. 3**) on the wheel (**Fig. 23 ref. 4**).

**Fig. 23**

7. For wheels with alloy rims, use the proper plastic guard (**Fig. 24 ref. 1**).

**Fig. 24**

- 8 - At the end of the operations, loosen the device releasing first the cone with the external levers and then moving the ring nut and the cone away from the rim with the small levers.
9 - Lower the shaft to release it from its seat, turn it of 90° on counter-clockwise and extract it from the hole through the proper handle.



NEVER LEAVE THE WHEEL FITTED ON THE MACHINE FOR A PERIOD LONGER THAN NECESSARY FOR CARRYING WORK AND IN ANY CASE NEVER LEAVE IT UNATTENDED.

13.5 Bead breaking through vertical rolls

1. After the wheel has been locked, move the upper bead breaking roller (**Fig. 25 ref. 2**) near rim edge; press the push button (**Fig. 25 ref. 1**).

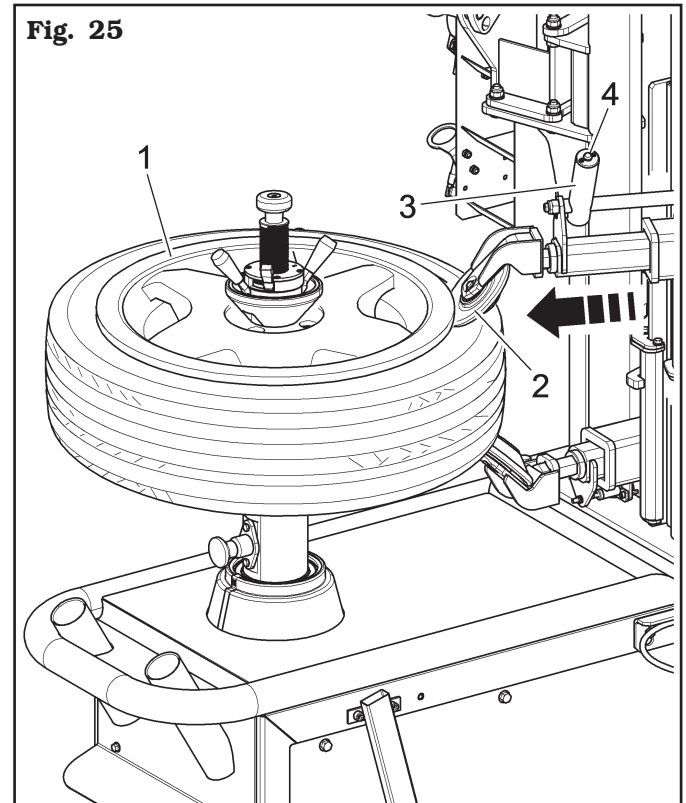


MOVE VERY CAREFULLY THE BEAD BREAKER ARM TO WORKING POSITION, IN ORDER TO AVOID POSSIBLE HANDS CRUSHING.

2. Correctly position the bead breaker rolls on rim diameter through the handle (**Fig. 25 ref. 3**) after the arms have been unlocked with push button (**Fig. 25 ref. 4**) positioned on the same handle.



USE VERY CAREFULLY THE BEAD BREAKING ROLLERS IN ORDER TO AVOID POSSIBLE HANDS CRUSHING.

**Fig. 25**

3. Keep on approaching, activating wheel clockwise rotation (see **Fig. 26a**) pushing the pedal (**Fig. 14 ref. 1**) and at the same time activate the lever (**Fig. 12 ref. A (RH)**), keeping it pressed until there's room enough for the cam. Then introduce the roll between rim and tyre by pressing the push button (**Fig. 12 ref. B (RH)**) and keep on with the bead breaking until the operation is completed (see **Fig. 26b**).



THE BEADING DISC MUST EXERT PRESSURE ON THE TYRE BEAD BUT NEVER ON THE RIM.



USE VERY CAREFULLY THE BEAD BREAKING ROLLERS IN ORDER TO AVOID POSSIBLE HANDS CRUSHING.

Fig. 26a

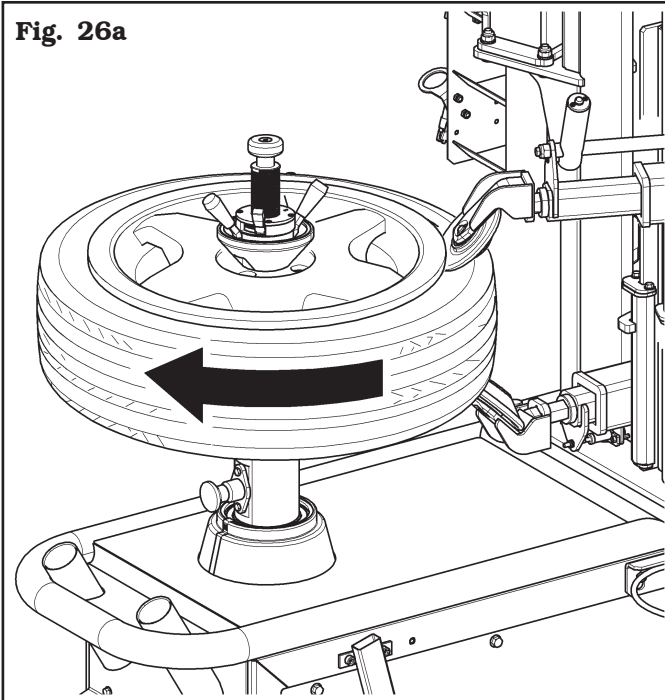
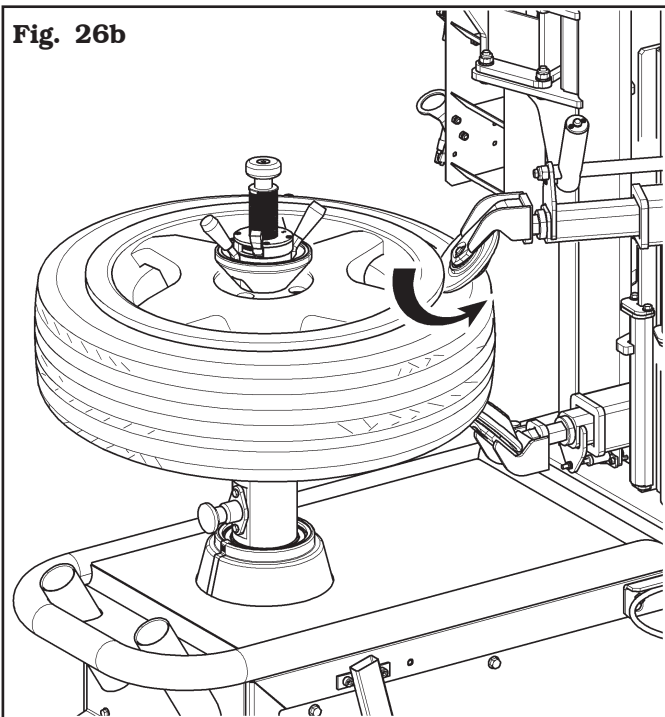


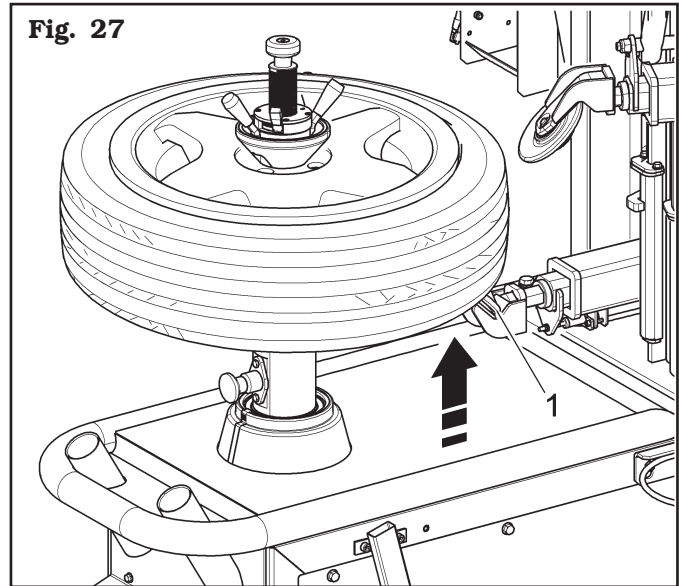
Fig. 26b



4. Once bead breaking has been completed in the upper part, move upper roll in the rest position again, by lifting the lever (**Fig. 12 ref. A (RH)**).

5. Move the lower roll close (**Fig. 27 ref. 1**) by pressing the lever (**Fig. 12 ref. A (LH)**).

Fig. 27



6. Only now turn the wheel clockwise (see **Fig. 28**) by pressing the pedal (**Fig. 14 ref. 1**) and, at the same time, by operating the lever (**Fig. 12 ref. A (LH)**), keeping it pressed until there's room enough for cam operation. Then introduce the lower bead breaker roll between rim and tyre by pressing the push button (**Fig. 12 ref. B (LH)**) and keep on with the bead breaking until the operation is completed (see **Fig. 29**).



THE BEADING DISC MUST EXERT PRESSURE ON THE TYRE BEAD BUT NEVER ON THE RIM.



USE VERY CAREFULLY THE BEAD BREAKING ROLLERS IN ORDER TO AVOID POSSIBLE HANDS CRUSHING.

Fig. 28

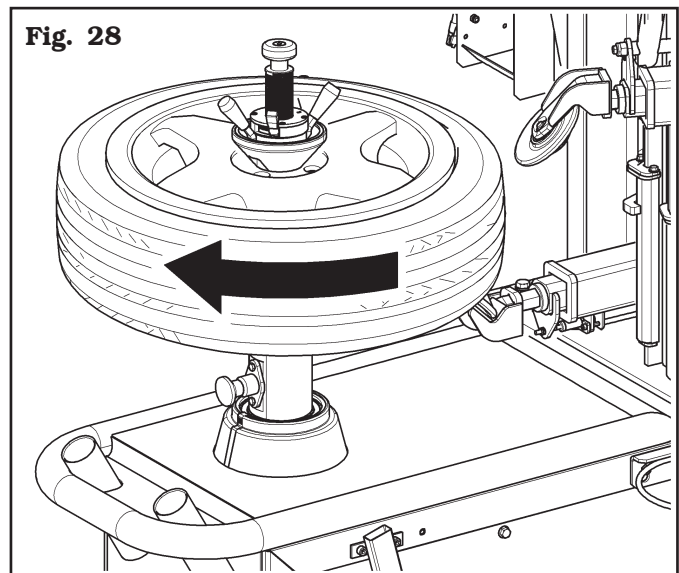
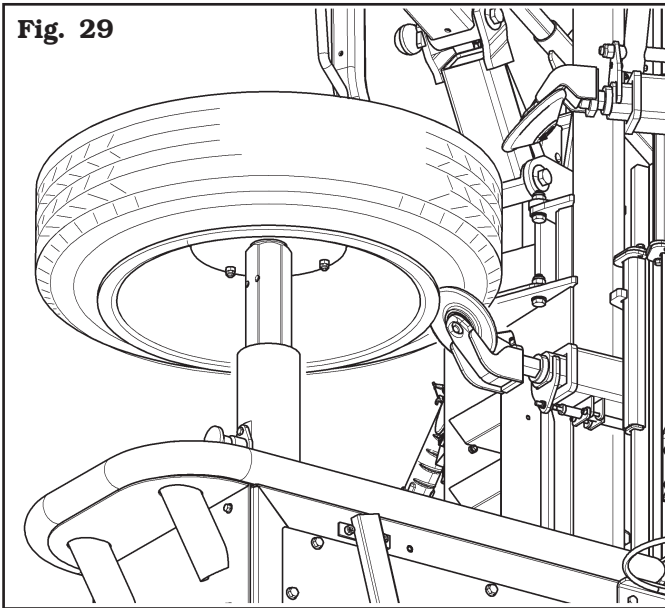


Fig. 29

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



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

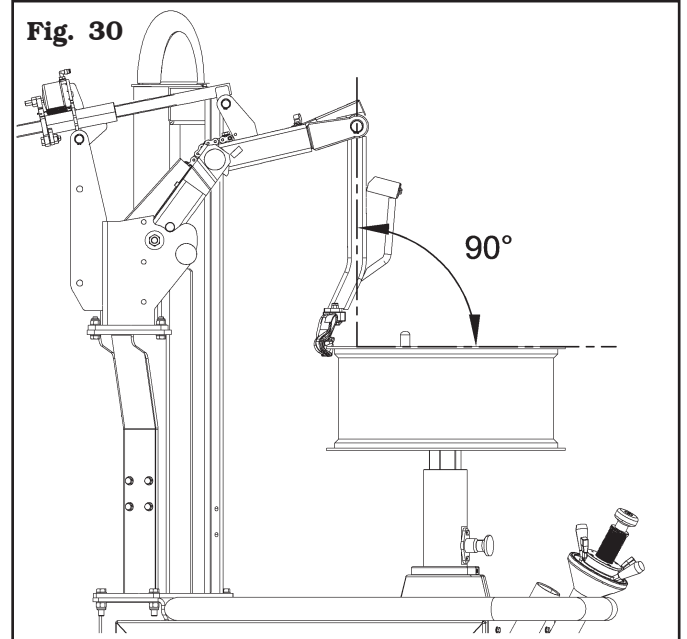
7. Once bead breaking has been completed in the lower part, move lower roll in the rest position again, by lifting the lever (**Fig. 12 rEf. A (LH)**).
8. Rotate the rim until the valve is positioned on the immediate right of the roll.

13.6 Demounting the tyre

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

1. Push the pedal (**Fig. 14 ref. 1**) to rotate the wheel clockwise until the valve stem reaches "hour 1" position.
2. Press the push button (**Fig. 13 ref. 1**) on the handle and position the mounting/demounting arm on the rim outer edge.

It is important to position the mounting arm correctly (2 different positions are possible). The two positions are set using the knob on the rod and, keeping the push button on the handle pressed, manually moving the arm until it is locked in the required position. The correct position is achieved when the angle between the tool holder arm and the rim plate is 90° (see **Fig. 30**).

Fig. 30

This position is important because:

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

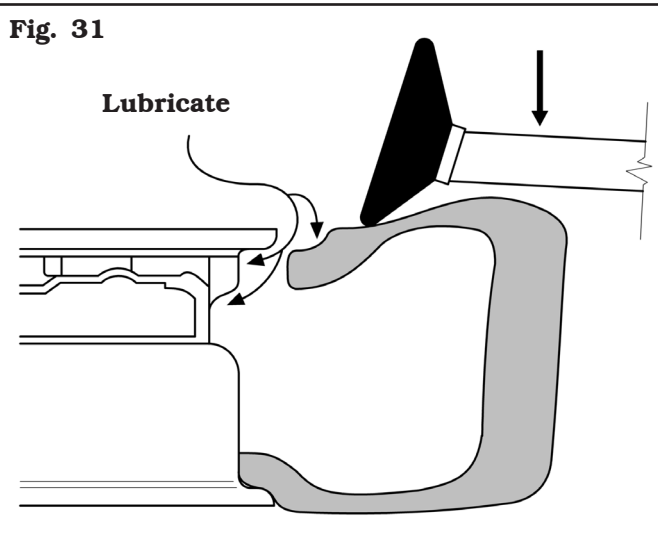


WITH ROUNDED OR FLAT EDGE RIMS, THE ARM SHOULD HAVE AN ANGLE OF 100°/110°.

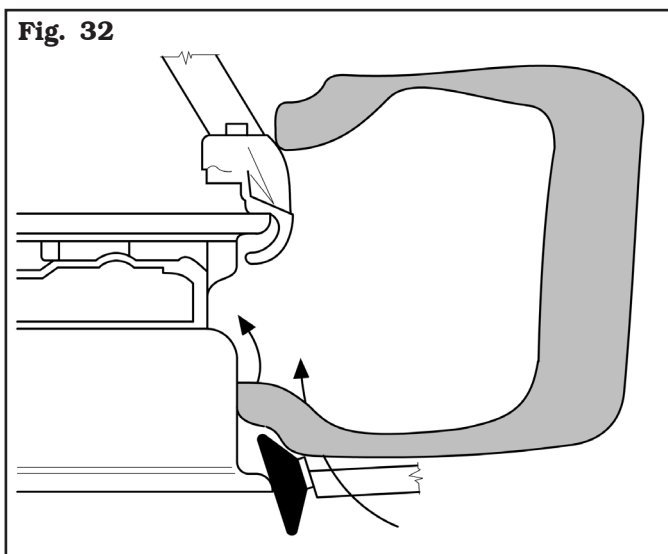
3. Move the lever protector (# B0326001) to the pointed end of the bead lifting lever. Use the same lever to lift the bead onto the right end of the mounting tool and position it parallel with the rim plate at the same time pressing on the side of the tyre at "6 o'clock" position.

4. Press the pedal to turn the wheel clockwise until the whole bead has been lifted from the rim. During the rotation of the wheel, the bead lifting tool slides away from the mounting tool moving onto the rim edge. The plastic protector prevents the lever from scratching the rim.
5. Lift the tyre and repeat the operation on the other bead.

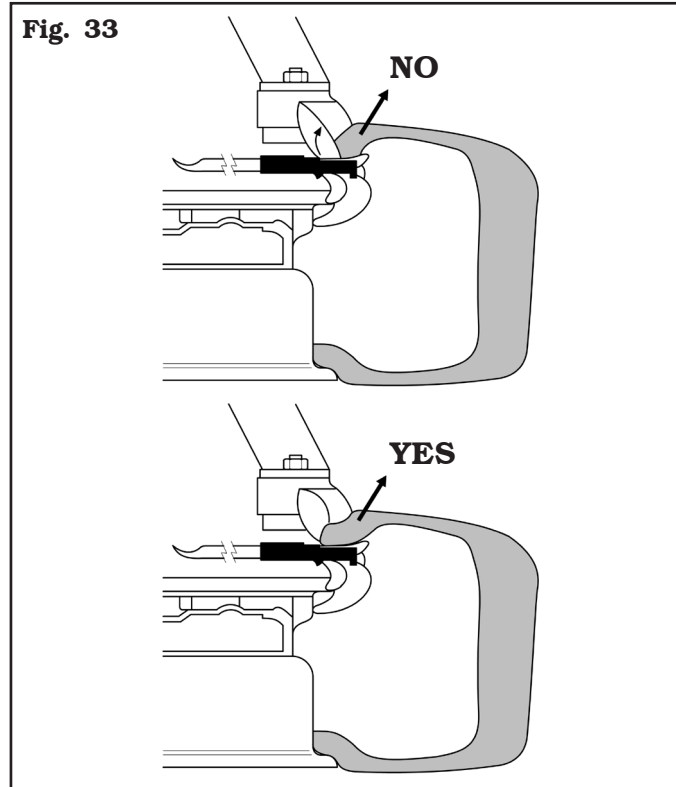
On heavy low-profile tyres, for an easier and safer demounting, once the upper bead has been broken, it is advisable to keep pressing until obtaining enough space to lubricate the groove, the bead seating, and the bead itself. (see **Fig. 31**). Failure to lubricate might cause friction between the mounting tool and the tyre, and would cause damage to the tyre and/or the bead.



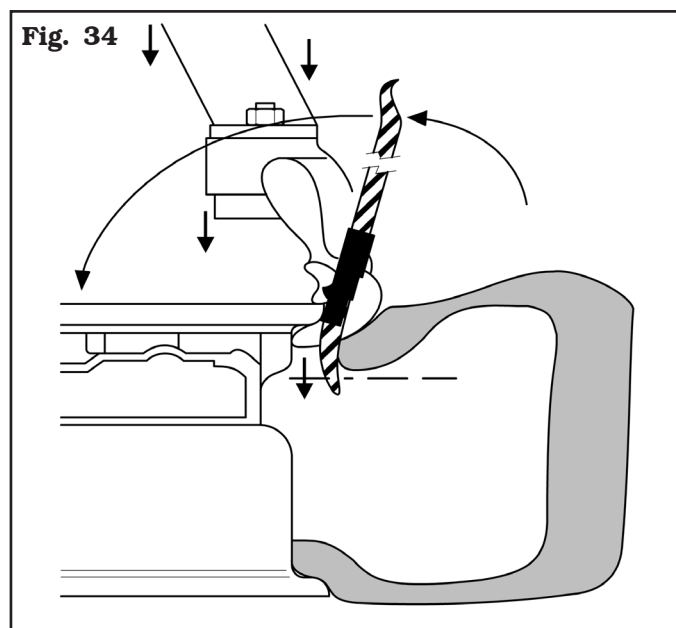
When the upper bead is being demounted, it might happen that the lower bead re-sets in the rim. In this case use bead breaker's lower roll to bead-break again, and if the tyre should be very wide, push it up to the mounting tool (see **Fig. 32**).



When demounting hard tyres, it may happen that the bead comes onto the mounting tool with the lip turned. This causes the bead to slide from the lever when clockwise rotation begins. To avoid this problem rotate the wheel slightly anti-clockwise until the bead flattens. Now the clockwise demounting cycle can begin (see **Fig. 33**).

Fig. 33

When demounting hard low-profile tyres, it might happen that the bead pushes up the mounting tool. It may be found useful to use the upper bead-breaking roller to push the bead down to create enough space to position the lever and at the same time pushing up the tool holder arm down (**Fig. 34**).

Fig. 34

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

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

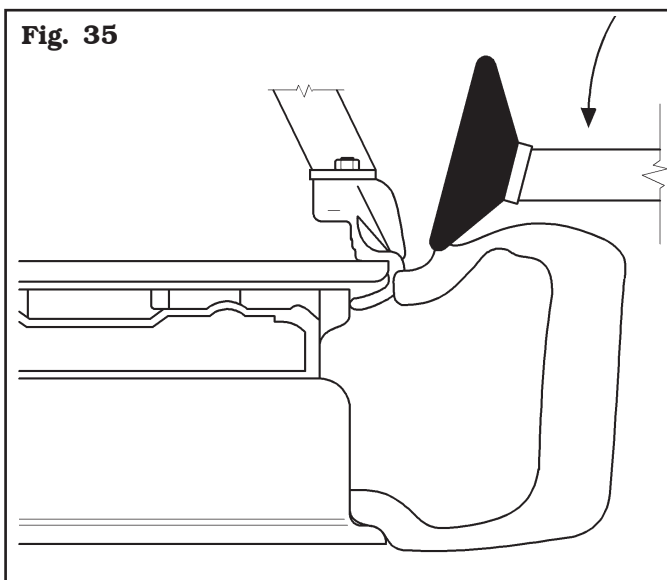
There are rims on the market for which it is difficult to check the position of the groove with the tyre mounted. A useful method for checking is to use the bead-breaker rollers, pressing on the tyre sufficiently to see the inside of the rim.

13.7 Mounting the tyre

To mount the tyre, proceed as follows:

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

When mounting hard low-profile tyres, it may be useful to use the upper bead-breaker roll to push the bead into the groove (see **Fig. 35**).



13.8 For rims with spoke end raised compared to the rim-edge

(Disassembly)

1. Clamp the wheel by means of the clamping device (preventively deflate the tyre completely and remove the balancing counterweights on both sides of the wheel).
2. Carry out tyre bead breaking with the standard procedure.
3. Use the upper bead breaker roller to lubricate with an approved lubricant the tyre bead, the lip, the bead seat and the EDGE of the RIM.
4. Position the mounting/demounting arm (after it has been release with the relevant push button) and use the bead lifting lever to pull tyre's bead upon the mounting tool.
5. Raise the lower bead breaker roller to reduce the tension of the tyre on the mounting tool.
6. Rotate the wheel in clockwise direction pushing the pedal provided.
7. With the lever lift the lower bead onto the mounting tool and rotate in clockwise direction in order to complete demounting.

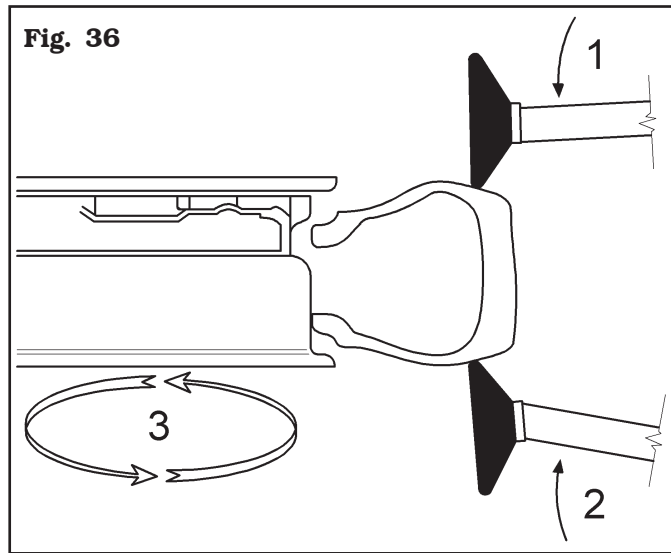
(Assembly)

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

13.9 Special use of the bead-breaker

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

- Clamp the tyre between the bead breaker roll.
- Turn the mandrel clockwise until the reference point on the tyre coincides with the reference point on the rim (usually the valve) (see **Fig. 36**).



13.11 Tyre inflation with machine with tubeless inflation

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

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

- Remove the valve stem core.
Removing the valve stem core will allow the tyre to inflate faster and the bead to seat easier.
- Connect the inflation terminal to the valve of the tyre.



TO IMPROVE THE EFFECTIVENESS OF TUBELESS INFLATION SYSTEM, ALWAYS LUBRICATE TYRE BEADS.

- Press the bead blaster hose on the wheel rim as shown in **Fig. 37**. Ensure the hose head is pressed in to activate the additional air jet.



THE NOZZLE SHOULD BE HORIZONTAL FOR OPTIMAL PERFORMANCE (FIG. 37).

13.10 Tyre inflation with machine without tubeless inflation

Connect the inflation device to the tyre valve and inflate the same tyre using the pedal provided (**Fig. 14 ref. 2**).

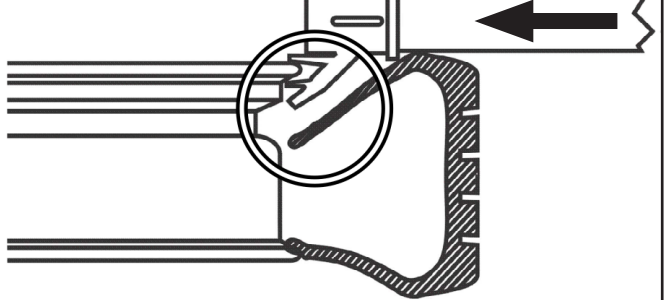


A SAFETY DEVICE IS PRESENT FOR THE ADJUSTMENT OF THE MAXIMUM PRESSURE OF THE SUPPLIED AIR ($4,2 \pm 0,2$ BAR / 60 PSI).

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

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

Fig. 37





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

- Press completely downwards the inflating pedal, in order to release a high pressure air jet through the tubeless inflation nozzle.
- Keep partially pressed downwards the inflating pedal to inflate the tyre and place the beads in their seats.



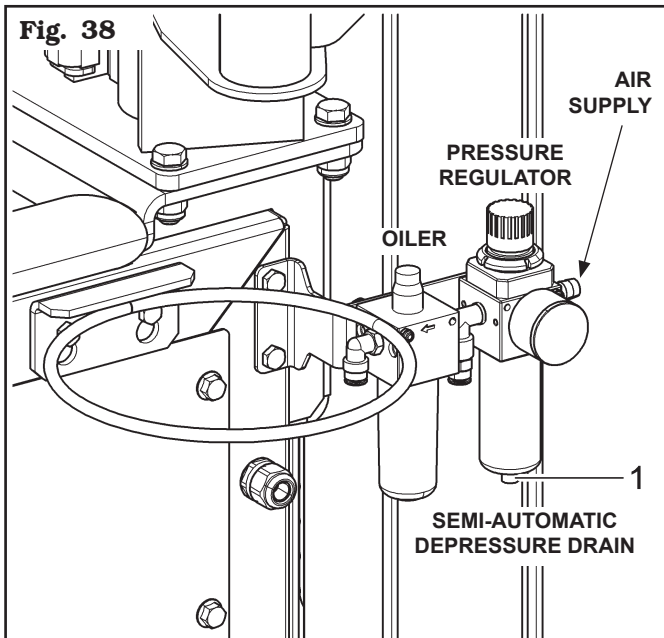
DO NOT EXCEED THE PRE-ARRANGED PRESSURE VALUES WHILE SEALING THE BEAD.

- After the beads take place in their own seat, disconnect the inflating terminal and install again the valve gear, that was removed previously. Then connect the inflating terminal and inflate the tyre with the required pressure.



IF THE TYRE GETS INFLATED TO MUCH, IT IS POSSIBLE TO EXHAUST THE AIR FROM THE TYRE, BY PUSHING THE MANUAL DEFLATING PUSH-BUTTON LOCATED UNDER THE PRESSURE GAUGE.

- Disconnect the inflation terminal from the valve.



14.0 ROUTINE MAINTENANCE



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



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

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

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

- Disconnect the mains power supply before starting any cleaning or routine maintenance operations.
- Remove deposits of tyre powder and other waste materials with a vacuum cleaner.

DO NOT BLOW IT WITH COMPRESSED AIR.

- Do not use solvents to clean the oil/pressure regulator.
- The conditioning unit is equipped with an automatic vacuum-operated drain therefore it requires no manual intervention by the operator (see Fig. 38).



IN ORDER TO ENSURE A GOOD FUNCTIONING AND TO AVOID THE PRESENCE OF CONDENSATION IN THE AIR TREATMENT UNITS WITH SEMI-AUTOMATIC DRAIN, IT'S NECESSARY TO MAKE SURE ABOUT THE CORRECT POSITION OF THE VALVE (FIG. 38 REF. 1), PLACED UNDER THE CAP TO ACTIVATE A CORRECT DRAIN FUNCTION, THE CAP MUST BE ROTATED IN THE RIGHT WAY.



IN ORDER TO ALLOW A LONGER LIFE OF THE FILTER AND OF ALL MOVING PNEUMATIC DEVICES, YOU HAVE TO MAKE SURE THAT THE SUPPLIED AIR IS:

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

- Every **week** and/or when necessary, top up the oil tank using the filler hole provided, closed by a cap or screw, on the lubricator filter.

NOTE: This operation should not be carried out by unscrewing the cup of the lubricator filter.

- The use of synthetic oil might damage the pressure regulator filter.
- Replace worn out parts immediately, rubber pads, bead breaker rolls, lever protector, mounting tool.
- Periodically, with a frequency of at least once a month, lubricate the arms of the bead breaking roller and of the tools.
- At regular intervals, at least every two months, verify the rubber protections conditions, in relation to point 3.0 Safety devices. If necessary replace damaged parts requesting for them to the supplier.

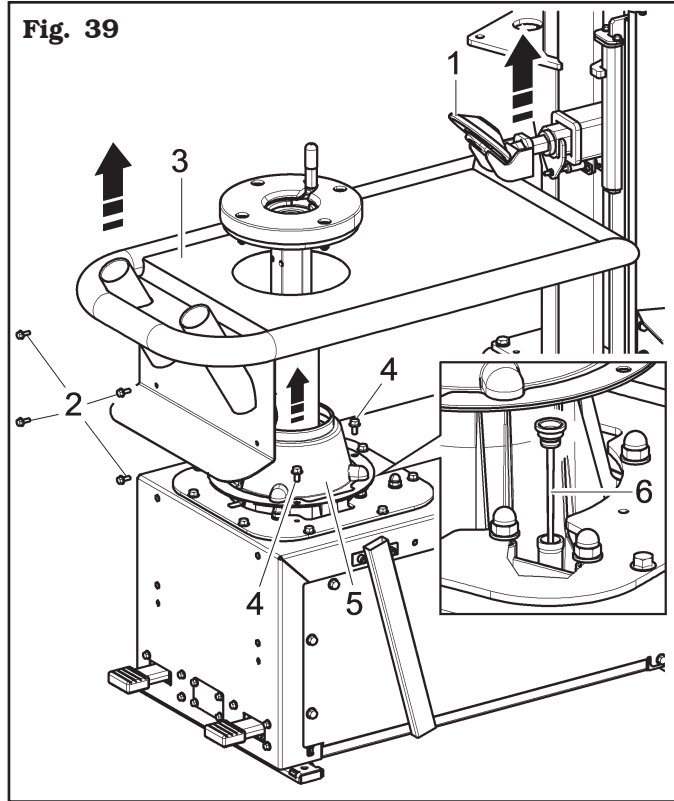


ANY DAMAGE TO THE MACHINE DEVICES RESULTING FROM THE USE OF LUBRICANTS OTHER THAN THOSE RECOMMENDED IN THIS MANUAL WILL RELEASE THE MANUFACTURER FROM ANY LIABILITY!!

- At regular intervals, (at least every 100 working hours) check reduction gear lubricating oil level. Execute this operation following the procedure described below:

1. Raise the lower bead breaker roller (**Fig. 39 ref. 1**).
2. Unscrew the 4 clamping screws of the accessory holder (**Fig. 39 ref. 2**).
3. Lift the accessory holder with pipe as much as possible (**Fig. 39 ref. 3**).
4. Keeping the same lifted, unscrew the 3 clamping screws (**Fig. 39 ref. 4**) of the rubber guard (**Fig. 39 ref. 5**).
5. Remove the rubber guard (**Fig. 39 ref. 5**). Now it is possible to unscrew the plug (**Fig. 39 ref. 6**) to check lubricant level in the reduction gear.

Fig. 39



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

14.1 Lubricants

Special lubricant for mandrel movement control gearbox. Use **ESSO GEAR OIL GX140**.

Lubricate slides and screws/nut screws or racks and pinion with a soft brush using lubricant of **ESSO GP**.



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.

15.0 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
The bead breaker roll is not immediately activated.	<ol style="list-style-type: none"> Supply missed. The operating push button/lever is broken. 	<ol style="list-style-type: none"> Connect the supply. Call for technical assistance.
The upper bead-breaker arm remains down.	Compressed air supply pressure below 6 Bar.	Check supply pressure. Call for technical assistance.
The nozzle doesn't supply air when the inflation pedal is pressed (model with tubeless inflation).	The inflation pedal is badly adjusted.	Call for technical assistance.
No movements take place when the pedal is pressed.	<ol style="list-style-type: none"> Supply missed. Inflation pedal unit not set correctly. 	<ol style="list-style-type: none"> Check power supply. Call for technical assistance.
The mandrel doesn't rotate.	<ol style="list-style-type: none"> Inverter overload alarm. or inverter undervoltage alarm. or inverter overvoltage alarm. Overtemperature alarm. 	<ol style="list-style-type: none"> Shorten the length of a possible machine extension cable or increase the conductors section (disconnect and connect again). Lift the motor pedal and wait for the automatic reset. Wait until the motor system cools (the machine does not restart if the temperature level does not go below the set safety threshold).
The mandrel doesn't rotate, but it attempts rotation when the machine is switched on again.	Pedalboard irreversible de-calibration.	Call for technical assistance.
The mandrel rotates slowly but it does not operate on the motor pedal.	Pedalboard reversible de-calibration.	<ol style="list-style-type: none"> Keep the pedal in rest position. Keep the machine connected to the net. Wait for 30 seconds that the pedalboard recalibration automatic attempt ends.
The mandrel does not reach the maximum rotation speed.	The mechanical resistance of the gearmotor system has increased.	Turn the mandrel without wheel for a few minutes so that the system heats, thus reducing frictions. If in the end the mandrel does not accelerate again, call for assistance.

16.0 TECHNICAL DATA

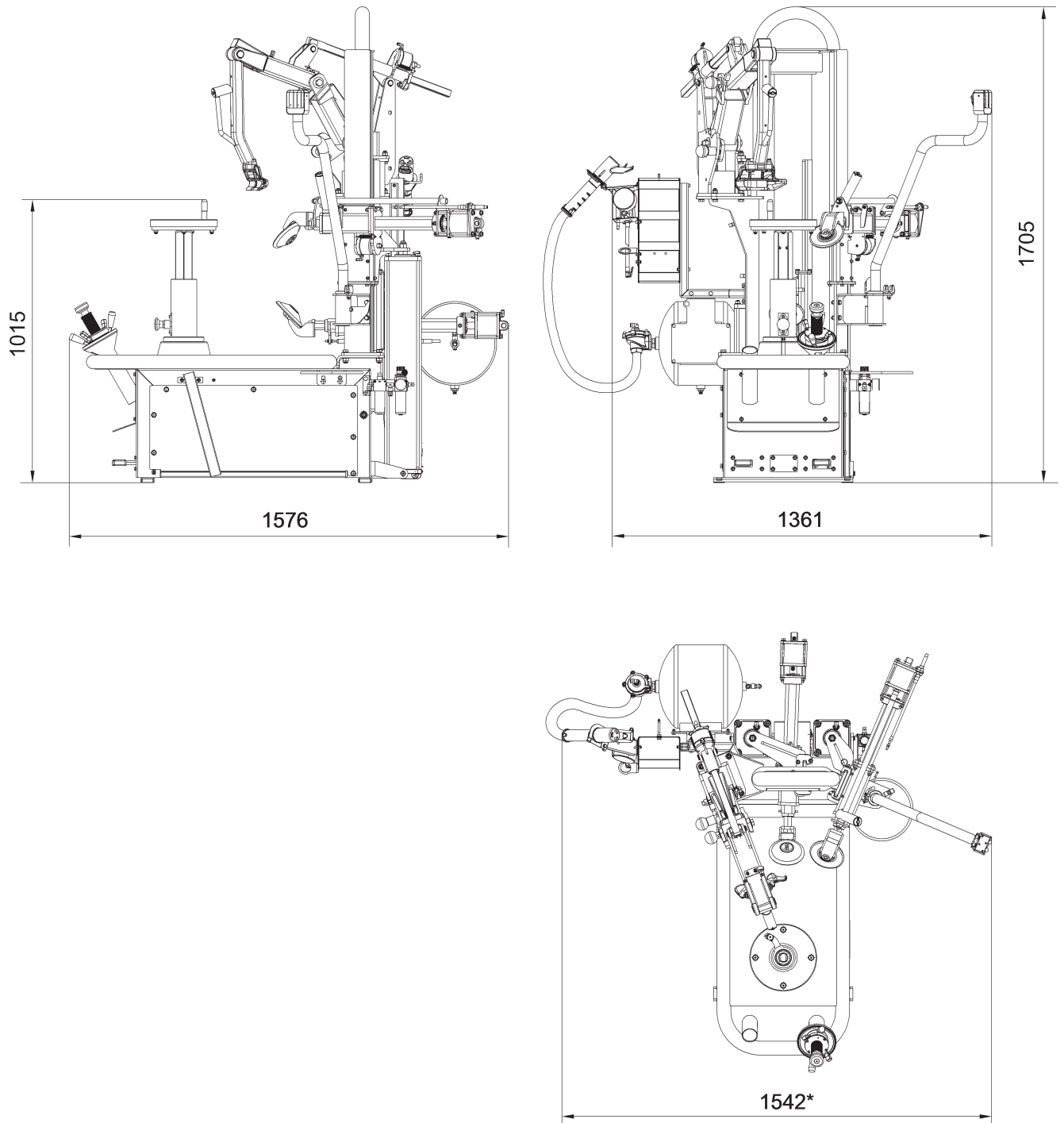
Recommended air supply pressure	8 - 10 bar
Invemotor Speed	0 - 14 rpm
Invemotor Power	1,5 kW
Recommended electric supply	single-phase 200÷265V - 50/60 Hz
Wheel maximum diameter	46"
Wheel max. width	15"
Rim locking diameter	10"-26"
Bead-breaking power per roll (10 bar).....	1200 kg
Vertical bead breaker max. opening	900 mm
Gear noise.....	dBA 76

16.1 Weight

Model without tubeless inflation	300 kg
Model with tubeless inflation	318 kg

16.2 Dimensions

Fig. 40



* For version with tubeless inflation only

17.0 STORING

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

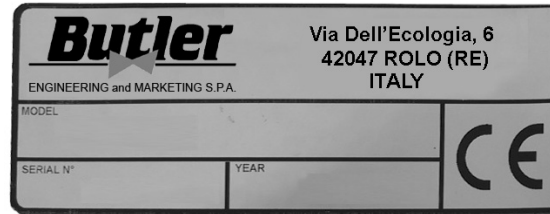
18.0 SCRAPPING

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

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 product (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.

19.0 REGISTRATION PLATE DATA



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

Said plate must always be kept clean from grease residues or filth generally.



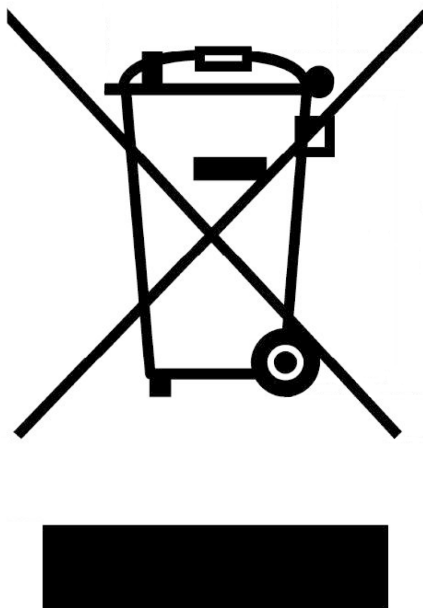
ATTENTION: TAMPERING WITH, CARVING, CHANGING ANYHOW OR EVEN REMOVING MACHINE IDENTIFICATION PLATE IS ABSOLUTELY FORBIDDEN; DO NOT COVER IT WITH TEMPORARY PANELS, ETC., SINCE IT MUST ALWAYS BE VISIBLE.

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

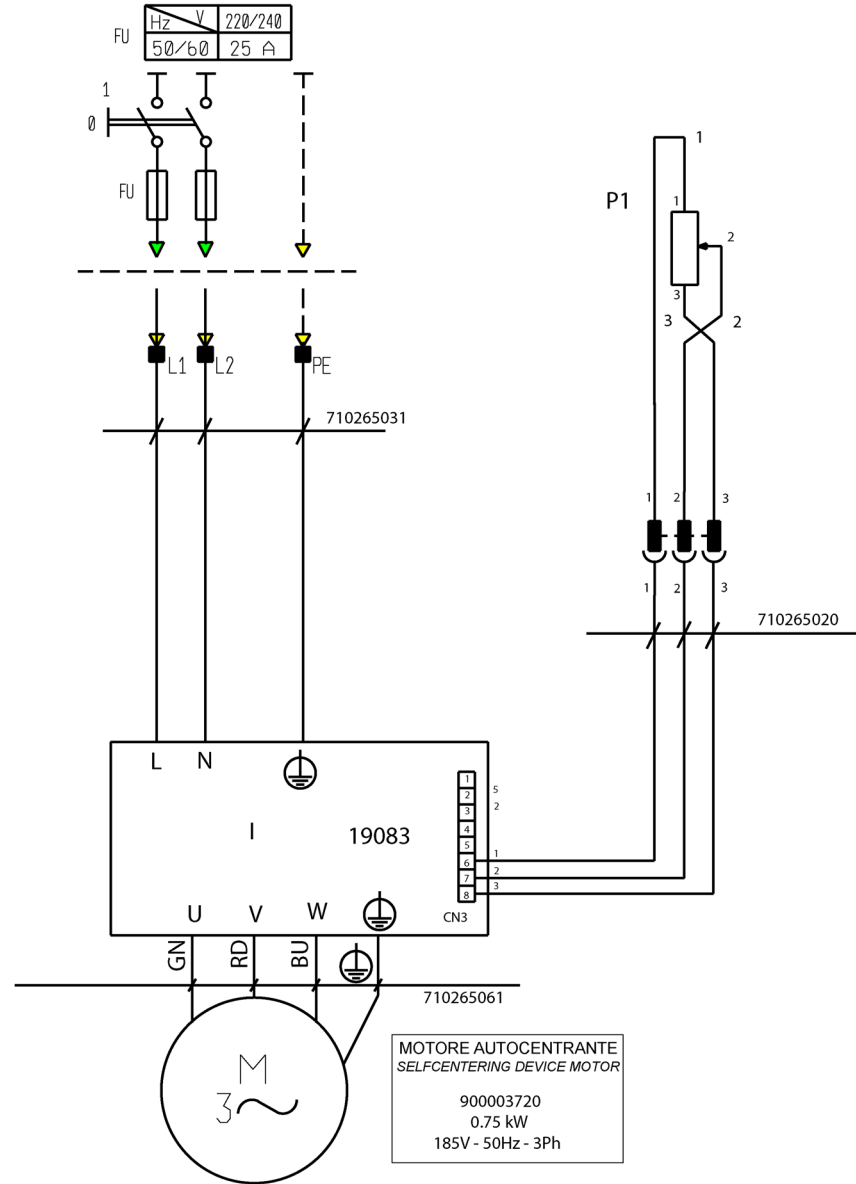
20.0 FUNCTIONAL DIAGRAMS

Here follows a list of the machine functional diagrams.

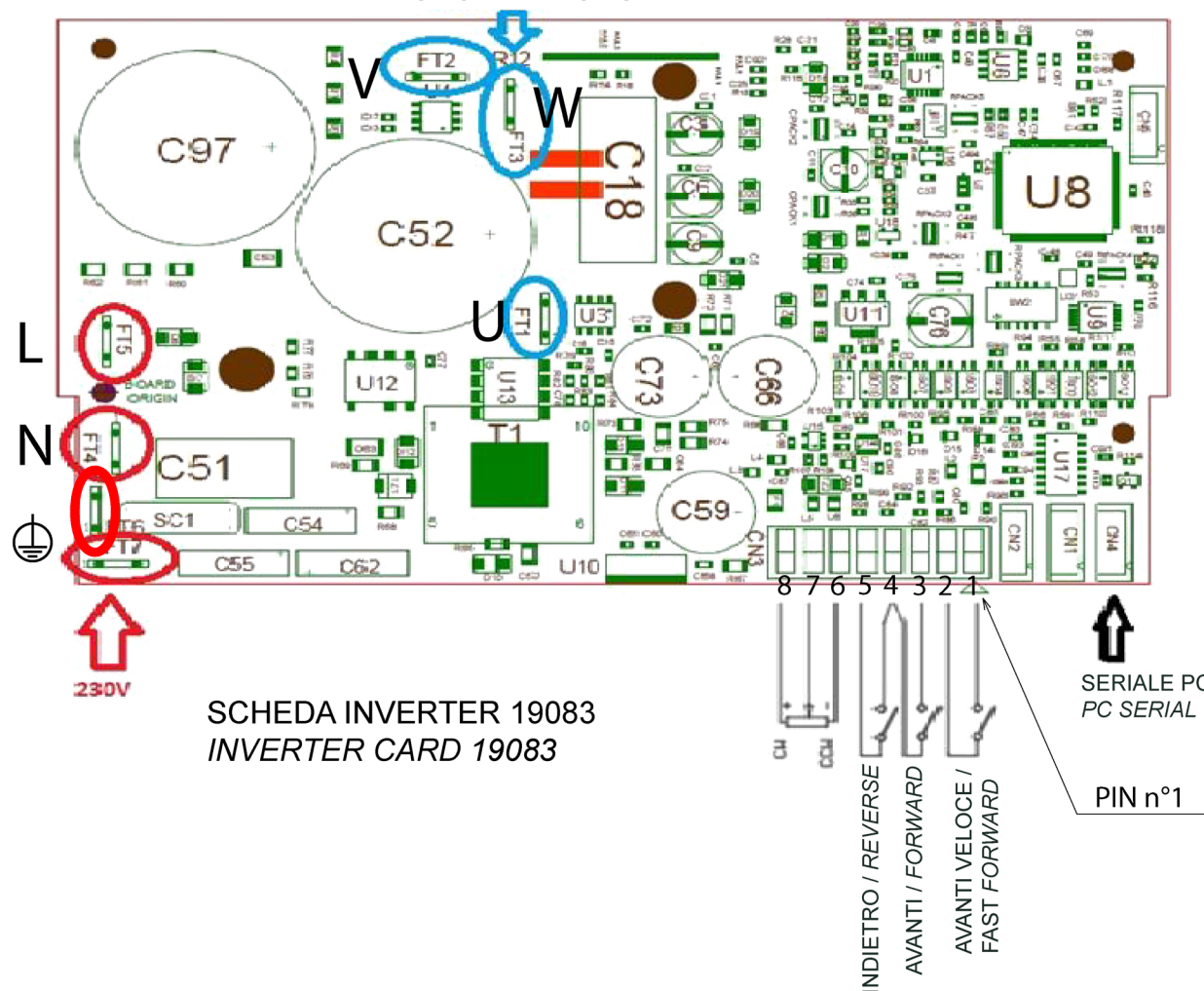
Fig. 41



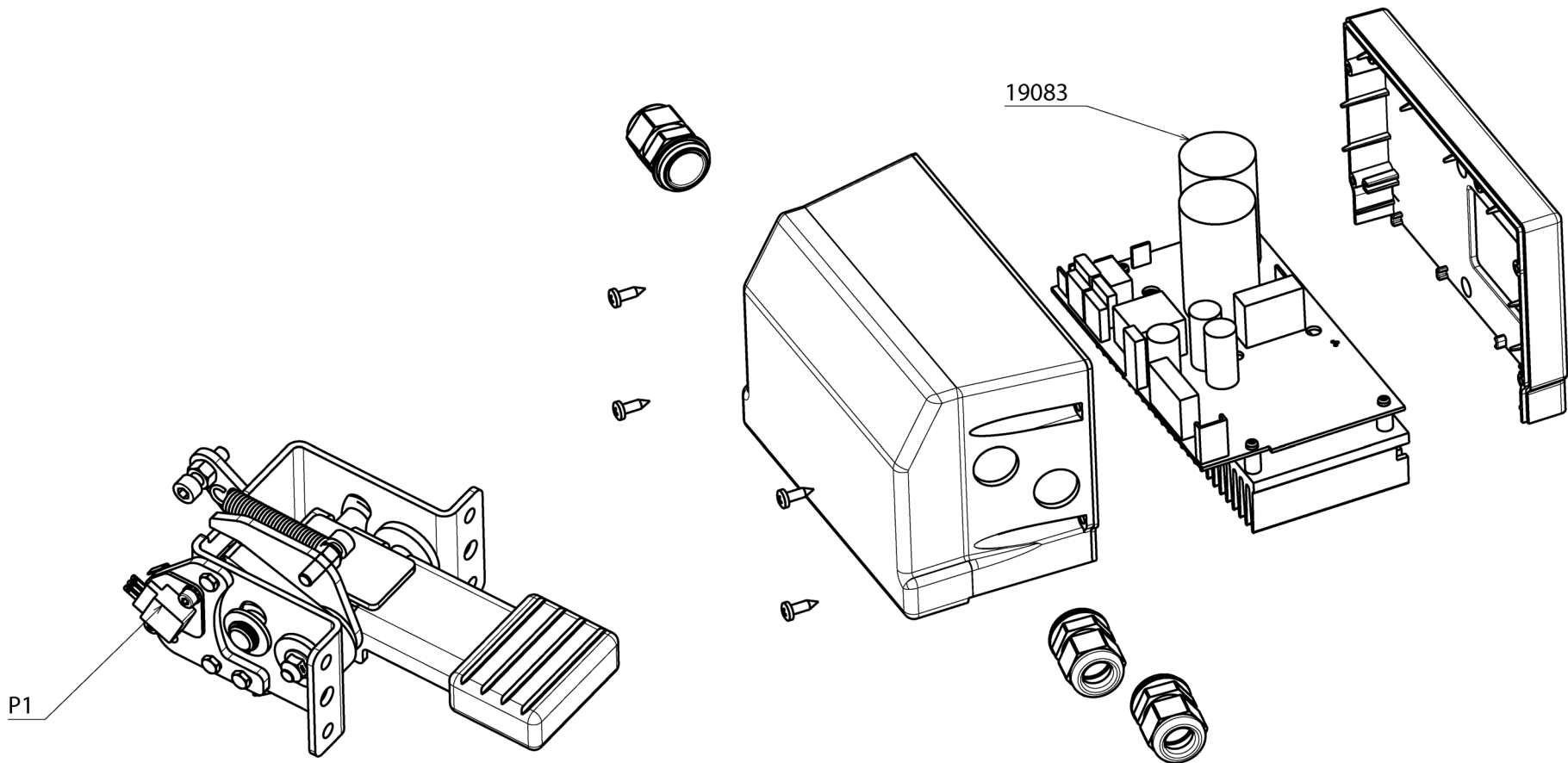
MONOFASE CAVO ALIMENTAZIONE 2P+TERRA x 6mmq
 SUPPLY CABLE MONOPHASE 2P+GROUND x 6mmq



MOTORE / MOTOR



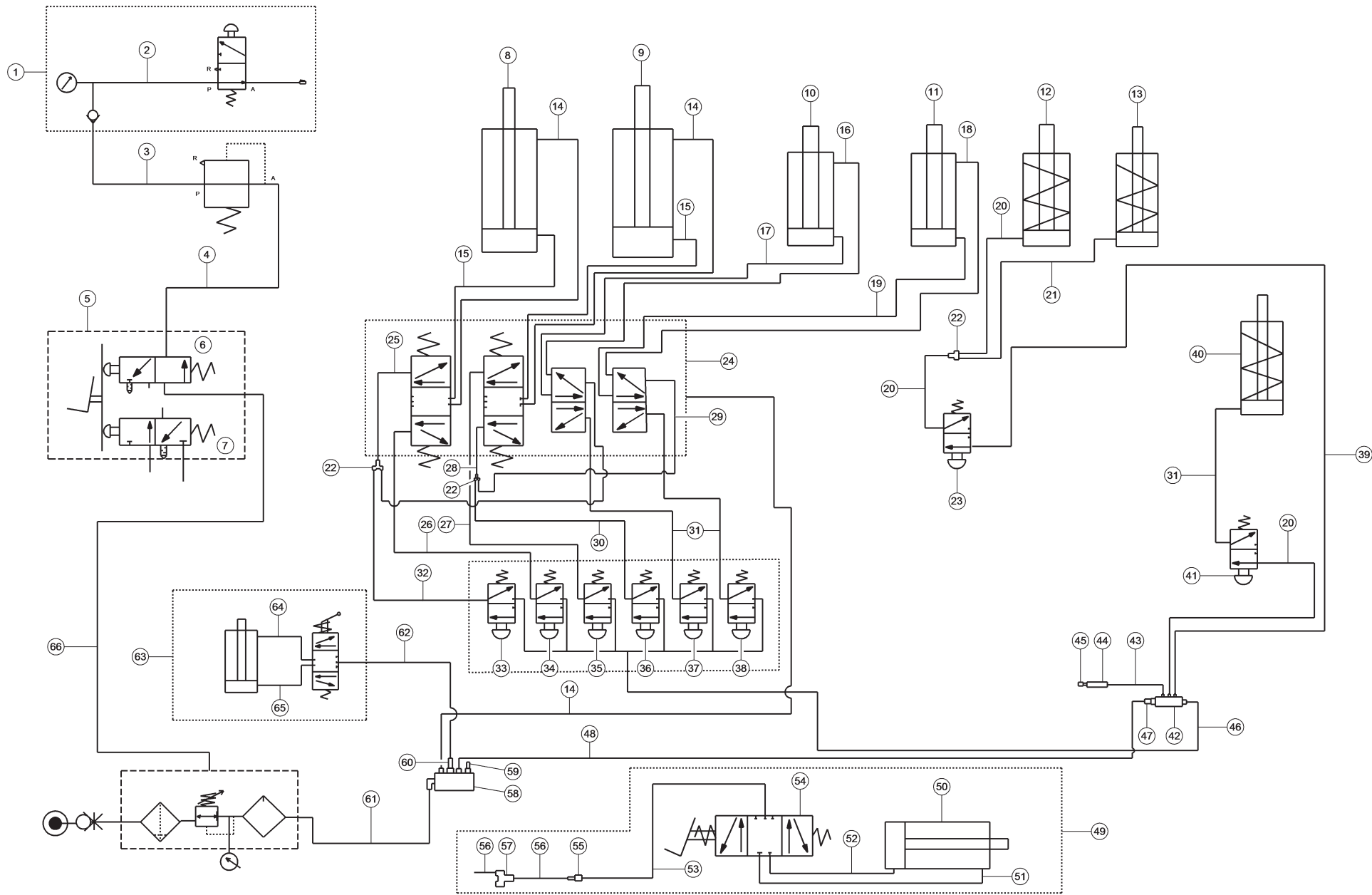
SCHEDA INVERTER 19083
INVERTER CARD 19083



710490401

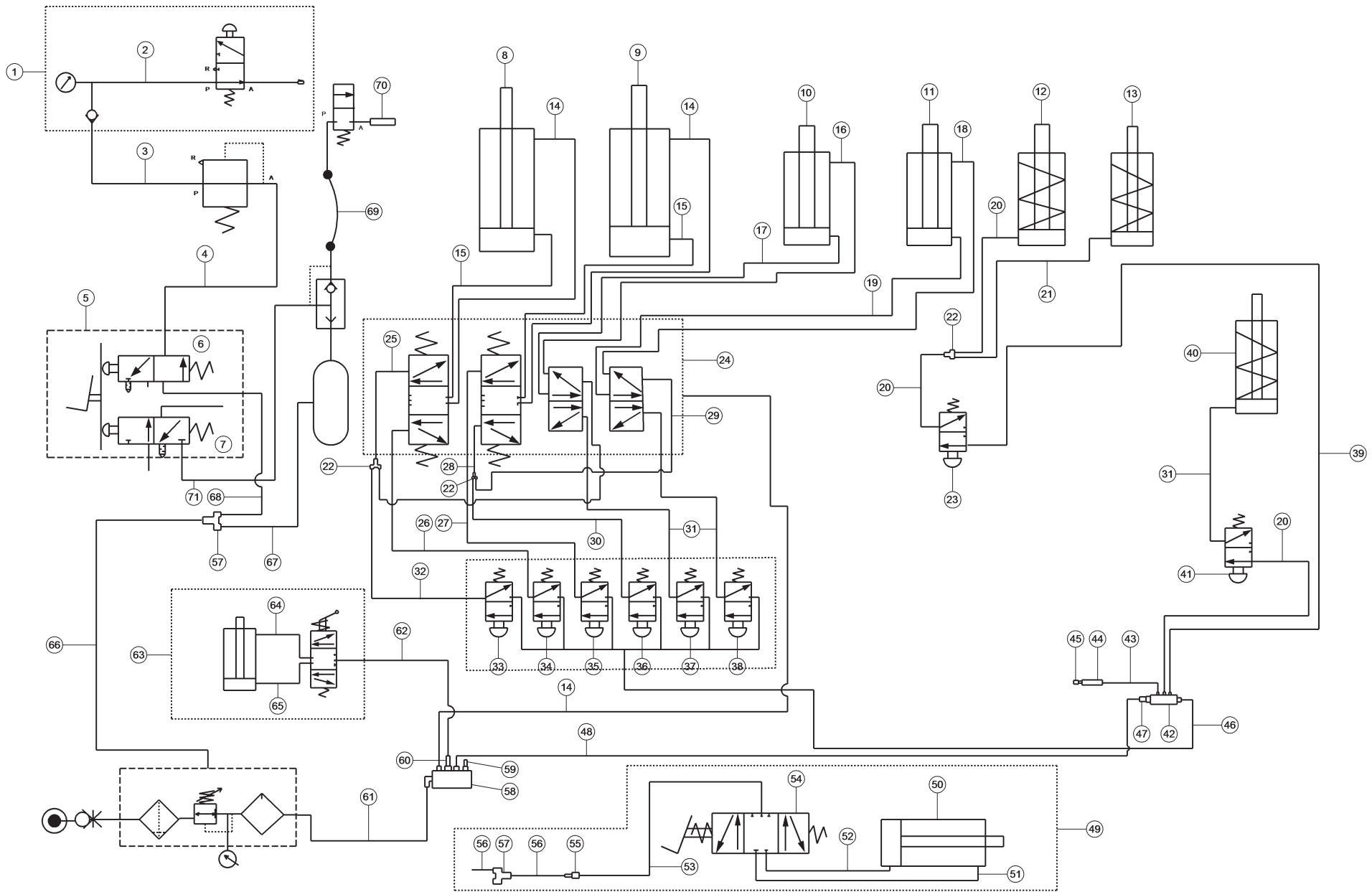
710292821

 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		SCHEMA ELETTRICO 3/4 ELECTRICAL SCHEME 3/4 SCHALTPLAN 3/4 SCHEMA ELECTRIQUE 3/4 ESQUEMA ELECTRICO 3/4	Pag. 34 di 41
	Tavola N°A - Rev. 0	710805510		KARACTER.TLX KARACTER.TLXFI



N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
1		Gruppo gonfiaggio con manometro	Inflation unit with pressure gauge	Aufpumpsatz mit Manometer	Groupe gonflage avec manomètre	Grupo inflado con manómetro
2	317008	Tubo rilsan 8x6 rosso L=2400	8x6 red rilsan pipe L=2400	Rilsan Schlauch 8x6 rot L=2400	Tuyau rilsan 8x6 rouge L=2400	Tubo rilsan 8x6 rojo L=2400
3	317008	Tubo rilsan 8x6 rosso L=2000	8x6 red rilsan pipe L=2000	Rilsan Schlauch 8x6 rot L=2000	Tuyau rilsan 8x6 rouge L=2000	Tubo rilsan 8x6 rojo L=2000
4	317009	Tubo rilsan 8x6 blu L=1300	8x6 blue rilsan pipe L=1300	Rilsan Schlauch 8x6 blau L=1300	Tuyau rilsan 8x6 bleu L=1300	Tubo rilsan 8x6 azul L=1300
5		Valvole pedale di gonfiaggio	Inflation pedal valves	Ventile des Aufpumppedals	Vannes pédales de direction de gonflage	Válvulas pedal de inflado
6		Nera N.A.	N.O. black	Schwarz N.O.	Noir N.O	Negra N.A.
7		Bianca N.C.	N.C. white	Blanche N.F.	Weiß N.G.	Blanca N.C.
8		Cilindro rullo stallonatore inferiore D.120	Lower bead breaker roll D.120 cylinder	D.120 Zylinder unteren Abdrücksrolle	Cylindre rouleau décolle-talon inférieur D.120	Cilindro rodillo destalonador inferior D.120
9		Cilindro rullo stallonatore superiore D.120	Upper bead breaker roll D.120 cylinder	D.120 Zylinder oberen Abdrücksrolle	Cylindre rouleau décolle-talon supérieur D.120	Cilindro rodillo destalonador superior D.120
10		Cilindro camma superiore	Upper cam cylinder	Oberer Nockenzyylinder	Cylindre came supérieur	Cilindro leva superior
11		Cilindro camma inferiore	Lower cam cylinder	Unterer Nockenzyylinder	Cylindre came inférieur	Cilindro leva inferior
12		Cilindro strangolo superiore	Upper neck cylinder	Oberer Sperrvorrichtungszylinder	Cylindre étranglement supérieur	Cilindro estrangulación superior
13		Cilindro strangolo inferiore	Lower neck cylinder	Unterer Sperrvorrichtungszylinder	Cylindre étranglement inférieur	Cilindro estrangulación inferior
14	317007	Tubo rilsan 8x6 nero L=900	8x6 black rilsan pipe L=900	Rilsan Schlauch 8x6 schwarz L=900	Tuyau rilsan 8x6 noir L=900	Tubo rilsan 8x6 negro L=900
15	317007	Tubo rilsan 8x6 nero L=250	8x6 black rilsan pipe L=250	Rilsan Schlauch 8x6 schwarz L=250	Tuyau rilsan 8x6 noir L=250	Tubo rilsan 8x6 negro L=250
16	317006	Tubo rilsan 6x4 nero L=1750	6x4 black rilsan pipe L=1750	Rilsan Schlauch 6x4 schwarz L=1750	Tuyau rilsan 6x4 noir L=1750	Tubo rilsan 6x4 negro L=1750
17	317006	Tubo rilsan 6x4 nero L=1650	6x4 black rilsan pipe L=1650	Rilsan Schlauch 6x4 schwarz L=1650	Tuyau rilsan 6x4 noir L=1650	Tubo rilsan 6x4 negro L=1650
18	317006	Tubo rilsan 6x4 nero L=1550	6x4 black rilsan pipe L=1550	Rilsan Schlauch 6x4 schwarz L=1550	Tuyau rilsan 6x4 noir L=1550	Tubo rilsan 6x4 negro L=1550
19	317006	Tubo rilsan 6x4 nero L=1400	6x4 black rilsan pipe L=1400	Rilsan Schlauch 6x4 schwarz L=1400	Tuyau rilsan 6x4 noir L=1400	Tubo rilsan 6x4 negro L=1400
20	317026	Tubo rilsan 4x2,7 nero L=2400	4x2,7 black rilsan pipe L=2400	Rilsan Schlauch 4x2,7 schwarz L=2400	Tuyau rilsan 4x2,7 noir L=2400	Tubo rilsan 4x2,7 negro L=2400
21	317026	Tubo rilsan 4x2,7 nero L=1900	4x2,7 black rilsan pipe L=1900	Rilsan Schlauch 4x2,7 schwarz L=1900	Tuyau rilsan 4x2,7 noir L=1900	Tubo rilsan 4x2,7 negro L=1900
22	B5815000	Raccordo V D.4	V D.4 union	Verbindung V D.4	Raccord V D.4	Conector V D.4
23		Regolazione diametro stallonatori	Bead breaker diameter adjustment	Einstellung Durchmessers Abdrücker	Réglage diamètre décolle-talons	Regulación diámetro destalonadores
24	710814220	Base con valvole	Base with valves	Sockel mit Ventile	Embase avec vannes	Base con válvulas
25	BMP70000	Tubo rilsan 4x2,7 bianco L=100	4x2,7 white rilsan pipe L=100	Rilsan Schlauch 4x2,7 weiß L=100	Tuyau rilsan 4x2,7 blanc L=100	Tubo rilsan 4x2,7 blanco L=100
26	317028	Tubo rilsan 4x2,7 verde L=1600	4x2,7 green rilsan pipe L=1600	Rilsan Schlauch 4x2,7 grün L=1600	Tuyau rilsan 4x2,7 vert L=1600	Tubo rilsan 4x2,7 verde L=1600
27	317027	Tubo rilsan 4x2,7 rosso L=1600	4x2,7 red rilsan pipe L=1600	Rilsan Schlauch 4x2,7 rot L=1600	Tuyau rilsan 4x2,7 rouge L=1600	Tubo rilsan 4x2,7 rojo L=1600
28	BMP90000	Tubo rilsan 4x2,7 giallo L=100	4x2,7 yellow rilsan pipe L=100	Rilsan Schlauch 4x2,7 gelb L=100	Tuyau rilsan 4x2,7 jaune L=100	Tubo rilsan 4x2,7 amarillo L=100
29	BMP90000	Tubo rilsan 4x2,7 giallo L=50	4x2,7 yellow rilsan pipe L=50	Rilsan Schlauch 4x2,7 gelb L=50	Tuyau rilsan 4x2,7 jaune L=50	Tubo rilsan 4x2,7 amarillo L=50
30	BMP90000	Tubo rilsan 4x2,7 giallo L=1600	4x2,7 yellow rilsan pipe L=1600	Rilsan Schlauch 4x2,7 gelb L=1600	Tuyau rilsan 4x2,7 jaune L=1600	Tubo rilsan 4x2,7 amarillo L=1600
31	317026	Tubo rilsan 4x2,7 nero L=1600	4x2,7 black rilsan pipe L=1600	Rilsan Schlauch 4x2,7 schwarz L=1600	Tuyau rilsan 4x2,7 noir L=1600	Tubo rilsan 4x2,7 negro L=1600
32	BMP70000	Tubo rilsan 4x2,7 bianco L=1600	4x2,7 white rilsan pipe L=1600	Rilsan Schlauch 4x2,7 weiß L=1600	Tuyau rilsan 4x2,7 blanc L=1600	Tubo rilsan 4x2,7 blanco L=1600
33		Salita stallonatore superiore	Upper bead breaker rise	Anheben obereren Abdrückers	Montée décolle-talon supérieur	Subida destalonador superior
34		Discesa stallonatore superiore	Upper bead breaker lowering	Absenken oberen Abdrückers	Descente décolle-talon supérieur	Bajada destalonador superior
35		Salita stallonatore inferiore	Lower bead breaker rise	Anheben unteren Abdrückers	Montée décolle-talon inférieur	Subida destalonador inferior
36		Discesa stallonatore inferiore	Lower bead breaker lowering	Absenken unteren Abdrückers	Descente décolle-talon inférieur	Bajada destalonador inferior
37		Camma superiore	Upper cam	Obere Nocke	Came supérieure	Cama superior
38		Camma inferiore	Lower cam	Untere Nocke	Came inférieure	Cama inferior
39	317026	Tubo rilsan 4x2,7 nero L=2500	4x2,7 black rilsan pipe L=2500	Rilsan Schlauch 4x2,7 schwarz L=2500	Tuyau rilsan 4x2,7 noir L=2500	Tubo rilsan 4x2,7 negro L=2500
40		Cilindro strangolo posizionamento utensile	Tool positioning neck cylinder	Sperrvorrichtungszylinder zur Werkzeugpositionierung	Cylindre étranglement positionnement outil	Cilindro estrangulación posicionamiento utensilio
41		Regolazione diametro utensile	Tool diameter adjustment	Einstellung Durchmessers Werkzeugs	Réglage diamètre outil	Regulación diámetro utensilio

N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
42	B7351000	Raccordo 5 vie 1/8	1/8" 5-way connection	5 Weg - Anschluss 1/8"	Raccord 5 voies 1/8	Conector 5 vie 1/8"
43	317026	Tubo rilsan 4x2,7 nero L=100	4x2,7 black rilsan pipe L=100	Rilsan Schlauch 4x2,7 schwarz L=100	Tuyau rilsan 4x2,7 noir L=100	Tubo rilsan 4x2,7 negro L=100
44	B9451000	Raccordo intermedio diritto D.4	D.4 right middle union	Rechtsmittelverbindung D.4	Raccord intermédiaire droit D.4	Conector intermedio derecho D.4
45	325154	Raccordo tappo	Cap union	Stöpsel Anschluss	Raccord bouchon	Conector tapa
46	317006	Tubo rilsan 6x4 nero L=1800	6x4 black rilsan pipe L=1800	Rilsan Schlauch 6x4 schwarz L=1800	Tuyau rilsan 6x4 noir L=1800	Tubo rilsan 6x4 negro L=1800
47	325194	Raccordo fisso diritto 8-1'8	8-1'8 straight fixed union	8-1'8 Rech und feststehende Anschluss	Raccord fixe droit 8-1'8	Enlace fijo derecho 8-1'8
48	317007	Tubo rilsan 8x6 nero L=550	8x6 black rilsan pipe L=550	Rilsan Schlauch 8x6 schwarz L=550	Tuyau rilsan 8x6 noir L=550	Tubo rilsan 8x6 negro L=550
49	710890180	Gruppo trave stallonatore laterale	Lateral bead breaker beam unit	Trägersatz Seitenabdrückers	Groupe poutre décolle-talons latéral	Grupo viga destalonador lateral
50		Cilindro stallonatore laterale	Lateral bead breaker cylinder	Seitenabdrückzylinder	Cylindre décolle-talons latéral	Cilindro destalonador lateral
51	317036	Tubo elastolan 10x6,5 L=1500	10x6,5 elastolan pipe L=1500	Elastolan Schlauch 10x6,5 L=1500	Tuyau elastolan 10x6,5 L=1500	Tubo elastolan 10x6,5 L=1500
52	317036	Tubo elastolan 10x6,5 L=1700	10x6,5 elastolan pipe L=1700	Elastolan Schlauch 10x6,5 L=1700	Tuyau elastolan 10x6,5 L=1700	Tubo elastolan 10x6,5 L=1700
53	317036	Tubo elastolan 10x6,5 L=1600	10x6,5 elastolan pipe L=1600	Elastolan Schlauch 10x6,5 L=1600	Tuyau elastolan 10x6,5 L=1600	Tubo elastolan 10x6,5 L=1600
54		Valvola comando stallonatore laterale	Valve for lateral bead breaker control	Ventil zur Steuerung des Seitenabdrückers	Vanne commande décolle-talons latéral	Válvula mando destalonador lateral
55	325118	Raccordo girevole	Rotary union	Gerader Anschluss	Raccord pivotant	Enlace girable
56	317007	Tubo rilsan 8x6 nero L=100	8x6 black rilsan pipe L=100	Rilsan Schlauch 8x6 schwarz L=100	Tuyau rilsan 8x6 noir L=100	Tubo rilsan 8x6 negro L=100
57	325181	Raccordo a V8	V8 union	V-Verbindung 8	Raccord à V8	Enlace a V8
58	B3666001	Derivatore a 5 vie	5-way shunt	Fünfwegshunt	Dérivateur à cinq voies	Derivación 5 vías
59	325051	Raccordo intermedio diritto D.8	D.8 right middle union	Rechtsmittelverbindung D.8	Raccord intermédiaire droit D.8	Conector intermedio derecho D.8
60	325054	Riduzione 6-8	6-8 reduction	Reduktion 6-8	Reduction 6-8	Reducción 6-8
61	317007	Tubo rilsan 8x6 nero L=650	8x6 black rilsan pipe L=650	Rilsan Schlauch 8x6 schwarz L=650	Tuyau rilsan 8x6 noir L=650	Tubo rilsan 8x6 negro L=650
62	317006	Tubo rilsan 6x4 nero L=4100	6x4 black rilsan pipe L=4100	Rilsan Schlauch 6x4 schwarz L=4100	Tuyau rilsan 6x4 noir L=4100	Tubo rilsan 6x4 negro L=4100
63		Cilindro Plus	Plus cylinder	Zylinder Plus	Cylindre Plus	Cilindro Plus
64	317006	Tubo rilsan 6x4 nero L=250	6x4 black rilsan pipe L=250	Rilsan Schlauch 6x4 schwarz L=250	Tuyau rilsan 6x4 noir L=250	Tubo rilsan 6x4 negro L=250
65	317006	Tubo rilsan 6x4 nero L=450	6x4 black rilsan pipe L=450	Rilsan Schlauch 6x4 schwarz L=450	Tuyau rilsan 6x4 noir L=450	Tubo rilsan 6x4 negro L=450
66	317009	Tubo rilsan 8x6 blu L=1250	8x6 blue rilsan pipe L=1250	Rilsan Schlauch 8x6 blau L=1250	Tuyau rilsan 8x6 bleu L=1250	Tubo rilsan 8x6 azul L=1250



N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
1		Gruppo gonfiaggio con manometro	Inflation unit with pressure gauge	Aufpumpsatz mit Manometer	Groupe gonflage avec manomètre	Grupo inflado con manómetro
2	317008	Tubo rilsan 8x6 rosso L=2400	8x6 red rilsan pipe L=2400	Rilsan Schlauch 8x6 röt L=2400	Tuyau rilsan 8x6 rouge L=2400	Tubo rilsan 8x6 rojo L=2400
3	317008	Tubo rilsan 8x6 rosso L=2000	8x6 red rilsan pipe L=2000	Rilsan Schlauch 8x6 röt L=2000	Tuyau rilsan 8x6 rouge L=2000	Tubo rilsan 8x6 rojo L=2000
4	317009	Tubo rilsan 8x6 blu L=1300	8x6 blue rilsan pipe L=1300	Rilsan Schlauch 8x6 blau L=1300	Tuyau rilsan 8x6 bleu L=1300	Tubo rilsan 8x6 azul L=1300
5		Valvole pedale di gonfiaggio	Inflation pedal valves	Ventile des Aufpumpedals	Vannes pédales de direction de gonflage	Válvulas pedal de inflado
6		Nera N.A.	N.O. black	Schwarz N.O.	Noir N.O	Negra N.A.
7		Bianca N.C.	N.C. white	Blanche N.F.	Weiß N.G.	Blanca N.C.
8		Cilindro rullo stallonatore inferiore D.120	Lower bead breaker roll D.120 cylinder	D.120 Zylinder unteren Abdrücksrolle	Cylindre rouleau décolle-talon inférieur D.120	Cilindro rodillo destalonador inferior D.120
9		Cilindro rullo stallonatore superiore D.120	Upper bead breaker roll D.120 cylinder	D.120 Zylinder oberen Abdrücksrolle	Cylindre rouleau décolle-talon supérieur D.120	Cilindro rodillo destalonador superior D.120
10		Cilindro camma superiore	Upper cam cylinder	Oberer Nockenzyylinder	Cylindre came supérieur	Cilindro leva superior
11		Cilindro camma inferiore	Lower cam cylinder	Unterer Nockenzyylinder	Cylindre came inférieur	Cilindro leva inferior
12		Cilindro strangolo superiore	Upper neck cylinder	Oberer Sperrvorrichtungszylinder	Cylindre étranglement supérieur	Cilindro estrangulación superior
13		Cilindro strangolo inferiore	Lower neck cylinder	Unterer Sperrvorrichtungszylinder	Cylindre étranglement inférieur	Cilindro estrangulación inferior
14	317007	Tubo rilsan 8x6 nero L=900	8x6 black rilsan pipe L=900	Rilsan Schlauch 8x6 schwarz L=900	Tuyau rilsan 8x6 noir L=900	Tubo rilsan 8x6 negro L=900
15	317007	Tubo rilsan 8x6 nero L=250	8x6 black rilsan pipe L=250	Rilsan Schlauch 8x6 schwarz L=250	Tuyau rilsan 8x6 noir L=250	Tubo rilsan 8x6 negro L=250
16	317006	Tubo rilsan 6x4 nero L=1750	6x4 black rilsan pipe L=1750	Rilsan Schlauch 6x4 schwarz L=1750	Tuyau rilsan 6x4 noir L=1750	Tubo rilsan 6x4 negro L=1750
17	317006	Tubo rilsan 6x4 nero L=1650	6x4 black rilsan pipe L=1650	Rilsan Schlauch 6x4 schwarz L=1650	Tuyau rilsan 6x4 noir L=1650	Tubo rilsan 6x4 negro L=1650
18	317006	Tubo rilsan 6x4 nero L=1550	6x4 black rilsan pipe L=1550	Rilsan Schlauch 6x4 schwarz L=1550	Tuyau rilsan 6x4 noir L=1550	Tubo rilsan 6x4 negro L=1550
19	317006	Tubo rilsan 6x4 nero L=1400	6x4 black rilsan pipe L=1400	Rilsan Schlauch 6x4 schwarz L=1400	Tuyau rilsan 6x4 noir L=1400	Tubo rilsan 6x4 negro L=1400
20	317026	Tubo rilsan 4x2,7 nero L=2400	4x2,7 black rilsan pipe L=2400	Rilsan Schlauch 4x2,7 schwarz L=2400	Tuyau rilsan 4x2,7 noir L=2400	Tubo rilsan 4x2,7 negro L=2400
21	317026	Tubo rilsan 4x2,7 nero L=1900	4x2,7 black rilsan pipe L=1900	Rilsan Schlauch 4x2,7 schwarz L=1900	Tuyau rilsan 4x2,7 noir L=1900	Tubo rilsan 4x2,7 negro L=1900
22	B5815000	Raccordo V D.4	V D.4 union	Verbindung V D.4	Raccord V D.4	Conector V D.4
23		Regolazione diametro stallonatori	Bead breaker diameter adjustment	Einstellung Durchmessers Abdrücker	Réglage diamètre décolle-talons	Regulación diámetro destalonadores
24	710814220	Base con valvole	Base with valves	Sockel mit Ventile	Embase avec vannes	Base con válvulas
25	BMP70000	Tubo rilsan 4x2,7 bianco L=100	4x2,7 white rilsan pipe L=100	Rilsan Schlauch 4x2,7 weiß L=100	Tuyau rilsan 4x2,7 blanc L=100	Tubo rilsan 4x2,7 blanco L=100
26	317028	Tubo rilsan 4x2,7 verde L=1600	4x2,7 green rilsan pipe L=1600	Rilsan Schlauch 4x2,7 grün L=1600	Tuyau rilsan 4x2,7 vert L=1600	Tubo rilsan 4x2,7 verde L=1600
27	317027	Tubo rilsan 4x2,7 rosso L=1600	4x2,7 red rilsan pipe L=1600	Rilsan Schlauch 4x2,7 röt L=1600	Tuyau rilsan 4x2,7 rouge L=1600	Tubo rilsan 4x2,7 rojo L=1600
28	BMP90000	Tubo rilsan 4x2,7 giallo L=100	4x2,7 yellow rilsan pipe L=100	Rilsan Schlauch 4x2,7 gelb L=100	Tuyau rilsan 4x2,7 jaune L=100	Tubo rilsan 4x2,7 amarillo L=100
29	BMP90000	Tubo rilsan 4x2,7 giallo L=50	4x2,7 yellow rilsan pipe L=50	Rilsan Schlauch 4x2,7 gelb L=50	Tuyau rilsan 4x2,7 jaune L=50	Tubo rilsan 4x2,7 amarillo L=50
30	BMP90000	Tubo rilsan 4x2,7 giallo L=1600	4x2,7 yellow rilsan pipe L=1600	Rilsan Schlauch 4x2,7 gelb L=1600	Tuyau rilsan 4x2,7 jaune L=1600	Tubo rilsan 4x2,7 amarillo L=1600
31	317026	Tubo rilsan 4x2,7 nero L=1600	4x2,7 black rilsan pipe L=1600	Rilsan Schlauch 4x2,7 schwarz L=1600	Tuyau rilsan 4x2,7 noir L=1600	Tubo rilsan 4x2,7 negro L=1600
32	BMP70000	Tubo rilsan 4x2,7 bianco L=1600	4x2,7 white rilsan pipe L=1600	Rilsan Schlauch 4x2,7 weiß L=1600	Tuyau rilsan 4x2,7 blanc L=1600	Tubo rilsan 4x2,7 blanco L=1600
33		Salita stallonatore superiore	Upper bead breaker rise	Anheben obereren Abdrückers	Montée décolle-talon supérieur	Subida destalonador superior
34		Discesa stallonatore superiore	Upper bead breaker lowering	Absenken oberen Abdrückers	Descente décolle-talon supérieur	Bajada destalonador superior
35		Salita stallonatore inferiore	Lower bead breaker rise	Anheben unteren Abdrückers	Montée décolle-talon inférieur	Subida destalonador inferior
36		Discesa stallonatore inferiore	Lower bead breaker lowering	Absenken unteren Abdrückers	Descente décolle-talon inférieur	Bajada destalonador inferior
37		Camma superiore	Upper cam	Obere Nocke	Came supérieure	Cama superior
38		Camma inferiore	Lower cam	Untere Nocke	Came inférieure	Cama inferior
39	317026	Tubo rilsan 4x2,7 nero L=2500	4x2,7 black rilsan pipe L=2500	Rilsan Schlauch 4x2,7 schwarz L=2500	Tuyau rilsan 4x2,7 noir L=2500	Tubo rilsan 4x2,7 negro L=2500
40		Cilindro strangolo posizionamento utensile	Tool positioning neck cylinder	Sperrvorrichtungszylinder zur Werkzeugpositionierung	Cylindre étranglement positionnement outil	Cilindro estrangulación posicionamiento utensilio
41		Regolazione diametro utensile	Tool diameter adjustment	Einstellung Durchmessers Werkzeugs	Réglage diamètre outil	Regulación diámetro utensilio



ENGINEERING and MARKETING S.P.A.

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

Tavola N°C - Rev. 0

710805030

SCHEMA PNEUMATICO 3/3
PNEUMATIC CIRCUIT DIAGRAM 3/3
PNEUMATIKPLAN 3/3
SCHEMA PNEUMATIQUE 3/3
ESQUEMA NEUMATICO 3/3
(KARACTER.TLXFI)

Pag. 41 di 41

KARACTER.TLX
KARACTER.TLXFI

N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
42	B7351000	Raccordo 5 vie 1/8	1/8" 5-way connection	5 Weg - Anschluss 1/8"	Raccord 5 voies 1/8	Conector 5 vie 1/8"
43	317026	Tubo rilsan 4x2,7 nero L=100	4x2,7 black rilsan pipe L=100	Rilsan Schlauch 4x2,7 schwarz L=100	Tuyau rilsan 4x2,7 noir L=100	Tubo rilsan 4x2,7 negro L=100
44	B9451000	Raccordo intermedio diritto D.4	D.4 right middle union	Rechtsmitttelverbindung D.4	Raccord intermédiaire droit D.4	Conector intermedio derecho D.4
45	325154	Raccordo tappo	Cap union	Stöpsel Anschluss	Raccord bouchon	Conector tapa
46	317006	Tubo rilsan 6x4 nero L=1800	6x4 black rilsan pipe L=1800	Rilsan Schlauch 6x4 schwarz L=1800	Tuyau rilsan 6x4 noir L=1800	Tubo rilsan 6x4 negro L=1800
47	325194	Raccordo fisso diritto 8-1'8	8-1'8 straight fixed union	8-1'8 Rech und feststehende Anschluss	Raccord fixe droit 8-1'8	Enlace fijo derecho 8-1'8
48	317007	Tubo rilsan 8x6 nero L=550	8x6 black rilsan pipe L=550	Rilsan Schlauch 8x6 schwarz L=550	Tuyau rilsan 8x6 noir L=550	Tubo rilsan 8x6 negro L=550
49	710890180	Gruppo trave stallonatore laterale	Lateral bead breaker beam unit	Trägersatz Seitenabdrückers	Groupe poutre décolle-talons latéral	Grupo viga destalonador lateral
50		Cilindro stallonatore laterale	Lateral bead breaker cylinder	Seitenabdrückzylinder	Cylindre décolle-talons latéral	Cilindro destalonador lateral
51	317036	Tubo elastolan 10x6,5 L=1500	10x6,5 elastolan pipe L=1500	Elastolan Schlauch 10x6,5 L=1500	Tuyau elastolan 10x6,5 L=1500	Tubo elastolan 10x6,5 L=1500
52	317036	Tubo elastolan 10x6,5 L=1700	10x6,5 elastolan pipe L=1700	Elastolan Schlauch 10x6,5 L=1700	Tuyau elastolan 10x6,5 L=1700	Tubo elastolan 10x6,5 L=1700
53	317036	Tubo elastolan 10x6,5 L=1600	10x6,5 elastolan pipe L=1600	Elastolan Schlauch 10x6,5 L=1600	Tuyau elastolan 10x6,5 L=1600	Tubo elastolan 10x6,5 L=1600
54		Valvola comando stallonatore laterale	Valve for lateral bead breaker control	Ventil zur Steuerung des Seitenabdrückers	Vanne commande décolle-talons latéral	Válvula mando destalonador lateral
55	325118	Raccordo girevole	Rotary union	Gerader Anschluss	Raccord pivotant	Enlace girable
56	317007	Tubo rilsan 8x6 nero L=100	8x6 black rilsan pipe L=100	Rilsan Schlauch 8x6 schwarz L=100	Tuyau rilsan 8x6 noir L=100	Tubo rilsan 8x6 negro L=100
57	325181	Raccordo a V8	V8 union	V-Verbindung 8	Raccord à V8	Enlace a V8
58	B3666001	Derivatore a 5 vie	5-way shunt	Fünfwegshunt	Dérivateur à cinq voies	Derivación 5 vías
59	325051	Raccordo intermedio diritto D.8	D.8 right middle union	Rechtsmitttelverbindung D.8	Raccord intermédiaire droit D.8	Conector intermedio derecho D.8
60	325054	Riduzione 6-8	6-8 reduction	Reduktion 6-8	Reduction 6-8	Reducción 6-8
61	317007	Tubo rilsan 8x6 nero L=650	8x6 black rilsan pipe L=650	Rilsan Schlauch 8x6 schwarz L=650	Tuyau rilsan 8x6 noir L=650	Tubo rilsan 8x6 negro L=650
62	317006	Tubo rilsan 6x4 nero L=4100	6x4 black rilsan pipe L=4100	Rilsan Schlauch 6x4 schwarz L=4100	Tuyau rilsan 6x4 noir L=4100	Tubo rilsan 6x4 negro L=4100
63		Cilindro Plus	Plus cylinder	Zylinder Plus	Cylindre Plus	Cilindro Plus
64	317006	Tubo rilsan 6x4 nero L=250	6x4 black rilsan pipe L=250	Rilsan Schlauch 6x4 schwarz L=250	Tuyau rilsan 6x4 noir L=250	Tubo rilsan 6x4 negro L=250
65	317006	Tubo rilsan 6x4 nero L=450	6x4 black rilsan pipe L=450	Rilsan Schlauch 6x4 schwarz L=450	Tuyau rilsan 6x4 noir L=450	Tubo rilsan 6x4 negro L=450
66	317009	Tubo rilsan 8x6 blu L=600	8x6 blue rilsan pipe L=600	Rilsan Schlauch 8x6 blau L=600	Tuyau rilsan 8x6 bleu L=600	Tubo rilsan 8x6 azul L=600
67	317009	Tubo rilsan 8x6 blu L=750	8x6 blue rilsan pipe L=750	Rilsan Schlauch 8x6 blau L=750	Tuyau rilsan 8x6 bleu L=750	Tubo rilsan 8x6 azul L=750
68	317009	Tubo rilsan 8x6 blu L=650	8x6 blue rilsan pipe L=650	Rilsan Schlauch 8x6 blau L=650	Tuyau rilsan 8x6 bleu L=650	Tubo rilsan 8x6 azul L=650
69	790090810	Tubo cianfrinato	Pipe	Schlauch	Tuyau	Tubo
70		Ugello di gonfiaggio	Inflation nozzle	Aufpumpedüse	Cycleur de gonflage	Boquilla de inflado
71	317007	Tubo rilsan 8x6 nero L=1900	8x6 black rilsan pipe L=1900	Rilsan Schlauch 8x6 schwarz L=1900	Tuyau rilsan 8x6 noir L=1900	Tubo rilsan 8x6 negro L=1900

7108-R007-0_B

**KARACTER.TLX
KARACTER.TLXFI**

- I** 21.0 LISTA DEI COMPONENTI
- GB** 21.0 LIST OF COMPONENTS
- D** 21.0 TEILELISTE
- F** 21.0 LISTE DES PIECES DETACHEES
- E** 21.0 LISTA DE PIEZAS



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



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



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



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



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

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

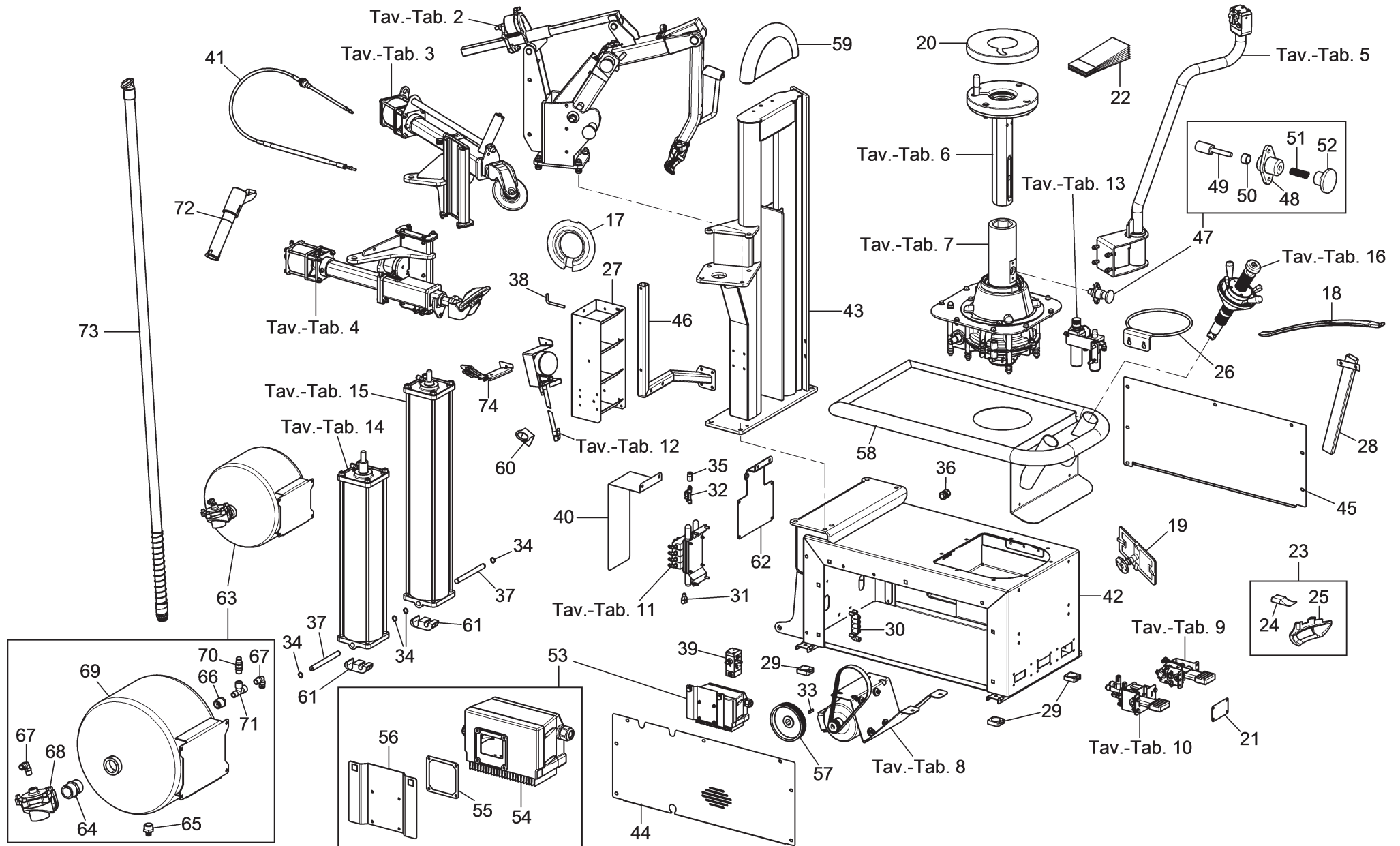
BUTLER ENGINEERING and MARKETING S.p.A. a s. u.

Via dell'Ecologia, 6 - 42047 Rolo - (RE) Italy

Phone (+39) 0522 647911 - Fax (+39) 0522 649760 - e-mail: Info@butler.it

SOMMARIO - SUMMARY - INHALT
SOMMAIRE - SUMARIO

Tavola N°1 - Rev. 0 _____ 3	Tavola N°10A - Rev. 0 710890830..... 15
ASSIEME GENERALE MAIN ASSEMBLY GENERALSATZ ASSEMBLAGE GENERAL JUNTO GENERAL	GRUPPO PEDALIERA NO "FI" PEDALBOARD UNIT NO "FI" PEDALENSATZ KEIN "FI" GROUPE PÉDALES DE DIRECTION PAS DE "FI" GRUPO PEDALERA NO "FI"
Tavola N°2 - Rev. 0 710890750..... 7	Tavola N°10B - Rev. 0 710890110..... 16
GRUPPO SUPPORTO BRACCI ARMS SUPPORT UNIT ARMTRÄGERSATZ GROUPE SUPPORT BRAS GRUPO SOPORTE BRAZOS	GRUPPO PEDALIERA GONFIAGGIO INFLATION PEDALBOARD UNIT AUFPUMPPEDALLEISTESATZ GROUPE PÉDALES DE GONFLAGE GRUPO PEDALERA INFLADO
Tavola N°3 - Rev. 0 710890490..... 8	Tavola N°11 - Rev. 0 710890320..... 17
GRUPPO CARRO STALLONATORE SUPERIORE UPPER BEAD BREAKER CARRIAGE UNIT OBERER ABDRÜCKER WAGENSATZ GROUPE CHARIOT DÉCOLLE-TALON SUPÉRIEUR GRUPO CARRO DESTALONADOR SUPERIOR	GRUPPO VALVOLE PNEUMATICHE PNEUMATIC VALVES UNIT DRUCKLUFTVENTILESATZ GROUPE VANNES PNEUMATIQUES GRUPO VÁLVULAS NEUMÁTICAS
Tavola N°4 - Rev. 0 710890240..... 9	Tavola N°12 - Rev. 0 B1166900 18
GRUPPO CARRO STALLONATORE INFERIORE LOWER BEAD BREAKER CARRIAGE UNIT UNTERER ABDRÜCKER WAGENSATZ GROUPE CHARIOT DÉCOLLE-TALON INFÉRIEUR GRUPO CARRO DESTALONADOR INFERIOR	GRUPPO MANOMETRO PRESSURE GAUGE UNIT MANOMETERSATZ GROUPE MANOMÈTRE GRUPO MANÓMETRO
Tavola N°5 - Rev. 0 710890560..... 10	Tavola N°13 - Rev. 0 710891000..... 19
GRUPPO TUBO COMANDI CONTROLS TUBE UNIT SATZ VON STEUERUNGENROHR GROUPE TOUYAUX COMMANDES GRUPO TUBO MANDOS	GRUPPO TRATTAMENTO ARIA FILTRO RIDUTTORE LUBRIFICATORE GREASER REDUCTION GEAR FILTER AIR TREATMENT UNIT AUFBEREITUNGSLUFTSATZ FILTER DES SCHMIERUNTERSSETZERS GROUPE TRAITEMENT AIR FILTRE RÉDUCTEUR GRAISSEUR GRUPO TRATAMIENTO AIRE FILTRO REDUCTOR LUBRIFICADOR
Tavola N°6 - Rev. 0 710890860..... 11	Tavola N°14 - Rev. 0 710890260..... 20
GRUPPO APPOGGIO RUOTA WHEEL BEARING UNIT RADTRÄGERSATZ GROUPE APPUI ROUE GRUPO APOYA RUEDA	GRUPPO CILINDRO PNEUMATICO D.125 D.125 PNEUMATIC CYLINDER UNIT SATZ PNEUMATISCHEN ZYLINDERS D.125 GROUPE CYLINDRE PNEUMATIQUE D.125 GRUPO CILINDRO NEUMÁTICO D.125
Tavola N°7 - Rev. 0 710890150..... 12	Tavola N°15 - Rev. 0 710890410..... 21
GRUPPO RIDUTTORE VSF VSF REDUCTION GEAR UNIT UNTERSETZERSATZ VSF GROUPE REDUCTEUR VSF GRUPO REDUCTOR VSF	CILINDRO PNEUMATICO D.125 D.125 PNEUMATIC CYLINDER PNEUMATIKZYLINDER D.125 CYLINDRE PNEUMATIQUE D.125 CILINDRO NEUMÁTICO D.125
Tavola N°8 - Rev. 0 710890770..... 13	Tavola N°16 - Rev. 0 710891060..... 22
GRUPPO LAMA CON MOTORE BLADE UNIT WITH MOTOR BLECHSATZ MIT MOTOR GROUPE LAME AVEC MOTEUR GRUPO CUCHILLA CON MOTOR	GRUPPO ALBERO DI BLOCCAGGIO LOCKING SHAFT UNIT SPERWELLESATZ GROUPE ARBRE DE BLOCAGE GRUPO ÁRBOL DE BLOQUEO
Tavola N°9 - Rev. 0 710490401..... 14	
PEDALIERA PER INVERTER PEDALBOARD FOR INVERTER PEDALLEISTE FÜR INVERTER PÉDALES DE DIRECTION POUR INVERSEUR PEDALERA PARA INVERTER	





ENGINEERING and MARKETING S.P.A.

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

Tavola N°1 - Rev. 0

ASSIEME GENERALE
MAIN ASSEMBLY
GENERALSATZ
ASSEMBLAGE GENERAL
JUNTO GENERAL

Pag. 4 di 22

KARACTER.TLX
KARACTER.TLXFI

Tav.	Cod.	Pos.	KARACTER.TLX	KARACTER.TLXFI		
2	710890750		●	●		
3	710890490		●	●		
4	710890240		●	●		
5	710890560		●	●		
6	710890860		●	●		
7	710890150		●	●		
8	710890770		●	●		
9	710490401		●	●		
10A	710890830		●			
10B	710890110			●		
11	710890320		●	●		
12	B1166900		●	●		
13	710891000		●	●		
14	710890260		●	●		
15	710890410		●	●		
16	710891060		●	●		
	B1157000	17	●	●		
	G1000A52	18	●	●		
	G1000A86	19	●	●		
	710013421	20	●	●		
	710814150	21	●	●		
	790011620	22	●	●		
	790190050	23	●	●		
	B0326001	24	●	●		
	B1205900	25	●	●		
	B0223000	26	●	●		
	B1119300	27	●	●		
	B1349000	28	●	●		
	B2528000	29	●	●		
	B3666001	30	●	●		
	B5815000	31	●	●		
	B7351000	32	●	●		
	231003	33	●	●		
	243007	34	●	●		



ENGINEERING and MARKETING S.P.A.

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

Tavola N°1 - Rev. 0

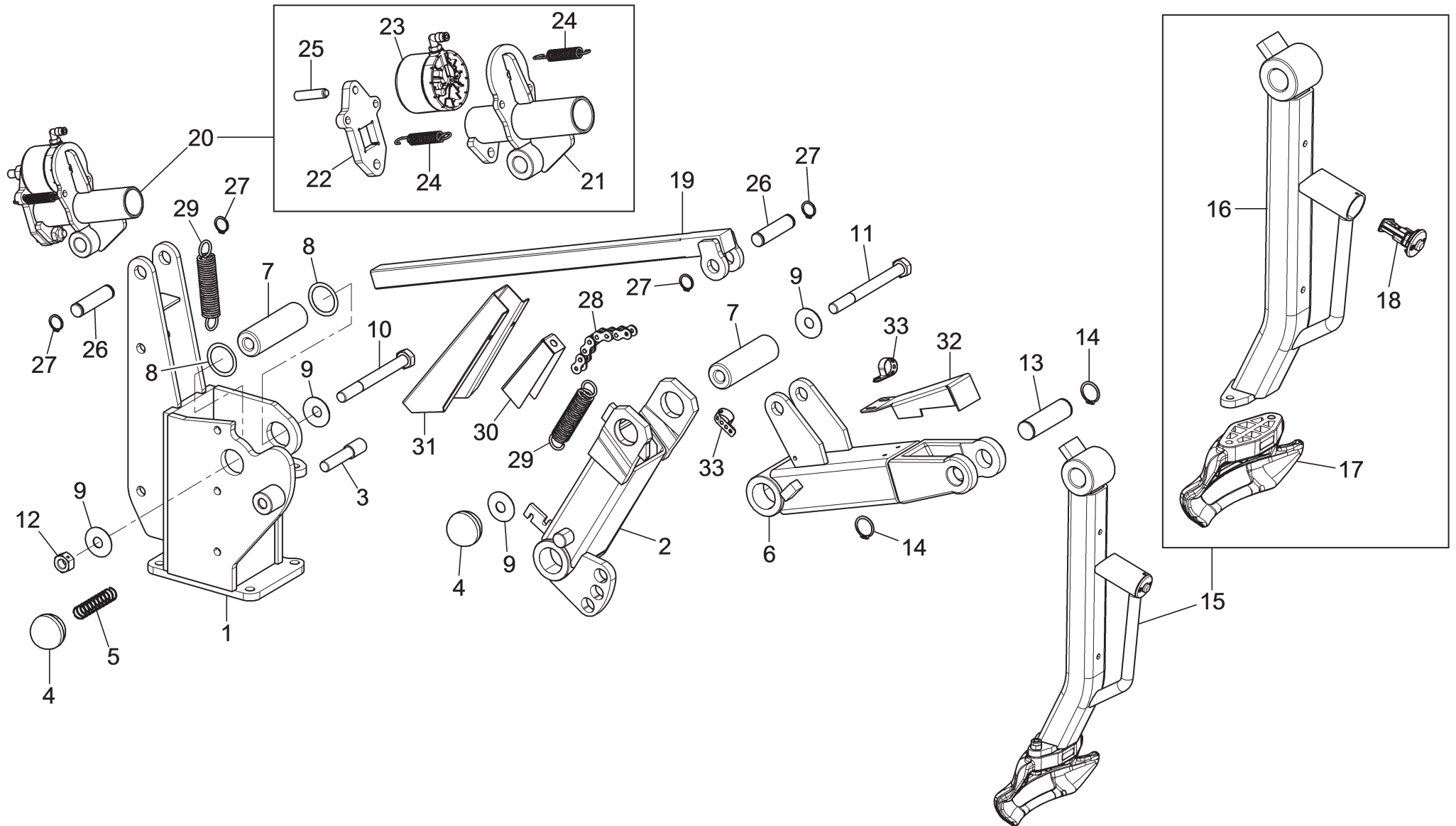
ASSIEME GENERALE
MAIN ASSEMBLY
GENERALSATZ
ASSEMBLAGE GENERAL
JUNTO GENERAL

Pag. 5 di 22

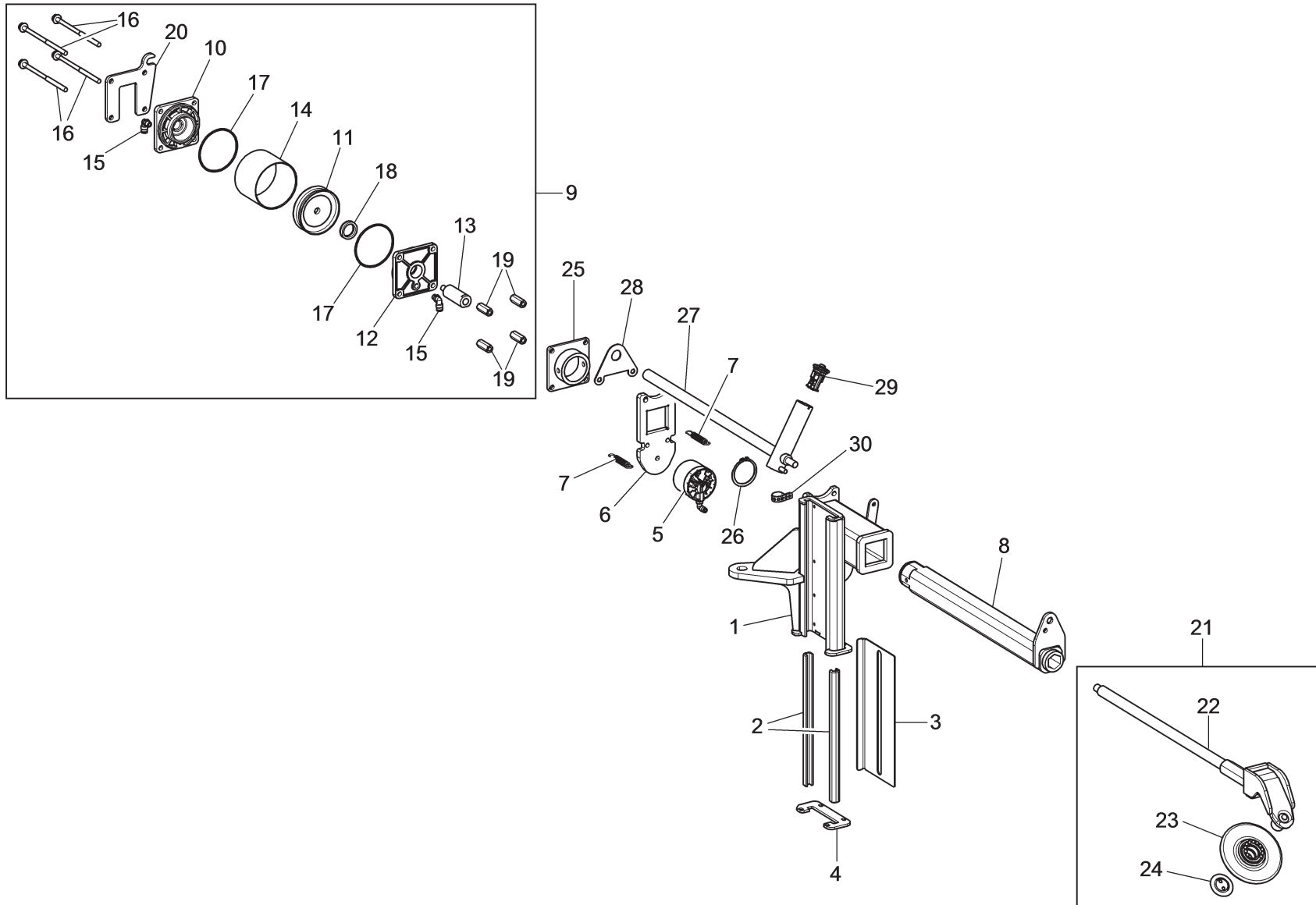
KARACTER.TLX
KARACTER.TLXFI

Tav.	Cod.	Pos.	KARACTER.TLX	KARACTER.TLXFI		
	325194	35	●	●		
	599445	36	●	●		
	710012440	37	●	●		
	710013660	38	●	●		
	710590670	39	●	●		
	710811680	40	●	●		
	710811910	41	●	●		
	710812800	42	●	●		
	710813460	43	●	●		
	710813950	44	●	●		
	710814020	45	●	●		
	710814480	46	●	●		
	710890590	47	●	●		
	710811650	48	●	●		
	730022700	49	●	●		
	730023890	50	●	●		
	B8830000	51	●	●		
	903169	52	●	●		
	710890780	53	●	●		
	710890790	54	●	●		
	900071190	55	●	●		
	710814080	56	●	●		
	730012420	57	●	●		
	710891020	58	●	●		
	710815080	59	●	●		
	710814180	60	●	●		
	750616050	61	●	●		
	710811600	62		●		
	710890760	63		●		
	B1202700	64		●		
	B1175900	65		●		
	533016	66		●		
	325031	67		●		
	309095	68		●		

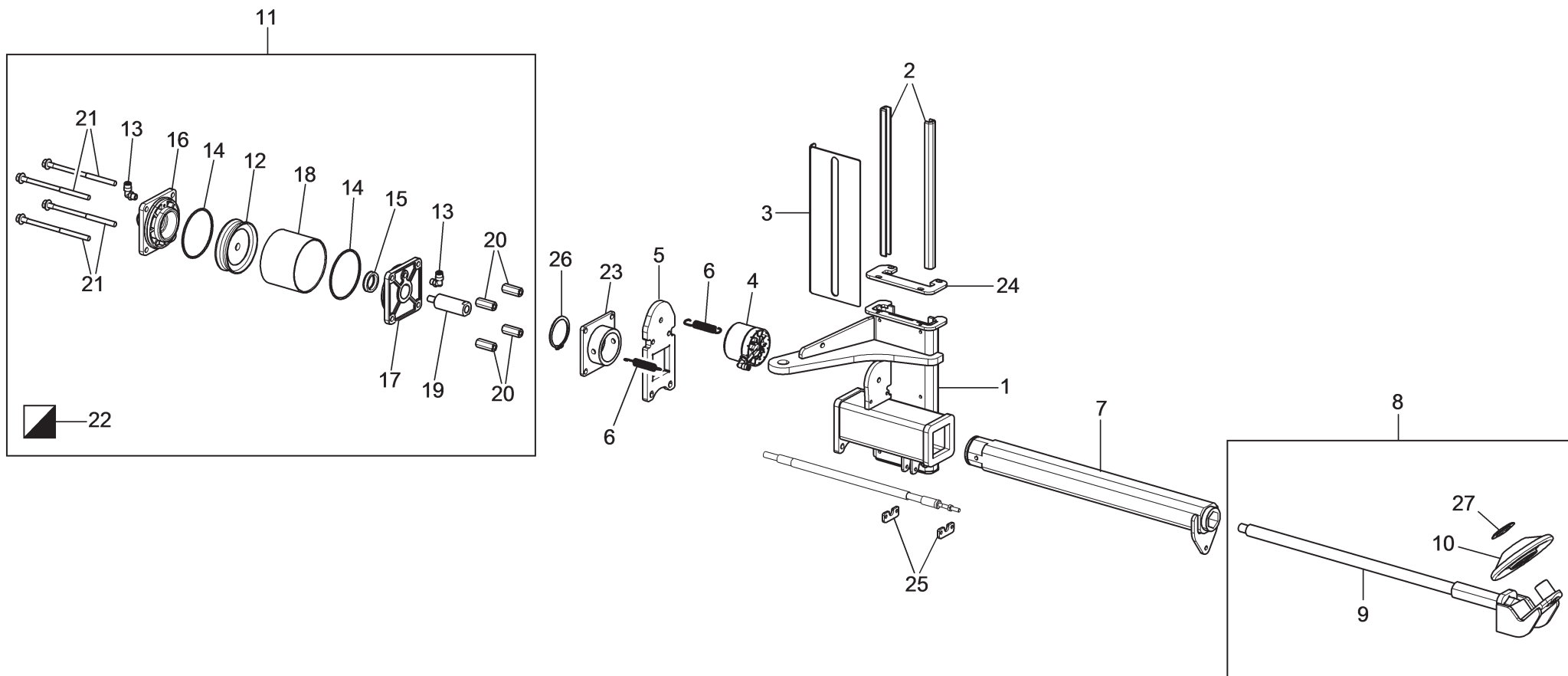
Tav.	Cod.	Pos.	KARACTER.TLX	KARACTER.TLXFI		
	790010121	69		•		
	B1505000	70		•		
	B1146000	71		•		
	770090000	72		•		
	790090810	73		•		
	790090120	74		•		



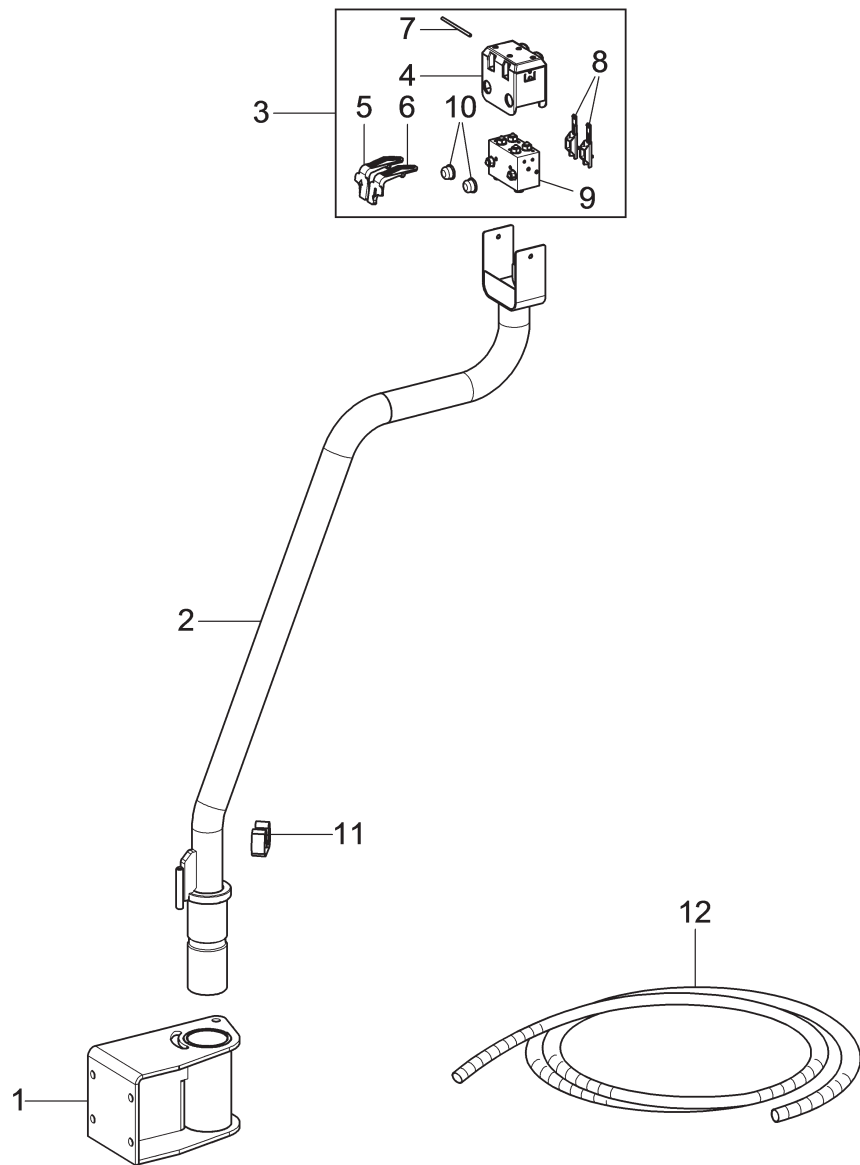
<p>KARACTER.TLX</p>	<p>KARACTER.TLXFI</p>		
<p>Butler ENGINEERING and MARKETING S.P.A.</p> <p>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</p>		<p>GRUPPO SUPPORTO BRACCI ARMS SUPPORT UNIT ARMTRÄGERSATZ GROUPE SUPPORT BRAS GRUPO SOPORTE BRAZOS</p>	<p>Pag. 7 di 22</p>
<p>Tavola N°2 - Rev. 0</p>		<p>710890750</p>	<p>KARACTER.TLX KARACTER.TLXFI</p>



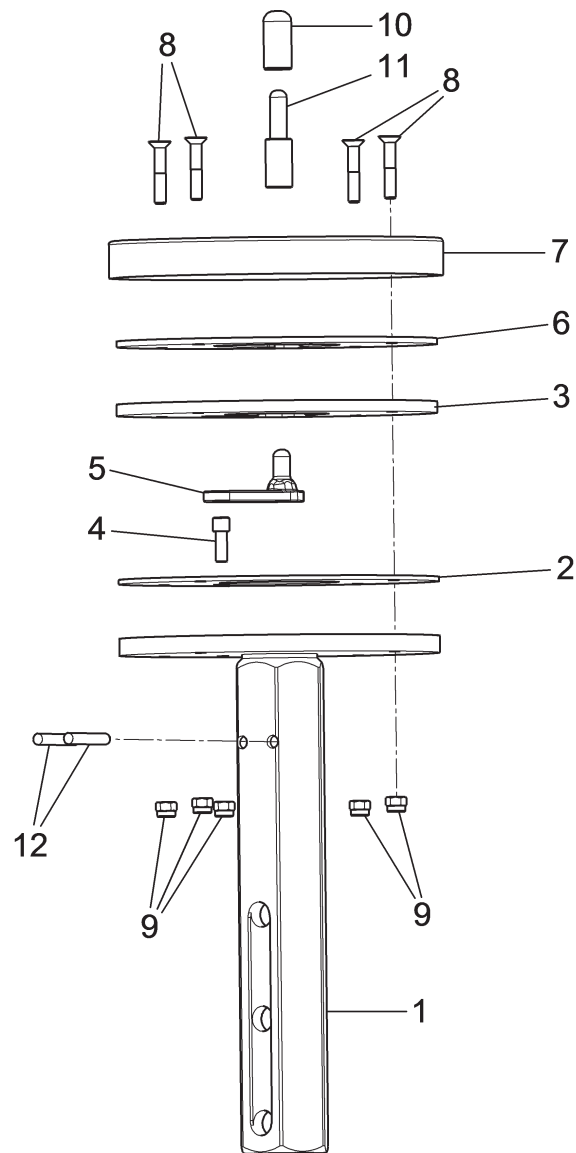
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 Butler ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		Pag. 8 di 22
	Tavola N°3 - Rev. 0	710890490	GRUPPO CARRO STALLONATORE SUPERIORE UPPER BEAD BREAKER CARRIAGE UNIT OBERER ABDRÜCKER WAGENSATZ GROUPE CHARIOT DÉCOLLE-TALON SUPÉRIEUR GRUPO CARRO DESTALONADOR SUPERIOR
			KARACTER.TLX KARACTER.TLXFI



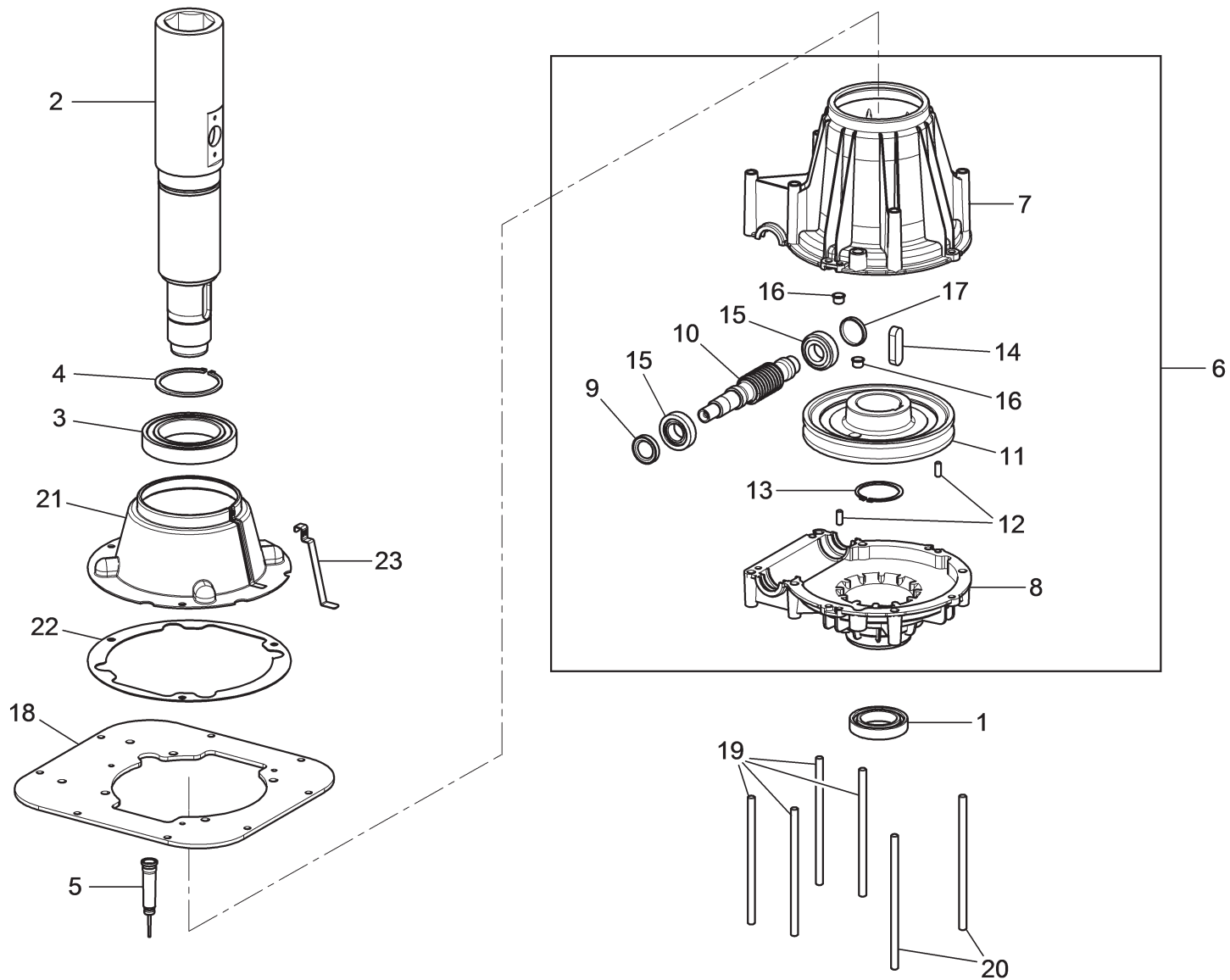
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO CARRO STALLONATORE INFERIORE LOWER BEAD BREAKER CARRIAGE UNIT UNTERER ABDRÜCKER WAGENSATZ GROUPE CHARIOT DÉCOLLE-TALON INFÉRIEUR GRUPO CARRO DESTALONADOR INFERIOR
Tavola N°4 - Rev. 0	710890240		Pag. 9 di 22 KARACTER.TLX KARACTER.TLXFI




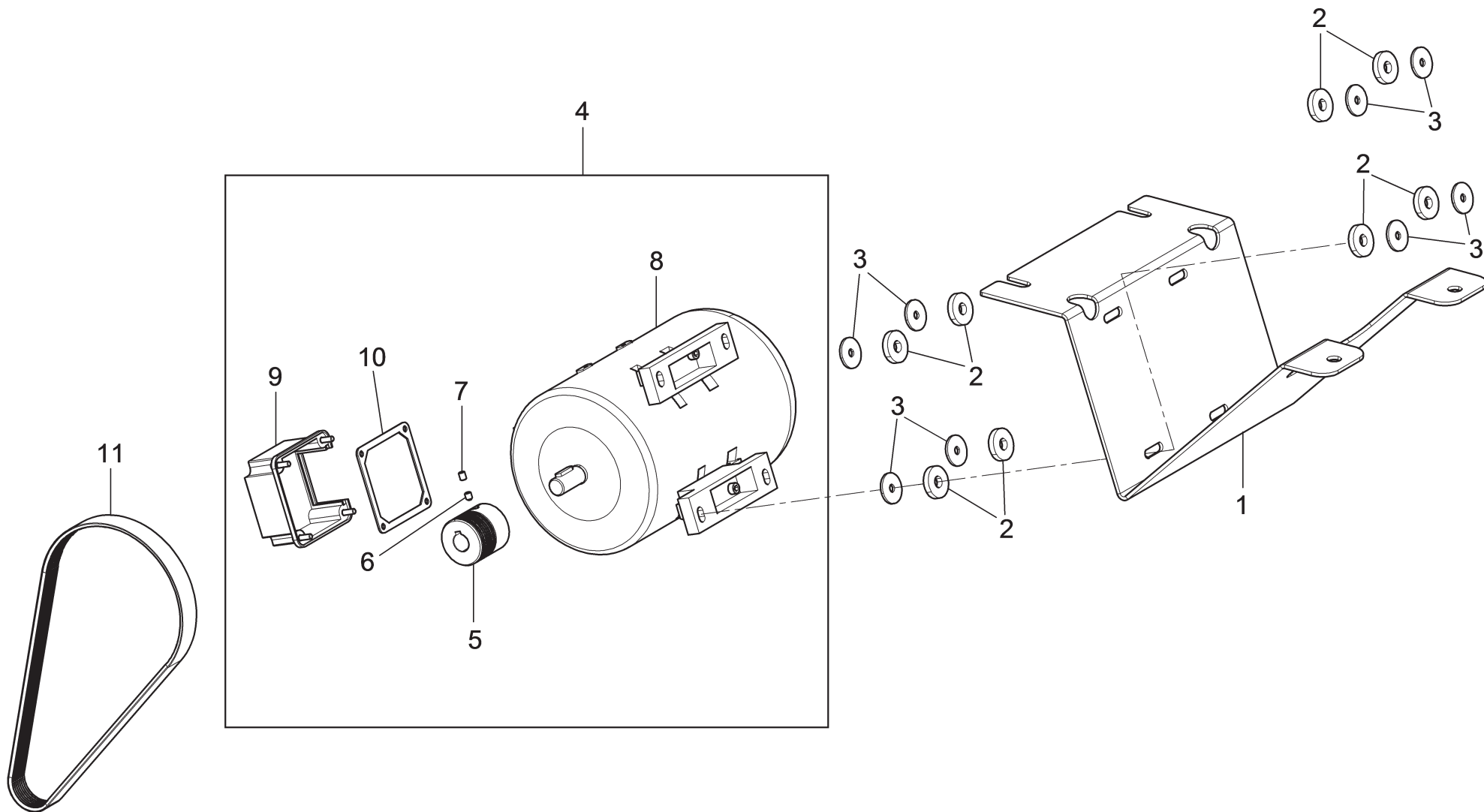
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		GRUPPO TUBO COMANDI CONTROLS TUBE UNIT SATZ VON STEUERUNGENROHR GROUPE TOUYAUX COMMANDES GRUPO TUBO MANDOS
	Tavola N°5 - Rev. 0	710890560	Pag. 10 di 22
			KARACTER.TLX KARACTER.TLXFI



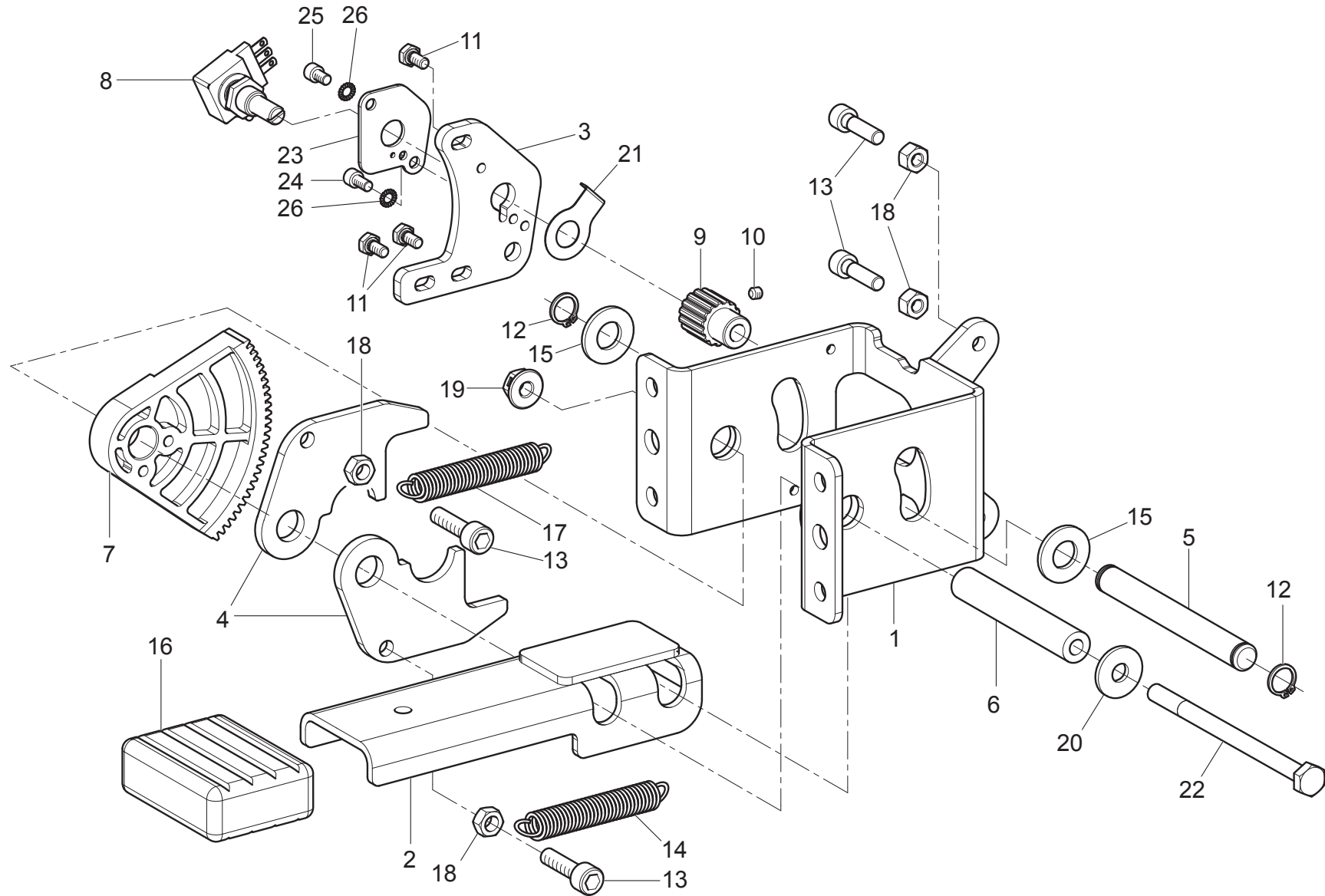
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO APOGGIO RUOTA WHEEL BEARING UNIT RADTRÄGERSATZ GROUPE APPUI ROUE GRUPO APOYA RUEDA
	Tavola N°6 - Rev. 0	710890860	Pag. 11 di 22 KARACTER.TLX KARACTER.TLXFI



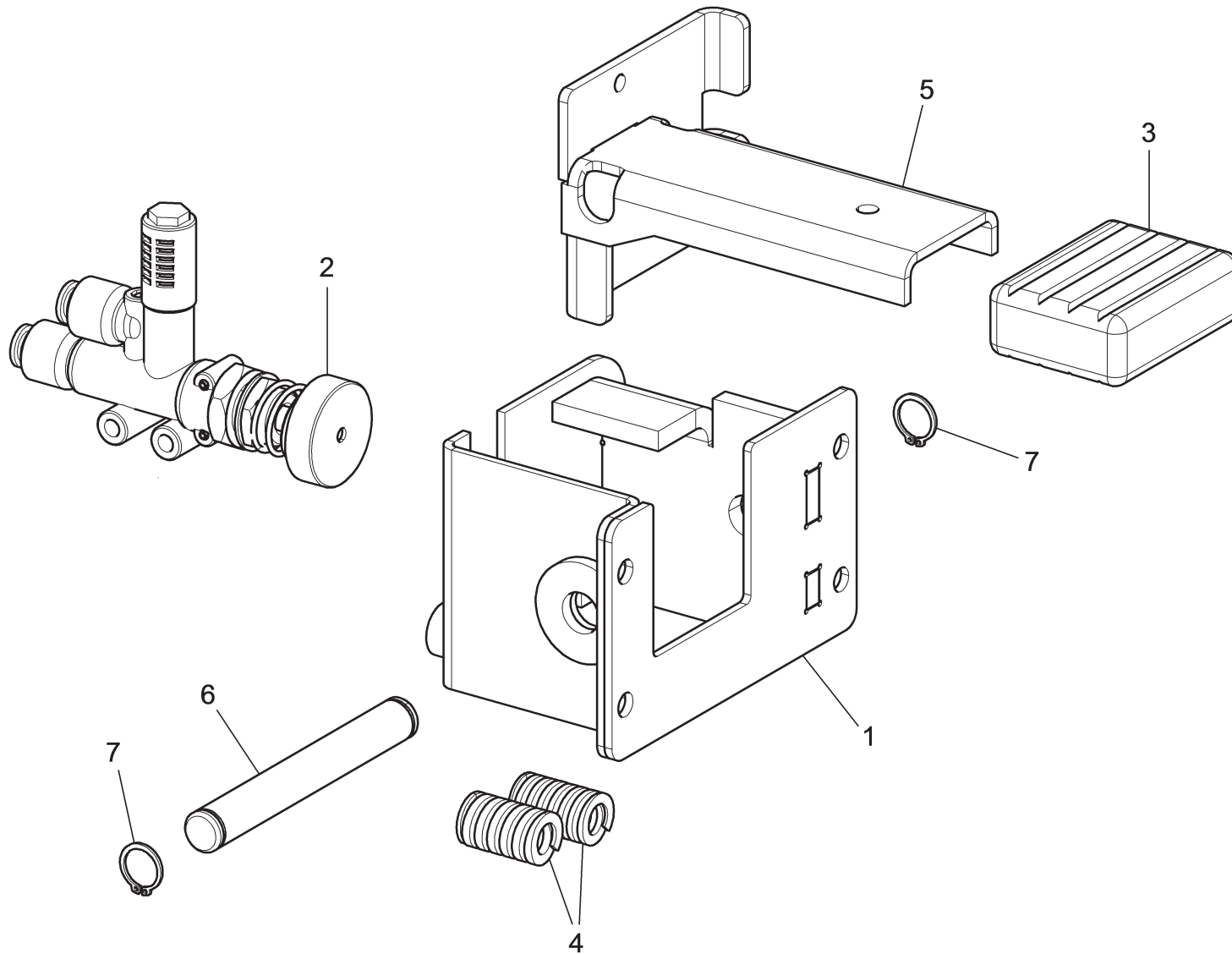
KARACTER.TLX	KARACTER.TLXFI		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO RIDUTTORE VSF VSF REDUCTION GEAR UNIT UNTERSETZERSATZ VSF GROUPE REDUCTEUR VSF GRUPO REDUCTOR VSF
	Tavola N°7 - Rev. 0	710890150	Pag. 12 di 22 KARACTER.TLX KARACTER.TLXFI



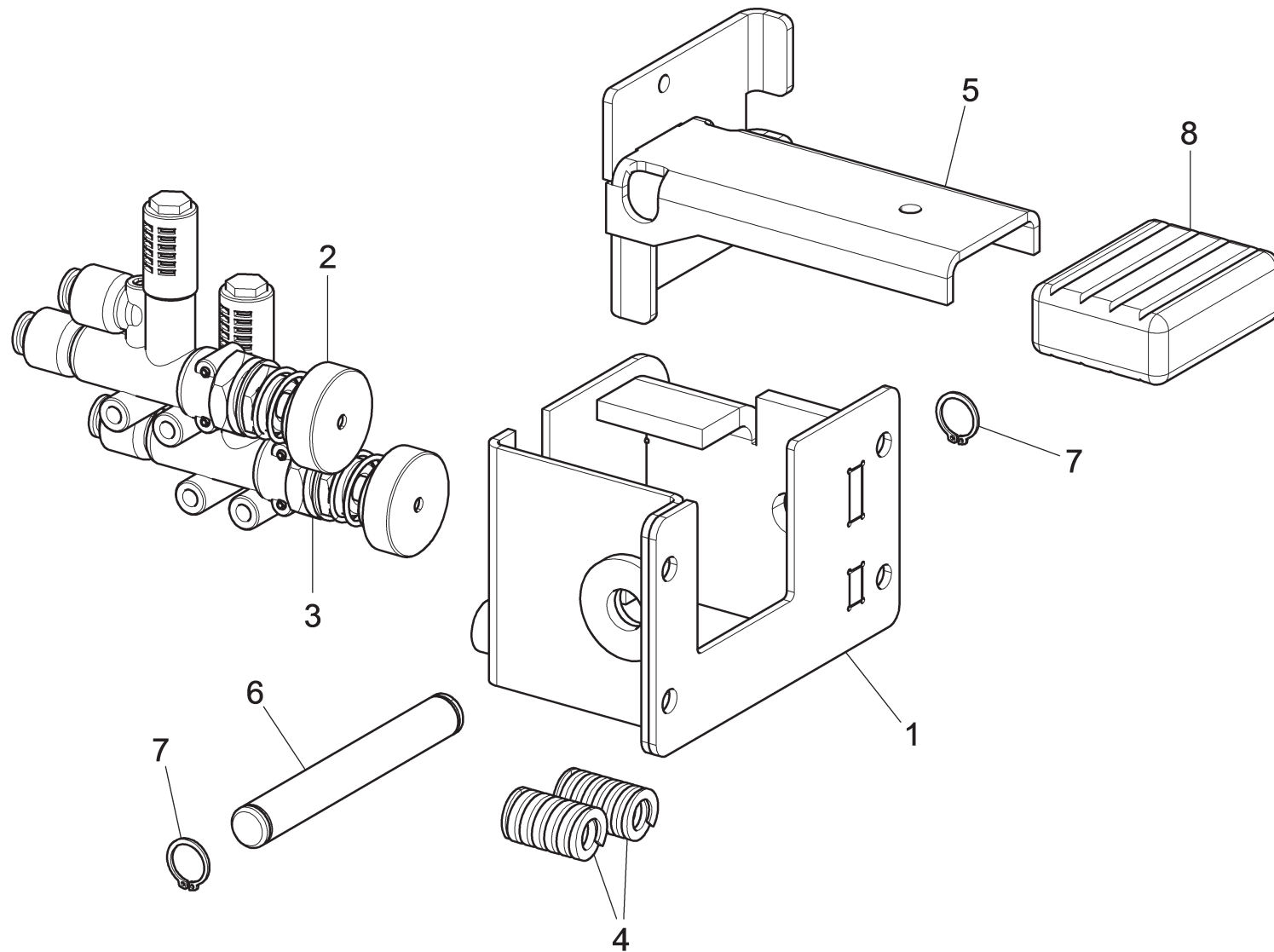
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO LAMA CON MOTORE BLADE UNIT WITH MOTOR BLECHSATZ MIT MOTOR GROUPE LAME AVEC MOTEUR GRUPO CUCHILLA CON MOTOR
	Tavola N°8 - Rev. 0	710890770	



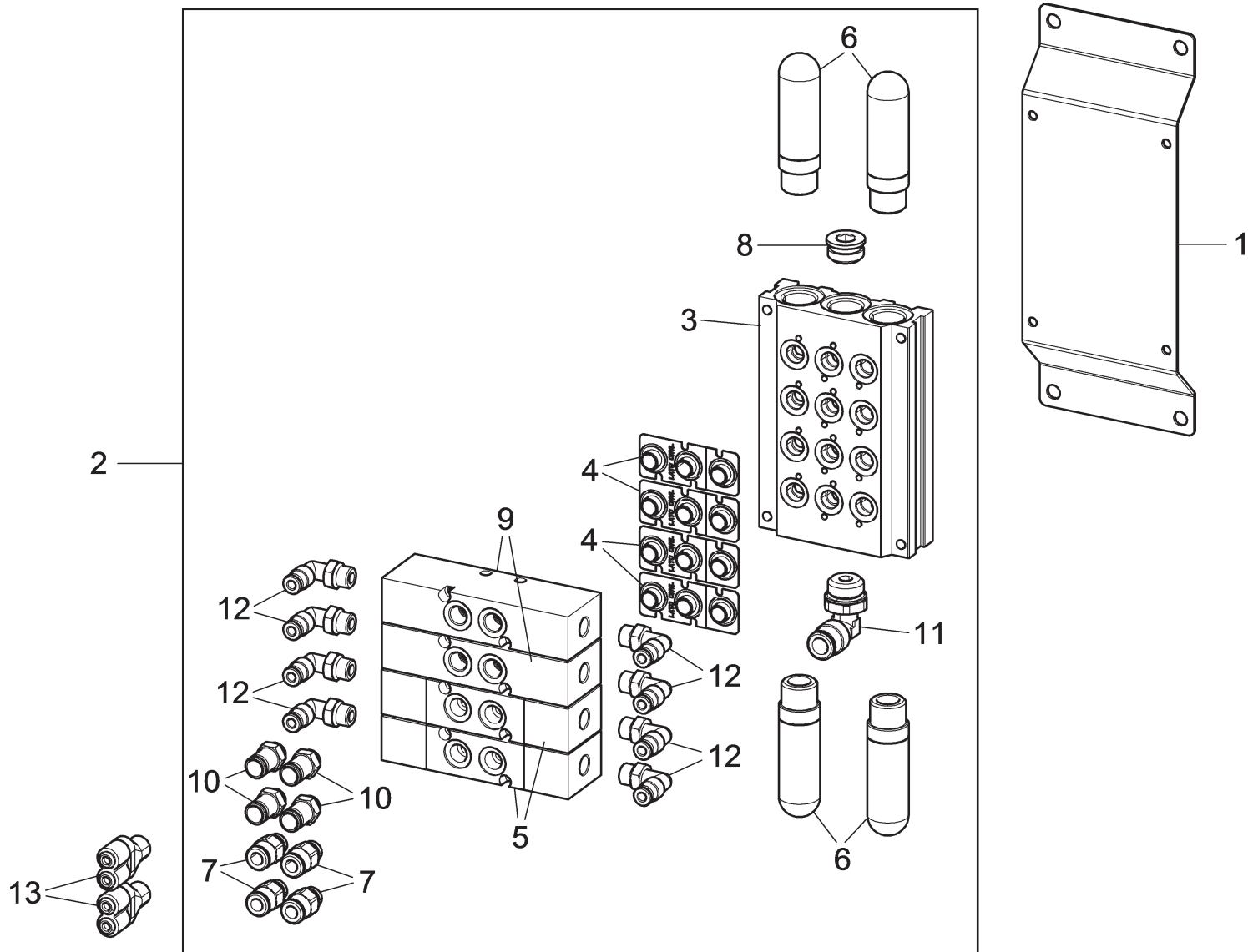
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÉCES DÉTACHÉES - LISTA DE PIEZAS		PEDALIERA PER INVERTER PEDALBOARD FOR INVERTER PEDALLEISTE FÜR INVERTER PÉDALES DE DIRECTION POUR INVERSEUR PEDALERA PARA INVERTER
Tavola N°9 - Rev. 0	710490401		Pag. 14 di 22 KARACTER.TLX KARACTER.TLXFI



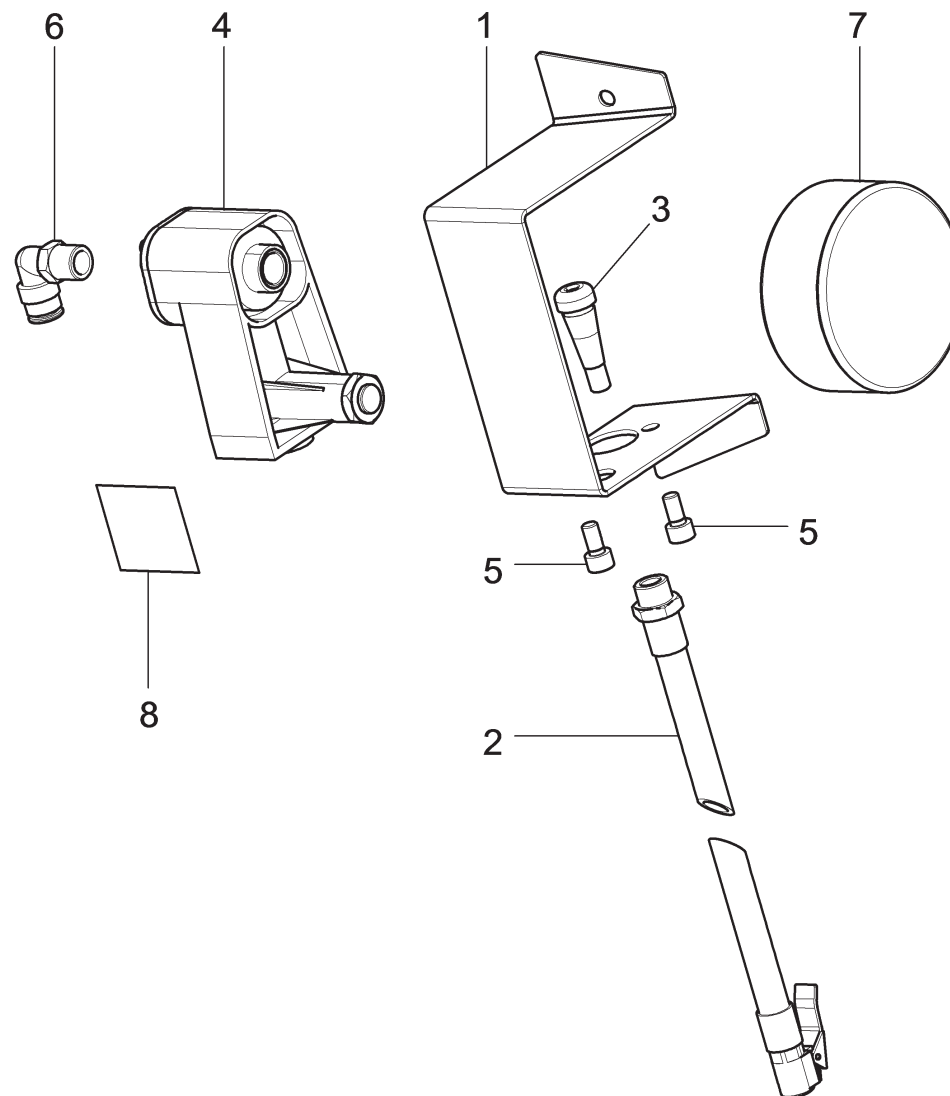
KARACTER.TLX	KARACTER.TLXFI		
•			
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO PEDALIERA NO "FI" PEDALBOARD UNIT NO "FI" PEDALENSATZ KEIN "FI" GROUPE PÉDALES DE DIRECTION PAS DE "FI" GRUPO PEDALERA NO "FI"
	Tavola N°10A - Rev. 0	710890830	




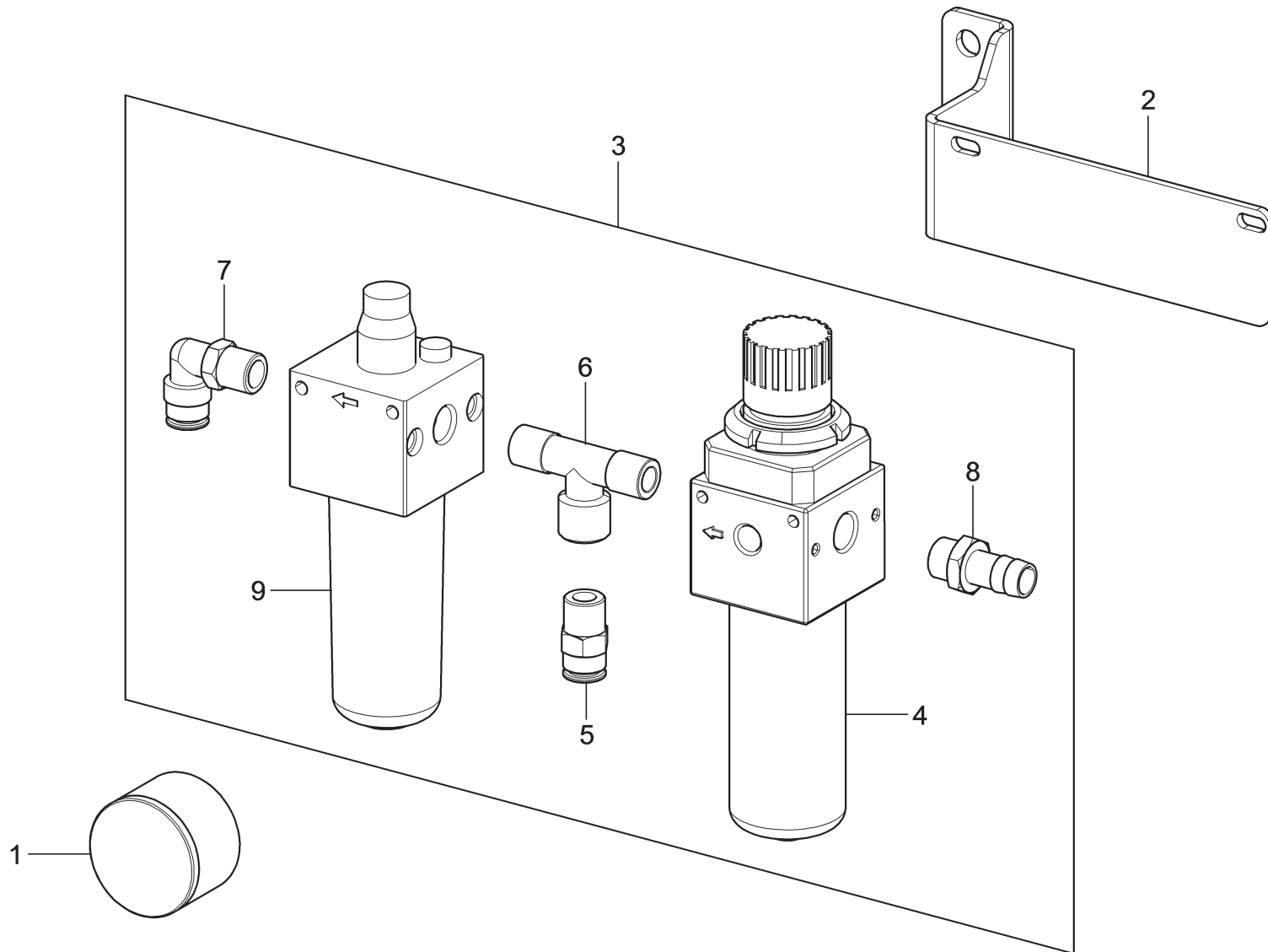
KARACTER.TLX	KARACTER.TLXFI		
•			
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO PEDALIERA GONFIAGGIO INFLATION PEDALBOARD UNIT AUFPUMPPEDALLEISTESATZ GROUPE PÉDALES DE GONFLAGE GRUPO PEDALERA INFLADO
	Tavola N°10B - Rev. 0	710890110	



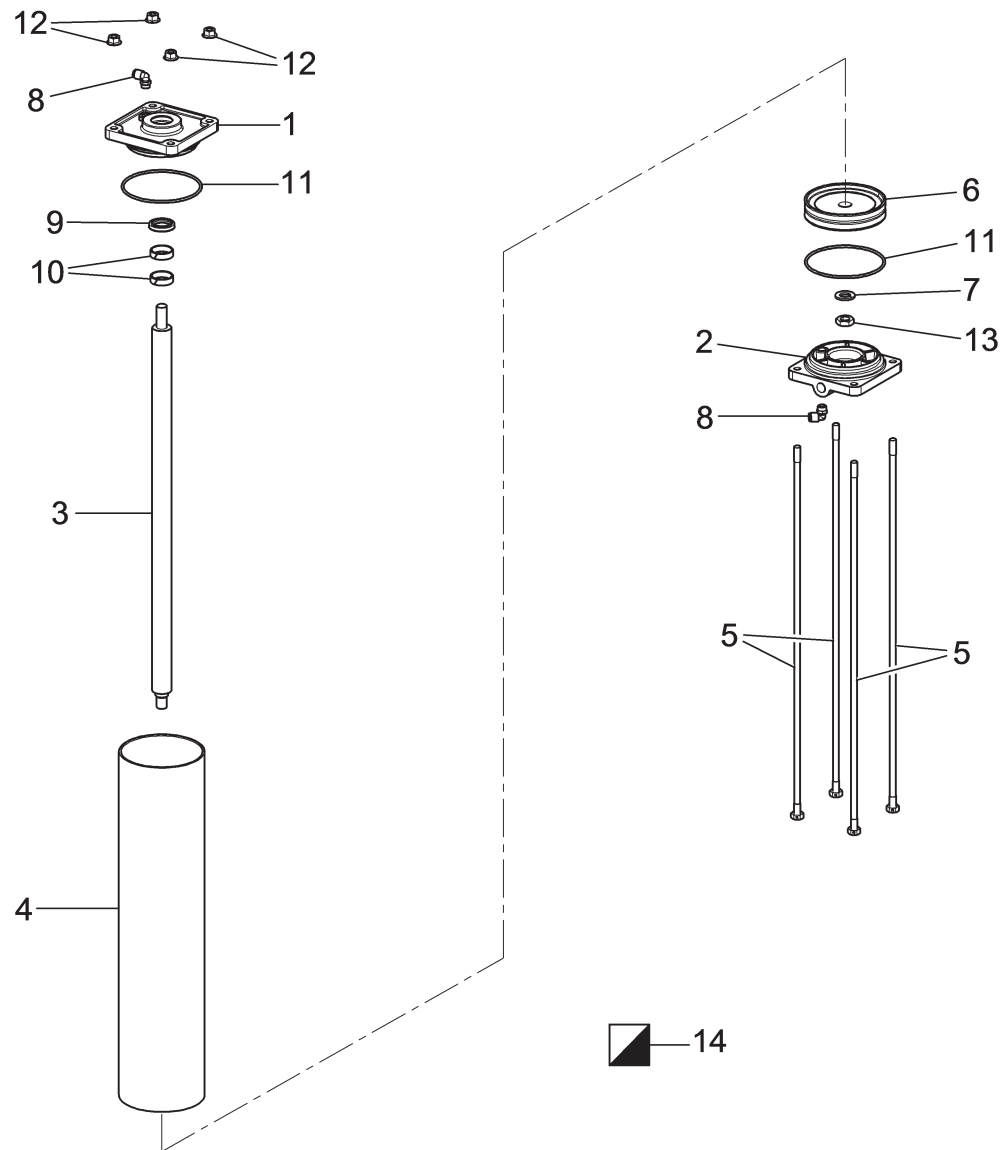
KARACTER.TLX		KARACTER.TLXFI			
•		•			
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS			GRUPPO VALVOLE PNEUMATICHE PNEUMATIC VALVES UNIT DRUCKLUFTVENTILESATZ GROUPE VANNES PNEUMATIQUES GRUPO VÁLVULAS NEUMÁTICAS	Pag. 17 di 22
	Tavola N°11 - Rev. 0	710890320			KARACTER.TLX KARACTER.TLXFI



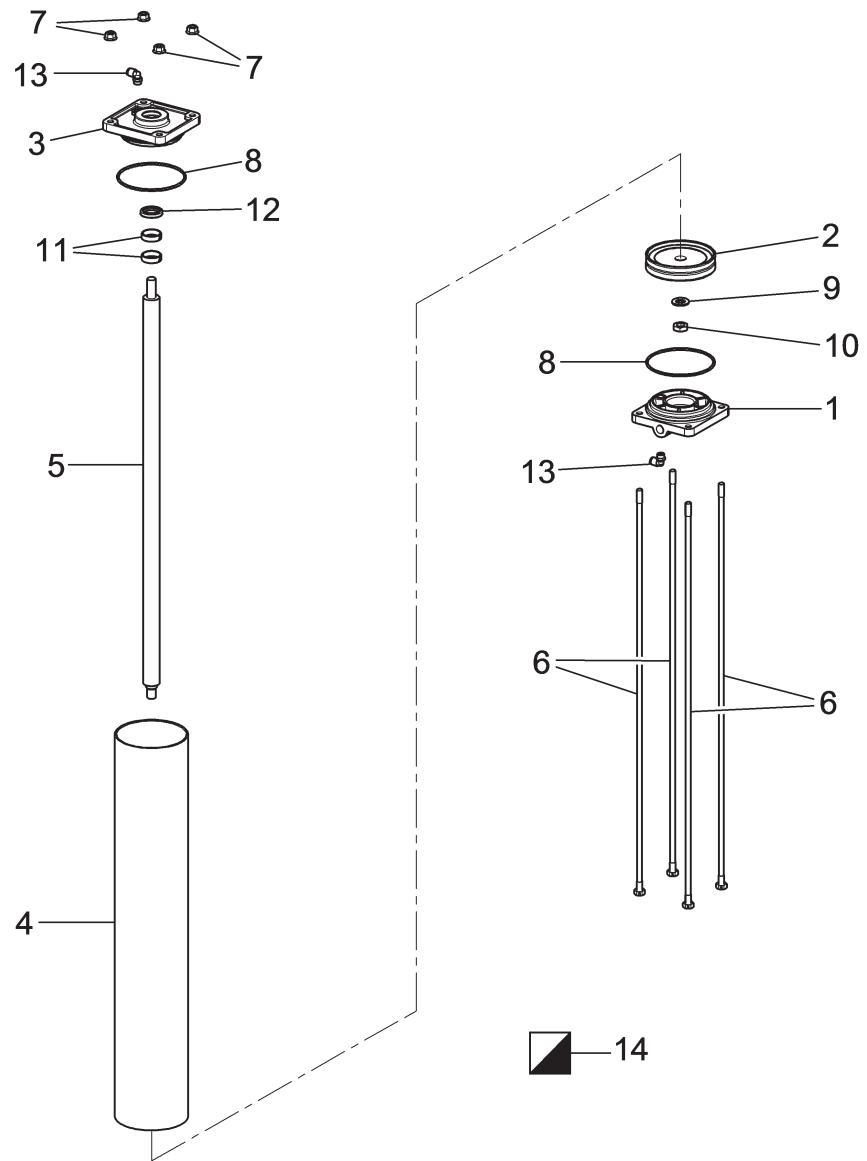
KARACTER.TLX		KARACTER.TLXFI		
•		•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS			Pag. 18 di 22
	Tavola N°12 - Rev. 0	B1166900		GRUPPO MANOMETRO PRESSURE GAUGE UNIT MANOMETERSATZ GROUPE MANOMÈTRE GRUPO MANÓMETRO
				KARACTER.TLX KARACTER.TLXFI




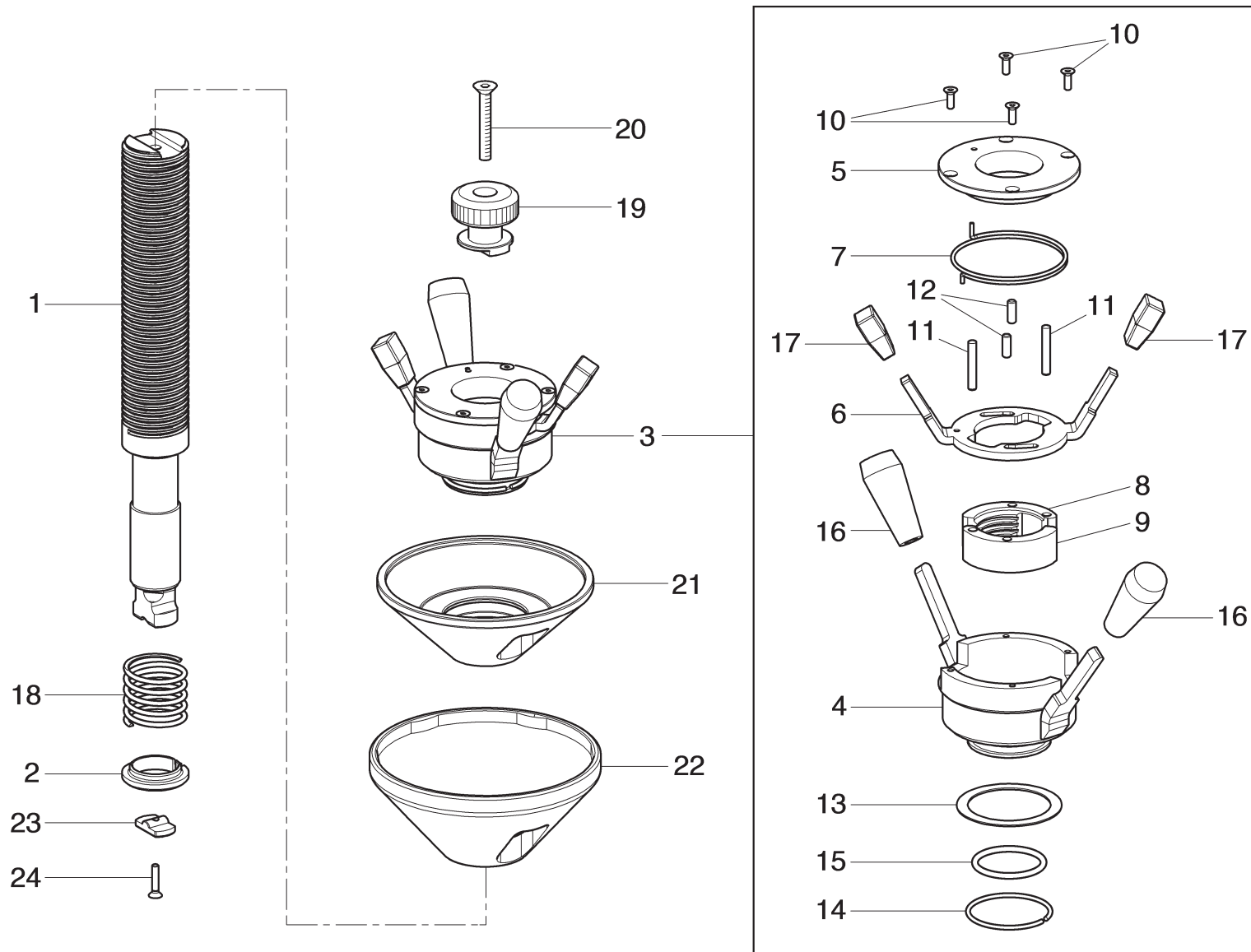
KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO TRATTAMENTO ARIA FILTRO RIDUTTORE LUBRIFICATORE GREASER REDUCTION GEAR FILTER AIR TREATMENT UNIT AUFBEREITUNGLUFTSATZ FILTER DES SCHMIERUNTERSATZERS GROUPE TRAITEMENT AIR FILTRE RÉDUCTEUR GRAISSEUR GRUPO TRATAMIENTO AIRE FILTRO REDUCTOR LUBRIFICADOR
Tavola N°13 - Rev. 0	710891000		Pag. 19 di 22 KARACTER.TLX KARACTER.TLXFI



KARACTER.TLX		KARACTER.TLXFI	
•		•	
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		GRUPPO CILINDRO PNEUMATICO D.125 D.125 PNEUMATIC CYLINDER UNIT SATZ PNEUMATISCHEN ZYLINDERS D.125 GROUPE CYLINDRE PNEUMATIQUE D.125 GRUPO CILINDRO NEUMÁTICO D.125
	Tavola N°14 - Rev. 0	710890260	Pag. 20 di 22 KARACTER.TLX KARACTER.TLXFI



KARACTER.TLX		KARACTER.TLXFI		
•		•		
 Butler ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS			Pag. 21 di 22 KARACTER.TLX KARACTER.TLXFI
	Tavola N°15 - Rev. 0	710890410		



KARACTER.TLX	KARACTER.TLXFI		
•	•		
 ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS		GRUPPO ALBERO DI BLOCCAGGIO LOCKING SHAFT UNIT SPERWELLESATZ GROUPE ARBRE DE BLOCAGE GRUPO ÁRBOL DE BLOQUEO
	Tavola N°16 - Rev. 0	710891060	