ALLEGATO 1 AL MANUALE DI ISTRUZIONI

INFORMAZIONI SUL FABBRICANTE

In tutte le parti del presente manuale nelle quali si fa riferimento, quale fabbricante, a una delle seguenti società:

- Ravaglioli S.p.A., P.IVA e C.F.: 01759471202, con sede legale in Sasso Marconi (BO), Via 1° Maggio, 3, Italia
- Butler Engineering and Marketing S.p.A., P.IVA: 01741580359, C.F.: 01824810368, con sede legale in Rolo (RE), Via dell'Ecologia, 6, Italia
- Space S.r.l., P.IVA e C.F.:07380730015, con sede legale in Trana (TO), Via Sangano, 48, Italia

tale società deve essere intesa come:

Vehicle Service Group Italy S.r.l.

P.IVA: 01426630388

C.F.: 01633631203

con sede legale in Ostellato (FE), Via Brunelleschi, 9, Italia

per effetto della intervenuta fusione per incorporazione delle citate Ravaglioli S.p.A., Butler Engineering and Marketing S.p.A. e Space S.r.l. in Officine Meccaniche Sirio S.r.l., ridenominata, a seguito della fusione, Vehicle Service Group Italy S.r.l., avente efficacia giuridica a far data dal 1° luglio 2023.

Il presente Allegato 1 al Manuale di istruzioni costituisce parte integrante del Manuale di istruzioni stesso.

Simone Ferrari

Direttore Generale

Vehicle Service Group Italy S.r.l.
Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy
VAT no.: 01426630388 | Tax no.: 01633631203

Vehicle Service Group Italy S.r.l. | Via Filippo Brunelleschi 9 | 44020 Ostellato (FE) Italy
+39.051.6781511 | +39.051.846349 | info.emea@vsgdover.com
VAT no.: 01426630388 | Tax no.: 01633631203

ANNEX 1 TO THE INSTRUCTION MANUAL

MANUFACTURER INFORMATION

In all parts of the present manual in which reference is made to one of the following companies as the manufacturer:

- Ravaglioli S.p.A., VAT Number and Tax Code: 01759471202, with registered office in Sasso Marconi (BO), Via 1° Maggio, 3, Italy
- Butler Engineering and Marketing S.p.A., VAT Number: 01741580359, Tax Code: 01824810368, with registered office in Rolo (RE), Via dell'Ecologia, 6, Italy
- Space S.r.l., VAT Number and Tax Code: 07380730015, with registered office in Trana (TO), Via Sangano, 48, Italy

this company is to be understood as:

Vehicle Service Group Italy S.r.l.

VAT Number: 01426630388

Tax Code: 01633631203

with registered office in Ostellato (FE), Via Brunelleschi, 9, Italy

as a result of the intervened merger by incorporation of the aforementioned Ravaglioli S.p.A., Butler Engineering and Marketing S.p.A. and Space S.r.l. into Officine Meccaniche Sirio S.r.l., renamed, following the merger, as Vehicle Service Group Italy S.r.l., having legal effect as of July 1st, 2023.

This Annex 1 to the Instruction Manual is an integral part of the Instruction Manual itself.

Simone Ferrari

Managing Director

Vehicle Service Group Italy S.r.l.
Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy
VAT no.: 01426630388 | Tax no.: 01633631203

ANLAGE 1 ZUR BEDIENUNGSANLEITUNG

HERSTELLERANGABEN

In allen Teilen der vorliegenden Bedienungsanleitung, in denen auf eine der folgenden Gesellschaften:

- Ravaglioli S.p.A., Umsatzsteuer-Identifikationsnummer und Italienische Steuernummer: 01759471202, mit Rechtssitz in Sasso Marconi (BO), Via 1° Maggio, 3, Italien
- Butler Engineering and Marketing S.p.A., Umsatzsteuer-Identifikationsnummer 01741580359, und Italienische Steuernummer: 01824810368, mit Rechtssitz in Rolo (RE), Via dell'Ecologia, 6, Italien
- Space S.r.l., Umsatzsteuer-Identifikationsnummer und Italienische Steuernummer: 07380730015, mit Rechtssitz in Trana (TO), Via Sangano, 48, Italien

als Hersteller Bezug genommen wird, ist diese Gesellschaft zu verstehen als:

Vehicle Service Group Italy S.r.l.

UMSATZSTEUER-IDENTIFIKATIONSNUMMER: 01426630388

ITALIENISCHE STEUERNUMMER: 01633631203

mit eingetragenem Rechtssitz in Ostellato (FE), Via Brunelleschi, 9, Italien

als Folge der verschmelzenden Übernahme der vorgenannten Ravaglioli S.p.A., Butler Engineering and Marketing S.p.A. und Space S.r.l. in die Officine Meccaniche Sirio S.r.l., die nach der Verschmelzung mit rechtlicher Wirkung zum 1. Juli 2023 in Vehicle Service Group Italy S.r.l. umbenannt wurde.

Die vorliegende Anlage 1 zur Bedienungsanleitung ist integrierender Bestandteil der Betriebsanleitung selbst.

Simone Ferrari

Geschäftsführer

Vehicle Service Group Italy S.r.l.
Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy
VAT no.: 01426630388 | Tax no.: 01633631203

ANNEXE 1 DU MANUEL D'INSTRUCTIONS

INFORMATIONS SUR LE FABRICANT

Dans toutes les parties de ce manuel où il est fait référence à l'une des sociétés suivantes en tant que fabricant:

- Ravaglioli S.p.A., numéro de TVA et code fiscal: 01759471202, dont le siège social est situé à Sasso Marconi (BO), Via 1° Maggio, 3, Italie
- Butler Engineering and Marketing S.p.A., numéro de TVA: 01741580359, code fiscal: 01824810368, dont le siège est à Rolo (RE), Via dell'Ecologia, 6, Italie
- Space S.r.l., numéro de TVA et code fiscal: 07380730015, dont le siège est à Trana (TO), Via Sangano, 48, Italie

cette société doit être sous-entendue comme:

Vehicle Service Group Italy S.r.l.

numéro de TVA: 01426630388

code fiscal: 01633631203

dont le siège social est situé à Ostellato (FE), Via Brunelleschi, 9, Italie

à la suite de la fusion par incorporation des sociétés Ravaglioli S.p.A., Butler Engineering and Marketing S.p.A. et Space S.r.l. dans Officine Meccaniche Sirio S.r.l., renommée, à la suite de la fusion, Vehicle Service Group Italy S.r.l., avec effet juridique à compter du 1er juillet 2023.

La présente Annexe 1 au Manuel d'instructions fait partie intégrante du Manuel d'instructions lui-même.

Simone Ferrari

Directeur Général

Vehicle Service Group Italy S.r.l.
Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy
VAT no.: 01426630388 | Tax no.: 01633631203

ANEXO 1 AL MANUAL DE INSTRUCCIONES

INFORMACIÓN DEL FABRICANTE

En todas las partes de este manual en las que se haga referencia a una de las siguientes empresas como fabricante:

- Ravaglioli S.p.A., número de IVA y código fiscal: 01759471202, con domicilio social en Sasso Marconi (BO), vía 1° Maggio, 3, Italia
- Butler Engineering and Marketing S.p.A., número de IVA: 01741580359, código fiscal: 01824810368, con domicilio social en Rolo (RE), vía dell'Ecologia, 6, Italia
- Space S.r.l., número de IVA y código fiscal:07380730015, con domicilio social en Trana (TO), vía Sangano, 48, Italia

que debe entenderse por sociedad:

Vehicle Service Group Italy S.r.l.

Número de IVA: 01426630388

código fiscal: 01633631203

con domicilio social en Ostellato (FE), vía Brunelleschi, 9, Italia

como resultado de la fusión por incorporación de las mencionadas Ravaglioli S.p.A., Butler Engineering and Marketing S.p.A. y Space S.r.l. en Officine Meccaniche Sirio S.r.l., rebautizada, tras la fusión, Vehicle Service Group Italy S.r.l., con efectos jurídicos a partir del 1 de julio de 2023.

El presente Anexo 1 del Manual de Instrucciones forma parte integrante del mismo.

Simone Ferrari

Director Gerente

Vehicle Service Group Italy S.r.l.
Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy
VAT no.: 01426630388 | Tax no.: 01633631203

ENGINEERING and MARKETING S.P.A.

7505-M002-05

NAV41.11N
NAV41.13EI

INSTRUCTION MANUAL

EN TRANSLATION FROM THE ORIGINAL INSTRUCTIONS

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

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

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

7505-M002-05 - Rev. n. 05 (07/2022)

SUMMARY

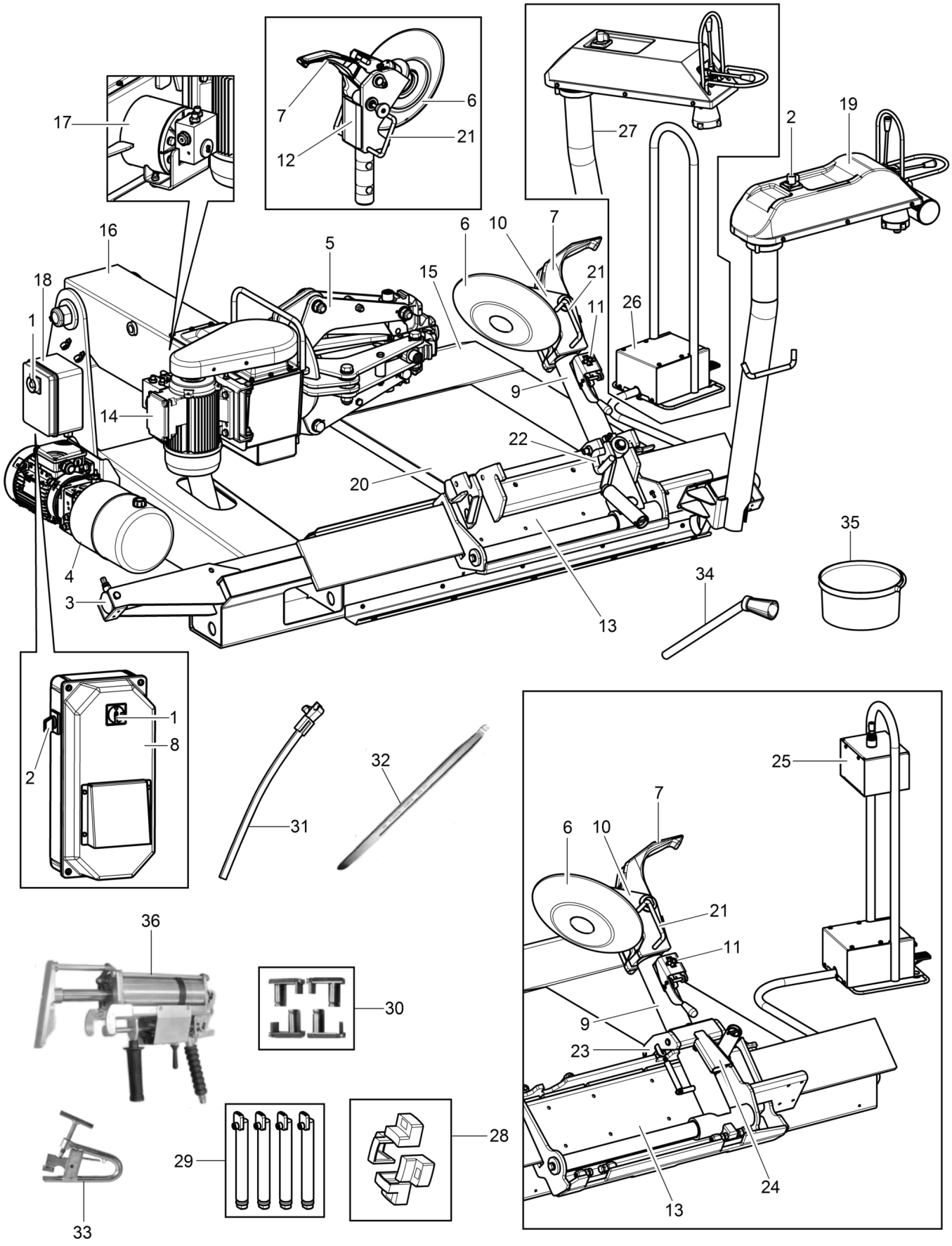
Feature / Versions — Model	NAV41.11N	NAV41.13EI
Air control unit	•	
Control box assembly		•
VARGN41NCRT - Version with pedalboard with rotation, pedalboard box assembly and air control unit	**OPT**	
VARGNAV4113D - Version with inverter, pedalboard box assembly and air control unit	**OPT**	
VARGNAV4113EID - Version with inverter		**OPT**
UE3087 - 220 V - 1 Ph - 50 Hz version	**OPT**	
UE2763 - 220 V - 1 Ph - 60 Hz version	**OPT**	
UE2764 - 220 V - 3 Ph - 60 Hz version	**OPT**	
UE3072 - 230 V - 1 Ph - 50 Hz version		**OPT**
UE3169 - 230 V - 1 Ph - 60 Hz version		**OPT**
UE2786 - 400 V - 3 Ph - 60 Hz version	**OPT**	
UE2781 - 220 V - 3 Ph - 50 Hz version	**OPT**	
UE3167 - 220 V - 3 Ph - 60 Hz version		**OPT**
Coupling lever	•	
Jack		•
Tool holder arm release pedal		•

• = standard

OPT = optional

GENERAL DESCRIPTION

Fig. 1



KEY

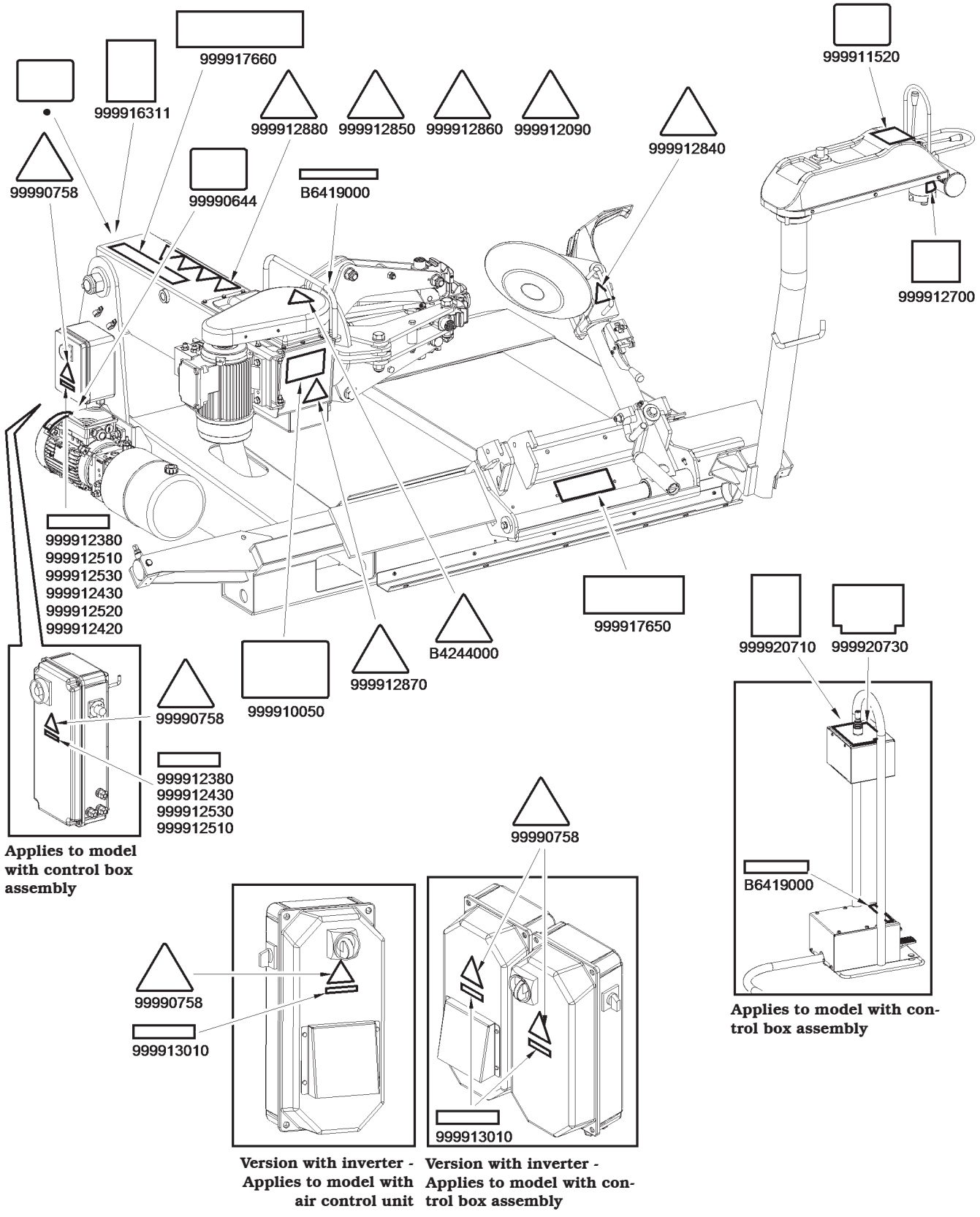
1 - Main switch
2 - Selector 1-0-2 self-centring chuck speed control (version with inverter)
3 - Tools carriage movement cylinder
4 - Hydraulic power unit
5 - Self-centring chuck
6 - Bead breaker disc
7 - Tool
8 - Electrical box with inverter (version with inverter)
9 - Tool holder arm
10 - Tools assembly
11 - Quick-fit tool
12 - Tool assembly without lever (optional)
13 - Tools carriage
14 - Chuck rotation motor
15 - Wheel loading platform
16 - Chuck arm
17 - Chuck opening/closing cylinder
18 - Electric cabinet
19 - Air control unit (standard on some models)
20 - Movable footboard
21 - Tools assembly lifting handle
22 - Coupling lever (standard on some models)
23 - Jack (standard on some models)
24 - Tool holder arm release pedal (standard on some models)
25 - Control box assembly (standard on some models)
26 - Pedalboard box assembly (applies to model with version with pedalboard with rotation and version with inverter)
27 - Air control unit assembly (applies to model with version with pedalboard with rotation and version with inverter)
28 - Standard clamp protections for alloy rims (optional)
29 - Chuck grip extensions (optional)
30 - Adapters with increased grip (optional)
31 - Bead lever
32 - Lever with bead wires (optional)
33 - Bead locking clamp for alloy rims (optional)
34 - Brush unit (optional)
35 - Mounting grease (optional)
36 - Pneumatic beadpusher (optional)

SYMBOLS USED IN THE MANUAL

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

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

PLATES LOCATION DRAWING



Code numbers of plates	
B4244000	*Rotating parts danger plate*
B6419000	*Rotation plate (applies to model with control box assembly)*
99990644	*Chuck rotation index plate*
99990758	*Electric shock danger plate*
999910050	*Protection device use plate*
999911520	*2-lever distributor plate (applies to model with air control unit)*
999912090	*Danger plate 6*
999912380	*400 V - 3 Ph - 50 Hz voltage plate*
999912420	*220/50/3 voltage plate (applies to 220 V - 3 Ph - 50 Hz version)*
999912430	*230 V - 1 Ph - 50 Hz plate (applies to 220 V - 1 Ph - 50 Hz and 230 V - 1 Ph - 50 Hz versions)*
999912510	*220/60/3 voltage plate (applies to 220 V - 3 Ph - 60 Hz version)*
999912520	*380 V - 3 Ph - 60 Hz plate (applies to 400 V - 3 Ph - 60 Hz version)*
999912530	*220 V - 1 Ph - 60 Hz plate (applies to 220 V - 1 Ph - 60 Hz and 230 V - 1 Ph - 60 Hz versions)*
999912700	*1 lever distributor plate*
999912840	*Danger plate 1*
999912850	*Danger plate 2*
999912860	*Danger plate 3*
999912870	*Danger plate 4*
999912880	*Danger plate 5*
999913010	*400 V - 3 Ph+N - 50 Hz voltage plate (applies to versions with inverter)*
999916311	*Rubbish skip plate*
999920710	*Chuck open/close plate (applies to model with control box assembly)*
999920730	*Control plate (applies to model with control box assembly)*
999917650	*Butler logo plate*
999917660	*Navigator plate*
•	*Serial number plate*

IF ONE OR MORE PLATES ARE MISSING FROM THE MACHINE OR BECOMES DIFFICULT TO READ, IT MUST BE REPLACED. QUOTE THE CODE NUMBER 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 DAMAGES 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 purchasing this electro-hydraulic tyre changer. We feel sure you will not regret your decision. This machine has been designed for use in professional workshops and in particular it stands out for its reliability and easy, safe and rapid operation: with just a small degree of maintenance and care, this tyre changer will give you many years of trouble-free service and lots of satisfaction.

2.0 INTENDED USE

The machines described in this manual and their different versions are tyre changers with electro-hydraulic working, to be used only for the mounting and demounting of any type of wheel with whole rim (drop centre and with bead wire), with dimension and weight values mentioned in “Technical specifications” chapter. The machine is NOT to be used for tyre inflation.

DANGER: EMPLOYING THESE MACHINES OUTSIDE THE USE DESTINATION THEY HAVE BEEN DESIGNED FOR (AS INDICATED IN THIS MANUAL) IS INAPPROPRIATE AND DANGEROUS.

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

2.1 Training of personnel

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

Given the complexity of the operations necessary to manage the 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.

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

3.0 SAFETY DEVICES

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

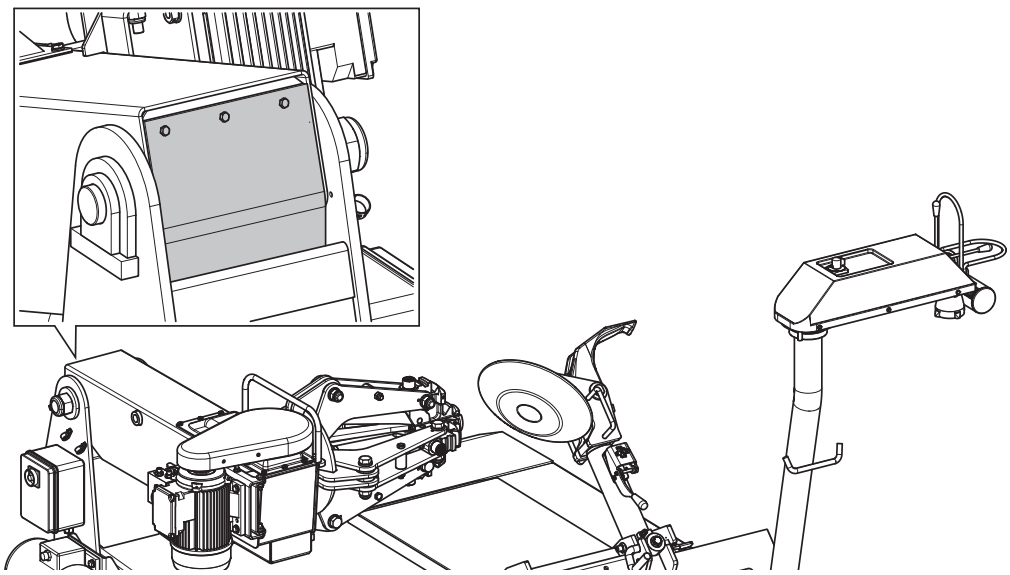
All the machines are equipped with:

- **hold-to-run controls** (immediate stop of operation when the control is released).
- **Control logic disposition**
  To prevent the operator from making dangerous mistakes.
- Thermal magnetic switch on the supply line of the oil-pressure power unit motor: avoids the motor overheating in case of intensive use.

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

- **Controlled check valves** on:
  - opening of chuck jaws,

    Such valves are installed to avoid that accidental oil leakages provoke unwelcome jaws movements (and as a consequence the fall of the wheel).
- **Fuses** on the power supply line of the chuck motor,
- **Automatic power supply** disconnect with the opening of the electric cabinet.
- **Motor protection devices** (standard on some models).
  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”.
- **Fixed protections and guards**
  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. These protections can be located in the figure below.



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.
Possible residual risks have been emphasized through pictorial representations and warnings which placing is indicated in “PLATES LOCATION DRAWING” at page 8.

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 standards.
- Use of the machine is only permitted in places free from **explosion** or **fire** hazard and in **dry places under cover**.
- The use of only original accessories and spare parts is advised. Our machine is designed to function only with original accessories.

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

- The installation must be performed by qualified and authorized personnel in full compliance with the instructions given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the machine if it malfunctions and contact the customer service of an authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, disconnect all supplies to the machine by using the main switch.
- The machine power supply system must be equipped with an appropriate earthing, to which the yellow-green machine protection wire must be connected.
- Ensure that the work area around the machine is free of potentially dangerous objects and that there is no oil since this could damage the 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. Unauthorized personnel must remain outside the working area, as shown in **Fig. 4.**
  Avoid any hazardous situations. Do not use air-operated or electrical equipment when the shop is damp or the floor slippery and do not expose such tools to atmospheric agents.
- When operating and servicing this machine, carefully follow all applicable safety and accident-prevention precautions.
  The machine must not be operated by untrained personnel.

THE MACHINE OPERATES WITH PRESSURIZED HYDRAULIC FLUID. MAKE SURE EVERY COMPONENT OF THE HYDRAULIC CIRCUIT IS ALWAYS PROPERLY LOCKED, ANY PRESSURIZED LEAKS MAY CAUSE SERIOUS INJURIES OR WOUNDS.

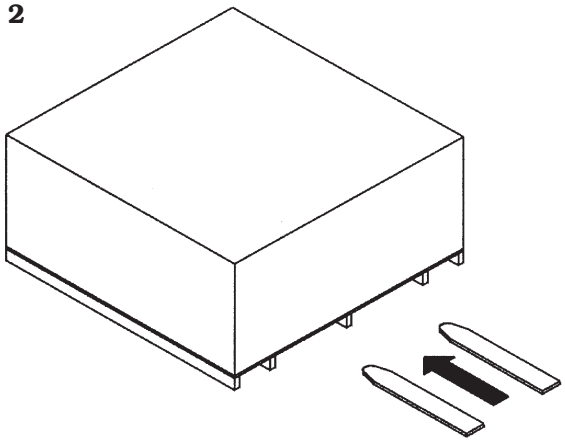
IN CASE OF A CHANCE SUPPLY FAILURE (WHETHER ELECTRICITY OR OIL-PRESSURE), MOVE THE CONTROLS TO THE NEUTRAL POSITION.

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 (SEE PARAGRAPH "TECHNICAL SPECIFICATIONS").

The machine is supplied completely assembled, packed in a cardboard box.
Movement must be by pallet-lift or fork-lift trolley.
Lift the packaging as indicated in **Fig. 2** (forks introduced in the middle to ensure a correct loads distribution).

Fig. 2



6.0 UNPACKING

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

After removing the packing, and in the case of the 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 packaging elements (plastic bags, polystyrene foam, nails, bolts, wood, etc.) must be collected up and disposed of through according to the in force laws, except for the pallet, which could be used again for subsequent machine handling.

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

7.0 MOBILIZATION

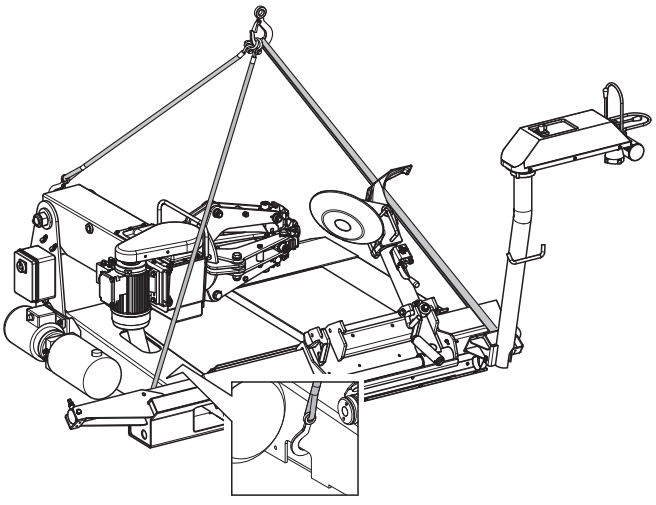
If the machine has to be moved.

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.
- Move the chuck to completely lowered position and in the centre of the machine in order to ensure a correct load balancing.
- Move the tool carriage to limit switch towards the chuck.
- Disconnect all machine power supply sources.
- Sling with three sufficiently long belts (300 cm at least) and with capacity load at least equal to machine weight (see **Fig. 3**).
- Lift and transport with suitable device with adequate dimensions.

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).

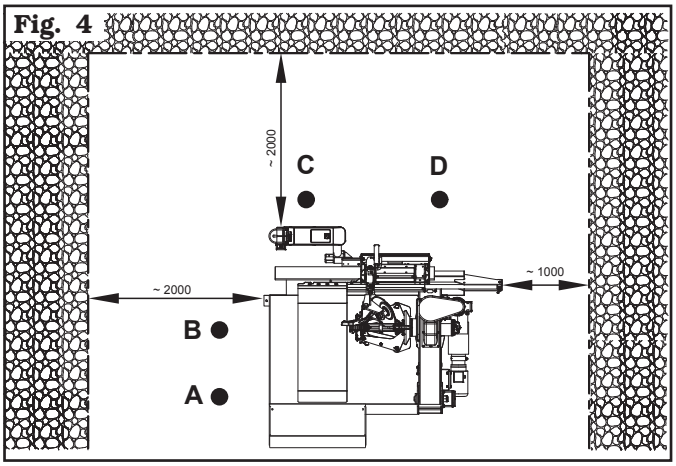
The use of the machine in ambient conditions other than those specified above is only allowed after prior agreement with and approval of the manufacturer.

8.1 Working position

In **Fig. 4** it's possible to define working positions **A, B, C, D** , which will be referred to in the description of machine operative phases.
Positions **A** and **B** must be considered as main positions for tyre mounting and demounting and for wheel clamping on the chuck, while positions **C** and **D** are the best positions to follow tyre bead breaking and demounting operations.
Working in these positions allows better precision and speed during operating phases as well as greater safety for the operator.

8.2 Installation space

Fig. 4



INSTALL THE MACHINE INDOORS OR IN A ROOFED AREA. PLACE OF INSTALLATION MUST BE DRY, ADEQUATELY LIT AND IN COMPLIANCE WITH APPLICABLE SAFETY REGULATIONS.

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 secured to 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 guarantee the tightness of the anchor plugs.

8.3 Lighting

The machine does not require its own lighting for normal working operations. However, it must be placed in an adequately lit environment.
For correct lighting, use lamps having total power 800/1200 Watt as envisaged by UNI 10380.

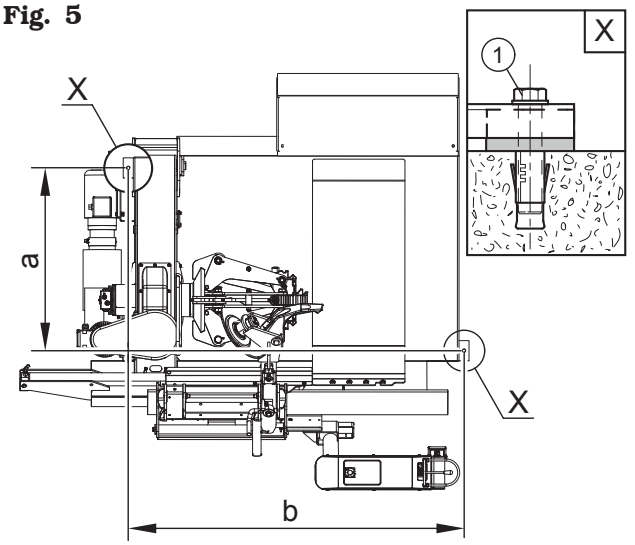
9.0 MACHINE ASSEMBLY

ANY MECHANICAL ATTACHMENTS MUST BE CARRIED OUT BY QUALIFIED STAFF

9.1 Anchoring system

The packed machine is fixed to the support pallet through the holes prearranged on the chassis. Such holes can be used also to secure the machine to the ground, through floor anchors (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**.

Fig. 5



Applies to model with air control unit	Applies to model with control box
a = 912 **b** = 1664	**a** = 967 **b** = 1974

- Execute 4 holes with 12 mm diameter on the floor by the holes on the bottom floor;
- insert the anchors (excluded from supply) into the holes;
- secure the machine to the ground with 4 M12x120 mm bolts (excluded from supply) (**Fig. 5 ref. 1**) (or with 4 12x80 mm stud bolts (excluded from supply)). Tighten the bolts with an approximate tightening torque of 70 Nm.

9.2 Accessories contained in the packing

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

Description	Qty
Bead lever	**1**

10.0 ELECTRICAL CONNECTIONS

ANY ELECTRICAL ATTACHMENTS MUST BE CARRIED OUT BY 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 a cable. A plug corresponding to the following requirements must be connected to the cable:
For any other type of power supply, ask the manufacturer at the time of purchase: a machine functioning under the required voltage conditions will be prepared.

FIT A TYPE-APPROVED PLUG TO THE MACHINE CABLE (THE GROUND WIRE IS YELLOW/GREEN AND MUST NEVER BE CONNECTED TO ONE OF THE 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).

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

Models	Conformity standard	Voltage	Amperage	Poles	Minimum IP rating
Standard	IEC 309	400 V	16 A	3 Poles + Ground	IP 44
Version with pedalboard with rotation					
Inverter			32 A		
220 V - 1 Ph - 50 Hz version		220 V	25 A	2 Poles + Ground	IP 54
220 V - 1 Ph - 60 Hz version					
220 V - 3 Ph - 60 Hz version		230/400 V		3 Poles + Ground	
230 V - 1 Ph - 50 Hz version		230 V	32 A	2 Poles + Ground	
230 V - 1 Ph - 60 Hz version					
400 V - 3 Ph - 60 Hz version		400 V		3 Poles + Ground	
220 V - 3 Ph - 50 Hz version		220 V	25 A		

10.1 Oil check on oil-pressure power unit

ANY OIL-PRESSURE ATTACHMENTS MUST BE CARRIED OUT BY QUALIFIED STAFF

THE OIL-PRESSURE POWER UNIT IS DELIVERED WITHOUT HYDRAULIC OIL, THEREFORE MAKE SURE THE TANK PROVIDED IS FILLED WITH AN APPROXIMATE AMOUNT OF OIL OF 3 LITRES, ALWAYS BEING CAREFUL NOT TO SPILL IT OUTSIDE THE TANK.
USE HYDRAULIC OIL WITH A VISCOSITY DEGREE APPROPRIATE TO THE AVERAGE TEMPERATURES IN THE INSTALLATION COUNTRY AND IN PARTICULAR:
- **VISCOSITY 32 (FOR COUNTRIES WITH ROOM TEMPERATURE FROM 0 TO 30 DEGREES);**
- **VISCOSITY 46 (FOR COUNTRIES WITH ROOM TEMPERATURE ABOVE 30 DEGREES).**

10.2 Check of motor rotation direction

Once the last electrical connection has been completed, power the machine with the main switch. Make sure the motor of the hydraulic power unit rotates in the direction indicated by the arrow (**Fig. 6A-6B-6C-6D ref. B.**) visible on the electric motor cap. If rotation should occur in the opposite direction, the machine must be immediately stopped and phase inversion must be executed inside the plug connection in order to reset the correct rotation direction.

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

10.3 Electrical checks

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

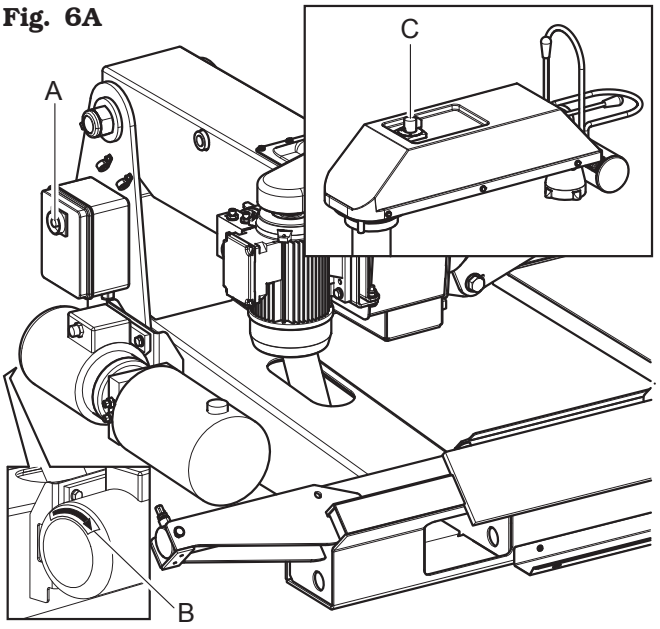
CARRY OUT A DAILY CHECK OF THE HOLD-TO-RUN CONTROL CORRECT FUNCTIONING, BEFORE STARTING MACHINE OPERATION.

Once the plug/socket connection has been made, turn on the machine using the main switch (**Fig. 6A-6B-6C-6D ref. A**).

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

Applies to model with air control unit

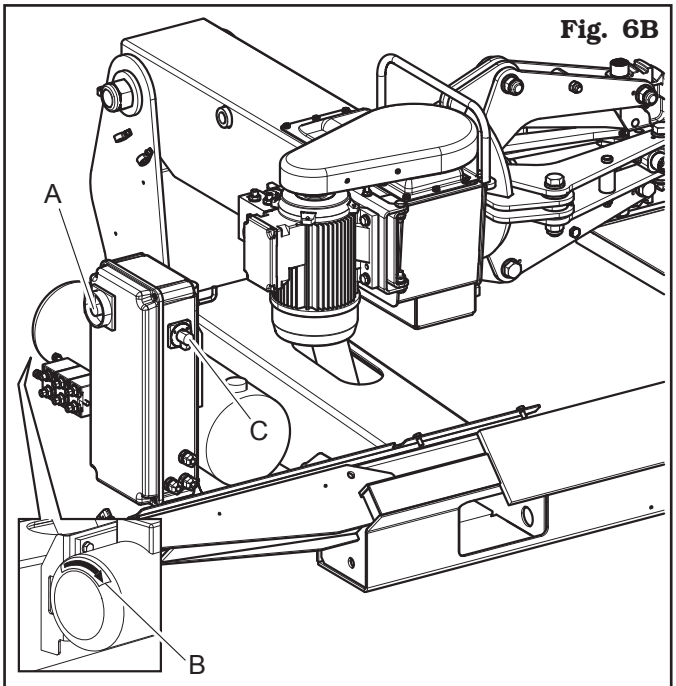
Fig. 6A



KEY
A – Main switch
B – Rotation direction of power unit motor
C – Selector 1-0-2 self-centring chuck speed control

Applies to model with control box

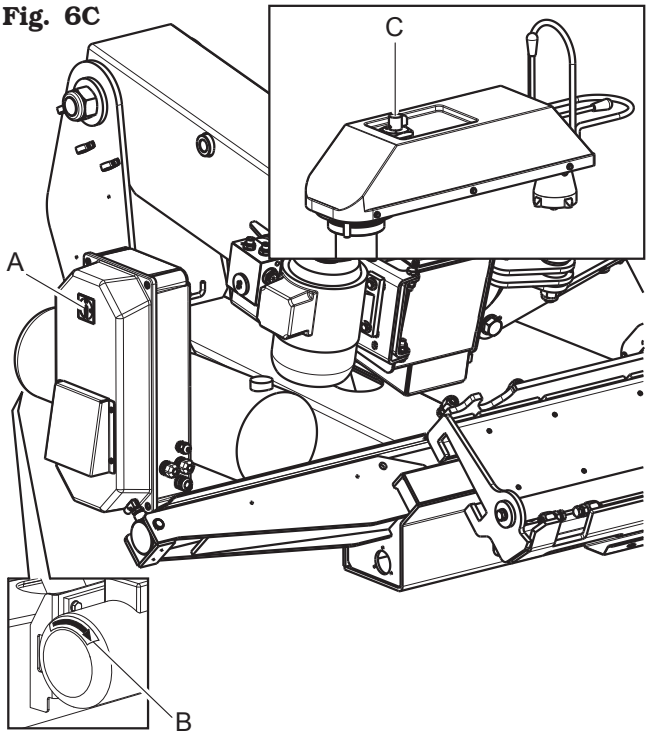
Fig. 6B



KEY
A – Main switch
B – Rotation direction of power unit motor
C – Selector 1-0-2 self-centring chuck speed control

Version with inverter applies to model with air control unit

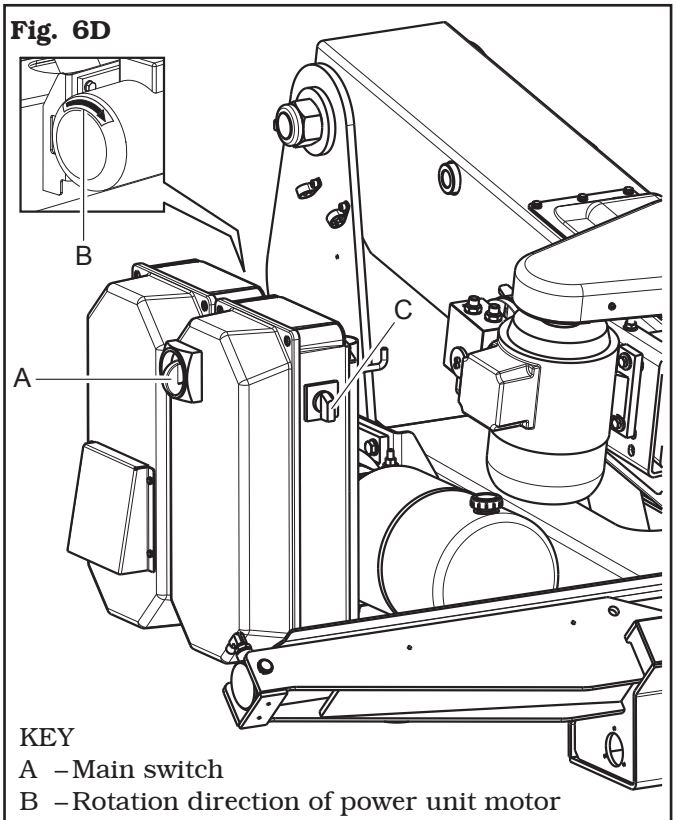
Fig. 6C



KEY
A – Main switch
B – Rotation direction of power unit motor
C – Selector 1-0-2 self-centring chuck speed control

Version with inverter applies to model with control box

Fig. 6D



KEY
A – Main switch
B – Rotation direction of power unit motor
C – Selector 1-0-2 self-centring chuck speed control

11.0 CONTROLS

11.1 Control device (applies to model with air control unit)

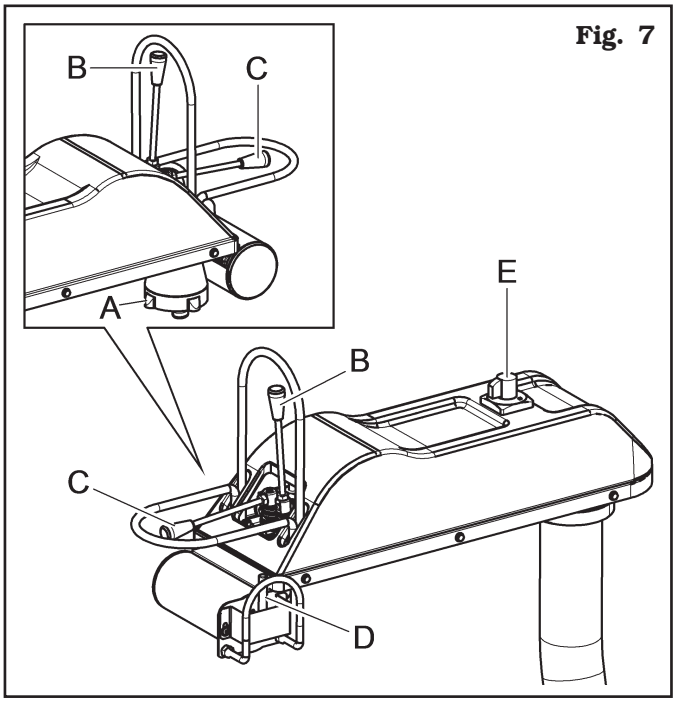
The control (handle control) can be moved according to the positioning necessities of the operator.

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

The control (**Fig. 7**) consists of:

- **"A"** lower selector (with protection) three-positions control for opening and closing of wheel holder chuck: a central "firm" position for stop of chuck opening/closing movement and two "hold activation" positions for chuck jaws opening/closing;
- **"B" lever** three-positions control for tools holder carriage movement: a central "firm" position for movement stop and two "hold activation" positions for carriage supporting movement towards the chuck and return;
- **"C" lever** three-positions control for vertical movement of chuck arm: central "firm" position for movement stop and two "hold activation" positions for arm up and down movement;
- **"D" lever** control chuck anticlockwise/clockwise rotation;
- **"E" selector**, three-positions, for chuck rotation speed: position "0" for movement stop, position "1" for low speed and position "2" for high speed.

Fig. 7



11.2 Control device (applies to model with version with pedalboard with rotation)

This control device consists of 2 units:

- control unit on machine,
- ground control unit.

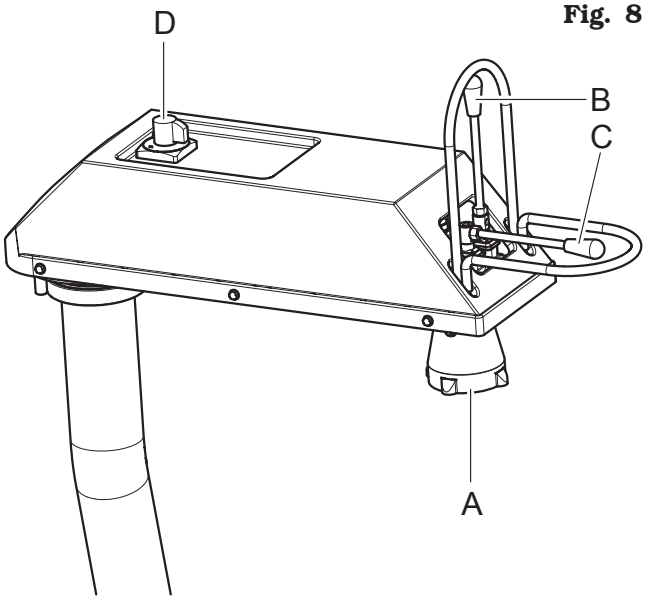
The control unit on machine (see **Fig. 8**) can be moved according to the positioning necessities of the operator.

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

The control (**Fig. 8**) consists of:

- **"A"** lower selector (with protection) three-positions control for opening and closing of wheel holder chuck: a central "firm" position for stop of chuck opening/closing movement and two "hold activation" positions for chuck jaws opening/closing;
- **"B" lever** three-positions control for tools holder carriage movement: a central "firm" position for movement stop and two "hold activation" positions for carriage supporting movement towards the chuck and return;
- **"C" lever** three-positions control for vertical movement of chuck arm: central "firm" position for movement stop and two "hold activation" positions for arm up and down movement;
- **"D" selector**, three-positions, for chuck rotation speed: position "0" for movement stop, position "1" for low speed and position "2" for high speed.

Fig. 8



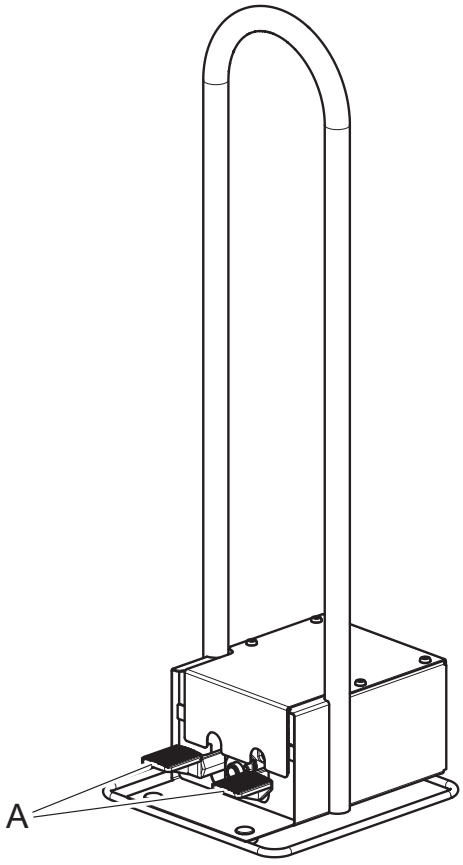
The ground control unit (see **Fig. 9**) can be moved according to the positioning necessities of the operator. The operator should place the control in a zone free from obstacles in order to see clearly and completely the operative zone.

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

The "pedals **A**" operate the cw and ccw chuck rotation.

THE HANDLE MUST NOT BE PLACED WHERE WATER STAGNATES.

Fig. 9



11.3 Control device (applies to model with control box assembly)

The ground control unit (**Fig. 10**) can be moved according to the positioning necessities of the operator. The operator should place the control in a zone free from obstacles in order to see clearly and completely the operative zone.

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

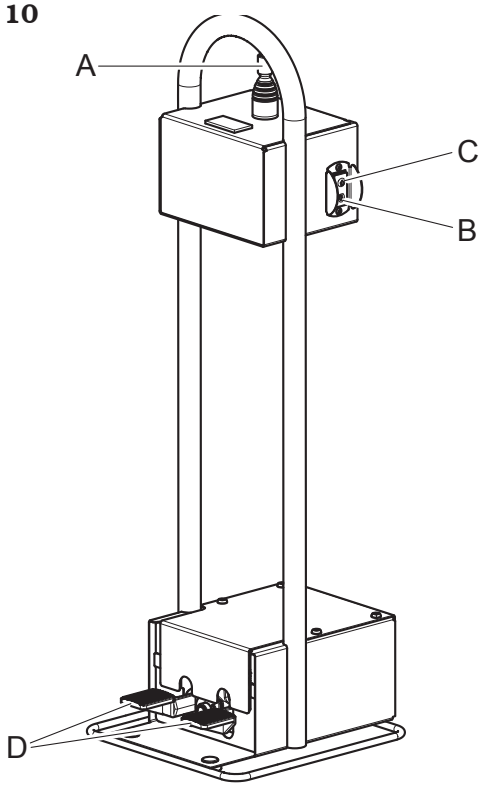
"Lever **A**" has four hold-to-run control operative positions:

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

"Push button **B**" has one hold-to-run control operative position, and once it is pressed, it operates the self-centring chuck opening.
"Push button **C**" has one hold-to-run control operative position, and once it is pressed, it operates the self-centring chuck closing.
The "pedals **D**" operate the cw and ccw chuck rotation.

THE HANDLE MUST NOT BE PLACED WHERE WATER STAGNATES.

Fig. 10



12.0 USING THE MACHINE

12.1 Precaution measures during tyre removal and fitting

Before fitting a tyre, observe the following safety rules:

- always use clean, dry and in good condition rims and tyres; in particular, if necessary, clean the rims after all the old balancing weights (as well as the adhesive weights on the inner side) have been removed, and make sure that:
  - neither the bead nor the tread of the tyre are damaged;
  - the rim does not have any dents and/or deformations (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 the tyre beads, using specific tyre lubricants only;
- replace the inner tube valve with a new valve, if the tyre pipe has a metal valve, replace the grommet;
- always make sure that tyre and rim sizes are correct for their coupling; never fit a tyre unless you are sure it is of the right size (the rated size of rim and tyre is usually printed directly on them);
- do not use compressed air or water jets to clean the wheels on the machine.

12.2 Preliminary operations

In view of the tyre changer structure and of its intended use, the operator must work with wheels with large diameter (up to 2300 mm) and heavy wheels (up to 1700 kg).
The utmost care while moving the wheels is recommended: make use of other operators, properly trained and with suitable clothes.

THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 6A-6B-6C-6D REF. C). LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT.
THE CAREFUL LUBRICATION OF THE TYRE BEADS IS RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.

12.3 Preparing the wheel

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

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

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

12.4 Wheel clamping

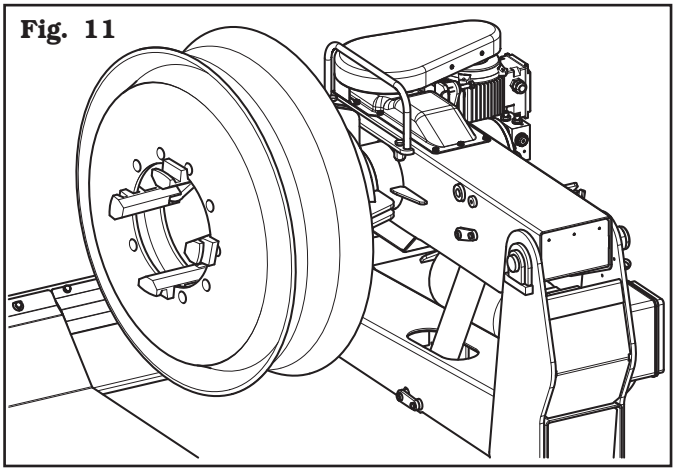
DUE TO THE DIMENSIONS AND WEIGHT OF THE WHEEL TO BE LOCKED, MAKE USE OF A SECOND OPERATOR TO HOLD THE WHEEL INTO VERTICAL POSITION, IN ORDER TO ENSURE SAFE OPERATIVE CONDITIONS.

IN CASE OF HANDLING WHEELS WEIGHING MORE THAN 500 KG. THE USE OF A FORKLIFT OR A CRANE IS RECOMMENDED.

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

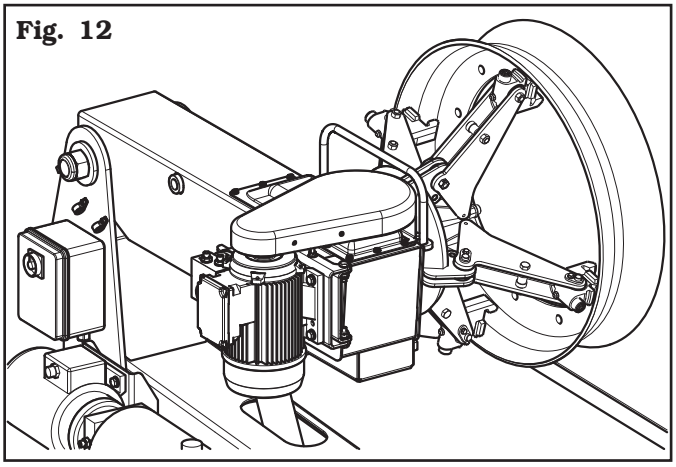
DO NOT CHANGE THE SET OPERATING PRESSURE VALUE BY MEANS OF THE MAXIMUM PRESSURE VALVES. THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR INJURY OR DAMAGE ARISING FROM UNAUTHORISED CHANGES.

Fig. 11



Clamping on the central hole

Fig. 12



Clamping on bead seat

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

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

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

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

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

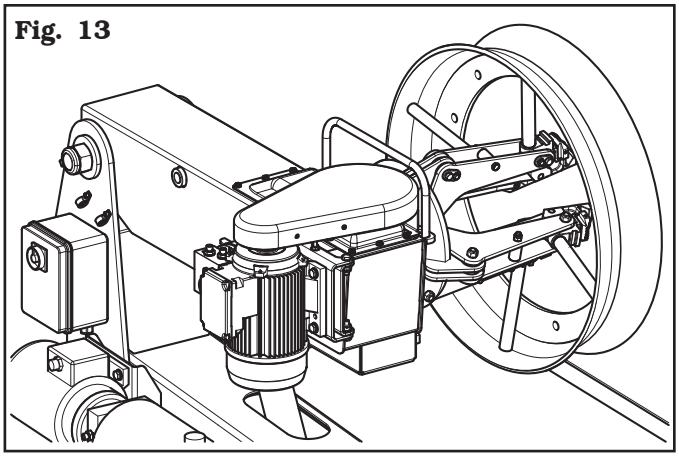
To clamp the wheel proceed as follows:

- Move the tool holder arm to “off-work” position (**Fig. 15 ref. 1**);
- Move the movable footboard (**Fig. 1 ref. 20**) outside. Make the wheel rotate on the same footboard;
- Place the lock chuck (**Fig. 1 ref. 5**) approximately in the centre of the wheel; move the footboard towards the chuck and centre the wheel on it, in the most suitable position using the corresponding control levers;
- Adjust the opening of the self-centring chuck through the corresponding control (**Fig. 7 ref. A** and **Fig. 10 ref. B**) according to the type of rim to be locked;
- Lock the rim with the lock chuck (**Fig. 1 ref. 5**);
- Make sure the rim is always correctly locked and centred, and the wheel is lifted from the machine platform, in order to prevent the rim from slipping in the following operations.

KEEP ON OPERATING RIM CLAMPING CONTROL, UNTIL REACHING THE MAX. OPERATING PRESSURE (170 BAR), WHICH CAN BE CHECKED THROUGH THE PREARRANGED PRESSURE GAUGE.

THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 6A-6B-6C-6D REF. C). LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT.
THE CAREFUL LUBRICATION OF THE TYRE BEADS IS RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.

Fig. 13



Locking with extensions

Whenever the rim exceeds the 43” in the locking point, use the appropriate extensions (optional). To avoid damages or scratches on light alloy rims, the special jaws supplied with the tyre changer as an optional should be used.

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

THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 6A-6B-6C-6D REF. C). LOW SPEED IS RECOMMENDED FOR WHEELS WITH GREAT DIAMETER AND WEIGHT.
THE CAREFUL LUBRICATION OF THE TYRE BEADS IS RECOMMENDED, IN ORDER TO PROTECT THEM FROM POSSIBLE DAMAGES AND TO FACILITATE MOUNTING AND DEMOUNTING OPERATIONS.

12.5 Functioning of tool holder arm

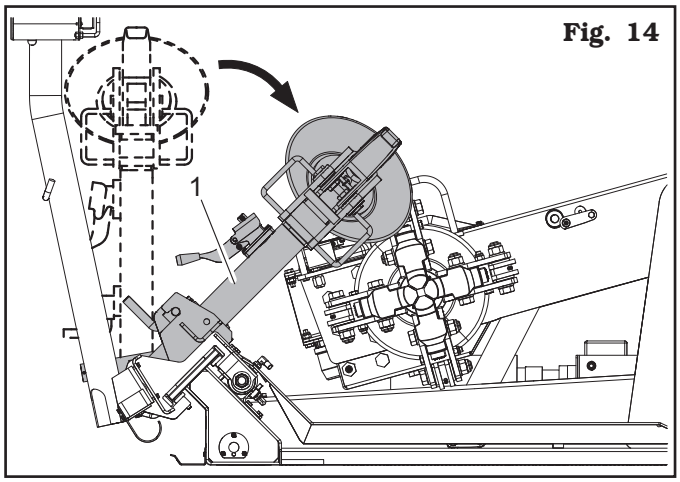
During the working phases, the tool holder arm can maintain two firm positions, that is:

1) “Working” position;

2) “off-work” position.

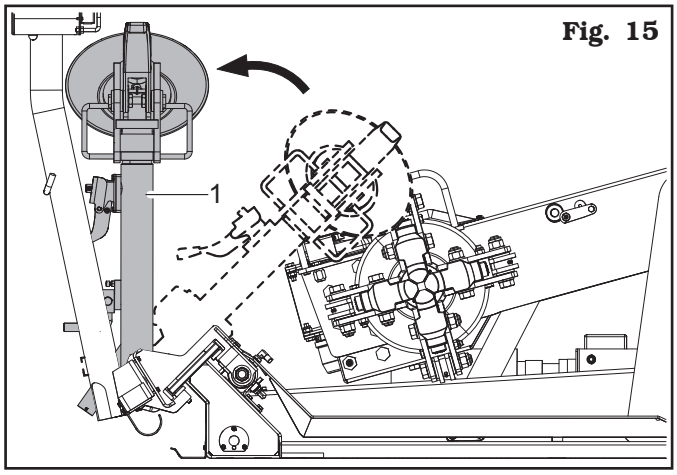
In “working” position (**Fig. 14 ref. 1**) the tool holder arm is lowered towards the chuck and from this position it executes the various tyre bead breaking, demounting and mounting operations.

Fig. 14



In “off-work” position (**Fig. 15 ref. 1**): the tool holder arm is in vertical position and has to be brought in this position every time it is not in use and in order to be shifted from one tyre side to another, during the different working phases.

Fig. 15



The tool holder arm, shifts from “off-work” position to “working” position and vice versa manually.

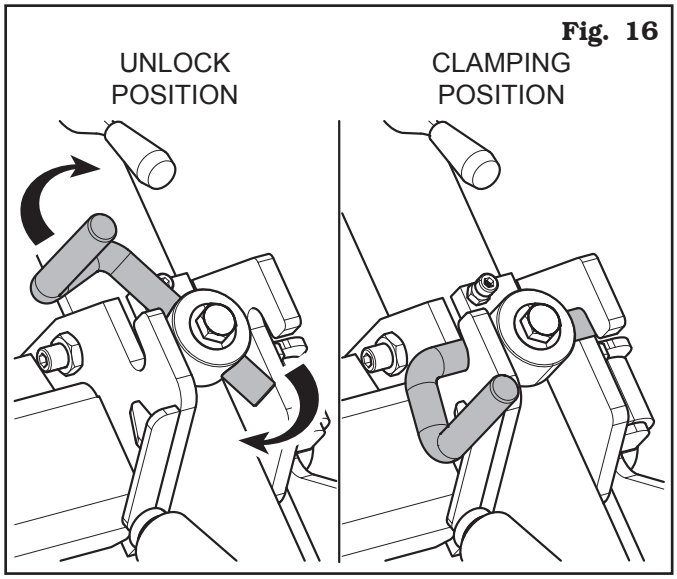
IN WORK POSITION, THE SAFETY JACKS (FIG. 1 REF. 23) (STANDARD ON SOME MODELS) MUST BE HOOKED TO THE TOOL CARRIAGE (FIG. 1 REF. 13).

Standard on some models

IN WORK POSITION, THE COUPLING LEVER (FIG. 1 REF. 22) MUST BE CORRECTLY HOOKED TO THE TOOL CARRIAGE CLAMPING PROFILES (SEE FIG. 16).

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

Fig. 16



Standard on some models

IN WORK POSITION, THE SAFETY JACKS (FIG. 1 REF. 23) MUST BE HOOKED TO THE TOOL CARRIAGE (FIG. 1 REF. 13).

To shift from “working” position to “off-work” position and vice versa, the tools holder arm moves by pushing the pedal provided (**Fig. 1 ref. 24**).

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

12.5.1 Tools rotation

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

The machine, equipped with a quick-fit tool, remarkably facilitates the tools assembly extraction/rotation operations. Here follows the description of these operations:

TOOL ROTATION

To rotate the tool head (**Fig. 17** and **Fig. 18 ref. 1**) (both in lower position (**Fig. 18 ref. 2**) and in upper position (**Fig. 17 ref. 3**)) just push the unlocking lever (**Fig. 17** and **Fig. 18 ref. 4**) towards the tool arm. When the new work position of the head is reached (**Fig. 17** and **Fig. 18 ref. 1**) the lever (**Fig. 17** and **Fig. 18 ref. 4**) automatically inserts locking its rotation.

Fig. 17

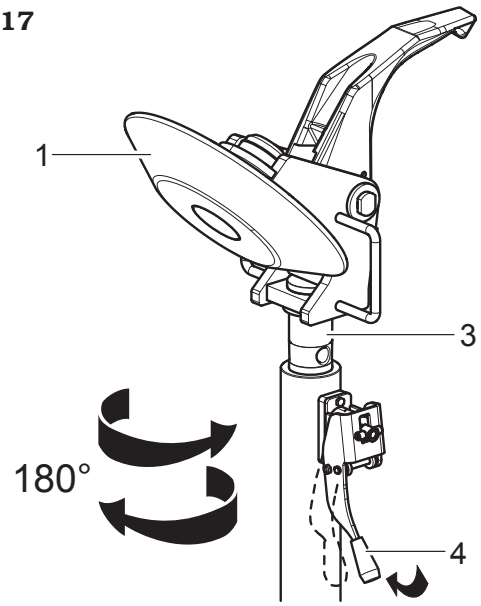
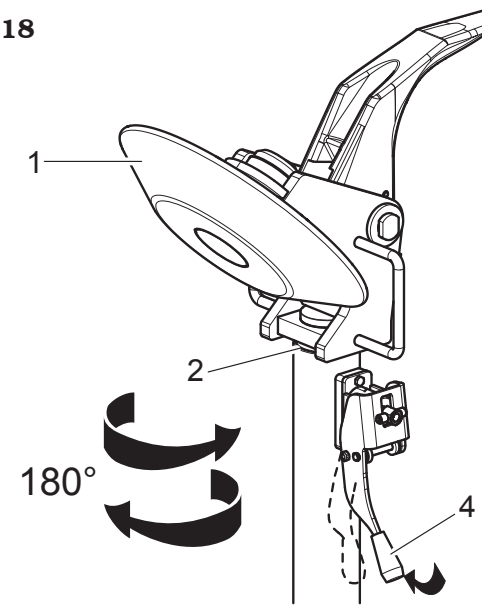


Fig. 18



TOOL EXTRACTION

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

1) Push the lever (**Fig. 19 ref. 1**) towards the tool arm and place the head (**Fig. 19 ref. 2**) at 90° compared to the work position.
2) Lift the head manually until the pin fits automatically.
3) Now the head (**Fig. 20 ref. 1**) stays up, allowing easily the rotation operations described before.

Fig. 19

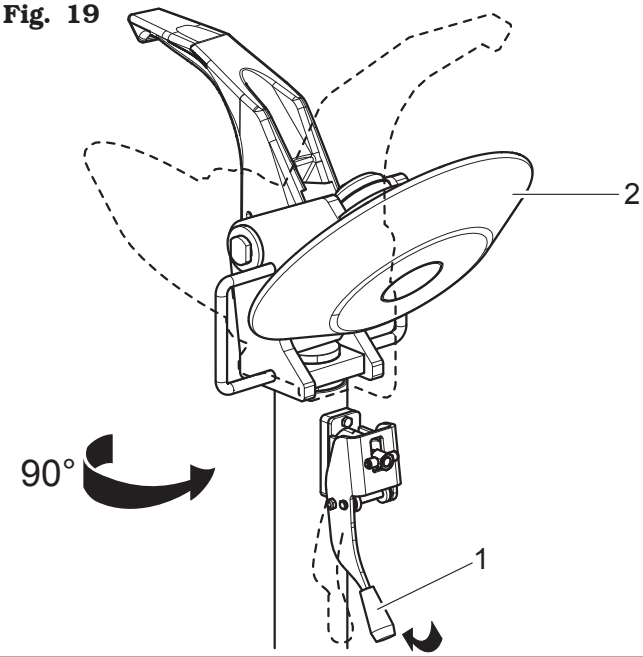
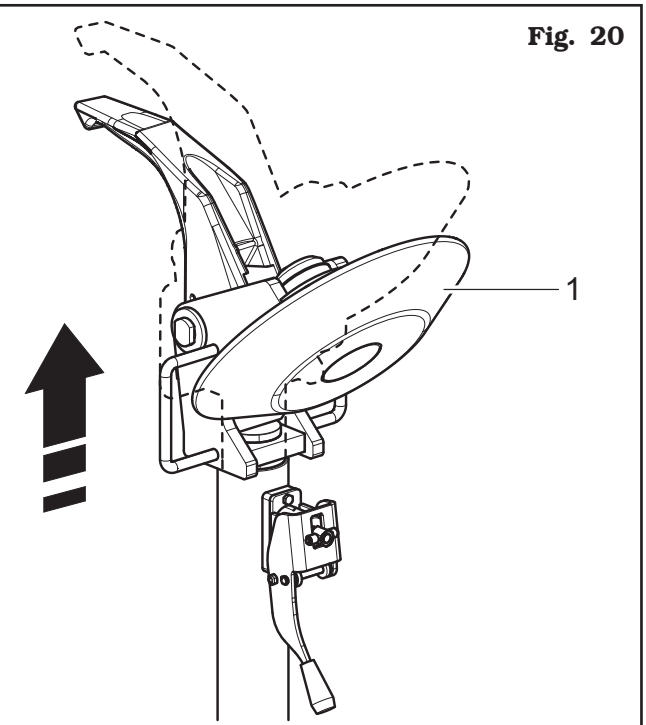


Fig. 20



TOOL INTRODUCTION

1) Push the lever (**Fig. 21 ref. 1**) towards the tool arm and place the head (**Fig. 21 ref. 2**) at 90° compared to the work position.
2) Lower the head (**Fig. 22 ref. 1**) manually, until the locking pin fits automatically.

DURING THIS OPERATION, WITH THE HAND LEFT FREE, MOVE THE HEAD (FIG. 22 REF. 1) DOWNWARDS.

3) At this point, it is possible to rotate the head (**Fig. 22 ref. 1**) as described before.

PAY ATTENTION NOT TO SQUASH THE HANDS BETWEEN THE TOOL SUPPORT AND THE ARM!

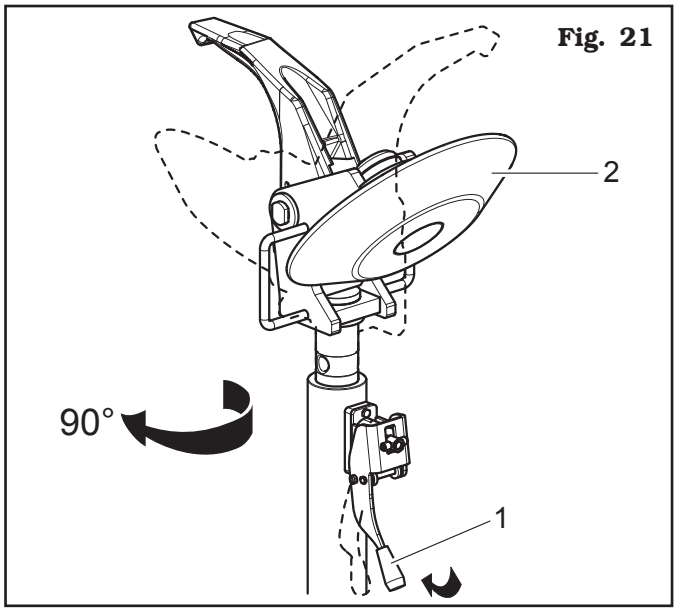


Fig. 21

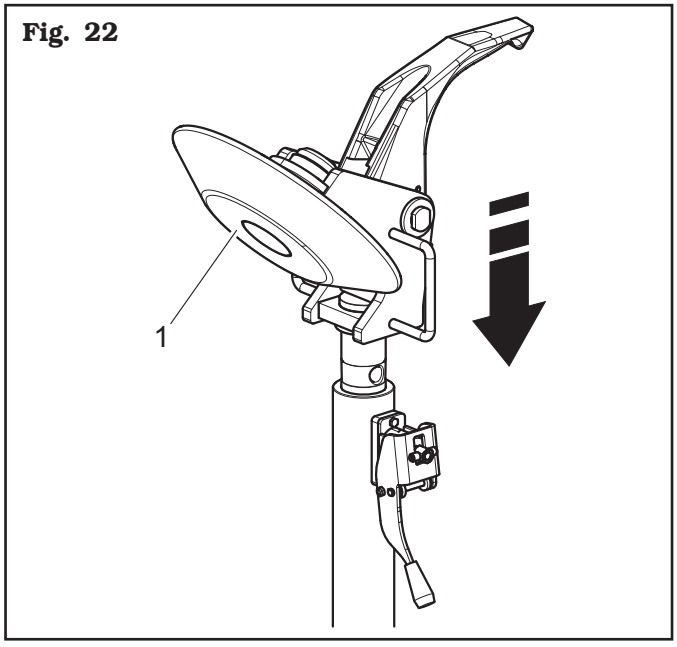


Fig. 22

12.6 Tubeless tyres

12.6.1 Bead breaking

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

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

A. Lock the wheel on the chuck as described in the previous paragraph.

B. Remove all balancing weights from the rim. Extract the valve and let air out of tyre.

C. Move to work position **C** (**Fig. 4**).

D. Lower tools holder arm into work position (hooked safety jack) (**Fig. 14**).

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

E. Place as shown in **Fig. 23** the bead breaker disc (**Fig. 23 ref. 1**) by means of the relevant handle control; the outer profile of the rim (**Fig. 23 ref. 2**) must almost touch the bead breaker disc.

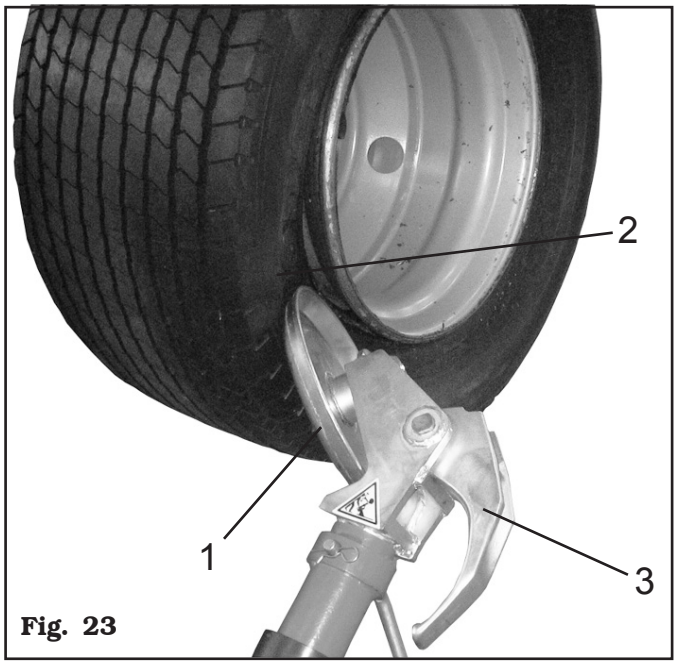


Fig. 23

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

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

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

G. Once external beading has been carried out, unhook and lift the tool holder arm placing it to "off-work" position (**Fig. 15 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel, then place it in "working position" (**Fig. 14 ref. 1**) and secure it with the special safety jack.

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

H. Carry out the tools holder head 180° rotation according to the descriptions of the relevant paragraph, so that the beading disc (**Fig. 24 ref. 1**) is placed against the rim edge (**Fig. 24 ref. 2**).

I. Move to work position **D** (**Fig. 4**) and repeat the operations described in points **E**, **F** until the tyre has been completely beaded.

Throughout beading operations it is advisable to bend the hook tool (**Fig. 23** and **Fig. 24 ref. 3**) back to itself to avoid obstacles during the operating phases.

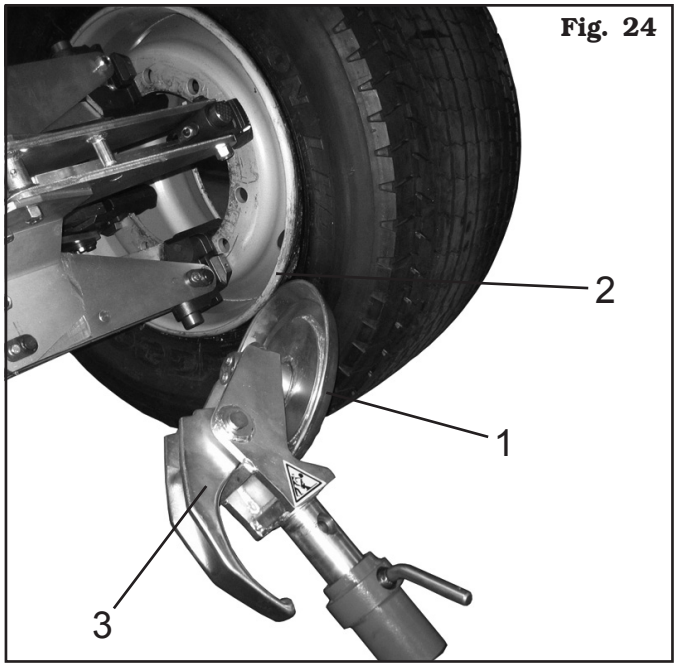


Fig. 24

12.6.2 Demounting

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

Tubeless tyres can be removed in two ways:

A. If the wheel does not present particular problems, continuing beading operation will completely dislodge the beads from the rim. The inner bead, pushed by the disc, presses against the outer one till it has been completely removed (see **Fig. 25**).

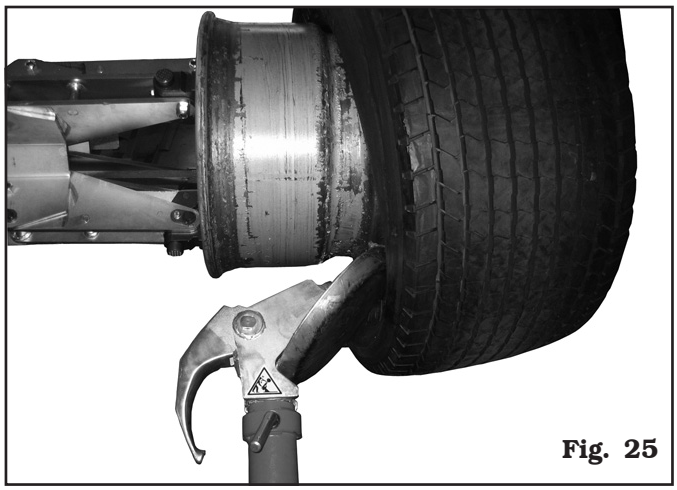
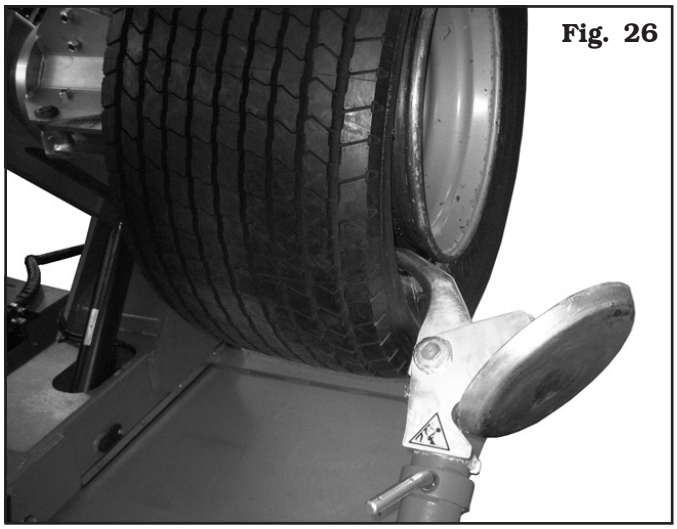


Fig. 25

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

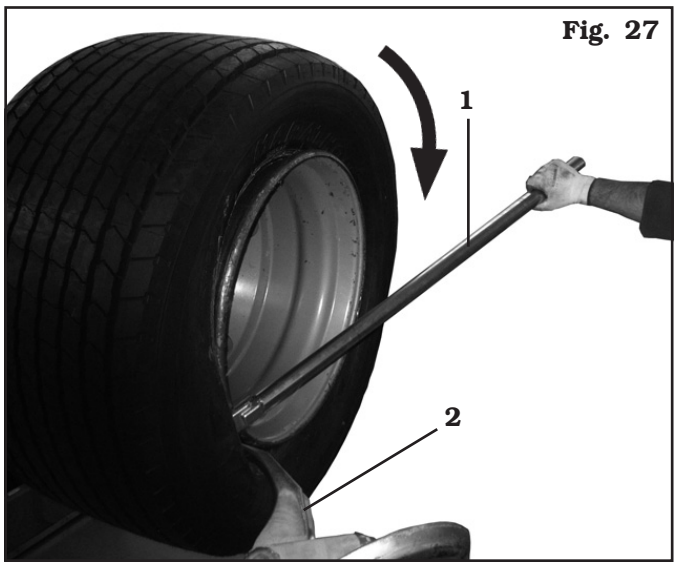
- Move to work position **C** (**Fig. 4**).
- Position the tool holder arm on the outer side of the wheel and bring forward the hook tool, inserting it between rim and bead up to it is secured to the bead itself (see **Fig. 26**).

Fig. 26



- Move the rim away from the tool by about 4-5 cm to avoid possible unhooking of the bead from the same tool.
- Move to work position **A** (**Fig. 4**).
- Translate the tool outwards (**Fig. 27 ref. 2**) to allow easy insertion of lever (**Fig. 27 ref. 1**) between the rim and the bead; insert lever (**Fig. 27 ref. 1**)) between the rim and the bead on the right-hand side of the tool (**Fig. 27 ref. 2**).

Fig. 27

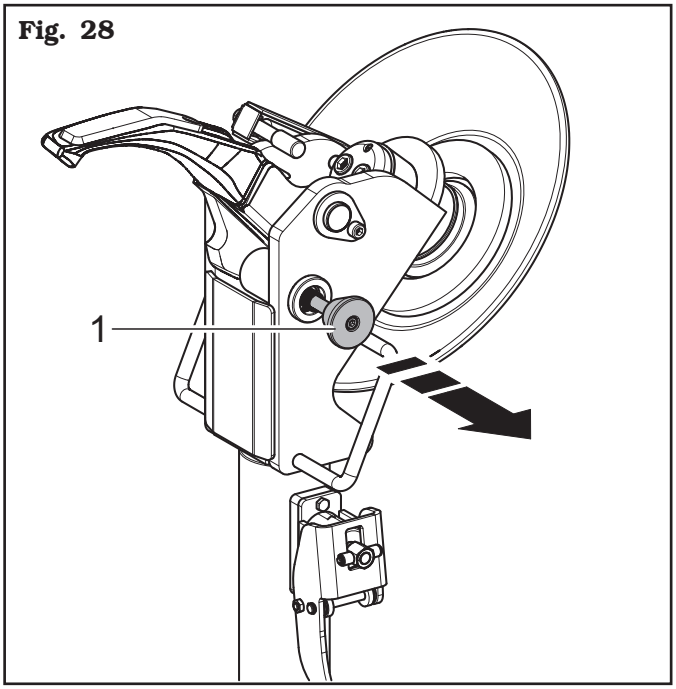


- Keeping the lever pressed, lower the wheel until the edge of the rim is 5 mm distant from the hook tool.
- Turn the wheel clockwise keeping lever pressed (**Fig. 27 ref. 1**) until the bead has gone completely out.

Optional

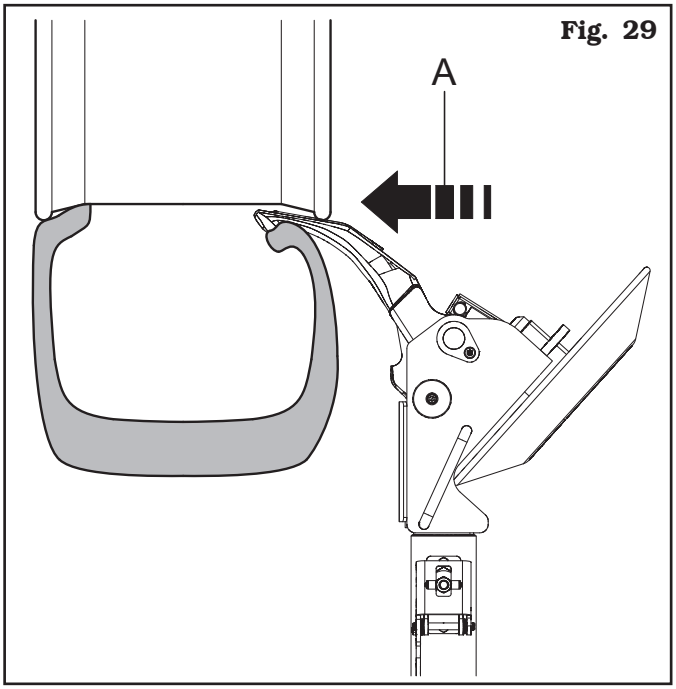
BEFORE STARTING DEMOUNTING THE 1ST BEAD THE SPRING LOCKING DEVICE OF THE TOOL MUST BE EXTRACTED OUTWARDS (FIG. 28 POS. 1).

Fig. 28



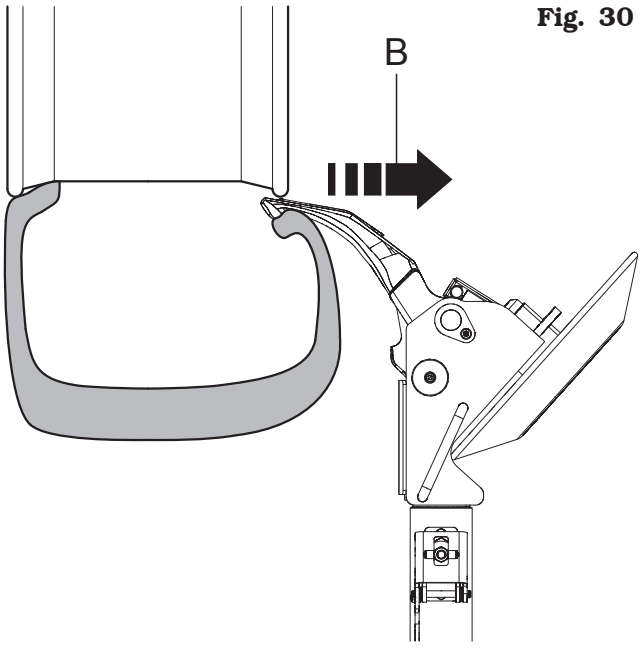
- Position the tool holder arm on the outer side of the wheel and bring forward the hook tool, inserting it between rim and bead until it is secured to the bead itself (see **Fig. 29 ref. A**).

Fig. 29



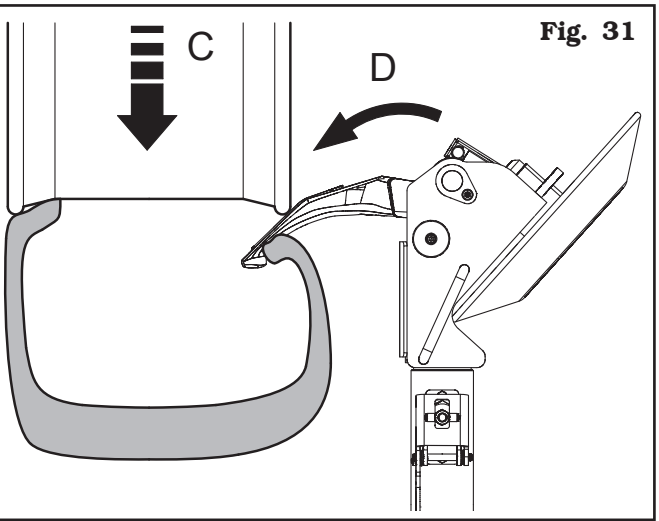
• Translate the tool outwards (**Fig. 30 ref. B**) until the first bead is brought outside the rim.

Fig. 30



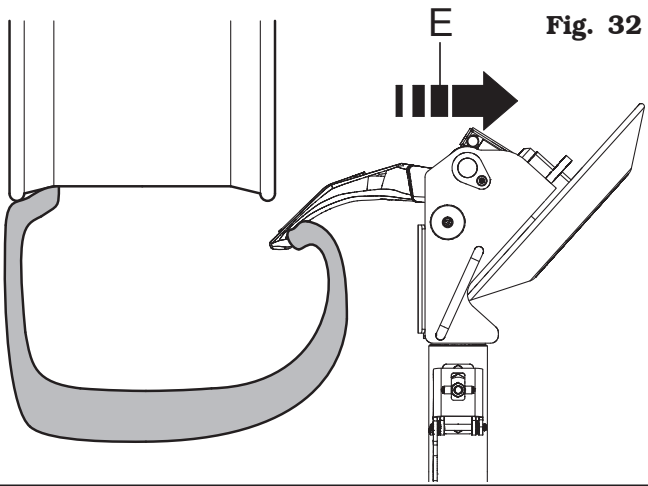
• Lower the chuck (**Fig. 31 ref. C**) up to locking the tool in the extraction position (**Fig. 31 ref. D**).

Fig. 31



• Translate the tool outwards (**Fig. 32 ref. E**) up to the bead is brought to mounting position.

Fig. 32



• Then rotate the wheel clockwise until the first bead has completely gone out.

For all versions

• Once the external bead has been removed, move tool holder arm away from the wheel, unhook it and lift it bringing it to "off-work" position (**Fig. 15 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then place it to "working" position again (**Fig. 14 ref. 1**) and secure with the safety hook provided.

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

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

• Move to work position **D** (**Fig. 4**).

• Carry out the tool holder head 180° rotation in order to insert the hook tool (**Fig. 33 ref. 1**) between the rim edge and the tyre bead.

Fig. 33

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

THE REMOVAL OF THE BEADS FROM THE RIM CAUSES THE TYRE TO FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING BY ACCIDENT IN THE WORK AREA.

12.6.3 Mounting

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

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

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

With bead breaker disc

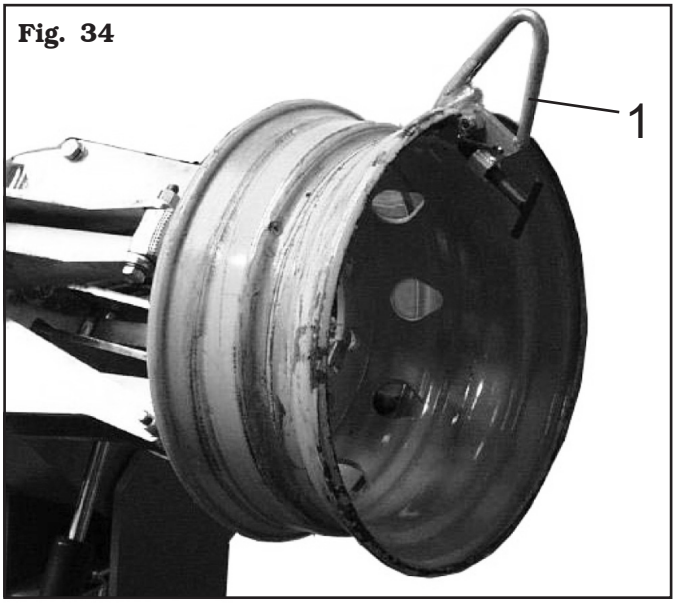
Proceed as follows:

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

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

- Mount pliers (optional) (**Fig. 34 ref. 1**) on the external edge of the rim in the highest point as shown in **Fig. 34**.

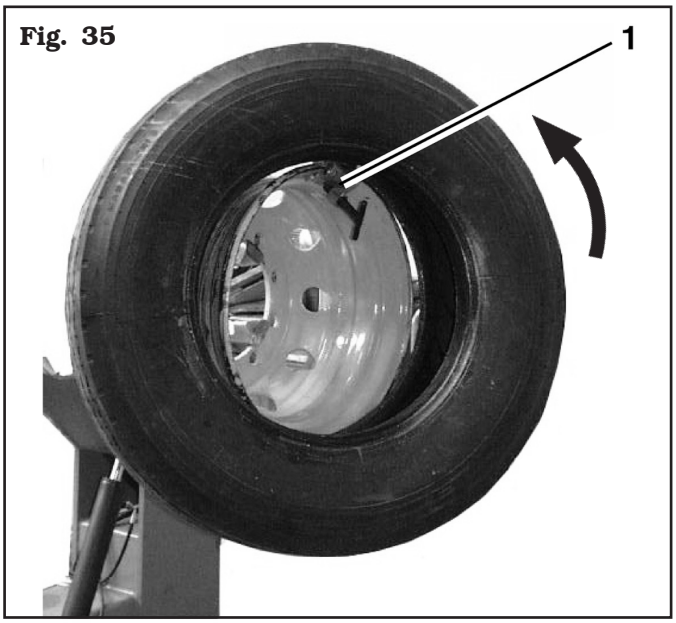
Fig. 34



THE PLIERS (OPTIONAL) MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

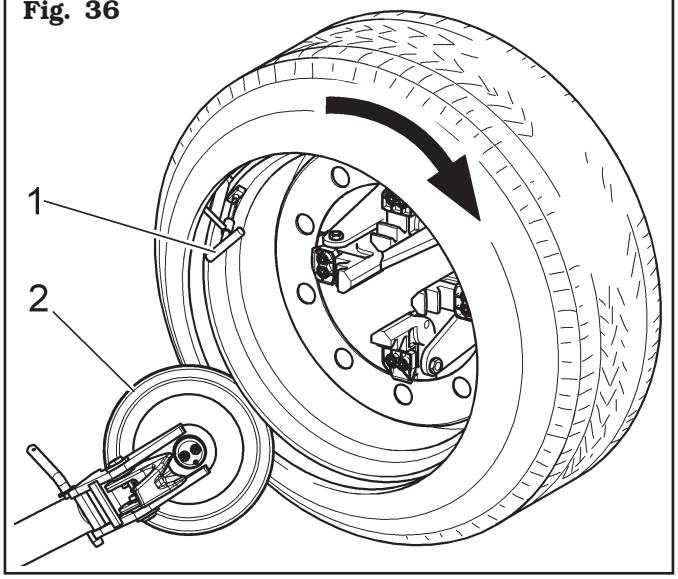
- Move to work position **B** (**Fig. 4**).
- Lower the chuck arm completely. Roll the tyre on the platform and hook it to clamp (**Fig. 35 ref. 1**).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm; the tyre will position itself sideways in relation to the rim (see **Fig. 35**).

Fig. 35



- Move to work position **C** (**Fig. 4**).
- Position bead breaker disc (**Fig. 36 ref. 2**) so that it is at approximately 1.5 cm (½”) from the edge of the rim. Fitting clamp (**Fig. 36 ref. 1**) is at “11 o’clock”. Turn the chuck until the pliers reach (optional) the lowest point (“6 o’clock”).

Fig. 36



- Move the bead breaker disc away from the wheel.
- Remove the pliers (optional) and fit them in the same position ("6 o'clock") outside the second bead.
- Turn the chuck 90° clockwise until the pliers (optional) are at 9 o'clock.
- Move the bead breaker disc forward up to it is inside the edge of the rim by about 1-2 cm, making sure it is approximately 5 mm from the profile. Start clockwise rotation making sure that, after a 90° turn, the second bead begins sliding in the rim drop centre.
- Once insertion is completed, move the tool away from the wheel, turn it over into "off-work" position and remove the pliers (optional).
- Lower the chuck until the wheel rests on the footboard.
- Move to work position **A** (**Fig. 4**).
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.

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

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

With hook tool

Proceed as follows:

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

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

- Mount pliers (optional) (**Fig. 34 ref. 1**) on the external edge of the rim at the highest point**.**

THE PLIERS (OPTIONAL) MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

- Move to work position **B** (**Fig. 4**).
- Lower the chuck arm completely. Roll the tyre on the mobile footboard and hook it to the pliers (optional) (**Fig. 35 ref. 1**).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm; the tyre will position itself sideways in relation to the rim (see **Fig. 35**).
- Place the tool holder arm to "off-work" position (**Fig. 15 ref. 1**); translate it to the inner side of the tyre and hook it again into "working" position (**Fig. 14 ref. 1**).
- Carry out the tools head 180° rotation up to the hook tool is moved onto the tyre side (see **Fig. 37**).

Fig. 37

- Move to work position **D** (**Fig. 4**).
- Move the tool forward until the reference notch matches the external edge of the rim coincide at about 5 mm from the rim itself.
- Move to work position **C** (**Fig. 4**).
- From the external side of the wheel, check the exact position of the tool and, if necessary, correct it. Then, turn the chuck clockwise until the pliers (optional) reach the lowest point ("6 o'clock"). The first bead should now be inserted in the rim.
- Remove the pliers (optional).
- Move to work position **D** (**Fig. 4**).
- Extract the tool from the tyre.
- Place the tool holder arm to "off-work" position (**Fig. 15 ref. 1**); translate it to the outer side of the tyre and hook it again into "working" position (**Fig. 14 ref. 1**).
- Carry out the tools head 180° rotation up to the hook tool is moved onto the tyre side (see **Fig. 26**).
- Mount the pliers (optional) in the lowest point (6 o'clock) outside the second bead.
- Move to work position **C** (**Fig. 4**).
- Turn the chuck 90° clockwise until the pliers (optional) are at 9 o'clock.
- Move the tool forward until the axis of the reference notch matches that of the external edge of the rim at about 5 mm from the rim itself (**Fig. 26**). Begin clockwise rotation making sure that, after a 90° turn, the second bead begins to slide in the rim drop centre. Turn until the pliers (optional) reach the lowest point ("6 o'clock"). The second bead should now be inserted in the rim.
- Move the tool away from the wheel, turn it over into "off-work" position and remove the pliers (optional).
- Lower the chuck until the wheel rests on the movable footboard.
- Move to work position **A** (**Fig. 4**).
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.

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

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

12.7 Tyres with inner tube

12.7.1 Bead breaking

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

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

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

12.7.2 Demounting

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

- Tilt up tool holder arm, unhook it and lift it placing it to "off-work" position (**Fig. 15 ref. 1**); use the handle control to position the tool holder arm on the outer side of the wheel then place it in working position (**Fig. 14 ref. 1**) and secure with the safety hook provided (**Fig. 1 ref. 23**).

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

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

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the tool by about 4-5 cm to avoid possible unhooking of the bead from the same tool.
- Translate the hook tool outwards until the reference notch matches the external edge of the rim.
- Move to work position **A** (**Fig. 4**).
- Insert lever (**Fig. 38 ref. 1**) between the rim and the bead on the right-hand side of the tool.

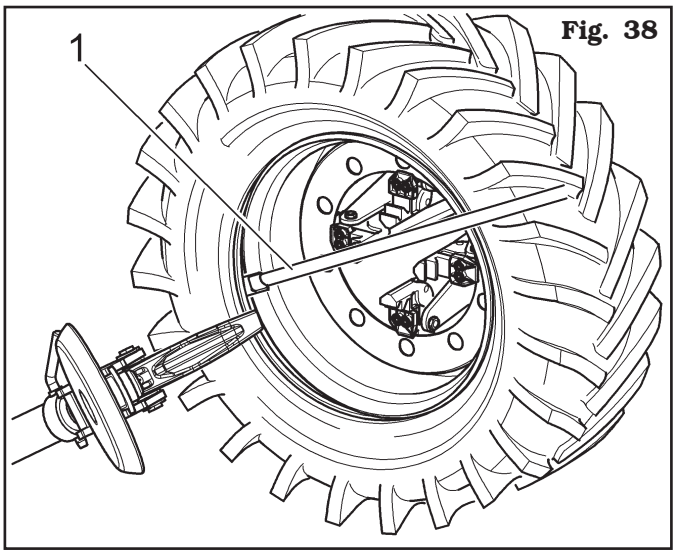


Fig. 38

- Keeping the lever pressed, lower the wheel until the edge of the rim is approximately 5 mm distant from the hook tool.
- Turn the wheel clockwise by keeping lever pressed until the bead has gone completely out.
- Move away the tool holder arm to "off-work" position (**Fig. 15 ref. 1**); lower the chuck until the tyre rests on the mobile footboard; exert a certain pressure on it; this will create enough space to extract the inner tube.
- Extract the inner tube and lift the wheel again.
- Move to work position **D** (**Fig. 4**).
- Tilt up tool holder arm, unhook it and lift it placing it to "off-work" position (**Fig. 15 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then place it to work position (**Fig. 14 ref. 1**) and secure with the safety hook provided (**Fig. 1 ref. 23**) (standard on some models).
- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the tool by about 4-5 cm to avoid possible unhooking of the bead from the same tool.
- Move to work position **A** (**Fig. 4**).
- Translate the hook tool outwards until the reference notch is 3 cm inside the rim.
- Insert the lever (**Fig. 39 ref. 1**) between rim (**Fig. 39 ref. 2**) and bead (**Fig. 39 ref. 3**) on the tool right.

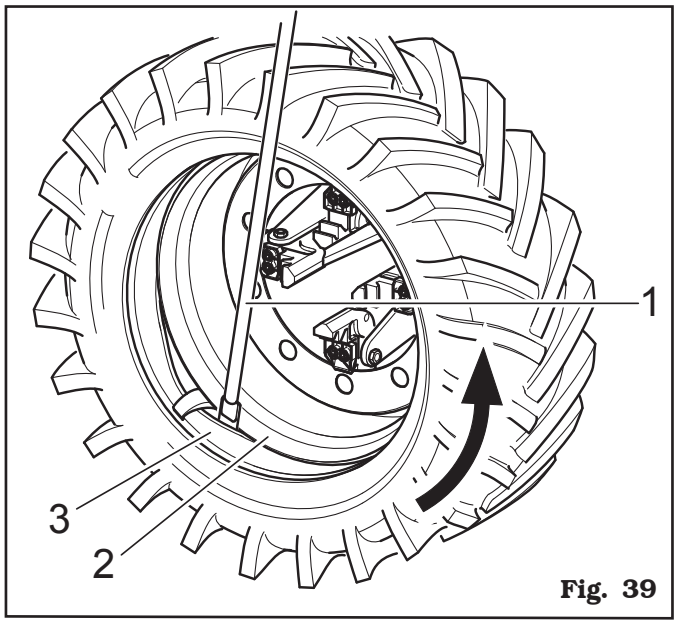


Fig. 39

- Keeping the lever pressed, lower the wheel until the edge of the rim is approximately 5 mm distant from the hook tool then turn the chuck counterclockwise keeping the lever (**Fig. 39 ref. 1**) pressed until the tyre has been completely dislodged from the rim.

THE REMOVAL OF THE BEADS FROM THE RIM CAUSES THE TYRE TO FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING BY ACCIDENT IN THE WORK AREA.

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

12.7.3 Mounting

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

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

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

- Mount pliers (optional) (**Fig. 34 ref. 1**) on the external edge of the rim in the highest point as shown in **Fig. 34**.

THE PLIERS (OPTIONAL) MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

- Move to work position **B** (**Fig. 4**).
- Position the tyre on the mobile footboard and lower the chuck (make sure that the pliers (optional) are at the highest point) to hook the first tyre bead (internal bead).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm; the tyre will position itself sideways with respect to the rim.
- Tilt up tool holder arm, unhook it and lift it placing it to "off-work" position (**Fig. 15 ref. 1**); use the handle control to position the tool holder arm on the inner side of the wheel then place it to "working position" (**Fig. 14 ref. 1**) and secure with the safety hook provided.

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

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

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move to work position **D** (**Fig. 4**).
- Move the tool forward until the axis of the reference notch matches that of the external edge of the rim at about 5 mm from the rim itself (see **Fig. 40**).

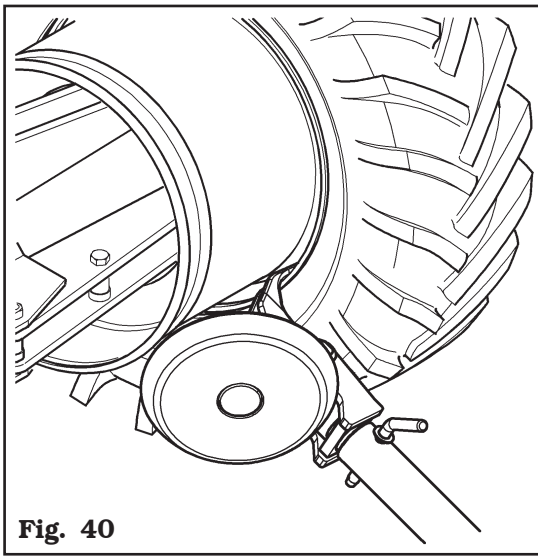


Fig. 40

- Move to work position **C** (**Fig. 4**).
- From the external side of the wheel, check the exact position of the tool and, if necessary, correct it. Then, turn the chuck clockwise until the pliers (optional) reach the lowest point ("6 o'clock"). The first bead should now be inserted in the rim, therefore remove the pliers (optional).
- Move to work position **D** (**Fig. 4**).
- Extract the tool hook from the tyre.
- Place the tool holder arm to "off-work" position (**Fig. 15 ref. 1**) and translate it to the outer side of the tyre.
- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph.
- Move to work position **B** (**Fig. 4**).
- Turn the chuck to position the hole to insert the valve downward ("6 o'clock").
- Lower the chuck until the wheel rests on the movable footboard. Translate the movable footboard to create enough space between the tyre edge and the rim to insert the inner tube.

THE VALVE HOLE COULD BE IN AN ASYMMETRIC POSITION WITH RESPECT TO THE CENTRE OF THE RIM. IN THIS CASE IT IS NECESSARY TO POSITION AND INTRODUCE THE INNER TUBE AS SHOWN IN FIGURE 46.

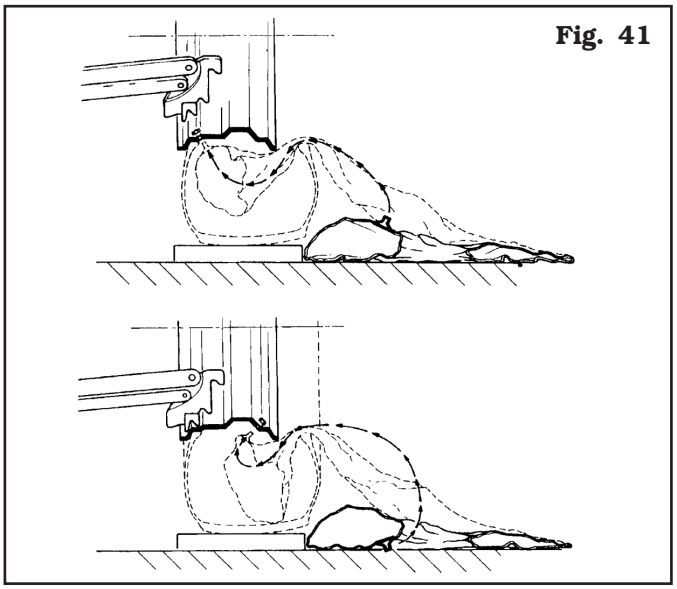


Fig. 41

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

- Turn the chuck and position the valve downwards ("6 o'clock").
- To avoid damaging the inner tube, slightly inflate it when inserting the second bead.
- To avoid damaging the valve when securing the second bead, remove the fixing ring nut and mount an extension on the same valve.
- Move to work position **C** (**Fig. 4**).
- Lift the chuck and mount the pliers (optional) (**Fig. 42 ref. 1**) on the rim outside the second bead at about 20 cm from the inflating valve on the right.
- Turn the chuck clockwise until pliers (optional) (**Fig. 42 ref. 1**) are at 9 o'clock.

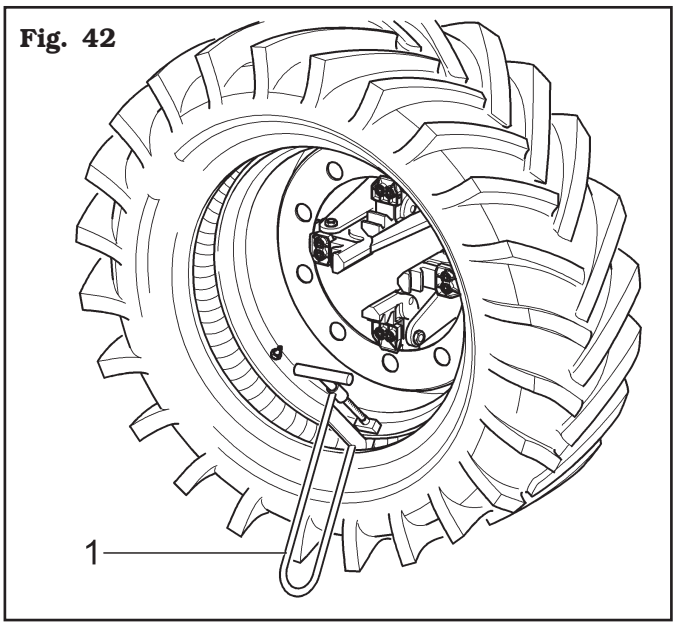


Fig. 42

- Place the tool holder arm to "working position" (**Fig. 14 ref. 1**) on the outer side of the tyre.
- Place the hook tool to work position and bring the tool holder arm forward until the axis of the reference notch matches that of the outer edge of the rim at a distance of 5 mm.
- Turn the chuck clockwise until lever (**Fig. 43 ref. 1**) is introduced in the housing obtained on the hook tool.
- Turn the chuck with lever (**Fig. 43 ref. 1**) hooked up to the complete insertion of the tyre outer bead.
- Remove lever (**Fig. 43 ref. 1**), pliers (optional) (**Fig. 43 ref. 2**) and extract the hook tool by turning the chuck counterclockwise and translating it outwards.

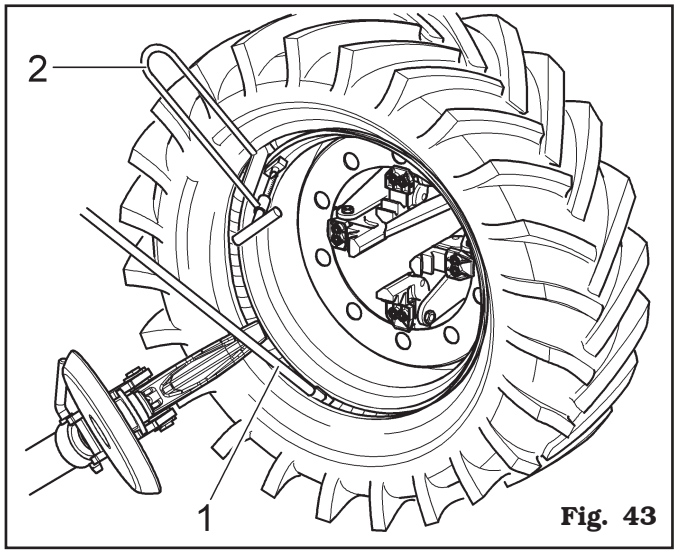


Fig. 43

- Tilt up tool holder arm placing it to "off-work" position (**Fig. 15 ref. 1**) after it has been unhooked.
- Lower the chuck until the wheel rests on the movable footboard.
- Move to work position **B** (**Fig. 4**).
- Check the condition of the tyre valve and centre it in the rim hole if necessary, by slightly turning the chuck; secure the valve with the supplied ring nut after removing the protective extension.
- Close the chuck jaws completely, making sure the wheel is held up to avoid dropping.

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

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

12.8 Wheels with bead wire

As an example **Fig. 44** and **Fig. 45** illustrate sections and compositions of types of wheels with bead wire currently being sold.

Fig. 44

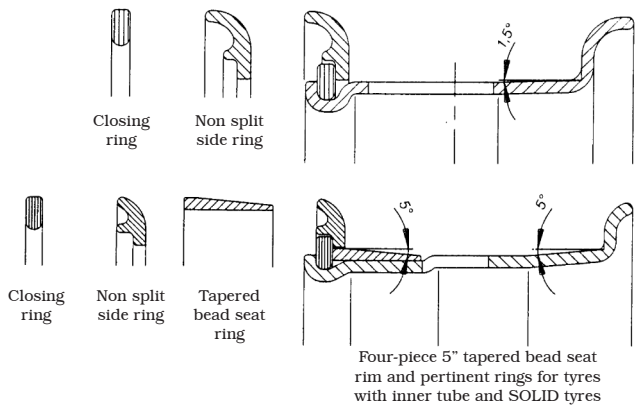
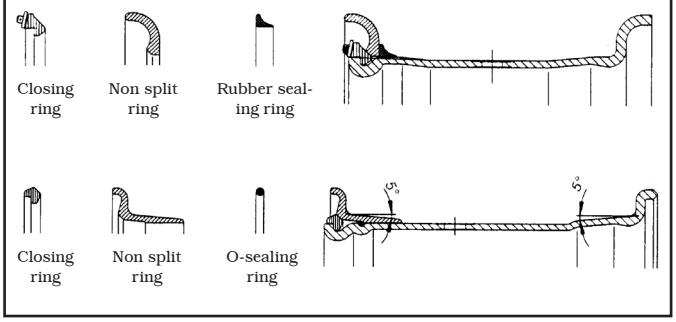


Fig. 45



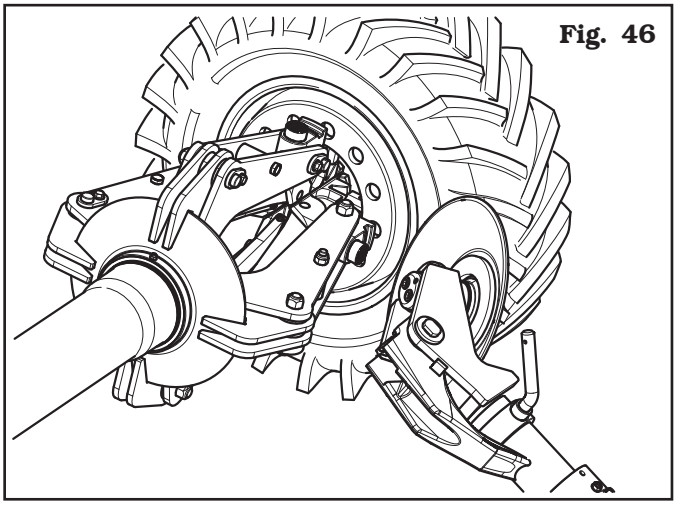
12.8.1 Beading and demounting

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

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

- Mount the wheel on the chuck as described in "WHEEL CLAMPING" and make sure it is deflated.
- Move to work position **D** (**Fig. 4**).
- Place the tool arm to "work position" (**Fig. 14 ref. 1**) in the tyre inner side, and make sure it is locked by the provided safety stop (**Fig. 1 ref. 23**) (Standard on some models).
- Position the bead breaker disc on rim edge (see **Fig. 46**).

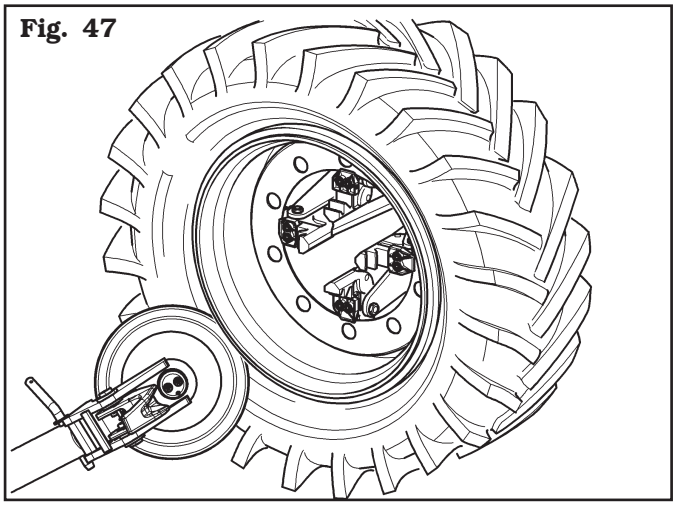
Fig. 46



- Turn the chuck and smear the entire bead seat of the rim with lubricant. While doing this, jerk the bead breaker disc forward until the first bead is removed (as these wheels feature inner tubes, carry out the operation carefully, paying special attention to when the bead dislodges, trying to stop disc advance immediately to avoid compromising the integrity of the inner pipe and valve).
- Place the tool holder arm to "off-work" position (**Fig. 15 ref. 1**), operate the handle control in order to position the tools holder arm on the wheel outer side, then place it to "working" position (**Fig. 14 ref. 1**) again and lock it with the safety hook provided.

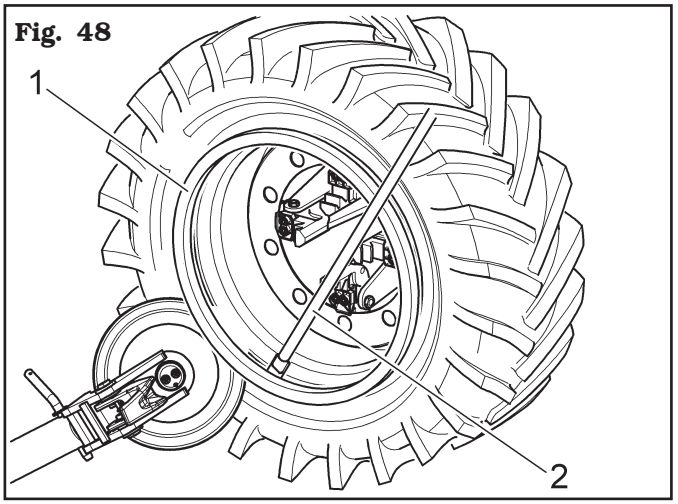
- Carry out tools holder head 180° rotation according to the description of the relevant paragraph, in order to let the bead breaker disc come into contact with the tyre outer side (see **Fig. 47**).

Fig. 47



- Turn the chuck and smear the entire bead seat of the rim with lubricant.
- While doing this, jerk the bead breaker disc forward until bead is removed.
- Repeat the operation, making the bead breaker disc move forward against the bead wire (see **Fig. 48**) up to the stop ring is released (**Fig. 48 ref. 1**). It will be then extracted through lever (**Fig. 48 ref. 2**).

Fig. 48



- Remove the bead wire.
- Remove the O-Ring, when featured.
- Tilt up tool holder arm placing it to "off-work" position (**Fig. 15 ref. 1**) after it has been unhooked.
- Lower the chuck until the wheel rests on the movable footboard.
- Move to work position **B** (**Fig. 8**).
- Translate the movable footboard until the tyre is completely dislodged from the rim (in case of tyres with inner tube, make sure that the valve hasn't been damaged during removal).

THE REMOVAL OF THE BEADS FROM THE RIM CAUSES THE TYRE TO FALL. ALWAYS MAKE SURE THAT NO ONE IS STANDING BY ACCIDENT IN THE WORK AREA.

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

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

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

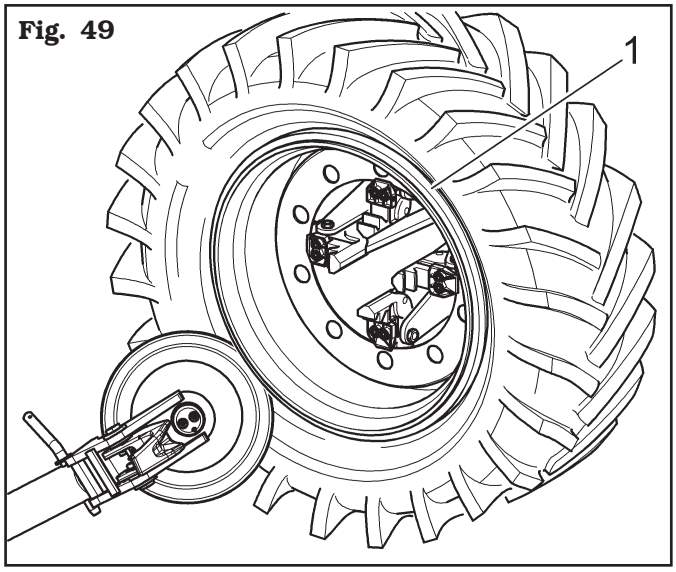
12.8.2 Mounting

THROUGHOUT TYRE MOUNTING/DEMOUNTING OPERATIONS, CHECK THAT THE SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAX. OPERATING VALUE (170 BAR).

- Place the tool holder arm in off-work position (**Fig. 15 ref. 1**); if it has been removed, secure the rim to the chuck as described in "WHEEL CLAMPING" paragraph. If the wheel features an inner tube, position the rim with the valve slot facing downwards (at "6 o'clock").
- Lubricate the entire bead seat of the rim and the tyre beads.
- Move to work position **B** (**Fig. 4**).
- Position movable footboard (**Fig. 1 ref. 20**) so as to allow the upward motion of the tyre (if the wheel features an inner tube, position the rim with the valve slot downwards at 6 o'clock").
- Place the chuck in order to centre the rim on the tyre.
- Operate the movable footboard forward movement in order to insert the rim in the tyre (in case of tyres with inner tube, make the valve re-enter not to damage it). Move forward until the rim is completely inserted in the tyre.

- Insert the bead wire on the rim with the stop ring fitted (if the rim and bead wire feature fixing slits, they must be in phase with each other).
- Move to work position **C** (**Fig. 4**).
- Place the tool holder arm on the external side then lower it into "work position" (**Fig. 14 ref. 1**) with the bead breaker disc facing the wheel. If the outer edge ring is not sufficiently fitted on the rim, position the chuck until the bead wire is near the bead breaker disc. Move the bead breaker disc forward and then turn the chuck until the housing of the O-Ring (if featured) is found.
- Lubricated the O-Ring and place it in its housing.
- Move to work position **B** (**Fig. 4**).
- Position the bead wire (**Fig. 49 ref. 1**) on the rim, fit the stop ring with the help of the bead breaker disc as shown in **Fig. 49**.

Fig. 49



- Tilt up tool holder arm placing it to "off-work" position (**Fig. 15 ref. 1**) after it has been unhooked.
- Position movable footboard (**Fig. 1 ref. 20**) directly under the wheel and lower the chuck until the wheel is resting on the platform itself.
- Close the chuck jaws completely and translate the mobile footoboard outwards until the rim has been completely removed, making sure the wheel is held up to avoid dropping.

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

13.0 ROUTINE MAINTENANCE

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

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

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

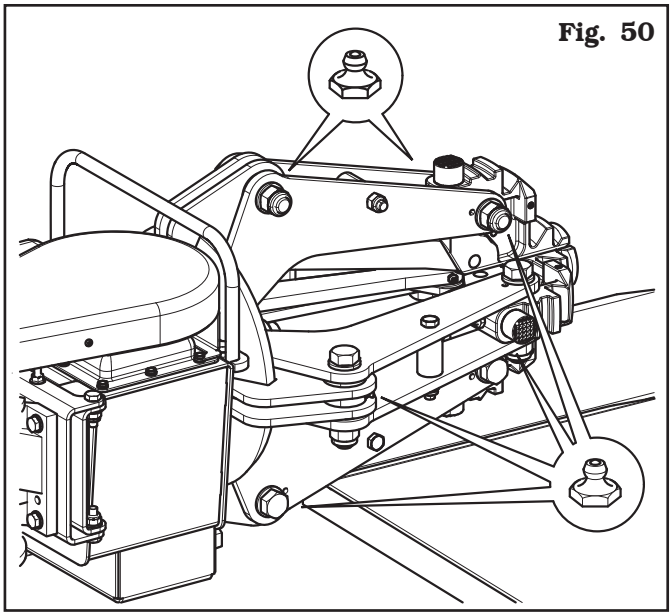
BEFORE CARRYING OUT ANY MAINTENANCE WORK ON THE HYDRAULIC CIRCUIT, SET THE MACHINE IN THE REST CONDITION.

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.
- **NEVER BLOW WITH COMPRESSED AIR.**
- Periodically (preferably once a month) make a complete check on the controls, ensuring that they provide the specified actions.
- Every 100 working hours lubricate the tool carriage sliding guides.
- Periodically (preferably once a month), grease all moving parts of the machine (see **Fig. 50**).

Fig. 50



- Check periodically the oil level of the oil-pressure unit and, in case, carry out the filling up with hydraulic oil having a viscosity degree suitable for the average temperatures of the country where the machine is installed and in particular:
  - viscosity 32 (for countries with room temperature from 0 to 30 degrees);
  - viscosity 46 (for countries with room temperature above 30 degrees).

  At least once a year it is advisable to proceed anyway to the complete replacement of the hydraulic oil of the same oil-pressure unit.

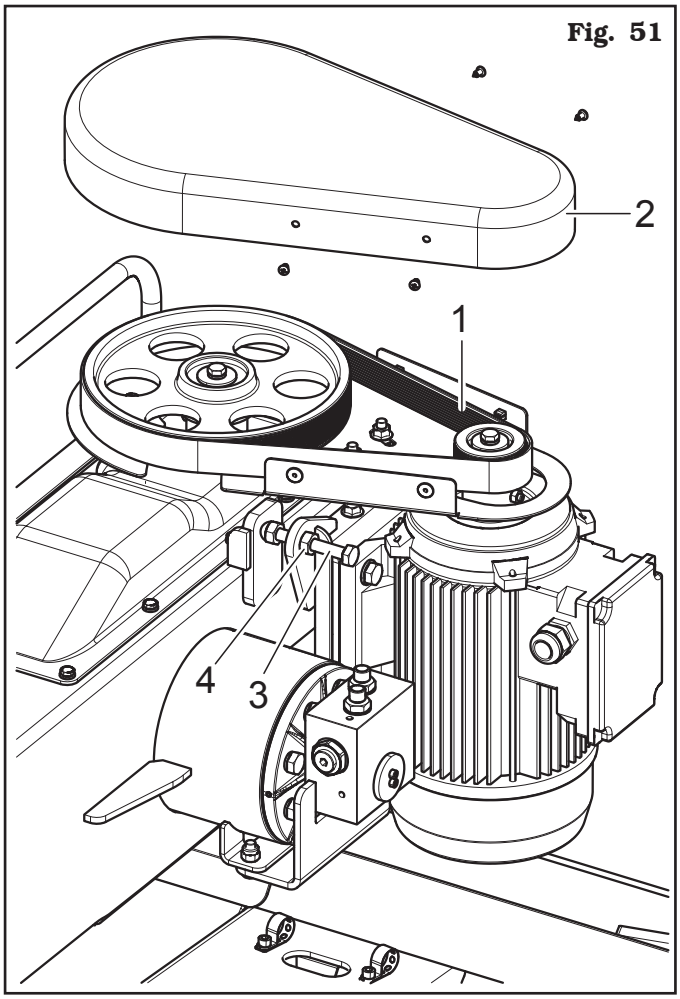
CARRY OUT THIS CONTROL WITH THE MACHINE COMPLETELY CLOSED (WITH HYDRAULIC PISTONS IN).

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

A. Check belt tensioning (**Fig. 51 ref. 1**):

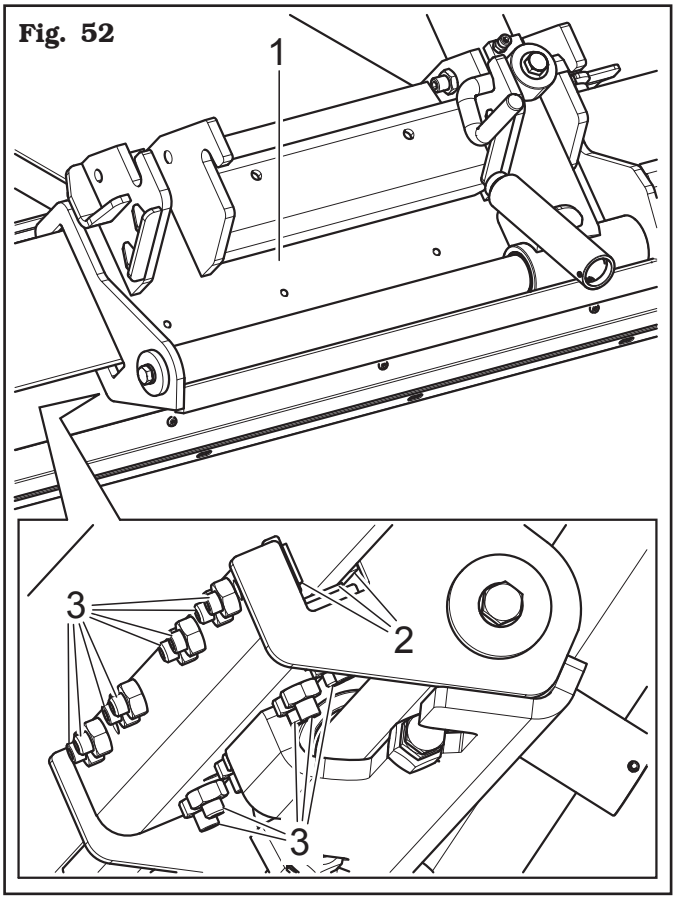
- Remove upper guard (**Fig. 51 ref. 2**) by removing the provided securing bolts;
- stretch the belt (**Fig. 51 ref. 1**) using the screw (**Fig. 51 ref. 3**), after the nut (**Fig. 51 ref. 4**) has been slackened;
- tighten the fixing nut (**Fig. 51 ref. 4**) after the adjustment operations, then assemble the protection guard (**Fig. 51 ref. 2**) again.

Fig. 51



B. Adjust the play of slide (**Fig. 52 ref. 1**) by means of the adjustment bolts (**Fig. 52 ref. 3**) of the sliding blocks (**Fig. 52 ref. 2**).

Fig. 52



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

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

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

14.0 TROUBLESHOOTING TABLE

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

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

CONTACT AUTHORIZED TECHNICAL SERVICE

do not try and service alone

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

Problem	Possible cause	Remedy
When a control device is operated the machine does not move at all.	**a)** Solenoid valve not receiving power. **b)** Solenoid valve jammed. **c)** Transformer fuse blown. **d)** Control unit not set correctly.	**a)** Call the after-sales service. **b)** Call the after-sales service. **c)** Change the fuse. **d)** Call the after-sales service.
No pressure in hydraulic circuit.	**a)** Power unit motor turning in wrong direction. **b)** Power unit pump has failed. **c)** No oil in power unit tank.	**a)** Restore correct rotation direction by changing socket connection. **b)** Call the after-sales service. **c)** Fill power unit tank with oil
Machine operates in jerks.	**a)** Not enough fluid in power unit tank. **b)** Control unit switch has failed.	**a)** Top up with oil. **b)** Call the after-sales service.
VERSIONS WITH INVERTER		
The chuck doesn't rotate.	**a)** The first current threshold has been exceeded. **b)** The second current threshold has been exceeded. **c)** Lack of supply. **d)** Insufficient net voltage. **e)** Net voltage too high. **f)** Sudden and short drop of net voltage. **g)** The second temperature threshold has been exceeded.	**a)** Wait for the automatic reset releasing the control. **b)** Disconnect the machine from the net for 30 seconds at least, then reconnect. If the problem persists, check the harness. **c)** Connect the power supply. **d)** Shorten the length of possible extension cable to the machine or raise the leads section (disconnect and reconnect). **e)** Disconnect the machine from the net for 30 seconds at least, then reconnect. **f)** Disconnect the machine from the net for 30 seconds at least, then reconnect. **g)** The machine does not start until the temperature does not lower under the safety limit.
The chuck does not reach the maximum speed.	**a)** The first temperature threshold has been exceeded. **b)** Raised mechanical resistance.	**a)** Let the motor body cool. **b)** Make the chuck rotate loadless for some minutes. If it does not accelerate, call the after-sales service.

15.0 TECHNICAL DATA

15.1 Technical electrical data

		Standard	Version with inverter applies to model with air control unit	Version with inverter applies to model with control box	Version with pedalboard with rotation	220 V - 1 PH - 50 Hz version	220 V - 1 PH - 60 Hz version	220 V - 3 PH - 60 Hz version	230 V - 1 PH - 50 Hz version	230 V - 1 PH - 60 Hz version	400 V - 3 PH - 60 Hz version	220 V - 3 PH - 50 Hz version
Chuck motor power (kW)		1 - 1.3	1.1		1.1 - 1.3	1.85	2.2	1 - 1.4	1.85	2.2	1 - 1.3	1 - 1.4
Power supply	Voltage (V)	400	185		400	230		220	230		400	230
	Phases	3				1		3	1		3	
	Frequency (Hz)	50					60		50	60		50
Hydraulic drive unit motor (kW)		1.5			2.2	1.85	2.2		1.85	2.2		
Power supply	Voltage (V)	400			230 - 400	230		230 - 400	230		400	230
	Phases	3				1		3	1		3	
	Frequency (Hz)	50					60		50	60		50
Typical current draw (A)		7.1	9.8		11.2	21.5	32.5	18	21.5	32.5	9.7	12.55
Self-centring chuck rotation speed (revolutions/ min)		4-8	1-5-10		4-8							

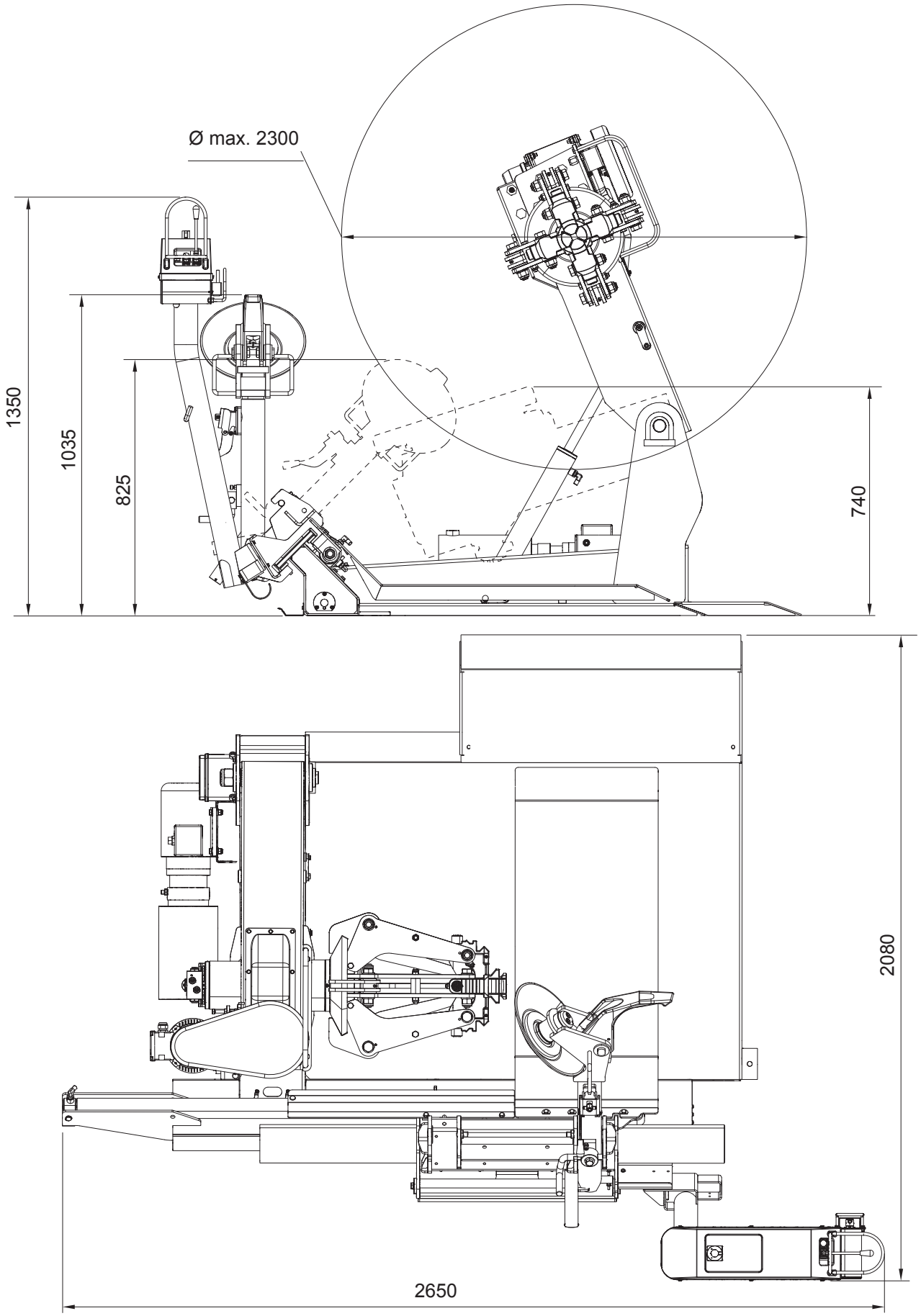
15.2 Technical mechanical data

	Applies to model with air control unit	Applies to model with control box assembly
Tyre maximum diameter (mm)	2300 (90")	
Wheel max. width (mm)	1100	1300
Max. rotation torque (Nm)	4000	
Wheel max. weight (kg)	1700	
Self-centring lock (inches)	11 - 43 (11 - 56 with extensions)	
Minimum locking hole (mm)	90	
Chuck minimum height from the ground (mm)	300	
Bead-breaking force (N)	26000	
Gear noise (dB) (A)	< 80	
Operating pressure (bar)	170	
Weight (Kg)	740	820

15.3 Dimensions

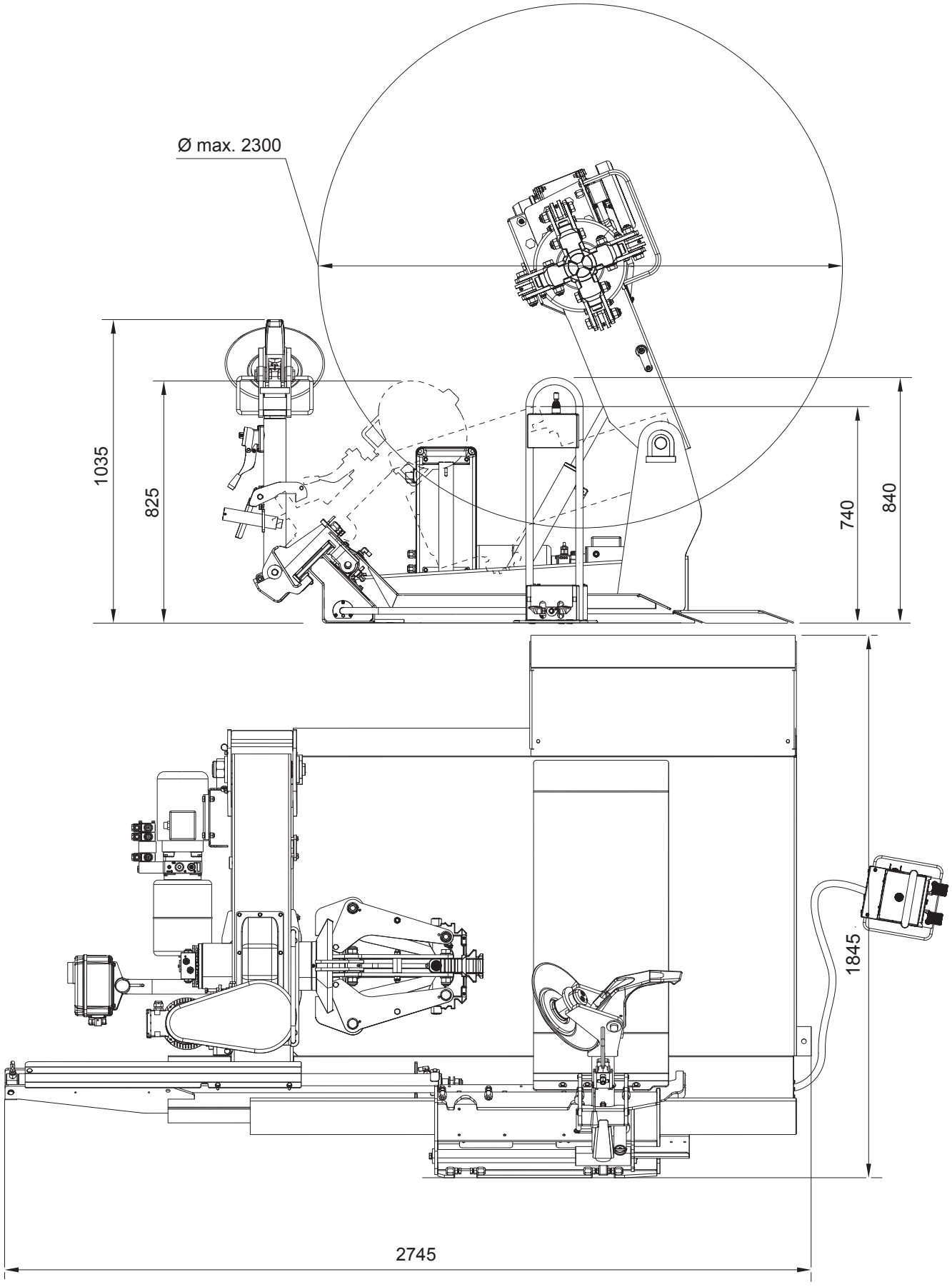
Applies to model with air control unit

Fig. 53



Applies to model with control box assembly

Fig. 54



16.0 STORING

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

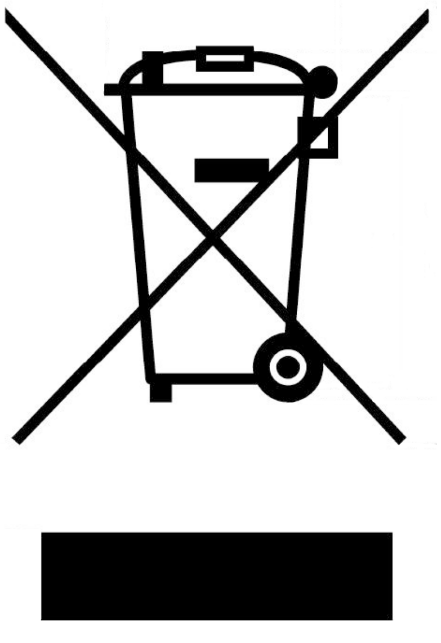
17.0 SCRAPPING

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

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.

Fig. 55



18.0 REGISTRATION PLATE DATA

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

19.0 FUNCTIONAL DIAGRAMS

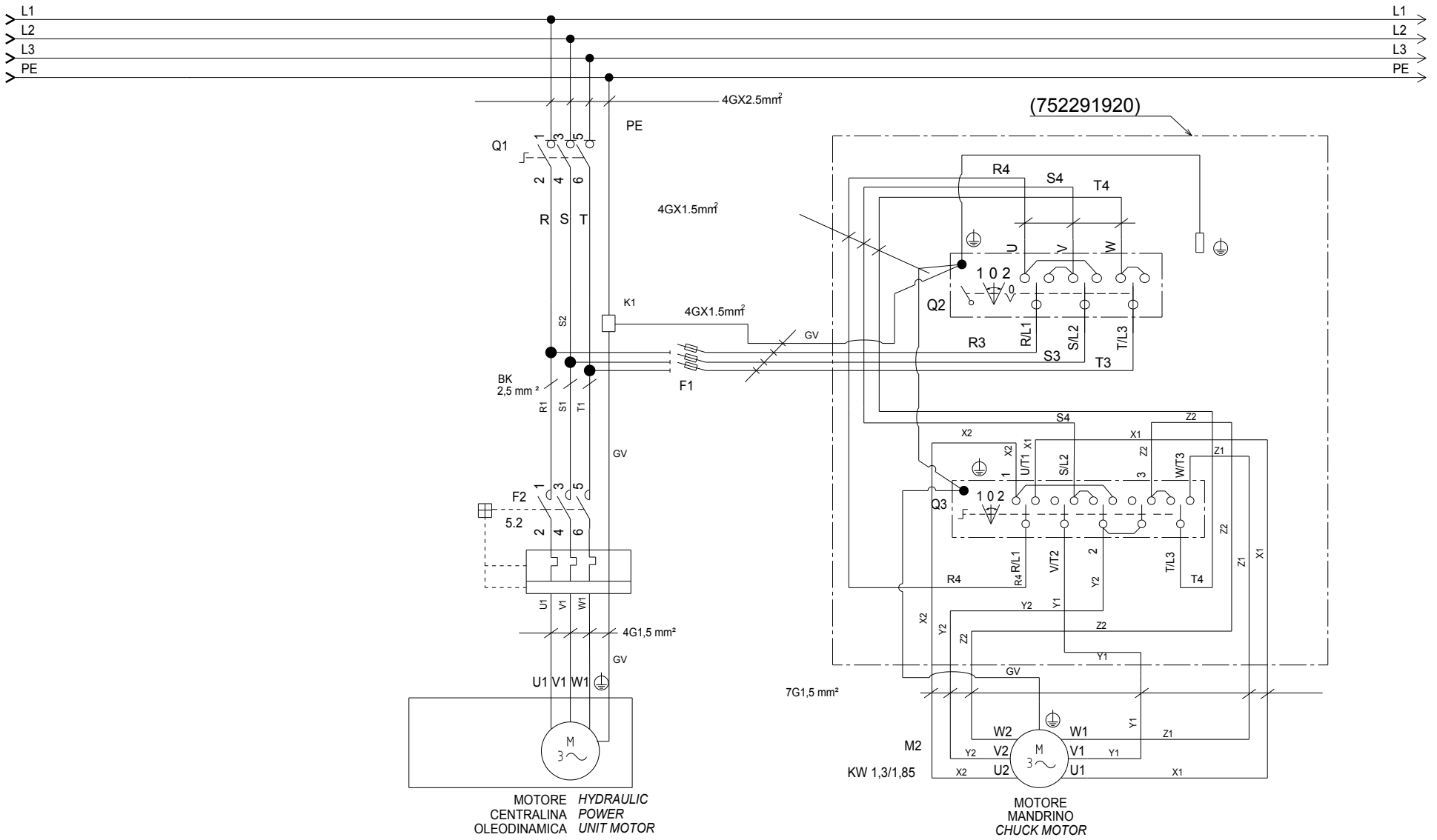
Here follows a list of the machine functional diagrams.

Valido per il modello con unità di comando in aria
Apply to model with air control unit
Gültig für Modell mit Luftstevergerät
Valide pour le modèle avec unité de contrôle dans l'air
Válido para el modelo con unidad de control en el aire

Valido per la versione 220 V - 3 Ph - 60 Hz
Apply to version 220 V - 3-Ph - 60 Hz
Gültig für die Version 220 V - 3 Ph - 60 Hz
Valide pour la version 220 V - 3 Ph - 60 Hz
Válido para la versión 220 V - 3 Ph - 60 Hz

Valido per la versione 220 V - 3 Ph - 50 Hz
Apply to version 220 V - 3-Ph - 50 Hz
Gültig für die Version 220 V - 3 Ph - 50 Hz
Valide pour la version 220 V - 3 Ph - 50 Hz
Válido para la versión 220 V - 3 Ph - 50 Hz

Valido per la versione 400 V - 3 Ph - 60 Hz
Apply to version 400 V - 3-Ph - 60 Hz
Gültig für die Version 400 V - 3 Ph - 60 Hz
Valide pour la version 400 V - 3 Ph - 60 Hz
Válido para la versión 400 V - 3 Ph - 60 Hz



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**	*SCHEMA ELETTRICO 1/2 ELECTRICAL SCHEME 1/2 SCHALTPLAN 1/2 SCHEMA ELECTRIQUE 1/2 ESQUEMA ELECTRICO 1/2*	***Pag. 47 di 77***
	Tavola N°A - Rev. 2 / **750505520**		**NAV41.11N - NAV41.13EI**

Valido per il modello con unità di comando in aria
Apply to model with air control unit
Gültig für Modell mit Luftstevergerät
Valide pour le modèle avec unité de contrôle dans l'air
Válido para el modelo con unidad de control en el aire

Valido per la versione 220 V - 3 Ph - 60 Hz
Apply to version 220 V - 3-Ph - 60 Hz
Gültig für die Version 220 V - 3 Ph - 60 Hz
Valide pour la version 220 V - 3 Ph - 60 Hz
Válido para la versión 220 V - 3 Ph - 60 Hz

Valido per la versione 220 V - 3 Ph - 50 Hz
Apply to version 220 V - 3-Ph - 50 Hz
Gültig für die Version 220 V - 3 Ph - 50 Hz
Valide pour la version 220 V - 3 Ph - 50 Hz
Válido para la versión 220 V - 3 Ph - 50 Hz

Valido per la versione 400 V - 3 Ph - 60 Hz
Apply to version 400 V - 3-Ph - 60 Hz
Gültig für die Version 400 V - 3 Ph - 60 Hz
Valide pour la version 400 V - 3 Ph - 60 Hz
Válido para la versión 400 V - 3 Ph - 60 Hz

LISTA COMPONENTI

RIFERIMENTO	DESCRIZIONE	DATI TECNICI	QUANTITA
F1	PORTAFUSIBILE	3 POLI P10-3 5450334 WIMEX	1
	FUSIBILE	FUS.RITARDATO 6A 500V 10,3X38	3
I1	INTERRUTTORE GENERALE		1
F2	INTERRUTTORE SALVAMOTORE	4-6.3A ART.GV2 ME10 SCHNEIDER	1
K1	MORSETTO G/V 4mmq	MORSETTO G/V 4mmq art.UT 4-PE PHOENIX COD.3044128 (vite)	1
Q3	COMMUTATORE DI POLI DAHLANDER	25A 500V	1
Q2	COMMUTATORE	Ith 25A Ui 690V-50Hz Uimp 4KW	1
M1	MOTORE CENTRALINA	M.E.KW1.5 T400 M.DX B3-B14 50	1
M2	MOTORE MANDRINO	ME KW1/1.3 T400/50HZ 90B3S4/2 PER MANDRINO NAV41N	1

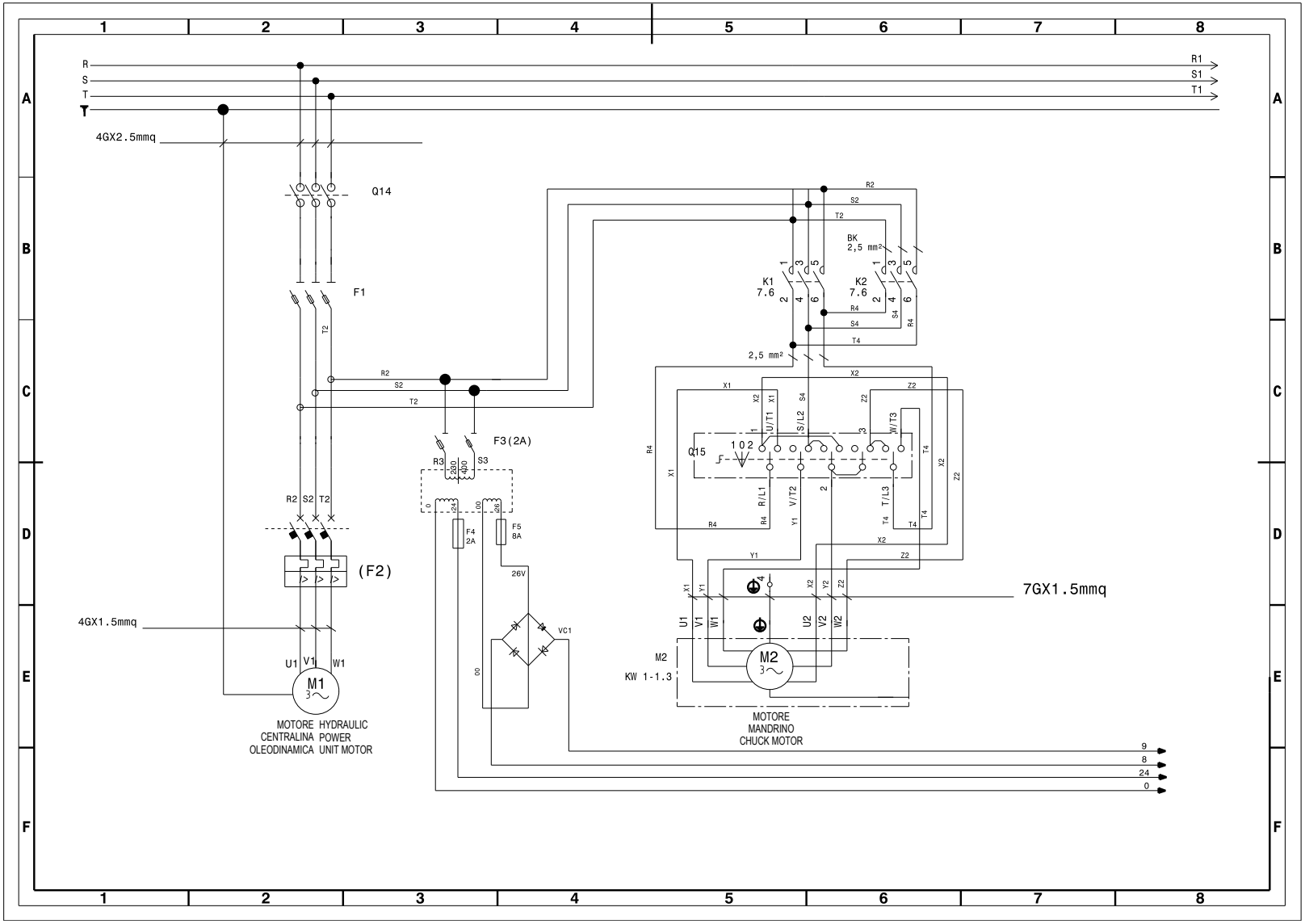
COMPONENTS LIST

REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	QUANTITY
F1	FUSE HOLDER	3 POLES P10-3 5450334 WIMEX	1
	FUSE	DELAYED FUSE 6A 500V 10,3X38	3
I1	GENERAL SWITCH	4-6.3A ART.GV2 ME10 SCHNEIDER	1
F2	OVERLOAD CUTOUT SWITCH		1
K1	G/V 4mmq Y/G CLAMP	G/V 4mmq Y/G CLAMP art.UT 4-PE PHOENIX COD.3044128 (bolt)	1
Q3	DAHLANDER POLE CHANGE SWITCH	25A 500V	1
Q2	COMMUTATOR	Ith 25A Ui 690V-50Hz Uimp 4KW	1
M1	HYDRAULIC POWER UNIT MOTOR	E. M. KW1.5 T400 M.DX B3-B14 50	1
M2	CHUCK MOTOR	E. M. KW1/1.3 T400/50HZ 90B3S4/2 FOR CHUCK NAV41N	1

Motori rotazione mandrino e centralina idraulica
Chuck rotation motors and hydraulic power unit
Spindelrotationsmotoren und Hydrauliksteuerung
Moteurs rotation mandrin et distributeur hydraulique
Motores rotación mandril y centralita hidráulica

Valido per il modello con colonnetta comandi
Apply to model with control box
Gültig für Modell mit Kontrolkasten
Valide pour le modèle avec boîtier de commande
Válido para el modelo con caja de control

Valido per la versione 220 V - 3 Ph - 60 Hz
Apply to version 220 V - 3-Ph - 60 Hz
Gültig für die Version 220 V - 3 Ph - 60 Hz
Valide pour la version 220 V - 3 Ph - 60 Hz
Válido para la versión 220 V - 3 Ph - 60 Hz

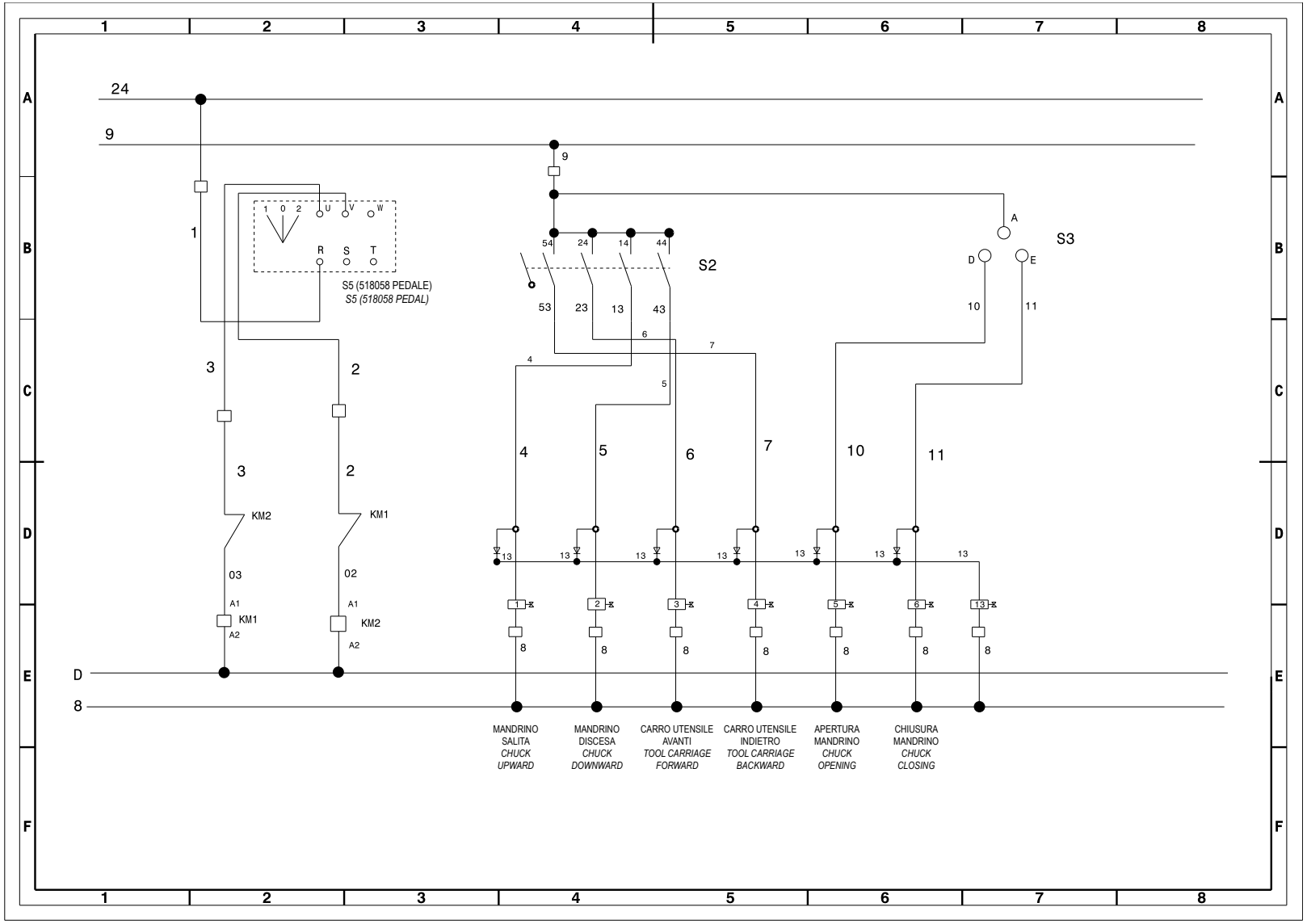


Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/4 ELECTRICAL SCHEME 1/4 SCHALTPLAN 1/4 SCHEMA ELECTRIQUE 1/4 ESQUEMA ELECTRICO 1/4*	***Pag. 49 di 77***
	Tavola N°B - Rev. 3	**750505532**		**NAV41.11N - NAV41.13EI**

Comando motori
Motors control
Motorsteuerung
Commande moteurs
Mando motores

Valido per il modello con colonnetta comandi
Apply to model with control box
Gültig für Modell mit Kontrolkasten
Valide pour le modèle avec boîtier de commande
Válido para el modelo con caja de control

Valido per la versione 220 V - 3 Ph - 60 Hz
Apply to version 220 V - 3-Ph - 60 Hz
Gültig für die Version 220 V - 3 Ph - 60 Hz
Valide pour la version 220 V - 3 Ph - 60 Hz
Válido para la versión 220 V - 3 Ph - 60 Hz



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 2/4 ELECTRICAL SCHEME 2/4 SCHALTPLAN 2/4 SCHEMA ELECTRIQUE 2/4 ESQUEMA ELECTRICO 2/4*	***Pag. 50 di 77***
	Tavola N°B - Rev. 3	**750505532**		**NAV41.11N - NAV41.13EI**

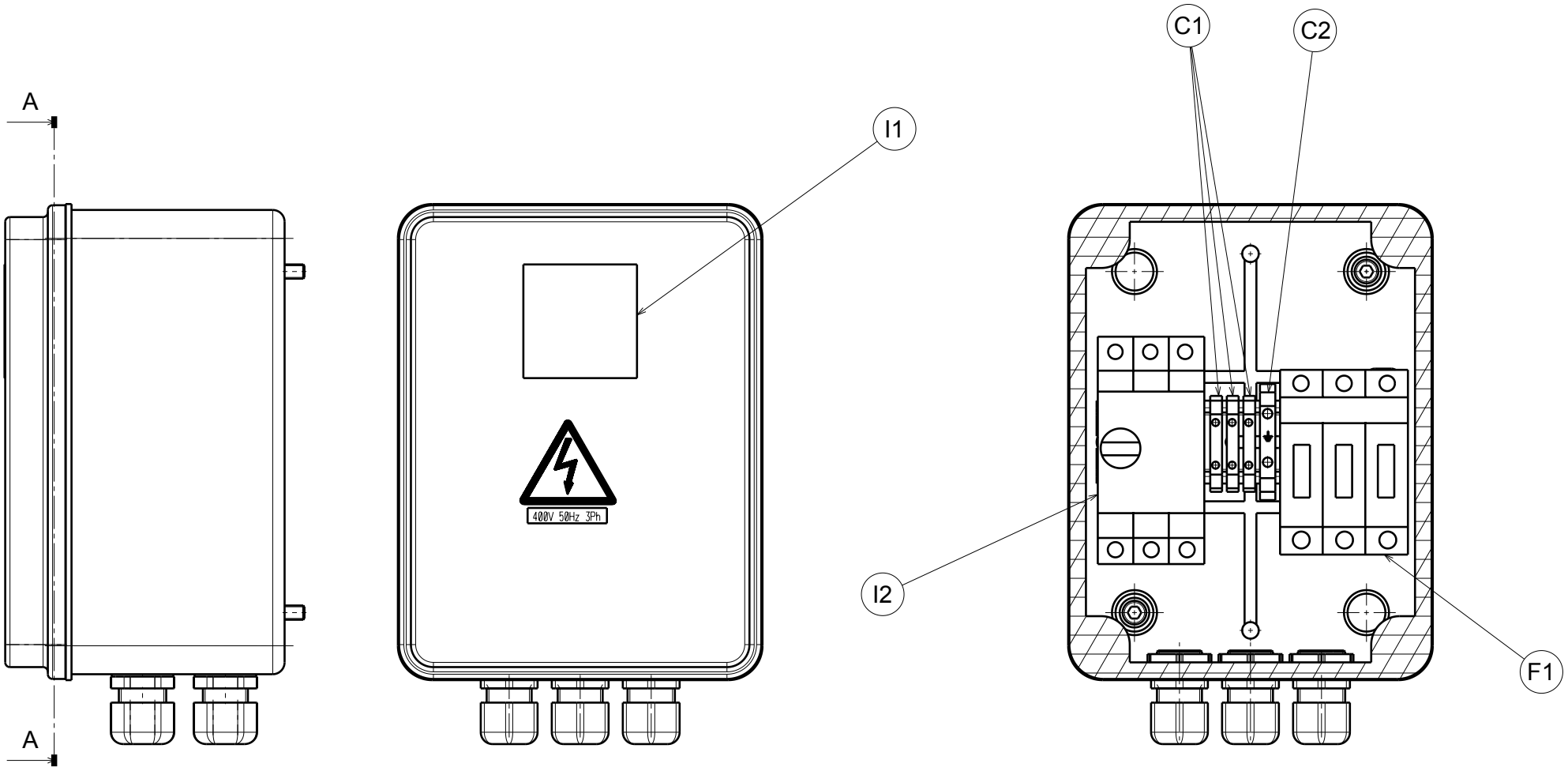
RIFERIMENTO	DESCRIZIONE	DATI TECNICI	QUANTITA
F1	PORTAFUSIBILE	3 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	10,3x38 16A 500V aM RITARDATO	3
F2	INTERRUTTORE AUTOM. TRIPOLARE	4-6.3A ART.GV2 ME10SCHNEIDER	1
			1
F3	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	10,3X38 2A 500V RAPIDO	2
F5	PORTA FUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE+FUSIBILE	FUSIBILE GL 10,3X38 2A 500V + FUSIB.10,3X38 8A 500V	1 1
Q1,Q2,Q3,Q4, Q5,Q6,Q13	ELETTROVALVOLE		7
K1M	CONTATTORE TRIPOLARE	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	1
K2M	CONTATTORE TRIPOLARE	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	1
K3	MORSETTO 2.5mmq C/DIODO	MORS.2,5 C/DIOD.1N5408 PHOENIX ST2,5-QUATTRO DIO 1N 5408K/R-L	6
K4	MORSETTO A MOLLA 2 PIAN.2.5mmq	MORSETTO 2,5mmq ST 2,5-QUATTRO PHOENIX cod.3031306 (molla) 4C	7
K5	MORSETTO G/V 4mmq ART.TEO.4 CABUR T0430	MORSETTO G/V 4mmq art.UT 4-PE PHOENIX COD.3044128 (vite)	2
VC1	PONTE RADDRIZZATORE VC1	-	1
	CONDENSATORE C1-C2		1
	INS.CAVO ALIMENTAZIONE QUADRO		1
	INS.CAVO MOTORE MANDRINO		1
	INS.CAVO MOTORE CENTRALINA	-	1
	INS.CAVO MANIPOLATORE		1
	INS.CAVO ELETTROVALV.Q1-Q2- Q3-Q4-Q5-Q6-Q13		1 1 1 1 1 1 1
S2	MANIPOLATORE	4 POS.+CENTR.TEMPORANEE Ø22	1
			1
S3	PULSANTE BASCULANTE	-	1
		-	
S5	INVERTITORE TRIPOLARE		1
		-	1
T1	TRASFORMATORE	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	1
M1	MOTORE CENTRALINA	1,5KW 400V 50HZ 4/6,9A 1400rpm	1
M2	MOTORE MANDRINO	ME KW1/1.3 T400/50HZ 90B3S4/2	1

Valido per il modello con colonnetta comandi
Apply to model with control box
Gültig für Modell mit Kontrolkasten
Valide pour le modèle avec boîtier de commande
Válido para el modelo con caja de control

Valido per la versione 220 V - 3 Ph - 60 Hz
Apply to version 220 V - 3-Ph - 60 Hz
Gültig für die Version 220 V - 3 Ph - 60 Hz
Valide pour la version 220 V - 3 Ph - 60 Hz
Válido para la versión 220 V - 3 Ph - 60 Hz

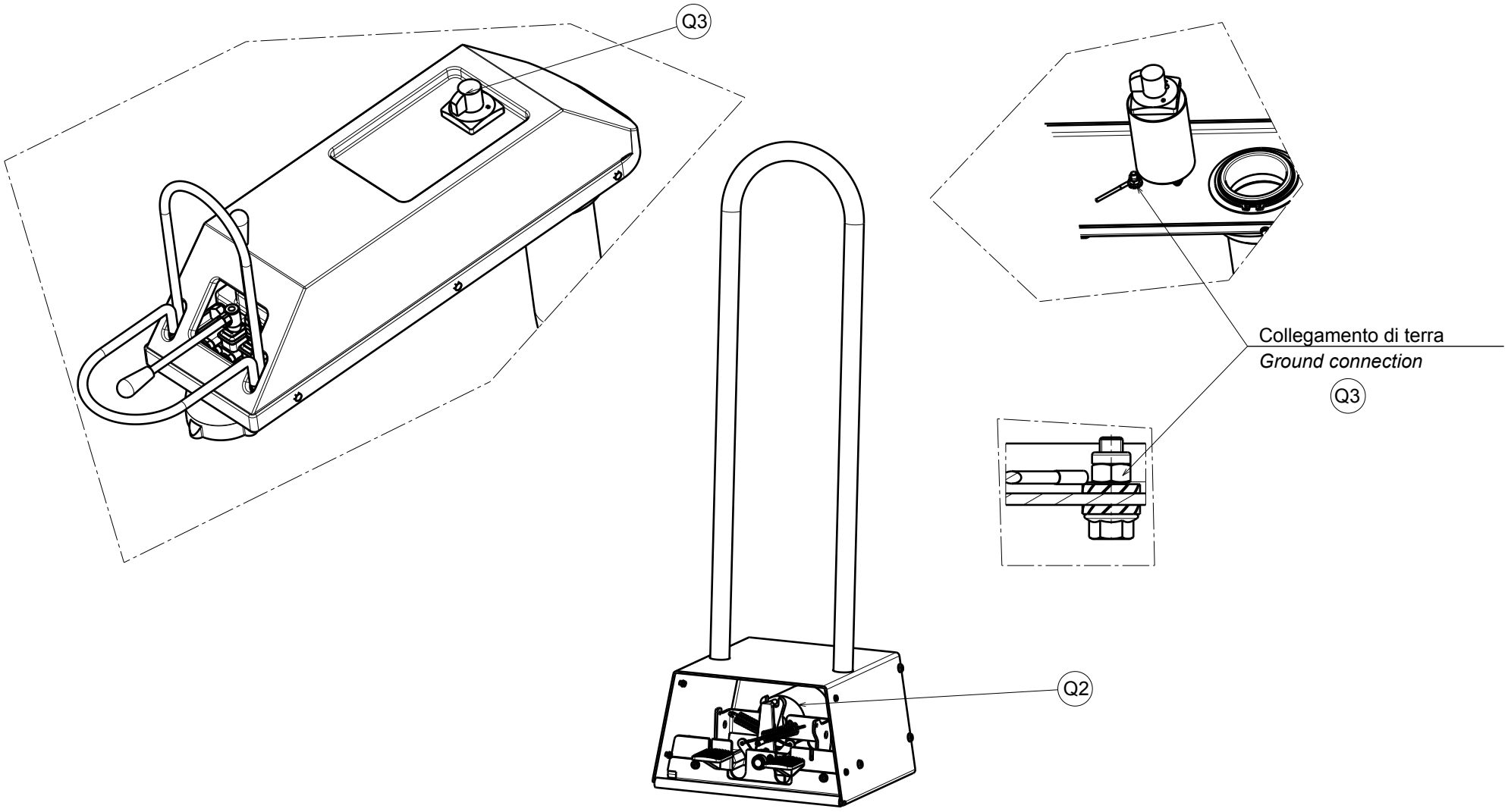
REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	QUANTITY
F1	FUSE HOLDER	10,3x38 32A 690V 3 POLES SECTIONABLE	1
	FUSE	10,3x38 16A 500V aM DELAYED	3
F2	TRIPOLAR AUTOMATIC SWITCH	4-6.3A ART.GV2 ME10SCHNEIDER	1
			1
F3	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	1
	FUSE	10,3X38 2A 500V RAPID	2
F5	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	1
	FUSE + FUSE	GL 10,3X38 2A 500V + FUSE 10,3X38 8A 500V FUSE	1 1
Q1,Q2,Q3,Q4, Q5,Q6,Q13	SOLENOID VALVES		7
K1M	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	1
K2M	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	1
K3	CLAMP 2.5mmq C/DIODO	CLAMP 2.5mmq C/DIODO 1N5408 PHOENIX ST2,5-FOUR DIO 1N 5408K/R-L	6
K4	SPRING CLAMP 2 PIAN.2.5mmq	CLAMP 2.5mm ST 2,5-FOUR PHOENIX cod.3031306 (spring) 4C	7
K5	CLAMP G/V 4mmq ART.TEO.4 CABUR T0430	CLAMP G/V 4mmq art.UT 4-PE PHOENIX COD.3044128 (bolt)	2
VC1	RECTIFIER BRIDGE VC1	-	1
	CONDENSER C1-C2		1
	SQUARE FEEDING CABLE ASSEMBLY		1
	CHUCK UNIT MOTOR CABLE ASSEMBLY		1
	HYDR.POWER UNIT MOTOR CABLE ASSEMBLY	-	1
	HANDLE CABLE ASSEMBLY		1
	Q1-Q2-Q3-Q4-Q5-Q6-Q13 SOLENOID VALVE CABLE ASSEMBLY		1 1 1 1 1 1 1
S2	HANDLE	4 POS.+CENTRAL TEMPORARY Ø22	1
			1
S3	PUSHBUTTON	-	1
		-	
S5	TRIPOLAR INVERTER		1
		-	1
T1	TRANSFORMER	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	1
M1	HYDRAULIC POWER UNIT MOTOR	1,5KW 400V 50HZ 4/6,9A 1400rpm	1
M2	CHUCK MOTOR	ME KW1/1.3 T400/50HZ 90B3S4/2	1

Valido per la versione con pedaliera con rotazione
Apply to version with rotation pedalboard
Gültig für die Version mit Drehpedaleinheit
Valide pour la version avec pédales avec rotation
Válido para la versión con pedales con rotación

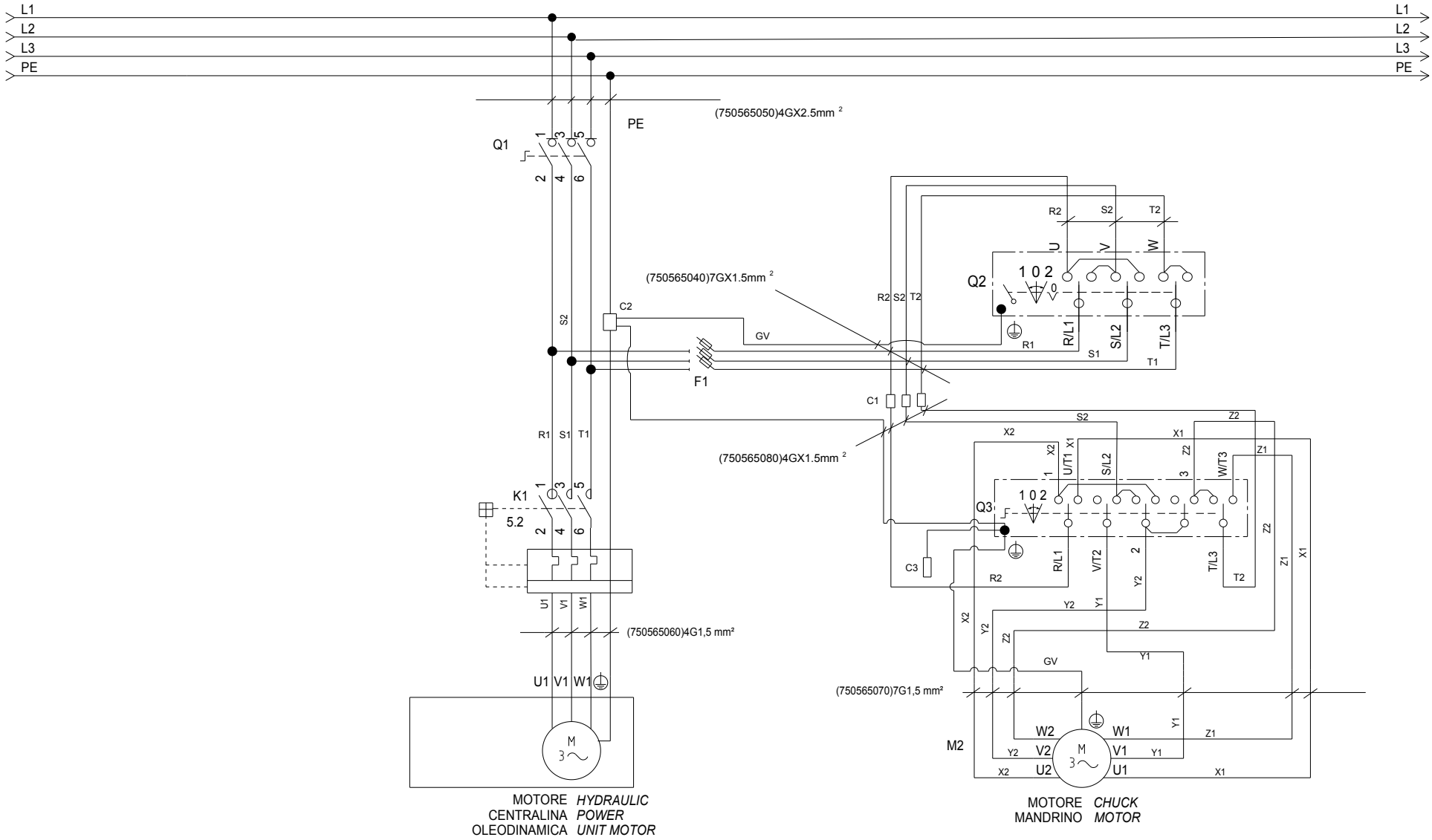


Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/4 ELECTRICAL SCHEME 1/4 SCHALTPLAN 1/4 SCHEMA ELECTRIQUE 1/4 ESQUEMA ELECTRICO 1/4*	***Pag. 53 di 77***
	Tavola N°C - Rev. 2	**750505510**		**NAV41.11N - NAV41.13EI**

Valido per la versione con pedaliera con rotazione
Apply to version with rotation pedalboard
Gültig für die Version mit Drehpedaleinheit
Valide pour la version avec pédales avec rotation
Válido para la versión con pedales con rotación



Valido per la versione con pedaliera con rotazione
Apply to version with rotation pedalboard
Gültig für die Version mit Drehpedaleinheit
Valide pour la version avec pédales avec rotation
Válido para la versión con pedales con rotación



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 3/4 ELECTRICAL SCHEME 3/4 SCHALTPLAN 3/4 SCHEMA ELECTRIQUE 3/4 ESQUEMA ELECTRICO 3/4*	***Pag. 55 di 77***
	Tavola N°C - Rev. 2	**750505510**		**NAV41.11N - NAV41.13EI**

Valido per la versione con pedaliera con rotazione
Apply to version with rotation pedalboard
Gültig für die Version mit Drehpedaleinheit
Valide pour la version avec pédales avec rotation
Válido para la versión con pedales con rotación

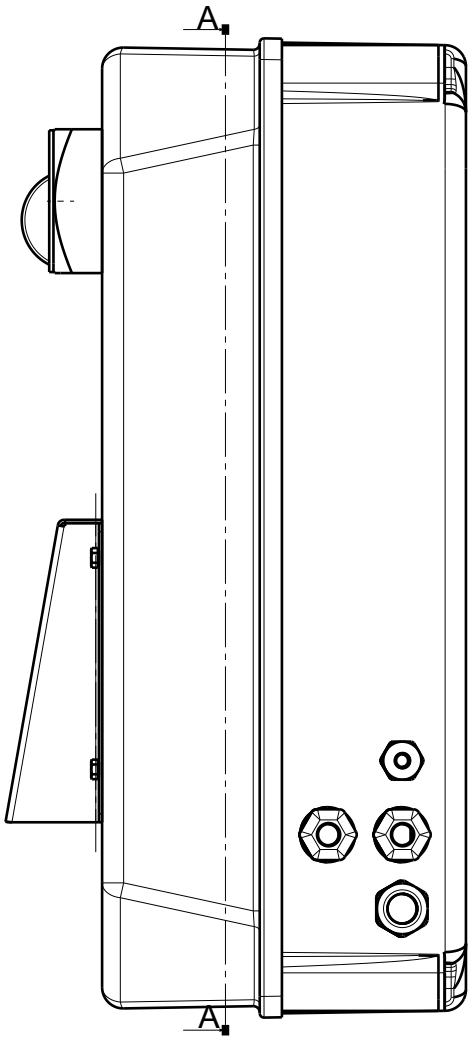
LISTA COMPONENTI

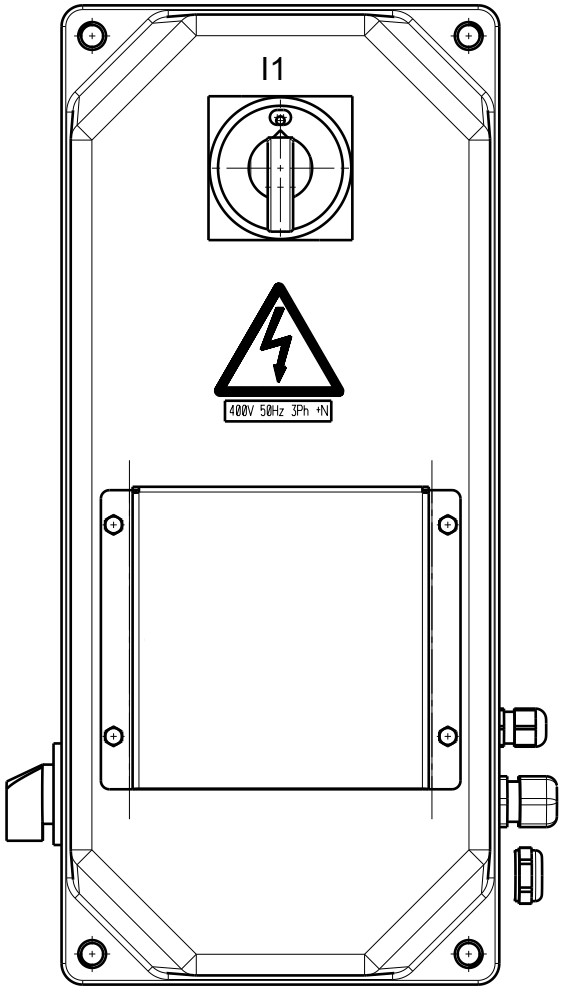
RIFERIMENTO	DESCRIZIONE	DATI TECNICI	SIGLA CATALOGO	QUANTITA	RIFERIMENTO DOCUMENTO
F1	PORTAFUSIBILE	3 POLI P10-3 5450334 WIMEX	515035	1	2.5
	FUSIBILE	FUS.RITARDATO 6A 500V 10,3X38	507083	3	
I1	INTERRUTTORE GENERALE		518007AS	1	2.5
I2	INTERRUTTORE SALVAMOTORE	4-6.3 ART.GV2 ME10 SCHNEIDER	518276	1	2.5
C1	MORSETTO	MORSETTO 2.5mmq	510145	3	2.5
C2	MORSETTO	G/V 4mmq art.TEO.4 CABUR	510150	1	4.4
Q3	COMMUTATORE DI POLI DAHLANDER	25A 500V	518189	1	4.6-4.7
Q2	COMMUTATORE	Ith 25A Ui 690V-50Hz Uimp 4kV	518272	1	4.6-4.7
					4.3
M1	MOTORE CENTRALINA	2,2KW 230/400V 50HZ 10,2/59A cosØ=0,73/0,70 1300 rpm	900003970	1	4.3-4.4
M2	MOTORE MANDRINO	1,3/1,85KW 400V 50Hz 4/5,3A cosØ=0,80/0,84 1400/2800rpm	900003930	1	4.6-4.7

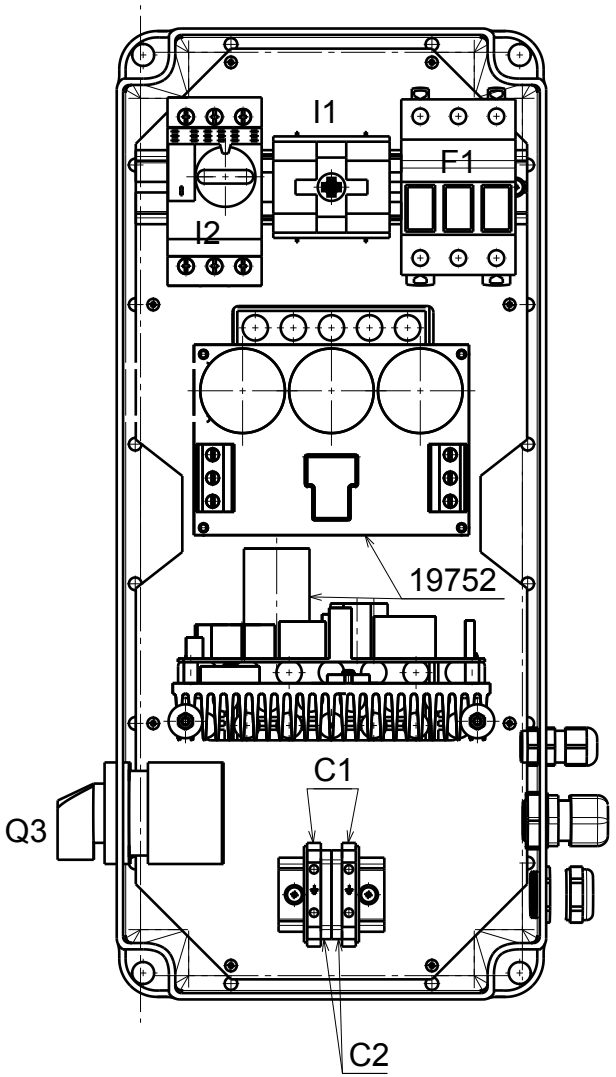
COMPONENTS LIST

REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	ABBREVIATION ON CATALOGUE	QUANTITY	DOCUMENT
F1	FUSE HOLDER	3 POLES P10-3 5450334 WIMEX	515035	1	2.5
	FUSE	DELAYED FUSE 6A 500V 10,3X38	507083	3	
I1	GENERAL SWITCH		518007AS	1	2.5
I2	OVERLOAD CUTOUT SWITCH	4-6.3 ART.GV2 ME10 SCHNEIDER	518276	1	2.5
C1	CLAMP	2.5mmq CLAMP	510145	3	2.5
C2	CLAMP	G/V 4mmq art.TEO.4 CABUR	510150	1	4.4
Q3	DAHLANDER POLE CHANGE SWITCH	25A 500V	518189	1	4.6-4.7
Q2	COMMUTATOR	Ith 25A Ui 690V-50Hz Uimp 4kV	518272	1	4.6-4.7
					4.3
M1	HYDRAULIC POWER UNIT MOTOR	2,2KW 230/400V 50HZ 10,2/59A cosØ=0,73/0,70 1300 rpm	900003970	1	4.3-4.4
M2	CHUCK MOTOR	1,3/1,85KW 400V 50Hz 4/5,3A cosØ=0,80/0,84 1400/2800rpm	900003930	1	4.6-4.7

Valido per la versione con inverter per il modello con unità di comando in aria
Apply to version with inverter to model with air control unit
Gültig für die Version mit Frequenzumformer für Modell mit Luftstevergerät
Valide pour la version avec inverseur pour le modèle avec unité de contrôle dans l'air
Válido para la versión con inversor para el modelo con unidad de control en el aire

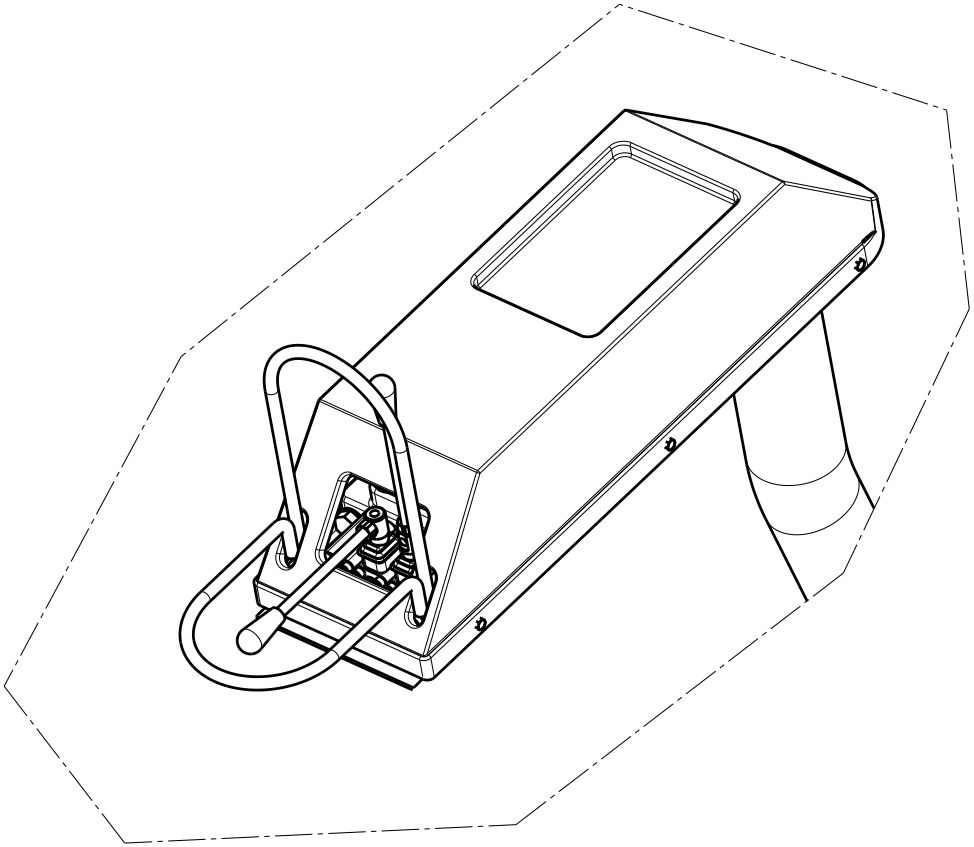


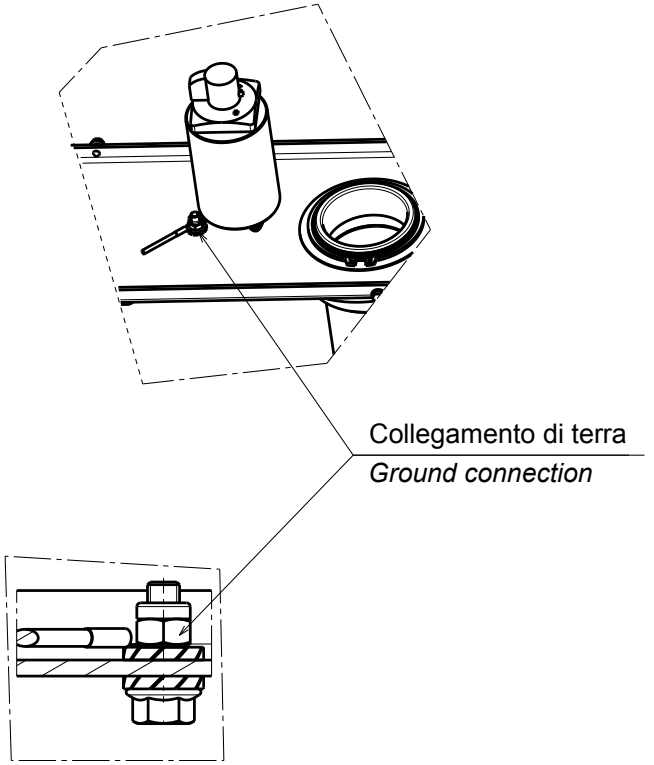




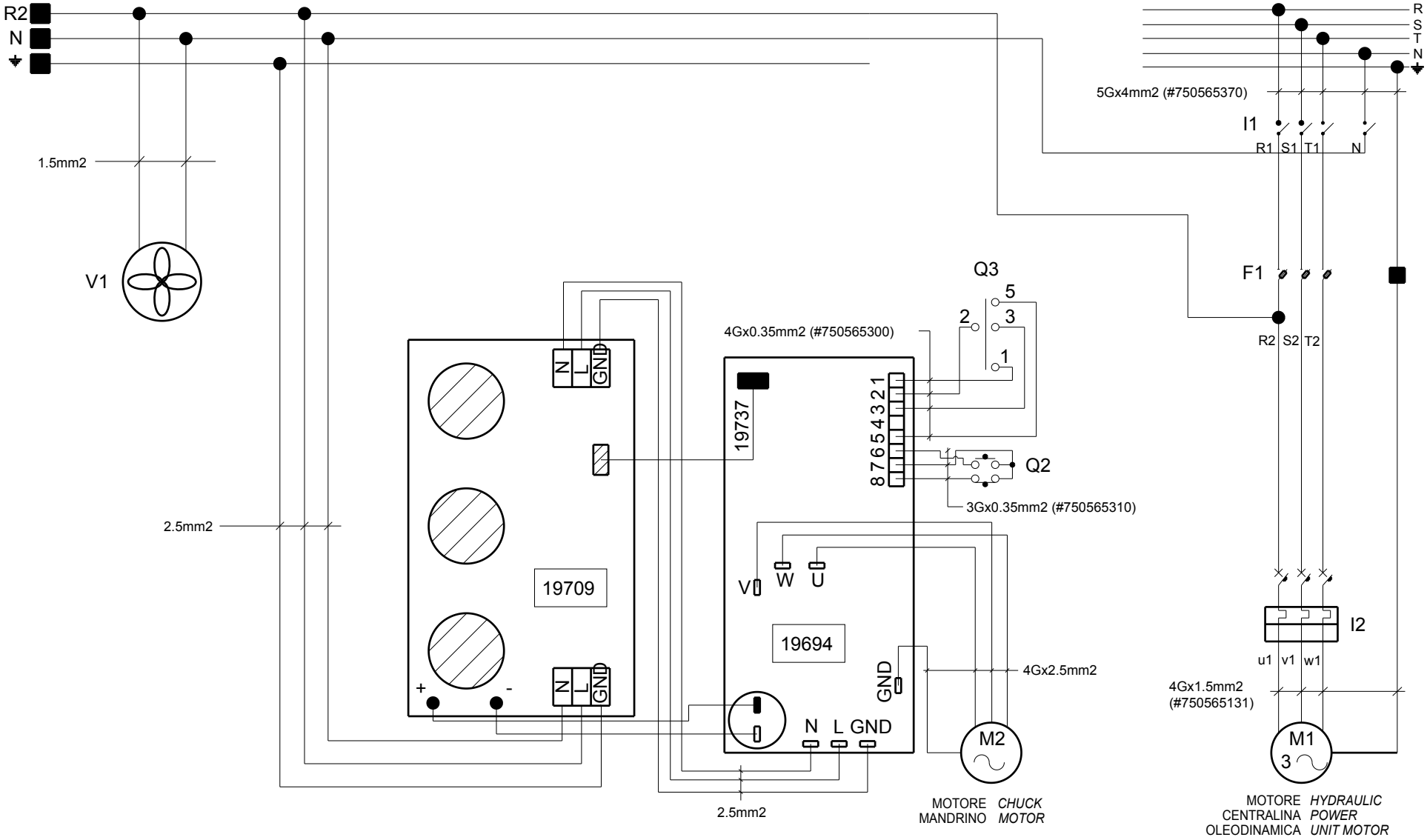
Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/4 ELECTRICAL SCHEME 1/4 SCHALTPLAN 1/4 SCHEMA ELECTRIQUE 1/4 ESQUEMA ELECTRICO 1/4*	***Pag. 57 di 77***
	Tavola N°D - Rev. 2	**750505550**		**NAV41.11N - NAV41.13EI**

Valido per la versione con inverter per il modello con unità di comando in aria
Apply to version with inverter to model with air control unit
Gültig für die Version mit Frequenzumformer für Modell mit Luftstevergerät
Valide pour la version avec inverseur pour le modèle avec unité de contrôle dans l'air
Válido para la versión con inversor para el modelo con unidad de control en el aire





Valido per la versione con inverter per il modello con unità di comando in aria
Apply to version with inverter to model with air control unit
Gültig für die Version mit Frequenzumformer für Modell mit Luftstevergerät
Valide pour la version avec inverseur pour le modèle avec unité de contrôle dans l'air
Válido para la versión con inversor para el modelo con unidad de control en el aire



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 3/4 ELECTRICAL SCHEME 3/4 SCHALTPLAN 3/4 SCHEMA ELECTRIQUE 3/4 ESQUEMA ELECTRICO 3/4*	***Pag. 59 di 77***
	Tavola N°D - Rev. 2	**750505550**		**NAV41.11N - NAV41.13EI**

Valido per la versione con inverter per il modello con unità di comando in aria
Apply to version with inverter to model with air control unit
Gültig für die Version mit Frequenzumformer für Modell mit Luftstevergerät
Valide pour la version avec inverseur pour le modèle avec unité de contrôle dans l'air
Válido para la versión con inversor para el modelo con unidad de control en el aire

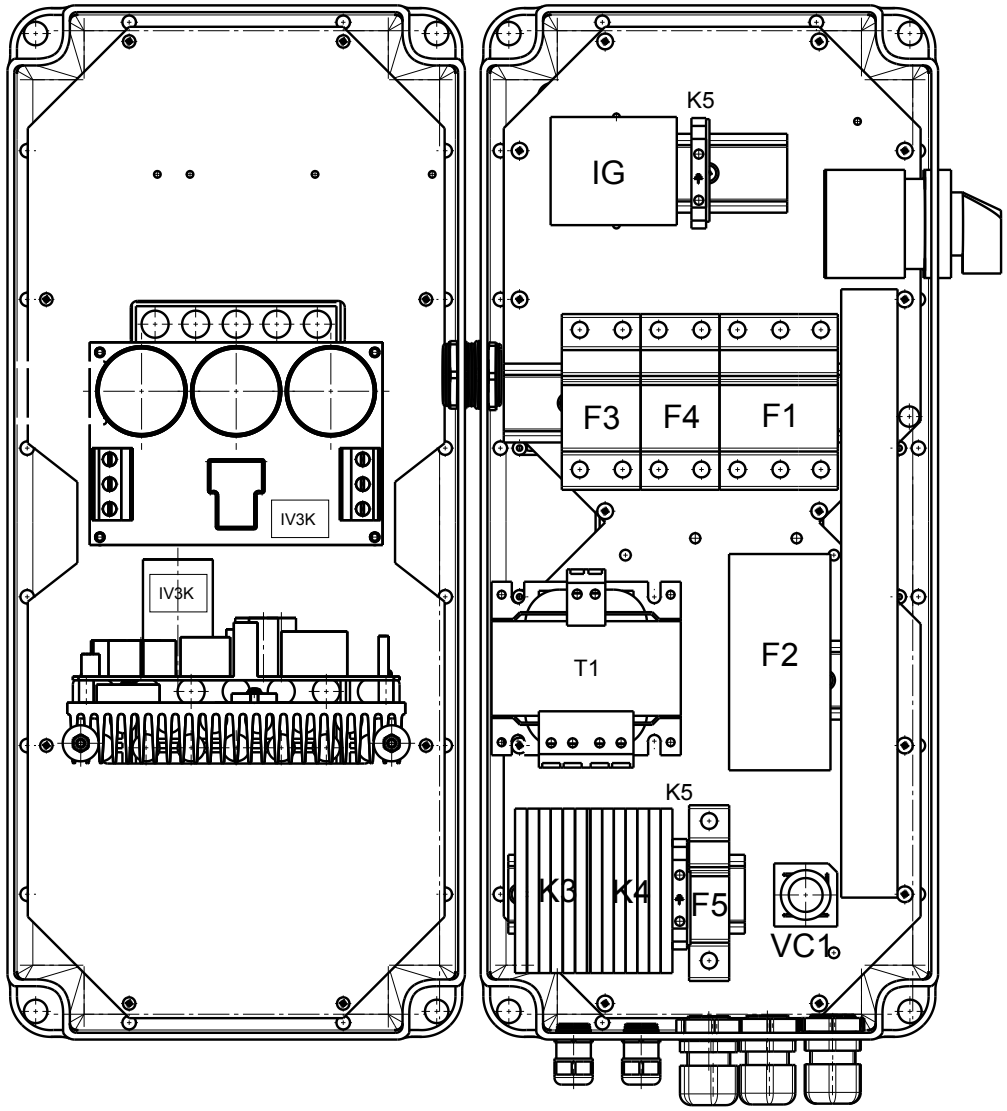
LISTA COMPONENTI

RIFERIMENTO	DESCRIZIONE	DATI TECNICI	SIGLA CATALOGO	QUANTITA	RIFERIMENTO DOCUMENTO
F1	PORTAFUSIBILE	3 POLI P10-3 5450334 WIMEX	515035	1	
	FUSIBILE	10x38 10A 500V aM RITARDATO	507094	3	
I1	INTERRUTTORE GENERALE		518250+518226	1	
I2	INTERRUTTORE SALVAMOTORE	4-6.3A ART.GV2 ME10 SCHNEIDER	518276	1	
C1	MORSETTO	G/V4mmq ART.TEO.4 CABUR T0430	510150	2	
C2	MORSETTO	2,5mmq 4conn.art.CBR.2/GR CABUR cod.CR110GR (vite)	510207	2	
Q2					
Q3	COMMUTATORE 3POS. 25A	ST31/8ENSX70A SONTHEIMER	518270	1	
M1	MOTORE CENTRALINA	2,2KW 230/400V 50HZ 10,2/59A cosØ=0,73/0,70 1300 rpm	900003970	1	
M2	MOTORE MANDRINO	ME 80.B4 KW1.1 185V 50HZ 3PH3 C3A031B48800A30-C ICME	900004800	1	
V1	VENTOLA DI RAFFREDDAMENTO		16718	1	
	ASSIEME IV3K		19752	1	

COMPONENTS LIST

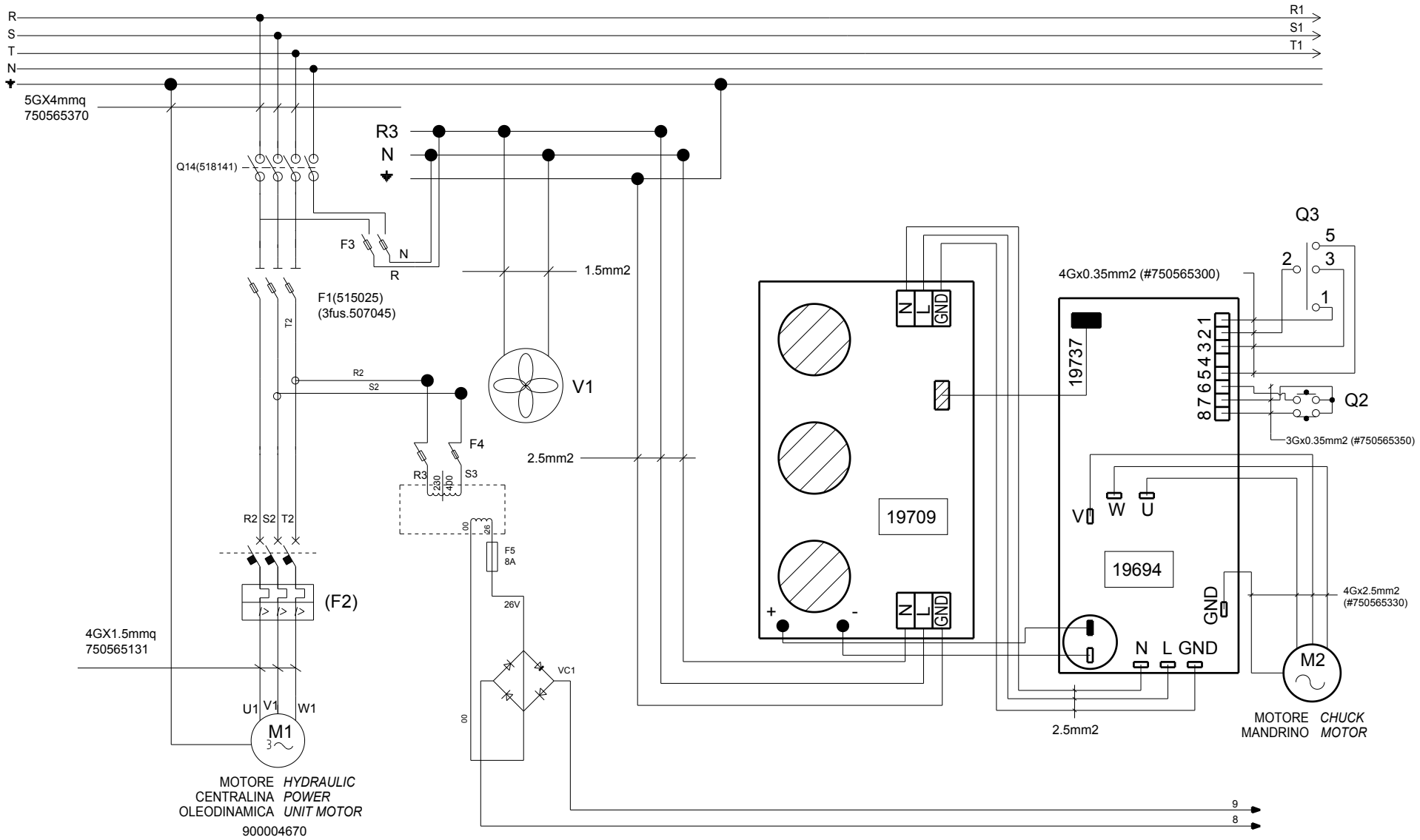
REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	ABBREVIATION ON CATALOGUE	QUANTITY	DOCUMENT REFERENCE
F1	FUSE HOLDER	3 POLES P10-3 5450334 WIMEX	515035	1	
	FUSE	10x38 10A 500V aM DELAYED	507094	3	
I1	GENERAL SWITCH		518250+518226	1	
I2	OVERLOAD CUTOUT SWITCH	4-6.3A ART.GV2 ME10 SCHNEIDER	518276	1	
C1	CLAMP	G/V4mmq ART.TEO.4 CABUR T0430	510150	2	
C2	CLAMP	2,5mmq 4conn.art.CBR.2/GR CABUR cod.CR110GR (vite)	510207	2	
Q2					
Q3	COMMUTATOR 3POS. 25A	ST31/8ENSX70A SONTHEIMER	518270	1	
M1	HYDRAULIC POWER UNIT MOTOR	2,2KW 230/400V 50HZ 10,2/59A cosØ=0,73/0,70 1300 rpm	900003970	1	
M2	CHUCK MOTOR	ME 80.B4 KW1.1 185V 50HZ 3PH3 C3A031B48800A30-C ICME	900004800	1	
V1	COOLING FAN		16718	1	
	IV3K ASSEMBLY		19752	1	

Valido per la versione con inverter per il modello con colonnetta comandi
Apply to version with inverter to model with control box
Gültig für die Version mit Frequenzumformer für Modell mit Kontrolkasten
Valide pour la version avec inverseur pour le modèle avec boîtier de commande
Válido para la versión con inversor para el modelo con caja de control



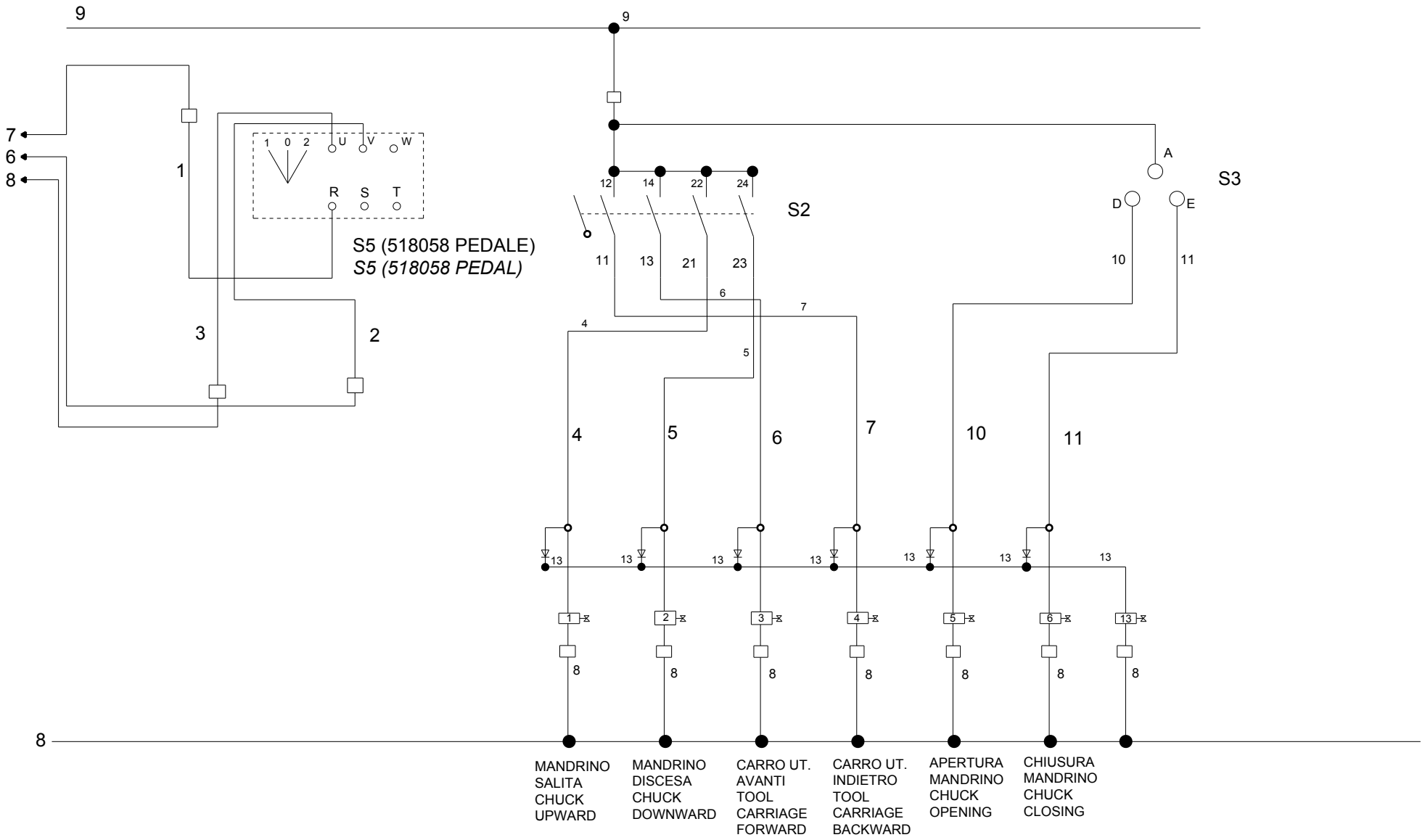
Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/7 ELECTRICAL SCHEME 1/7 SCHALTPLAN 1/7 SCHEMA ELECTRIQUE 1/7 ESQUEMA ELECTRICO 1/7*	***Pag. 61 di 77***
	Tavola N°E - Rev. 2	**750505560**		**NAV41.11N - NAV41.13EI**

Valido per la versione con inverter per il modello con colonnetta comandi
Apply to version with inverter to model with control box
Gültig für die Version mit Frequenzumformer für Modell mit Kontrolkasten
Valide pour la version avec inverseur pour le modèle avec boîtier de commande
Válido para la versión con inversor para el modelo con caja de control



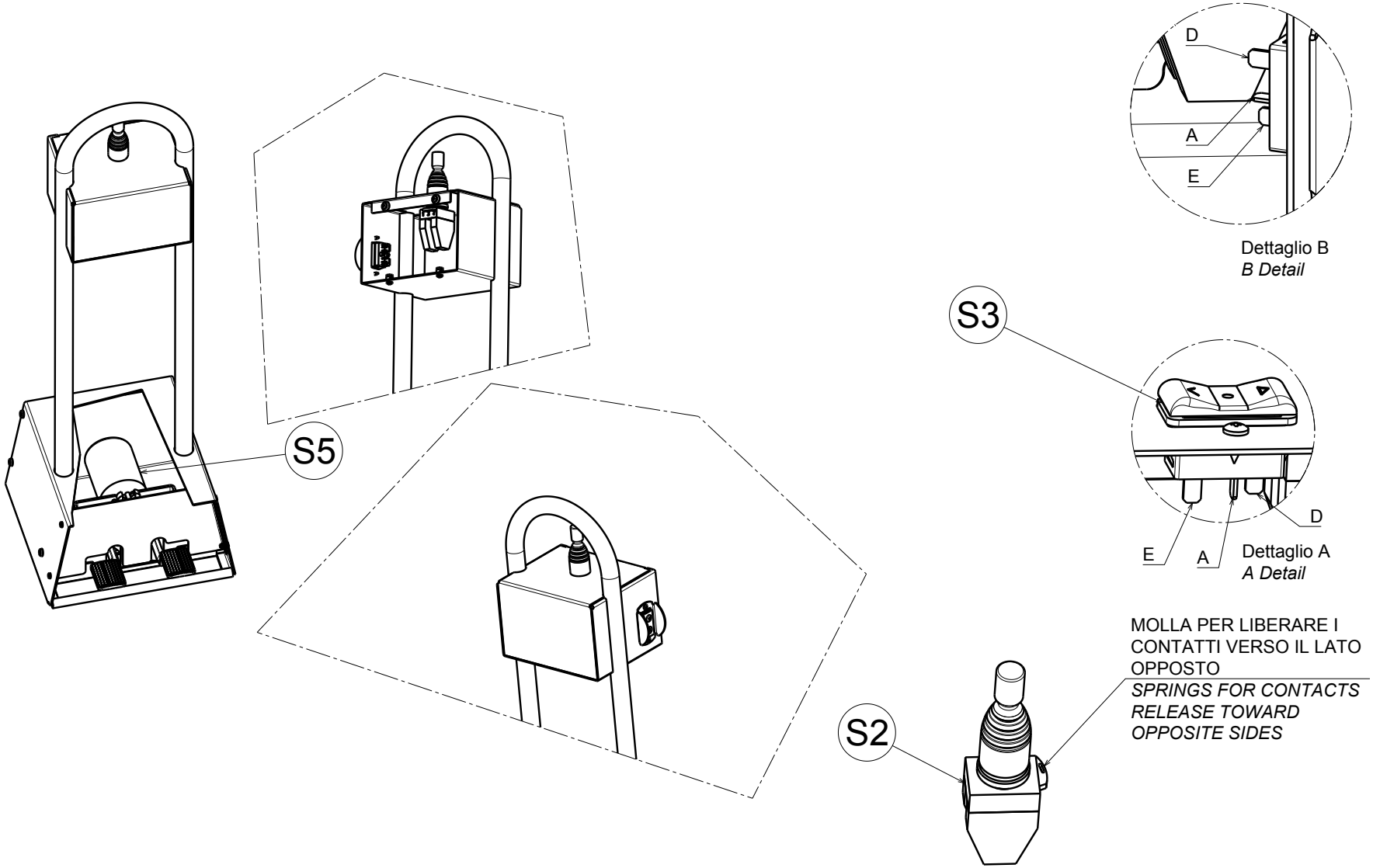
Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 2/7* *ELECTRICAL SCHEME 2/7* *SCHALTPLAN 2/7* *SCHEMA ELECTRIQUE 2/7* *ESQUEMA ELECTRICO 2/7*	***Pag. 62 di 77***
	Tavola N°E - Rev. 2	**750505560**		**NAV41.11N - NAV41.13EI**

Valido per la versione con inverter per il modello con colonnetta comandi
Apply to version with inverter to model with control box
Gültig für die Version mit Frequenzumformer für Modell mit Kontrolkasten
Valide pour la version avec inverseur pour le modèle avec boîtier de commande
Válido para la versión con inversor para el modelo con caja de control

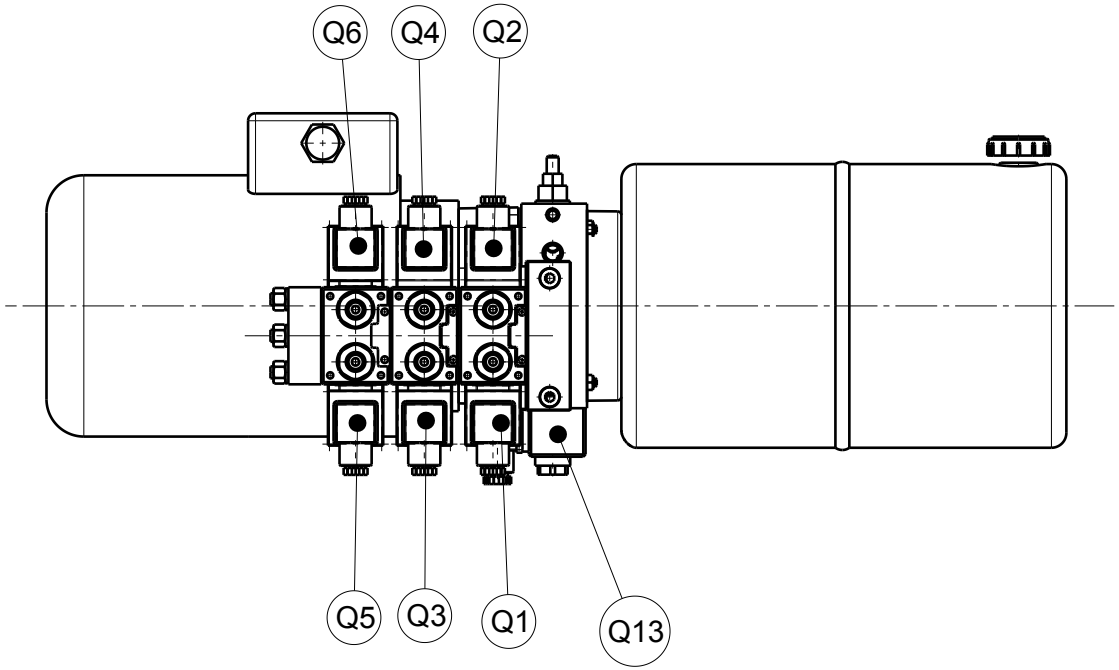


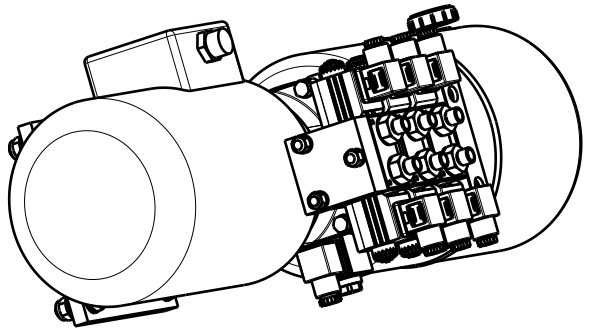
Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 3/7 ELECTRICAL SCHEME 3/7 SCHALTPLAN 3/7 SCHEMA ELECTRIQUE 3/7 ESQUEMA ELECTRICO 3/7*	***Pag. 63 di 77***
	Tavola N°E - Rev. 2	**750505560**		**NAV41.11N - NAV41.13EI**

Valido per la versione con inverter per il modello con colonnetta comandi
Apply to version with inverter to model with control box
Gültig für die Version mit Frequenzumformer für Modell mit Kontrolkasten
Valide pour la version avec inverseur pour le modèle avec boîtier de commande
Válido para la versión con inversor para el modelo con caja de control



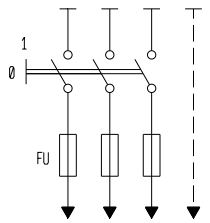
Valido per la versione con inverter per il modello con colonnetta comandi
Apply to version with inverter to model with control box
Gültig für die Version mit Frequenzumformer für Modell mit Kontrolkasten
Valide pour la version avec inverseur pour le modèle avec boîtier de commande
Válido para la versión con inversor para el modelo con caja de control





RIFERIMENTO	DESCRIZIONE	DATI TECNICI	SIGLA CATALOGO	QUANTITA	RIFERIMENTO DOCUMENTO
F1	PORTAFUSIBILE	3 POLI SEZIONABILE 10,3x38 32A 690V	515025	1	2.7
	FUSIBILE	10,3x38 16A 500V aM RITARDATO	507045	3	
F2	INTERRUTTORE AUTOM. TRIPOLARE	4-6.3A ART.GV2 ME10SCHNEIDER	518276	1	2.7
				1	2.7
F3-F4	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	515027	2	2.7
(F3)	FUSIBILE	RIT.10,3X38 25A 500V	507048	2	
(F4)	FUSIBILE	10,3X38 2A 500V RAPIDO	507019	2	
F5	PORTAFUSIBILE	UNIPOLARE 10,3X38 32A 690V	515029	1	2.7
	FUSIBILE	10,3X38 8A 500V AM	507100	1	2.7
Q1,Q2,Q3,Q4, Q5,Q6,Q13				7	
K3	MORSETTO 2.5mmq C/DIODO 1N4007		510218	6	2.7
K4	MORSETTO A MOLLA 2 PIAN.1.5mmq		510217	7	2.7
K5	MORSETTO G/V 4mmq ART.TEO.4 CABUR T0430		510150	2	2.7
VC1	PONTE RADDRIZZATORE VC1	-	B1296200	1	2.7
	CONDENSATORE C1-C2		B1296300	1	2.7
	INS.CAVO ALIMENTAZIONE QUADRO		750565370	1	
	INS.CAVO MOTORE MANDRINO		750565330	1	
	INS.CAVO MOTORE CENTRALINA	-	750565131	1	
	INS.CAVO MANIPOLATORE		750565141	1	
	INS.CAVO ELETTROVALV.Q1-Q2-Q3-Q4-Q5-Q6-Q13		750516151 750516161 750516171 750516181 750516191 750516201 750516211	1 1 1 1 1 1 1	
S2	MANIPOLATORE	4 POS.+CENTR.TEMPORANEE Ø22	517157AS	1	5.7
				1	
S3	PULSANTE BASCULANTE	-	517300	1	5.7
		-			
S5	INVERTITORE TRIPOLARE		518272	1	5.7
		-		1	
T1	TRASFORMATORE	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	528085	1	2.7
-	-	-	-	-	-
M1	MOTORE CENTRALINA	1,5KW 400V 50HZ 4/6,9A 1400rpm	900004670	1	3.7
M2	MOTORE MANDRINO	1,35/1,85KW 400V 50Hz 4/5.3A 1400/2800rpm	900003930	1	3.7

REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	ABBREVIATION ON CATALOGUE	QUANTITY	DOCUMENT REFERENCE
F1	FUSE HOLDER	10,3x38 32A 690V 3 POLES SECTIONABLE	515025	1	2.7
	FUSE	10,3x38 16A 500V aM DELAYED	507045	3	
F2	TRIPOLAR AUTOMATIC SWITCH	4-6.3A ART.GV2 ME10SCHNEIDER	518276	1	2.7
				1	2.7
F3-F4	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	515027	2	2.7
(F3)	FUSE	10,3X38 25A 500V DELAYED	507048	2	
(F4)	FUSE	10,3X38 2A 500V RAPID	507019	2	
F5	FUSE HOLDER	10,3X38 32A 69 SINGLE CORE0V	515029	1	2.7
	FUSE	10,3X38 8A 500V AM	507100	1	2.7
Q1,Q2,Q3,Q4, Q5,Q6,Q13				7	
K3	CLAMP 2.5mmq C/DIODO 1N4007		510218	6	2.7
K4	SPRING CLAMP 2 PIAN.1.5mmq		510217	7	2.7
K5	CLAMP G/V 4mmq ART.TEO.4 CABUR T0430		510150	2	2.7
VC1	VC1 RECTIFIER BRIDGE	-	B1296200	1	2.7
	C1-C2 CONDENSER		B1296300	1	2.7
	SQUARE FEEDING CABLE ASSEMBLY		750565370	1	
	CHUCK UNIT MOTOR CABLE ASSEMBLY		750565330	1	
	HYDR. POWER UNIT MOTOR CABLE ASSEMBLY	-	750565131	1	
	HANDLE CABLE ASSEMBLY		750565141	1	
	Q1-Q2-Q3-Q4-Q5-Q6-Q13 SOLENOID VALVE CABLE ASSEMBLY		750516151 750516161 750516171 750516181 750516191 750516201 750516211	1 1 1 1 1 1 1	
S2	HANDLE	4 POS.+CENTR.TEMPORARY Ø22	517157AS	1	5.7
				1	
S3	PUSHBUTTON	-	517300	1	5.7
		-			
S5	TRIPOLAR INVERTER		518272	1	5.7
		-		1	
T1	TRANSFORMER	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	528085	1	2.7
-	-	-	-	-	-
M1	HYDRAULIC POWER UNIT MOTOR	1,5KW 400V 50HZ 4/6,9A 1400rpm	900004670	1	3.7
M2	MOTOR CHUCK	1,35/1,85KW 400V 50Hz 4/5.3A 1400/2800rpm	900003930	1	3.7



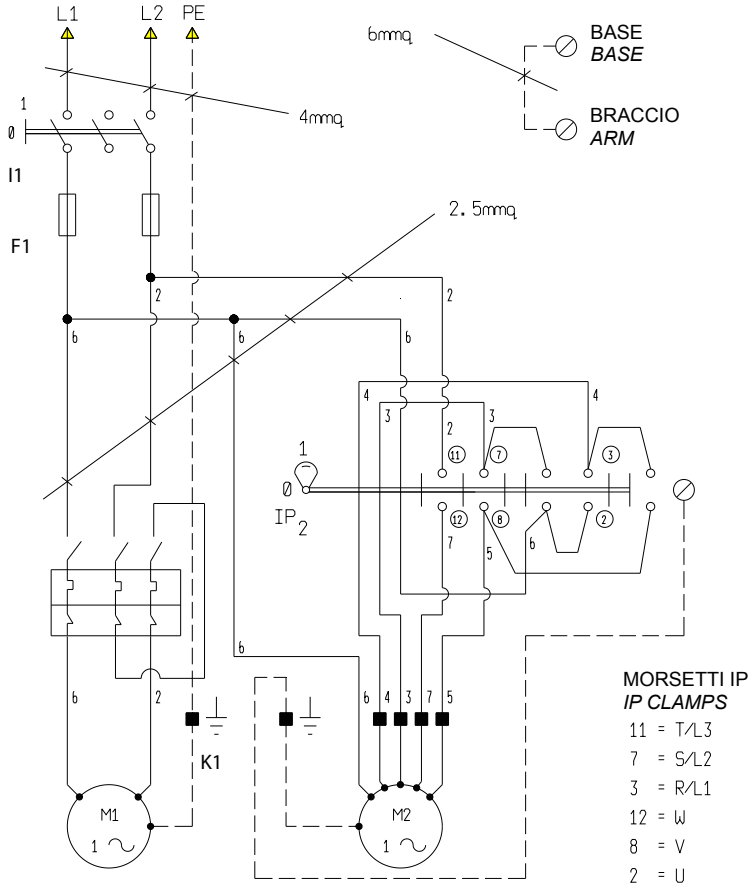
INSTALLAZIONE A CARICO DEL CLIENTE
INSTALLATION BY AUTHORIZED OPERATORS

FU	V / HZ	220
	50	25A aM
	60	25A aM

CAVO ALIMENTAZIONE 2P+TERRA x 4 mmq
POWER SUPPLY CABLE 2P+GROUND x 4 mmq

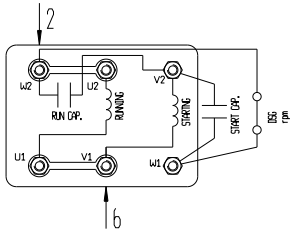
Valido per la versione 220 V - 1 Ph - 50 Hz
Apply to version 220 V - 1-Ph - 50 Hz
Gültig für die Version 220 V - 1 Ph - 50 Hz
Valide pour la version 220 V - 1 Ph - 50 Hz
Válido para la versión 220 V - 1 Ph - 50 Hz

Valido per la versione 220 V - 1 Ph - 60 Hz
Apply to version 220 V - 1-Ph - 60 Hz
Gültig für die Version 220 V - 1 Ph - 60 Hz
Valide pour la version 220 V - 1 Ph - 60 Hz
Válido para la versión 220 V - 1 Ph - 60 Hz

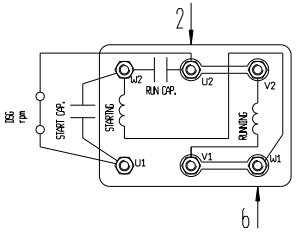


MORSETTI IP
IP CLAMPS

11 = T/L3
7 = S/L2
3 = R/L1
12 = W
8 = V
2 = U

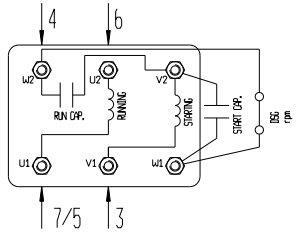


COLLEGAMENTO MOTORE ICME
ICME MOTOR CONNECTION

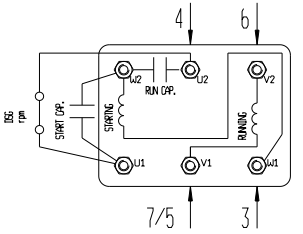


COLLEGAMENTO MOTORE CARPANELLI
CARPANELLI MOTOR CONNECTION

M1 PER INVERTIRE LA ROTAZIONE:
METTERE LE LAMELLE VERTICALI
IN ORDER TO REVERSE ROTATION:
APPLY THE VERTICAL REEDS



COLLEGAMENTO MOTORE ICME
ICME MOTOR CONNECTION



COLLEGAMENTO MOTORE CARPANELLI
CARPANELLI MOTOR CONNECTION

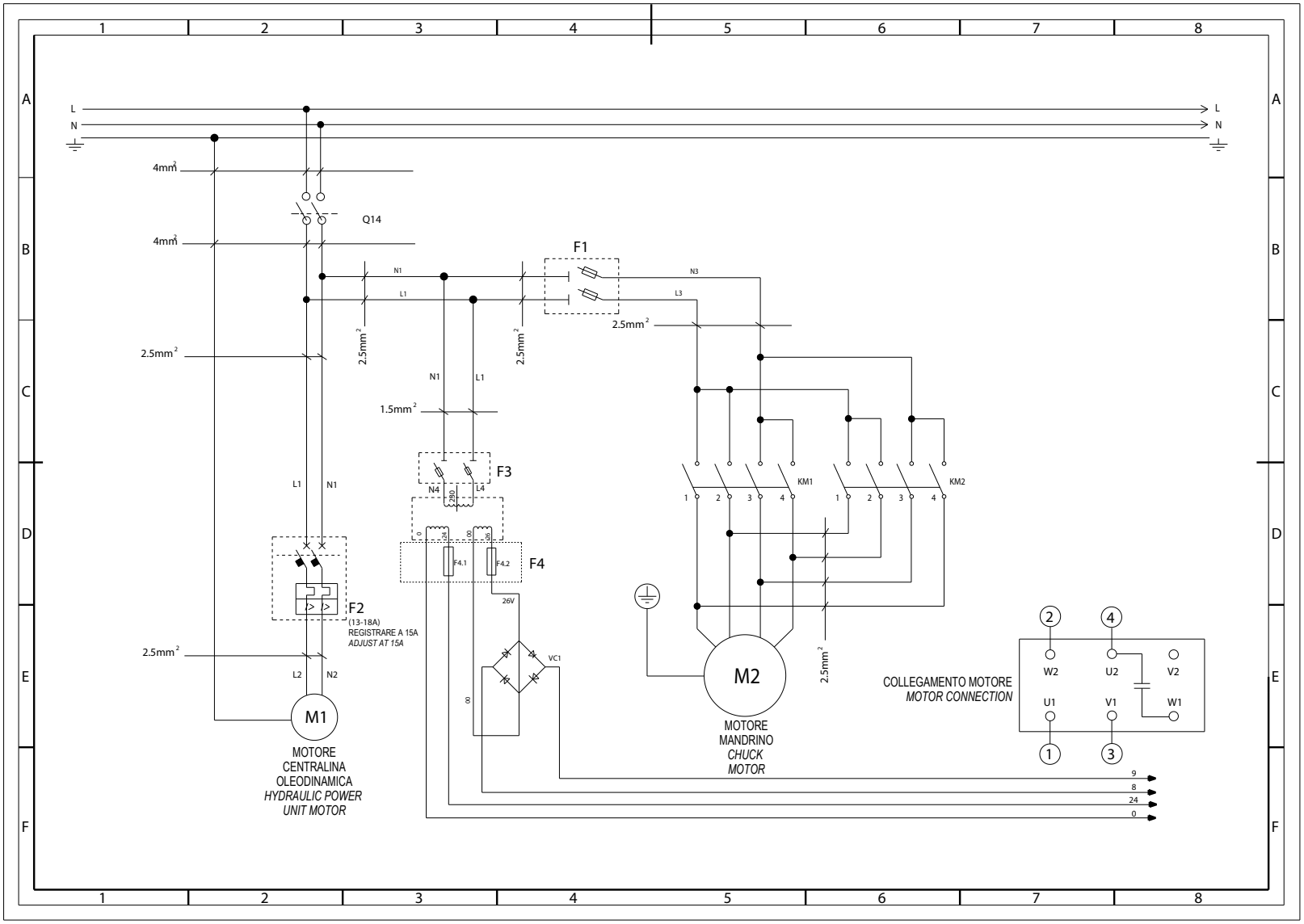
M2 PER INVERTIRE LA ROTAZIONE:
SCAMBIARE IL FILO n°3 CON IL FILO n°4
IN ORDER TO REVERSE ROTATION:
EXCHANGE WIRE nr.3 WITH WIRE nr:4

Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO ELECTRICAL SCHEME SCHALTPLAN SCHEMA ELECTRIQUE ESQUEMA ELECTRICO*	***Pag. 68 di 77***
	Tavola N°F - Rev. 1	**750505620**		**NAV41.11N - NAV41.13EI**

Motori rotazione mandrino e centralina idraulica
Chuck rotation motors and hydraulic power unit
Spindelrotationsmotoren und Hydrauliksteuerung
Moteurs rotation mandrin et distributeur hydraulique
Motores rotación mandril y centralita hidráulica

Valido per la versione 230 V - 1 Ph - 50 Hz
Apply to version 230 V - 1-Ph - 50 Hz
Gültig für die Version 230 V - 1 Ph - 50 Hz
Valide pour la version 230 V - 1 Ph - 50 Hz
Válido para la versión 230 V - 1 Ph - 50 Hz

Valido per la versione 230 V - 1 Ph - 60 Hz
Apply to version 230 V - 1 Ph - 60 Hz
Gültig für die Version 230 V - 1 Ph - 60 Hz
Valide pour la version 230 V - 1 Ph - 60 Hz
Válido para la versión 230 V - 1 Ph - 60 Hz

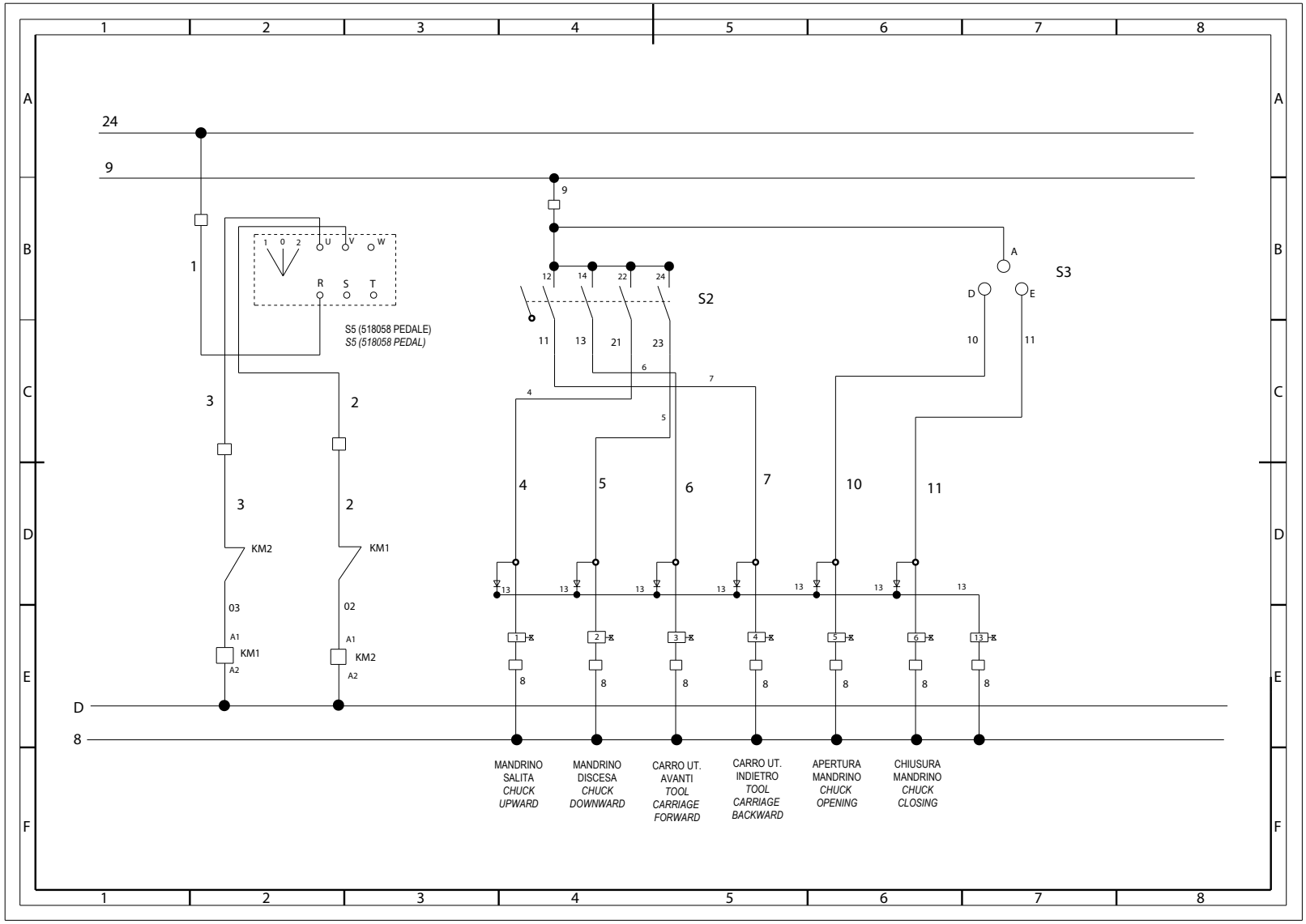


Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 1/4 ELECTRICAL SCHEME 1/4 SCHALTPLAN 1/4 SCHEMA ELECTRIQUE 1/4 ESQUEMA ELECTRICO 1/4*	***Pag. 69 di 77***
	Tavola N°G - Rev. 0	**750505640**		**NAV41.11N - NAV41.13EI**

Comando motori
Motors control
Motorsteuerung
Commande moteurs
Mando motores

Valido per la versione 230 V - 1 Ph - 50 Hz
Apply to version 230 V - 1-Ph - 50 Hz
Gültig für die Version 230 V - 1 Ph - 50 Hz
Valide pour la version 230 V - 1 Ph - 50 Hz
Válido para la versión 230 V - 1 Ph - 50 Hz

Valido per la versione 230 V - 1 Ph - 60 Hz
Apply to version 230 V - 1 Ph - 60 Hz
Gültig für die Version 230 V - 1 Ph - 60 Hz
Valide pour la version 230 V - 1 Ph - 60 Hz
Válido para la versión 230 V - 1 Ph - 60 Hz



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA ELETTRICO 2/4 ELECTRICAL SCHEME 2/4 SCHALTPLAN 2/4 SCHEMA ELECTRIQUE 2/4 ESQUEMA ELECTRICO 2/4*	***Pag. 70 di 77***
	Tavola N°G - Rev. 0	**750505640**		**NAV41.11N - NAV41.13EI**

Valido per la versione 230 V - 1 Ph - 50 Hz
Apply to version 230 V - 1-Ph - 50 Hz
Gültig für die Version 230 V - 1 Ph - 50 Hz
Valide pour la version 230 V - 1 Ph - 50 Hz
Válido para la versión 230 V - 1 Ph - 50 Hz

Valido per la versione 230 V - 1 Ph - 60 Hz
Apply to version 230 V - 1 Ph - 60 Hz
Gültig für die Version 230 V - 1 Ph - 60 Hz
Valide pour la version 230 V - 1 Ph - 60 Hz
Válido para la versión 230 V - 1 Ph - 60 Hz

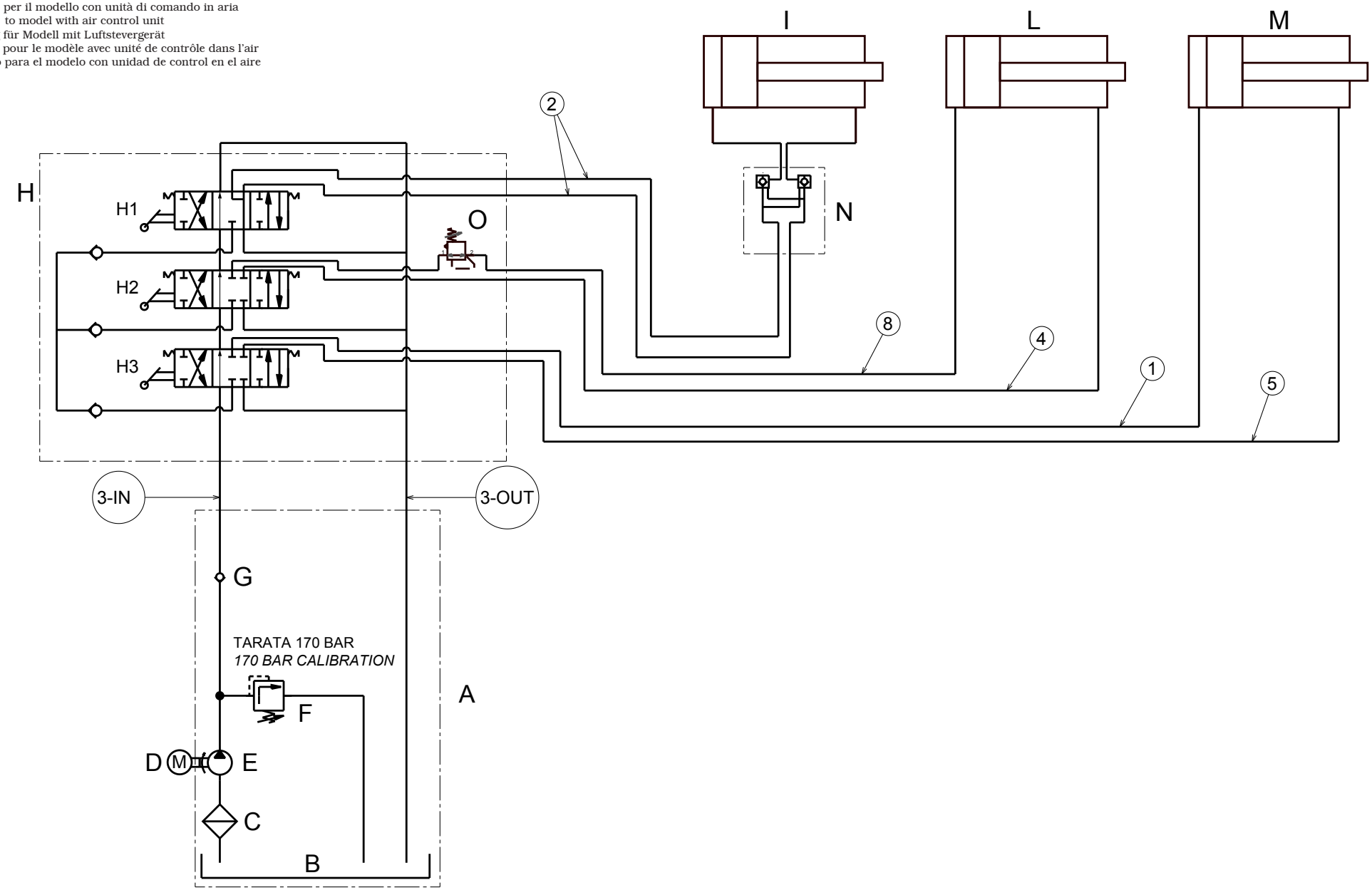
RIFERIMENTO	DESCRIZIONE	DATI TECNICI	QUANTITA'
F1	PORTAFUSIBILE	PORTAF.BIP.GK1-DD 32A F.10X38	1
	FUSIBILE	FUSIB.RITARDATO 16A 500V AM 10,3x38	2
F2	INTERRUTTORE AUTOM. TRIPOLARE	INTERRUTTORE MAGNETOTERMICO 13-18 A	1
F3	PORTAFUSIBILE	2 POLI SEZIONABILE 10,3x38 32A 690V	1
	FUSIBILE	FUSIBILE RITARD.10,3X38 2A 500	2
F4	PORTAFUSIBILE	PORTAF.BIP.GK1-DD 32A F.10X38	1
	FUSIBILE	FUSIBILE GL 10,3X38 2A 500V RAPIDO	1
	FUSIBILE	FUSIB.10,3X38 8A 500V RAPIDO	1
Q1,Q2,Q3,Q4, Q5,Q6,Q13			7
KM1	CONTATTORE	CONTATTORE QUADRIPOLARE 32A - 50/60HZ 24VAC	1
KM2	CONTATTORE	CONTATTORE QUADRIPOLARE 32A - 50/60HZ 24VAC	1
K3	MORSETTO 2.5mmq C/DIODO	MORS.2,5 C/DIOD.1N5408 PHOENIX ST2,5-QUATTRO DIO 1N 5408K/R-L	6
K4	MORSETTO A MOLLA 2 PIAN.2.5mmq	MORSETTO 2,5mmq ST 2,5-QUATTRO PHOENIX cod.3031306 (molla) 4C	7
K5	MORSETTO G/V 4mmq	MORSETTO G/V 4mmq art.UT 4-PE PHOENIX COD.3044128 (vite)	2
VC1	PONTE RADDRIZZATORE VC1	-	1
	CONDENSATORE C1-C2		1
	INS.CAVO MANIPOLATORE		1
	INS.CAVO ELETTROVALV.Q1-Q2-Q3-Q4-Q5-Q6-Q13		1 1 1 1 1 1 1
S2	MANIPOLATORE	4 POS.+CENTR.TEMPORANEE Ø22	1
S3	PULSANTE BASCULANTE		1
S5	INVERTITORE TRIPOLARE		1
T1	TRASFORMATORE	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	1
M1	MOTORE CENTRALINA	GM90M4 1,85kW 4P B34 230V 50Hz 1Ph IP54 S6 ELPROM NS2546/010	1
M2	MOTORE MANDRINO	GM90M4 1,85kW 4P B34 230V 50Hz 1Ph IP54 S3 ELPROM NS2546/009	1

Valido per la versione 230 V - 1 Ph - 50 Hz
Apply to version 230 V - 1-Ph - 50 Hz
Gültig für die Version 230 V - 1 Ph - 50 Hz
Valide pour la version 230 V - 1 Ph - 50 Hz
Válido para la versión 230 V - 1 Ph - 50 Hz

Valido per la versione 230 V - 1 Ph - 60 Hz
Apply to version 230 V - 1 Ph - 60 Hz
Gültig für die Version 230 V - 1 Ph - 60 Hz
Valide pour la version 230 V - 1 Ph - 60 Hz
Válido para la versión 230 V - 1 Ph - 60 Hz

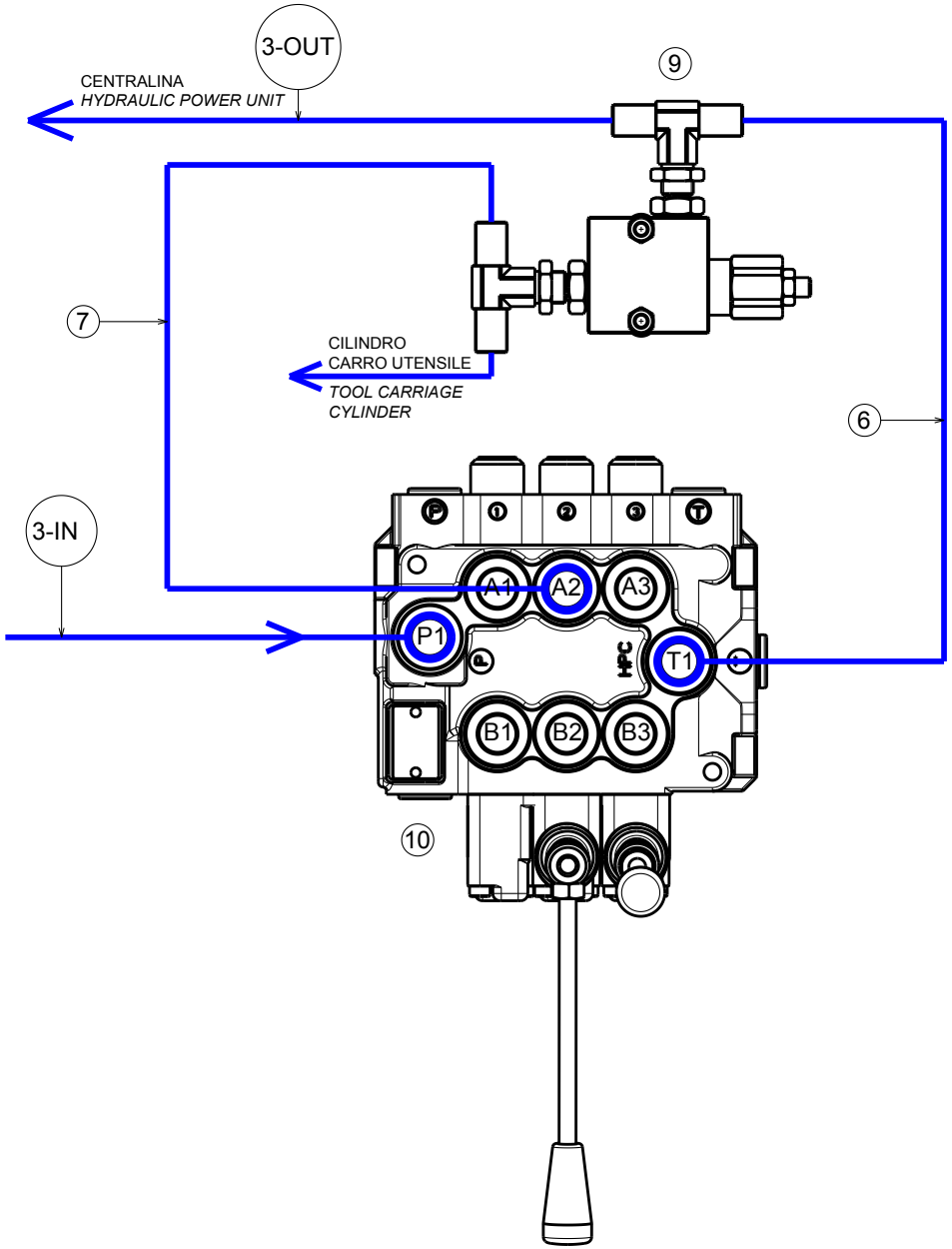
REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	QUANTITY
F1	FUSE HOLDER	BIP.GK1-DD 32A F.10X38 FUSE HOLDER	1
	FUSE	16A 500V AM 10,3x38 DELAYED FUSE	2
F2	TRIPOLAR AUTOMATIC SWITCH	13-18 A MAGNETIC-THERMIQUE SWITC	1
F3	FUSE HOLDER	10,3x38 32A 690V 2 POLES SECTIONABLE	1
	FUSE	10,3X38 2A 500 DELAYED FUSE	2
F4	FUSE HOLDER	BIP.GK1-DD 32A F.10X38 FUSE HOLDER	1
	FUSE	GL 10,3X38 2A 500V RAPID FUSE	1
	FUSE	10,3X38 8A 500V RAPID FUSE	1
Q1,Q2,Q3,Q4, Q5,Q6,Q13			7
KM1	CONTACTOR	QUADRIPOLAR CONTACTOR 32A - 50/60HZ 24VAC	1
KM2	CONTACTOR	QUADRIPOLAR CONTACTOR 32A - 50/60HZ 24VAC	1
K3	CLAMP 2.5mmq C/DIODO	CLAMP 2.5mmq C/DIODO 1N5408 PHOENIX ST2,5-FOUR DIO 1N 5408K/R-L	6
K4	SPRING CLAMP 2 PIAN.2.5mmq	2,5mmq CLAMP ST 2,5-FOUR PHOENIX cod.3031306 (spring) 4C	7
K5	CLAMP Y/G 4mmq	CLAMP Y/G 4mmq art.UT 4-PE PHOENIX COD.3044128 (bolt)	2
VC1	VC1 RECTIFIER BRIDGE	-	1
	C1-C2 CONDENSER		1
	HANDLE CABLE ASSEMBLY		1
	SOLENOID VALVES CABLE ASSEMBLY Q1-Q2-Q3-Q4-Q5-Q6-Q13		1 1 1 1 1 1 1
S2	HANDLE	4 POS.+CENTR.TEMPORARY Ø22	1
S3	PUSHBUTTON		1
S5	TRIPOLAR INVERTER		1
T1	TRANSFORMER	100 VA 50/60 Hz PRI: 0/400V SEC: 0/24V 0/26V	1
M1	HYDRAULIC POWER UNIT MOTOR	GM90M4 1,85kW 4P B34 230V 50Hz 1Ph IP54 S6 ELPROM NS2546/010	1
M2	MOTOR CHUCK	GM90M4 1,85kW 4P B34 230V 50Hz 1Ph IP54 S3 ELPROM NS2546/009	1

Valido per il modello con unità di comando in aria
Apply to model with air control unit
Gültig für Modell mit Luftstevergerät
Valide pour le modèle avec unité de contrôle dans l'air
Válido para el modelo con unidad de control en el aire



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA OLEODINAMICO 1/3 HYDRAULIC SCHEME 1/3 ÖLDYNAMISCHPLAN 1/3 SCHEMA HYDRAULIQUE 1/3 ESQUEMA OLEODINÁMICO 1/3*	***Pag. 73 di 77***
	Tavola N°H - Rev. 2	**750505021**		**NAV41.11N - NAV41.13EI**

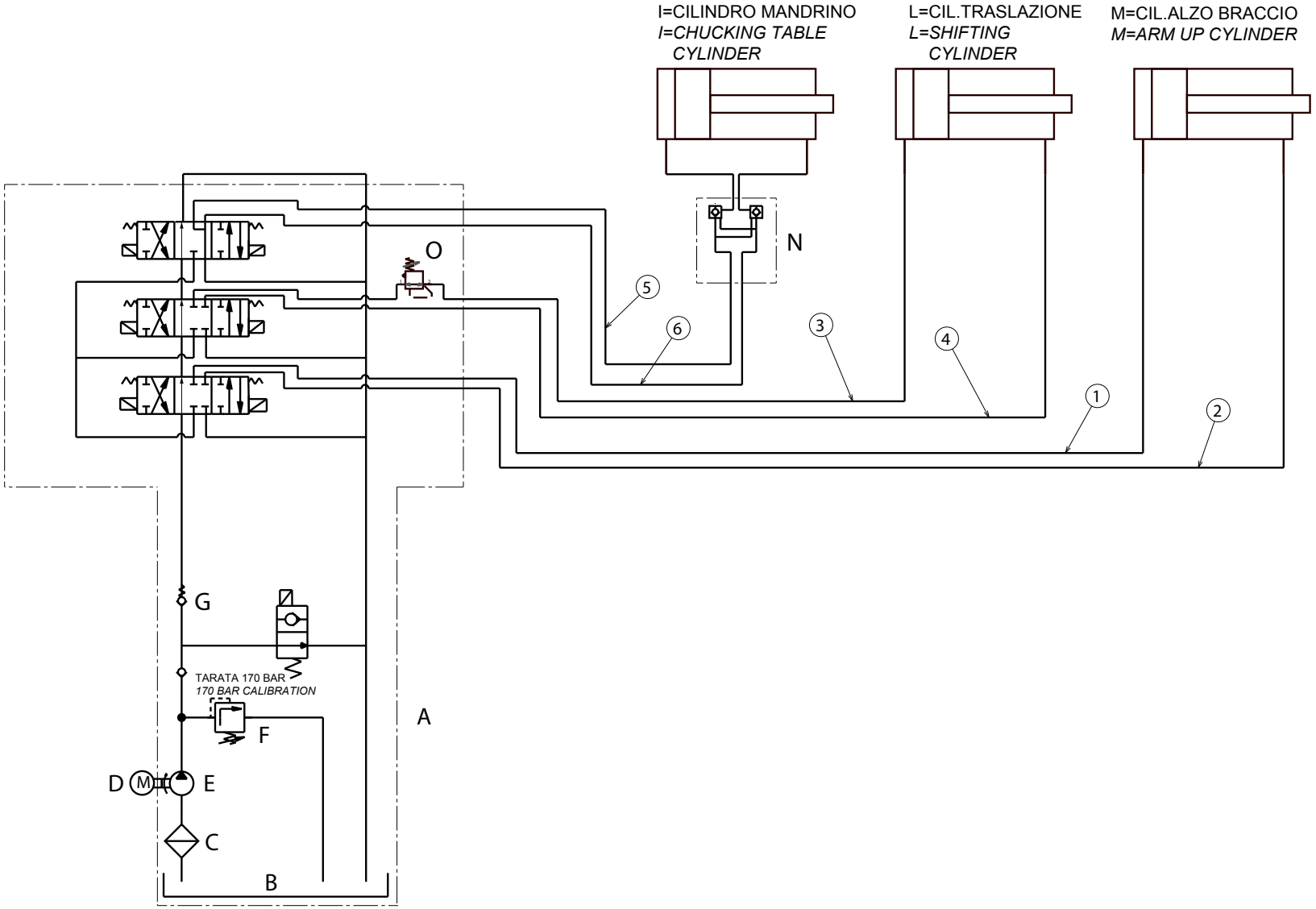
Valido per il modello con unità di comando in aria
Apply to model with air control unit
Gültig für Modell mit Luftstevergerät
Valide pour le modèle avec unité de contrôle dans l'air
Válido para el modelo con unidad de control en el aire



Butler ENGINEERING and MARKETING S.P.A.	LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS		*SCHEMA OLEODINAMICO 2/3* *HYDRAULIC SCHEME 2/3* *ÖLDYNAMISCHPLAN 2/3* *SCHEMA HYDRAULIQUE 2/3* *ESQUEMA OLEODINÁMICO 2/3*	***Pag. 74 di 77***
	Tavola N°H - Rev. 2	**750505021**		**NAV41.11N - NAV41.13EI**

N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
1	750560080	Tubo oleodinamico 3/16 L=4500	L=4500 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=4500	Tuyau oléohydraulique 3/16 L=4500	Tubo oleodinámico 3/16 L=4500
2	752260330	Tubo oleodinamico 3/16 L=6300	L=6300 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=6300	Tuyau oléohydraulique 3/16 L=6300	Tubo oleodinámico 3/16 L=6300
3	750560050	Tubo oleodinamico 1/4 L=4600	L=4600 1/4 oil-pressure hose	Öl-Luft Rohr 1/4 L=4600	Tuyau oléohydraulique 1/4 L=4600	Tubo oleodinámico 1/4 L=4600
4	750560060	Tubo oleodinamico 3/16 L=4700	L=4700 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=4700	Tuyau oléohydraulique 3/16 L=4700	Tubo oleodinámico 3/16 L=4700
5	750560090	Tubo oleodinamico 3/16 L=4800	L=4800 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=4800	Tuyau oléohydraulique 3/16 L=4800	Tubo oleodinámico 3/16 L=4800
6	750360180	Tubo oleodinamico 1/4 L=320	L=320 1/4 oil-pressure hose	Öl-Luft Rohr 1/4 L=320	Tuyau oléohydraulique 1/4 L=320	Tubo oleodinámico 1/4 L=320
7	750360190	Tubo oleodinamico 3/16 L=240	L=240 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=240	Tuyau oléohydraulique 3/16 L=240	Tubo oleodinámico 3/16 L=240
8	750560260	Tubo oleodinamico 3/16 L=4700	L=4700 3/16 oil-pressure hose	Öl-Luft Rohr 3/16 L=4700	Tuyau oléohydraulique 3/16 L=4700	Tubo oleodinámico 3/16 L=4700
9	750391340	Gruppo valvola limitatrice	Relief valve assembly	Entlastungsventilsatz	Ensemble soupape de décharge	Conjunto válvula de alivio
10	750391350	Gruppo distributore idraulico	hydraulic distributor assembly	Hydraulikverteilersatz	Ensemble distributeur hydraulique	Conjunto distribuidor hidráulico
A		Centralina	Hydraulic power unit	Steuerung	Distributeur	Centralita
B		Serbatoio	Tank	Tank	Réservoir	Tanque
C		Filtro	Filter	Filter	Filtre	Filtro
D		Motore pompa	Pump motor	Pumpenmotor	Moteur pompe	Motor bomba
E		Pompa	Pump	Pumpe	Pompe	Bomba
F		Valvola di taratura	Calibration valve	Kalibrierungsventil	Soupape de calibrage	Válvula de calibrado
G		Valvola unidirezionale	Unidirect. Valve	Einseitigventil	Soupape unidirectionelle	Valvúla unidir.
H		Blocco valvole di comando	Control valves block	Block der Steuerventile	Bloc soupapes de commande	Bloque válvulas de mando
I		Cilindro apertura/chiusura mandrino	Mandrel open/close cylinder	Zylinder für öffnung/verschluss des Spindels	Cylindre ouverture/fermeture mandrin	Cilindro apertura/cierre mandril
L		Cilindro traslazione carrello	Carriage translation cylinder	Zylinder für Wagensverschiebung	Cylindre translation chariot	Cilindro traslación carro
M		Cilindro sollevamento mandrino	Chuck lifting cylinder	Zylinder für Spindelsanheben	Cylindre élévation mandrin	Cilindro levantamiento mandril
N		Modulo + doppio ritegno pilotato	Module + double controlled check	Modul + doppelter gesteuerter Anschlag	Modulet + double retenue commandée	Módulo + doble retención controlada
O		Valvola regolatrice di pressione	Pressure regulation valve	Ventil für Druckseinstellung	Soupape régulation pression	Válvula reguladora de presión
P1		Ingresso olio	Oil inlet	Öleinlass	Entrée huile	Entrada aceite
T1		Scarico olio	Oil drain	Ölablauf	Vidange huile	Drenaje aceite
A1		Apertura mandrino	Chuck opening	Spilndelöffnung	Ouverture mandrin	Abertura mandril
B1		Chiusura mandrino	Chuck closing	Spindelsschließen	Fermeture mandrin	Cierre mandril
A2		Avanti carro utensile	Tool carriage forward	Werkzeugwagen vorwärts	Chariot outil en avant	Carro útil adelante
B2		Indietro carro utensile	Tool carriage backward	Werkzeugwagen rückwärts	Chariot outil en arrière	Carro útil atrás
A3		Giù mandrino	Chuck down	Spindel unten	Mandrin bas	Mandril abajo
B3		Su mandrino	Chuck up	Spindel oben	Mandrin haut	Mandril arriba

Valido per i modelli con colonnetta comandi
Apply to models with control box
Gültig für Modelle mit Kontrolkasten
Valide pour les modèles avec boîtier de commande
Válido para los modelos con caja de control



Butler ENGINEERING and MARKETING S.P.A.	**LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIECES DETACHEES - LISTA DE PIEZAS**		*SCHEMA OLEODINAMICO HYDRAULIC SCHEME ÖLDYNAMISCHPLAN SCHEMA HYDRAULIQUE ESQUEMA OLEODINÁMICO*	***Pag. 76 di 77***
	Tavola N°I - Rev. 1	**750505041**		**NAV41.11N - NAV41.13EI**

N°	Cod.	Descrizione	Description	Beschreibung	Description	Descripción
1	750560210	*Tubo oleodinamico 3/16 L=1120*	*L=1120 3/16 oil-pressure hose*	*3/16 Öl-Luft Schlauch L=1120*	*Tuyau oléohydraulique 3/16 L=1120*	*Tubo oleodinámico 3/16 L=1120*
2	750560220	*Tubo oleodinamico 3/16 L=1640*	*L=1640 3/16 oil-pressure hose*	*3/16 Öl-Luft Schlauch L=1640*	*Tuyau oléohydraulique 3/16 L=1640*	*Tubo oleodinámico 3/16 L=1640*
3	750560230	*Tubo oleodinamico 3/16 L=2145*	*L=2145 3/16 oil-pressure hose*	*3/16 Öl-Luft Schlauch L=2145*	*Tuyau oléohydraulique 3/16 L=2145*	*Tubo oleodinámico 3/16 L=2145*
4	750560240	*Tubo oleodinamico 3/16 L=1670*	*L=1670 3/16 oil-pressure hose*	*3/16 Öl-Luft Schlauch L=1670*	*Tuyau oléohydraulique 3/16 L=1670*	*Tubo oleodinámico 3/16 L=1670*
5	750560100	*Tubo oleodinamico 3/16 L=2900*	*L=2900 3/16 oil-pressure hose*	*3/16 Öl-Luft Schlauch L=2900*	*Tuyau oléohydraulique 3/16 L=2900*	*Tubo oleodinámico 3/16 L=2900*
A		*Centralina*	*Hydraulic power unit*	*Steuerung*	*Distributeur*	*Centralita*
B		*Serbatoio*	*Tank*	*Tank*	*Réservoir*	*Tanque*
C		*Filtro*	*Filter*	*Filter*	*Filtre*	*Filtro*
D		*Motore pompa*	*Pump motor*	*Pumpenmotor*	*Moteur pompe*	*Motor bomba*
E		*Pompa*	*Pump*	*Pumpe*	*Pompe*	*Bomba*
F		*Valvola di taratura*	*Calibration valve*	*Kalibrierungsventil*	*Soupape de calibrage*	*Válvula de calibrado*
G		*Valvola unidirezionale*	*Unidirect. Valve*	*Einseitigventil*	*Soupape unidirect*	*Valvúla unidir.*
I		*Cilindro apertura/chiusura mandrino*	*Mandrel open/close cylinder*	*Zylinder für öffnung/verschluss des Spindels*	*Cylindre ouverture/fermeture mandrin*	*Cilindro apertura/cierre mandril*
L		*Cilindro traslazione carrello*	*Carriage translation cylinder*	*Zylinder für Wagensverschiebung*	*Cylindre translation chariot*	*Cilindro traslación carro*
M		*Cilindro sollevamento mandrino*	*Mandrel lifting cylinder*	*Zylinder für Spindelsanheben*	*Cylindre élévation mandrin*	*Cilindro levantamiento mandril*
N		*Modulo + doppio ritegno pilotato*	*Module + double controlled check*	*Modul + doppelter gesteuerter Anschlag*	*Modulet + double retenue commandée*	*Módulo + doble retención controlada*
O		*Valvola regolatrice di pressione*	*Pressure regulation valve*	*Ventil für Druckseinstellung*	*Soupape régulation pression*	*Válvula reguladora de presión*

Butler
Engineering and Marketing

Dichiarazione di Conformità
Declaration of Conformity
Konformitätserklärung
Déclaration de Conformité
Declaración de Conformidad

CE

Noi
We / Wir / Nous / Nosotros

BUTLER ENGINEERING AND MARKETING S.p.A.s.u.
Via dell'Ecologia, 6
42047 Rolo RE ITALIA

dichiariamo sotto la nostra esclusiva responsabilità che il prodotto
declare, undertaking sole responsibility, that the product
erklären unter unserer alleinigen Verantwortung, dass das Produkt
déclarons, sous notre entière responsabilité, que le produit
declaramos bajo nuestra exclusiva responsabilidad, que el producto

Smontagomme *Tyre changer* *Reifenmontiermaschine* *Démonte-Pneus* *Desmontadora*	

al quale questa dichiarazione si riferisce, risponde alle seguenti Direttive applicabili:
to which this declaration applies is in compliance with the following applicable Directives:
auf das sich diese Erklaerung bezieht, den nachstehenden anwendbaren Normen entspricht:
objet de cette déclaration est conforme aux Directives applicables suivantes:
al que se refiere esta declaración cumple con las siguientes Normas aplicables:

2006/42/CE	Direttiva Macchine
2014/30/UE	Direttiva Compatibilità Elettromagnetica

Per la conformità alle suddette direttive sono state seguite le seguenti Norme Armonizzate:
To comply with the above mentioned Directives, we have followed the following harmonized directives:
In Übereinstimmung mit o.g. Richtlinien wurden folgende harmonisierte Normen befolgt:
Pour la conformité aux normes ci-dessus, nous avons suivi les normes harmonisées suivantes:
Para la conformidad a las Normas arriba mencionadas, hemos seguido las siguientes Normas armonizadas:

UNI EN ISO 12100:2010	Sicurezza del macchinario – Principi generali di progettazione – Valutazione del rischio e riduzione del rischio
CEI EN 60204-1:2018	Sicurezza del macchinario – Equipaggiamento elettrico delle macchine – Parte 1: Regole generali

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Rolo,

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The version of this declaration conforms to the regulation
Das Modell der vorliegenden Erklärung entspricht der Norm
Le modèle de la présente déclaration est conforme à la norme
El modelo de la presente declaración cumple la norma

Dichiarazione di Conformità
Declaration of Conformity
Konformitätserklärung
Déclaration de Conformité
Declaración de Conformidad

CE

Noi
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Vehicle Service Group Italy S.r.l.
via Brunelleschi, 9
44020 San Giovanni di Ostellato (Ferrara) – ITALIA

dichiariamo sotto la nostra esclusiva responsabilità che il prodotto
declare, undertaking sole responsibility, that the product
erklären unter unserer alleinigen Verantwortung, dass das Produkt
déclarons, sous notre entière responsabilité, que le produit,
declaramos bajo nuestra exclusiva responsabilidad, que el producto

Smontagomme / Tyre Changer Reifenmontiermaschinen / Démonte Pneus Desmonta Neumáticos	

al quale questa dichiarazione si riferisce, risponde alle seguenti Direttive applicabili:
to which this declaration applies is in compliance with the following applicable Directives:
auf das sich diese Erklaerung bezieht, den nachstehenden anwendbaren Normen entspricht:
objet de cette déclaration est conforme aux Directives applicables suivantes:
al que se refiere esta declaración cumple con las siguientes Normas aplicables:

2006/42/CE	Direttiva Macchine
2014/30/UE	Direttiva Compatibilità Elettromagnetica

Per la conformità alle suddette direttive sono state seguite le seguenti Norme Armonizzate:
To comply with the above mentioned Directives, we have followed the following harmonized directives:
In Übereinstimmung mit o.g. Richtlinien wurden folgende harmonisierte Normen befolgt:
Pour la conformité aux normes ci-dessus, nous avons suivi les normes harmonisées suivantes:
Para la conformidad a las Normas arriba mencionadas, hemos seguido las siguientes normas armonizadas:

UNI EN ISO 12100:2010	Sicurezza del macchinario – Principi generali di progettazione - Valutazione del rischio e riduzione del rischio
CEI EN 60204-1:2018	Sicurezza del macchinario – Equipaggiamento elettrico delle macchine - Parte 1: Regole generali

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SIMONE FERRARI
VP VSG Europe Managing Director

S.G. di Ostellato, / /

Il modello della presente dichiarazione è conforme alla norma **UNI CEI EN ISO/IEC 17050-1**
The version of this declaration conforms to the regulation
Das Modell der vorliegenden Erklärung entspricht der Norm
Le modèle de la présente déclaration est conforme à la norme
El modelo de la presente declaración cumple la norma

UK Declaration of Conformity

We

Vehicle Service Group Italy S.r.l.
via Brunelleschi, 9
44020 San Giovanni di Ostellato (Ferrara) – ITALIA

declare, undertaking sole responsibility, that the product

Tyre Changer	

to which this declaration applies is in compliance with the following applicable Regulations:

The Supply of Machinery (Safety) Regulations 2008

The Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016

To comply with the above mentioned Regulations, we have followed, totally, the following designated standards

BS EN ISO 12100:2010	Safety of machinery. General principles for design. Risk assessment and risk reduction.
BS EN 60204-1:2018	Safety of machinery. Electrical equipment of machines. General requirements.
BS EN 61000-6-3:2007 +A1:2011 +AC:2012	Electromagnetic compatibility (EMC) - Part 6-3. Generic Standards - Emission standard for residential, commercial and light-industrial environments.
BS EN 61000-6-2:2005 +AC:2005	Electromagnetic compatibility (EMC) - Part 6-2. Generic Standards - Immunity for industrial environments.

The technical documentation file is constituted by

VEHICLE SERVICE GROUP UK LTD
3 Fourth Avenue
Bluebridge Industrial Estate
Halstead
Essex C09 2SY
United Kingdom

S.G.di Ostellato, / /

SIMONE FERRARI
VP VSG Europe Managing Director

UK7503-DC001P 01/07/2023

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