R573 - R573BT Tire Changer

OPERATION & MAINTENANCE MANUAL

IMPORTANT **Any damage caused by failure to follow the instructions in this manual or improper machine use shall relieve the manufacturer of all liability.**

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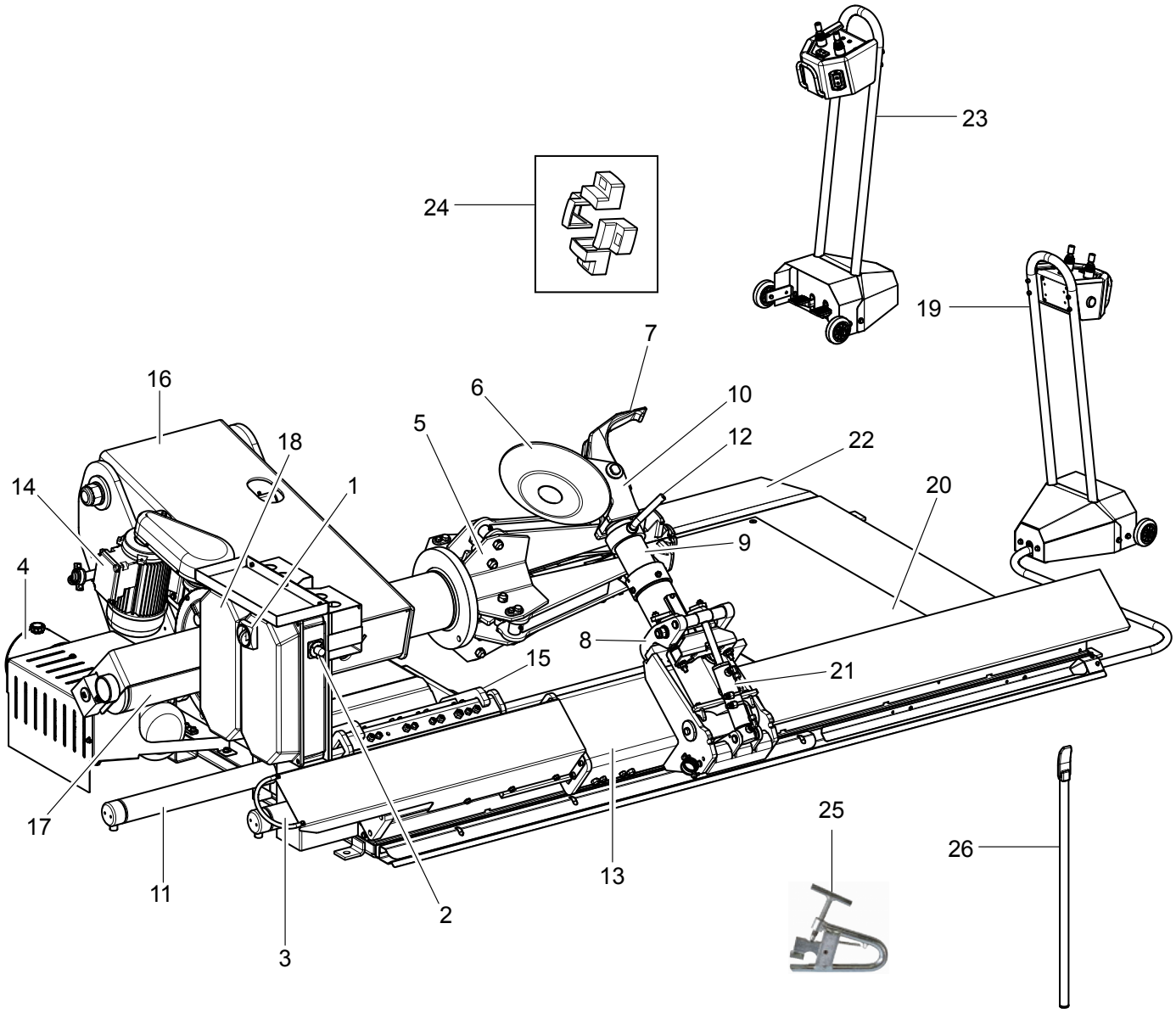
SUMMARY

FEATURE / Model	R573	R573BT
Tools unit	●	●
Control unit	●	
Bluetooth control unit		●
Self-braking chuck motor	●	●

● = standard

GENERAL DESCRIPTION

FIG. 1



KEY

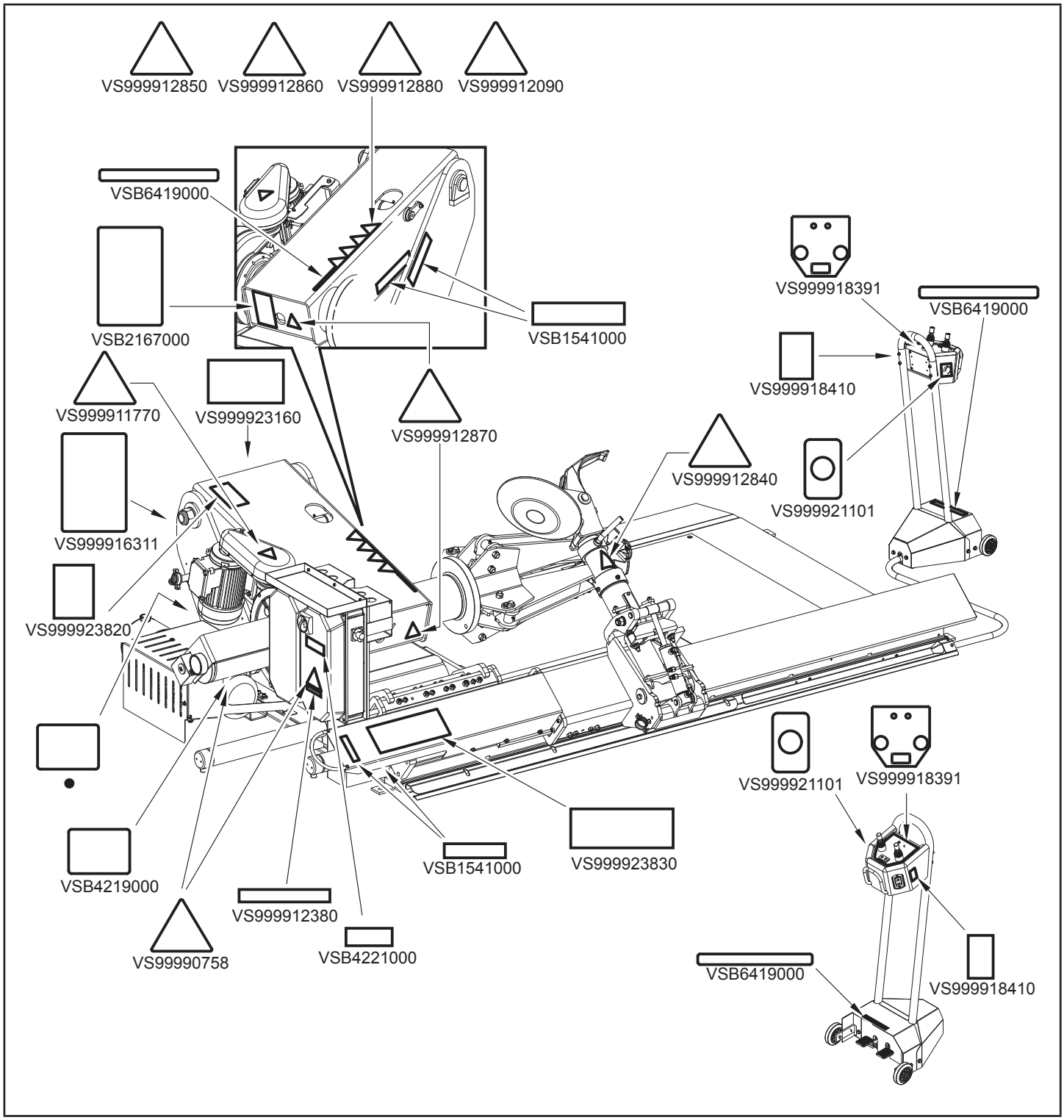
1 - Main switch
2 - Selector 1-0-2 self-centring chuck speed control
3 - Tools carriage translation cylinder
4 - Hydraulic power unit
5 - Self-centring chuck
6 - Bead breaking disc
7 - Tool
8 - Jack
9 - Tools holder arm
10 - Tools unit
11 - Chuck carriage translation cylinder
12 - Tools unit positioning lever
13 - Tools carriage
14 - Chuck rotation motor
15 - Chuck carriage
16 - Chuck arm
17 - Chuck opening/closing cylinder
18 - Electric cabinet
19 - Control unit
20 - Movable footboard
21 - Tools holder arm release cylinder
22 - Ramp
23 – Bluetooth handle control (standard on some models)
24 - Standard clamp protections for alloy rims
25 - Clamp for earth moving wheels
26 - Long bead lever

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.
	Danger! Be particularly careful.
	Warning. Be particularly careful (possible material damages).

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

INFORMATION PLATE LOCATION TABLE



Code numbers of plates	
VSB1541000	Danger plate
VSB2167000	Obligation to wear protection clothing plate
VSB4219000	Rotation indicating plate
VSB4221000	Grounding plate
VSB6419000	Rotation plate
VS99990758	Electricity danger plate
VS999911770	Unit move indicating plate
VS999912090	Tyre fall danger plate
VS999912380	400V 50Hz 3Ph voltage plate
VS999912840	Danger plate 1
VS999912850	Danger plate 2
VS999912860	Danger plate 3
VS999912870	Danger plate 4
VS999912880	Danger plate 5
VS999916311	Rubbish skip plate
VS999918391	Handle control plate
VS999918410	Self-centring chuck plate
VS999921101	Double speed nameplate
VS999923160	Prop 65 Attention plate
VS999923820	Rotary R573 plate
VS999923830	Rotary R573 plate
•	Serial number plate
♦	Manufacturer plate

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

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

1.0 GENERAL INTRODUCTION

This manual is an integral part of the product and must be retained for the whole operating life of the machine.
Carefully study the warnings and instructions contained in this manual. It contains important instructions regarding functioning, SAFE USE and MAINTENANCE.

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

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

1.1 Introduction

Thank you for preferring this 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 (with groove and bead wire), with dimension and weight values described in “Technical specifications” chapter. The machines described in this manual and their different versions are NOT to be used for tyre inflation.

THIS MACHINE MUST BE USED STRICTLY FOR THE INTENDED PURPOSE IT WAS DESIGNED FOR (AS INDICATED IN THIS MANUAL).

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR ANY DAMAGE 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.

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

3.0 SAFETY DEVICES

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

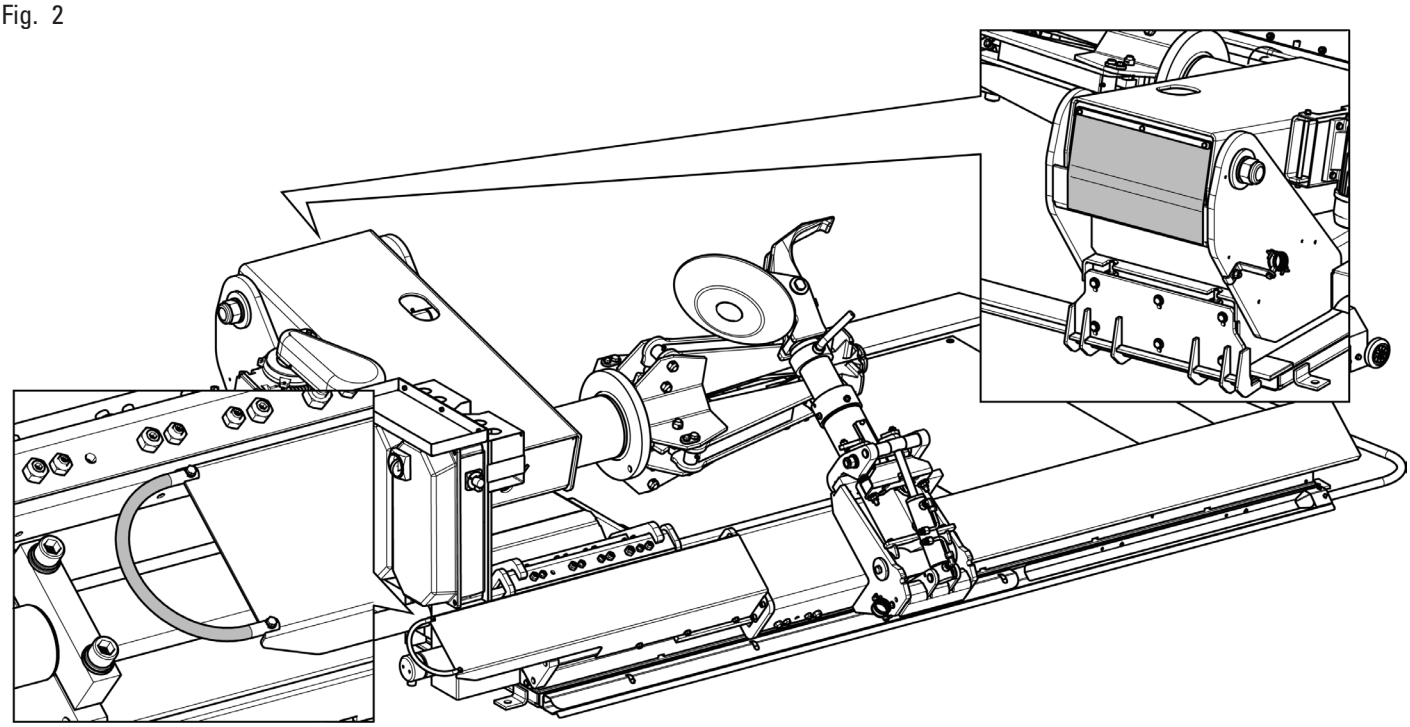
All the machines are equipped with:

- "man-operated" 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 clamps,
  - chuck arm lifting,
  - tool holding arm tilting.
  These valves have been fit in order to avoid unexpected movements of the clamps, tool or chuck arm (and, as a consequence, the wheel fall) caused by accidental oil drippings.
- Fuses on the electric supply line of the chuck motor;
- Automatic power supply disconnection with the opening of the electric cabinet.
- Chuck self-braking motor.
- 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.

Fig. 2



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 " PLATE POSITIONING TABLE" at page 6.

4.0 IMPORTANT SAFETY INSTRUCTIONS

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

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

SAVE THESE INSTRUCTIONS

4.1 General safety rules

- Any tampering with or modification to the machine not previously authorized by the manufacturer exempts the latter from all responsibility for damage caused by or derived from said actions.
- Removing of or tampering with the safety devices or with the warning signals placed on the machine leads to serious dangers and represents a transgression of European safety rules.
- Use of the machine is only permitted in places free from explosion or fire hazard and in dry places under cover.
- Original spare parts and accessories should be used.

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 missfunctions and contact the assistance service of an authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, disconnect all supplies to the machine by using the main switch.
- The machine electrical supply system must be equipped with an appropriate earthing, to which the yellow-green machine protection wire must be connected.
- Ensure that the work area around the machine is free of potentially dangerous objects and that there is no oil since this could damage the 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. 5.
  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.

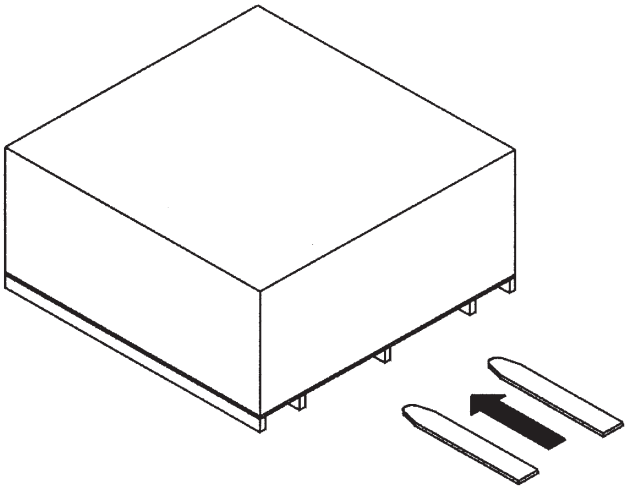
IN CASE OF A CHANCE SUPPLY FAILURE (WHETHER ELECTRICITY OR OIL-PRESSURE), MOVE THE CONTROLS TO THE NEUTRAL POSITION.

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 packed completely assembled.
The displacement must be performed through adequate lifting device (pallet truck or fork lift truck). Lift the packaging as indicated in Fig. 3 (forks introduced in the middle to ensure a correct loads distribution).

Fig. 3



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

7.0 MOBILIZATION

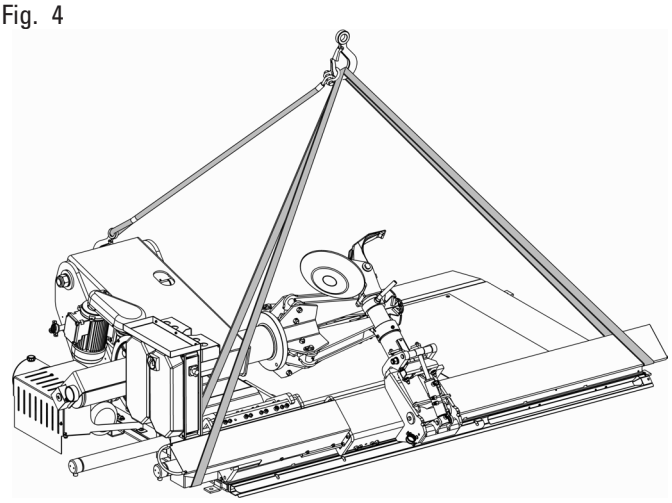
If the machine has to be moved.

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. 4).
- Lift and transport with suitable device with adequate dimensions.

Fig. 4



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).

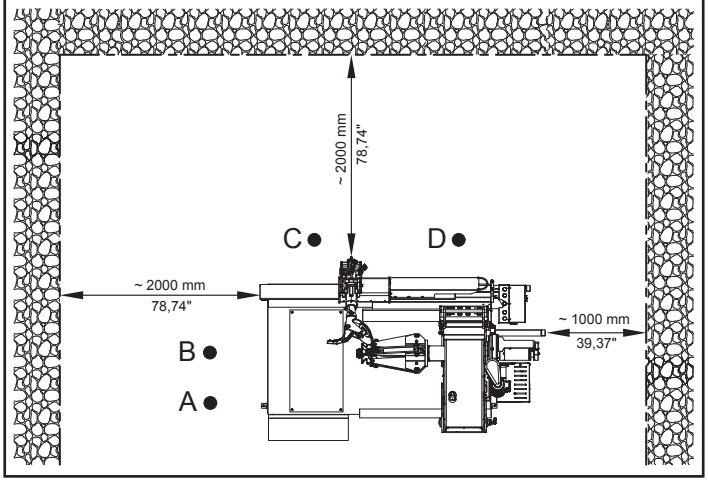
The use of the machine in ambient conditions other than those specified above is only allowed after prior agreement with and approval of the manufacturer.

8.1 Working position

In Fig. 5 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. 5



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. 5). The positioning of the machine must be according to the distances shown. From the control position the operator is able to observe all the machine and surrounding area. He must prevent unauthorized personnel or objects that could be dangerous from entering the area.
The machine must be fixed on a flat floor surface, preferably of cement or tiled. Avoid yielding or irregular surfaces.
The base floor must be able to support the loads transmitted during operation. This surface must have a capacity load of at least 500 kg/m².
The depth of the solid floor must be sufficient to guarantee that the anchoring bolts hold.

8.3 Lighting

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

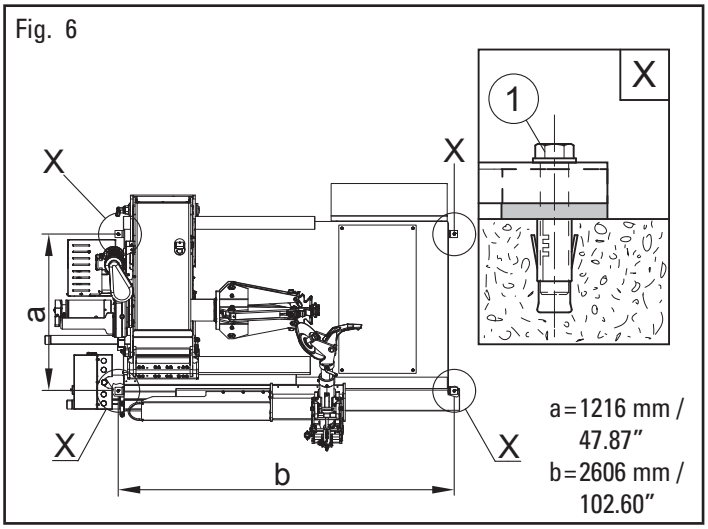
9.0 MACHINE ASSEMBLY

EACH MECHANICAL INTERVENTION MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED STAFF.

9.1 Anchoring system

The packed machine is fixed to the support pallet through the holes prearranged on the frame. Such holes can be used also to fix the machine to the ground, through floor anchor small blocks (excluded from supply). Before carrying out the definitive fixing, check that all the anchor points are laid down flat and correctly in contact with the fixing surface itself. If not so, insert shimming profiles between the machine and the fixing lower surface, as indicated in Fig. 6.

Fig. 6



- Execute 4 holes with 12 mm diameter on the floor by the holes on the bottom floor;
- insert the small blocks (excluded from supply) into the holes;
- fix the machine to the ground with 4 M12x120 mm screws (excluded from supply) (Fig. 6 ref. 1) (or with 4 12x80 mm stud bolts (excluded from supply)). Tighten the screws with an approximate tightening torque of 70 Nm.

9.2 Fixtures contained in the packing

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

Description	Qty
Clamp for earth moving wheels	1
tandard clamp protections for alloy rims	1
Long bead lever	1

10.0 ELECTRICAL CONNECTIONS

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

BEFORE CONNECTING THE MACHINE MAKE SURE THAT:
- THE MAIN POWER RATING CORRESPONDS TO THE MACHINE RATING AS SHOWN ON THE MACHINE PLATE;
- ALL MAIN POWER COMPONENTS ARE IN GOOD CONDITION;
- THE ELECTRICAL SYSTEM IS PROPERLY GROUNDED (GROUND WIRE MUST BE THE SAME CROSS-SECTION AREA AS THE LARGEST POWER SUPPLY CABLES OR GREATER);
- MAKE SURE THAT THE ELECTRICAL SYSTEM FEATURES A CUTOUT WITH DIFFERENTIAL PROTECTION SET AT 30 MA.

As envisaged by the regulations in force, the machine is not equipped with a master circuit breaker, but simply has a plug-socket connection to the electrical mains.
The machine is supplied with 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 (AS REPORTED BEFORE) PLUG TO THE MACHINE CABLE (THE GROUND WIRE IS YELLOW/GREEN AND MUST NEVER BE CONNECTED TO ONE OF THE TWO PHASE LEADS).

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

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

10.1 Oil check on oil-pressure power unit

ANY OIL-PRESSURE INTERVENTION MUST BE CARRIED OUT BY PROFESSIONALLY 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 5 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).

Class	Conformity standard	Voltage (V)	Current (A)	Phases	Protection degree
3 Ph double speed	IEC 309	230	16	3P + Ground	IP 44

10.2 Check of motor rotation direction

Once the last electrical connection has been terminated, 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. 7 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 MAINTAINED ACTION CONTROLS CORRECT FUNCTIONING, BEFORE STARTING MACHINE OPERATION.

Once the plug/socket connection has been made, turn on the machine using the main switch (Fig. 7 ref. A).

STANDARD ON SOME MODELS

Then horizontally or vertically move the lever (Fig. 9 ref. H): the red LED (Fig. 9 ref. B) will turn on.
Wait a few seconds for the green LED turning on (Fig. 9 ref. A) and then release the lever (Fig. 9 ref. H).
In the end, the green LED (Fig. 9 ref. A) flashes to indicate that the machine is ready for operation.

WHEN A CONTROL IS OPERATED, THE GREEN LED (FIG. 9 REF. A) LIGHT IS FIXED: IT FLASHES AGAIN WHEN IT IS RELEASED.

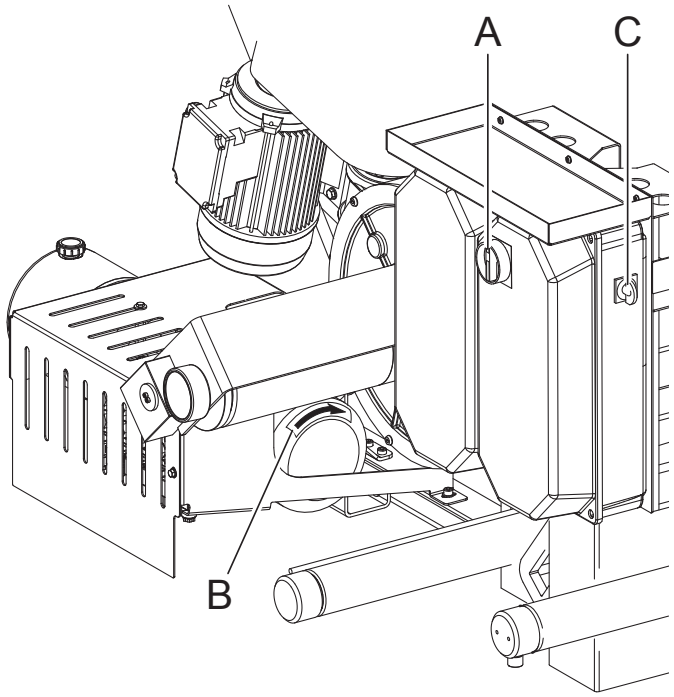
If during the operations the red LED (Fig. 9 ref. B) turns on and the green led turns off, charge the control batteries with the provided socket for battery charger, located under the control (Fig. 9 ref. M).

FOR ALL MODELS

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

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

Fig. 7



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 Cable control device

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

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

"Lever A" has four maintained action operative positions:

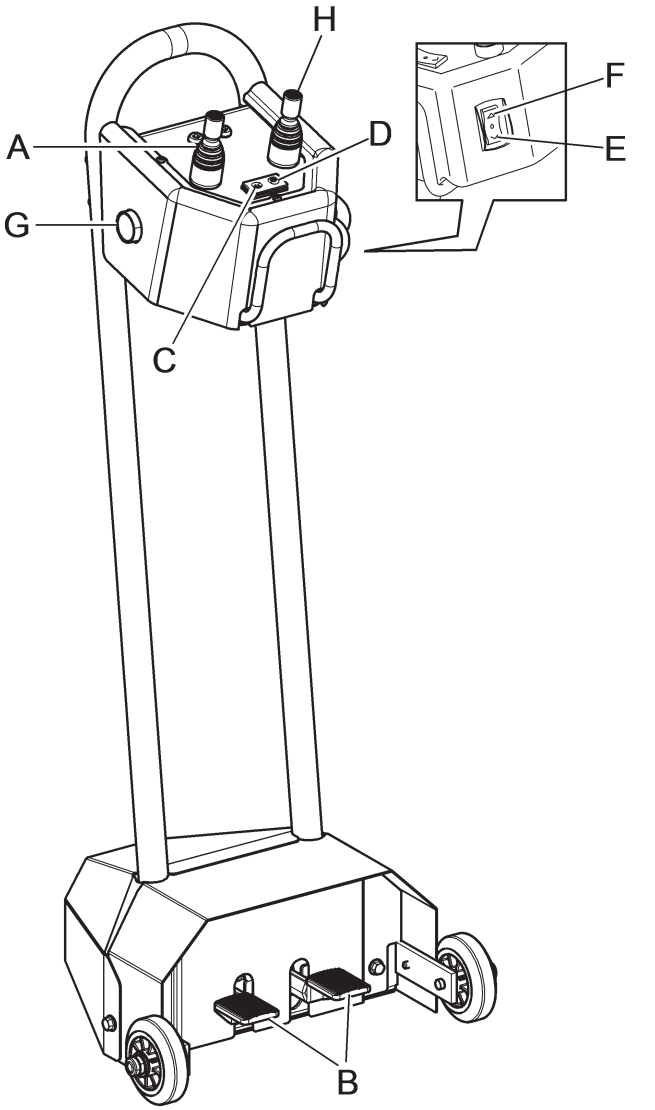
- Lever rightwards or leftwards, operates respectively the chuck holder carriage shifting rightwards or leftwards.
- Lever upwards or downwards: it operates respectively the rising and the lowering of the chuck holding arm.

"Pedal B" controls chuck clockwise and counter-clockwise rotation.
"Push button C" has a maintained action position, and when pressed it rotates the tool holder head counterclockwise (from behind the tool).
"Push button D" has a maintained action position, and when pressed it rotates the tool holder head clockwise (from behind the tool).
"Push button E" has a maintained action position and when pressed, it operates the self-centring chuck opening.
"Push button F" has a maintained action position, and when pressed it operates the self-centring chuck closing.
"Push button G" has a maintained action position, and when it is pressed and lever "A" or "H" is laterally shifted at the same time, it doubles the translation speed of the self-centring carriage and of the tool holder carriage respectively.
"Lever H" has four maintained action positions:

- Lever rightwards or leftwards, operates respectively the tool holder carriage shifting rightwards or leftwards.
- Lever upwards or downwards: it respectively lowers or lifts the tool holder arm.

THE HANDLE MUST NOT BE PLACED WHERE WATER STAGNATES.

Fig. 8



11.2 Control device with bluetooth transmission (standard on some models)

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

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

The flashing green led "A", indicates the machine stand-by position. When any control is operated, the machine is started and it is ready for operation. During functioning, the led "A" is turned on with a fixed light.
The red turned on led "B" and the green turned off led "A" indicate that the manipulator batteries are exhausted: in order to carry on the functioning, the batteries must be charged.

IN ORDER TO ACTIVATE THE COMMUNICATION BETWEEN HANDLE CONTROL AND MACHINE, ON MACHINE SWITCHING AND AFTER EACH POSITIONING IN STAND-BY MODE, IT'S NECESSARY TO OPERATE ANY JOYSTICK (LEVER "H" OR LEVER "I") FOR 5 SECONDS AT LEAST.

"Push button C" has a maintained action position, and when pressed it rotates the tool holder head counterclockwise (from behind the tool).
"Push button D" has a maintained action position, and when pressed it rotates the tool holder head clockwise (from behind the tool).
"Push button E" has a maintained action position and when pressed, it operates the self-centring chuck opening.
"Push button F" has a maintained action position, and when pressed it operates the self-centring chuck closing.
"Push button G" has a maintained action position and when it is pressed and lever "I" or "H" is laterally shifted at the same time, it doubles the translation speed of the self-centring carriage and of the tool holder carriage respectively.
"Lever H" has four maintained action positions:

- Lever rightwards or leftwards, operates respectively the tool holder carriage shifting rightwards or leftwards.
- Lever upwards or downwards: it respectively lowers or lifts the tool holder arm.

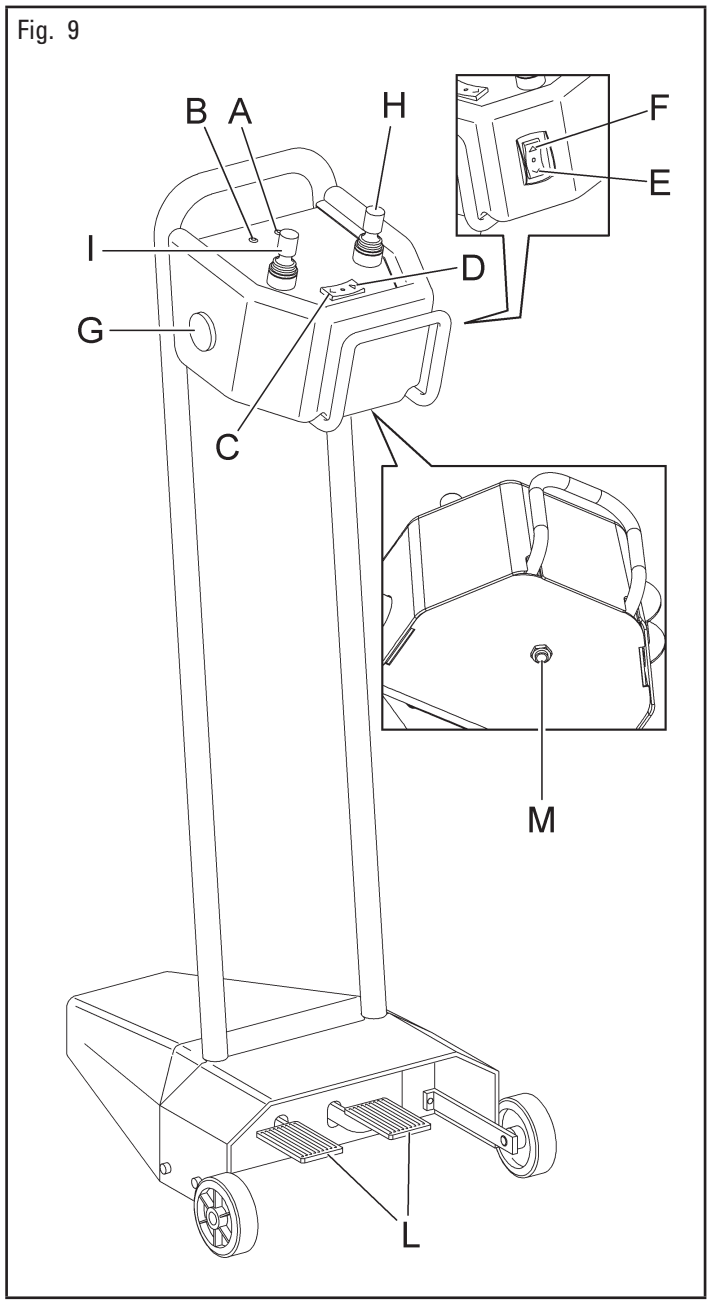
"Lever I" has four maintained action positions:

- Lever rightwards or leftwards, operates respectively the chuck holder carriage shifting rightwards or leftwards.
- Lever upwards or downwards: it operates respectively the rising and the lowering of the chuck holding arm.

"Pedal L" starts clockwise and anti-clockwise rotation of the chuck.
When any control is operated, the machine is started again, ready for operation: led "A" flashes.

THE HANDLE MUST NOT BE PLACED WHERE WATER STAGNATES.

Fig. 9



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 produce dents and/or deformation (especially for alloy rims, dents can cause internal micro-fractures, that pass unobserved at visual inspection, and can compromise the solidity of the rim and constitute danger even during inflation);
- adequately lubricate the contact surface of rim and the tyre beads, using specific tyre lubricants only;
- replace the inner tube valve with a new valve, if the tyre tube has a metal valve, replace the grommet;
- always make sure that tyre and rim sizes are correct for their coupling; on the contrary, 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 2700 mm and with remarkable weight up to 3000 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. 7 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

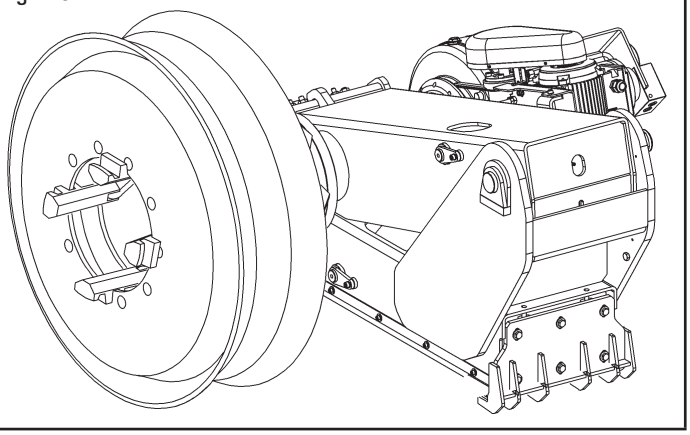
	REMOVE THE VALVE STEM AND ALLOW THE TYRE TO COMPLETELY DEFLATE.

- Remove the wheel balancing weights from both sides of the wheel.
- Establish from which side the tyre should be demounted, checking the position of the groove.
- Find the rim locking type.

12.4 Wheel clamping

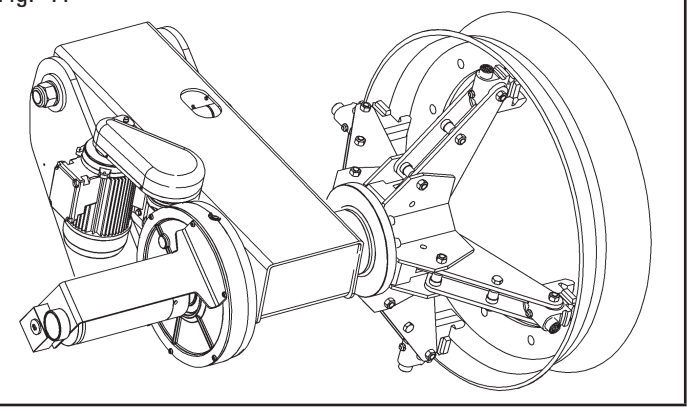
	FOR WHAT CONCERNS THE DIMENSIONS AND WEIGHT OF THE WHEEL TO BE LOCKED, MAKE USE OF A SECOND OPERATOR WHO MUST HOLD THE WHEEL INTO VERTICAL POSITION, IN ORDER TO ENSURE SAFE OPERATIVE CONDITIONS.
	WHEN HANDLING WHEELS WEIGHING MORE THAN 500 KG A FORK-LIFT TRUCK OR A CRANE SHOULD BE USED.
	MAKE SURE THAT RIM CLAMPING IS DONE PROPERLY AND THAT THE GRIP IS SAFE, 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. 10



Clamping on the central hole

Fig. 11



Clamping on bead seat

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

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

FOR WHEELS WITH GROOVED RIMS SECURE THE WHEEL SO THAT THE GROOVE 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 CLAMPS ARE AVAILABLE. THEY ALLOW YOU TO WORK ON THE RIMS WITHOUT DAMAGING THEM. THE PROTECTIVE CLAMPS ARE FITTED ONTO THE CHUCK'S NORMAL CLAMPS BY MEANS OF A BAYONET CONNECTION.

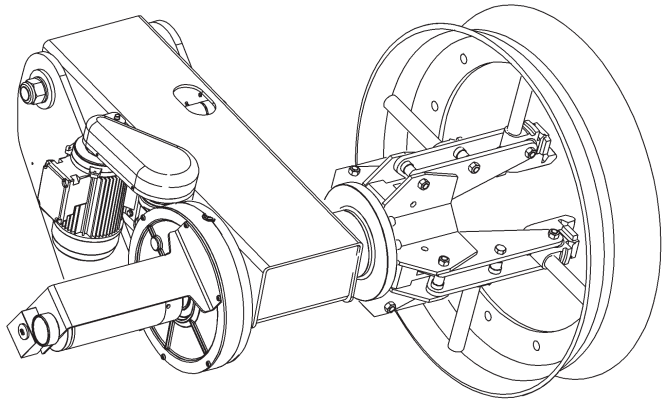
To clamp the wheel proceed as follows:

- Move the tool holder arm to "off-work" position (Fig. 14 ref. 1) with the help of the provided controls (Fig. 8 and Fig. 9 ref. H);
- Place the wheel vertical on the machine table;
- Translate the chuck carriage towards the tyre until the self-centring arms are inserted inside the rim;
- Adjust the opening of the self-centring chuck through the "opening/closing"control (Fig. 8 and Fig. 9 ref. E/F) according to the type of rim to be locked;
- Use the lever (Fig. 8 ref. A and Fig. 9 ref. I) to position the coaxial chuck with the wheel centre, in order to make the clamps edges skim the wheel edge;
- Operate the control (Fig. 8 and Fig. 9 ref. E) until the wheel is completely clamped;
- 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 MAXIMUM OPERATING PRESSURE (180 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. 7 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. 12



Locking with extensions

Whenever the rim exceeds the 50" in the locking point, use the appropriate extensions (optional). To avoid damages or scratches on light alloy rims, the special clamps 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 ANYWAY.

THROUGHOUT TYRE MOUNTING AND DEMOUNTING OPERATIONS, THE SELF-CENTRING CHUCK ROTATION SPEED CAN BE DOUBLED BY ROTATING THE SELECTOR (FIG. 7 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

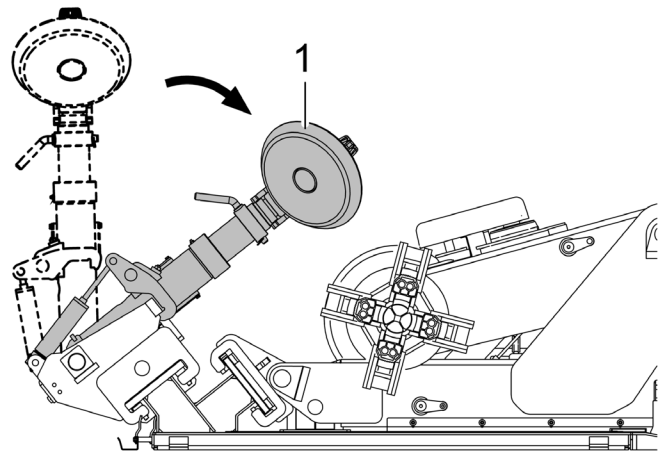
During the working phases, the tool holder arm can maintain two firm positions, that is:

1) "Working" position;

2) "Out of work" position.

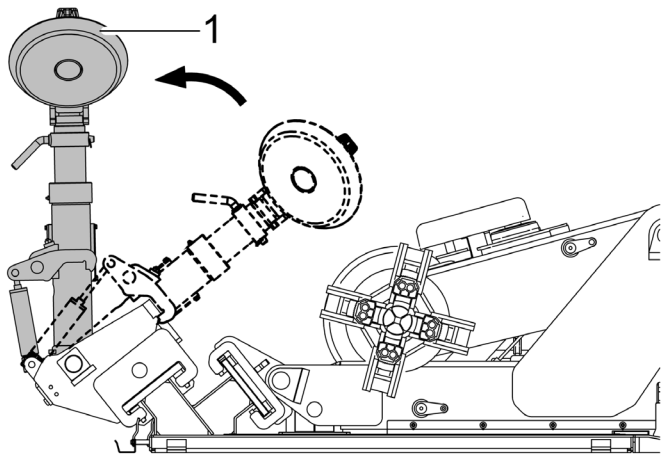
In "working" position (Fig. 13 ref. 1) the tool holder arm is lowered towards the chuck and from this position it executes the various tyre bead breaking, demounting and mounting operations.

Fig. 13



In "out of work" position (Fig. 14 ref. 1): the tool holder arm is in a 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. 14



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

IN WORK POSITION, THE SAFETY JACKS (FIG. 1 REF. 8) MUST BE HOOKED TO THE TOOL CARRIAGE (FIG. 1 REF. 13).

To shift from "work" position to "off-work" position, the tool holder arm moves by the handle control that activates the cylinder (Fig. 1 ref. 21).

12.5.1 Tools rotation

Tool holder head 180° rotation is automatic, and it takes place through handle control operation (Fig. 8 and Fig. 9 ref. C and D).

12.5.2 Tools unit extraction/insertion

The tools holder head has two working positions.

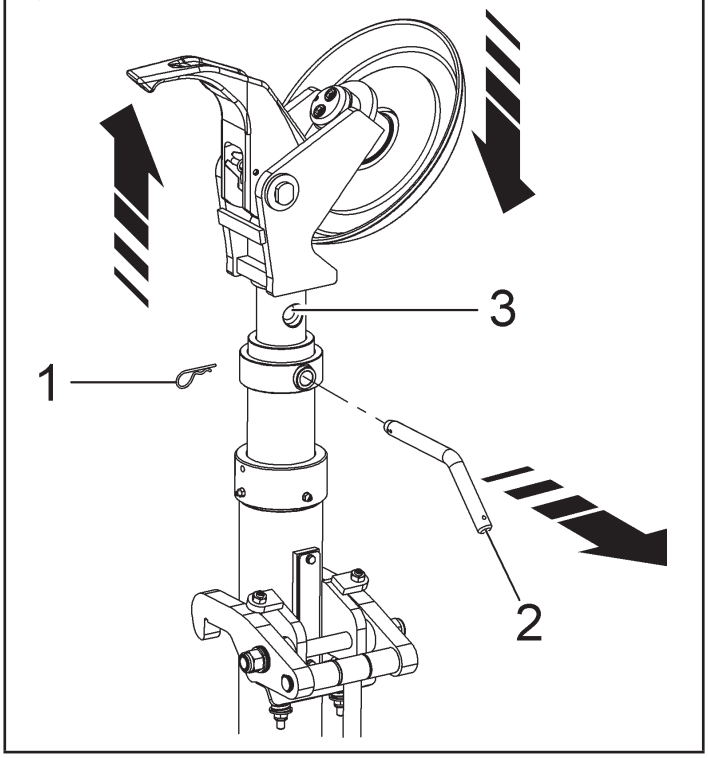
THE FOLLOWING OPERATIONS MUST BE CARRIED OUT WITH THE TOOLS HEAD IN "OFF-WORK" POSITION.

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

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

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

Fig. 15



12.6 Tubeless tyres

12.6.1 Bead breaking

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

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

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. 5).

D. Lower tool holder arm into work position (hooked safety jack) (Fig. 13)

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

E. Place as shown in Fig. 16 the beading disc (Fig. 16 ref. 1) by means of the relevant handle control; the outer profile of the rim (Fig. 16 ref. 2) must almost touch the beading disc.

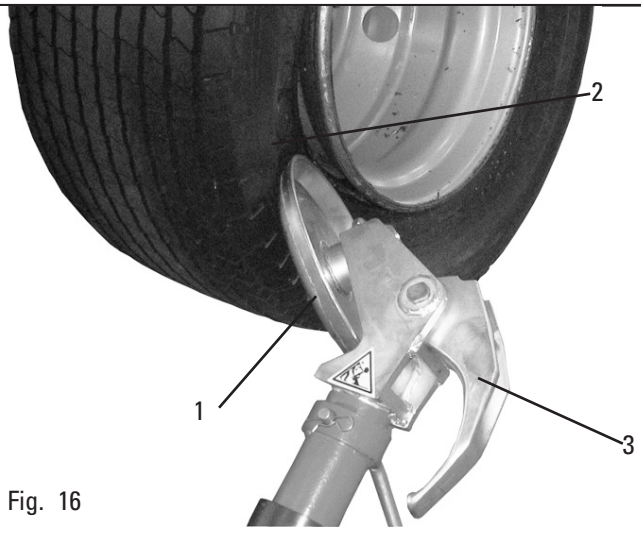


Fig. 16

THE BEADING 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 in “off-work” position (Fig. 14 ref. 1); use the handle control to position the tool holder arm on the inner side of the wheel, then place it in “work position” (Fig. 13 ref. 1) and secure it with the special safety jack.

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

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

I. Move to work position D (Fig. 5) and repeat the operations described in points E, F until the tyre has been completely beaded.

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

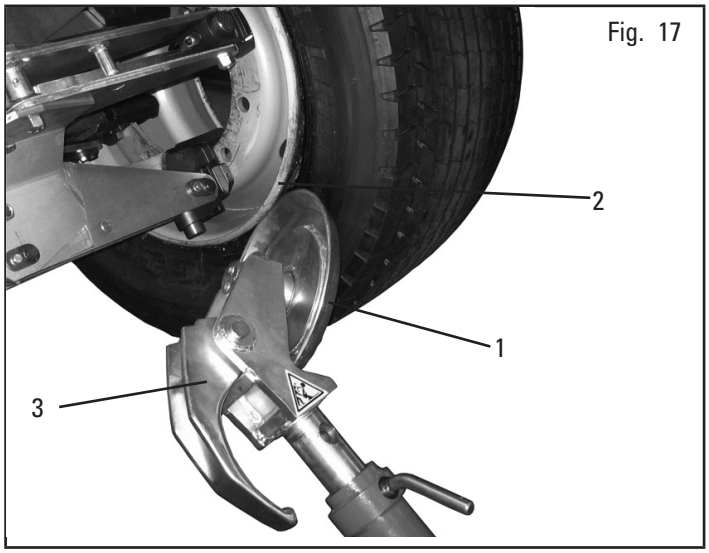


Fig. 17

12.6.2 Demounting

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

Tubeless tyres can be removed in two ways:

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

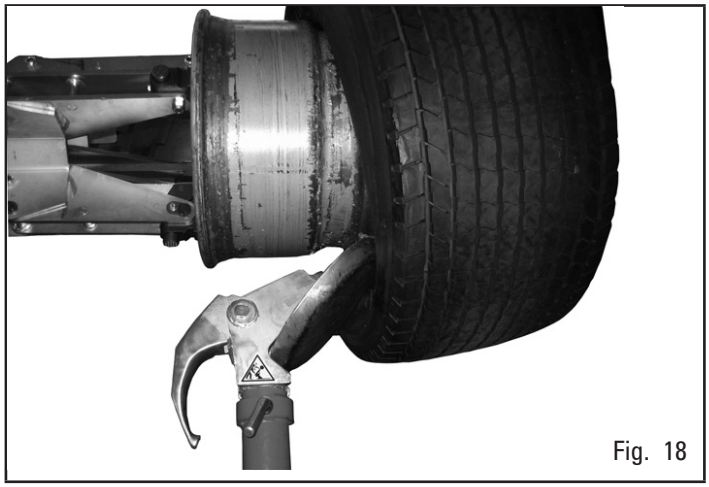


Fig. 18

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

- Move to work position C (Fig. 5).
- 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. 19).

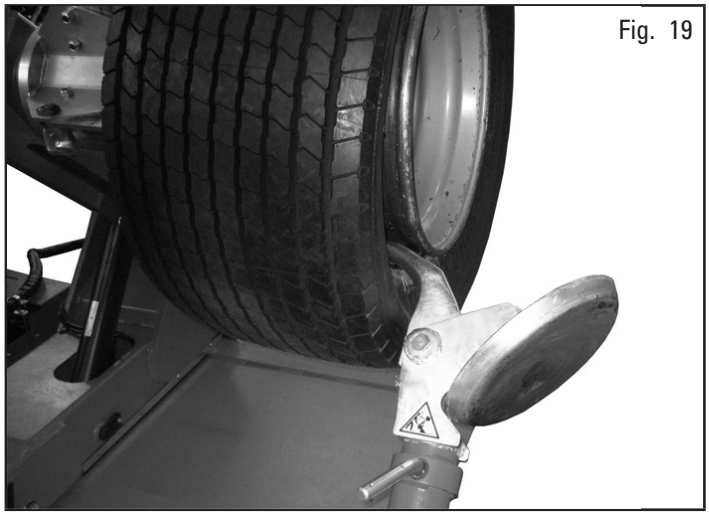


Fig. 19

- 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. 5).
- Translate the tool outwards (Fig. 20 ref. 2) to allow easy insertion of lever (Fig. 20 ref. 1) between the rim and the bead; insert lever (Fig. 20 ref. 1) between the rim and the bead on the right-hand side of the tool (Fig. 20 ref. 2).

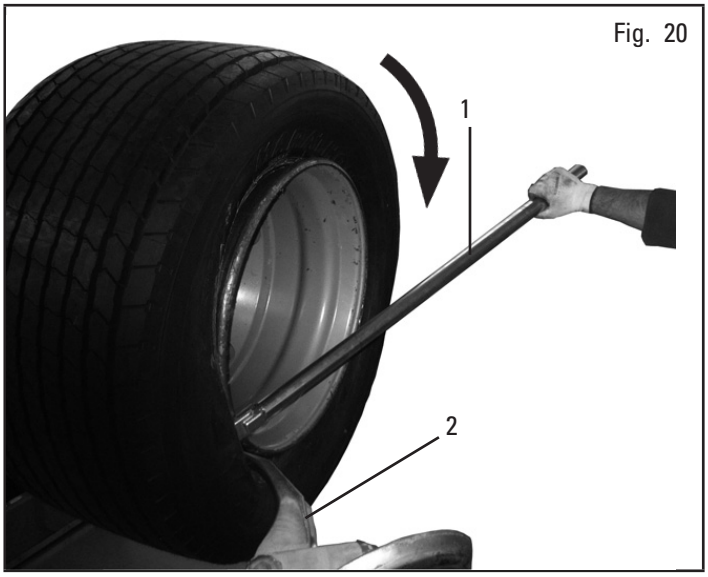


Fig. 20

- 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. 20 ref. 1) until the bead has gone completely out.
- Once the external bead has been removed, move tool holder arm away from the wheel, unhook it and lift it bringing it in “out of work” position (Fig. 14 ref. 1); use the handle control to position the tool holder arm on the inner side of the wheel then place it in “working” position again (Fig. 13 ref. 1) and secure with the safety hook provided.

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

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

- Move to work position D (Fig. 5).

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

Fig. 21

- Move the rim away from the tool by about 4-5 cm to avoid possible unhooking of the bead from the same tool.
- Move to work position B (Fig. 5).
- 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 SELF-CENTRING CHUCK CLAMPING PRESSURE IS CLOSE TO THE MAXIMUM OPERATING VALUE (180 BAR).

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

With beading disc

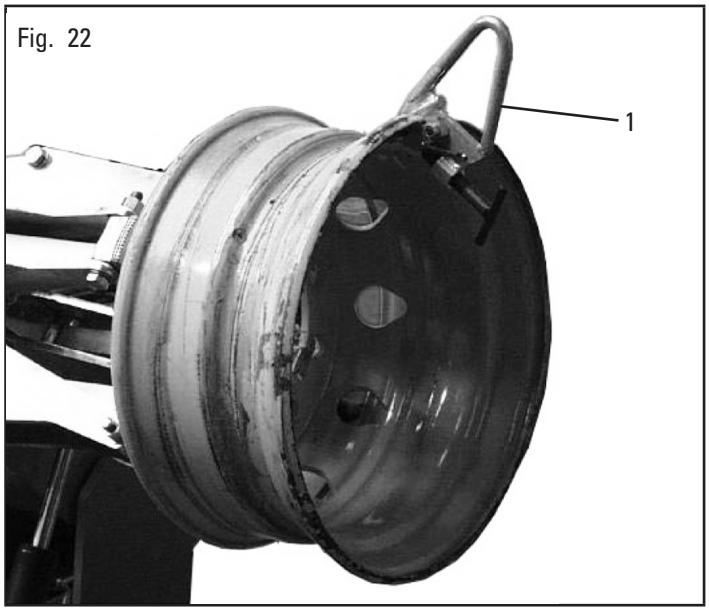
Proceed as follows:

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

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

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

Fig. 22

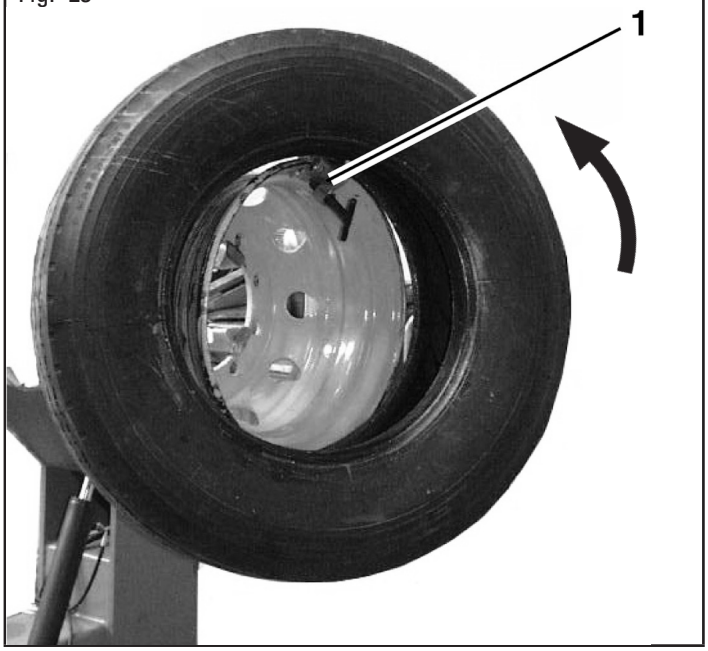


THE CLAMP MUST BE TIGHTLY SECURED TO THE EDGE OF THE RIM.

- Move to work position B (Fig. 5).

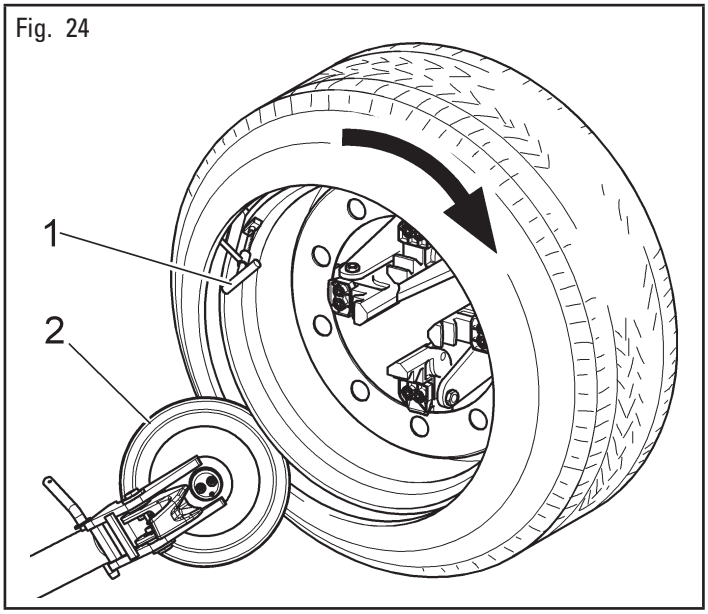
- Lower the chuck arm completely. Roll the tyre on the platform and hook it to clamp (Fig. 23 ref. 1).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm; the tyre will position itself sideways with respect to the rim (see Fig. 23).

Fig. 23



- Move to work position C (Fig. 5).
- Position beading disc (Fig. 24 ref. 2) so that it is at approximately 1.5 cm (½") from the edge of the rim. Fitting clamp (Fig. 24 ref. 1) is at 11 o'clock. Turn the chuck until the clamp reaches the lowest point (6 o'clock).

Fig. 24



- Move the beading disc away from the wheel.
- Remove the clamp and fit it in the same position (6 o'clock) outside the second bead.
- Turn the chuck 90° clockwise until the clamp is at "9 oclock".
- Move the beading disc forward until 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 groove.
- Once insertion is completed, move the tool away from the wheel, turn it over into "out of work" position and remove the clamp.
- Lower the chuck until the wheel rests on the mobile footboard.
- Move to work position A (Fig. 5).
- Close the chuck clamps 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 platform to release the wheel from the chuck. With especially soft tyres, simultaneously insert both beads on the clamp so that bead insertion in the tyre is done only once; this single operation is ideal for saving time.

<u>With hook tool</u>

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.

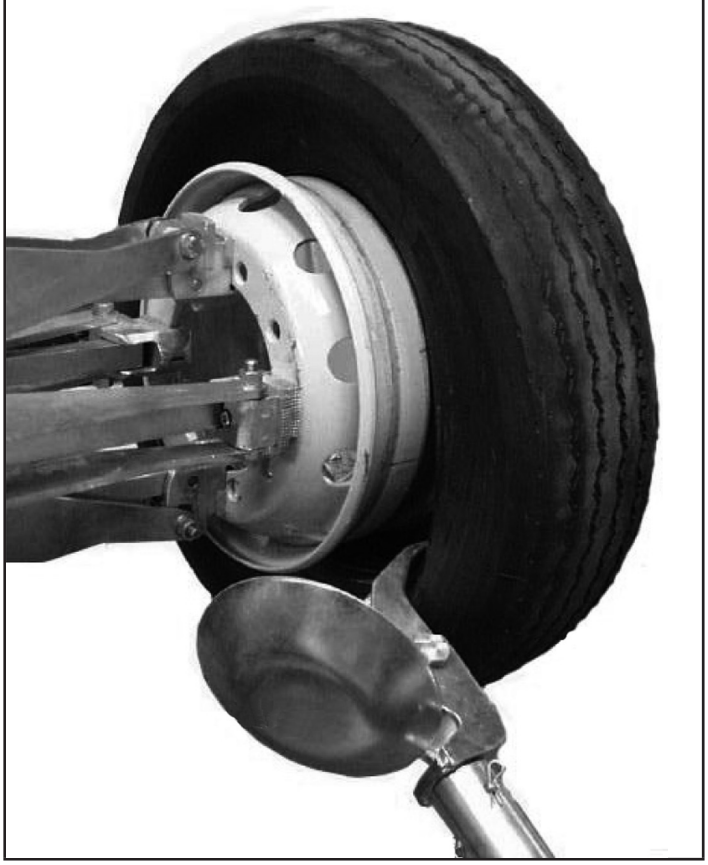
- Mount the clamp (Fig. 22 Ref. 1) on the external edge of the rim in the highest point.

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

- Move to work position B (Fig. 5).
- Lower the chuck arm completely. Roll the tyre on the platform and hook it to clamp (Fig. 23 ref. 1).
- Lift the chuck arm with the tyre hooked and turn it counterclockwise about 15-20 cm; the tyre will position itself sideways with respect to the rim (see Fig. 23).
- Place the tool holder arm in "out of work" position (Fig. 14 ref. 1); translate it to the inner side of the tyre and hook it again into "working" position (Fig. 13 ref. 1).

- Carry out the tool head 180° rotation until the hook tool is moved onto the tyre side (see Fig. 25).

Fig. 25



- Move to work position D (Fig. 5).
- 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. 5).
- 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 clamp reaches the lowest point (6 oclock). The first bead should now be inserted in the rim.
- Remove clamp.
- Move to work position D (Fig. 5).
- Extract the tool from the tyre.
- Place the tool holder arm in "out of work" position (Fig. 14 ref. 1); translate it to the outer side of the tyre and hook it again into "working" position (Fig. 13 ref. 1).
- Carry out tools head 180° rotation until the hook tool is moved onto the tyre side.
- Mount clamp in the lowest point (6 oclock) outside the second bead.
- Move to work position C (Fig. 5).
- Turn the chuck about 90° clockwise until clamp is at 9 oclock.
- Move the tool forward until the the axis of the reference notch matches the external edge of the rim coincide at about 5 mm from the rim itself. Begin clockwise rotation making sure that, after a 90° turn, the second bead begins to slide in the rim groove. Turn the chuck until the clamp reaches the lowest point (6 o'clock). The second bead should now be inserted in the rim.
- Move the tool away from the wheel, turn it over into "out of work" position and remove the clamp.
- Lower the chuck until the wheel rests on the mobile footboard.
- Move to work position A (Fig. 5).
- Close the chuck clamps 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.

12.7 Tyres with inner tube

12.7.1 Bead breaking

REMOVE THE LOCK 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 BEADING DISC AS SOON AS THE BEADS HAVE BEEN DISLODGED TO AVOID DAMAGE TO THE INNER TUBE OR TO THE VALVE.

12.7.2 Demounting

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

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

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

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

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the 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. 5).
- Insert lever (Fig. 26 ref. 1) between the rim and the bead on the right-hand side of the tool.

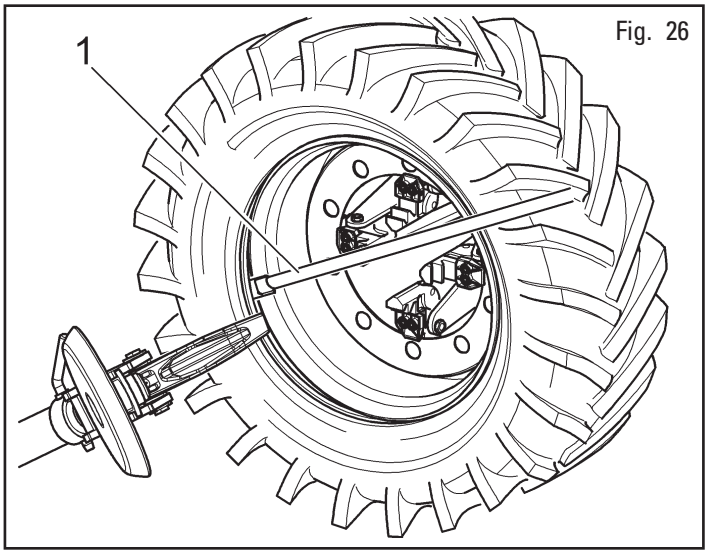


Fig. 26

- 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 the tool holder arm away in "off-work" position (Fig. 14 ref. 1); lower the chuck until the tyre rests on the footboard; exert a certain pressure on it so that when the chuck is moved slightly backwards, 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. 5).
- Tilt up tool holder arm, unhook it and lift it placing it in "off-work" position (Fig. 14 ref. 1); use the handle control to position the tool holder arm on the inner side of the wheel then place it in work position (Fig. 13 ref. 1) and secure with the safety hook provided (Fig. 1 ref. 8).
- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move the rim away from the tool by about 4-5 cm to avoid possible unhooking of the bead from the same tool.
- Move to work position A (Fig. 5).
- Translate the hook tool outwards until the reference notch is 3 cm inside the rim.
- Insert the lever (Fig. 27 ref. 1) between rim (Fig. 27 ref. 2) and bead (Fig. 27 ref. 3) on the tool right.

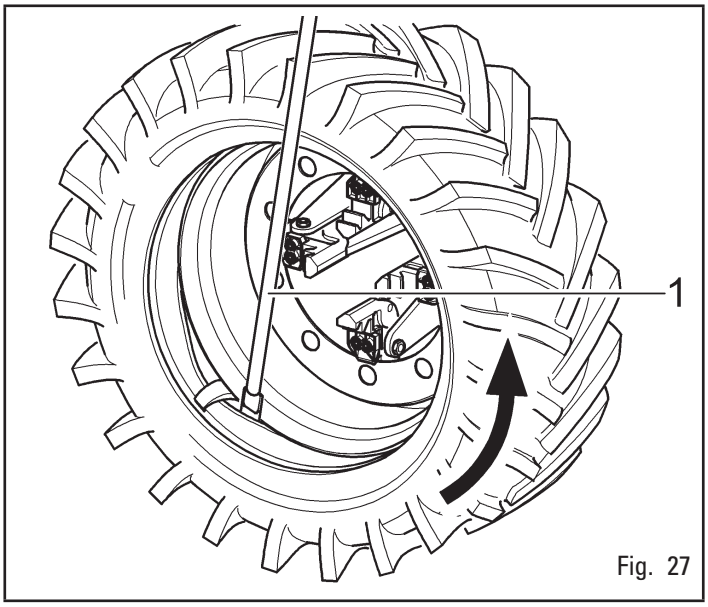


Fig. 27

- 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. 27 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 (180 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 supplied brush.

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

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

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

- Move to work position B (Fig. 5).
- Position the tyre on the footboard and lower the chuck (make sure the clamp is in 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 in "off-work" position (Fig. 14 ref. 1); use the handle control to position the tool holder arm on the inner side of the wheel then place it in work position (Fig. 13 ref. 1) and secure with the safety hook provided.

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

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

- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph, in order to insert the hook between the rim edge and the tyre bead; the operation must be carried out during chuck rotation.
- Move to work position D (Fig. 5).
- 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. 28).

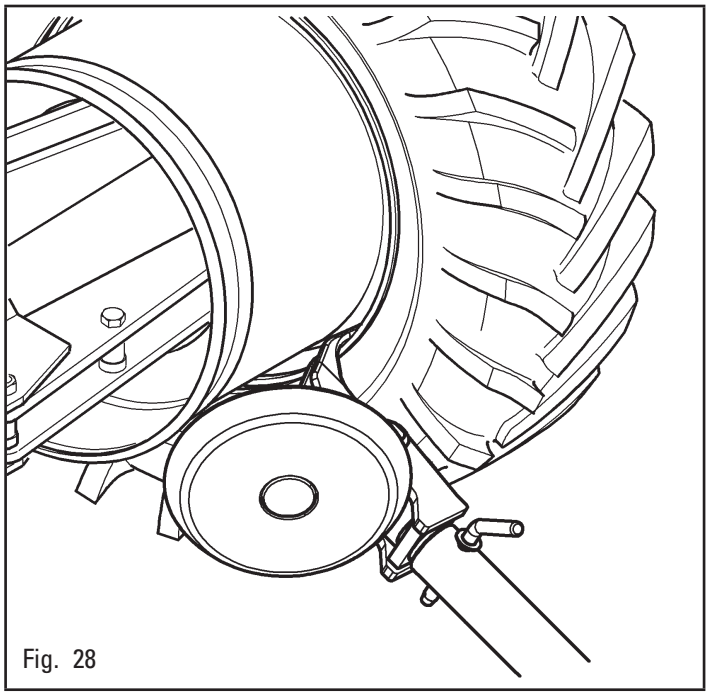


Fig. 28

- Move to work position C (Fig. 5).
- 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 clamp reaches the lowest point (6 oclock). The first bead should now be inserted in the rim, then remove clamp.
- Move to work position D (Fig. 5).
- Extract the tool hook from the tyre.
- Place the tool holder arm in "out of work" position (Fig. 14 ref. 1) and translate it to the outer side of the tyre.
- Carry out the tools holder head 180° rotation, according to the descriptions in the relevant paragraph.
- Move to work position B (Fig. 5).
- Turn the chuck to position the hole to insert the valve downward ("6 oclock").
- Lower the chuck until the wheel rests on the footboard. Move the chuck backward to create the necessary space between tyre edge and rim for the introduction of the inner tube.

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

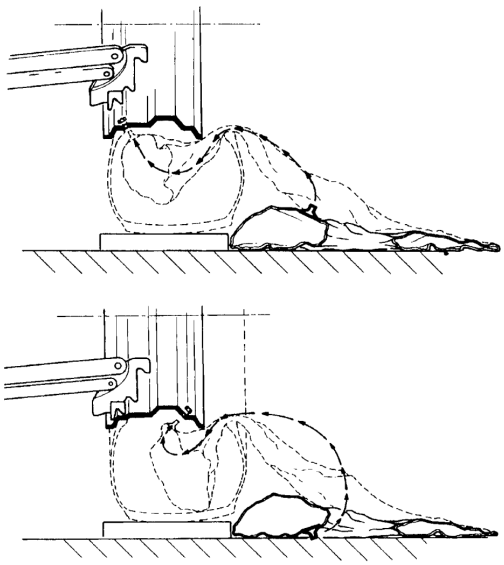


Fig. 29

Introduce the valve in the hole and fix it with the provided ring nut. Introduce the inner tube in the central groove 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 fitting the second bead, remove the fixing ring nut and mount an extension on the same valve.
- Move to work position C (Fig. 5).
- Lift the chuck and mount the clamp (Fig. 30 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 clamp (Fig. 30 ref. 1) is positioned at 9 oclock.

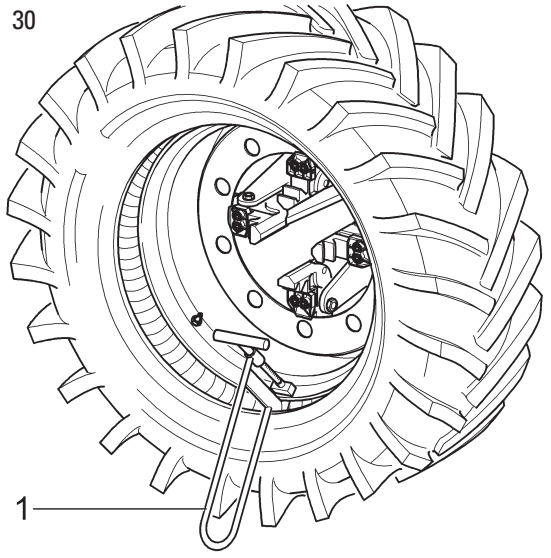


Fig. 30

- Place the tool holder arm in "working position" (Fig. 13 ref. 1) on the outer side of the tyre.
- Place the hook tool in 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. 31 ref. 1) is introduced in the housing obtained on the hook tool.
- Turn the chuck with lever (Fig. 31 ref. 1) hooked until complete insertion of the tyre outer bead.
- Remove lever (Fig. 31 ref. 1), clamp (Fig. 31 ref. 2 and extract the hook tool by turning the chuck counterclockwise and translating it outwards.

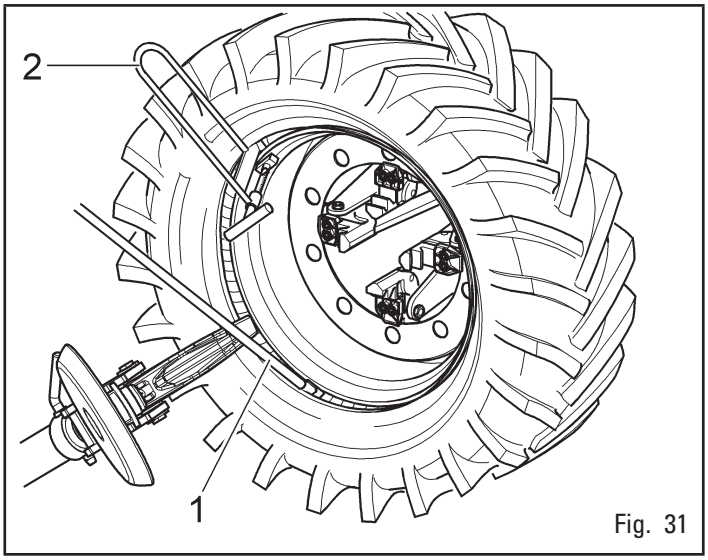


Fig. 31

- Tilt up tool holder arm placing it in "out of work" position (Fig. 14 ref. 1) after it has been unhooked.
- Lower the chuck until the wheel rests on the mobile footboard.
- Move to work position B (Fig. 5).
- Check the condition of the tyre valve and centre it in the rim hole if necessary, by slightly turning the chuck; fix the valve with the supplied ring nut after removing the protective extension.
- Close the chuck clamps 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 platform to release the wheel from the chuck.

12.8 Wheels with bead wire

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

Fig. 32

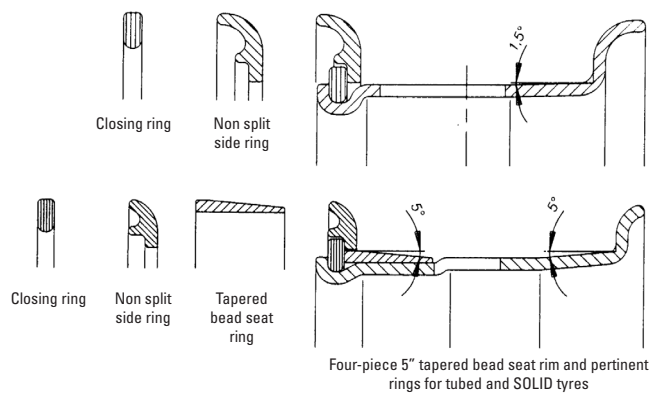
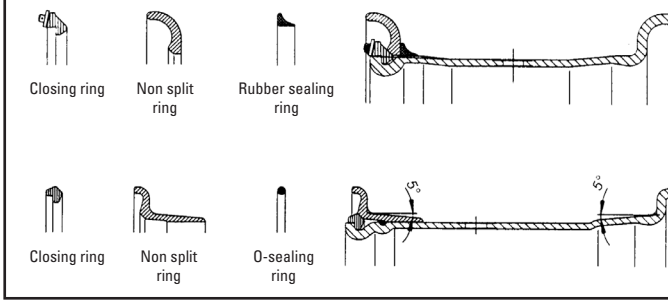


Fig. 33



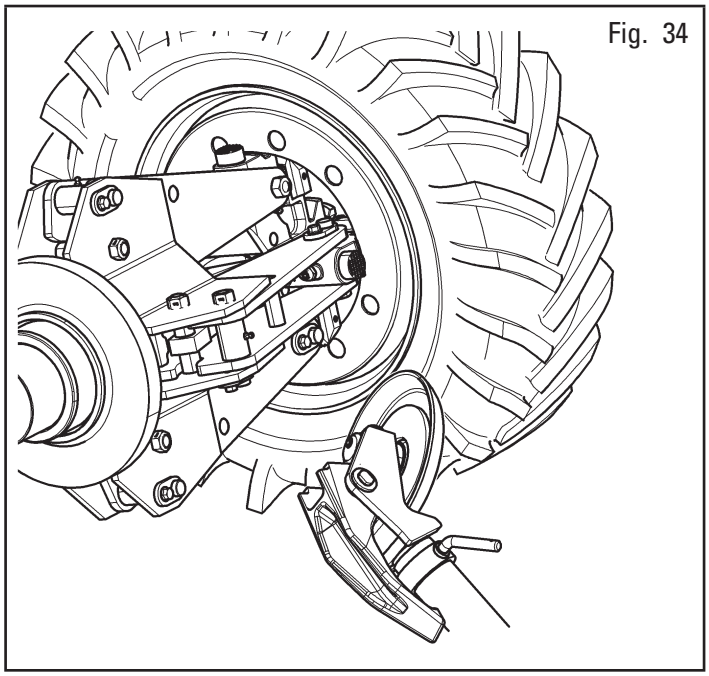
12.8.1 Beading and demounting

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

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

- Mount the wheel on the chuck as described in "WHEEL CLAMPING" and make sure it is deflated.
- Move to work position D (Fig. 5).
- Place the tool arm in "working position" (Fig. 13 ref. 1) in the tyre inner side, and make sure it is locked by the appropriate safety stop (Fig. 1 ref. 8).
- Position the beading disc on rim edge (see Fig. 34).

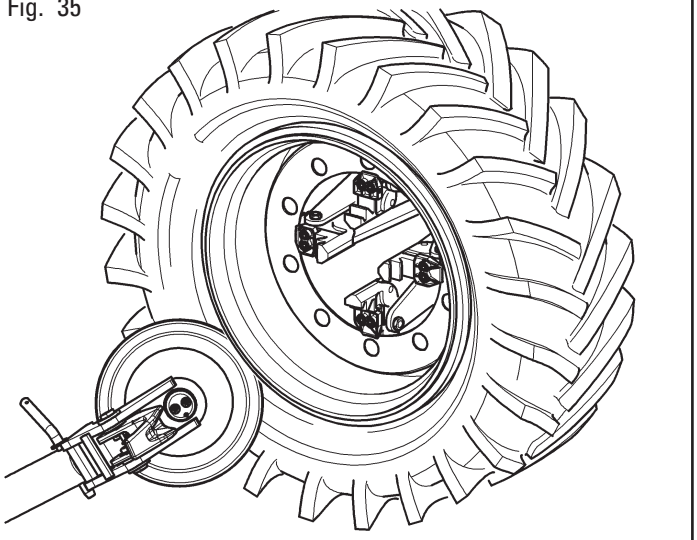
Fig. 34



- Turn the chuck and smear the entire bead seat of the rim with lubricant. While doing this, jerk the beading 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 advancement immediately to avoid compromising the integrity of the inner tube and valve).
- Place the tools holder arm in "out of work" position (Fig. 14 ref. 1), operate the handle control in order to position the tools holder arm on the wheel outer side, then place it in "working" position (Fig. 13 ref. 1) again and lock it with the safety hook provided.

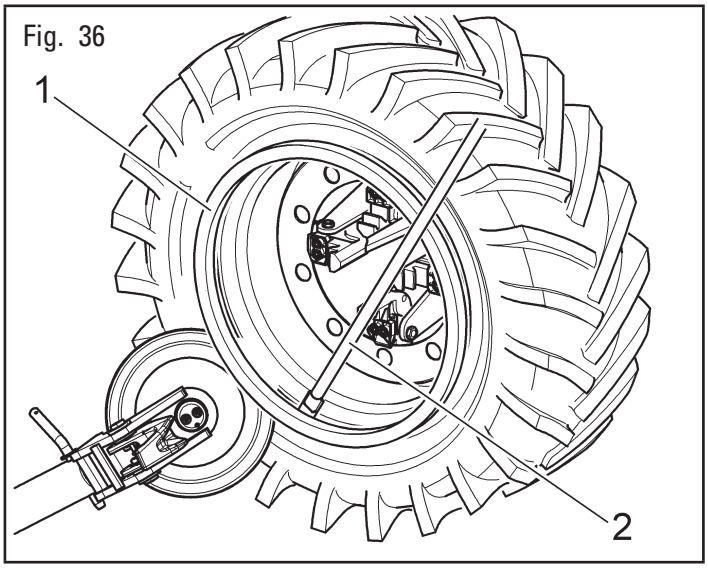
- Carry out tool holder head 180° rotation according to the description of the relevant paragraph, in order to let the beading disc come into contact with the tyre outer side (see Fig. 35).

Fig. 35



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

Fig. 36



- Remove the bead wire.
- Remove the O-Ring, when featured.
- Tilt up tool holder arm placing it in "out of work" position (Fig. 14 ref. 1) after it has been unhooked.
- Lower the chuck until the wheel rests on the footboard.
- Move to work position B (Fig. 5).
- Move the chuck backward until the tyre is completely dislodged from the rim (in case of tyres with inner tube, make sure 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.

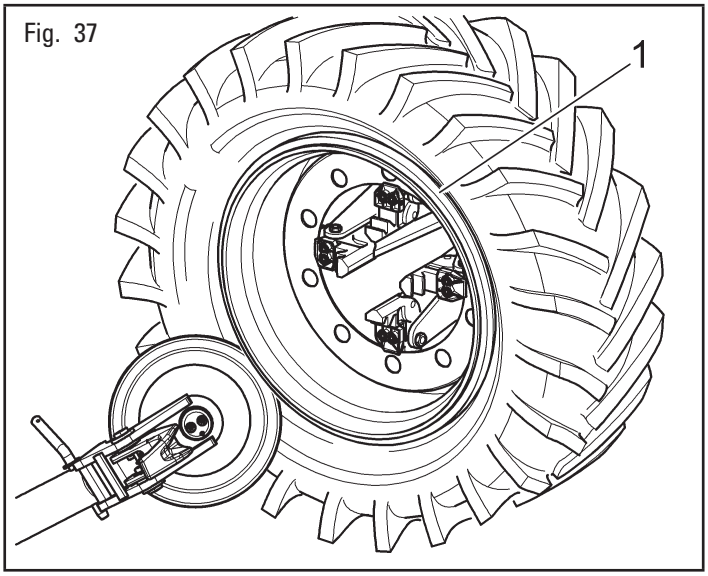
12.8.2 Mounting

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

- Place the tools holder arm in "out of work" position (Fig. 14 ref. 1); if it has been removed, fix 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. 5).
- Place the chuck in order to centre the rim on the tyre.
- Operate chuck forward translation in order to insert the rim in the tyre (in case of tubed tyres, make the valve re-enter in order 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. 5).
- Place the tool holder arm on the external side then lower it into "working" position (Fig. 13 ref. 1) with the beading 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 beading disc. Move the beading 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. 5).
- Position the bead wire (Fig. 37 ref. 1) on the rim, fit the stop ring with the help of the beading disc as shown in Fig. 37.

Fig. 37



- Tilt up tool holder arm placing it in “out of work” position (Fig. 14 ref. 1) after it has been unhooked.
- Lower the chuck until the wheel rests on the mobile footboard.
- Close the chuck clamps completely and translate the platform 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.

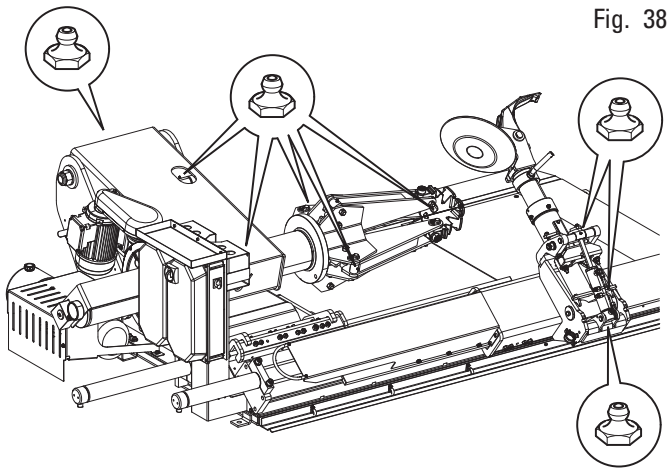
BEFORE REMOVING HYDRAULIC CIRCUIT UNIONS OR PIPES, MAKE SURE THAT THERE ARE NO PRESSURISED FLUIDS PRESENT. PRESSURISED OIL SPILLS MAY CAUSE SERIOUS WOUNDS OR INJURIES.

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 and chuck) carriage sliding guides.
- Periodically (preferably once a month), grease all moving parts of the machine (see Fig. 38).

Fig. 38



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

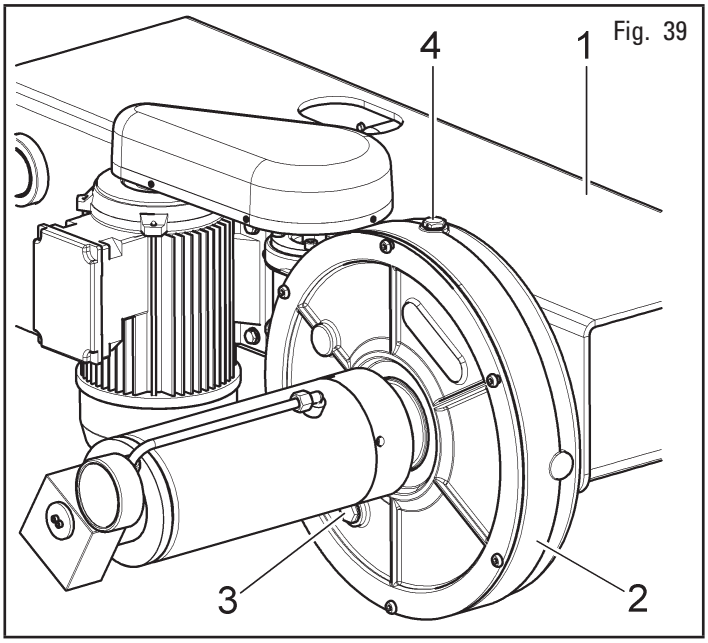
  At least once a year it is advisable to proceed anyway to the complete replacement of the hydraulic oil of the same oil-pressure unit.

PERFORM THIS OPERATION ONLY WITH THE MACHINE COMPLETELY CLOSED (HYDRAULIC PISTONS EXTENDED).

- 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), carry out the (inner and outer) guides of the tool and chuck carriages.

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

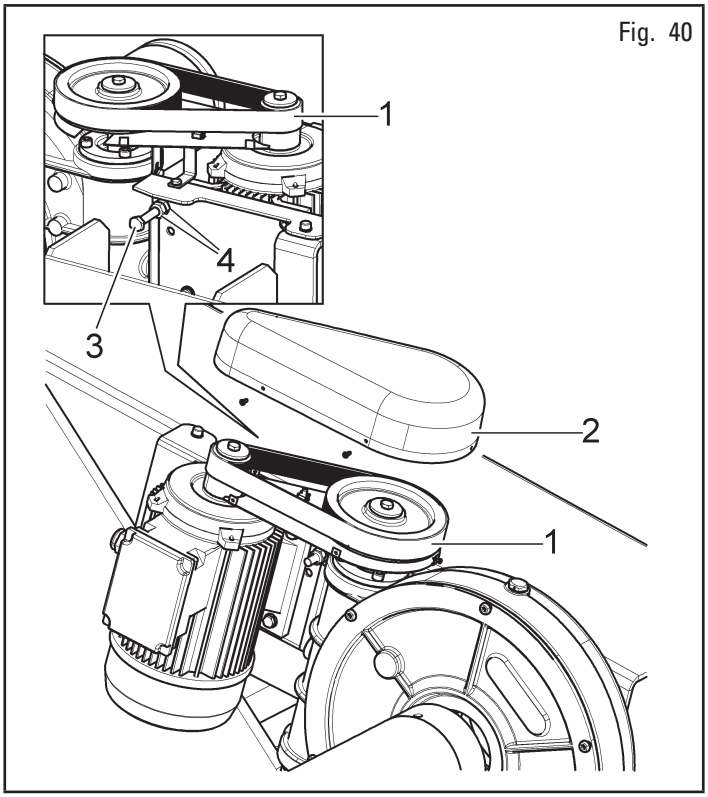
Fig. 39



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

- Remove the upper guard (Fig. 40 ref. 2) with a screwdriver.
- Stretch the belt (Fig. 40 ref. 1) using the screw (Fig. 40 ref. 3) after the nuts (Fig. 40 ref. 4) have been slackened.
- Tighten the fixing nuts (Fig. 40 ref. 4) after the adjustment operations, then assemble the protection guard (Fig. 40 ref. 2) again.

Fig. 40



C. Check periodically and, if necessary, adjust the play of slide (Fig. 41 ref. 1) on guide plates (Fig. 41 ref. 2) by means of the adjustment screws (Fig. 41 ref. 3) of sliding blocks (Fig. 41 ref. 4).

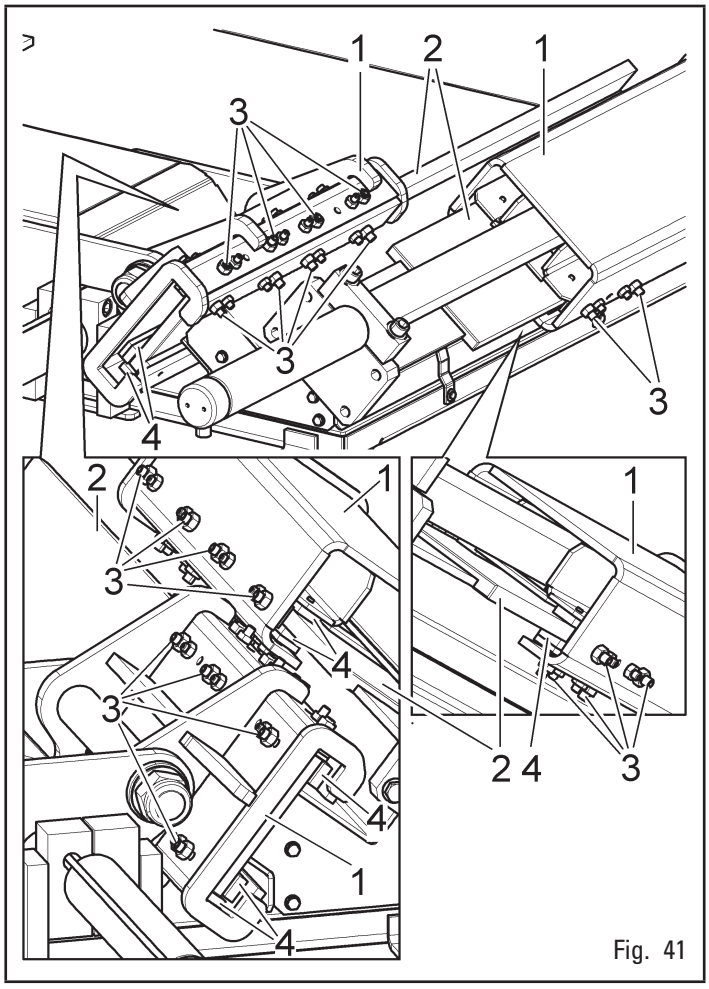


Fig. 41

OPERATION TO BE CARRIED OUT ONLY IN CASE THAT THE TOOL CARRIAGE AND THE CHUCK CARRIAGE MOVE 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) Gearbox 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 until jam release.
The machine does not start.	a) No electricity supply. b) Overload cutouts not set. c) Transformer fuse blown.	a) Connect the electricity supply. b) Set the overload cutouts. c) Change the fuse.
Fluid leaks from union or pipeline.	a) Union not tightened correctly. b) Pipeline cracked.	a) Tighten the union. 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 panel and reset the overload cutout tripped.
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.

Problem	Possible cause	Remedy
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. 

15.0 TECHNICAL DATA

15.1 Technical electrical data

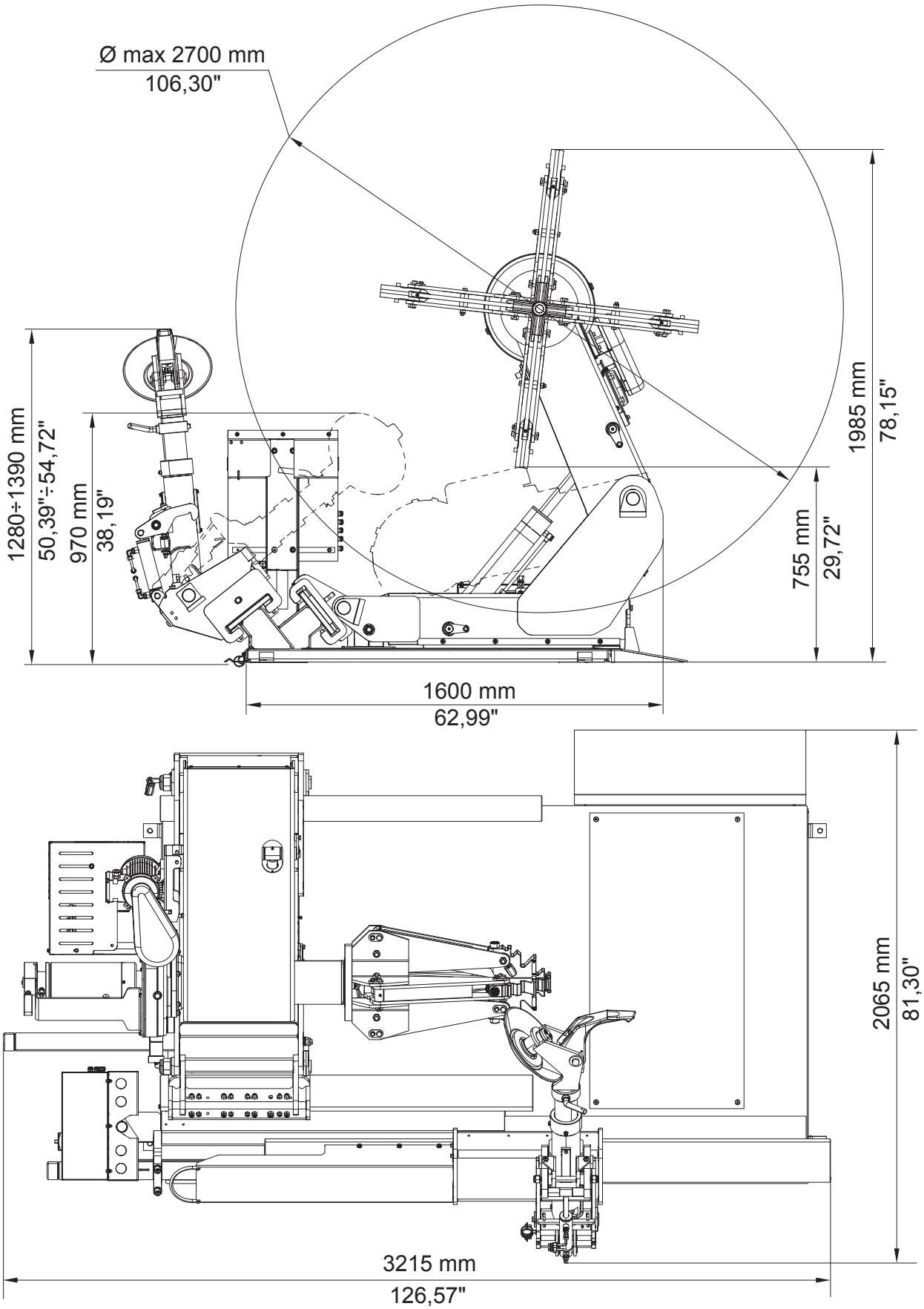
Motor power (kW)		1.5 - 2.2
Power supply	Voltage (V)	230
	Phases	3
	Frequency (Hz)	60
Hydraulic drive unit motor (kW)		1.8 - 2.5
Power supply	Voltage (V)	230
	Phases	3
	Frequency (Hz)	60
Chuck rotation speed (rev/min)		4 - 8

15.2 Technical mechanical data

Maximum tyre diameter (mm)	2700 (106”)
Max. wheel width (mm)	1750 (69”)
Max rotation torque (Nm)	6000
Wheel maximum weight (kg)	3000
Rim diameter (inches)	11 ÷ 50 (11 ÷ 60 with extensions)
Minimum locking hole (mm)	90
Chuck minimum height from the ground (mm)	330
Bead-breaking force (N)	42000
Gear noise (dB) (A)	< 80
Operating pressure (bar)	180
Weight (Kg)	1730

15.3 Dimensions

Fig. 42



16.0 STORING

If storing for long periods disconnect the main power supply and take measures to protect the machine from dust build-up. Lubricate parts that could be damaged from drying out. When putting the machine back into operation replace the rubber pads and the mounting tool.

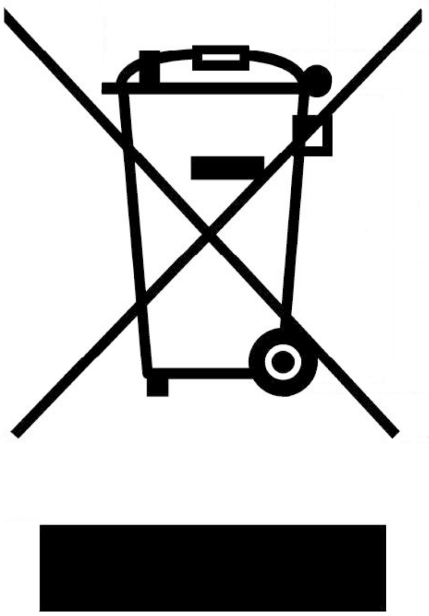
17.0 SCRAPPING

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.

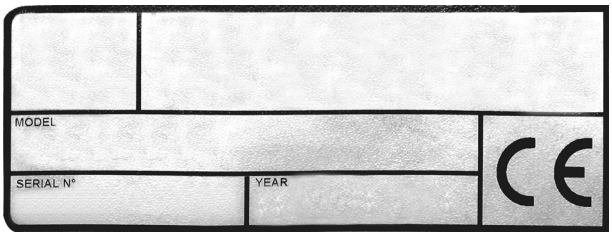
Instructions for the correct management of waste from electric and electronic equipment (WEEE) according to the Italian legislative decree 49/14 and subsequent amendments.

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. 43



18.0 REGISTRATION PLATE DATA



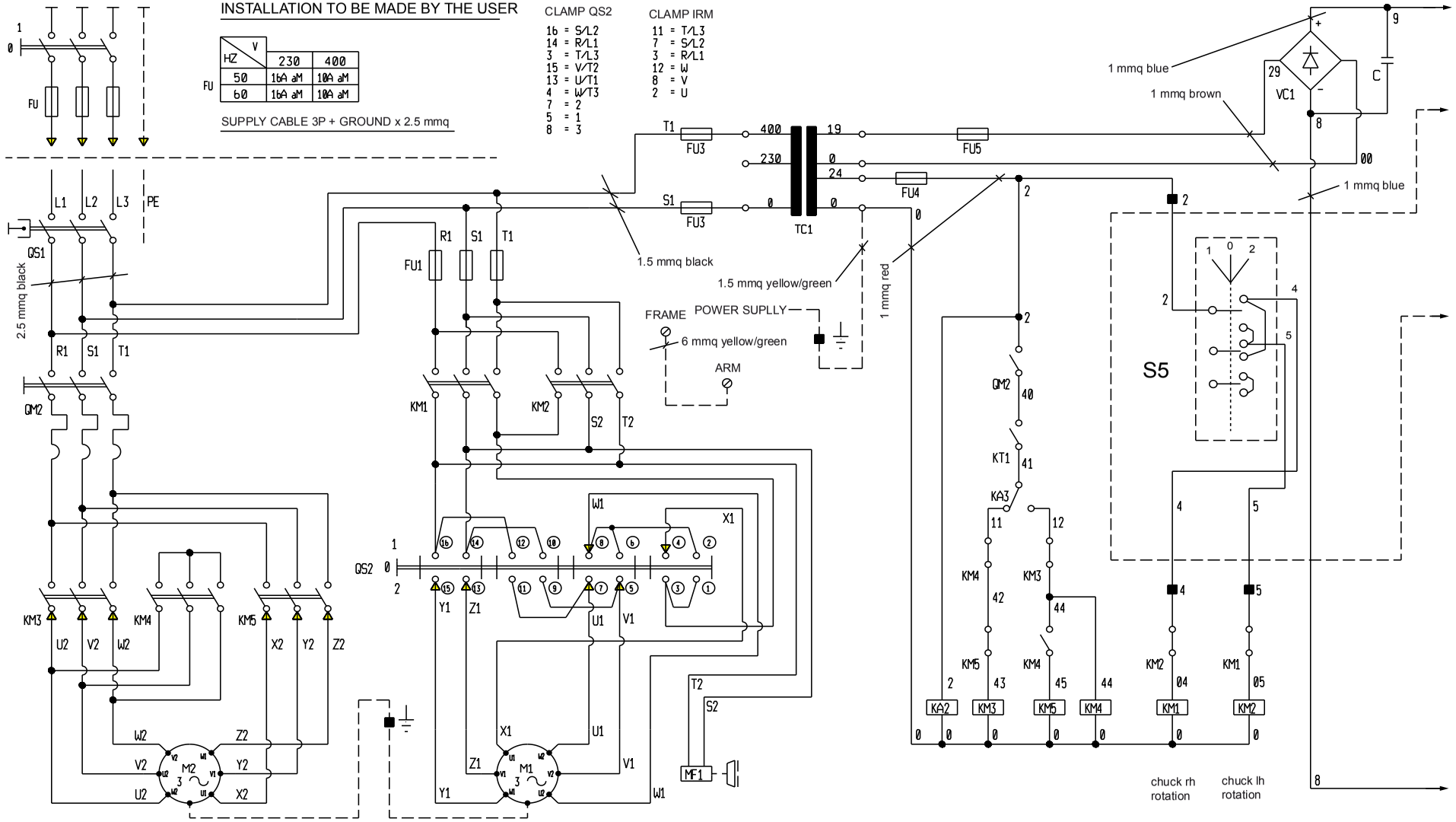
The validity of the Conformity Declaration enclosed to this manual is also extended to products and/or devices the machine model object of the Conformity Declaration can be equipped with.
Said plate must always be kept clean from grease residues or filth generally.

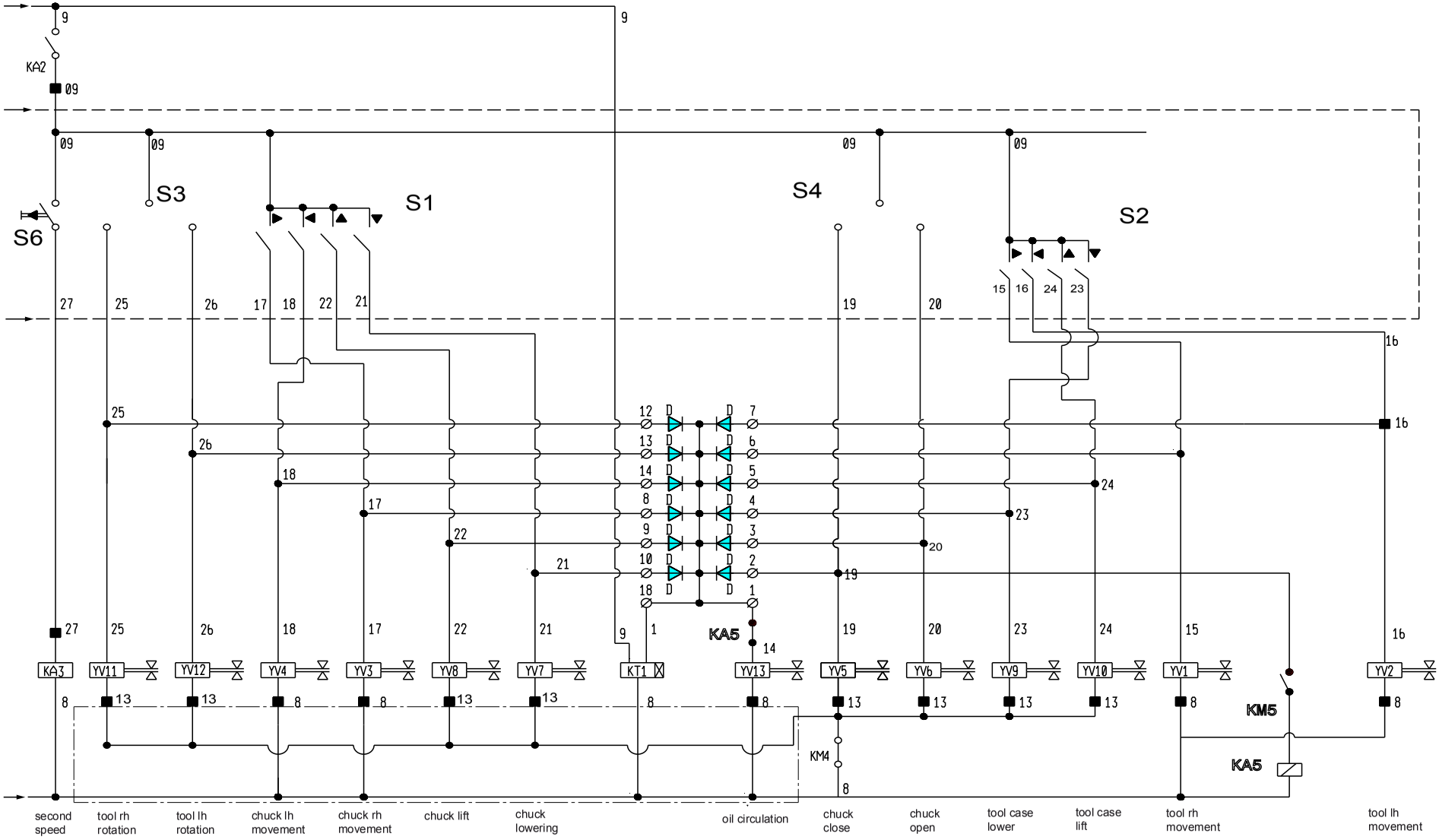
ATTENTION: TAMPERING WITH, CARVING, CHANGING ANYHOW OR EVEN REMOVING MACHINE IDENTIFICATION PLATE IS ABSOLUTELY FORBIDDEN; DO NOT COVER IT WITH TEMPORARY PANELS, ETC., SINCE IT MUST ALWAYS BE VISIBLE.

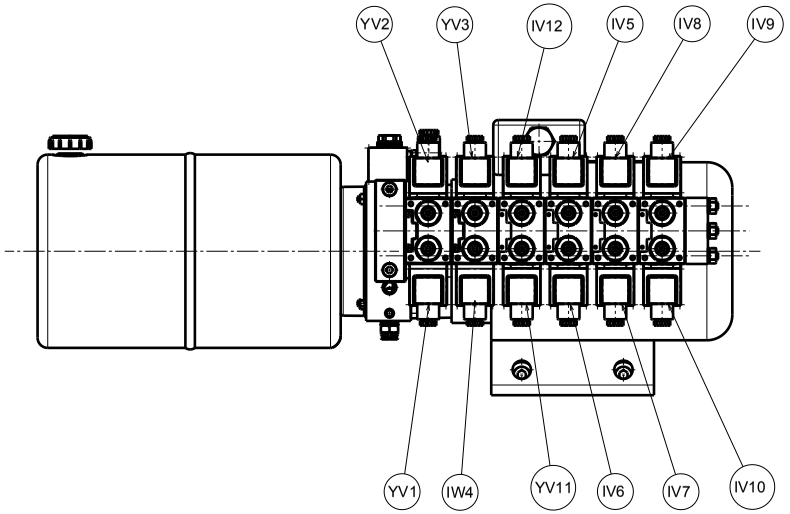
WARNING: Should the plate be accidentally damaged (removed from the machine, damaged or even partially illegible) inform immediately the manufacturer.

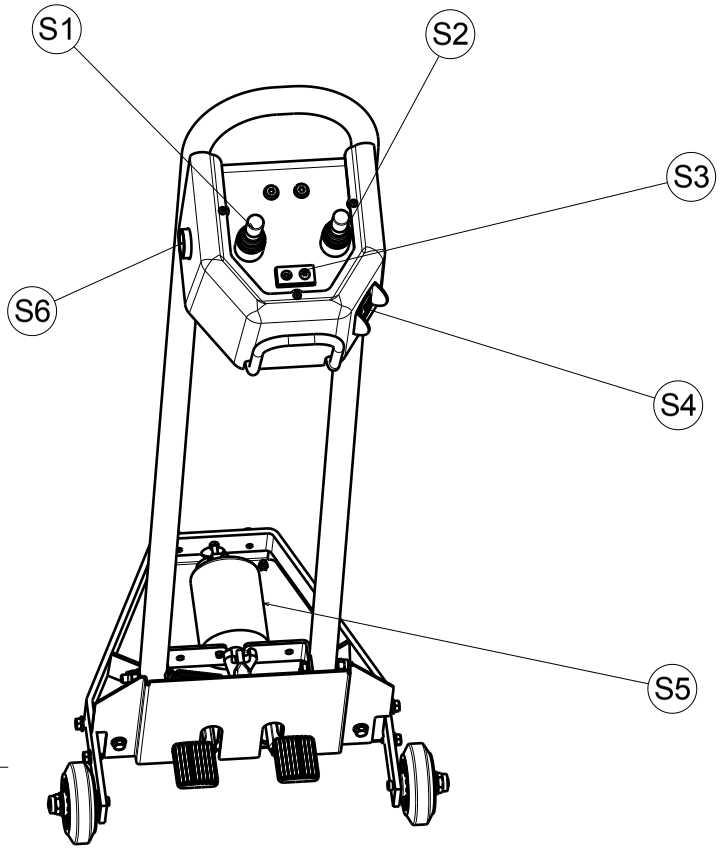
19.0 FUNCTIONAL DIAGRAMS

Here follows a list of the machine functional diagrams.

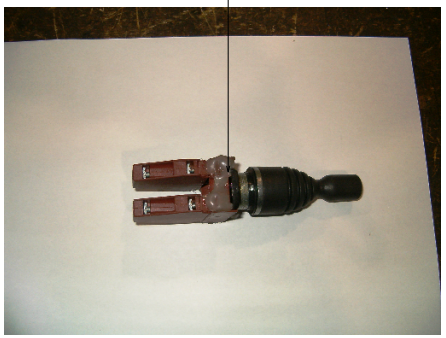

INSTALLATION TO BE MADE BY THE USER
SUPPLY CABLE 3P + GROUND x 2.5 mmq
CLAMP QS2
16 = S/L2
14 = R/L1
3 = T/L3
15 = V/T2
13 = U/T1
4 = W/T3
7 = 2
5 = 1
8 = 3
CLAMP IRM
11 = T/L3
7 = S/L2
3 = R/L1
12 = W
8 = V
2 = U
1 mmq blue
1 mmq brown
1 mmq blue
1.5 mmq black
1.5 mmq yellow/green
1 mmq red
6 mmq yellow/green
FRAME
POWER SUPPLY
ARM
2.5 mmq black
S5
chuck rh rotation
chuck lh rotation


KA2
S6
S3
S1
S4
S2
KA5
KM4
KM5
KA5
KA3
YV11
YV12
YV4
YV3
YV8
YV7
KT1
YV13
YV5
YV6
YV9
YV10
YV1
YV2
second speed
tool rh rotation
tool lh rotation
chuck lh movement
chuck rh movement
chuck lift
chuck lowering
oil circulation
chuck close
chuck open
tool case lower
tool case lift
tool rh movement
tool lh movement





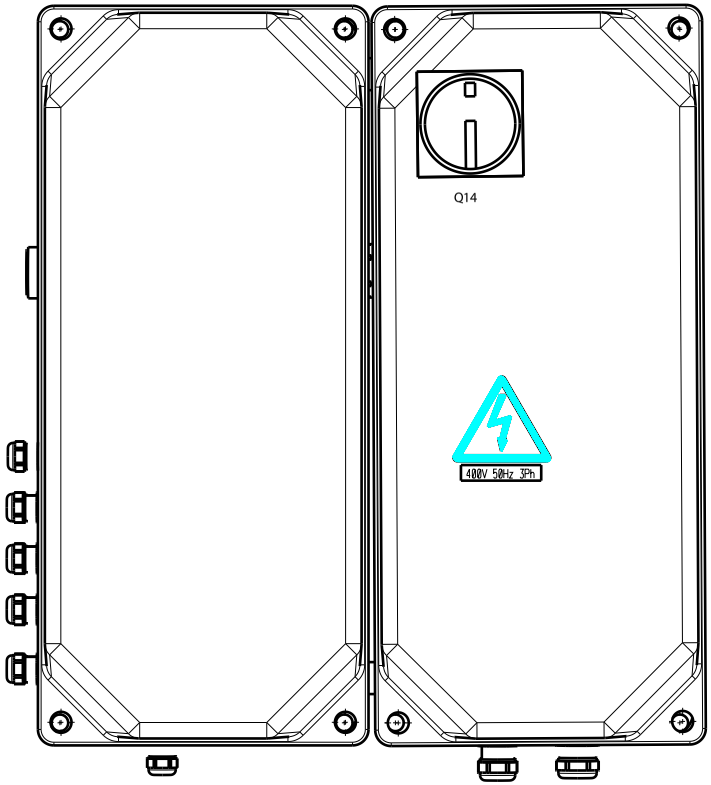
STICK THE HANDLE TANG INSIDE
THE COLUMN BOX

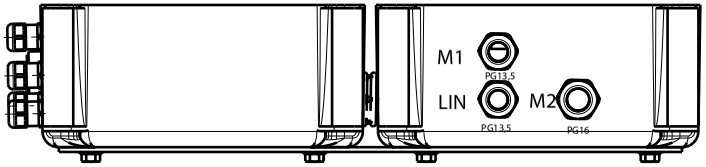


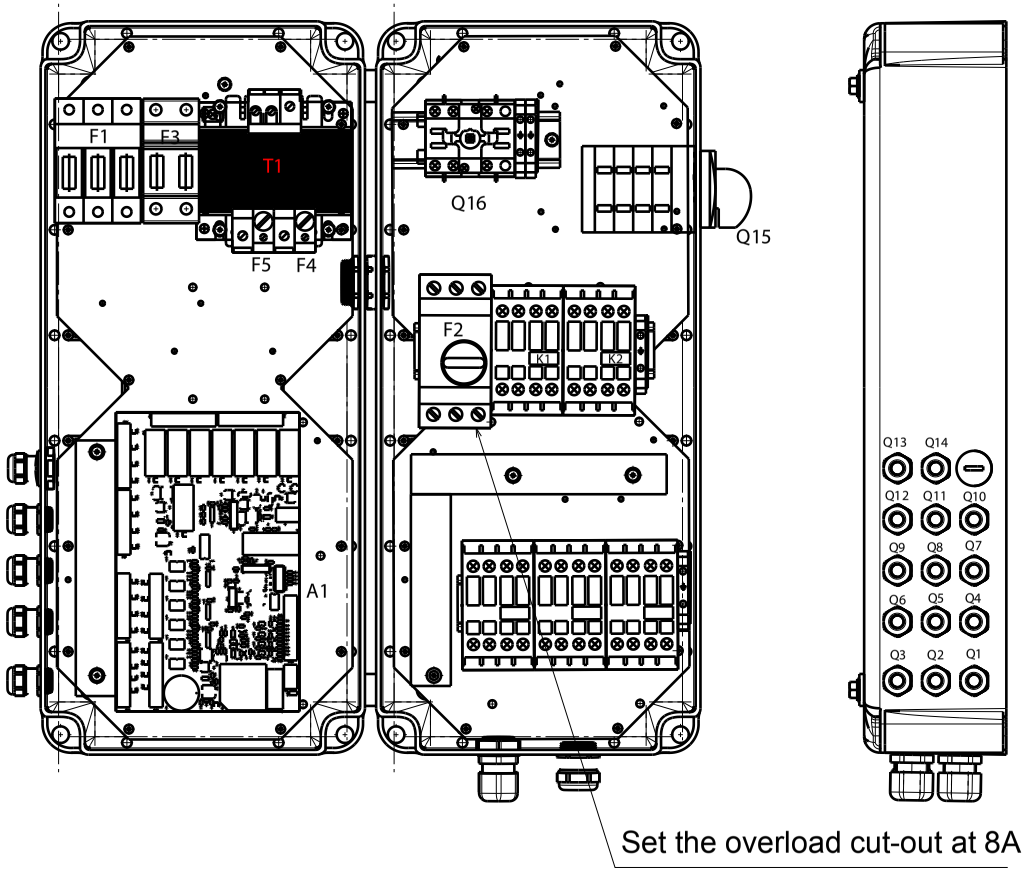
N.B. TO AVOID THE CONTACTS DISCONNECTION
IN CASE OF COLLISIONS WITH THE CONTROLS STUD,
STICK THE CONTACTS ON THE HANDLE WITH HOT GLUE

Table Number A - Rev. 0		VS752205780		
N°	**Code**	**Description**	**Description**	**Descripción**
	C	Electrolytic condenser	Condenseur électrolytique	Condensador electrólitico
	D	1N4007 diode	Diode 1N4007	Diodo 1N4007
	FU1	Line guard fuse	Fusible protection ligne	Fusible protección linea
	FU3	First guard fuse	Fusible protection premier	Fusible protección primera
	FU4	Second guard fuse	Fusible protection deuxième	Fusible protección segundaria
	FU5	Second guard fuse	Fusible protection deuxième	Fusible protección segundaria
	KA2	Controls block relay	Relais bloc commandes	Relé bloque mandos
	KA3	Relay commande second speed	Relais commande deuxième vitesse	Relé mando segunda velocidad
	KA5	Second speed solenoid valve inhibitor relay	Relais inhibiteur electrovanne en deuxieme vitesse	Relé inhibidor electroválvula en segunda velocidad
	KM1	Chuck clockwise rot. contactor	Contacteur rot. horaire mandrin	Contactor rot. horario mandril
	KM2	Chuck anticlockwise rot. contactor	Contacteur rot. anti-horaire mandrin	Contactor rot. izquierda mandril
	KM3	First speed control contactor	Contacteur commande premier vitesse	Contactor mando primera velocidad
	KM4/KM5	Second speed control contactor	Contacteur commande deuxieme vitesse	Contactor mando segunda velocidad
	KT1	Hydraulic power unit control timer	Timer commande moteur distributeur	Timer mando motor centralita
	MF1	Chuck motor brake	Frein moteur mandrin	Freno motor mandril
	S5	Chuck rotation control commutator	Commutateur commande rotation mandrin	Conmutador mando rotación mandril
	S2	Handle for tool carriage forward/backward control	Manipulateur de commande chariot outil avant/arrière et montée/descente	Manipulador mando carro utensilio adelante/atrás y subida/bajada
	S1	Handle for chuck up/down control handle and chuck lh/rh movement	Manipulateur de commande montée/descente mandrin et mouvement droit/gauche mandrin	Manipulador comando subida/bajada mandril y movimiento izquierdo/derecho mandril
	M1	Chuck motor	Moteur mandrin	Motor mandril
	M2	Hydraulic power unit motor	Moteur distributeur	Motor centralita
	QM2	Magnetic-thermique switch	Interrupteur magneto-thermique	Interruptor iman termico
	QS1	Main switch	Interrupteur general	Interruptor general
	QS2	Pole commutator	Commutateur poles	Conmutador polos
	S4	Chuck open/close push-button	Bouton ouvre/ferme mandrin	Pulsador abre/cierra mandril

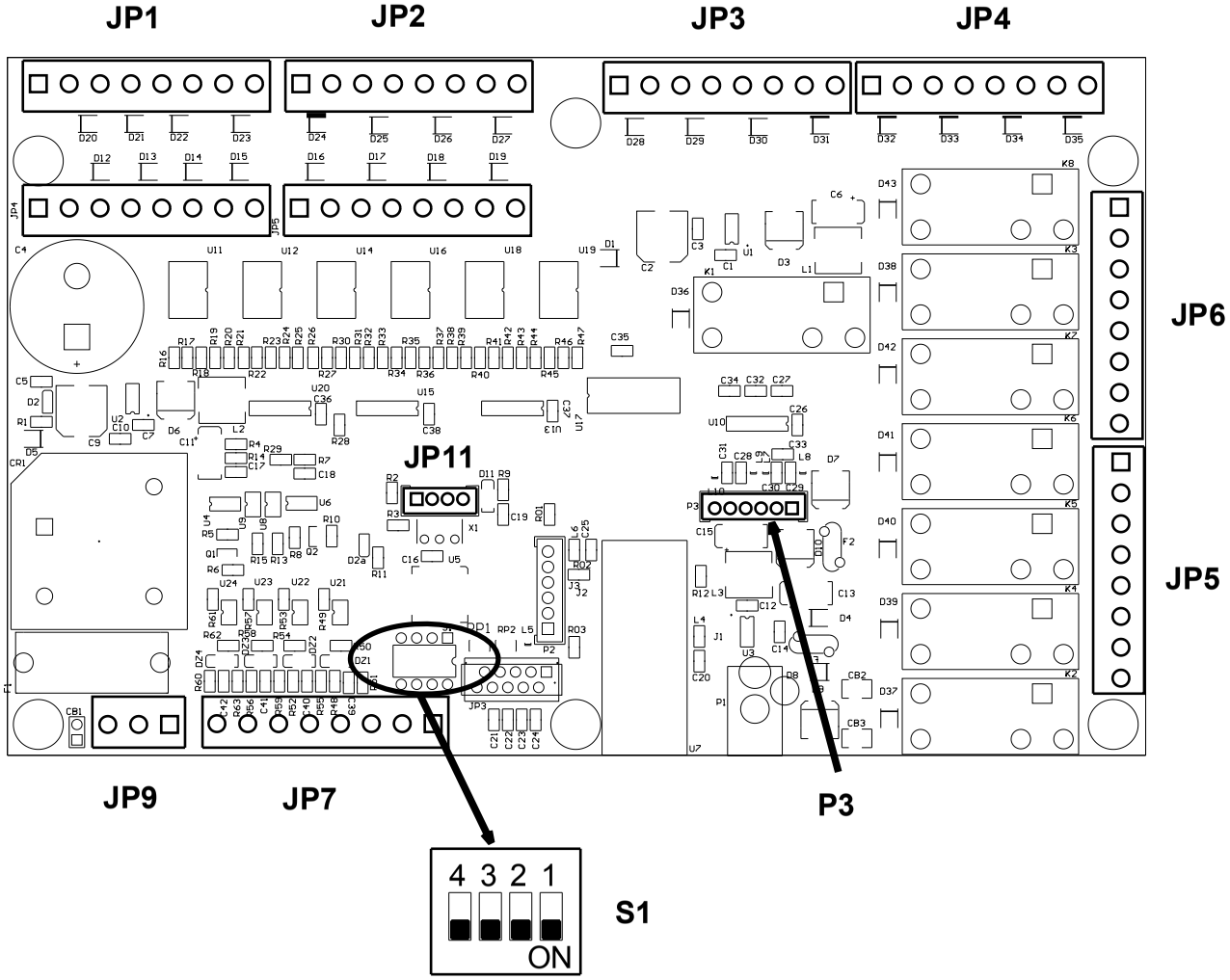
Table Number A - Rev. 0		VS752205780		
N°	**Code**	**Description**	**Description**	**Descripción**
	S3	Rh/lh tools rotation control push-button	Bouton commande rotation outils droit/gauche	Pulsador comando rotación utensilios derecha/ izquierda
	S6	Hydraulic power unit second speed push-button	Bouton deuxieme vitesse distributeur	Pulsador segunda velocidad centralita
	TC1	Control transformer	Transformateur commandes	Transformador mandos
	VC1	Bridge	Pont	Puente
	YV1	Tool rh movement solenoid valve	Électrovanne mouvement d outil	Electroválvula movimiento d utensilio
	YV2	Tool lh movement solenoid valve	Électrovanne mouvement g outil	Electroválvula movimiento iz utensilio
	YV3	Chuck rh movement solenoid valve	Électrovanne mouvement d mandrin	Electroválvula movimiento d mandril
	YV4	Chuck lh movement solenoid valve	Électrovanne mouvement g mandrin	Electroválvula movimiento iz mandril
	YV5	Chuck closing solenoid valve	Électrovanne fermeture mandrin	Electroválvula cierre mandril
	YV6	Chuck opening solenoid valve	Électrovanne ouverture mandrin	Electroválvula abertura mandril
	YV7	Chuck descent solenoid valve	Électrovanne descente mandrin	Electroválvula bajada mandril
	YV8	Chuck rising solenoid valve	Électrovanne montée mandrin	Electroválvula subida mandril
	YV9	Tool "in" solenoid valve	Électrovanne entrée outil	Electroválvula entra utensilio
	YV10	Tool "out" solenoid valve	Électrovanne sortie outil	Electroválvula sale utensilio
	YV11	Rotation solenoid vavle Synodx	Électrovanne rotation Synodx	Electroválvula rotación Synodx
	YV12	Synosx rotation solenoid valve	Électrovanne rotation Synosx	Electroválvula rotación Synosx
	YV13	Oil circulation solenoid valve	Électrovanne circulation huile	Electroválvula circolo aceite
	■	Clamp	Borne	Abrazadera


Q14
400V 50Hz 3Ph


M1
PG13.5
LIN
M2
PG13.5
PG16


F1
F3
T1
F5
F4
Q16
Q15
F2
K1
K2
A1
Q13
Q14
Q12
Q11
Q10
Q9
Q8
Q7
Q6
Q5
Q4
Q3
Q2
Q1
Set the overload cut-out at 8A

RECEIVING CARD VS18962 TOPOGRAPHIC VIEW



RECEIVING CARD VS18962 IN/OUT

PIN JP1	NUMBER	FUNCTION
1	JP1-1	Q1 TOOL CARRIAGE BACKWARD
2	JP1-2	0V for Q1
3	JP1-3	Q2 TOOL CARRIAGE FORWARD
4	JP1-4	0V for Q2
5	JP1-5	Q3 CHUCK CARRIAGE FORWARD
6	JP1-6	0V for Q3
7	JP1-7	Q4 CHUCK CARRIAGE BACKWARD
8	JP1-8	0V for Q4

PIN JP2	NUMBER	FUNCTION
1	JP2-1	Q5 CHUCK CLOSING
2	JP2-2	0V for Q5
3	JP2-3	Q6 CHUCK OPENING
4	JP2-4	0V for Q6
5	JP2-5	Q7 CHUCK ARM DESCENT Q14 CHUCK SLOW DESCENT
6	JP2-6	0V for Q7 0V for Q14
7	JP2-7	Q8 CHUCK ARM RISE
8	JP2-8	0V for Q8

PIN JP3	NUMBER	FUNCTION
1	JP3-1	Q9 TOOL COUNTERCLOCKWISE ROT.
2	JP3-2	0V for Q9
3	JP3-3	Q10 TOOL CLOCKWISE ROTATION
4	JP3-4	0V for Q10
5	JP3-5	Q11 TOOL ARM DESCENT
6	JP3-6	0V for Q11
7	JP3-7	Q12 TOOL ARM RISE
8	JP3-8	0V for Q12

PIN JP4	NUMBER	FUNCTION
1	JP4-1	Q13 OIL RECIRCULATION
2	JP4-2	0V for Q13
3	JP4-3	N.U.
4	JP4-4	N.U.
5	JP4-5	N.U.
6	JP4-6	N.U.
7	JP4-7	N.U.
8	JP4-8	N.U.

PIN JP5	NUMBER	FUNCTION
1	JP5-1	N.U.
2	JP5-2	N.U.
3	JP5-3	0 Vac
4	JP5-4	KM5 2V HYDR. POWER UNIT ROTATION CONTROL
5	JP5-5	KM4 2V STAR TYPE HYDR. POWER UNIT MOTOR ROT. CONTR.
6	JP5-6	KM3 1V HYDRAULIC POWER UNIT ROT. CONTROL
7	JP5-7	KM2 CHUCK CLOCKWISE ROTATION CONTROL
8	JP5-8	KM1 CHUCK COUNTERCLOCKWISE ROT. CONTROL

PIN JP7	NUMBER	FUNCTION
1	JP7-1	CONNECTED TO JP7-2
2	JP7-2	CONNECTED TO JP7-1
3	JP7-3	N.U.
4	JP7-4	N.U.
5	JP7-5	N.U.
6	JP7-6	N.U.
7	JP7-7	N.U.
8	JP7-8	N.U.

PIN JP9	NUMBER	FUNCTION
1	JP9-1	0 Vac
2	JP9-2	N.U.
3	JP9-3	19 Vac

ELECTRICAL PANEL (RECEIVER) CIRCUITS DIAGRAM

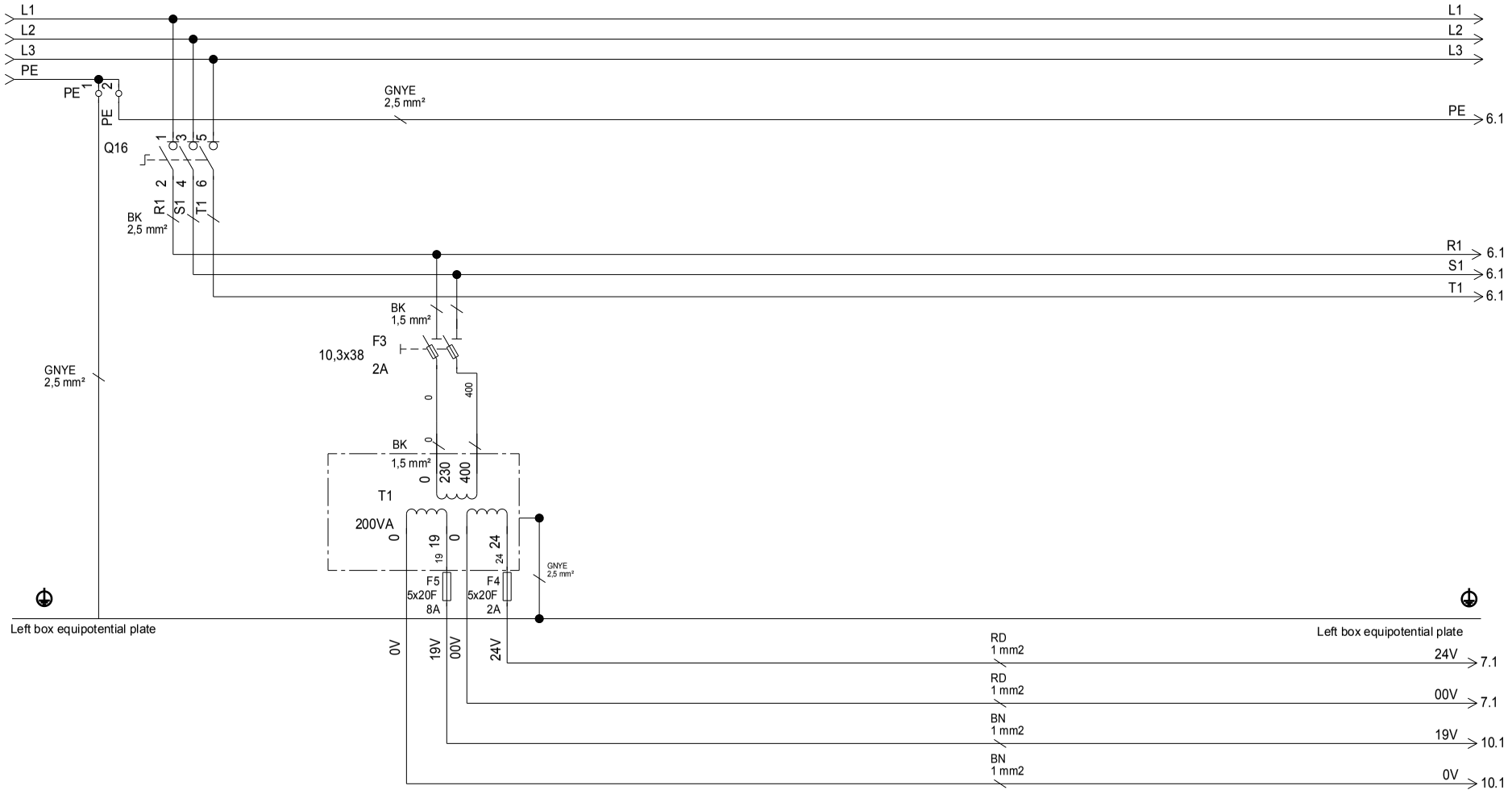
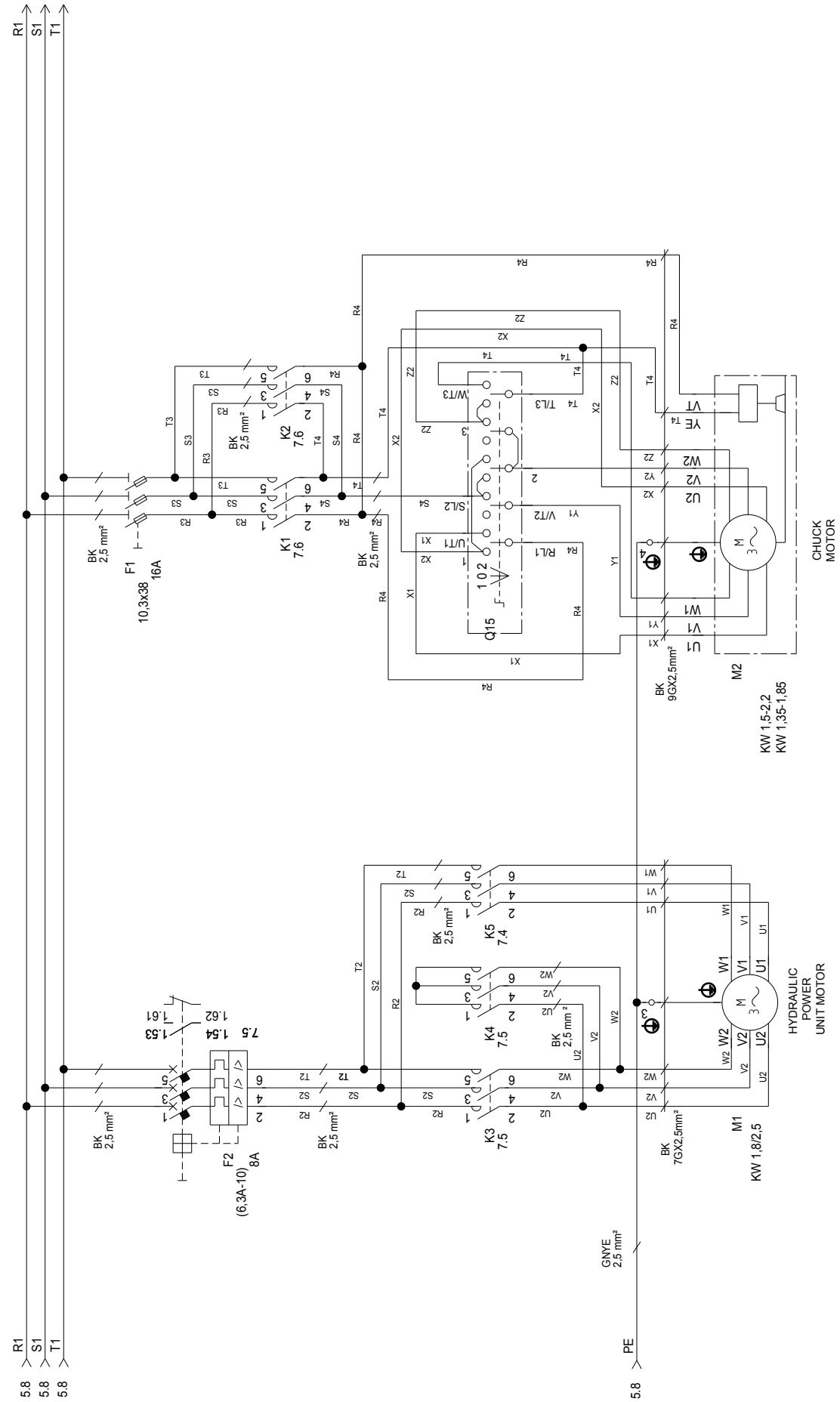
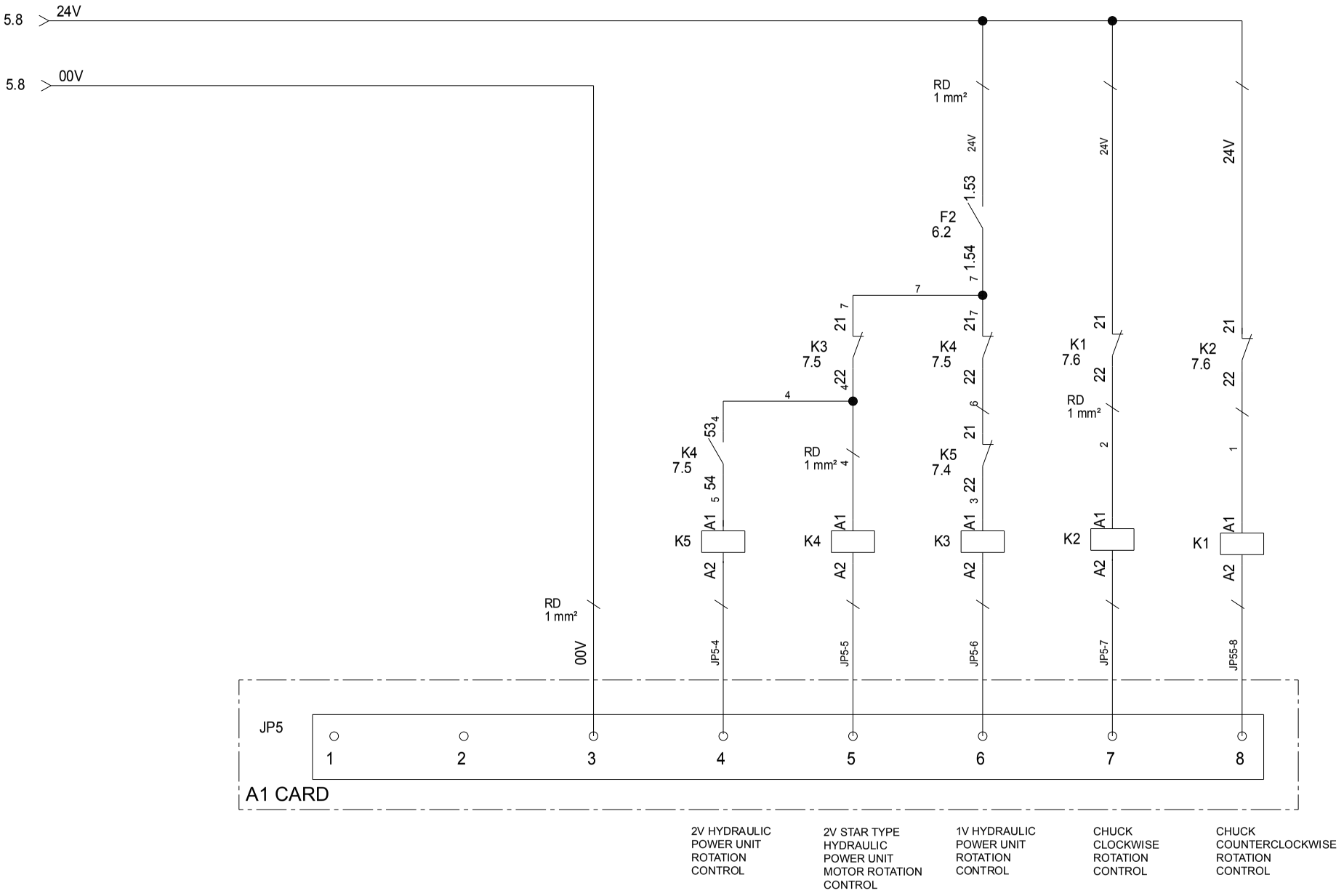
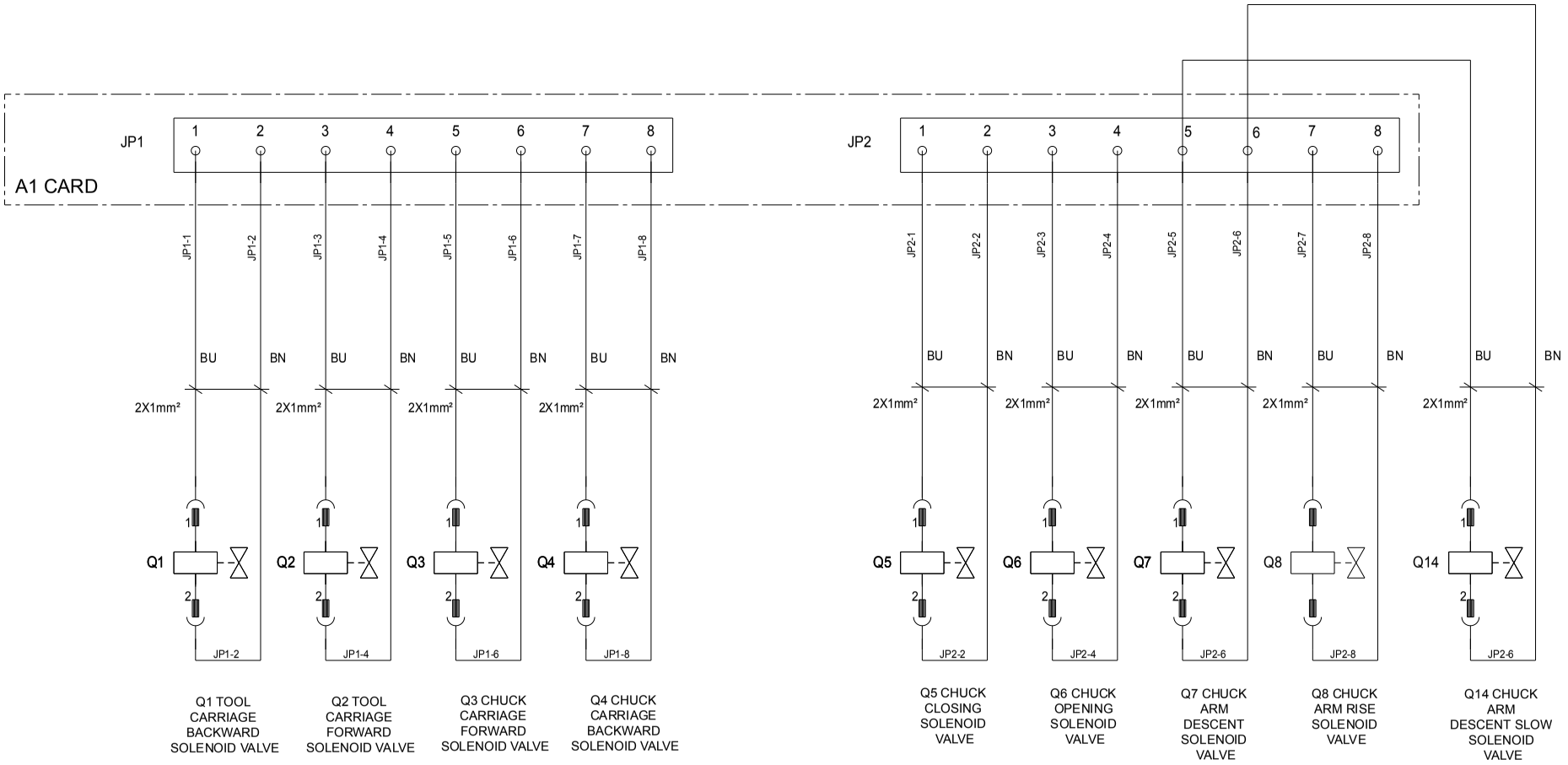


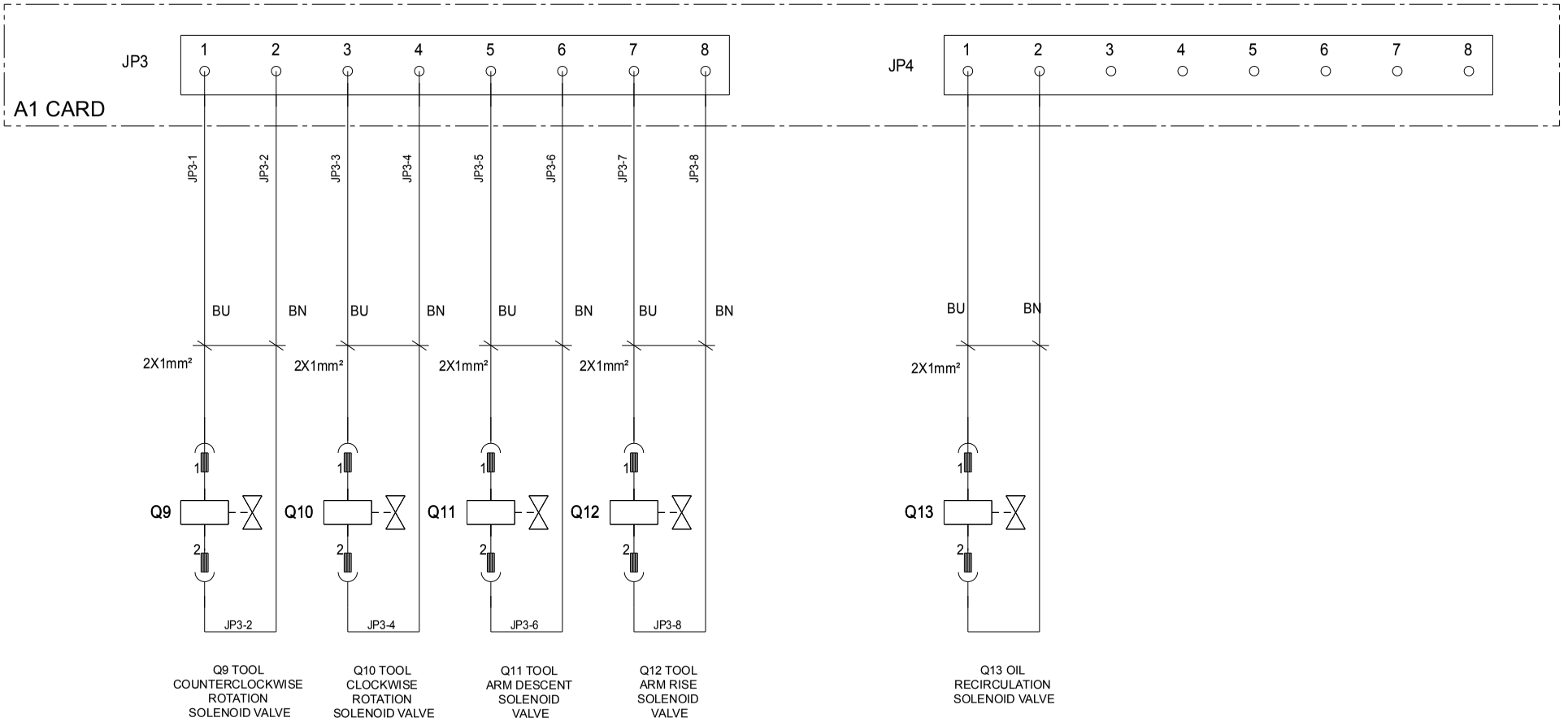
Table Number B - Rev. 0

VS752205562

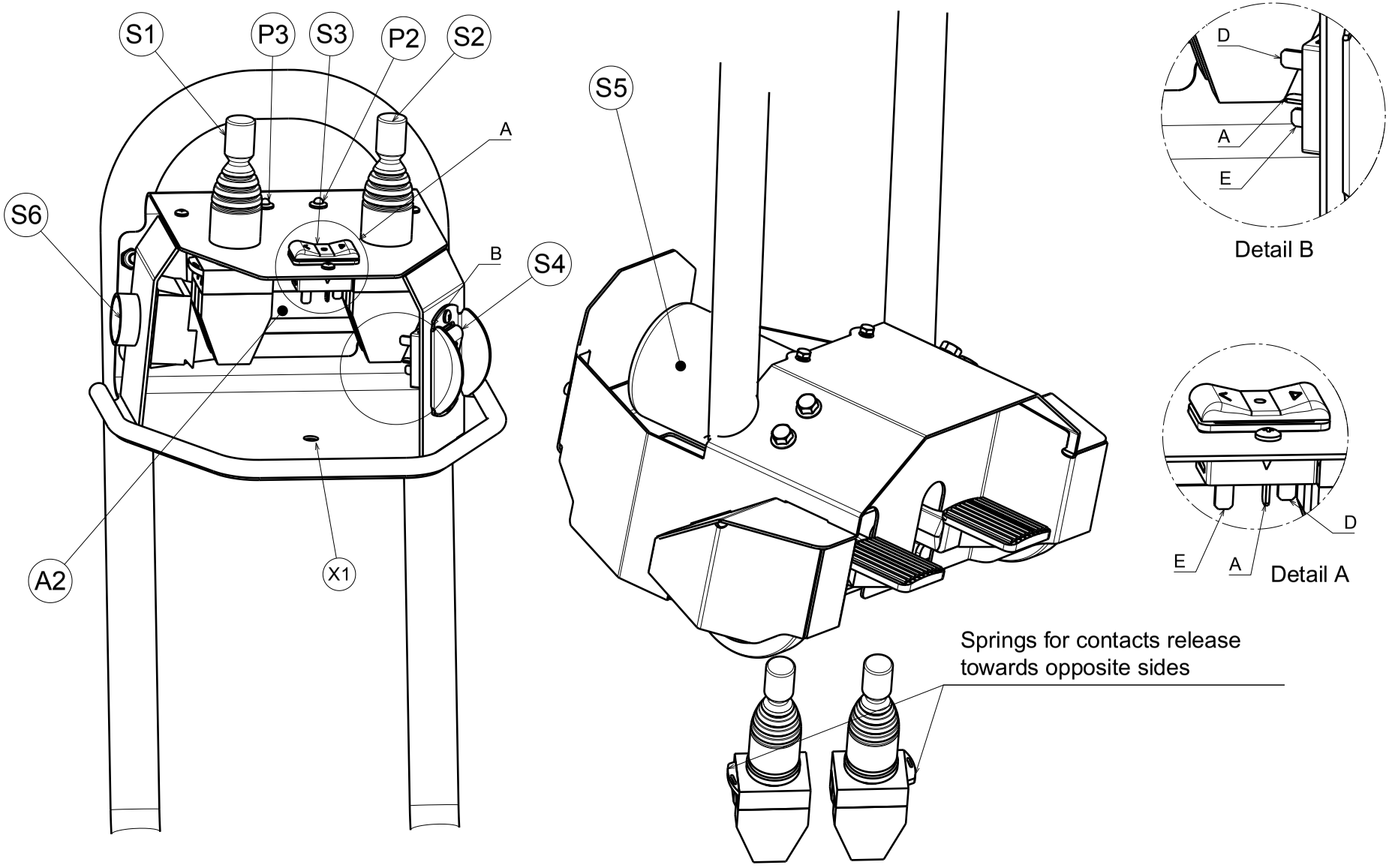



5.8 24V
5.8 00V
RD 1 mm²
24V
1.53
F2 6.2
1.54
7
21
K3 7.5
22
4
53
K4 7.5
54
5
A1
K5
A2
JP5-4
RD 1 mm²
00V
RD 1 mm²
4
K4
A1
A2
JP5-5
6
21
K5 7.4
22
3
K3
JP5-6
K1 7.6
2
K2
JP5-7
1
K1
JP55-8
JP5
1 2 3 4 5 6 7 8
A1 CARD
2V HYDRAULIC POWER UNIT ROTATION CONTROL
2V STAR TYPE HYDRAULIC POWER UNIT MOTOR ROTATION CONTROL
1V HYDRAULIC POWER UNIT ROTATION CONTROL
CHUCK CLOCKWISE ROTATION CONTROL
CHUCK COUNTERCLOCKWISE ROTATION CONTROL

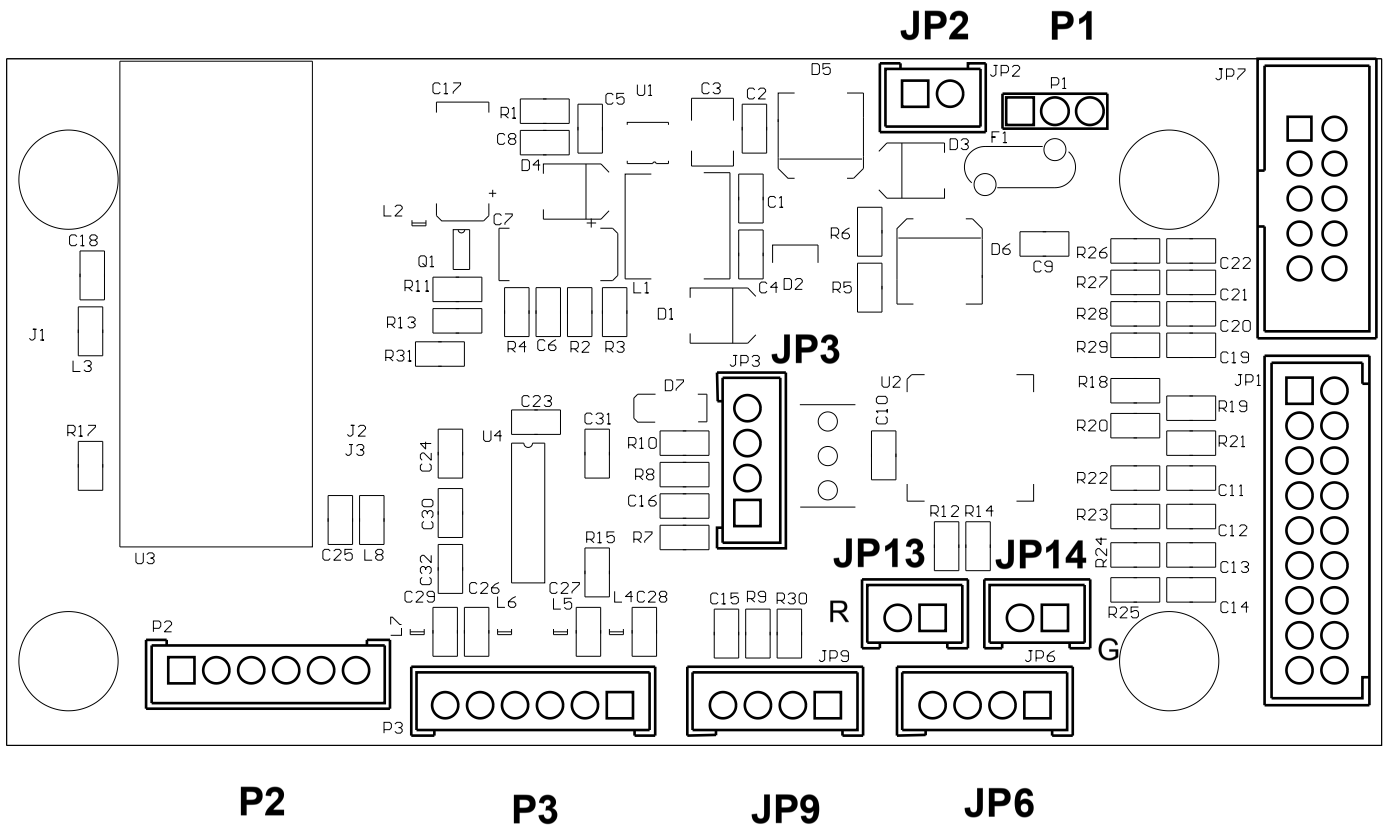

A1 CARD
JP1
1 2 3 4 5 6 7 8
JP2
1 2 3 4 5 6 7 8
JP1-1 JP1-2 JP1-3 JP1-4 JP1-5 JP1-6 JP1-7 JP1-8
JP2-1 JP2-2 JP2-3 JP2-4 JP2-5 JP2-6 JP2-7 JP2-8
BU BN
2X1mm²
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q14
JP1-2 JP1-4 JP1-6 JP1-8 JP2-2 JP2-4 JP2-6 JP2-8 JP2-6
Q1 TOOL CARRIAGE BACKWARD SOLENOID VALVE
Q2 TOOL CARRIAGE FORWARD SOLENOID VALVE
Q3 CHUCK CARRIAGE FORWARD SOLENOID VALVE
Q4 CHUCK CARRIAGE BACKWARD SOLENOID VALVE
Q5 CHUCK CLOSING SOLENOID VALVE
Q6 CHUCK OPENING SOLENOID VALVE
Q7 CHUCK ARM DESCENT SOLENOID VALVE
Q8 CHUCK ARM RISE SOLENOID VALVE
Q14 CHUCK ARM DESCENT SLOW SOLENOID VALVE


A1 CARD
JP3
1 2 3 4 5 6 7 8
JP4
1 2 3 4 5 6 7 8
JP3-1
JP3-2
JP3-3
JP3-4
JP3-5
JP3-6
JP3-7
JP3-8
BU
BN
2X1mm²
Q9
Q10
Q11
Q12
Q13
JP3-2
JP3-4
JP3-6
JP3-8
Q9 TOOL COUNTERCLOCKWISE ROTATION SOLENOID VALVE
Q10 TOOL CLOCKWISE ROTATION SOLENOID VALVE
Q11 TOOL ARM DESCENT SOLENOID VALVE
Q12 TOOL ARM RISE SOLENOID VALVE
Q13 OIL RECIRCULATION SOLENOID VALVE


BN
1 mm²
5.8
0V
5.8
19V
A1 CARD
JP7
1
2
3
4
5
6
7
8
JP9
0V
19V
1
2
3
JP7-1
JP7-2
Bk
0,35mm²


S1
P3
S3
P2
S2
A
S6
B
S4
A2
X1
S5
D
A
E
Detail B
E
A
D
Detail A
Springs for contacts release
towards opposite sides

TRANSMITTING CARD VS18961 TOPOGRAPHIC VIEW



TRANSMITTING CARD VS18961 IN/OUT

PIN JP1	NUMBER	FUNCTION
1	JP1-1	S1 CHUCK CARRIAGE BACKWARD
2	JP1-2	S2 TOOL CARRIAGE BACKWARD
3	JP1-3	S1 CHUCK CARRIAGE FORWARD
4	JP1-4	S2 TOOL CARRIAGE FORWARD
5	JP1-5	S1 CHUCK ARM RISE
6	JP1-6	S2 TOOL ARM DESCENT
7	JP1-7	S1 CHUCK ARM DESCENT
8	JP1-8	S2 TOOL ARM RISE
9	JP1-9	S1 (COMMON)
10	JP1-10	S2 (COMMON)
11	JP1-11	S4 (COMMON)
12	JP1-12	N.U.
13	JP1-13	S4 CHUCK CLOSING PUSHBUTTON
14	JP1-14	N.U.
15	JP1-15	S4 CHUCK OPENING PUSHBUTTON
16	JP1-16	N.U.
17	JP1-17	S3 TOOL COUNTERCLOCKWISE ROT. PUSHBUTTON
18	JP1-18	N.U.

PIN JP6	NUMBER	FUNCTION
1	JP6-1	S5 CHUCK COUNTERCLOCKWISE ROT. SELECTOR
2	JP6-2	S5 CHUCK CLOCKWISE ROT. SELECTOR
3	JP6-3	S3 TOOL CLOCKWISE ROT. PUSHBUTTON
4	JP6-4	S5 COMMON

PIN JP2	NUMBER	FUNCTION
1	JP2-1	G2 BATTERY -
2	JP2-2	G2 BATTERY +

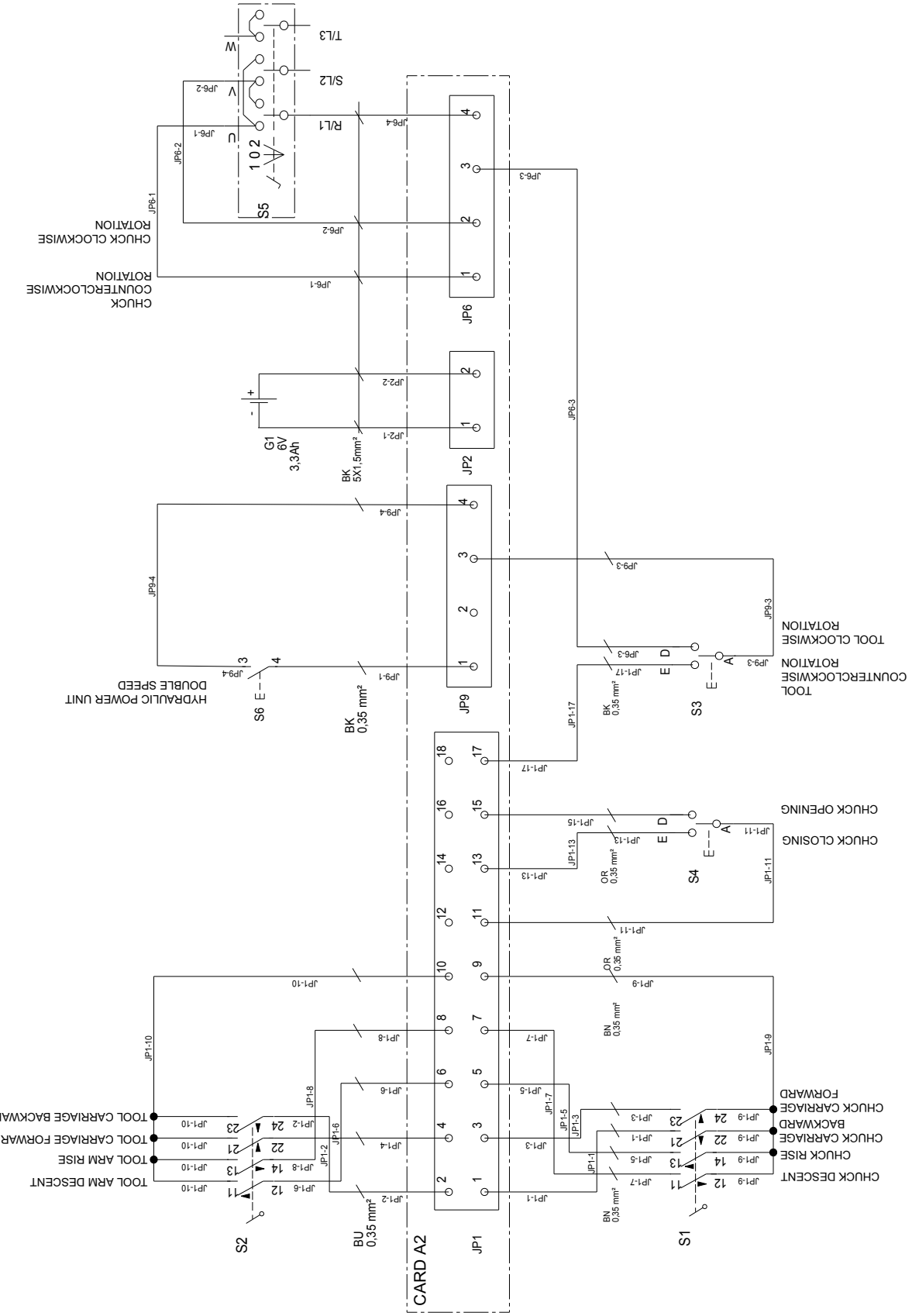
P1	NUMBER	FUNCTION
X1		0-12Vdc

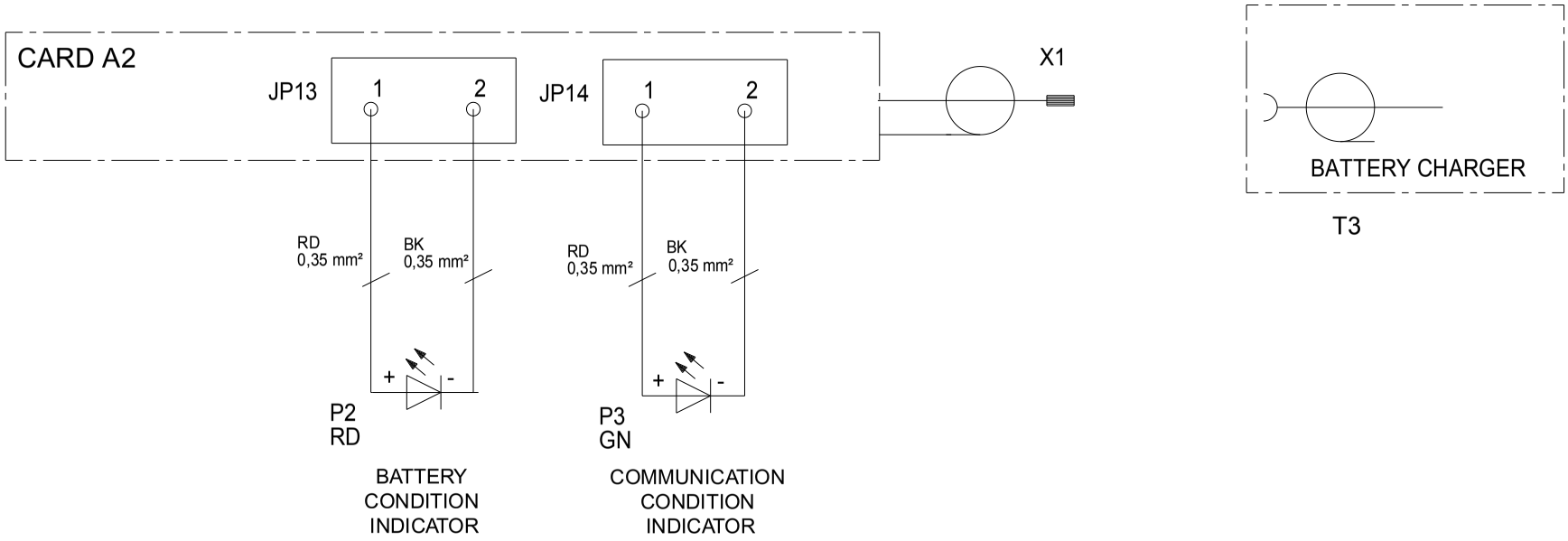
PIN JP9	NUMBER	FUNCTION
1	JP9-1	S6 HYDR. POWER UNIT DOUBLE SPEED PUSHBUTTON
2	JP9-2	N.U.
3	JP9-3	S3 (COMMON)
4	JP9-4	S6 HYDR. POWER UNIT DOUBLE SPEED PUSHBUTTON

PIN JP13	NUMBER	FUNCTION
1	JP13-1	P2 RED LED +
2	JP13-2	P2 RED LED -

PIN JP14	NUMBER	FUNCTION
1	JP14-1	P3 GREEN LED +
2	JP14-2	P3 GREEN LED -

GROUND HANDLE CONTROL (TRANSMITTER) CIRCUITS DIAGRAM

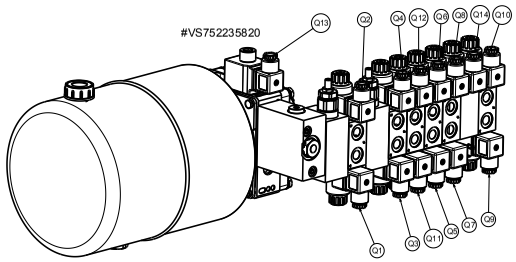


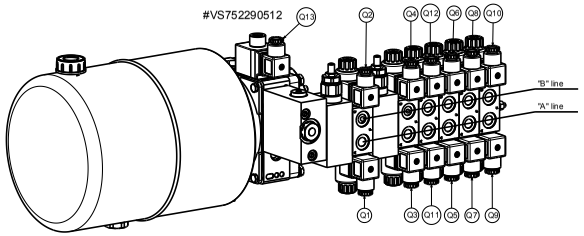

CARD A2
JP13
1
2
JP14
1
2
X1
RD
0,35 mm²
BK
0,35 mm²
RD
0,35 mm²
BK
0,35 mm²
+
-
+
-
P2
RD
P3
GN
BATTERY
CONDITION
INDICATOR
COMMUNICATION
CONDITION
INDICATOR
BATTERY CHARGER
T3

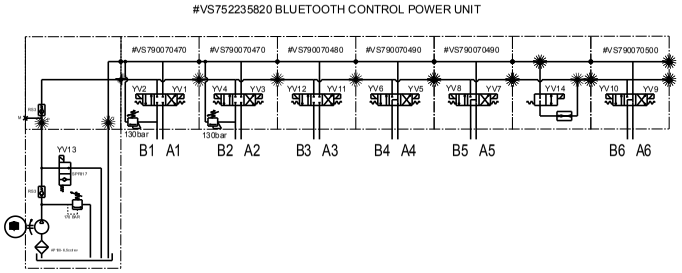
COMPONENTS LIST

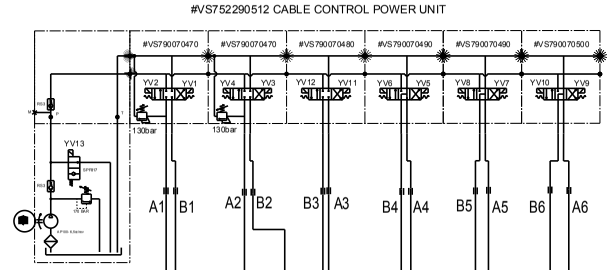
REFERENCE	DESCRIPTION	TECHNICAL SPECIFICATIONS	ABBREVIATION ON CATALOGUE	QUANTITY	DOCUMENT REFERENCE
A1	RECEIVING ELECTRICAL CARD	-	VS18962	1	2.5
A2	TRANSMITTING ELECTRICAL CARD		VS18961	1	11.2
F1	FUSE HOLDER	10,3x38 32A 690V SECTIONABLE 3 POLES	VS515025	1	6.6
	FUSE	10,3x38 16A 500V aM DELAYED-ACTION	VS507045	3	
F2	TRIPOLAR AUTOMATIC SWITCH	6,3-10A AC3 400V 2,2KW	VS518277	1	6.2
	AUXILIARY CONTACTS	1NO+1NC FRONT COUPLING	VS518279	1	6.2
F3	FUSE HOLDER	10,3x38 32A 690V SECTIONABLE 2 POLES	VS515027	1	5.3
	FUSE	10,3X38 2A 500V RAPID	VS507019	2	
F4	FUSE	5x20F 250V 2A RAPID	VS507043	1	5.3
F5	FUSE	5x20F 250V 8A RAPID	VS507090	1	5.3
F6	FUSE	5X20 T 8A 250V	VS507118	1	5.7
G1	BATTERY	6V 3,3AH/20HR Lead	VS10066	1	14.6
K1	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	VS522137	1	7.6
K2	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	VS522137	1	7.6
K3	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	VS522137	1	7.5
K4	TRIPOLAR CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	VS522137	1	7.5
	AUXILIARY CONTACTS	1NO+1NC FRONT COUPLING	VS522147	1	7.4
K5	CONTACTOR	9A AC3 400V 4,2KW 1NC 24Vac 50/60Hz	VS522137	1	7.4
P2	BACKLIGHTED INDICATOR (LED)	RED	VS18065	1	15.4
P3	BACKLIGHTED INDICATOR (LED)	GREEN	VS18066	1	15.5
Q1...Q14	SOLENOID VALVES	-	-	14	8-9
Q16	TRIPOLAR KNIFE SWITCH	Ith 32A Ui 690V-50Hz Uimp 4KW	VS518223 + VS518226	1	5.2
Q15	DAHLANDER POLES COMMUTATOR	25A 500V	VS518189	1	6.5-6.6
S1	HANDLE CONTROL	4 POS.+ CENTRAL POS. TEMPORARY Ø22	VS517157AS	1	14.2
S2	HANDLE CONTROL	4 POS.+ CENTRAL POS. TEMPORARY Ø22	VS517157AS	1	14.2
S3	BALANCING PUSHBUTTON	-	VS517283	1	14.5
S4	BALANCING PUSHBUTTON	-	VS517283	1	14.4
S5	COMMUTATOR	Ith 25A Ui 690V-50Hz Uimp 4KW	VS518058	1	14.7-14.8
S6	PUSHBUTTON	-	VS517105AS	1	14.5
T1	TRANSFORMER	200 VA 50/60 Hz PRI: 0/230/400V SEC: 0/19V 8,95A 0/24V 1,25A	VS528056	1	5.3
-	-	-	-	-	-
T3	BATTERY CHARGER	21.6W 7.2V 3A Lithium ion	VS18064	1	15.6
M1	HYDRAULIC POWER UNIT MOTOR	1,85/2,5KW 400V 50HZ 4,9/7,7A cosØ=0,73/0,70 1400/2800 rpm	VS900003880	1	6.3
M2	CHUCK MOTOR	1,35/1,85KW 400V 50Hz 1400/2800 rpm SELF BRAKING	VS900003840		
M2	CHUCK MOTOR	1,5/2,2KW 400V 50Hz 4,2/6A cosØ=0,80/0,84 1400/2800 rpm SELF BRAKING	VS900003810	1	6.5

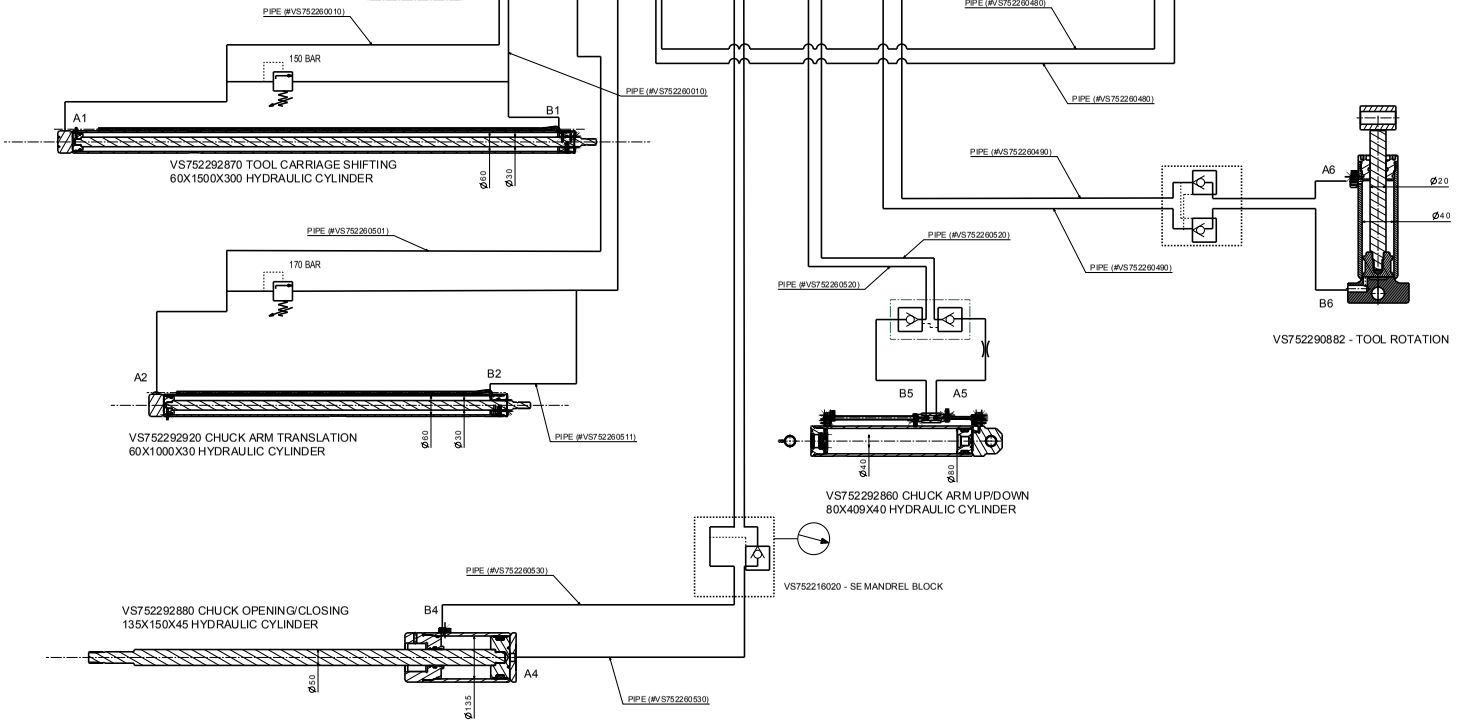
VS752205121











Installer: Please return this booklet to literature package, and give it to the owner/ operator.

Thank You

Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Wheel Service Equipment.

Contact Your Nearest Authorized Rotary Wheel Service Equipment Parts Distributor for Genuine Replacement Parts. See Literature Package for Parts Breakdown.

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