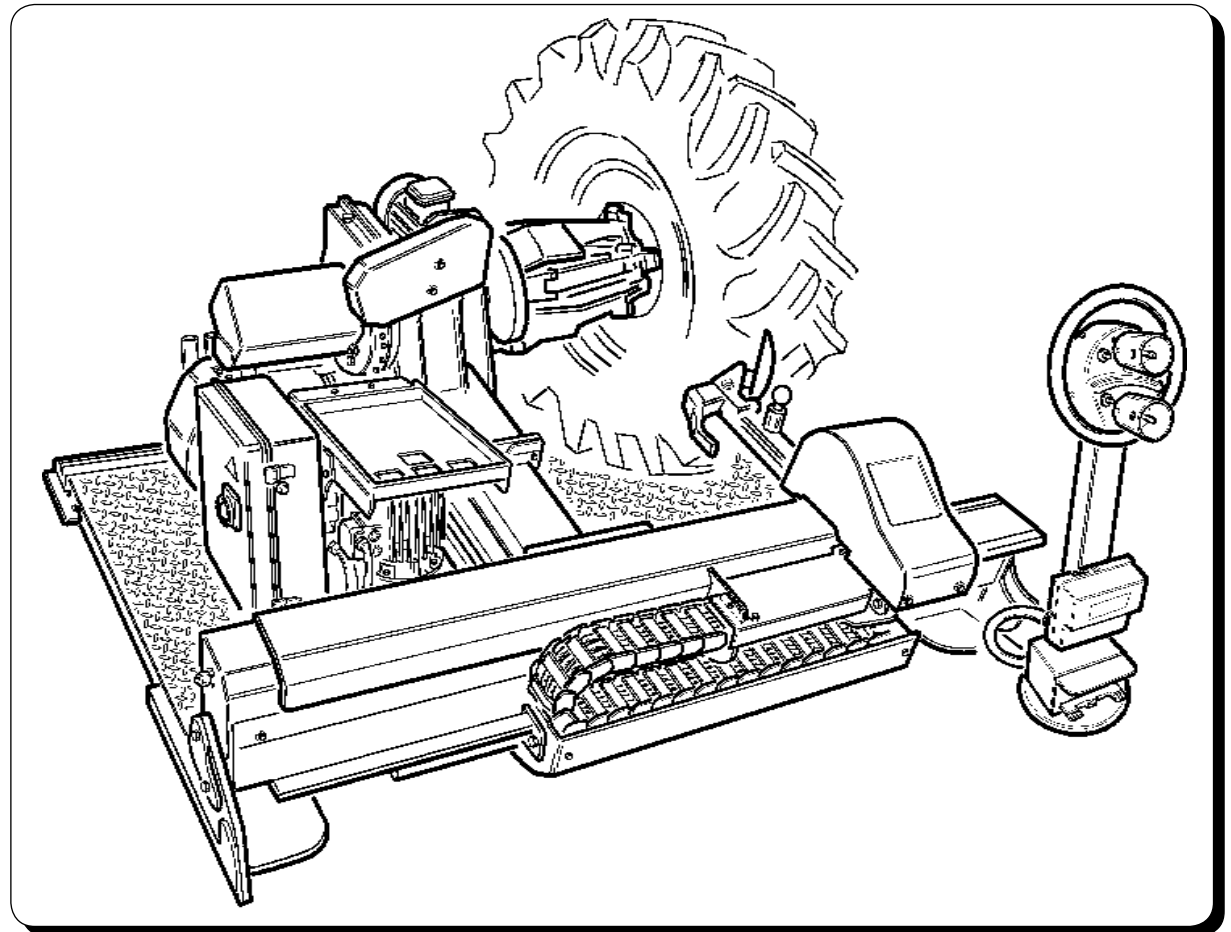


UNIVERSAL TYRE- CHANGER



INSTALLATION, USE AND MAINTENANCE GUIDE

Original instructions

Cod. 3014834 V ed.09/15

RGU588E

CONTENTS

1.	GENERAL INFORMATION	page 6
2.	TECHNICAL DATA	page 6
3.	GENERAL SAFETY REGULATIONS	page 6
4.	SAFETY DEVICES	page 7
5.	TRANSPORT	page 7
6.	UNPACKING	page 8
7.	INSTALLATION	page 8
7.1	Installation site	page 8
7.2	Workplace requirements	page 8
7.3	Electric hook up	page 9
	Check of motor rotation	page 9
8.	CONTROLS DESCRIPTION	page 10
9.	DESCRIPTION OF THE MAIN COMPONENTS	page 11
10.	WARNING STICKERS	page 12
10.1	Key to the warnings	page 14
11.	WORKING POSITION	page 15
12.	CHECK OF CORRECT OPERATION	page 15
13.	USE	page 17
13.1	Wheel clamping	page 17
	Clamping of alloy rims	page 18
	Clamping extensions	page 19
13.2	Tubeless and supersingle wheels	page 19
	Bead breaking	page 19
	Removing	page 21
	Mounting	page 22
13.3	Tube tyres	page 25
	Bead breaking	page 25
	Removing	page 26
	Mounting	page 26
13.4	Wheels with split ring	page 29
	Bead breaking and removing	page 29
	Mounting	page 31
14.	ORDINARY SERVICE	page 34
15.	TROUBLE SHOOTING	page 36
16.	HANDLING	page 37
17.	STORAGE	page 37
18.	SCRAPPING	page 38
19.	SERIAL PLATE DATA	page 38
20.	ACCESSORIES	page 39
	ELECTRIC AND HYDRAULIC DIAGRAMS	page 41

NOTE: Part of the illustrations contained in this book has been taken on prototypes. Some current components might therefore differ from what shown herein.

1 GENERAL INFORMATION

This tyre-changer has been specifically designed to demount and mount truck, bus, tractors and earth moving vehicles tyres, with rims from 14" to 56" and 2500 mm. max. diameter.

Any other use is improper and therefore not authorized.

Before starting any kind of work on this machine, carefully read and understand the contents of these operating instructions.

It is forbidden to use the machine for straightening rims, breaking beads of still inflated or dirty tyres, turning, rasping, cutting tyres.

The Manufacturer is not liable for any injury to persons or damage to things caused by a misuse of this machine.

KEEP THIS MANUAL IN A SAFE PLACE AND CONSULT IT WHENEVER IN NEED.

2 TECHNICAL DATA

Pump motor	3 kw
Gear box motor (2 speed)	1,85 - 2,5 kw
Clamping range	14" - 56"
Max. wheel weight	2000 kg
Max. wheel diameter	2.500 mm
Max. wheel width	1.500 mm
Weight (standard outfit included)	1.300 Kg
Acoustic pressure level (at work)	LpA <70 dB (A)

3 GENERAL SAFETY REGULATIONS

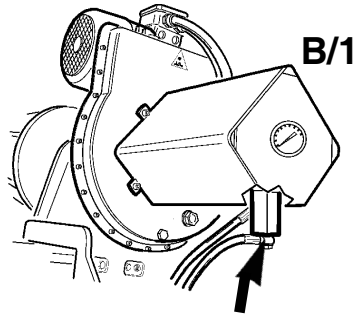
The use of this machine is strictly reserved to trained and authorized staff.

Any tampering or modification, if not previously authorized by manufacturer, relieves this one of all possible damages referred to the mentioned actions.

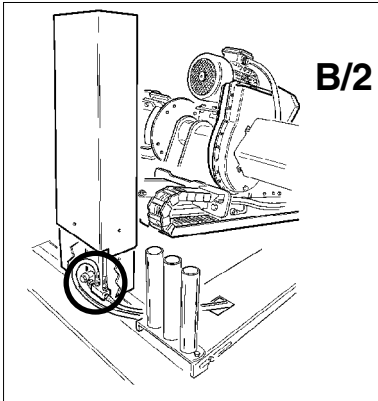
Any removal or tamper with the safety devices installed in this machine will represent a violation of the European regulations.

Any work on the electrics, however minor, must be done exclusively by professional staff.

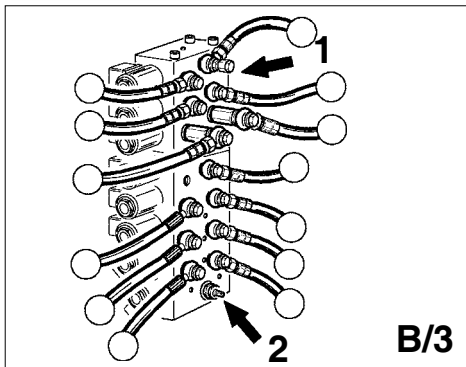




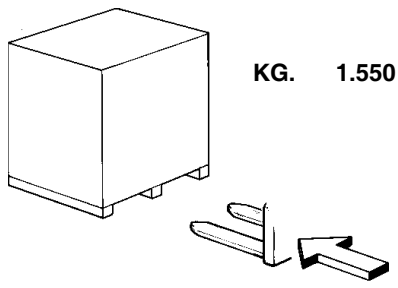
B/1



B/2



B/3



A/2

4

SAFETY DEVICE

The tyre-changer is equipped with several safety devices to grant the utmost safety at work:

- 1) **Check valve on the chuck opening hydraulic line** (inside the rotating union, see Fig. B/1). This prevents the wheel from falling from chuck down to floor if the hydraulic circuit accidentally breaks.
- 2) **Pilot operated seal check valve** (see Fig. B/2)
It prevents the chuck holder from falling down if the hydraulic circuit accidentally breaks.
- 3) **Pressure relief valve. Two available, one preset at 130 bar \pm 10% for the self-centering chuck (ref. 1 – B/3) and one preset at 170 bar \pm 10% for using the machine functions (ref. 2 – B/3).**
It limits the pressure in the hydraulic circuit and ensures correct operation of the plant.
- 4) **motors overload cut-outs** (inside the electric unit). They get engaged in case the motor overheats, so preventing it from burning out.

If the tyre-changer is equipped with the **RC Radio Control**, the mobile control stand is connected with the machine frame through a steel wire that prevents the operator from going too far so working without seeing the machine.

CAUTION! Removing or tampering with safety devices represents a violation of the European Safety Regulations and relieves the manufacturer of any and all liability for injury to persons or damage to things caused or referable to such acts.

5

TRANSPORT

Depending on customer request, the machine can be delivered in 3 different packing versions:

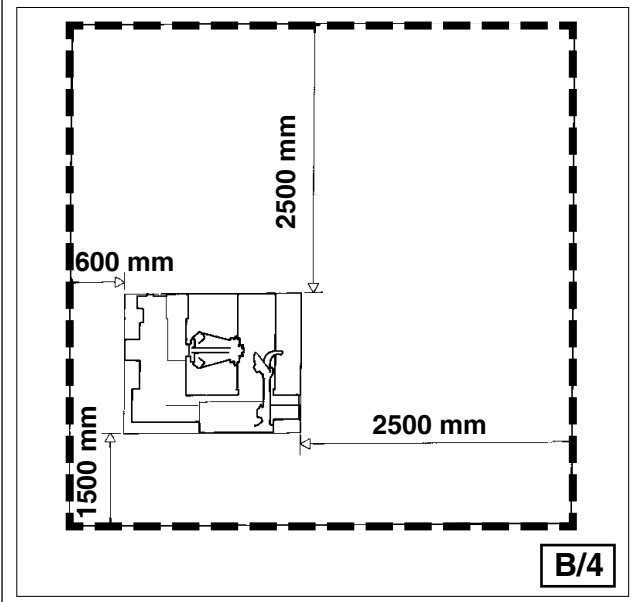
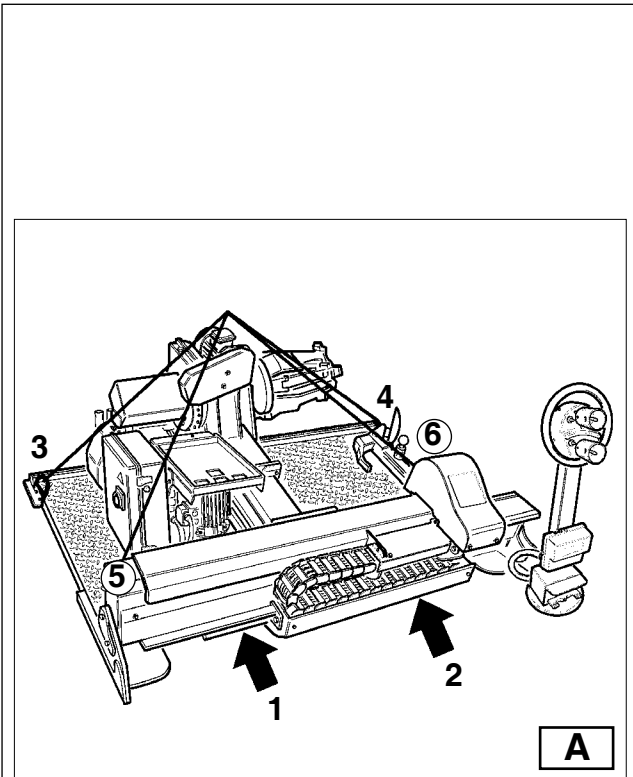
- 1- in a wooden crate on pallet
- 2- fixed onto a pallet
- 3- with no packing at all

In all cases the machine will be protected by a plastic covering.

In the first and second case, the machine must be handled with a fork lift truck with the forks positioned as shown in **Fig. A/2**

For the third case, follow the instructions given on page 35 of this manual, chap. 16 – Handling.

Shipping weight of the machine is 1.550 kg.



6 UNPACKING

Once the packing material has been removed, check the machine visually for integrity and make sure there are no damaged parts.

Keep the packing materials out of the reach of children as they can be a source of danger.

N.B. Keep the packing for possible future transport.

7 INSTALLATION

7.1 INSTALLATION SITE

Choose the installation site according to the current rules on Safety at Work.

The floor shall not be uneven as to grant stability to the machine.

Outdoor installation requires a weatherproof roof.

The working area must be in accordance to the following requirements:

- relative humidity from 30% to 95% without condensate;
- temperature between 0° and 55°C.



IT IS FORBIDDEN to use the machine in explosive atmosphere.

7.2 WORKPLACE REQUIREMENTS

Overall dimensions of this machine are 2600x3150mm. considering a min. distance from walls as shown in Fig. B/4. Make sure the ceiling is at least 3m. high.

ATTENTION! The dimensions above also refer to the working area. Bystanders and persons other than trained and authorized staff are strictly forbidden to enter this area.

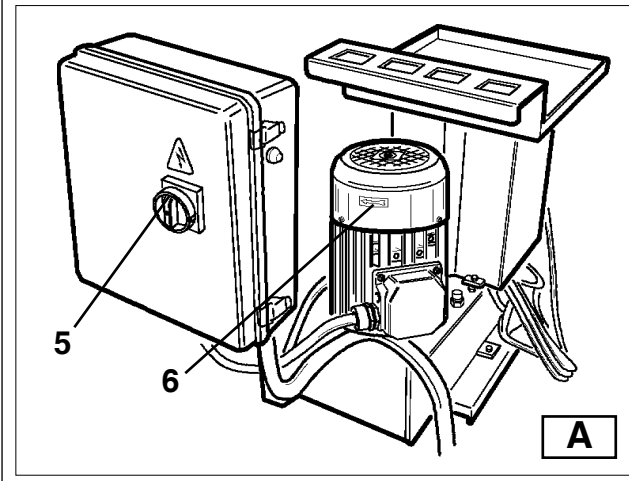
Set the forks of the lift truck into the slots 1 and 2 made in the machine baseframe expressly to move it and set it in position.

It is, furthermore, possible to use the hooks placed at the machine corners and those on the chuck carriage (fig. A, ref. 3,4,5,6), by means of lifting bands having adequate capacity (see technical data, page 4). Keep the hooks for any further need of moving the machine to a new installation site.

Recommended fork lift truck requirements: 2000 kg. min. lifting capacity; 1300 mm. fork length.

It is not essential to anchor the machine to floor. Just make sure it is well stable and set shims wherever levelling is necessary. This will grant good operating process after setting the machine at work. Set shims wherever necessary and use the proper fastening holes.

Alimentazione Power supply Alimentation Stromversorgung Alimentación	Interruttore Switch Interrupt. Schalter Interruptor	Interruttore Switch Interrupt. Schalter Interruptor
220 V. - 3 Ph. - 50/60 Hz.	10 A	13,5 A
240 V. - 3 Ph. - 50/60 Hz.	10 A	13,5 A
380 V. - 3 Ph. - 50/60 Hz.	8 A	6,3 A
415 V. - 3 Ph. - 50/60 Hz.	8 A	6,3 A



Before making any electric hook up, carefully check that the mains voltage corresponds to the data given on the voltage tag (positioned near the tyre-changer plug).

Following requirements are essential:

- the system must be equipped with a good earthing circuit
- the machine must be connected to a power supply line circuit breaker set at 30 mA
- the plug must be properly protected against overcurrent by means of either fuses or an automatic magneto-thermal switch with rated values as shown in the chart.

Read the required power draw as highlighted in the data plate fixed to the tyre-changer and make sure that the electric network is properly dimensioned to it.

WARNING! Make sure that the feeding cable, once connected to the electric network, can freely move and follow the stroke the chuck holder without risk of damage.

Any work on the electrics, however minor, must be done exclusively by professional staff.



Failure to comply with above mentioned requirements will relieve the manufacturer from any and all liability for any injury to persons or damage to things referred to these acts and it will involve the immediate expiry of warranty.

CHECK OF MOTOR ROTATION

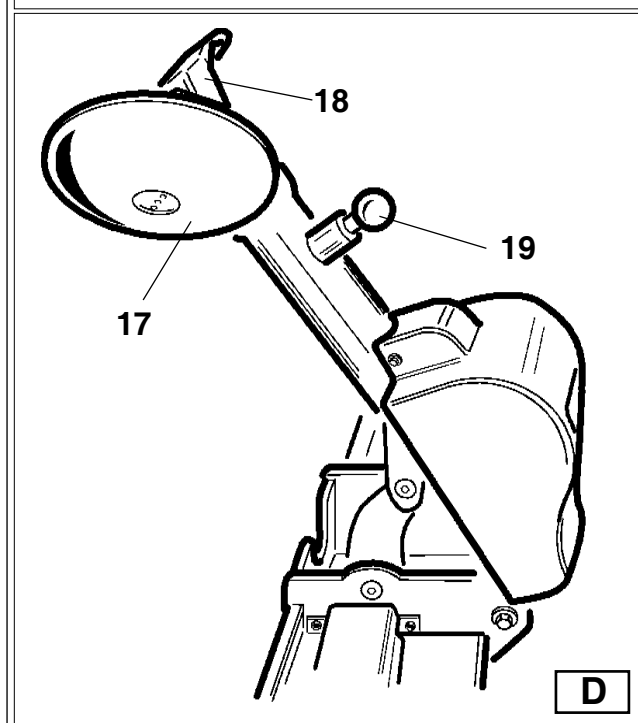
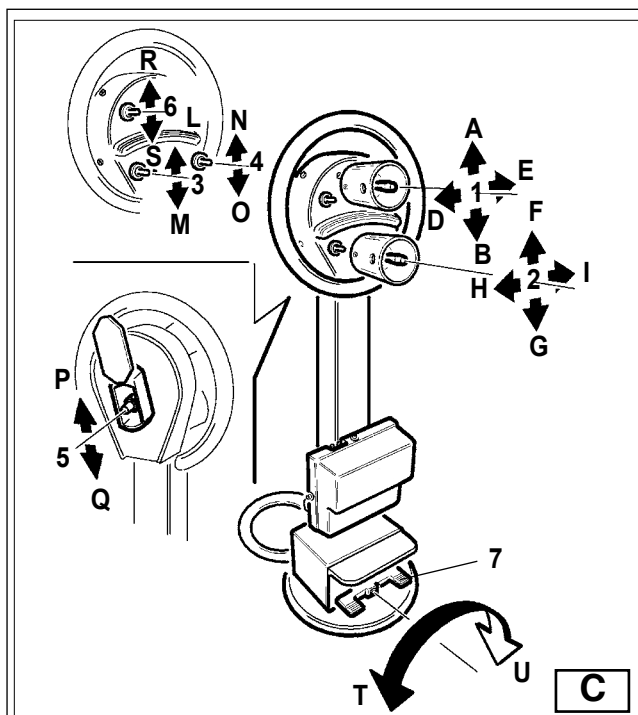
Check the tyre-changer to the network, turn on the main switch (5, fig. A) and check the rotation direction of the motor. It must correspond to the direction shown by the arrow (6, fig. A). If not, have two wires in the plug (3ph) reversed by professional staff.

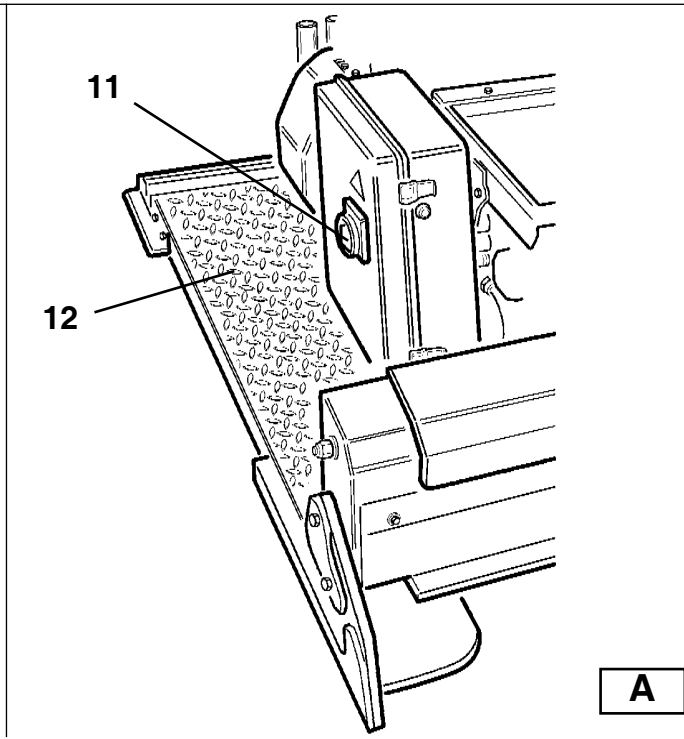
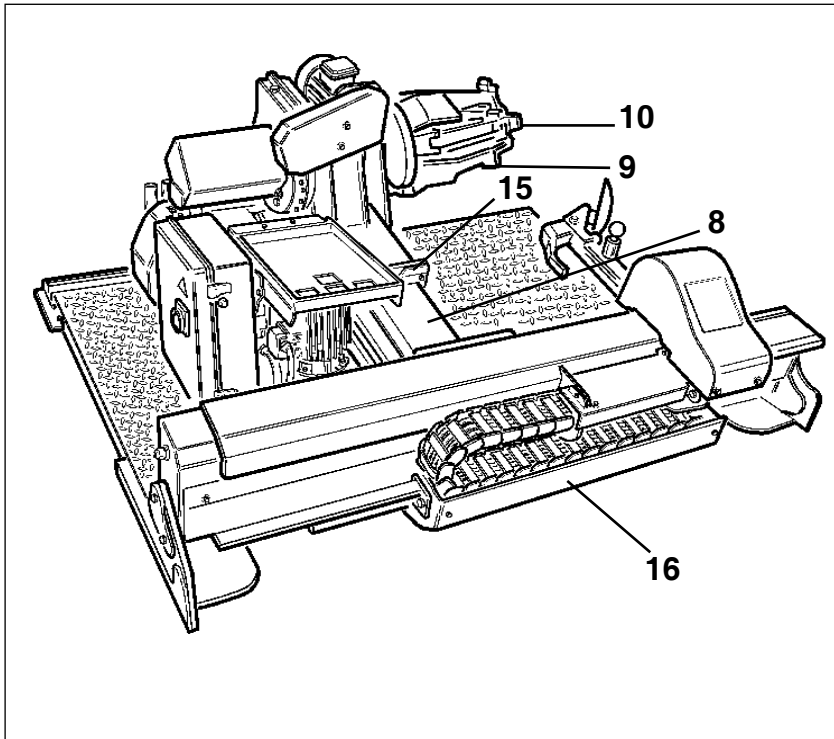
The mobile control stand (fig. C) enables the operator to work at any position around the machine. On this mobile stand the following controls are located:

- **the joystick 1 (1, fig. C)** in position **A** let the chuck holder move away from the tool holder; in position **B** it moves it in opposite direction; in position **D** it moves the chuck arm holder rightwards and the tool holder leftwards simultaneously (so they get close to each other); in position **E** it moves the chuck arm holder leftwards and the tool holder rightwards simultaneously (so they get far from each other).
- **The joystick 2 (2, fig. C)** controls all the tool's movements; in position **F** (up) it brings the tool arm to "rest position"; in position **G** (down) it brings the arm in "work position"; in position **H** (left) it controls 180° anti-clockwise rotation of the tools; in position **I** (right) it controls opposite rotation so bringing the tools in the initial condition.
- **Switch 3 (3, fig. C)** if pushed up to position **L** it makes the chuck rotate at the double of the speed set when selecting position **M** (up).
- **Switch 4 (4, fig. C)** let the chuck holder arm and the tool holder arm move at the same time either at high speed (pos. **N**) or at reduced speed (pos. **O**)
- **Switch 5 (5, fig. C)**, if pushed up to pos. **P**, it let the chuck jaws open (LOCK), if pushed down to pos. **Q** it let the chuck jaws close (UNLOCK)
- **Switch 6 (6, fig. C)** let the chuck move up (pos. **R**) and down (pos. **S**)
- **The balance pedal (7, fig. C)** let the chuck rotate in the direction shown by the arrow stuck on both pedal sides (**T** and **U**).

REMARKS: all the controls available in the mobile column are very sensitive, so granting the smallest movement with the highest precision.

On the tyre-changer, **knob (19, fig. D)** is also available for replacing the mounting tool whenever necessary (f.i. to install the RT tubeless roller tool)

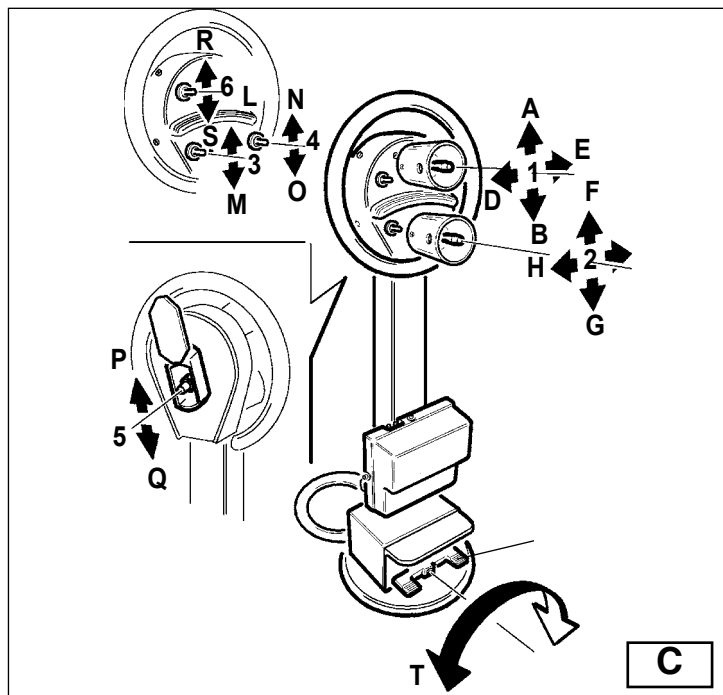




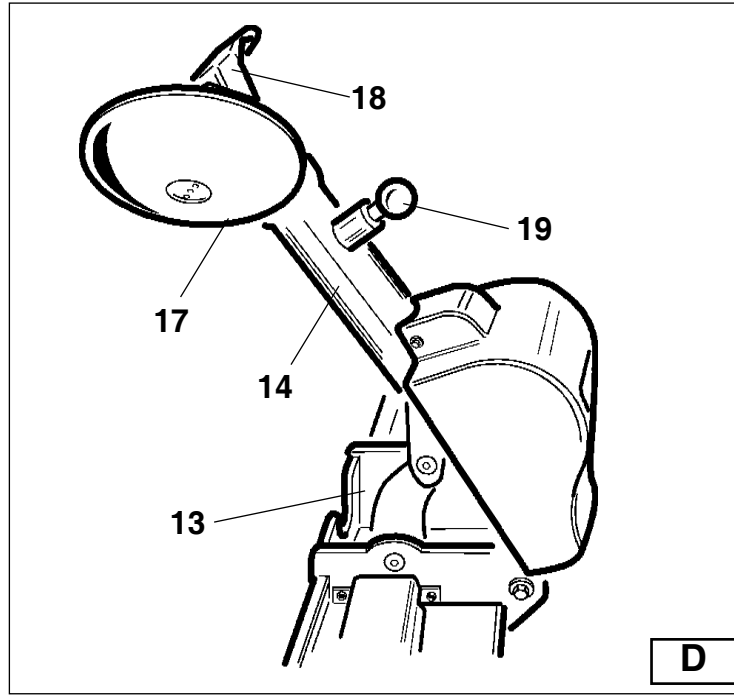
9 DESCRIPTION OF THE MAIN COMPONENTS

- 1) Joystick to carriage movement
- 2) Joystick to tool
- 3) Chuck speed rotation switch lever
- 4) Hydraulic speed switch lever
- 5) Chuck opening/closing switch lever
- 6) Chuck arm up/down switch lever
- 7) Chuck rotation control pedal
- 8) Chuck arm
- 9) Chuck
- 10) Jaws
- 11) Main switch
- 12) Base platform
- 13) Tool holder carriage
- 14) Tool holder
- 15) Chuck carriage
- 16) Chuck holder carriage
- 17) Bead breaking disk
- 18) Finger tool
- 19) Tool fastening knob

A



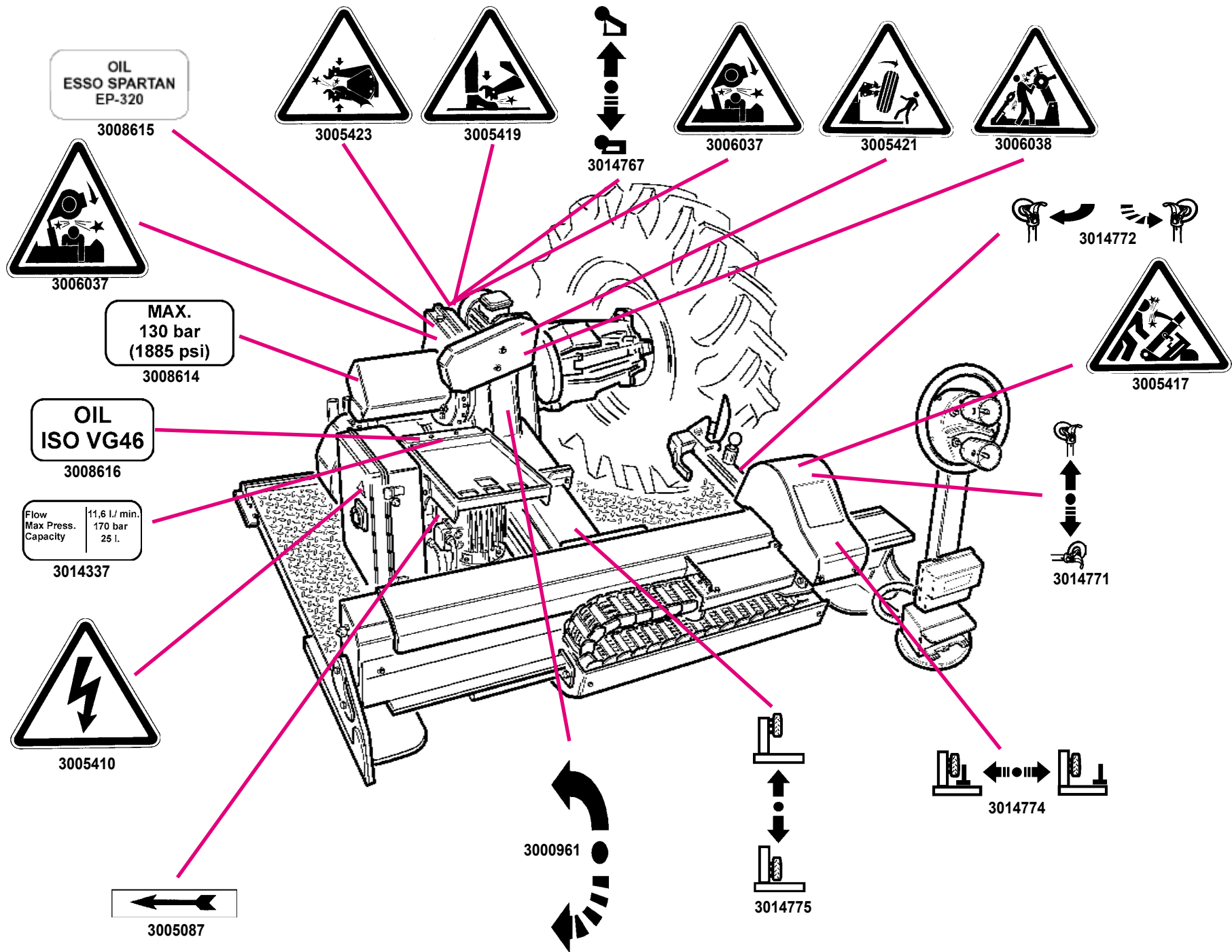
C

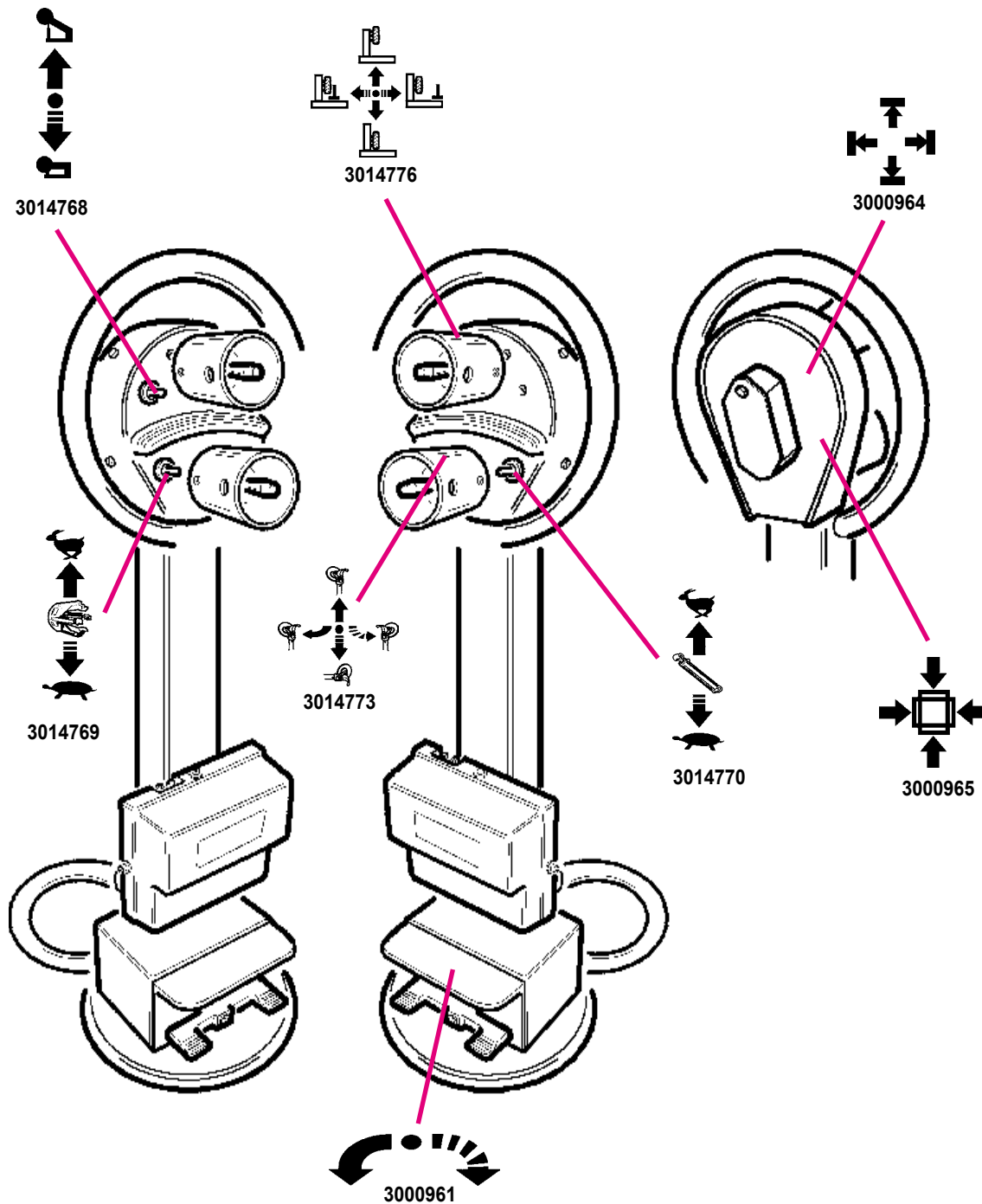


D

ATTENTION!
 Keep as far as possible from moving parts. Necklaces, bracelets and too large clothes can be a source of danger for the operator. For the same reason, long hair must be tied up.





**ATTENTION:**

Unreadable or missing stickers must be immediately replaced.
Do not use the tyre-changer if one or more stickers are missing.
Do not add any object that could prevent the operator from seeing them.



10.1

KEY TO THE WARNINGS



Danger of crushing hands in the chuck jaws.



Pay the utmost attention during tool holder tilting operation.



Danger of crushing feet during chuck rotation or opening operation



Danger of crushing between chuck holder and tyre-changer platform.



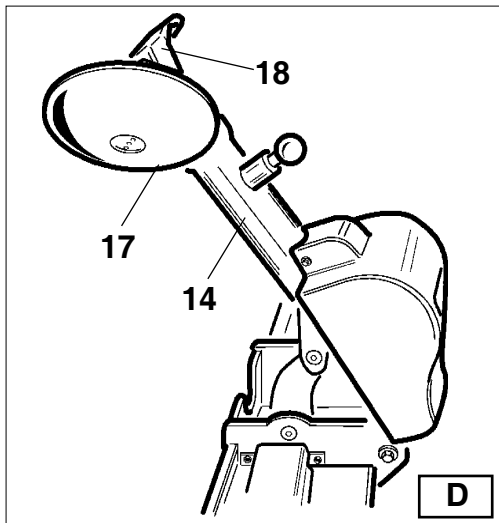
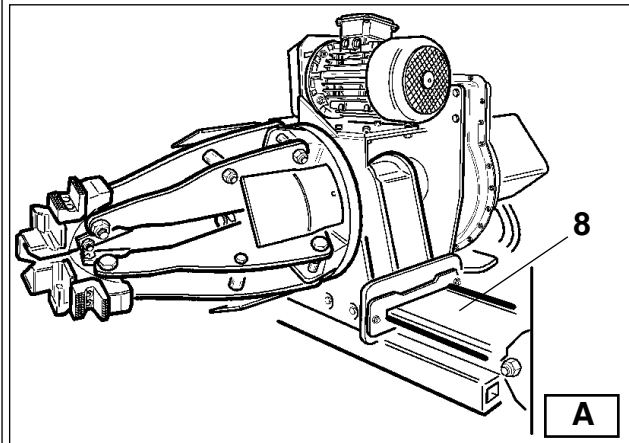
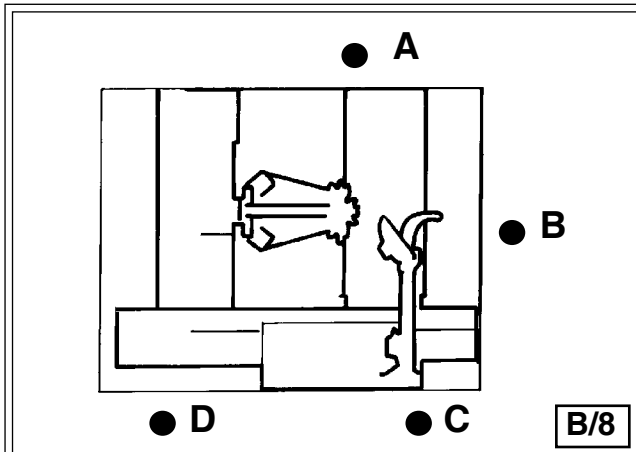
Danger of crushing between chuck and tool.



Danger of wheel falling down.



Live electric voltage



11

WORKING POSITION

Diagram B/8 shows the several working positions (A, B, C, D) that will be described in the following pages. Working from these positions ensures greater precision, higher speed and safety level to the operator

12

CHECK OF CORRECT OPERATION

Before using the tyre-changer, some checks shall be made to grant correct operation.

ATTENTION: perform the following checks keeping the tool hold-arm (14) in “rest position”.

1) Move the joystick (2, Fig. C page 9) UP (pos. F): the tool holder (14, Fig. D) must tilt to “rest position”.

ATTENTION!!

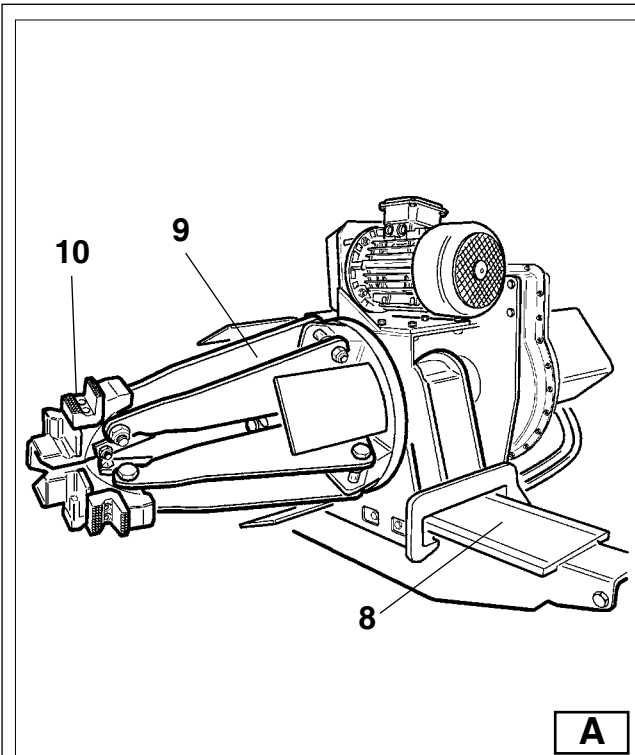
Don't keep your face close to the tool holder during tilting operation.



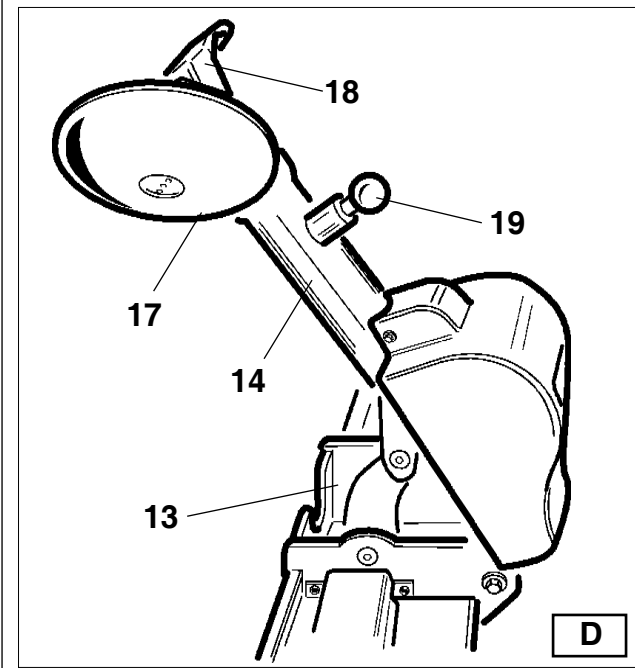
Move the joystick (2, Fig. C page 9) DOWN (pos. G): the tool holder (14, Fig. D) must tilt and hook into “work position”.

Move the joystick leftwards (pos. H): tools must rotate by 180° on their axle counterclockwise; move the joystick rightwards (pos. I): tools must reverse rotation and go back to initial position.

2) With tool holder in “rest position”, move the switch lever (6, Fig. C page 9) UP (pos. R): the chuck holder (8, Fig. A) must move upwards; move the switch lever DOWN (pos. S): the chuck holder must move downwards;



A



D

ATTENTION!

When the chuck holder moves down, it creates potential crushing points. Always work in the positions given by this guide, keeping outside the action range of moving arms.



move the joystick (ref.1 fig. C page 9) leftwards (D): the chuck holder (8, Fig. A) must also move leftwards and, at the same time, the tool holder (14, Fig. D) must move rightwards (getting far from each other); repeat the operations (D) and (E) moving the switch lever (ref. 4, fig. C, page 9) to the other possible position: movements must take place at a different speed (lower or higher according to the selected position, N or O).

3) move the joystick (5, fig. C, page 9) UP: the chuck jaws (9, fig. A) must open; move the joystick DOWN: the jaws must close.

Move the joystick (ref.1 fig. C page 9) rightwards (D): the chuck holder (8, Fig. A) must also move rightwards and, at the same time, the tool holder (14, Fig. D) must move leftwards (getting close to each other).

Repeat the operations above moving the switch lever (ref. 3, fig. C, page 9): movements must take place at different speed.

ATTENTION!

During the chuck jaws opening/closing movement there's the risk of potential crushing points. Always work in the positions given by this guide, keeping outside the chuck action range.



4) Press the pedal (ref.7, fig. C, page 9) in its right side: the chuck (9, fig. A) must rotate clockwise; press it in its left side: the chuck must rotate counterclockwise.

Move the switch lever (3, Fig. C, page 9) DOWN and repeat the operations above: movements must take place at a doubled speed.

5) Check the good functioning of hydraulic circuit:

- turn the switch (5, fig. C, page 9) UP and keep it that position until the chuck jaws have fully opened.

13

USE

13.1

WHEEL CLAMPING

WARNING!

In clamping phase, make sure the clamps have been correctly positioned on the rim, so preventing the wheel from falling off.



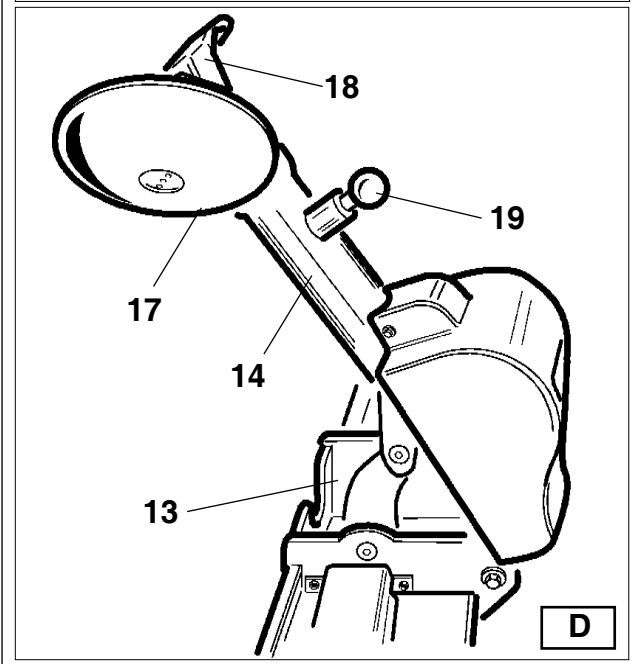
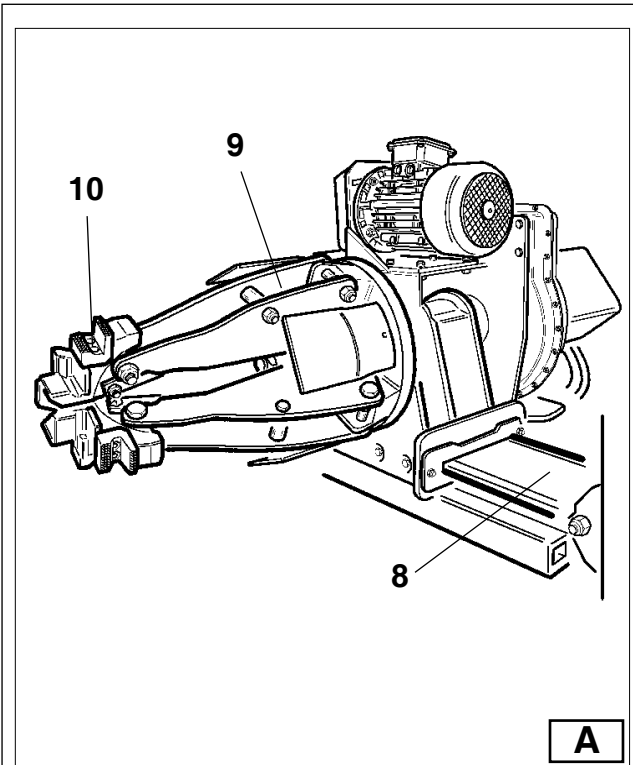
1) Set the mobile control unit in position B (Fig. B/8, page 13)

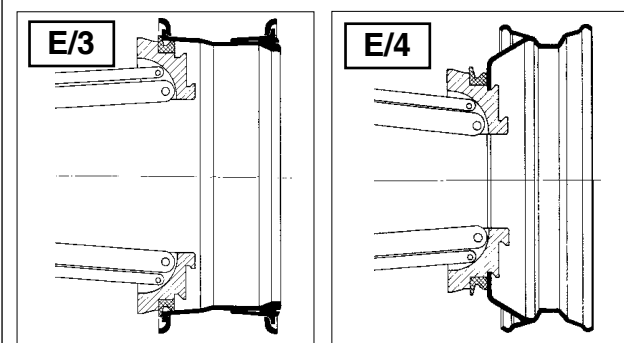
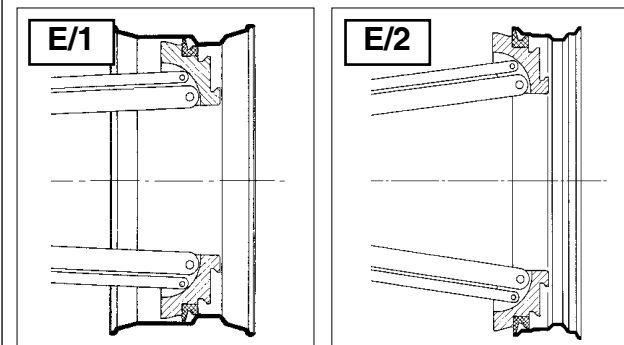
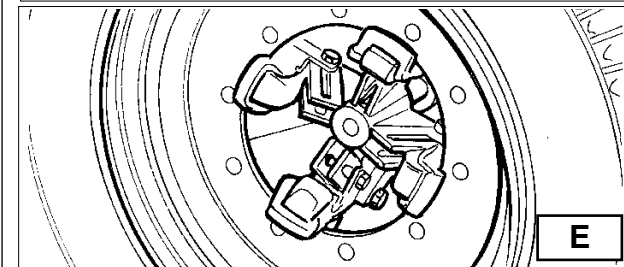
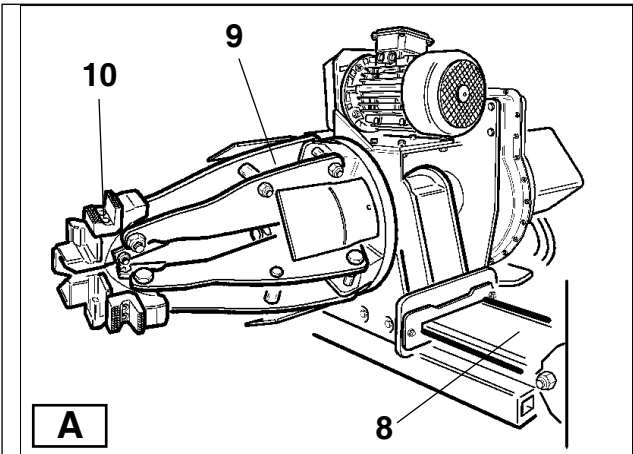
2) Tilt the tool holder to rest position (14, fig. D)

3) Use the joystick to move the chuck leftwards until there's place enough to let the wheel be set on the platform. Keep the wheel in vertical position.

WARNING!

This operation can be extremely dangerous. Do it manually only if you are certain you can keep the wheel balanced. Heavy tyres (over 110kg) and/or oversize tyres (with diameter over 130cm) shall never be lifted by hand. Let them roll on floor and lift them by means of an adequate mechanical lifting device.





- 4) Use the joystick to keep on moving the chuck arm up and down to centre the chuck (9, fig. A) to the rim
- 5) With the jaws (10, fig. A) closed, move the chuck against the wheel, then use the switch (5, fig. C, page 9) to open the jaws so clamping the rim from inside, in the most suitable position according to the kind of rim (to be chosen among those shown in Fig. E1/E2/E3/E4/E5/E6)

Always remember that the safest locking is on the central flange.

NOTE: for rims with reversed groove, lock the wheel as to let the groove outside (see fig. E1)

CLAMPING OF ALLOY RIMS

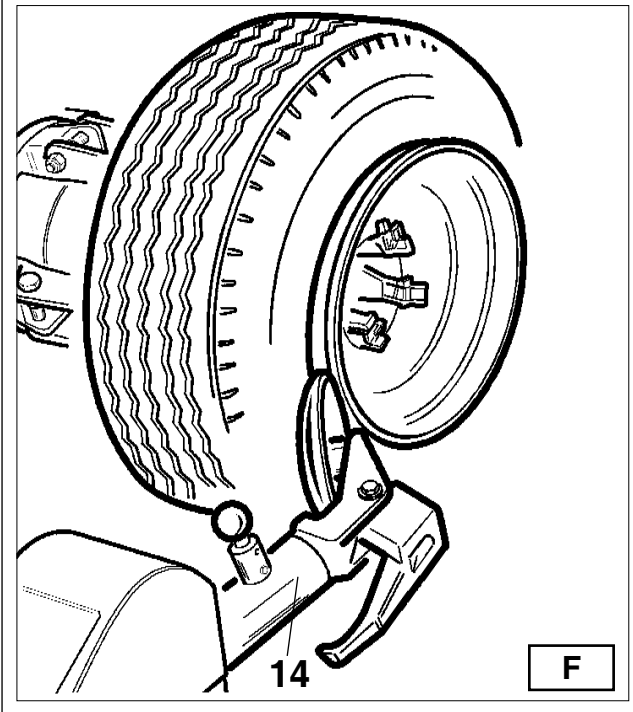
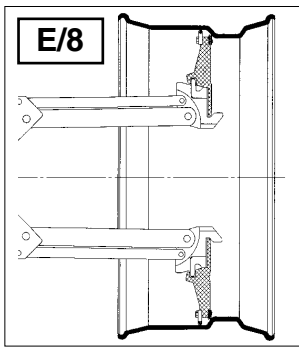
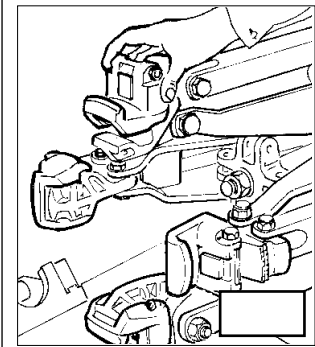
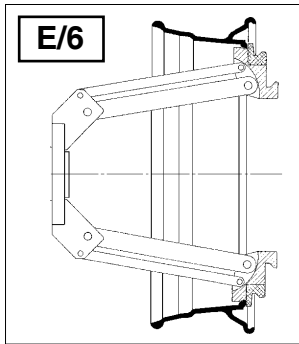
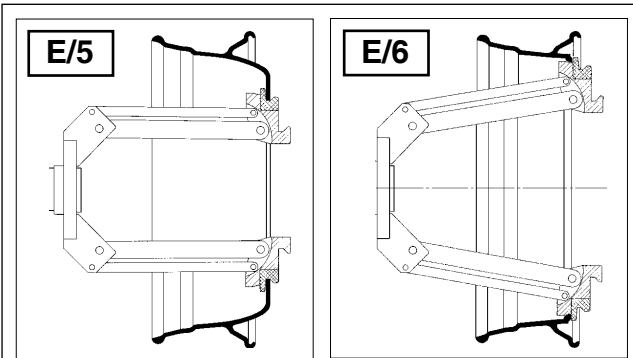
A kit of jaws item 137/90, available on demand, is expressly designed for operating on alloy rims without damaging them.

The jaws are to be inserted (bayonet-like mounting) into the jaw support of the self-centering chuck (see fig. E7, page 17)

Thanks to a wingscrew they can be easily locked on the support

Lock the rim as shown by fig. E

To operate on such wheels, it is also available item 138/90, alloy-rim gripper.



ATTENTION!

Do not leave working area with a wheel clamped on the tyre-changer and lifted up from floor.

CLAMPING EXTENSIONS

Rims having diameter over 46" without central hole flange can be clamped with the kit of 4 extensions, item 140/90 (available on demand)
 Insert the extension on the support (bayonet-like mounting) and lock it by the wing nut (see fig. E8).

13.2

TUBELESS AND SUPERSINGLE WHEELS

BEAD BREAKING



- 1) Lock the wheel on the chuck, as previously described, and make sure it is deflated.
- 2) Set the mobile control unit in working position C (fig. B/8, page 13)
- 3) Lower the tool arm (14, fig. F) to working position, until it gets locked by the ratchet.

ATTENTION!

Always make sure that the arm is correctly hooked to the carriage.

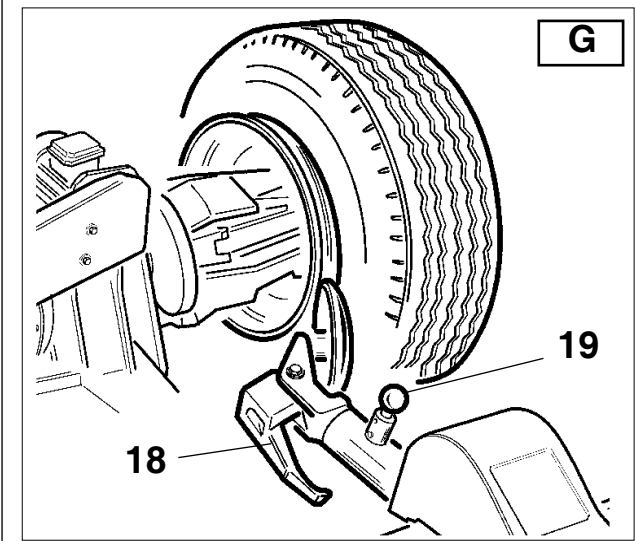
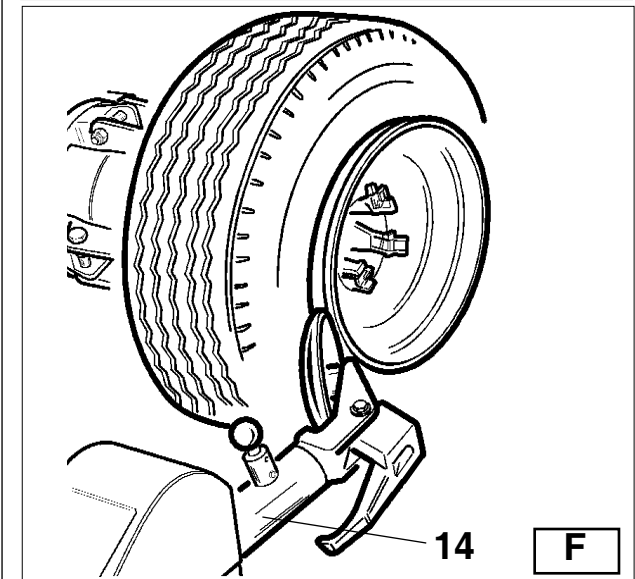
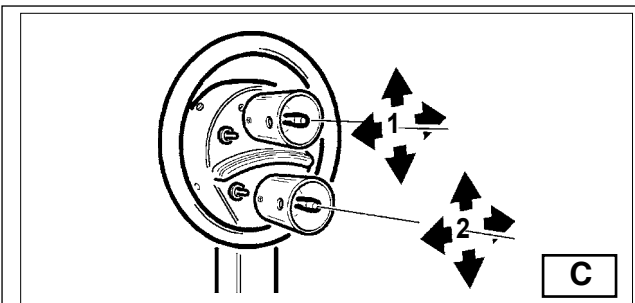


- 4) Use the joystick to position the wheel in a way to let the rim outer profile graze the bead breaking disk (fig. F)

ATTENTION!

The bead breaking disk must not be pressed against the rim but against the tyre bead.






5) Let the wheel rotate and, at the same time, let the bead breaking disk move forward, with a stick-slip motion, following the rim profile as well as possible.

6) Go on until the first bead is fully detached.

To facilitate this operation, grease tyre bead and rim edge while the wheel is rotating.


ATTENTION!
 To avoid any risk when greasing the beads, make the wheel rotate **CLOCKWISE** if you are greasing the outer bead, **COUNTERCLOCKWISE** if you are greasing the inner bead.



Always remember that the stronger is the tyre's adherence to rim, the slower must be the disk's penetration.

7) Use the joystick (2, fig. C, page 9) to move the tool arm to rest position, move it up and turn the tool by means of the proper knob. Move the tool arm to the left of the wheel to be demounted, lower it and move it to work position (fig. G)

ATTENTION!
 Do not keep your hands on the tool when moving it to work position, because they could get trapped between tool and wheel.



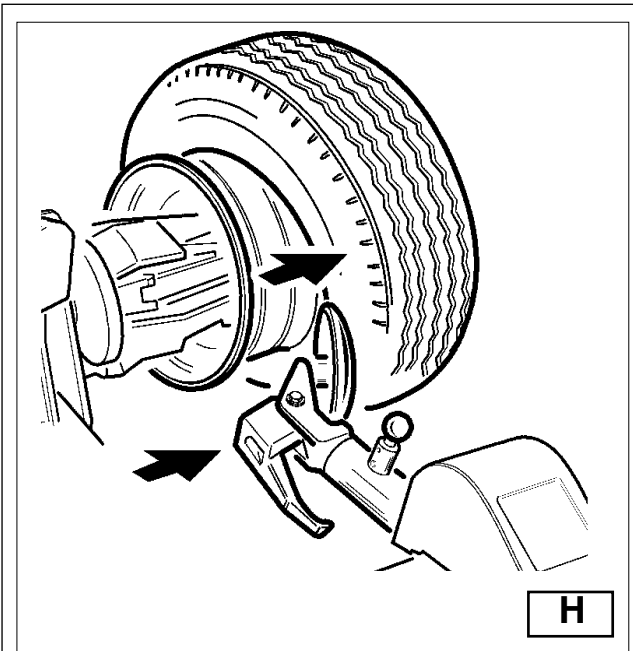
8) Use the joystick (1, fig. C, page 9) to move chuck and tool arm until this one is in the inner side of the wheel.

9) Use the joystick (2, fig. C, page 9) to move the arm back to work position and turn the tools by 180°

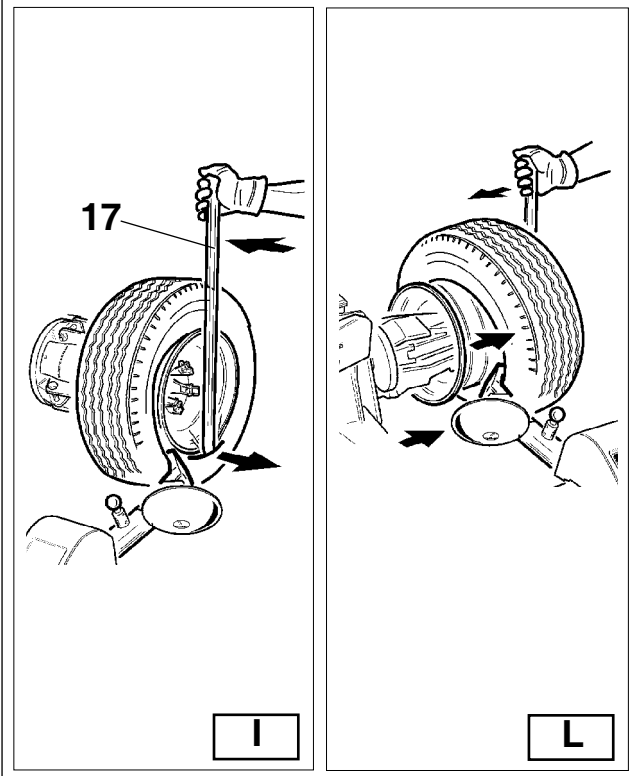
 **Set the mobile control unit in work position**

Repeat the operations described by point 5) and 6) until the second bead is fully detached.

NOTE: during bead breaking operation, the finger tool (18, fig. G) can be lowered so that it won't be an obstacle.



H



I

L

SMONTAGGIO

Tubeless tyres can be removed in two different ways:

- 1) If the wheel doesn't present any particular difficulty, after bead breaking proceed pushing the bead breaking disk against the tyre inner side until the two beads get out of the rim (see fig. H).
- 2) if the wheel is a SUPERSINGLE type, or particularly hard anyway, it is not possible to proceed as described above. In this case it is necessary to use the finger tool and proceed as described below:

- move the tool arm to the outside plane of the tyre



Set the mobile control unit in work position C (fig. B/8, page 13)

- let the wheel rotate and, at the same time, move the finger tool forward until it is introduced between rim and bead, well anchored to the bead (see fig. I)
- move the rim from tool of about 4-5 cm. as to prevent the tool from releasing the bead.
- Move the finger tool outward until the red spot in it gets close to rim outer edge.



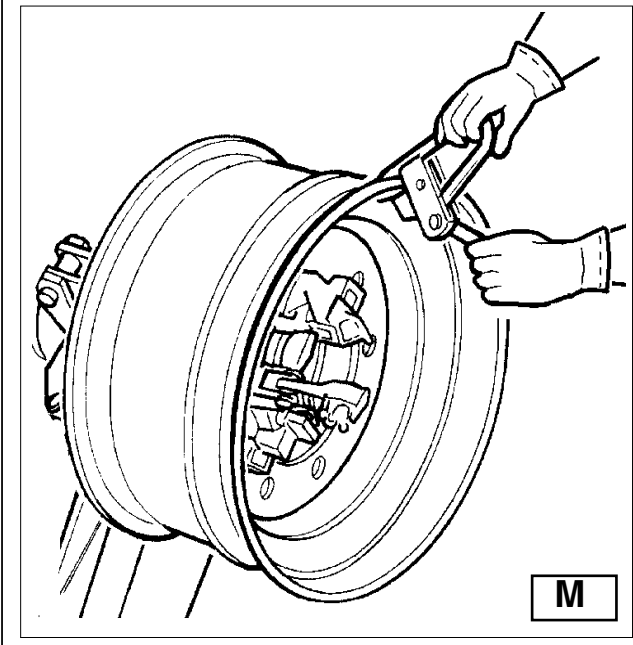
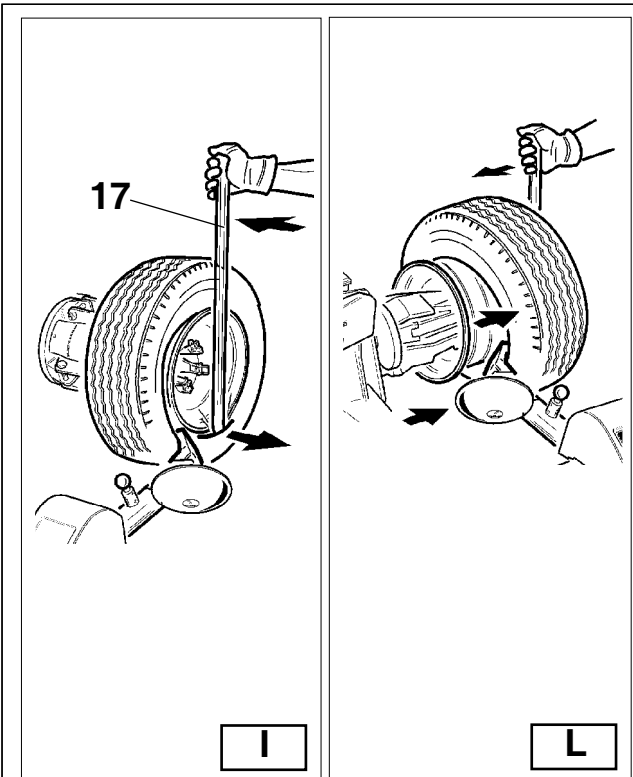
Set the mobile control unit in work position B (fig. B/8, page 13)

- Insert the lever (17, fig. I) between rim and bead, at the right of the tool.
- Keeping the lever pressed, move the wheel down until the rim edge is at about 5mm. distance from the finger tool
- Let the wheel rotate counterclockwise, keeping the lever pressed, until the bead is fully detached.
- Move the tool arm to rest position, then bring it to the inner side of the wheel.



Set the mobile control unit in work position D (fig. B/8, page 13)

- turn the finger tool by 180°, insert it between rim and bead (see fig. L) and move it until the bead gets close to the rim front edge (it is recommended to perform this operation while rotating the wheel) move the rim from tool of about 4-5 cm. as to prevent the tool from releasing the bead.



Set the mobile control unit in work position B (fig. B/8, page 13)

- Move the finger tool until the red spot in it is about 3 cm. inside the rim.
- Insert the lever (17, fig. I) between rim and bead, at the right of the tool.
- Keeping the lever pressed, move the wheel down until the rim edge is at about 5mm. distance from the finger tool, then let the wheel turn counterclockwise until the tyre is full detached.

ATTENTION!

The detachment of the beads might cause the tyre to fall down. Always make sure there are no by-standers inside the working area.



MOUNTING OPERATION

Tubeless tyres can be mounted using either **the disk** or **the finger tool**

If the wheel doesn't present any particular difficulty, it is suggested to use the disk; otherwise the finger tool will be required.

MOUNTING OPERATION WITH DISK

Proceed as follows:

- 1) if the rim is released by the self-centering chuck, clamp it again as described in par. "WHEEL CLAMPING"
- 2) grease beads and rim
- 3) set the in the highest position of rim outer edge (see fig. M)

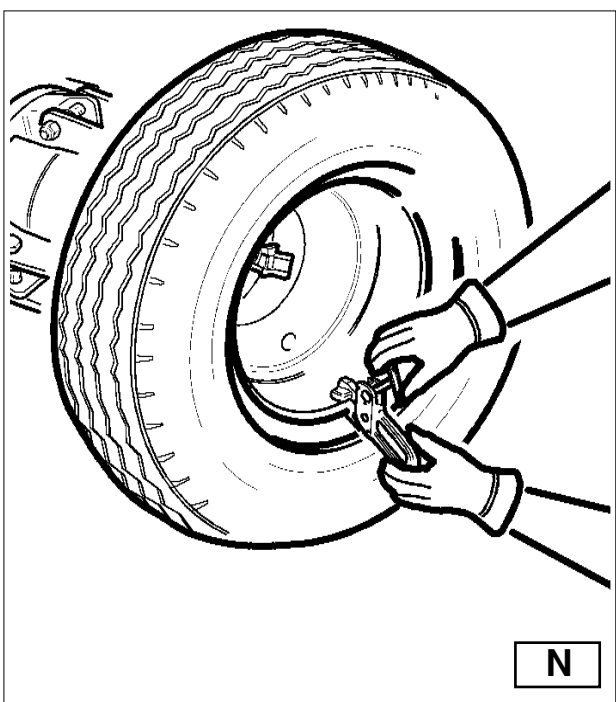
ATTENTION!

Make sure that the gripper is well secured to the rim.



Set the mobile control unit in work position B (fig. B/8, page 13)

- 4) Set the tyre on the machine baseframe and lower the chuck (taking care to keep the gripper in highest position) to hook the first bead to the gripper.
- 5) Lift the rim with hooked tyre and let it rotate counterclockwise of about 15-20 cm. The tyre will set itself slantways.



Set the mobile control unit in work position C (fig. B/8)

- 6) Set the disk against the second bead and turn the chuck until the gripper is in the lowest position (at 6 o'clock)
- 7) move the disk away from the wheel
- 8) remove the gripper and reinstall it again in the lowest position (at 6 o'clock) but out of the second bead (see. Fig. N)
- 9) turn the chuck clockwise by 90° to bring the gripper to 9 o'clock.
- 10) Move the disk inwards of about 1-2cm. from the rim edge, taking care to let it at about 5mm. from the profile. Start clockwise rotation checking the second bead that, after 90° rotation, shall start slipping into the rim groove.
- 11) at the end of mounting phase, move the tool away from the wheel, tilt it to rest position and remove the gripper
- 12) lower the chuck until the wheel rests on the machine baseframe.

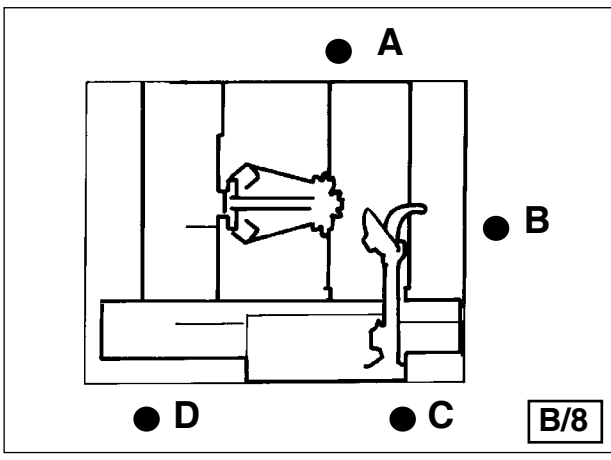


Set the mobile control unit in work position C (fig. B/8)

- 13) close the chuck jaws completely, taking care to hold the wheel to prevent it from falling off.

ATTENTION!!

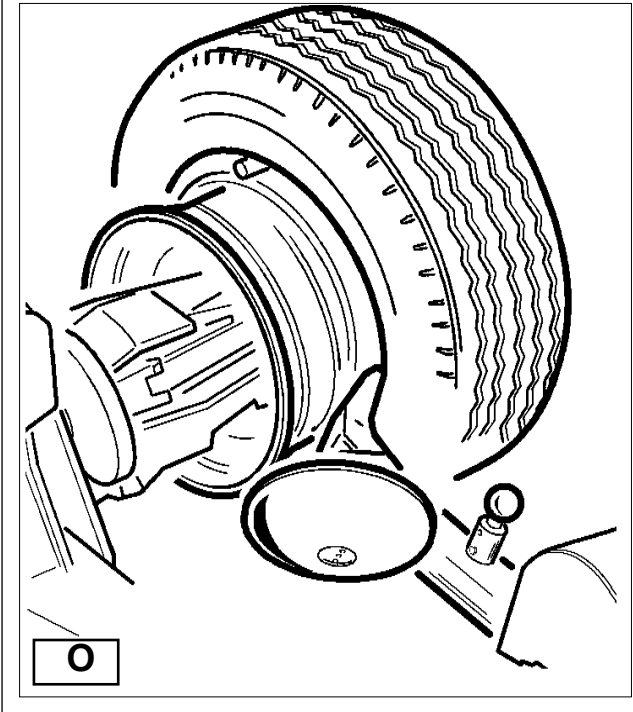
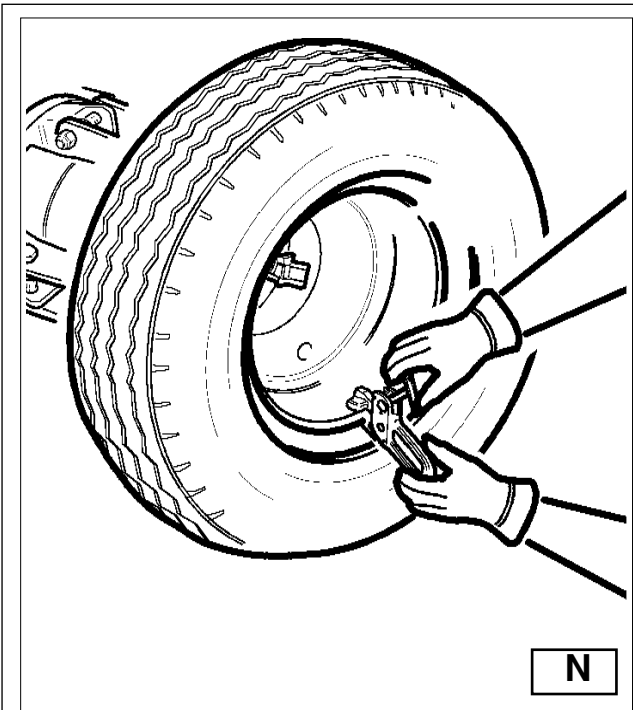
This operation can be extremely dangerous. Do it manually only if you are certain you can keep the wheel balanced. Heavy tyres (over 110kg) and/or oversize tyres (with diameter over 130cm) shall never be lifted by hand. Let them roll on floor and lift them by means of an adequate mechanical lifting device.



- 14) Move the chuck as to release the wheel
- 15) Move the wheel away.

NOTE: according to the tyre you are operating on, you can decide to speed up the a.m. operation, mounting both beads at the same time:

- proceed as described in point 1,2,3,4 above, but instead of fixing the gripper to only one bead (see point 4), fix it to both.
- Lift the rim with the hooked tyre on it and turn it counterclockwise of about 15-20 cm. (gripper at 10 o'clock)
- Proceed as described from point 10 to 15 above.



MOUNTING OPERATION WITH FINGER TOOL

- 1) proceed as described in point 1,2,3,4,5 of “Mounting operation with disk” section.
- 2) Move the tool arm to rest position, then move it to the inner side of the tyre and hook it in this position.
- 3) The finger tool must be positioned at the wheel side, otherwise turn it by 180°



Set the mobile control unit in work position D (fig. B/8, page 21)

- 4) move the tool until the red spot is at the level of the rim outer edge, at a distance of about 5mm. from it (see fig. O)



Set the mobile control unit in work position C (fig. B/8, page 21)

- 5) from the wheel outside have a visual check on tool position and correct it, if necessary. Then turn the chuck **clockwise** until the gripper is in the lowest position (at 6 o'clock). The first bead will be inserted in position.

- 6) remove the gripper



Set the mobile control unit in work position C (fig. B/8, page 21)

- 7) Let the tool out of the tyre
- 8) move the tool arm to rest position, then move it to the tyre outer side and hook it in this position
- 9) let the tool rotate by 180°
- 10) mount the gripper in the lowest position (at 6 o'clock) out of the second bead (see fig. N).



Set the mobile control unit in work position C (fig. B/8, page 21)

- 11) let the chuck rotate **clockwise** by 90° (until the gripper is at 9 o'clock)
- 12) move the tool until the red spot is at the level of the rim outer edge, at a distance of about 5mm. from it. Start clockwise rotation checking the second bead that, after 90° rotation, shall start slipping into the rim groove. Let rotate until the gripper is in lowest position (at 6 o'clock). Also the second bead will be inserted in position.

- 13) proceed as described in point 11,12,13,14,15 of “mounting operation with disk” section to remove the wheel correctly.

13.3

TUBR TYRES**BEAD BREAKING**

ATTENTION! When deflating the tyre it is necessary to unscrew the valve ring nut so that the valve, when setting back inside of the rim, doesn't constitute an obstacle for bead breaking.

Proceed with bead breaking operations as described for Tubeless tyres.

But, with tube tyres, it is necessary to stop the disk right after the detachment of the disk to avoid damaging both valve and tube.

TYRE REMOVING

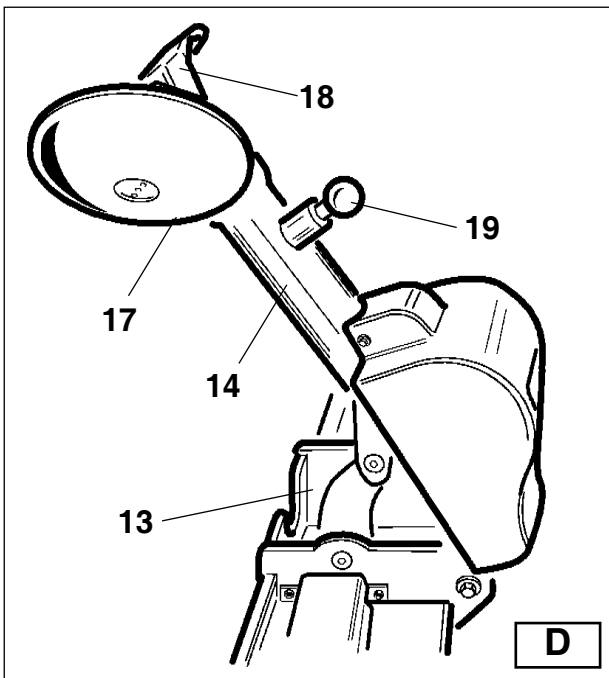
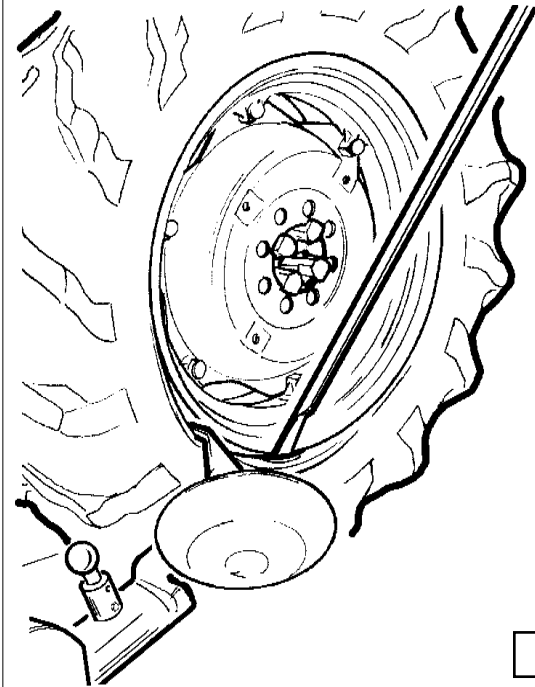
Set the mobile control unit in work position C (fig. B/8, page 21)

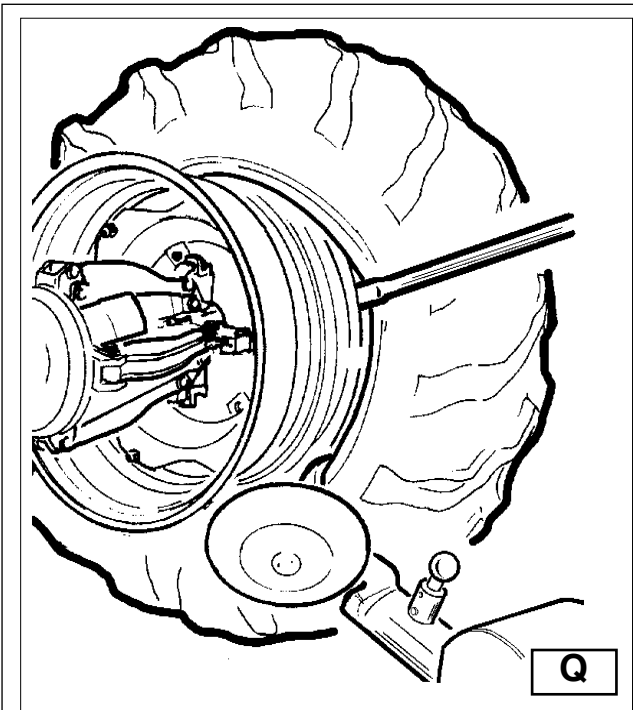
- 1) Tilt the tool arm (14, fig. D) to rest position, move it to the outside of the wheel and hook it in work position.
- 2) Turn the chuck and, at the same time, let the finger tool (17, fig. D) move forward to set it between rim and bead until the bead gets hooked by the tool.
- 3) Move the rim 4-5 cm from tool in order to prevent the bead from releasing.
- 4) Move the finger tool outwards until its red spot is in proximity of the rim outer edge



Set the mobile control unit in work position B (fig. B/8, page 21)

- 5) Insert the lever (see fig. P) between rim and bead, at the right of the tool.
- 6) Keep the lever pressed down, while lowering the wheel until the rim edge is at about 5 mm. from the finger tool.
- 7) Turn the wheel counterclockwise keeping the lever pressed until the bead is fully detached.
- 8) Set the tool arm in rest position. Lower the chuck until the tyre rests on the platform; slightly move the chuck inwards as to create the gap necessary to pull out the tube.
- 9) Pull out the tube and lift the wheel again.





Set the mobile control unit in work position D (fig. B/8, page 21)

- 10) Lift the tool arm and, by means of the proper knob, turn the tool by 180°. Move the tool arm to the inside of the wheel and lower it to work position, setting it between rim and bead. Move it until the bead is close to the rim front edge (it is recommended to perform this operation while turning the wheel)
- 11) Move the rim of about 4-5 cm. in order to prevent the bead from releasing.



Set the mobile control unit in work position B (fig. B/8, page 21)

- 12) move the finger tool until the red spot in it is at about 3 cm inside the rim
- 13) insert the lever between rim and bead, at the tool right side (see fig. Q)
- 14) keep the lever pressed and lower the wheel until the rim edge is at about 5 mm. distance from the finger tool, then turn the wheel counterclockwise until the tyre is fully pulled out.

ATTENTION!

The detachment of the beads might cause the tyre to fall down. Always make sure there are no by-standers inside the working area.

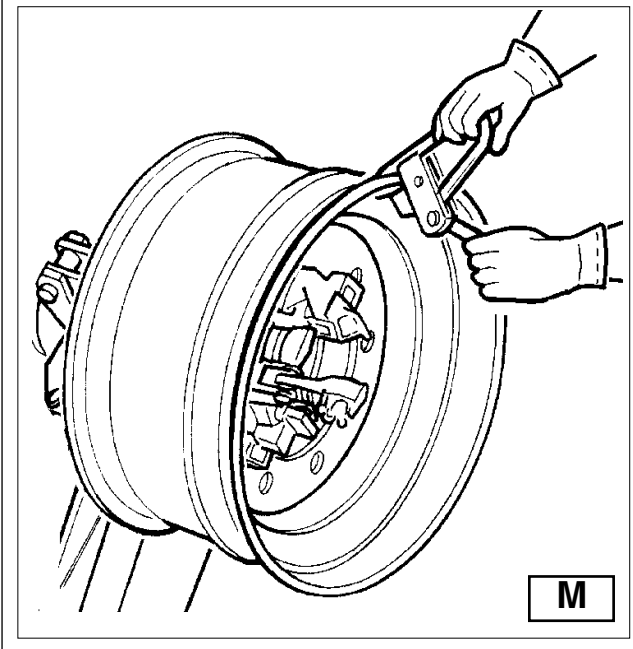


TYRE MOUNTING

- 1) If the rim has been removed from chuck, reinstall it and clamp it as described in par. "Wheel Clamping"
- 2) Grease both tyre beads and rim properly
- 3) Set the gripper in the highest position of the rim outer edge (see fig. M)

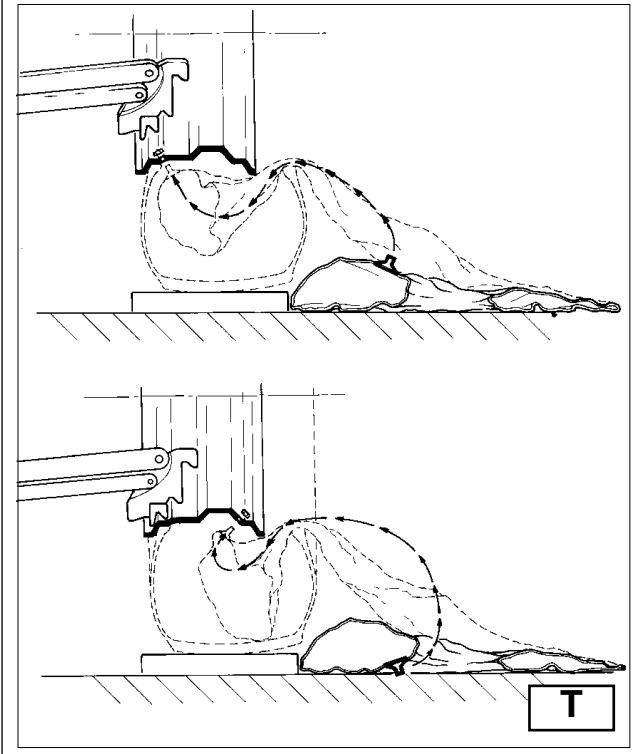
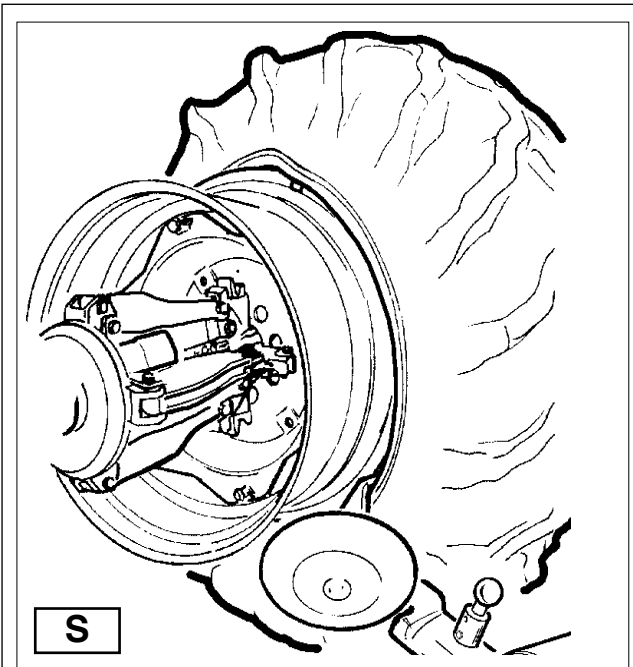
ATTENTION!

Make sure that the gripper is well secured to the rim.



Set the mobile control unit in work position B (fig. B/8, page 21)

- 4) Set the tyre on the platform and lower the chuck (keeping the gripper in the highest position) to hook the first bead.



5) Lift the rim with hooked tyre and let it rotate counterclockwise of about 15-20 cm. The tyre will set itself slantways.

6) set the tool arm to rest position, then move it to the tyre inner side and hook it in this position.

7) make sure that the finger tool is positioned on the wheel side. If not, turn it by 180°



Set the mobile control unit in work position D (fig. B/8, page 21)

8) move the tool until the red spot in it is at the same level of the rim outer edge, at a distance of about 5mm. from it (see Fig. S)



Set the mobile control unit in work position C (fig. B/8, page 21)

9) from the wheel outside have a visual check of the tool position and adjust it, if necessary. Then, turn the chuck clockwise until the gripper is in the lowest position (at 6 o'clock). The first bead will be inserted in the rim.

Remove the gripper.



Set the mobile control unit in work position C (fig. B/8, page 21)

10) Pull the tool out of the tyre.

11) Set the tool arm in rest position and move it to the outer side of the tyre

12) Turn the tool by 180°



Set the mobile control unit in work position C (fig. B/8, page 21)

13) Turn the chuck until the valve is set in the lowest position (at 6 o'clock)

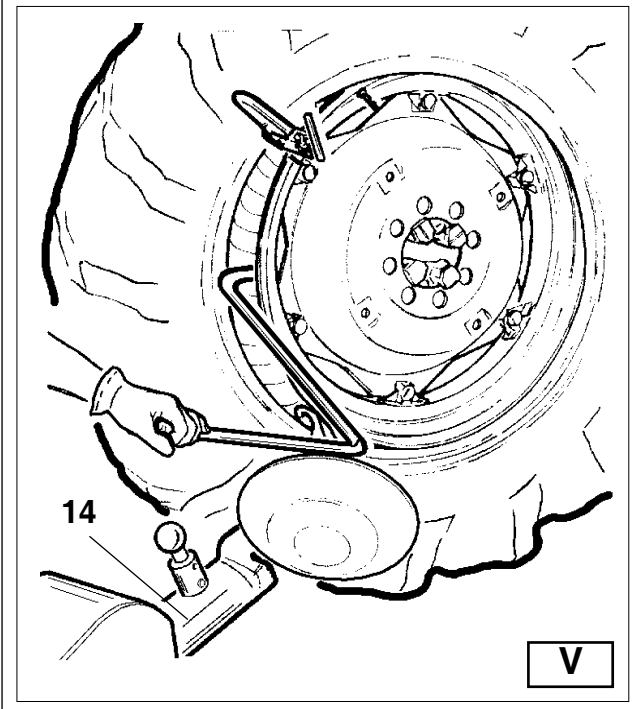
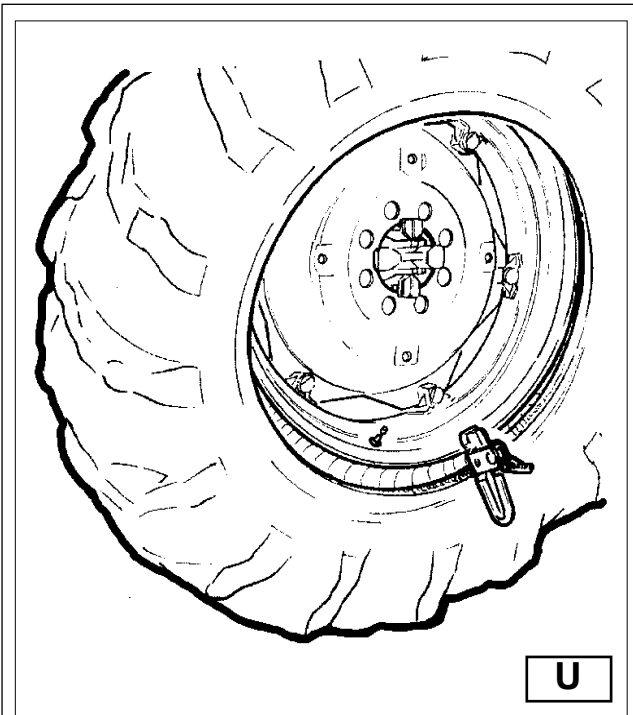
14) Lower the chuck until the tyre rests on the platform; move the chuck slightly inwards as to create the gap necessary to insert the tube.

NOTE: the hole for the valve can be in asymmetrical position compared with the centre of the rim.

In this case, it is necessary to introduce the tube as shown in fig. T.

Insert the valve into the hole and fix it by means of the proper ring nut.

15) insert the tube into the rim groove (Note: to facilitate this operation it is recommended to do it while turning the chuck clockwise).



- 16) Turn the chuck until the valve is set in lowest position (at 6 o'clock)
- 17) Inflate the tube a little bit (until there's no wrinkle left) to avoid pinching it when mounting the second bead.

- 18) Mount an extension on the valve, then remove the ring nut.

Note: this operation allows the valve to be free and not to get torn when mounting the second bead.



Set the mobile control unit in work position C (fig. B/8, page 21)

- 19) Lift the wheel again and set the gripper at the second bead outside, at about 20 cm. right from the valve (see fig. U)
- 20) Turn the chuck clockwise until the gripper is set at 9 o'clock.
- 21) Move the tool arm (14, Fig. V) to work position
- 22) Move the tool forwards until the red spot in it is close at about 5 mm. distances from the rim outer edge.
- 23) slightly turn clockwise until it is possible to insert the bead guide lever (see fig. V – optional accessory) into the finger tool proper seat.
- 24) Keep the lever pulled so guiding the bead into the rim groove and keep rotating until the tyre is fully mounted.
- 25) Remove the gripper. Turn the chuck counterclockwise while moving the tool outwards, to pull it out.
- 26) Tilt the tool arm to rest position
- 27) Lower the chuck until the wheel rests on the platform



Set the mobile control unit in work position C (fig. B/8, page 21)

- 28) Make sure that the valve is perfectly centred to the outlet hole; otherwise turn the chuck to adjust valve position. Fix the valve by means of its ring nut and remove the extension.
- 29) Close the chuck jaws completely paying attention to hold the wheel to prevent it from falling off.

ATTENTION!!

This operation can be extremely dangerous. Do it manually only if you are certain you can keep the wheel balanced. Heavy tyres (over 110kg) and/or oversize tyres (with diameter over 130cm) shall never be lifted by hand. Let them roll on floor and lift them by means of an adequate mechanical lifting device.



- 30) Move the chuck leftwards to release the wheel.
- 31) Remove the wheel

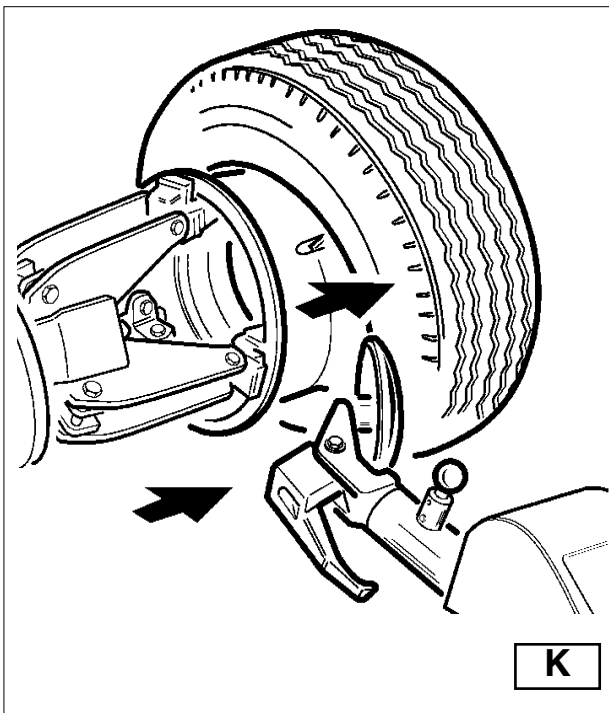
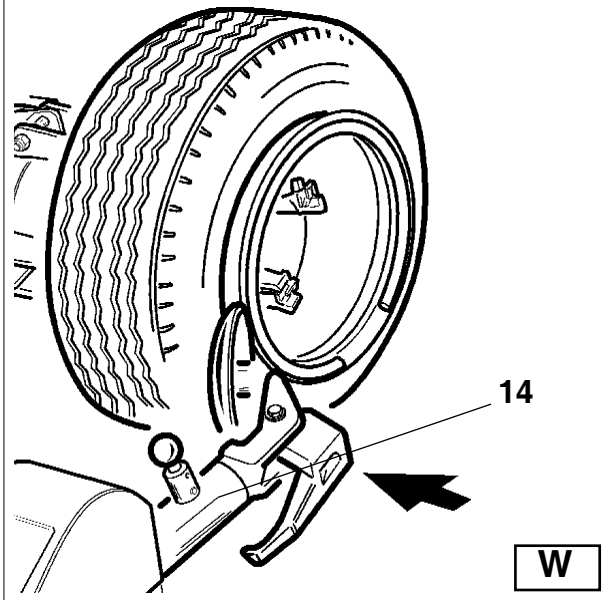
BEAD BREAKING AND REMOVING

WHEELS WITH 3-SEGMENT SPLIT RING

1) Clamp the wheel on the chuck, as previously described, and make sure it is well deflated.



Set the mobile control unit in work position B (fig. B/8, page 21)



3) Lower the tool arm (14, fig. W) to work position until it gets hooked with the proper ratchet

4) Position the bead breaking disk level with rim (see fig. W)

5) Turn the chuck and, at the same time, move the disk forward with short steps following the rim profile, until the first bead is fully detached. (Note: grease while doing this)

ATTENTION: If the tyre has an inner tube, work very carefully and be prepared to stop the disk right after the detachment of the bead to avoid damaging both valve and tube.

6) Repeat the operation but this time move the disk against the split-ring (see fig. Z, page 28) until the lock ring gets released. Remove this by means of the proper lever (23, fig. Z, page 28) or with the help of the disk.

7) Remove the split-ring

8) Move the tool arm (14, fig. W) from rim edge. Release the ratchet, tilt the arm to rest position and move it to the inner side of the wheel.

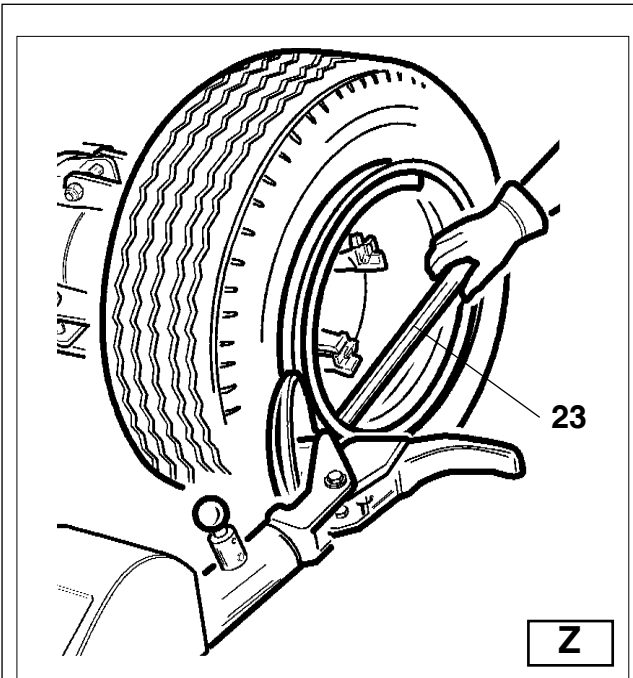
9) Turn the tool by 180°

Lower the arm to work position.

10) Turn the chuck and, at the same time, move the disk forward with short steps following the rim profile, until the second bead is fully detached. (Note: grease while doing this). Keep on pushing the disk against the tyre until half of it is out of the rim (see fig. K)

11) Tilt the tool arm to rest position

12) Lower the chuck until the tyre rests on the platform.



set the mobile control unit in work position B (fig. B/8, page 21)

13) move the chuck leftwards until the tyre is fully detached from rim. Watch out for the valve!

WHEELS WITH 5-SEGMENT SPLIT RING

1) Clamp the wheel on the chuck, as previously described, and make sure it is well deflated.



set the mobile control unit in work position C (fig. B/8, page 21)

2) Lower the tool arm (14, fig. D) to work position until it gets hooked with the proper ratchet

3) Use the joystick to position the wheel in a way that the disk grazes the rim outer edge.

4) Turn the chuck and, at the same time, move the disk forward until the split ring is fully detached from rim. Pay attention not to damage the O-ring.

5) Repeat the operation but this time move the disk against the split-ring (see fig. Z) until the lock ring gets released. Remove this by means of the proper lever (23, fig. Z) or with the help of the disk.

6) Remove the O-ring.

7) Move the tool arm (14, fig. D) from rim edge. Tilt the arm to rest position and move it to the inner side of the wheel.

8) Turn the tool by 180°

Lower the arm to work position.

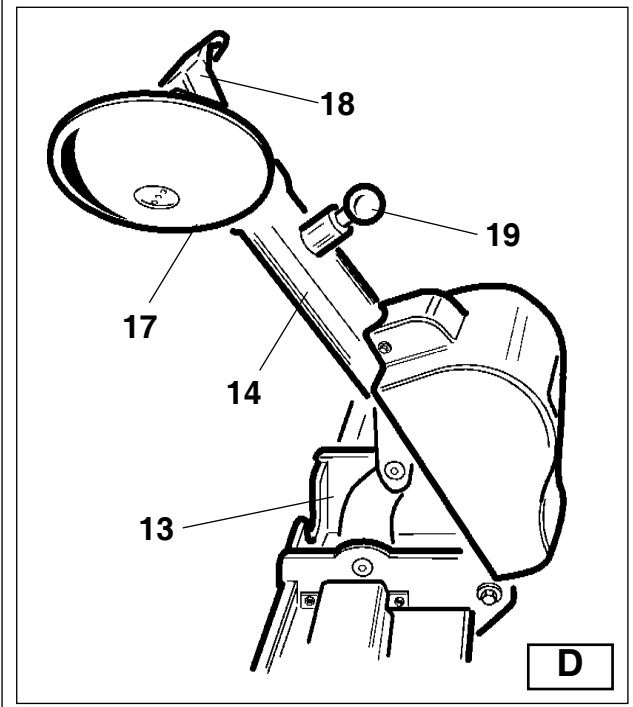


set the mobile control unit in work position C (fig. B/8, page 21)

9) Turn the chuck and, at the same time, lower it to insert the disk between bead and rim edge. Only when the bead starts detaching move the disk forward to bring the outer bead level with rim outer edge.

(Note: grease while doing this).

10) Tilt the tool arm to rest position



set the mobile control unit in work position B (fig. B/8, page 21)

11) Lower the chuck until the tyre rests on the platform.

- 12) Move the chuck leftward until the tyre (with the split ring) is pulled out of the rim
- 13) Remove the rim from the chuck
- 14) Set the tyre on the platform with the split ring turned toward the chuck
- 15) Lock the split ring on the chuck as described in par. WHEEL CLAMPING

ATTENTION:

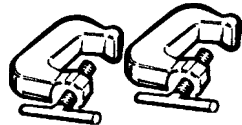
The tyre is unsafely fixed to the split ring. Any possible strain during moving and/or locking could cause a detachment of it and, consequently, its fall down.



set the mobile control unit in work position D (fig. B/8, page 21)

- 16) Lift the wheel
- 17) Set the tool arm back to work position
- 18) Position the chuck in a way that the disk is level with tyre bead
- 19) Turn the chuck and, at the same time, move the disk forward until the tyre is fully pulled out of the split ring

Note: it is possible to avoid this double bead breaking operation with the use of item **136/90 KIT OF GRIPPERS** (optional) that enables to fix split ring and rim together so detaching them at the same time.



136/90

ATTENTION!

The detachment of the tyre from rim causes the tyre to fall down. Always make sure there are no by-standers inside the working area.



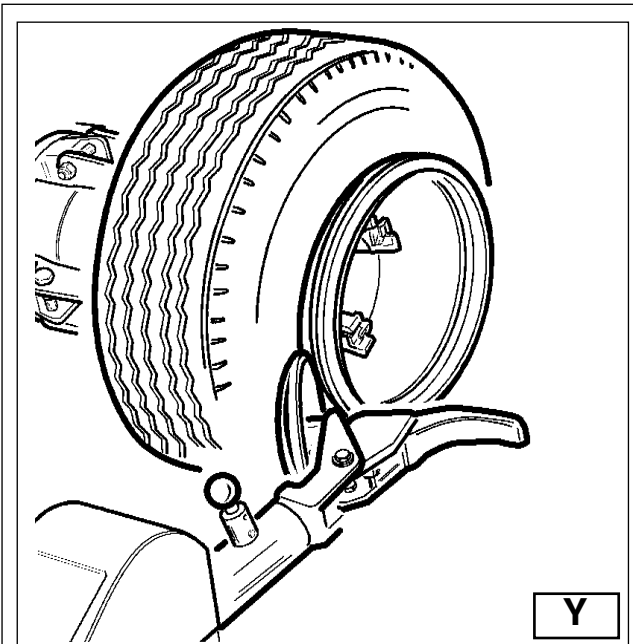
MOUNTING

WHEELS WITH 3-SEGMENT SPLIT RING

- 1) Move the tool arm to rest position. If the rim was removed from the chuck, clamp it again as described in par. "WHEEL CLAMPING"

Note: If the wheel has an inner tube it is necessary to position the rim with the valve slot down (at 6 o'clock)

- 2) Grease both tyre beads and rim.



set the mobile control unit in work position B (fig. B/8, page 21)

3) Set the tyre on the platform

Note: If the wheel has an inner tube it is necessary to position the rim with the valve slot at the bottom (at 6 o'clock)

4) Lower or lift the chuck as to perfectly centre rim with tyre

5) Move the chuck rightwards to let the rim enter the tyre

ATTENTION: If the tyre has an inner tube, it is necessary to push the valve inside to avoid the risk of damaging it.

Move forward until the rim is fully inserted into tyre.

6) Move the tool arm to the outside, and then lower it to work position with the disk turned toward the wheel.

Note: if the tyre is not sufficiently set on the rim, move the chuck until the tyre bead is level with the disk. Move the disk forward (while turning the chuck) until positioning is completed.

7) Set the split ring on rim, and then mount the lock ring with the help of the disk as shown in Fig. Y

8) Move the tool arm to rest position and close the chuck jaws completely, taking care to hold the wheel to prevent it from falling off.

ATTENTION!!

This operation can be extremely dangerous. Do it manually only if you are certain you can keep the wheel balanced. Heavy tyres (over 110kg) and/or oversize tyres (with diameter over 130cm) shall never be lifted by hand. Let them roll on floor and lift them by means of an adequate mechanical lifting device.



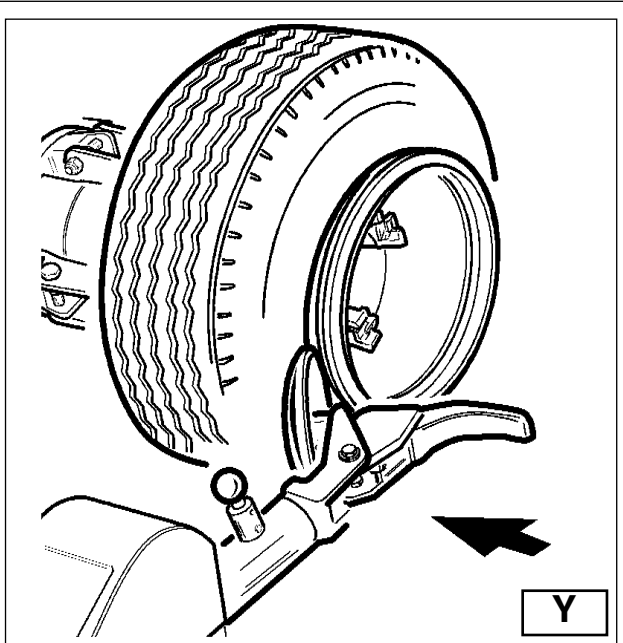
9) Move the chuck to release the wheel

10) Remove the wheel

WHEELS WITH 5-SEGMENT SPLIT RING

1) Move the tool arm to rest position. If the rim was removed from the chuck, clamp it again as described in par. "WHEEL CLAMPING"

2) Grease both tyre beads and rim.



set the mobile control unit in work position B (fig. B/8, page 21)

- 3) Set the tyre on the platform
- 4) Lower or lift the chuck as to perfectly centre rim with tyre
- 5) Move the chuck rightwards to let the rim enter the tyre
Move forward until the rim is fully inserted into tyre.
- 6) Set the bead wire on the rim (with the ledge ring mounted)

Note: if rim and split ring have slits for fixing, these must coincide to each other.



set the mobile control unit in work position C (fig. B/8, page 21)

- 7) Move the tool arm to the outside, and then lower it to work position with the disk turned toward the wheel.

Note: if the bead wire is not sufficiently set on the rim, move the chuck until the bead wire is level with the disk. Move the disk forward (while turning the chuck) until the O-ring seat gets uncovered.

- 8) grease the O-ring and set it into its seat



set the mobile control unit in work position C (fig. B/8, page 21)

- 9) Set the lock ring on rim with the help of the disk as shown in Fig. Y
Move the tool arm to rest position and close the chuck jaws completely, taking care to hold the wheel to prevent it from falling off

ATTENTION!!

This operation can be extremely dangerous. Do it manually only if you are certain you can keep the wheel balanced. Heavy tyres (over 110kg) and/or oversize tyres (with diameter over 130cm) shall never be lifted by hand. Let them roll on floor and lift them by means of an adequate mechanical lifting device.



- 10) Move the chuck to release the wheel
- 11) Remove the wheel

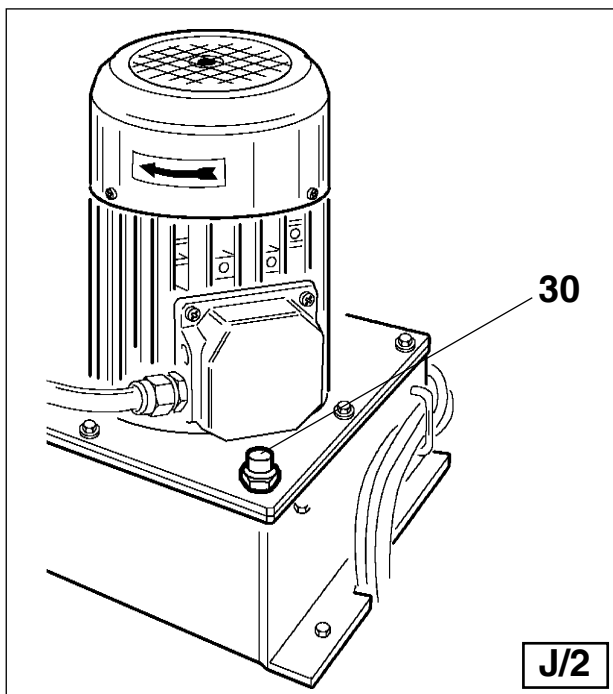
ATTENTION!

Do not inflate the tyre when the wheel is still mounted on the chuck. Tyre inflation can be extremely dangerous, therefore it must be performed with the wheel placed inside a proper inflating cage, for the safety of the operator.



WARNING!

Each maintenance operation must be performed only after disconnecting the plug from electric network.



At the achievement of 5 years from the date of installation and commissioning, the product must be reviewed in its entirety



Regular maintenance in accordance with the instructions given below is essential for correct operation of the tyre-changer and for its long working life as well.

1) periodically grease the following parts, after having cleaned them carefully with diesel oil:

- the various articulation points of the chuck
- the carriage slides
- the carriage guides

2) periodically check oil level inside the hydraulic unit by means of the relevant min. and max. indicators placed on the hydraulic unit tank

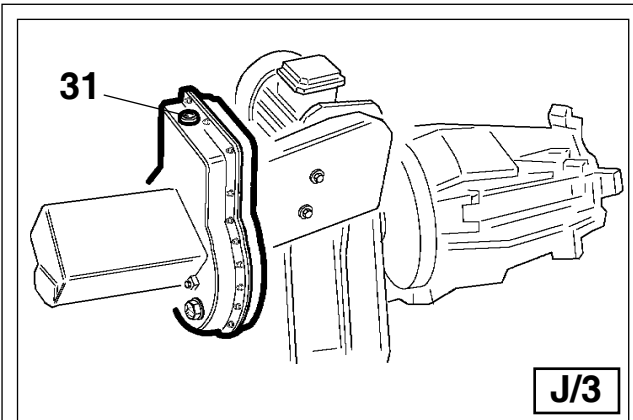
If necessary, top up with oil ISO-L-HV VG46 Persian Oil Idrol T or alike (Esso Invarol EP / Agip Arnica / Mobil DTE 15 / Fina Hydran HV / Shell Tellus T / Total Equivis ZS / Castrol Hyspin AWH HV / BP Bactram HV / Chevron Ep Hydraulic Oil HV). Remove the cap (30, fig. J/2), fill the tank with new oil and screw the cap back on.

3) periodically check oil level in the gear unit that, with chuck arm fully lowered at the end of its stroke, shall never uncover completely the sight glass placed on the gear casing.

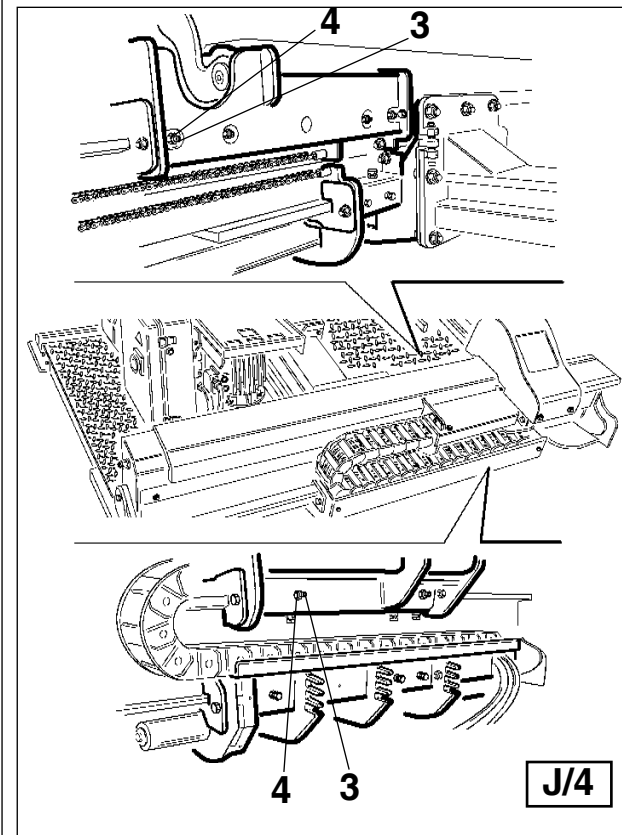
If necessary, top up with oil ESSO SPARTAN EP320 or alike (AGIP F1 REP237, BP GRX P 320, CHEVRON GEAR COMPOUND 320, MOBIL GEAR 632, SHELL OMALA OIL 320, CASTROL ALPHA SP 320). Remove the cap (31, fig. J/3, page 33), fill the tank with new oil and screw the cap back on.

4) periodically check the horizontal carriage:

Note: A possible mechanical play of the tool arm can be noticed during mounting/removing operations. For a longer life of the components, in such case it is recommended to adjust the slides as described



J/3



J/4

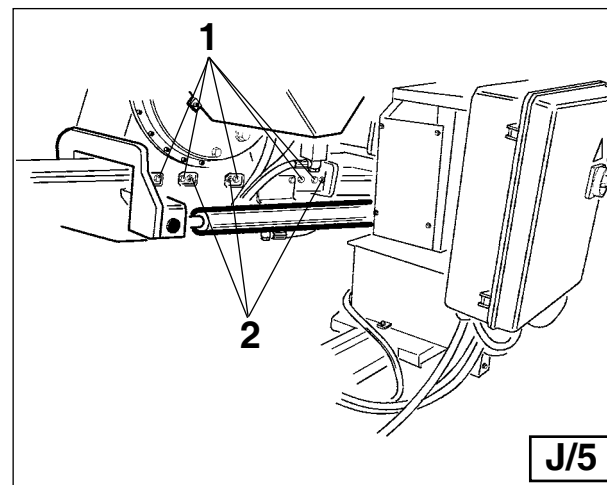
below:

PADJUSTMENT OF THE TOOL HOLDER CARRIAGE SLIDES

- a) Disconnect the machine from electrical network
- b) Loosen the screws (3 fig. J/4) related to each upper slide of the carriage
- c) Loosen the 4 register locking nuts (4 fig. J/4)
- d) Turn each of the slide adjusting screws by 1/4 of turn.
- e) Tighten the screws for locking the upper slides (3 Fig. J/4)
- f) Tighten the register locking nuts

Repeat the a.m. operation for the chuck carriage as in fig. J5 and the tool holder carriage.

Note: in case adjusting is insufficient to eliminate the play, repeat the a.m. operations once again until the play is eliminated in full.



J/5

PROBLEM

After having turned the main switch ON, on the power pack, the general warning light doesn't light on and commands do not work.

CAUSE

- 1) the power plug is not inserted
- 2) no power from the mains electric supply

REMEDY

- 1) plug in correctly
- 2) reset the mains electric supply

PROBLEM

After having turned the main switch ON, the general warning light lights on but the motor on the hydraulic power pack doesn't work.

CAUSE

- 1) the magneto-thermal switch is engaged

REMEDY

- 1) call for technical aid to find out the problem and restore the machine functioning

PROBLEM

There's a slowing down of the tyre-changer's movements, as well as too poor power.

CAUSE

Oil in power pack is below minimum level

REMEDY

Consult paragraph "MAINTENANCE" and fill the tank with new oil

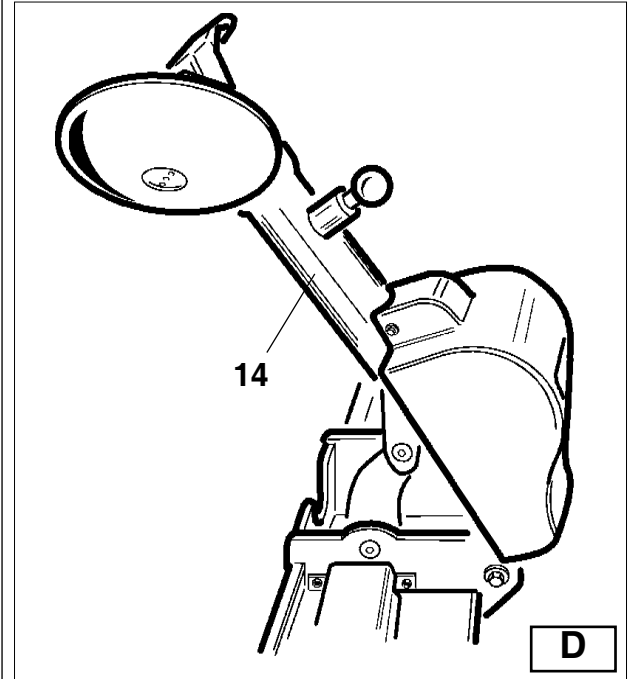
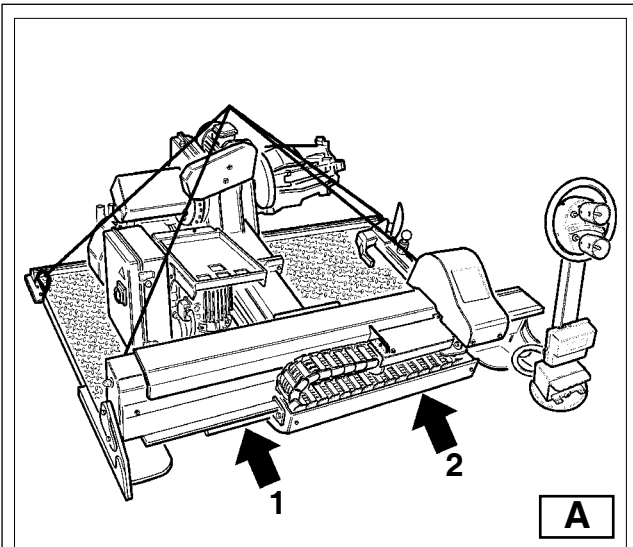
ATTENTION!

Dispose of the used oil according to the national laws in force.



ATTENTION: if, in spite of the above mentioned indications, the tyre-changer does not work properly, **DO NOT USE** it and call for technical assistance.





16

HANDLING

The tyre-changer has two slots (1 and 2, Fig. A) expressly made for moving the machine by means of a fork truck with lifting capacity of min. 2000 kg. and fork length of at least 1300mm.

Before moving the machine, position the carriages (chuck and tool) in the middle of the machine as to keep balance during handling.

Insert the forks into the slots, lift the machine from ground of some centimetres and position it in the new site keeping into consideration the overall dimensions of the machine (see fig. B/4, page 6)

The machine is equipped with 2 removable hooks, at the base corners (Fig. A, ref. 3 and 4) and with 2 fixed hooks (fig. A, ref. 5 and 6) on the tool arm carriage.

By means of adequate lifting bands as well as a fork lift truck, move the tyre-changer as shown in fig. A. Keep the hooks for any further need of moving the machine to a new installation site.

17

STORAGE

In case of storage for a long period (3-4 months or longer) it is necessary:

- 1) To close the chuck jaws; lower the chuck arm, set the tool arm in work position (lowered)
- 2) To disconnect the machine from electric power
- 3) To grease the parts that could get damaged by drying up:
 - the chuck
 - the tool arm guide
 - the carriage guides
 - the tool

Empty the tanks and protect the whole machine from dust by means of a nylon covering

When setting the machine at work after a long storage, it will be necessary:

- to fill the tanks with new oil

A long inactivity period could cause a block of the solenoid valves.

- restore the electric connection

18

SCRAPPING

Whenever you decide to scrap the machine, it is advisable to make it unusable by disconnecting it from power supply.

Being the machine considered as a special waste, demount it in homogeneous parts and dispose of them according to the national regulations in force.

Dispose of the package materials through the relevant collection centres.

Attention!

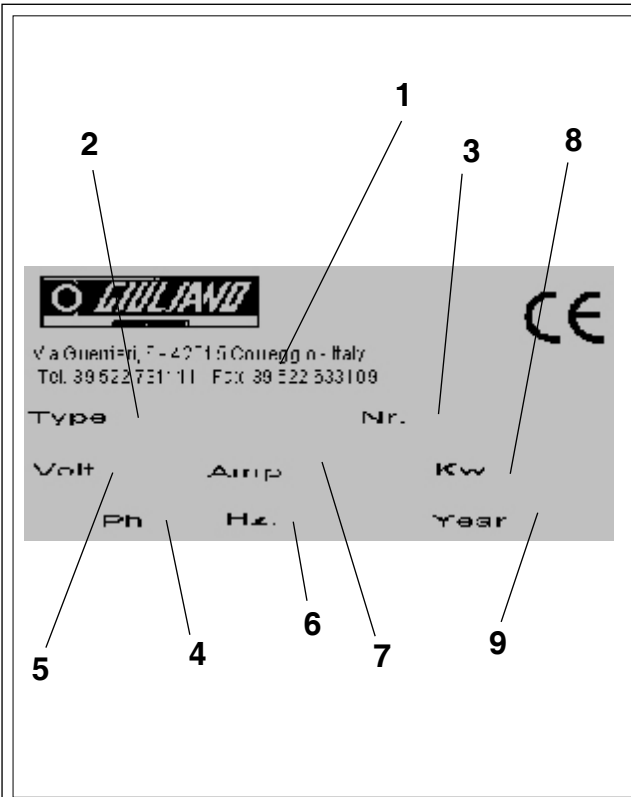
For a correct waste disposal, consult the declaration of conformity to RAEE and ROHS*

* where applicable



ATTENTION!

In case of fire, use only POWDER or CO² extinguisher



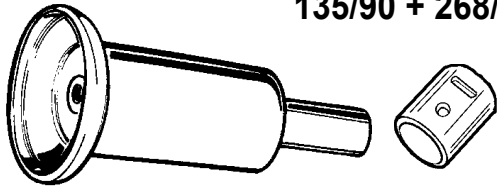
19

DATA PLATE

The data plate is placed at the machine backside and shows:

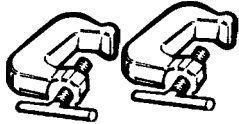
- 1- Manufacturer data
- 2- Model
- 3- Serial number
- 4- Phase
- 5- Voltage
- 6- Frequency
- 7- Absorption
- 8- Max. motor power
- 9- Construction year

135/90 + 268/04

**135/90 Roller for tubeless tyres**

Mounted on the tool arm, it facilitates bead breaking operations of tubeless tyres

136/90

**136/90 Kit of screw grippers**

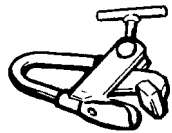
Used on wheels with split ring, they allow the contemporaneous bead breaking of rim and split ring

137/90

**137/90 Kit for jaw protections for alloy rims**

Mounted on the chuck jaws, they allow working on alloy rims without damaging them

138/90

**138/90 Gripper for alloy rims**

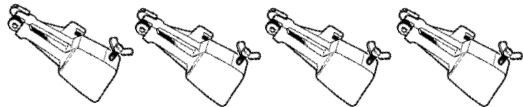
To be used instead of the standard gripper. It allows working on alloy rims without damaging them.

138/90

140/90 Kit of chuck extensions

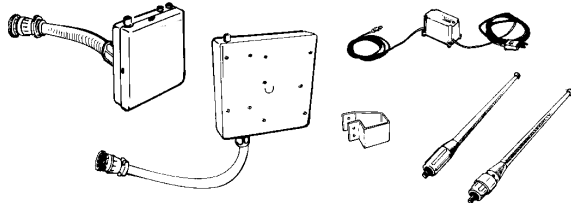
Mounted on the chuck jaws, they allow extending the clamping range of rims without central flange from 48" to 56"

140/90

**RC Radio control**

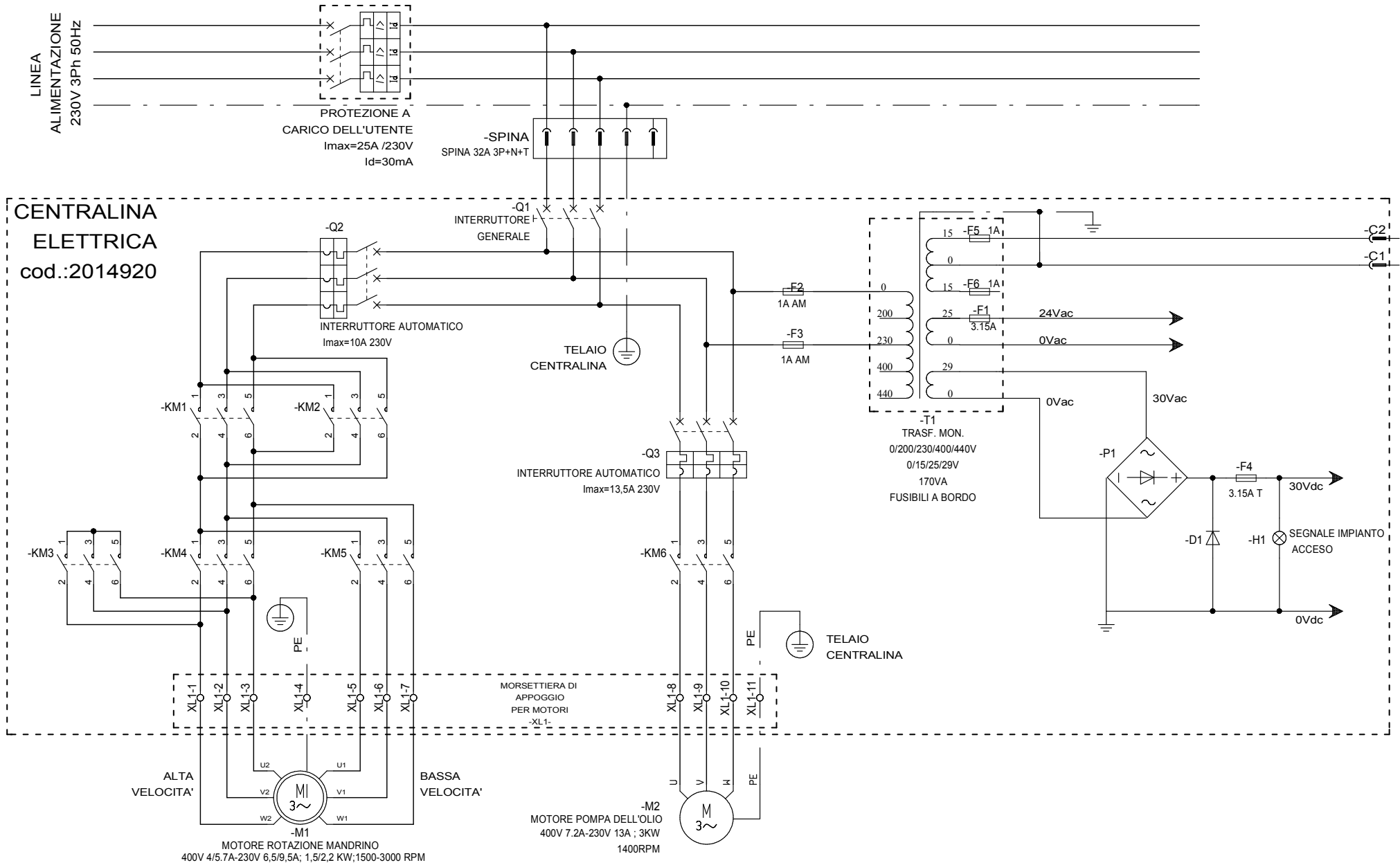
It allows eliminating the cable between machine and control unit, so working more easily and rapidly.

392/06-393/06-394/06

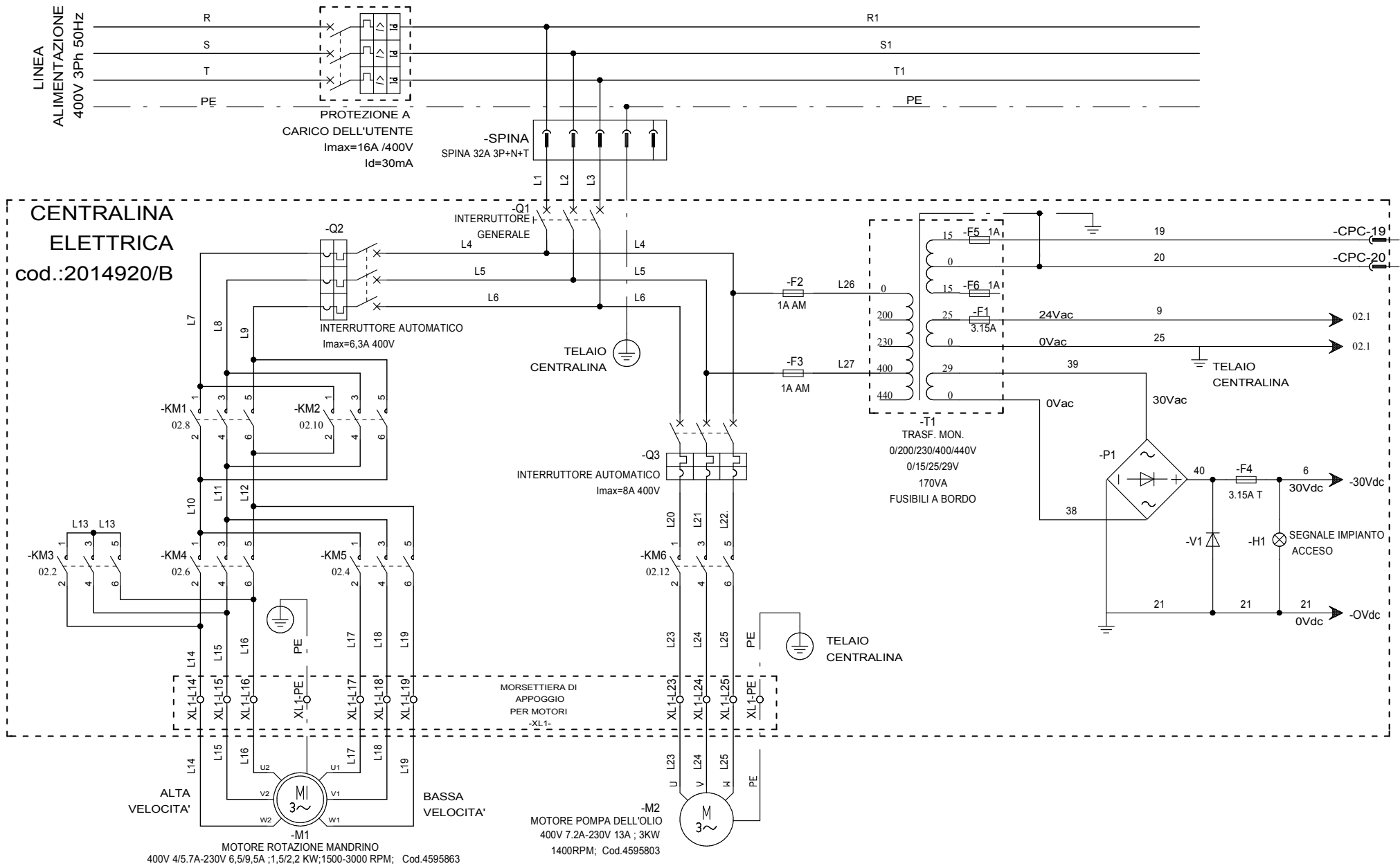


ELECTRIC AND HYDRAULIC DIAGRAMS

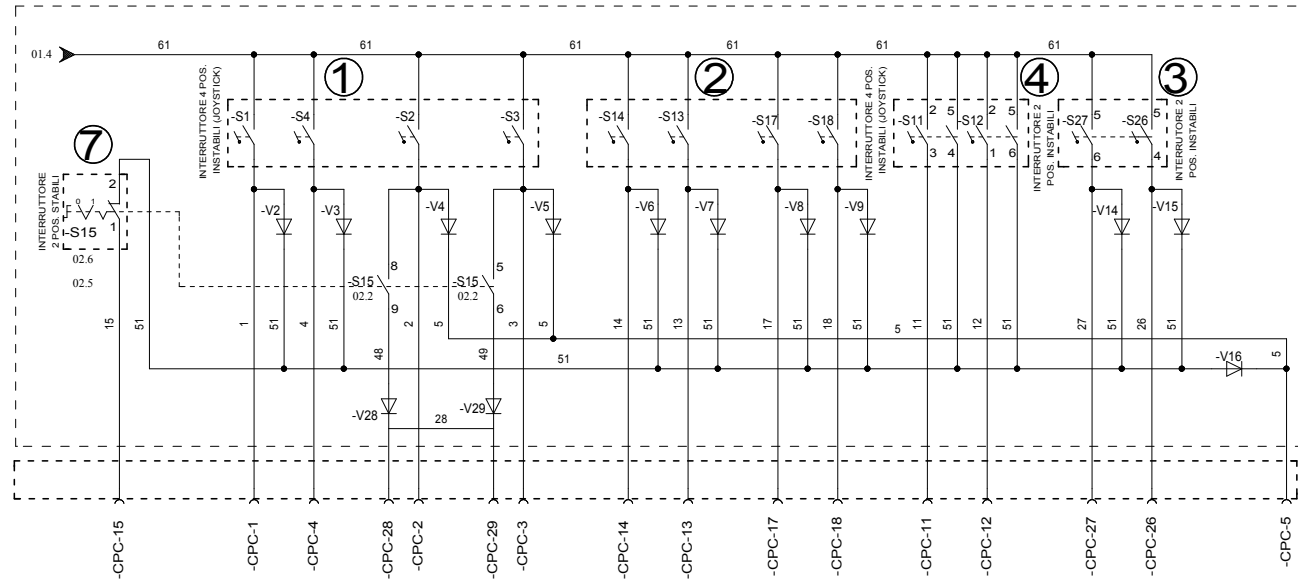
POWER DIAGRAM 230 V



POWER DIAGRAM 400 V

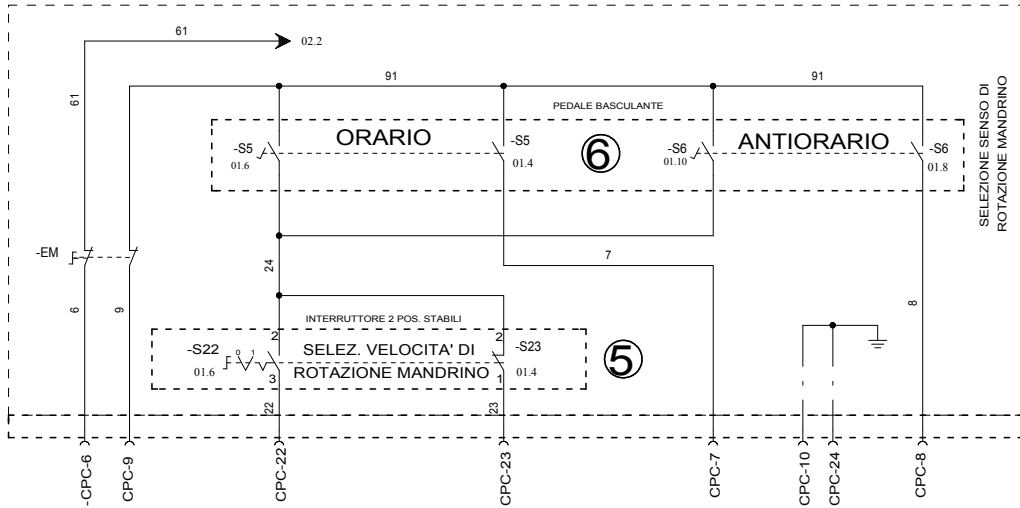
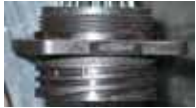


PEDAL UNIT DIAGRAM



PEDALIERA S558

CPC 37 VIE A PANNELLO
PORTAPIN FEMMINA
COD. AMP.:182920-1



PEDALIERA S558
COD. 2016295



CPC 37 VIE A PANNELLO
PORTAPIN FEMMINA
COD. AMP.:182920-1

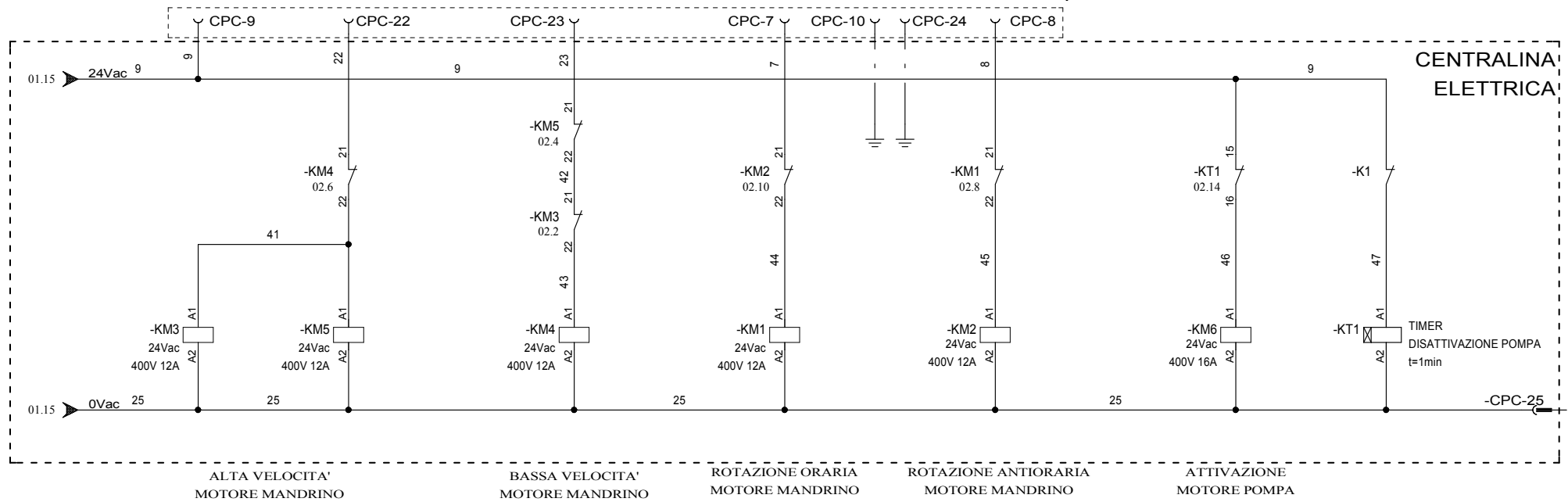
N.B.: n° = RIFERIMENTO AL LAYOUT DELLA PEDALIERA DI PAG 04

n° = RIFERIMENTO AL LAYOUT DELLA PEDALIERA DI PAG. 04

MOTOR CONTROL DIAGRAM



CONNETTORE
CPC A 37 POLI
PORTAPIN FEMMINA
cod. AMP : 182920-1



7 01.1
7 01.1
7 01.1
7 02.6

7 01.4
7 01.4
7 01.4
7 02.6

7 01.3
7 01.3
7 01.3
7 02.4

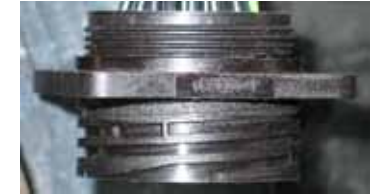
7 01.3
7 01.3
7 01.3
7 02.10

7 01.4
7 01.4
7 01.4
7 02.8

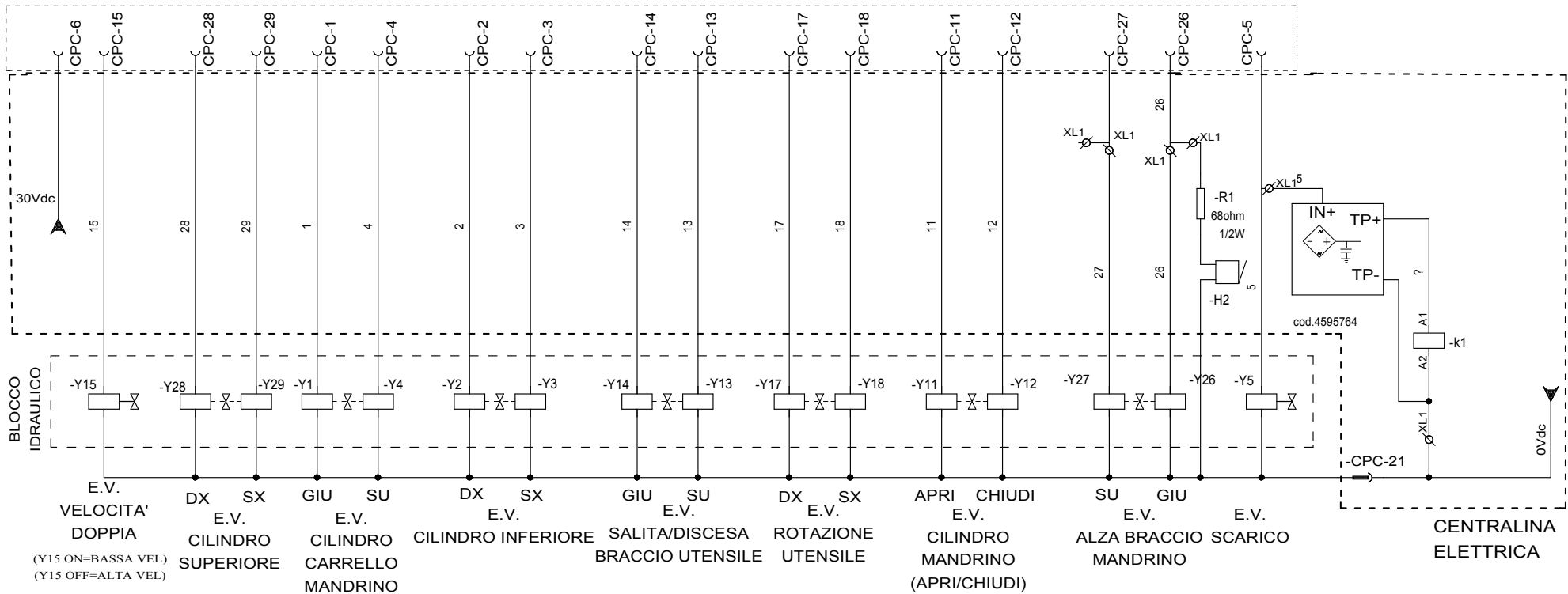
7 01.8
7 01.8
7 01.8
7 -

7 -
7 02.12
7 -

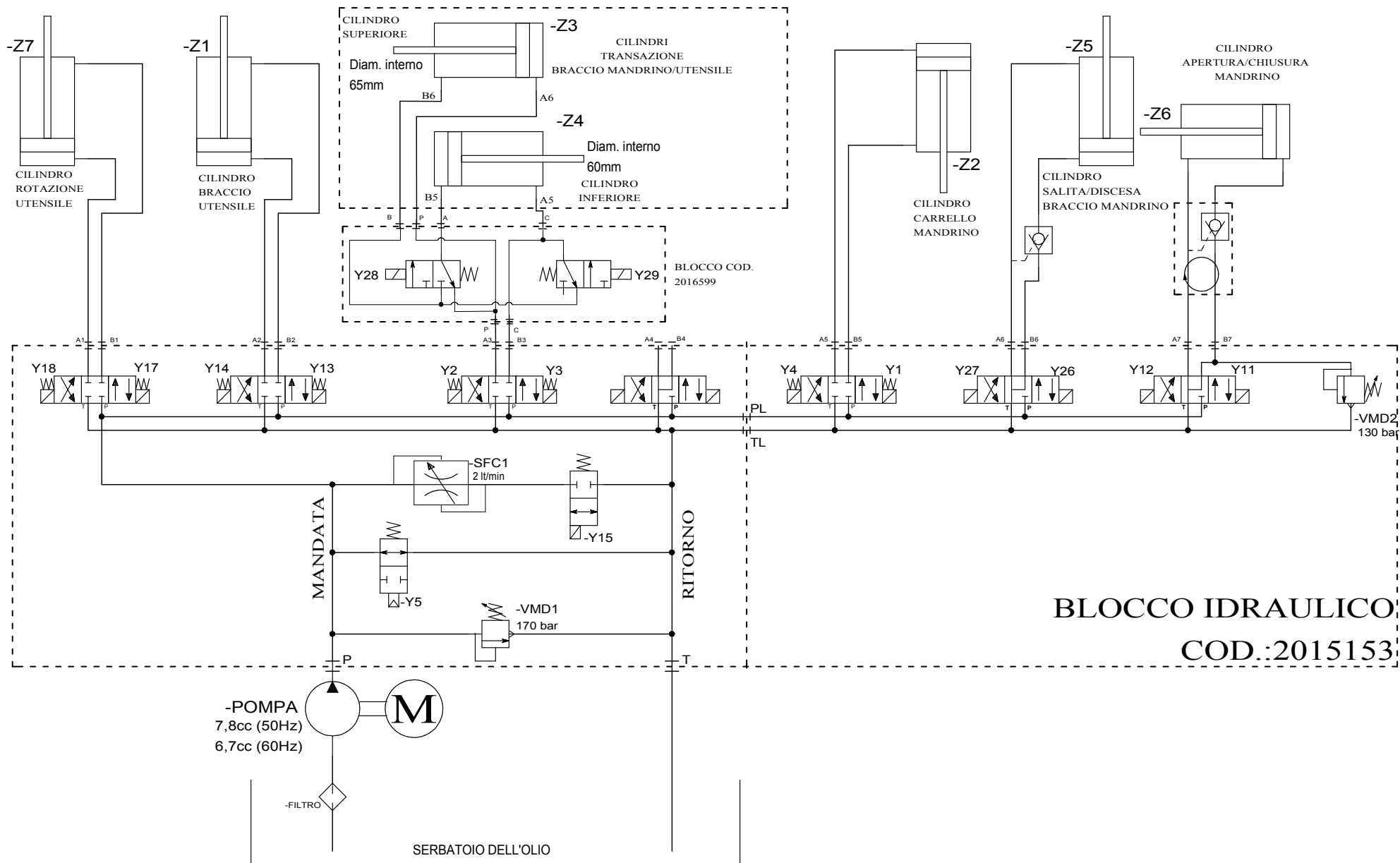
SOLENOID VALVES CONTROL DIAGRAM



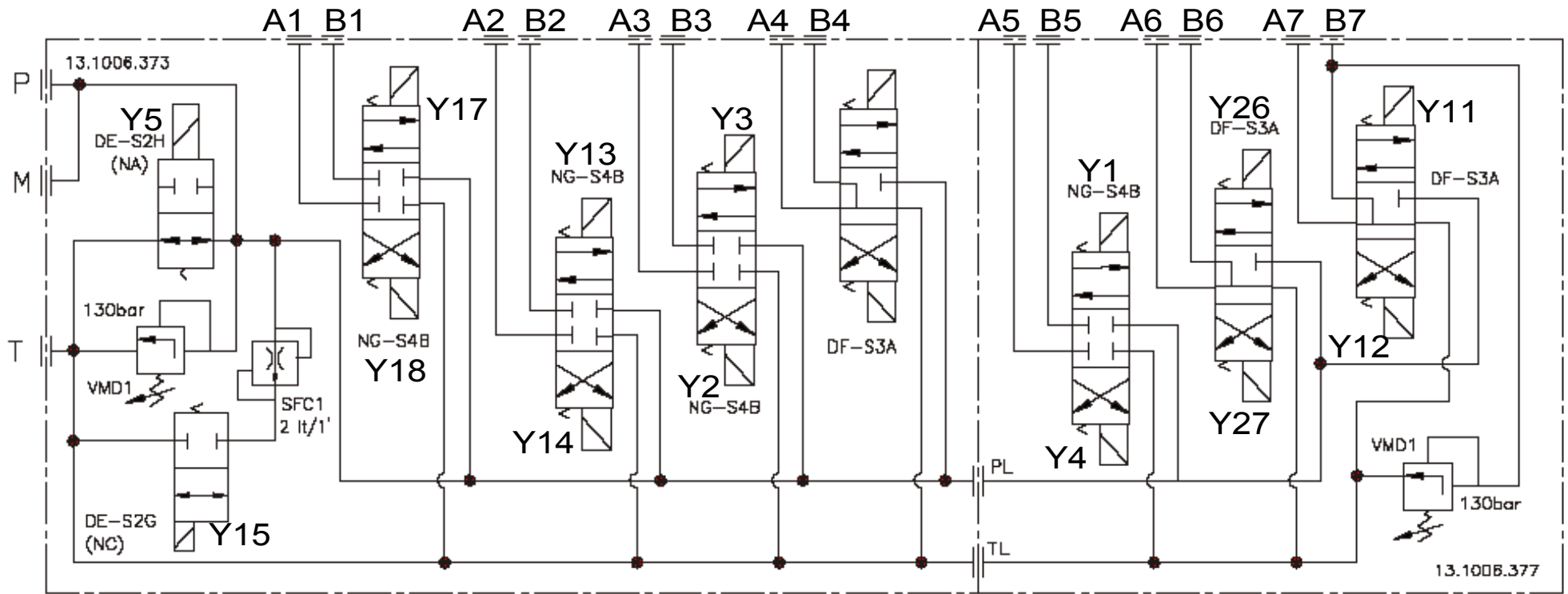
CONNETTORE
CPC A 37 POLI
PORTAPIN FEMMINA
cod. AMP:182920-1



HYDRAULIC CIRCUIT DIAGRAM



SOLENOID VALVES TOWER - HYDRAULIC SYSTEM DIAGRAM



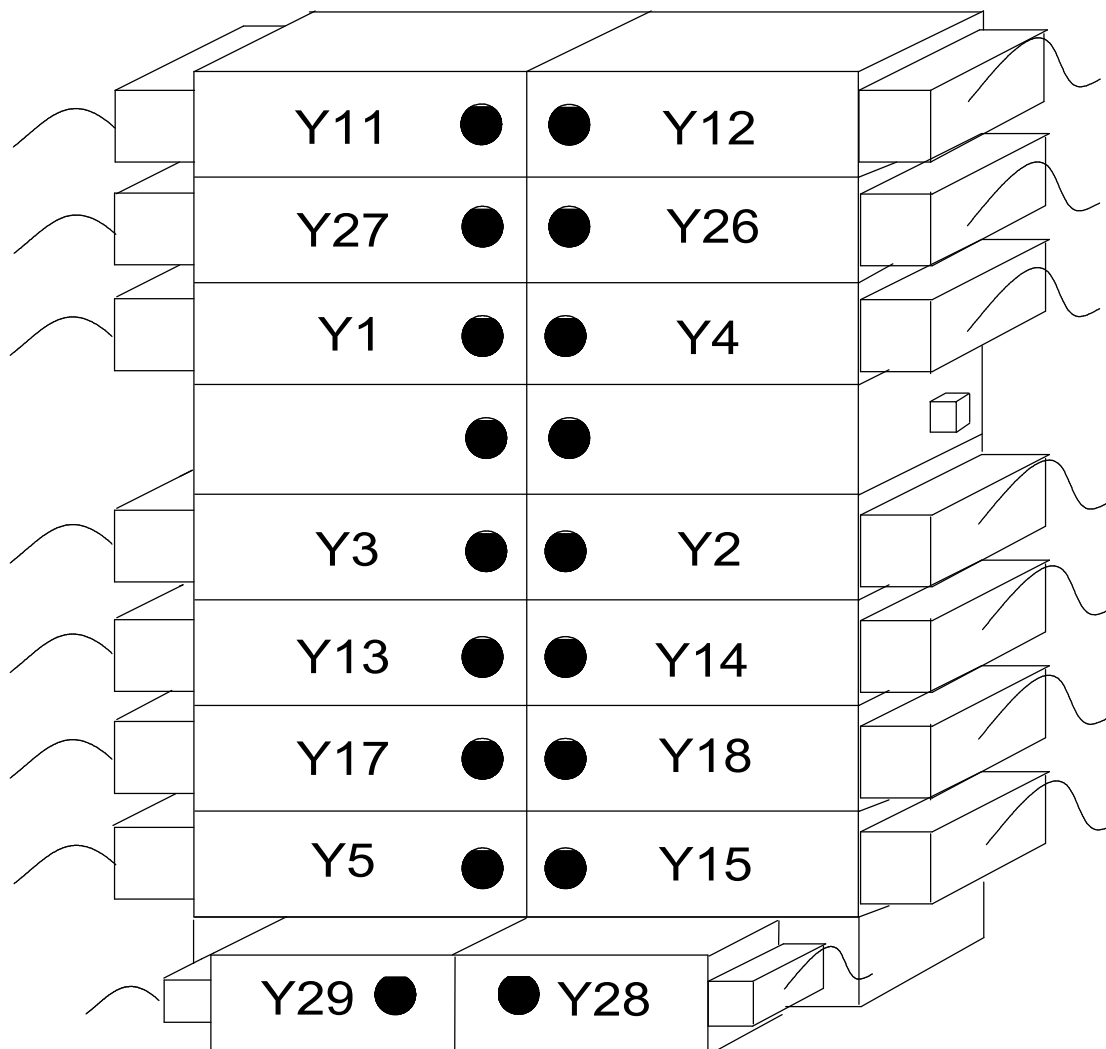
II* VELOCITA'

SOLENOID VALVE POSITIONNING

MACCHINA BASE:S558DOPPIO CILINDRO

COD. GRUPPO IDRAULICO:2015153

COD.BLOCCO Y28 Y29 : 2016599



COD.: 2016599

TUBI COLLEGAMENTO
IDRAULICO

VISTA LATO COLLEGAMENTO TUBI IDRAULICI