

**7700-M002-5\_V**

**PLUS91S for R146  
PLUS91N for R140  
PLUS91SE  
PLUS91SA  
VSG800A69**

**INSTRUCTION MANUAL**

**GB**

TRANSLATION FROM THE  
ORIGINAL INSTRUCTIONS

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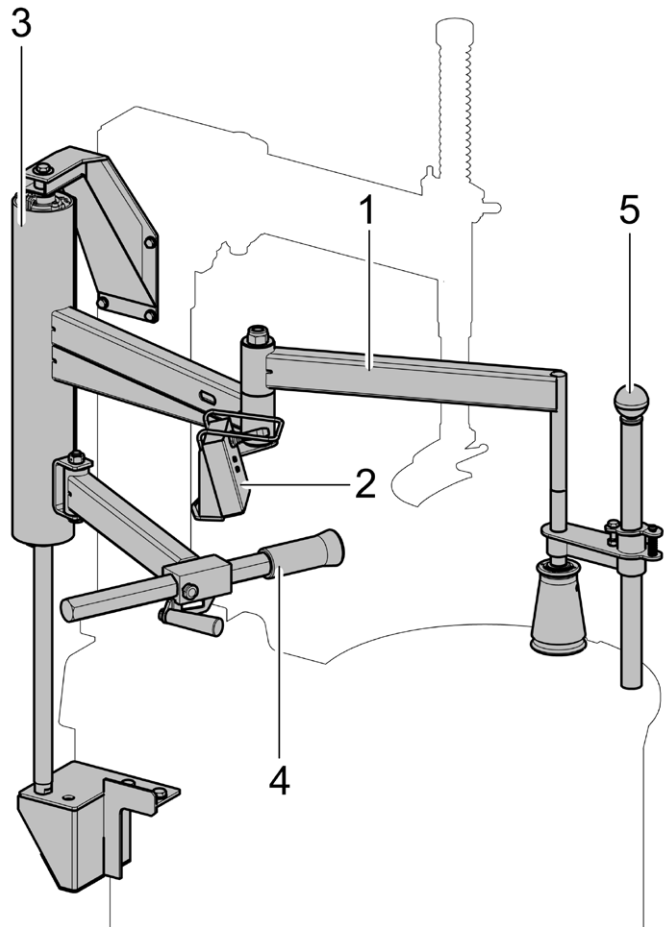
*For spare parts drawings refer to the section "LIST OF COMPONENTS" enclosed to this manual.*

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- For any further information please contact your local dealer.

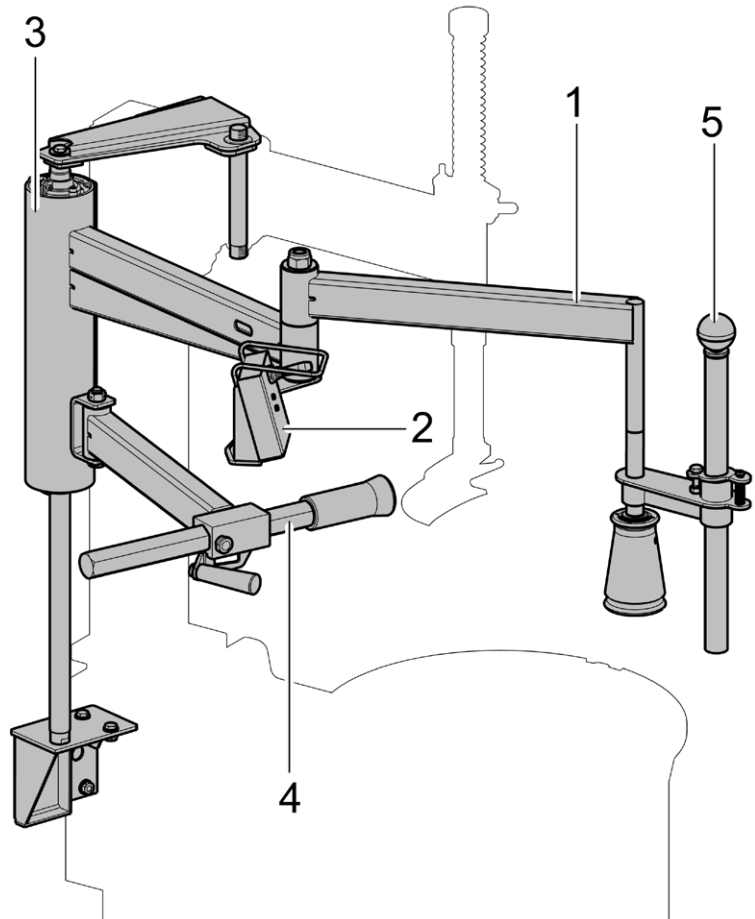
**SUMMARY**

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**FIG. 1 - PLUS91S DEVICE**

## KEY

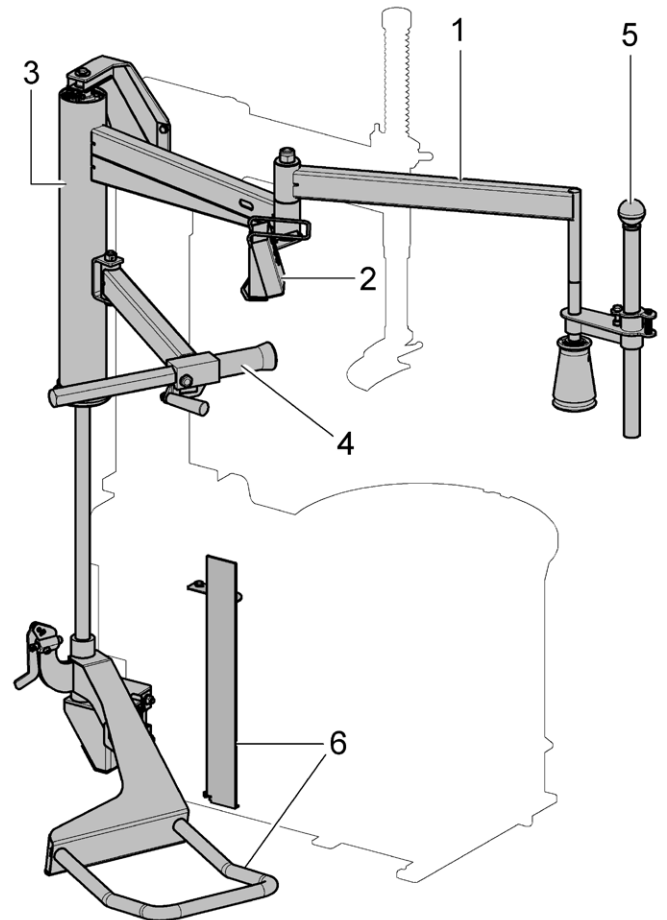
- 1 - Bead depressing roll unit
- 2 - Control unit
- 3 - Pneumatic cylinder
- 4 - Presser roller - bead lifting roll
- 5 - VSG1000A98 Entrainer (on demand)

**FIG. 2 - PLUS91N DEVICE**

## KEY

- 1 - Rotating bead depressing roll unit
- 2 - Control unit
- 3 - Pneumatic cylinder
- 4 - Presser roller - bead lifting roll
- 5 - VSG1000A98 Entrainer (on demand)

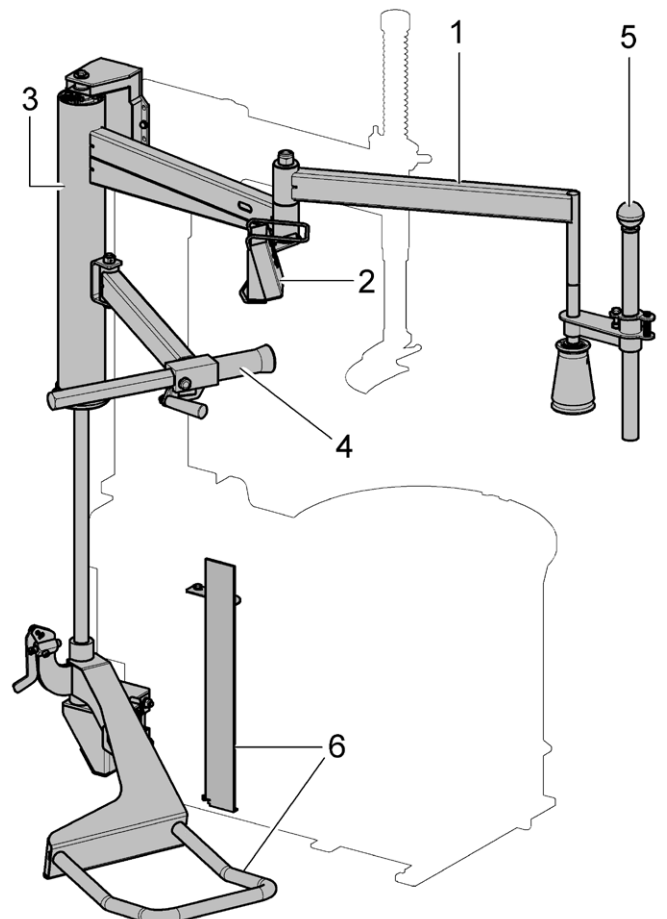
**FIG. 3 - PLUS91SE DEVICE - VSG800A69**



KEY

- 1 - Bead depressing roll unit
- 2 - Control unit
- 3 - Pneumatic cylinder
- 4 - Presser roller - bead lifting roll
- 5 - VSG1000A98 Entrainer (on demand)
- 6 - Lifting device (VSG800A69 on demand)





**FIG. 4 - PLUS91SA DEVICE - VSG800A69**







KEY

- 1 - Bead depressing roll unit
- 2 - Control unit
- 3 - Pneumatic cylinder
- 4 - Presser roller - bead lifting roll
- 5 - VSG1000A98 Entrainer
- 6 - Lifting device (VSG800A69 on demand)

**SYMBOLS USED IN THE MANUAL AND ON THE MACHINE**

Symbols	Description
	Mandatory. Operations or jobs to be performed compulsorily.
	Warning. Be particularly careful (possible material damages).
 VSB2167000	Wear work gloves.
	Wear work shoes.

Symbols	Description
	Danger! Be particularly careful.
	Note. Indication and/or useful information.
 VSB2167000	Wear safety goggles.
	Move with fork lift truck or pallet truck.



**SOME OF THE PICTURES PRESENT IN THIS MANUAL HAVE BEEN OBTAINED FROM PICTURES OF PROTOTYPES, THEREFORE THE STANDARD PRODUCTION 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 device.**

Carefully study the warnings and instructions contained in this manual. It contains important instructions regarding **ASSEMBLY, 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 device. We feel sure you will not regret your decision.

This accessory 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 device will give you many years of trouble-free service and lots of satisfaction.

## 2.0 INTENDED USE

**PLUS91S** and **PLUS91N** devices are accessories that can be applied to all plate tyre-changing machines with flag tool holder arm ("swing" series) and are intended to be used as an aid during tyre fitting and removal phases.

**PLUS91SE** device is an accessory that can be applied to all tyre-changing machines belonging to 246 families and is intended to be used as an aid during tyre fitting and removal phases.

**PLUS91SA** device is an accessory that can be applied to all tyre-changing machines belonging to 246 families in "A" version and is intended to be used as an aid during tyre fitting and removal phases.

**VSG800A69** lifting device is an accessory that can be applied to PLUS91SE and PLUS91SA and is intended to be used as an aid during wheel (max. 80 Kg) positioning and removal from mandrel phases. This accessory is suitable for all wheels having maximum size included within the operating range of the tyre-changer on which it is fitted.



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



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




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




### 2.1 Training of personnel

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

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



**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.**


**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.**

**3.0 GENERAL SAFETY RULES**



- **Any tampering with or modification to the accessory 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 device leads to serious dangers and represents a transgression of European safety rules.
- Use of the accessory is only permitted in places free from **explosion** or **fire** hazard and in **dry** and **under cover places**.
- Original spare parts and accessories should be used.

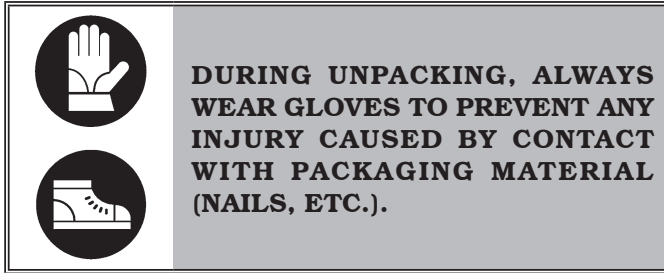
- The accessory handles and operating grips must be kept clean and free from oil.
- The workshop must be kept clean and dry. Make sure that the working premises are properly lit. The machine can be operated by a single operator. Unauthorized personnel must remain outside the working area. Avoid any hazardous 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.
- Never activate the accessory if the wheel is not correctly locked on the self-centring mandrel.
- When operating and servicing this device, carefully follow all in force safety and accident-prevention precautions. The machine must not be operated by professionally unskilled persons.



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

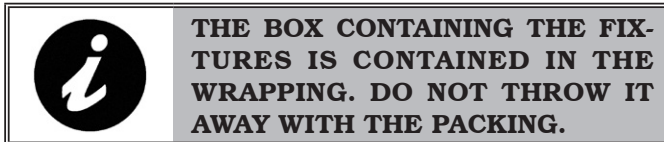
- Installation must be conducted only by qualified personnel exactly according to the instructions that are given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Do not use the accessory if it malfunctions and contact the assistance service of an authorized dealer.

## 4.0 UNPACKING



The accessory is supplied completely assembled.  
**Carry out carefully unpacking, assembly, lifting and installation operations described below.**  
**Failure to comply with these recommendations may cause damage to the accessory and put the operator at risk.**

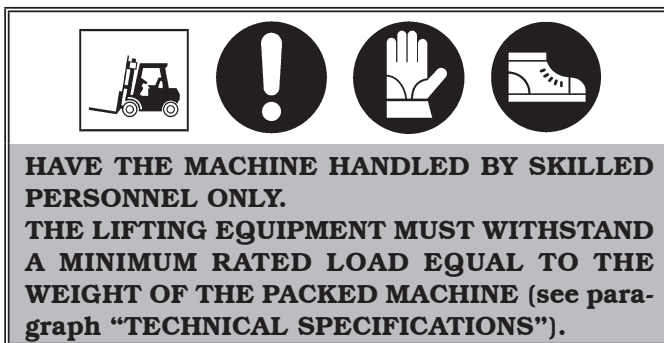
The packaging components (plastic bags, expanded polystyrene etc.) must not be left within reach of children since they are potentially dangerous.  
Dispose of all contaminating or non-biodegradable materials appropriately.



### 4.1 Packing and mobilization for transport of the device alone

The device is supplied packed in a cardboard box.  
Movement must be by pallet-lift or fork-lift trolley.

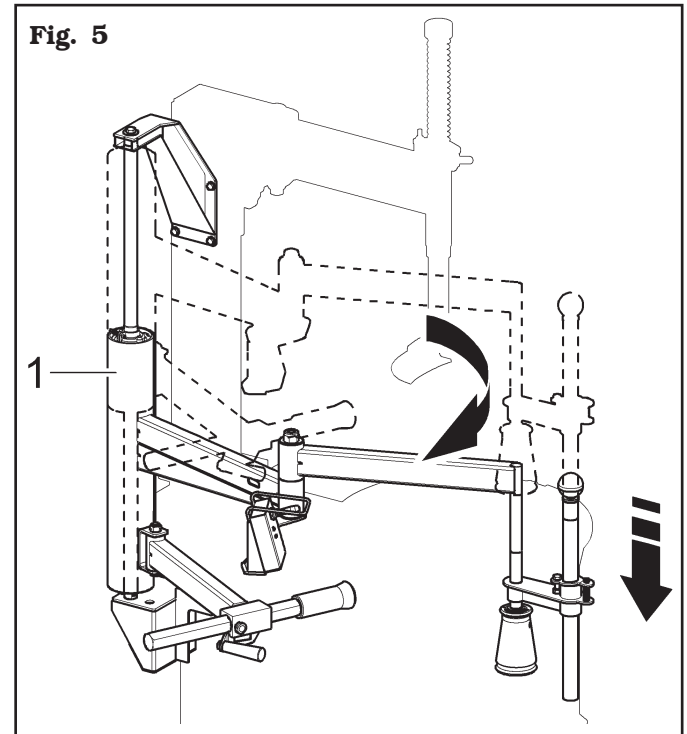
### 4.2 Handling packed device



### 4.3 Handling packed device with machine

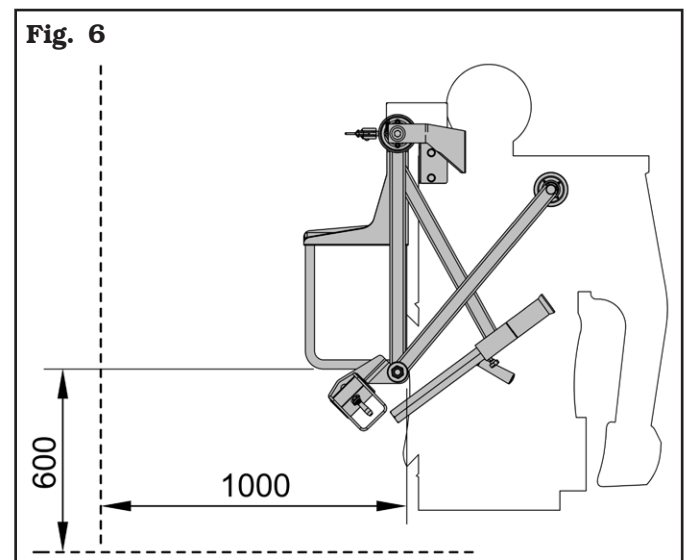
1) Fully lower the presser arm (**Fig. 5 ref. 1**). The device can be handled only together with the machine on which it is fitted. Make sure to block all the mobile elements of the device. Follow all the instructions given on the instruction manual of the relevant tyre-changer.

2) Carry out the lifting procedure described on the instructions manual of the tyre-changer on which the accessory is fitted.



## 5.0 INSTALLATION SPACE

### PLUS91SE - PLUS91SA - VSG800A69 DEVICE



Device's installation needs a useful space of mm 600x1000, on machine side, (as illustrated in **Fig. 6**), which is represented by the dotted line.

The operator must be able to see the entire equipment and the surrounding area from the control position. He must prevent unauthorized personnel or objects that could be dangerous from entering the area.



### 6.0 ASSEMBLY AND PREPARATION FOR USE

After the accessory has been unpacked, make sure they are undamaged, verify if any fault is present, then keep to the following instructions in order to accomplish preparation for use.

#### 6.1 Fixtures contained in the packing

The packing box contains the necessary equipment for the assembly of the Plus Device on all models of tyre-changers.

Check that all the parts listed are there:

Code	Description	N.
<b>VS325181</b>	<i>V8 union</i>	<b>1</b>
<b>VS317006</b>	<i>Rilsan pipe 6x4 bl</i>	<b>1</b>
<b>VS325054</b>	<i>Fixed reduction 6 - 8</i>	<b>1</b>

#### PLUS91S DEVICE

Code	Description	N.
<b>VS203058</b>	<i>VTE M10x25</i>	<b>4</b>
<b>VS228307</b>	<i>M10 triblock nut</i>	<b>4</b>
<b>VS203038</b>	<i>TE M8x25 screw</i>	<b>4</b>
<b>VS236006</b>	<i>Flat washer 8,4</i>	<b>4</b>
<b>VS236007</b>	<i>Flat washer 10,5</i>	<b>8</b>

#### PLUS91N DEVICE

Code	Description	N.
<b>VS228307</b>	<i>M10 triblock nut</i>	<b>4</b>
<b>VS203058</b>	<i>VTE M10x25</i>	<b>4</b>
<b>VS236007</b>	<i>Flat washer 10,5</i>	<b>8</b>

#### PLUS91SE - PLUS91SA DEVICE

Code	Description	N.
<b>VS203058</b>	<i>VTE M10x25</i>	<b>4</b>
<b>VS228307</b>	<i>M10 triblock nut</i>	<b>4</b>
<b>VS203038</b>	<i>TE M8x25 screw</i>	<b>4</b>
<b>VS236006</b>	<i>Flat washer 8,4</i>	<b>4</b>
<b>VS236007</b>	<i>Flat washer 10,5</i>	<b>8</b>

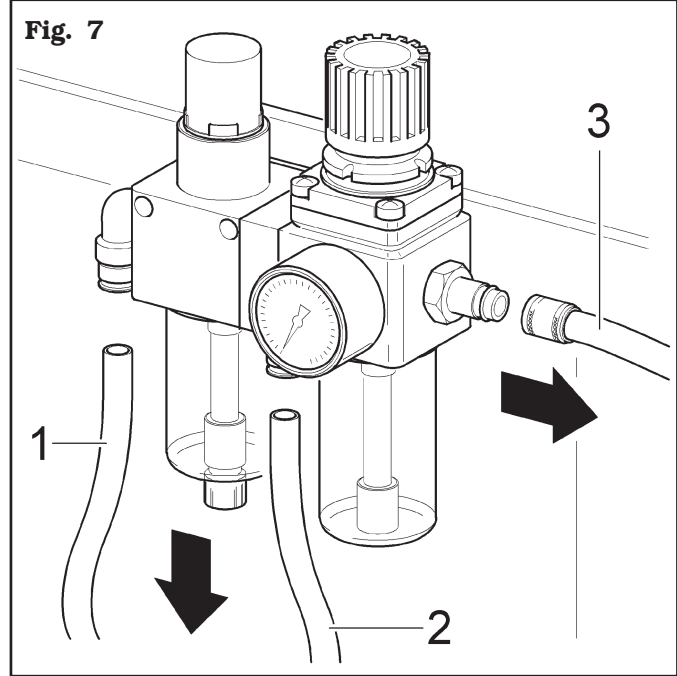
#### VSG800A69 LIFTING DEVICE

Code	Description	N.
<b>VS203058</b>	<i>VTE M10x25</i>	<b>2</b>
<b>VS228307</b>	<i>M10 triblock nut</i>	<b>2</b>
<b>VS236007</b>	<i>10,5x21x2 Flat washer</i>	<b>4</b>

### 6.2 Preparing the machine

#### 6.2.1 Pneumatic disconnection

Disconnect the pipes (**Fig. 7 ref. 1-2-3**).



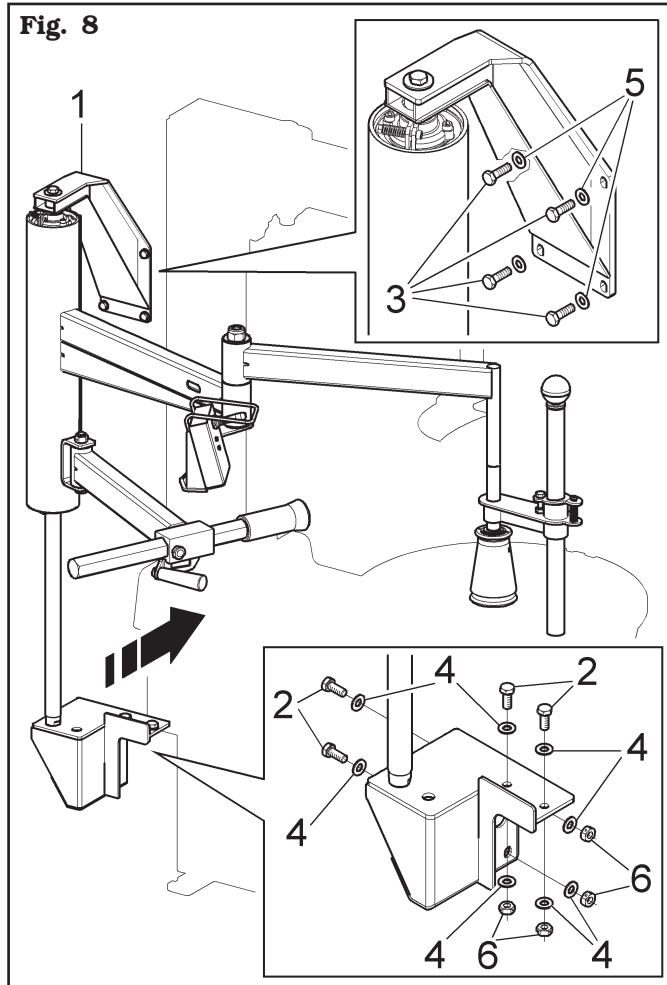
### 6.3 Installation procedures

#### 6.3.1 Installation of Plus91S Device



**BEFORE PERFORMING ANY OPERATION, THE POWER SUPPLY OF THE TYRE-CHANGING MACHINE MUST BE DISCONNECTED.**

Fix Plus91S Device (**Fig. 8 ref. 1**) to the machine, as indicated in the figure, with the screws (# VS203058) (**Fig. 8 ref. 2**), (# VS203038) (**Fig. 8 ref. 3**), the washers (# VS236007) (**Fig. 8 ref. 4**), (# VS236006) (**Fig. 8 ref. 5**) and the nuts (# VS228307) (**Fig. 8 ref. 6**).

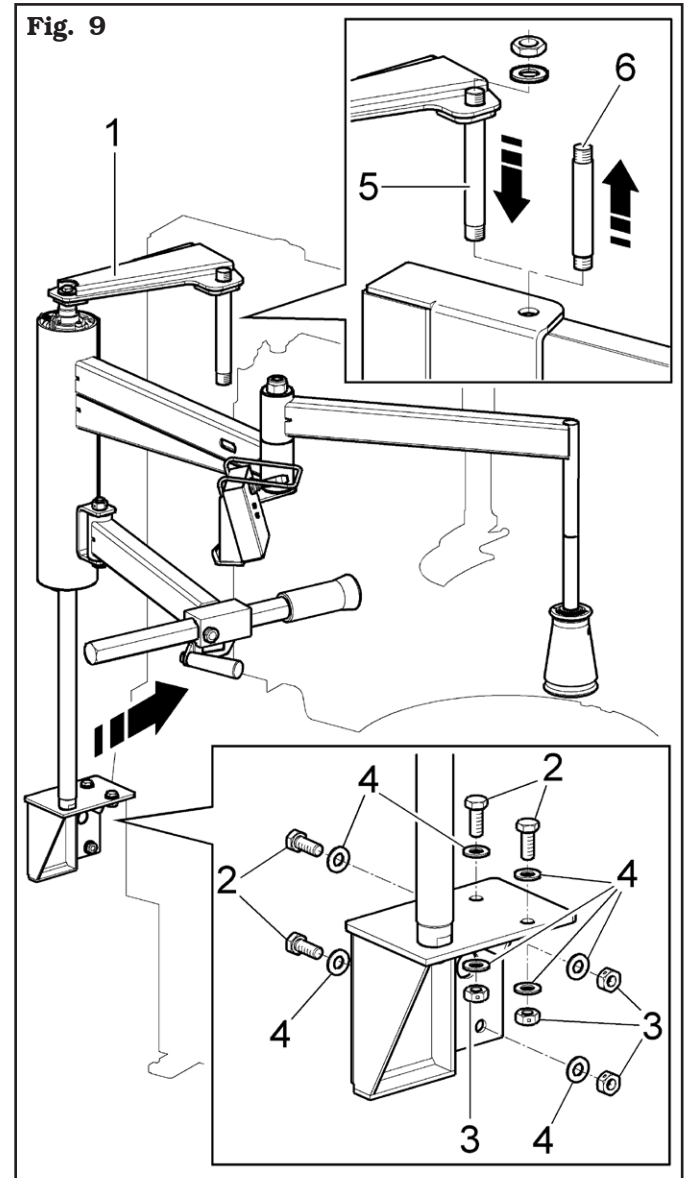


#### 6.3.2 Installation of Plus91N Device

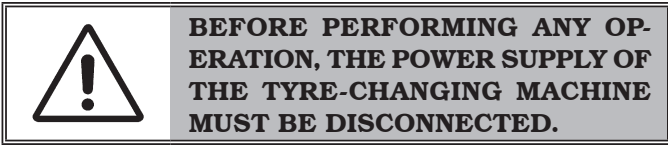


**BEFORE PERFORMING ANY OPERATION, THE POWER SUPPLY OF THE TYRE-CHANGING MACHINE MUST BE DISCONNECTED.**

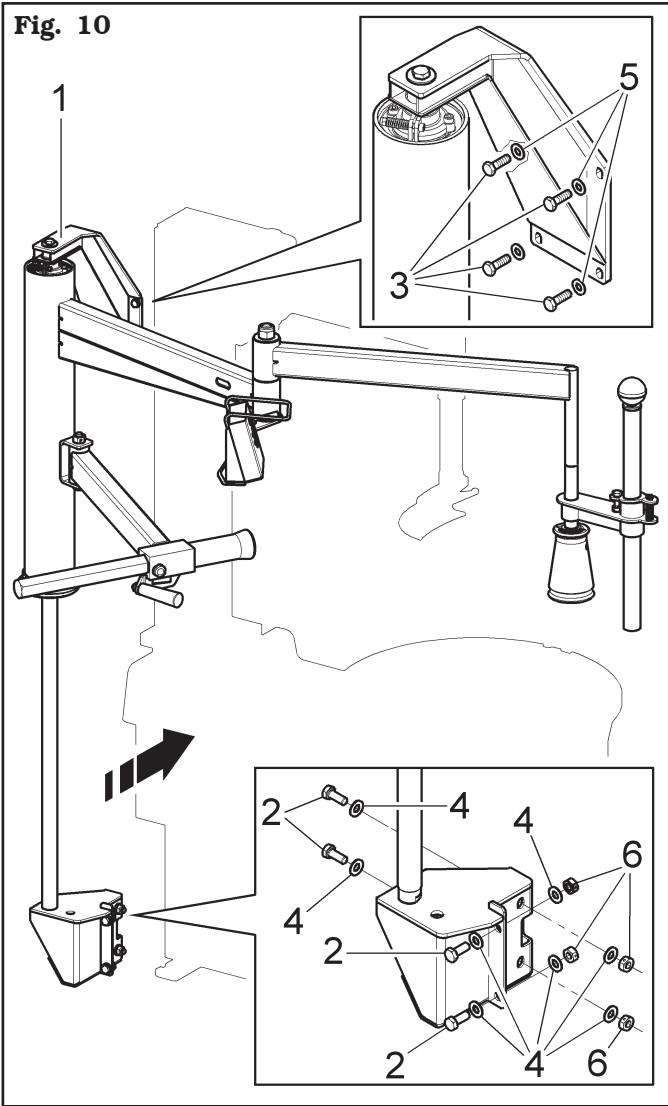
Fix Plus91N Device (**Fig. 9 ref. 1**) to the machine, as indicated in the figure, with the screws (# VS203058) (**Fig. 9 ref. 2**), the nuts (# VS228307) (**Fig. 9 ref. 3**) and the washers (# VS236007) (**Fig. 9 ref. 4**). The pin (**Fig. 9 ref. 5**) will replace the one already present on the rod (**Fig. 9 ref. 6**).



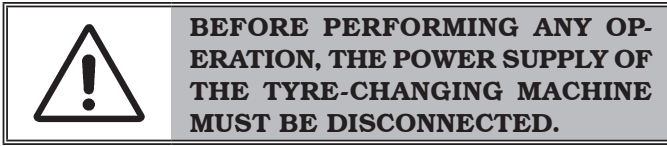
**6.3.3 Installation of Plus91SE Device**



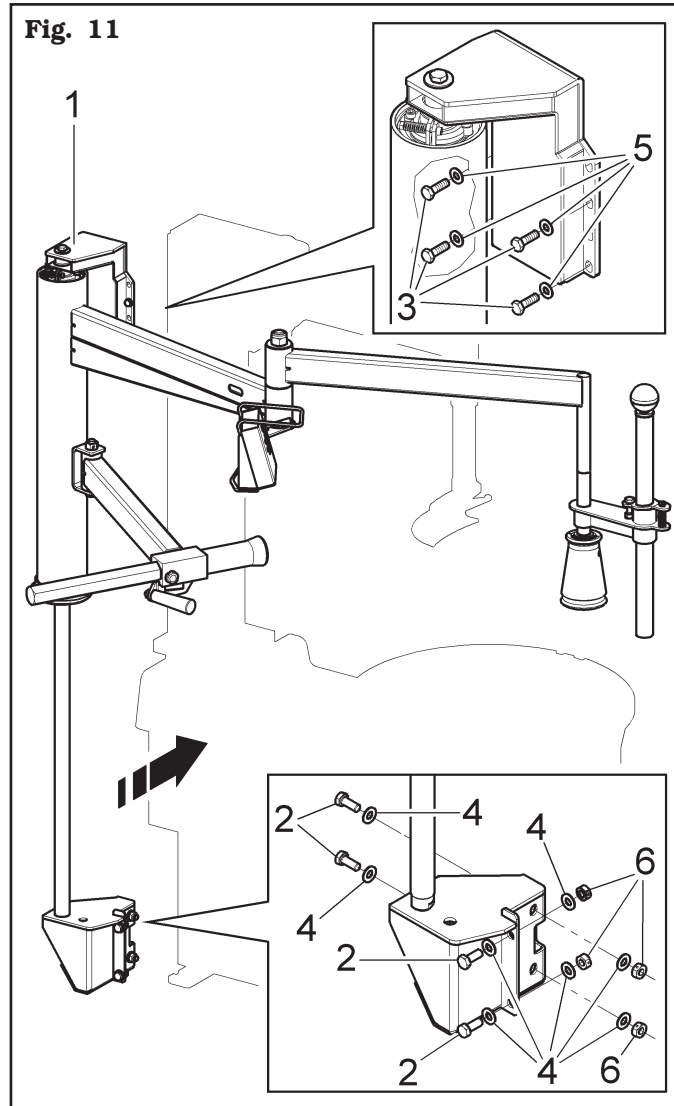
Fix Plus91SE Device (**Fig. 10 ref. 1**) to the machine, as indicated in the figure, with the screws (# VS203058) (**Fig. 10 ref. 2**), (# VS203038) (**Fig. 10 ref. 3**), the washers (# VS236007) (**Fig. 10 ref. 4**), (# VS236006) (**Fig. 10 ref. 5**) and the nuts (# 228307) (**Fig. 10 ref. 6**).



**6.3.4 Installation of Plus91SA Device**



Fix Plus91SA Device (**Fig. 11 ref. 1**) to the machine, as indicated in the figure, with the screws (# VS203058) (**Fig. 11 ref. 2**), (# VS203038) (**Fig. 11 ref. 3**), the washers (# VS236007) (**Fig. 11 ref. 4**), (# VS236006) (**Fig. 11 ref. 5**) and the nuts (# VS228307) (**Fig. 11 ref. 6**).



### 6.3.5 Installation of VSG800A69 Lifting device



**BEFORE PERFORMING ANY OPERATION, THE POWER SUPPLY OF THE TYRE-CHANGING MACHINE MUST BE DISCONNECTED.**

Unscrew the screw fixing the cylinder (**Fig. 12 ref. 2**) and the screws (**Fig. 12 ref. 3**) fixing the lower bracket (**Fig. 12 ref. 4**) to the machine. Extract the bracket downwards (**Fig. 12 ref. 4**) from the shaft (**Fig. 12 ref. 5**). Mount the lifting device unit (**Fig. 12 ref. 1**) to the device as indicated in the figure. At the end mount the lower bracket again following the operations described above in reverse order.

Fix the rotation stopper on the lateral part of tyre changing machine's frame (**Fig. 12 ref. 6**), as illustrated in the figure, using the supplied screws (**Fig. 12 ref. 7**) (# VS203058), washers (**Fig. 12 ref. 8**) (# VS236007) and nuts (**Fig. 12 ref. 9**) (# VS228307). Use the screw (**Fig. 12 ref. 10**) for casing fixing to fix rotation stopper's lower part (**Fig. 12 ref. 6**).

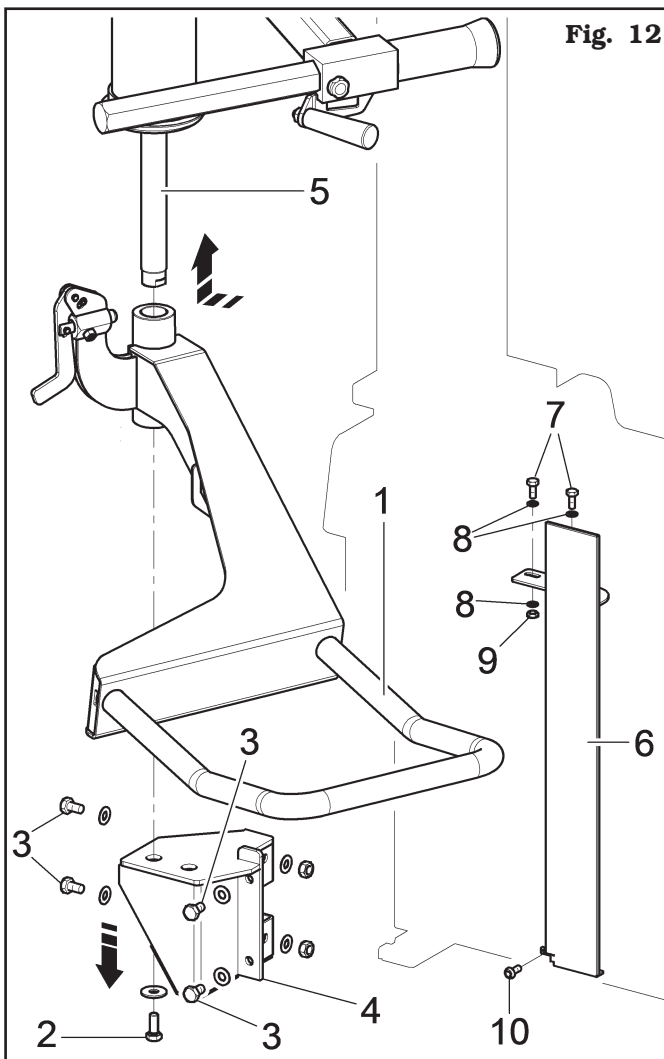


Fig. 12

### 6.4 Pneumatic connection

a - Use the clamp (**Fig. 13 ref. 4**) to fix the union (**Fig. 13 ref. 1**) on the lateral duct (**Fig. 13 ref. 3**), using the rilsan pipe (**Fig. 13 ref. 2**) coming out of it.

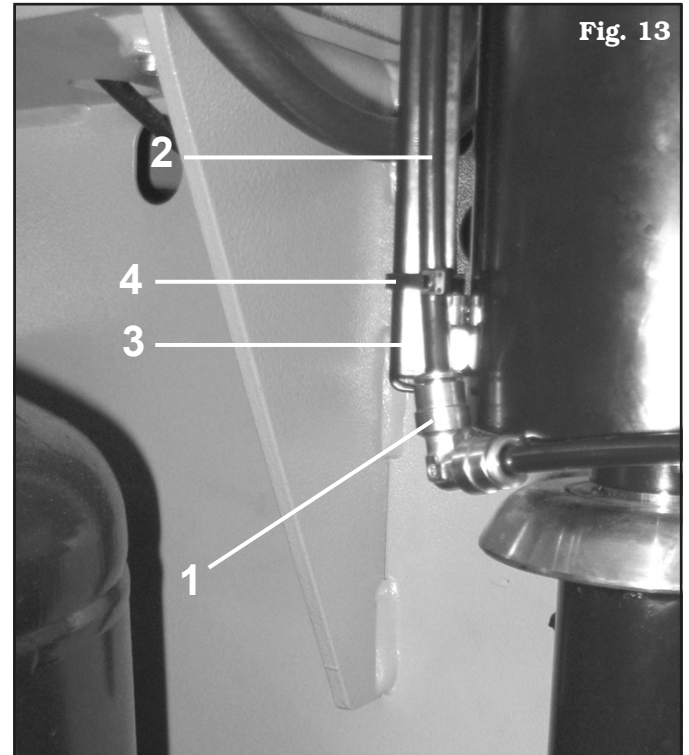


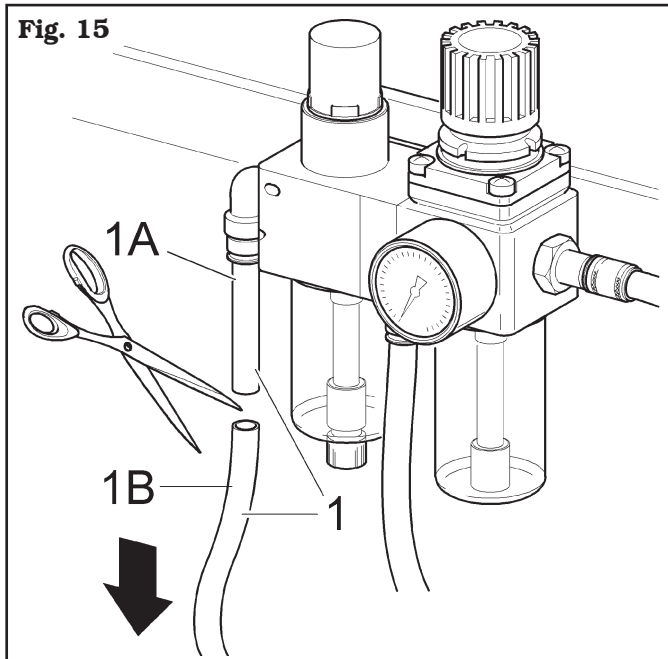
Fig. 13

b - In case of connection with tubeless inflating device it is advisable to introduce the rilsan pipe (**Fig. 14 ref. 1**) through the hole placed on tank support (**Fig. 14 ref. 1**).



Fig. 14

c - Cut the pipe (**Fig. 15 ref. 1**) as illustrated in **Fig. 15**.



d - Between the two pipe's sections (**Fig. 16 ref. 1A** - **1B**) interpose the "V" union (**Fig. 16 ref. 2**) (# VS325181). Introduce the reduction (**Fig. 16 ref. 3**) (# VS325054) and connect the pipe (**Fig. 16 ref. 4**) coming from Plus Device's control valve to the "V" union (**Fig. 16 ref. 2**).

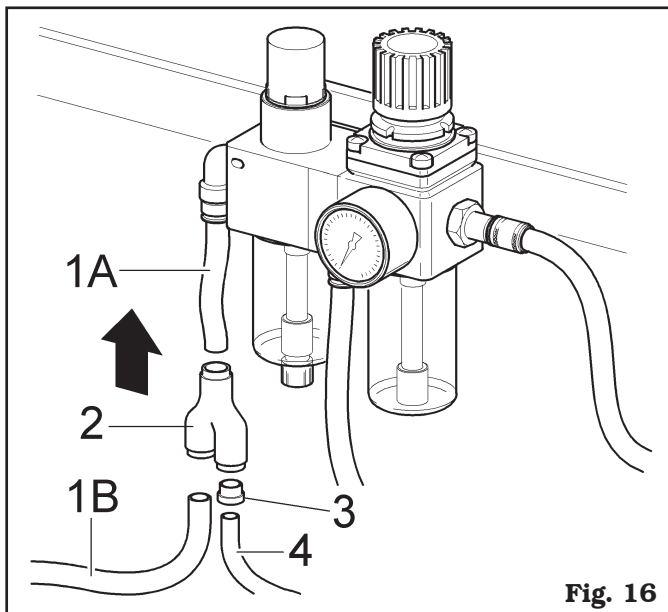


Fig. 16

Reconnect the machine supply.

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



**IF IN DOUBT DO NOT USE THE MACHINE AND REFER TO PROFESSIONALLY QUALIFIED PERSONNEL (OR TO THE SELLER).**

## 7.0 DEVICE USE



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

### 7.1 Working environment conditions

Working environment conditions should range within the allowed limits specified for the tyre removing machine on which the accessory is fitted (see manual of tyre removing machine).

### 7.2 Precaution measures during tyre removal and fitting

A - Before fitting a tyre, observe the following safety rules:



**ALWAYS USE CLEAN AND DRY TYRES AND RIMS IN GOOD CONDITIONS (IN PARTICULAR, REMOVE ALL OLD BALANCING WEIGHTS, THE ADHESIVE WEIGHTS ON THE INNER SIDE INCLUDED, AND CLEAN THE RIMS, IF NECESSARY) AND MAKE SURE NEITHER THE BEAD NOR THE TYRE TREAD ARE DAMAGED.**



**GENEROUSLY LUBRICATE THE CONTACT SURFACE OF RIM AND TYRE BEADS, USING ONLY TYRE LUBRICANTS (FREE OF WATER, HYDROCARBONS, OR SILICON).**



**REPLACE THE RIM VALVE WITH A NEW VALVE. IF THE TYRE TUBE HAS A METAL VALVE, REPLACE THE GROMMET.**



**ALWAYS MAKE SURE THAT THE TYRE IS THE RIGHT CONNECTION SIZE FOR THE RIM; NEVER FIT A TYRE UNLESS YOU ARE SURE IT IS THE RIGHT SIZE.**

B - Before removing a tyre, observe the following safety rules:



**FULLY DEFLATE THE TYRE.**



**DO NOT USE THE DEVICE FOR TYRE BEAD BREAKING OPERATIONS.**

### 7.3 Control unit

It is made up of an handle control (Fig. 17 ref. 1), positioned on the device. This handle control allows to operate the vertical translation of the presser roll (Fig. 1-2-3-4 ref. 4) and of the rotating bead depressing roll unit (Fig. 1-2-3-4 ref. 1). Lift the lever (Fig. 17 ref. 2) to operate the upwards translation, and lower the lever (Fig. 17 ref. 2) to perform the downwards translation. The device arms positioning next to the tyre is a completely manual operation.

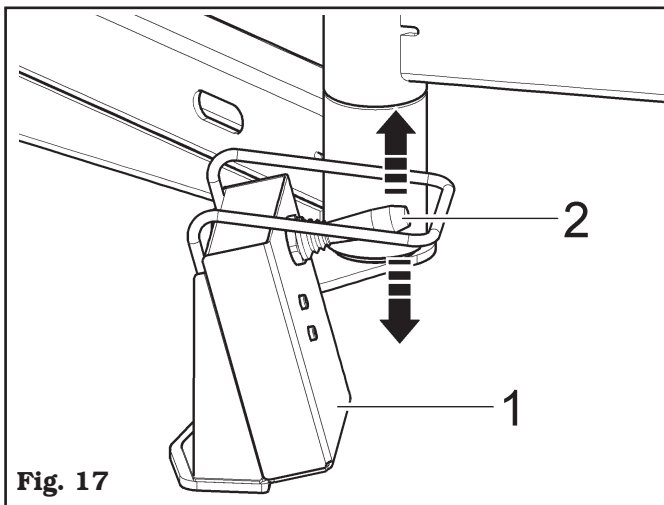


Fig. 17

### 7.4 Use of the lifting device

Make sure the clamping hook (Fig. 18 ref. 1) is positioned as indicated in Fig. 18 and close the Plus Device in rest position.

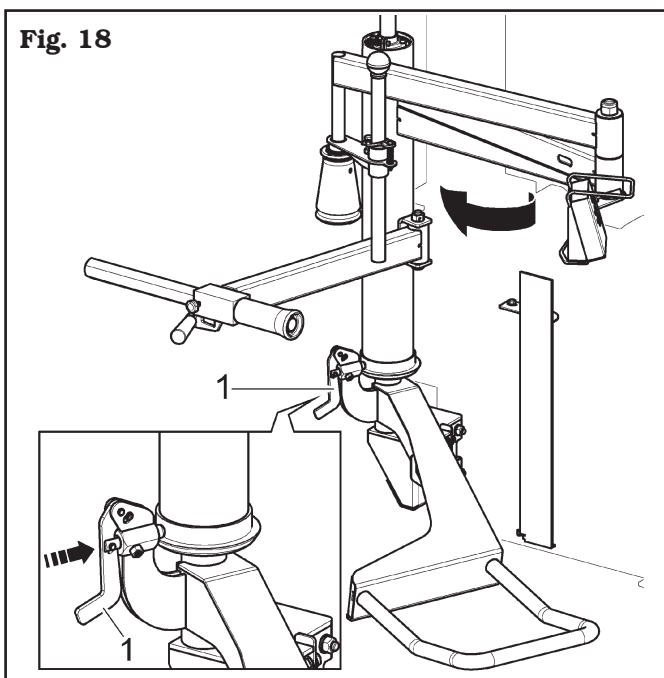


Fig. 18

1 - After having placed the wheel on the lifting device (Fig. 19 ref. 1), lift the control unit's lever (Fig. 19 ref. 2) and bring the wheel to a level where it can be shifted to the mandrel by hand (see Fig. 20).

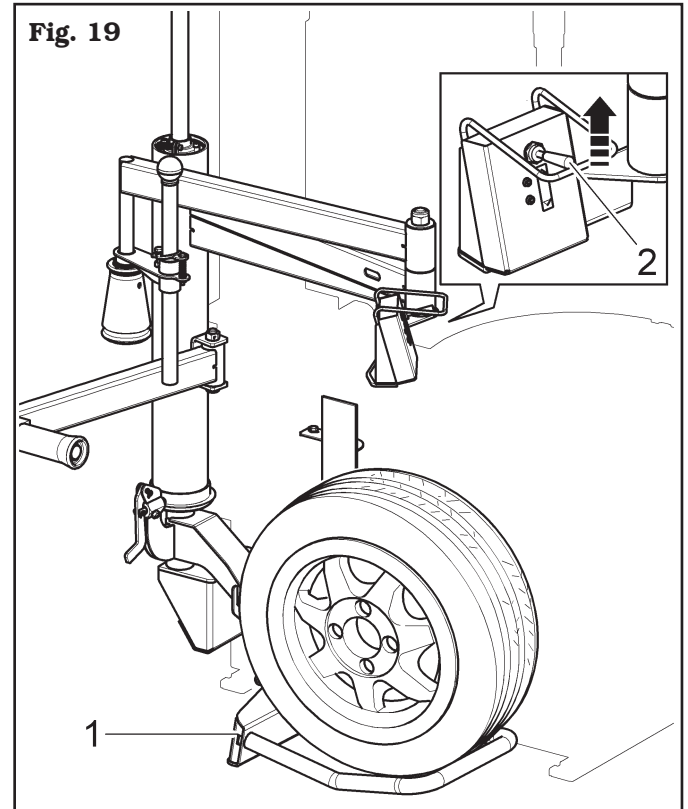


Fig. 19

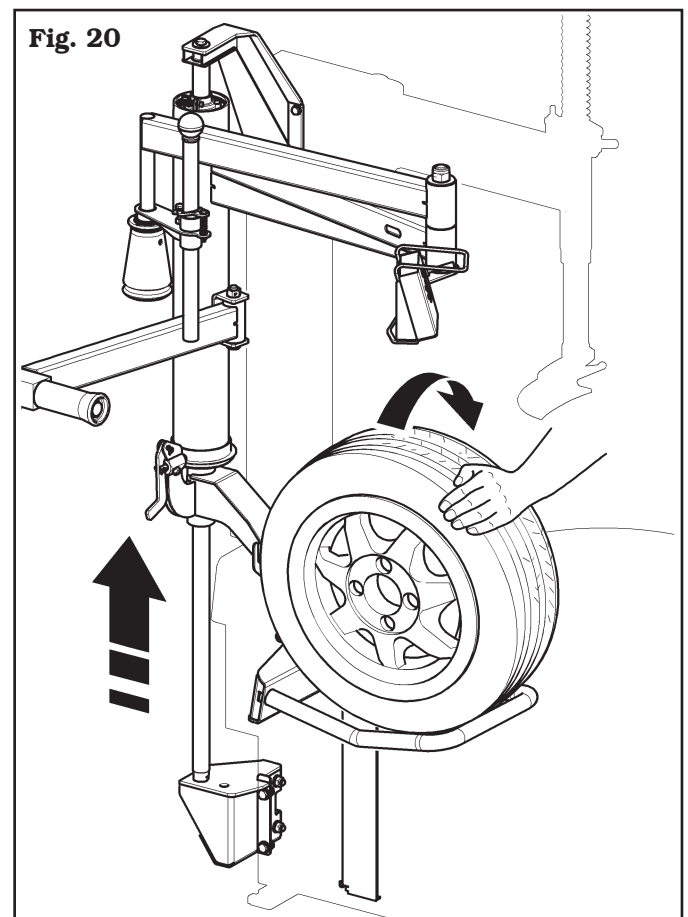
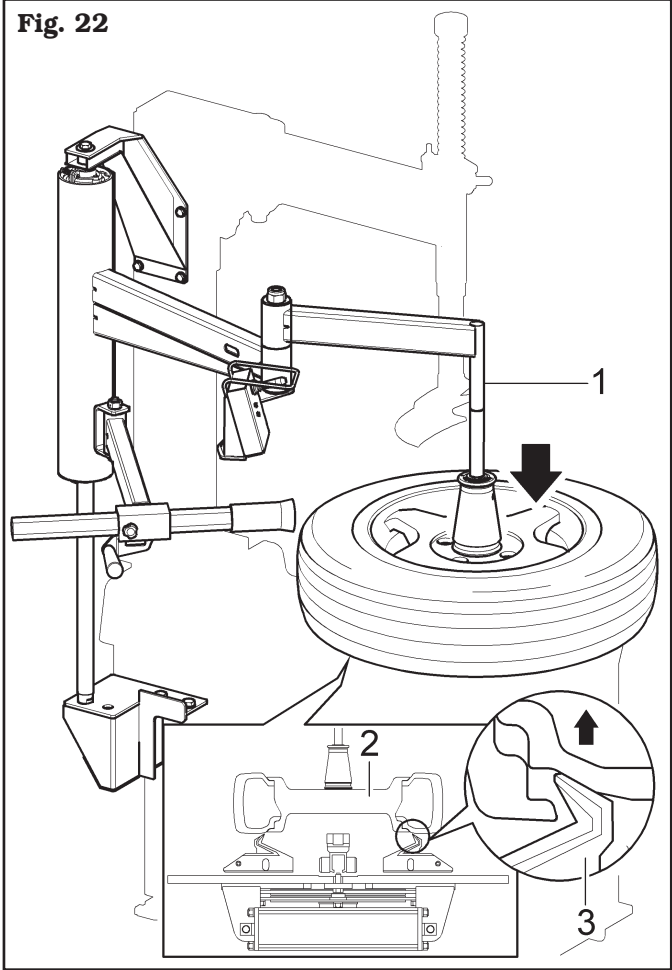
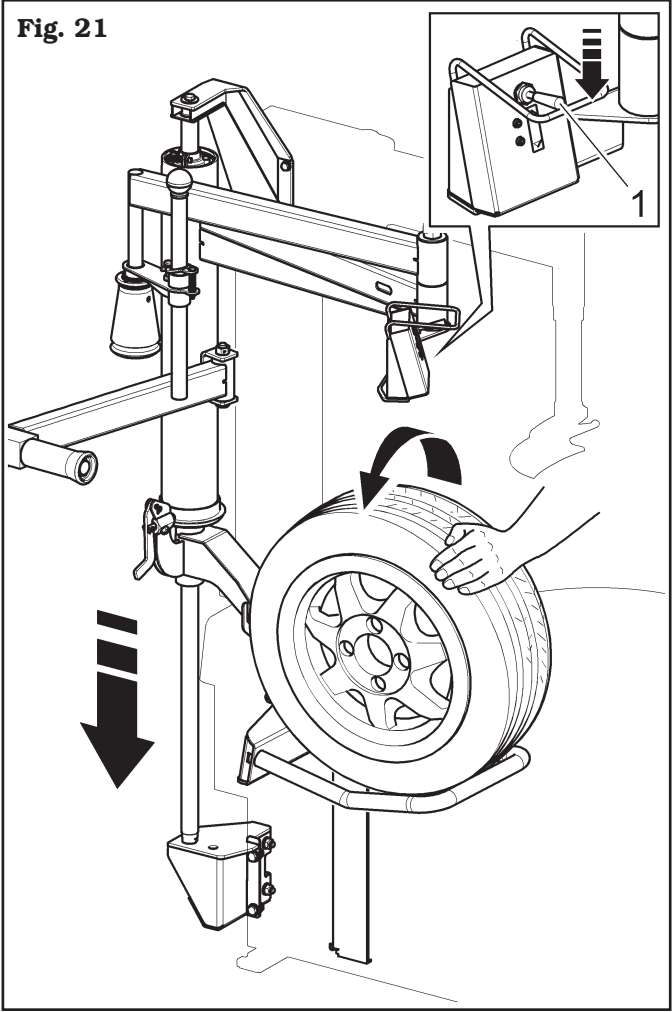



Fig. 20

- 2 - Place the wheel on the mandrel.
- 3 - Lower the control unit's lever to lower the lifting device.
- 4 - Perform all the tyre fitting and removal operations and unlock the wheel from the mandrel.
- 5 - Raise the lifting device by lifting the control unit's lever again.
- 6 - Place the wheel on the lifting device.
- 7 - Lower the control unit's lever again (**Fig. 21 ref. 1**) in order to make the lifting device lower and to bring the wheel to the floor keeping a hand on it (see **Fig. 21**).

**7.5 Rim blocking with tyre lowered on self-centring chucks**

In case of lowered tyres, it is possible to block the rim (**Fig. 22 ref. 2**) inside the jaws (**Fig. 22 ref. 3**) through the vertical thrust of the rotating bead depressing roll unit (**Fig. 22 ref. 1**) (after the supplied cone has been applied) placing it as shown in **Fig. 22**.





**KEEP A HAND ON THE WHEEL DURING ALL LIFTING DEVICE'S RISING AND DESCENT PHASES, TO PREVENT THE WHEEL FROM FALLING FROM THE LIFTER BECAUSE OF IMBALANCES.**

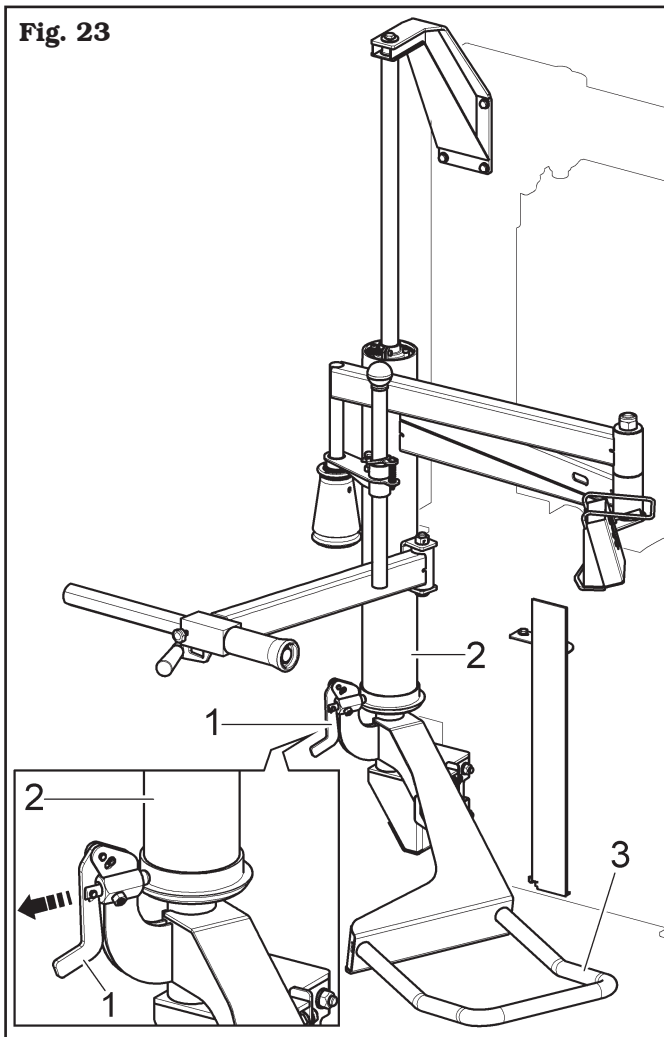
## 7.6 Demounting the tyre

### PLUS91SE - PLUS91SA DEVICE



MAKE SURE THE CLAMPING HOOK (FIG. 23 REF. 1) IS POSITIONED AS INDICATED IN FIG. 23 TO RELEASE THE CYLINDER (FIG. 23 REF. 2) FROM THE LIFTING DEVICE (FIG. 23 REF. 3).

Fig. 23

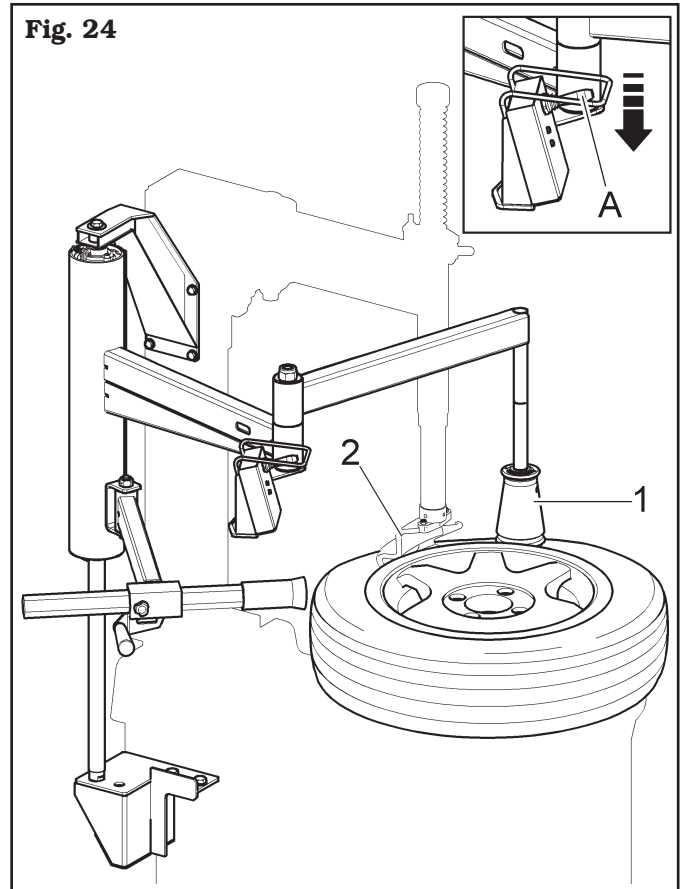


Tighten the mandrel on the rim by means of the appropriate pedal control.

#### Extraction of the first bead

a - Place the roll of the rotating bead depressing roll unit (Fig. 24 ref. 1) as shown in the figure (not far from head's nail (Fig. 24 ref. 2)). Lower the tyre using the roll of the rotating bead depressing unit (Fig. 24 ref. 1) (by lowering the control unit lever (Fig. 24 ref. A)), until allowing an easy positioning of the head (Fig. 24 ref. 2). Then block the head.

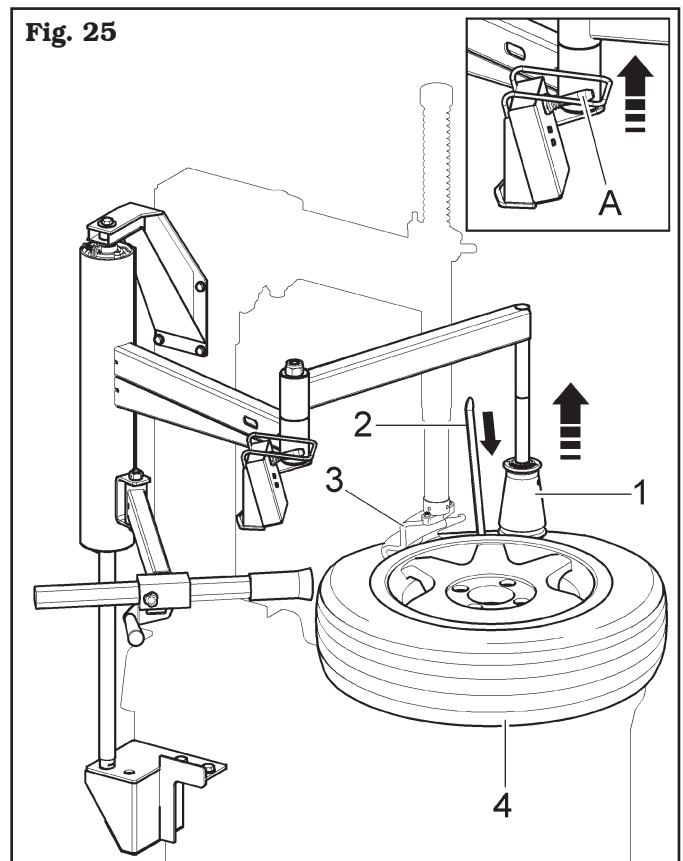
Fig. 24



b - Insert the bead lifting lever (Fig. 25 ref. 2) between tyre (Fig. 25 ref. 4) and head (Fig. 25 ref. 3).

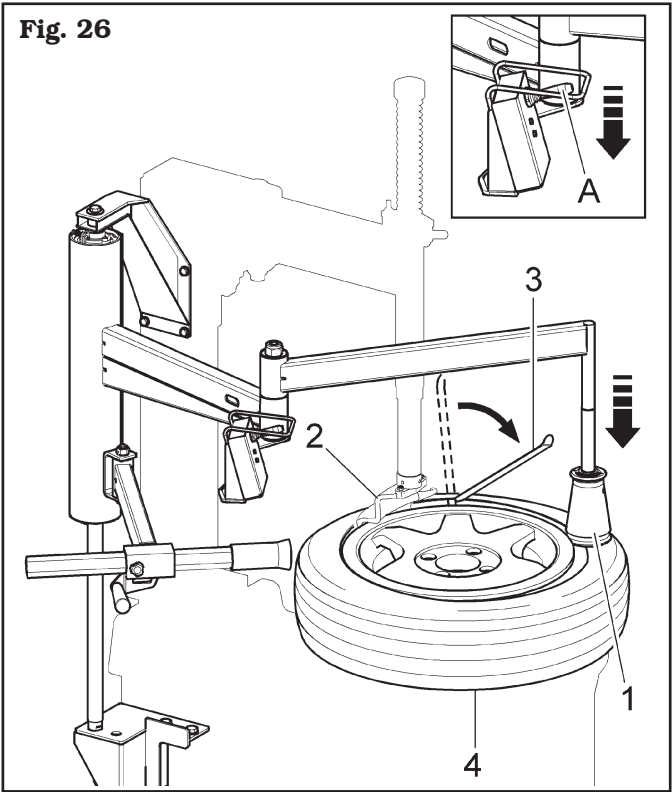
c - Lift the roll of Plus Device rotating bead depressing unit (Fig. 25 ref. 1) by lifting the lever (Fig. 25 ref. A).

Fig. 25

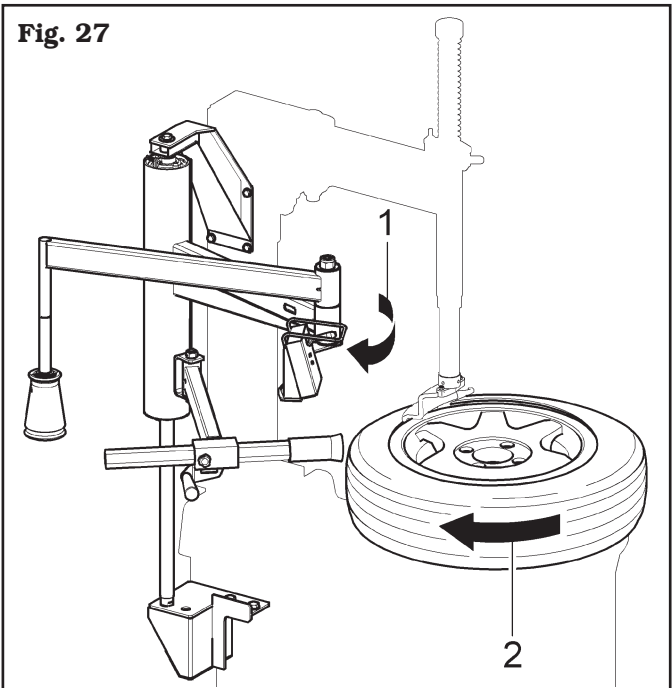




- d - Place the roll of the rotating bead depressing unit again (**Fig. 26 ref. 1**) at approximately 120° from machine-head axis (as shown in the figure) and lower the tyre (**Fig. 26 ref. 4**) operating the control unit's lever downwards (**Fig. 26 ref. A**), until the tyre bead is placed next to the rim groove.
- e - Load the tyre's bead through the appropriate lever (**Fig. 26 ref. 3**) on the head (**Fig. 26 ref. 2**).

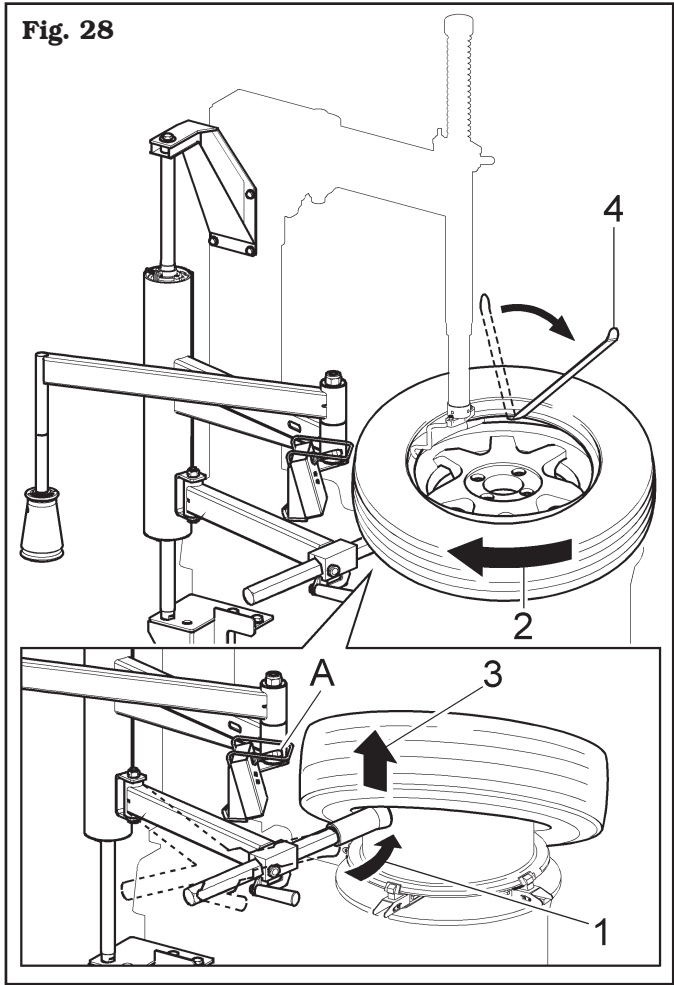


- f - Lift Plus Device and close it again in rest position as indicated in figure (**Fig. 27 ref. 1**).
- g - Carry out first bead's extraction by turning the mandrel clockwise (**Fig. 27 ref. 2**).



**Extraction of the second bead**

- h - Turn the bead lifting roll (**Fig. 28 ref. 1**) from its position until placing it between mandrel's plate and tyre, at approximately 1 cm from rim's outer lower edge.
- i - Lift the tyre with the bead lifting roll (**Fig. 28 ref. 3**) moving the control unit's lever upwards (**Fig. 28 ref. A**).
- l - Load the second bead on the head by means on the proper lever (**Fig. 28 ref. 4**).
- m - Turn the mandrel clockwise (**Fig. 28 ref. 2**) and extract the tyre from the rim.



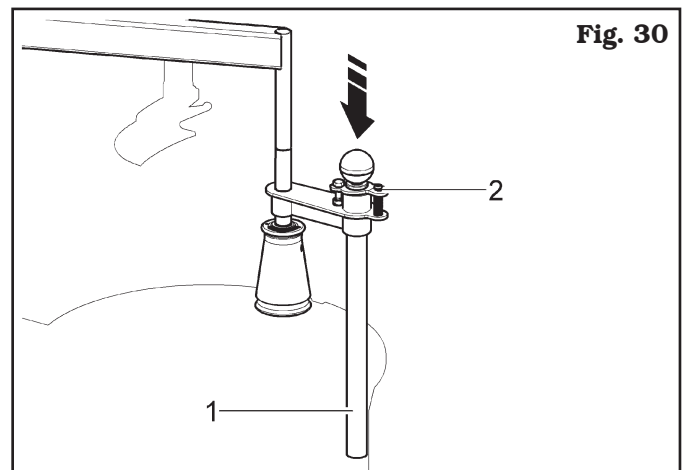
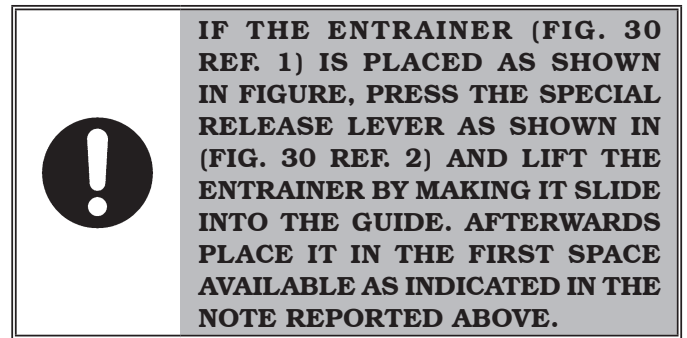
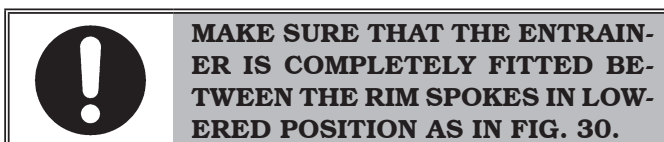
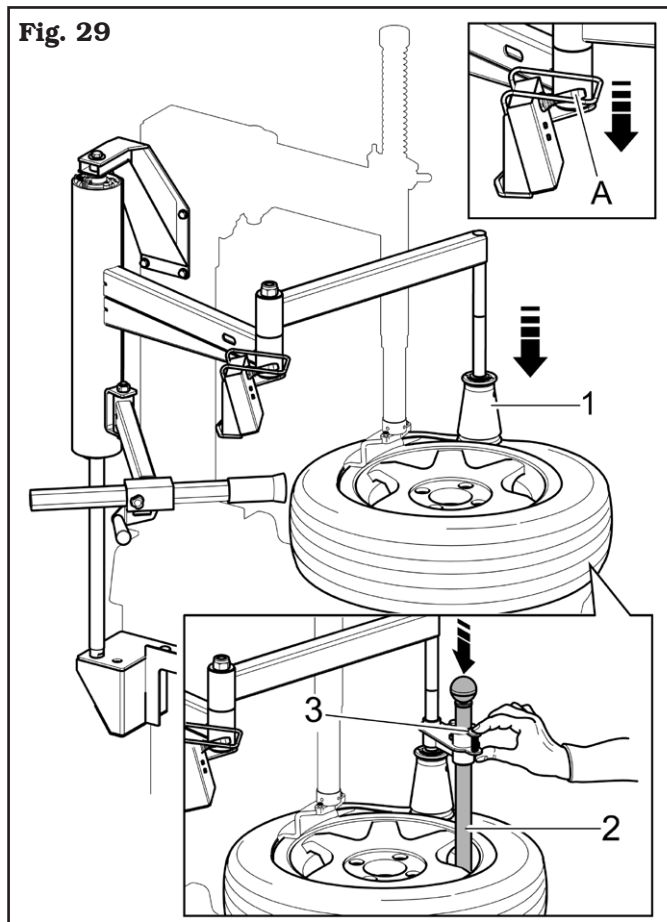
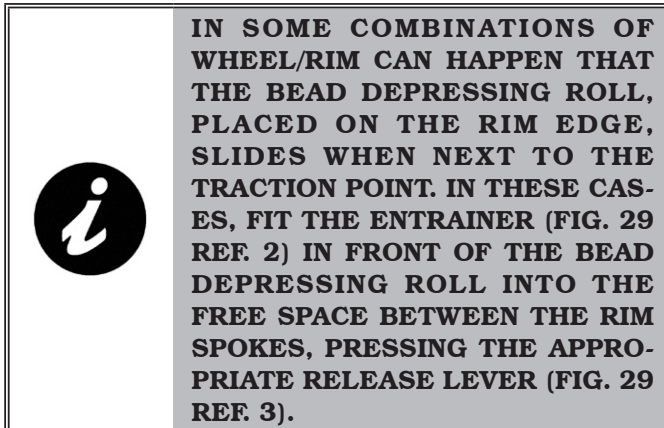
**7.6.1 Demounting of the second bead through the bead lifting roll**

For disassembly of the lower bead the bead lifting roll can be used as an alternative. Move the tool pulling it away from the working area.

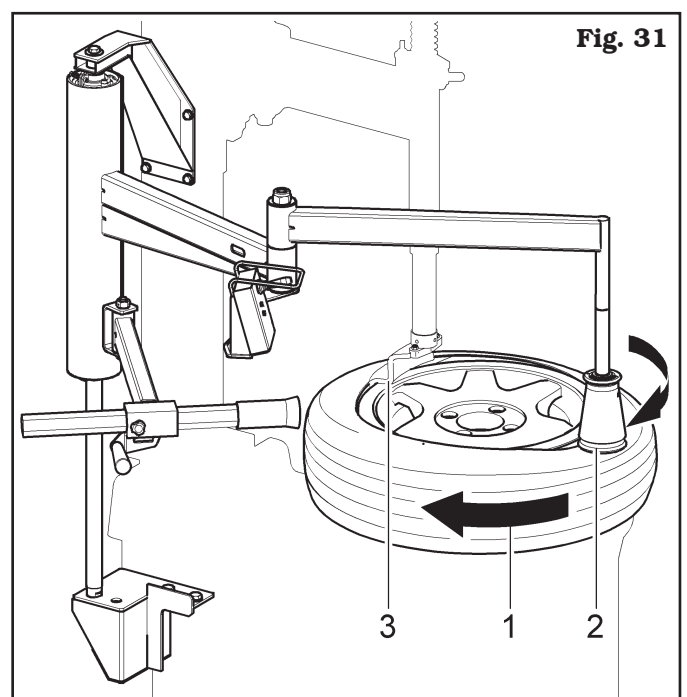
- a - Lift roll and tyre just next to the upper rim edge using the control.
- b - Therefore, move the roll forward with the provided control so that it is inserted between the rim edge and lower bead.
- c - Then, rotate and complete bead disassembly.

### 7.7 Mounting the tyre

- a - Mount the first bead on the rim. The Device is not necessary to complete this operation.
- b - Place the bead depressing roll (Fig. 29 ref. 1) as indicated in the figure.
- c - Lower the bead depressing roll (Fig. 29 ref. 1) operating the control provided (Fig. 29 ref. A) until the tyre bead is placed next to the rim groove.

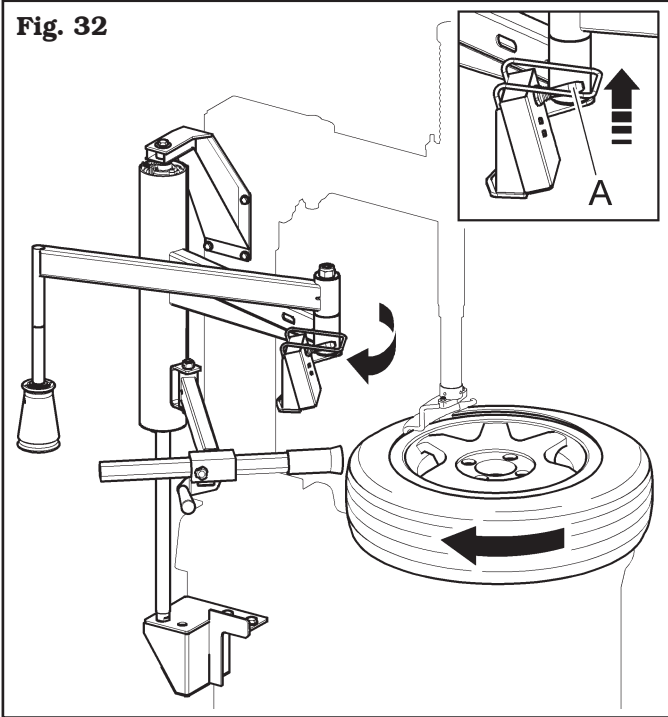


- d - Start mandrel clockwise rotation (Fig. 31 ref. 1) by means of the proper pedal control: while performing this operation keep a hand on the bead depressing roll (Fig. 31 ref. 2). Such operation, that does not require any physical effort, helps keeping bead depressing roll's correct position on the tyre.
- e - Stop mandrel rotation when the bead depressing roll (Fig. 31 ref. 3) is at 9 o'clock compared to the mounting tool.

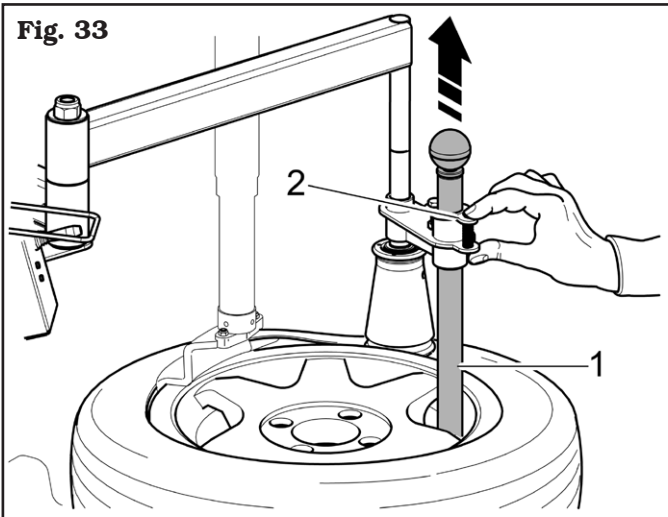


f - End the second bead's introduction by turning the mandrel clockwise (see **Fig. 32**).


g - Lift Plus Device with the relevant control (**Fig. 32 ref. A**) and close it again in rest position (see **Fig. 32**).




h - To disengage the entrainer (**Fig. 33 ref. 1**) from the working area, lift it from the tyre by means of the special release lever (**Fig. 33 ref. 2**) to allow the sliding in its own guide for its alignment with the wedge tool to return into rest position.



**8.0 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 SELF-CENTRER.**


To guarantee the efficiency and correct functioning of the accessory, 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 operation.
- Remove deposits of tyre powder and other waste materials with a vacuum cleaner.

**DO NOT BLOW IT WITH COMPRESSED AIR.**

- Clean and periodically oil the roller horizontal rod.
- Grease every month the joints of the roll holding arm and the lower disc and the sliding guides of the mobile guide.



**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!!**

## 9.0 TROUBLESHOOTING TABLE



Possible troubles which might occur to the accessory 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 device, set the main switch to “0” and lock it in this position.



**CONTACT AUTHORIZED TECHNICAL SERVICE**

**do not try and service alone**

<b>Problem</b>	<b>Possible cause</b>	<b>Remedy</b>
No movement is generated when the control lever is operated.	1. Supply missing. 2. The supply pipes have not been correctly assembled. 3. The control valve is not working.	1. Check supply. 2. Check pipes fitting. 3. Call for technical assistance. 
When the control lever is operated movement arises in one direction only.	The control valve is not working.	Call for technical assistance. 

## 10.0 TECHNICAL DATA

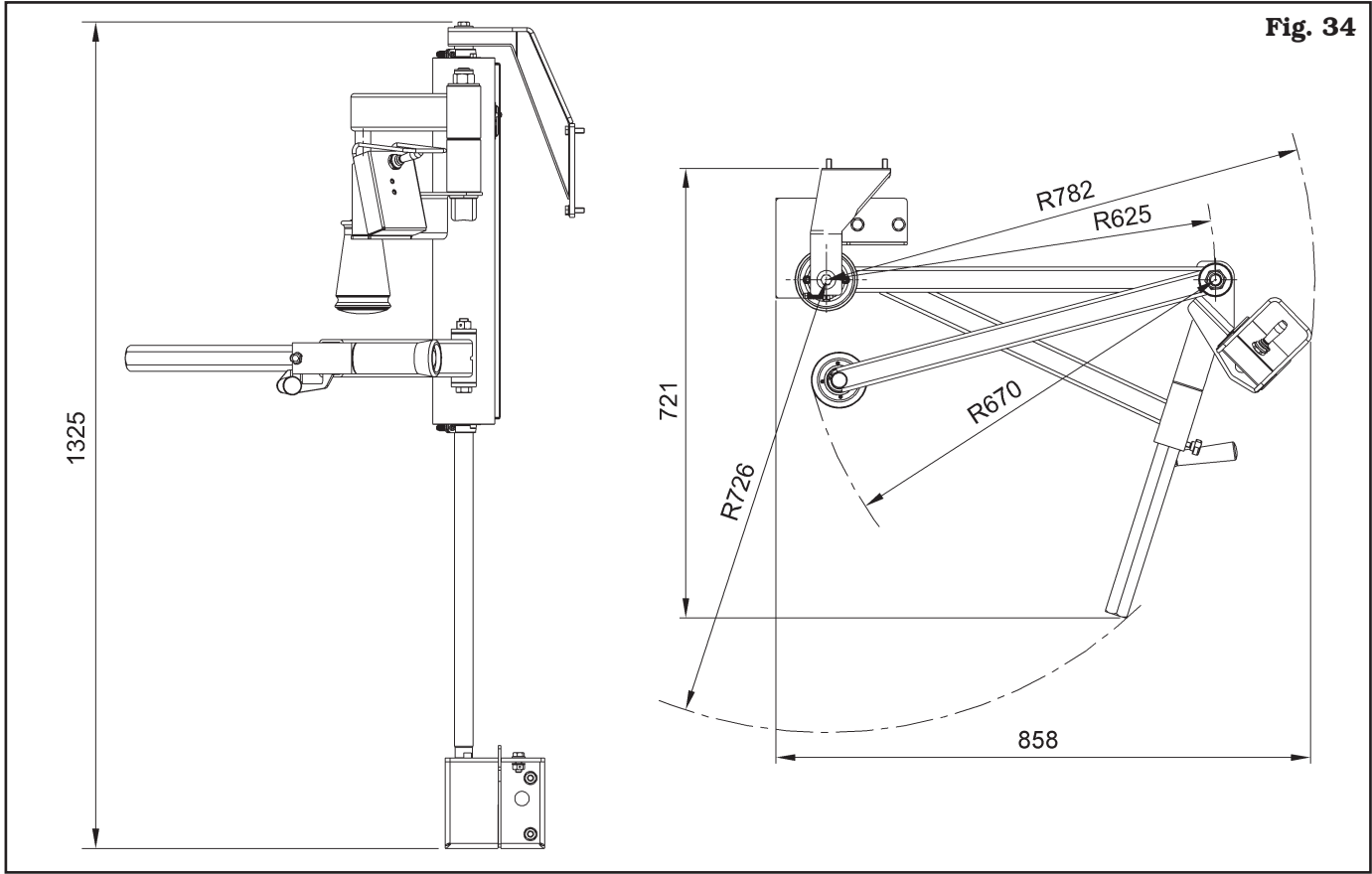
Rim width: ..... 15"  
 Rim diameter: ..... **min. 8" max 30"**  
 Force on roll: ..... **4000 N (8 bar)**  
 Operating pressure: ..... **8-10 bar**

### 10.1 Weight

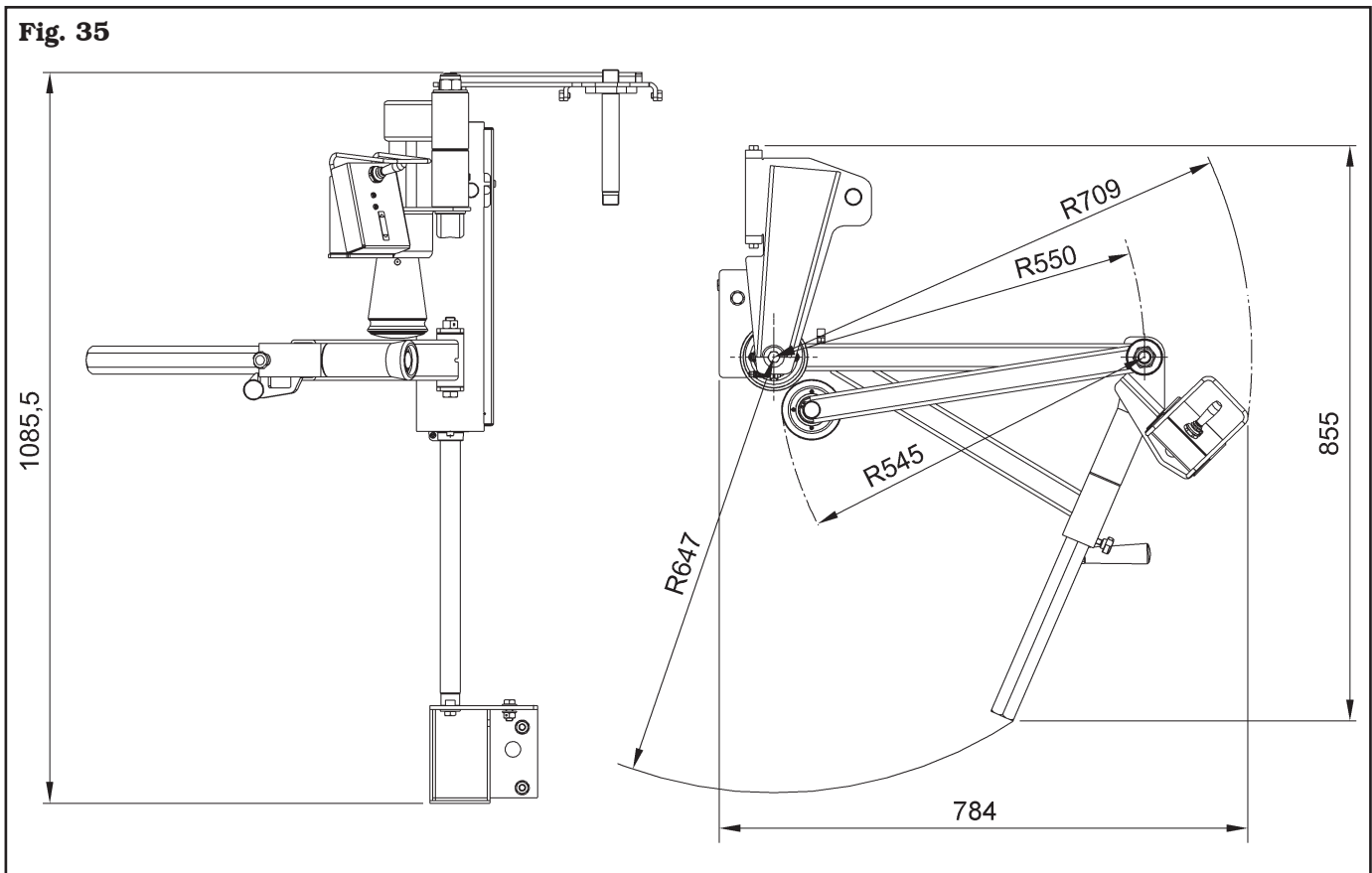
**PLUS91S DEVICE** ..... **max 50 Kg**  
**PLUS91N DEVICE** ..... **max 40 Kg**  
**PLUS91SE DEVICE** ..... **max 40 Kg**  
**PLUS91SA DEVICE** ..... **max 40 Kg**  
**LIFTING DEVICE VSG800A69** ..... **max 10 Kg**

**10.2 Dimensions**

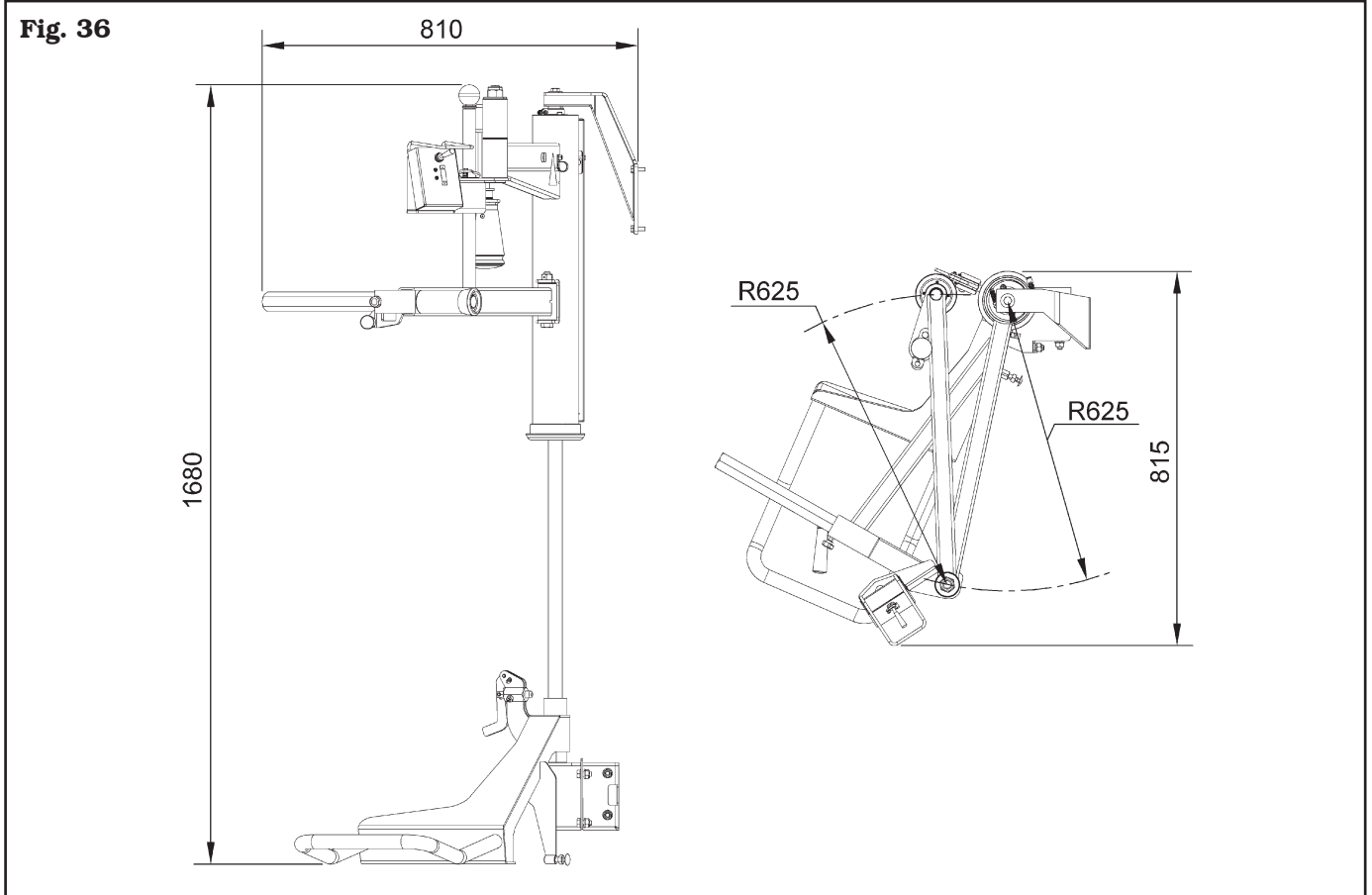
**PLUS91S DEVICE**



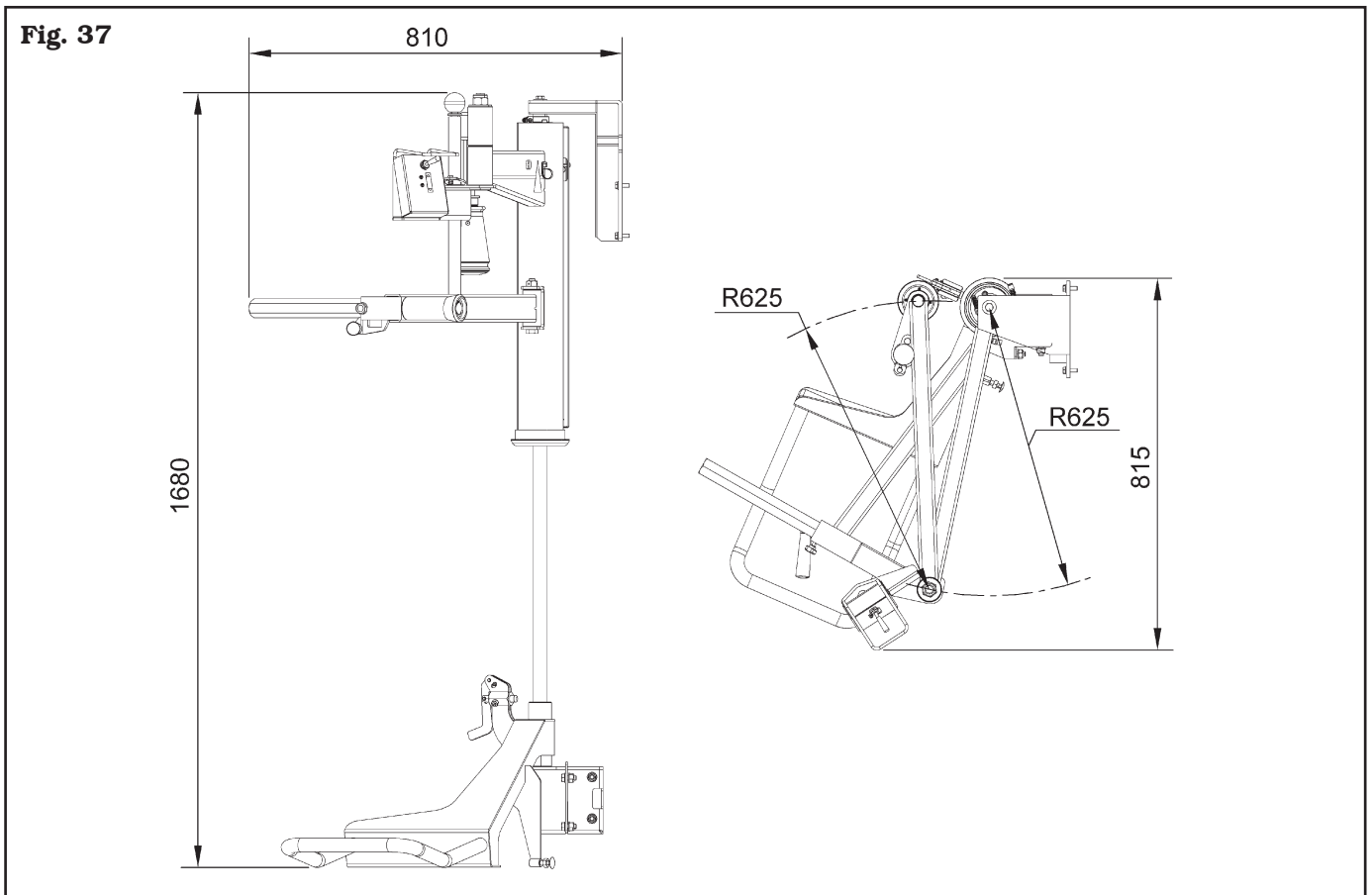
**PLUS91N DEVICE**



**PLUS91SE DEVICE - VSG800A69**



**PLUS91SA DEVICE - VSG800A69**



## 11.0 STORING

If storing for long periods disconnect the main power supply and take measures to protect the device from dust build-up. Lubricate parts that could be damaged from drying out.

## 12.0 SCRAPPING

When the decision is taken not to make further use of the accessory, it is advisable to make it inoperative by removing the connection pressure hoses.

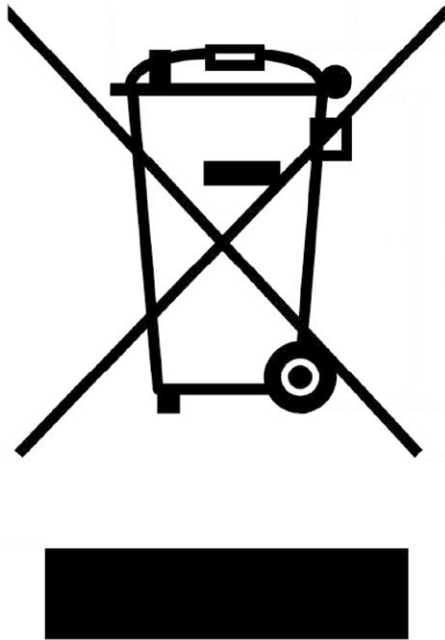
The accessory is to be considered as special waste and should be dismantled into homogeneous parts.

Dispose of it in accordance with current legislation.

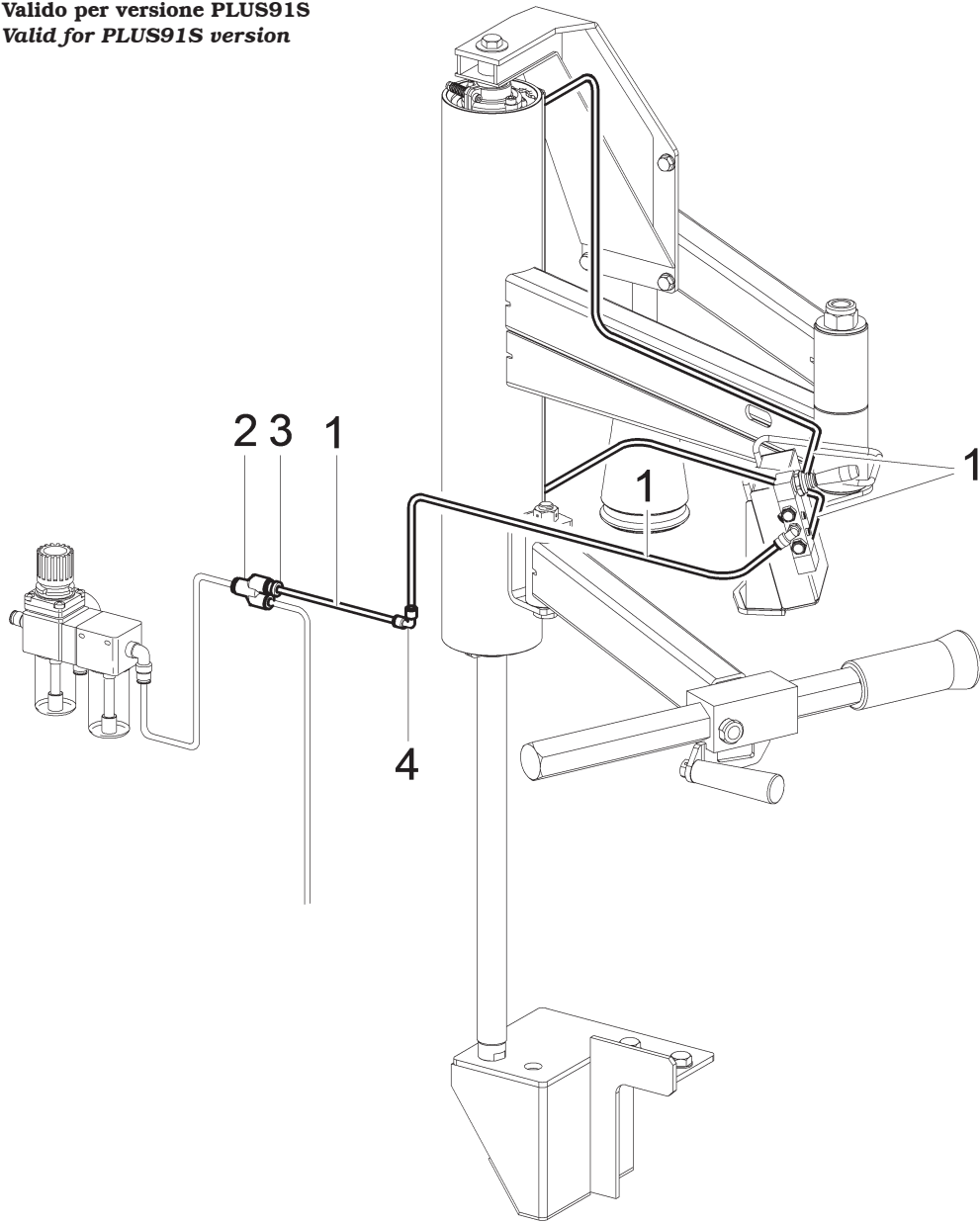
## 13.0 FUNCTIONAL DIAGRAMS

Here follows a list of the machine functional diagrams.

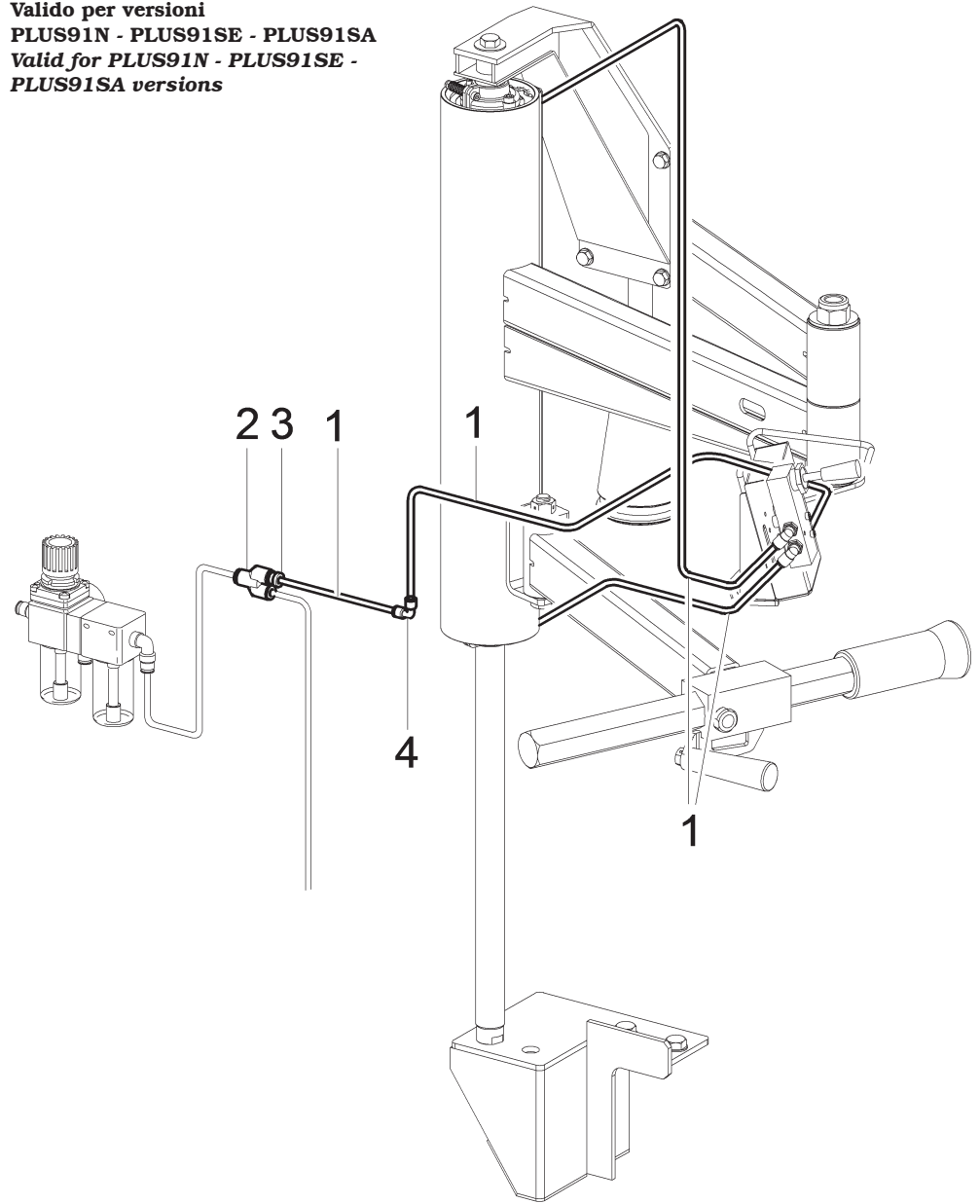
Fig. 38



Valido per versione PLUS91S  
Valid for PLUS91S version



Valido per versioni  
PLUS91N - PLUS91SE - PLUS91SA  
Valid for PLUS91N - PLUS91SE -  
PLUS91SA versions



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

Tavola N°A - Rev. 1

SCHEMA PNEUMATICO 1/2  
PNEUMATIC CIRCUIT DIAGRAM 1/2  
PNEUMATIKPLAN 1/2  
SCHEMA PNEUMATIQUE 1/2  
ESQUEMA NEUMATICO 1/2

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PLUS91S - PLUS91N  
PLUS91SE - PLUS91SA  
VSG800A69





## 7700-R002-6\_V

**PLUS91S  
PLUS91N  
PLUS91SE  
PLUS91SA  
VSG800A69**

- I** 14.0 LISTA DEI COMPONENTI
- GB** 14.0 LIST OF COMPONENTS
- D** 14.0 TEILELISTE
- F** 14.0 LISTE DES PIÈCES DETACHÉES
- E** 14.0 LISTA DE PIEZAS



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



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



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



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



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

- Per eventuali chiarimenti interpellare il più vicino rivenditore.
- For any further information please contact your local dealer.
- Für Rückfragen wenden Sie sich bitte an den nächsten Wiederverkäufer.
- Pour tout renseignement complémentaire s'adresser au revendeur le plus proche.
- En caso de dudas, para eventuales aclaraciones, póngase en contacto con el distribuidor más próximo.

**SOMMARIO - SUMMARY - INHALT**  
**SOMMAIRE - SUMARIO**

<p><b>Tavola N°1 - Rev. 1 __ PLUS91S ..... 4</b>          DISPOSITIVO PLUS91S          PLUS91S DEVICE          PLUS91S VORRICHTUNG          DISPOSITIF PLUS91S          DISPOSITIVO PLUS91S</p>	<p><b>Tavola N°6 - Rev. 2 __ VS770090062 ..... 9</b>          GRUPPO CILINDRO ASSEMBLATO          ASSEMBLED CYLINDER UNIT          ZUSAMMENGESETZTER ZYLINDERSATZ          GROUPE CYLINDRE ASSEMBLÉ          GRUPO CILINDRO ENSEMBLADO</p>
<p><b>Tavola N°2 - Rev. 3 __ PLUS91N ..... 5</b>          DISPOSITIVO PLUS91N          PLUS91N DEVICE          PLUS91N VORRICHTUNG          DISPOSITIF PLUS91N          DISPOSITIVO PLUS91N</p>	<p><b>Tavola N°7 - Rev. 2 __ VS770090093 ..... 10</b>          GRUPPO CILINDRO ASSEMBLATO          ASSEMBLED CYLINDER UNIT          ZUSAMMENGESETZTER ZYLINDERSATZ          GROUPE CYLINDRE ASSEMBLÉ          GRUPO CILINDRO ENSEMBLADO</p>
<p><b>Tavola N°3 - Rev. 3 __ PLUS91SE ..... 6</b>          DISPOSITIVO PLUS91SE          PLUS91SE DEVICE          PLUS91SE VORRICHTUNG          DISPOSITIF PLUS91SE          DISPOSITIVO PLUS91SE</p>	<p><b>Tavola N°8 - Rev. 0 __ VS770090050 ..... 11</b>          BRACCIO STALLONATORE          BEAD BREAKER ARM          ABRÜCKARM          BRAS IMPRIMÉ          BRAZO DESTALONADOR</p>
<p><b>Tavola N°4 - Rev. 1 __ VSG800A69 ..... 7</b>          SUPPORTO RUOTA          WHEEL SUPPORT          REIFENHALTERUNG          SUPPORT ROUE          SOPORTE RUEDA</p>	<p><b>Tavola N°9 - Rev. 1 __ VS770790421 ..... 12</b>          VALVOLA COMANDO CILINDRI          CYLINDERS CONTROL VALVE          VENTIL STEUERUNG ZYLINDEREN          VANNE COMMANDE CYLINDRES          VÁLVULA MANDO CILINDROS</p>
<p><b>Tavola N°5 - Rev. 1 __ VS770090041 ..... 8</b>          GRUPPO CILINDRO ASSEMBLATO          ASSEMBLED CYLINDER UNIT          ZUSAMMENGESETZTER ZYLINDERSATZ          GROUPE CYLINDRE ASSEMBLÉ          GRUPO CILINDRO ENSEMBLADO</p>	<p><b>Tavola N°10 - Rev. 2 __ PLUS91SA ..... 14</b>          DISPOSITIVO PLUS91SA          PLUS91SA DEVICE          PLUS91SA VORRICHTUNG          DISPOSITIF PLUS91SA          DISPOSITIVO PLUS91SA</p>

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

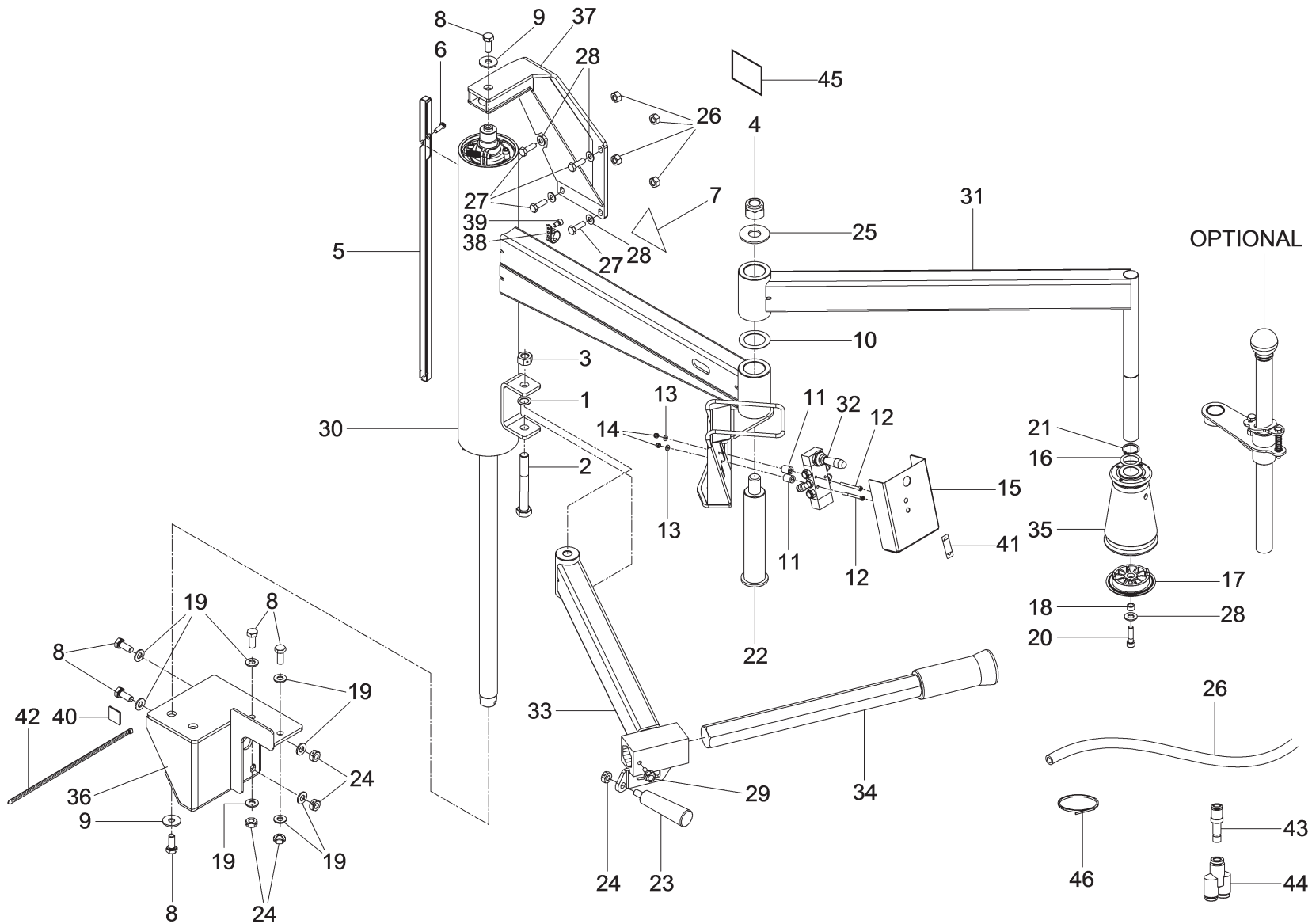
ELENCO GRUPPI MACCHINA  
MACHINE UNITS LIST  
MASCHINEGRUPPENLISTE  
LISTE DES GROUPES MACHINE  
LISTA DE GRUPOS MÁQUINA

**Pag. 3 di 14**

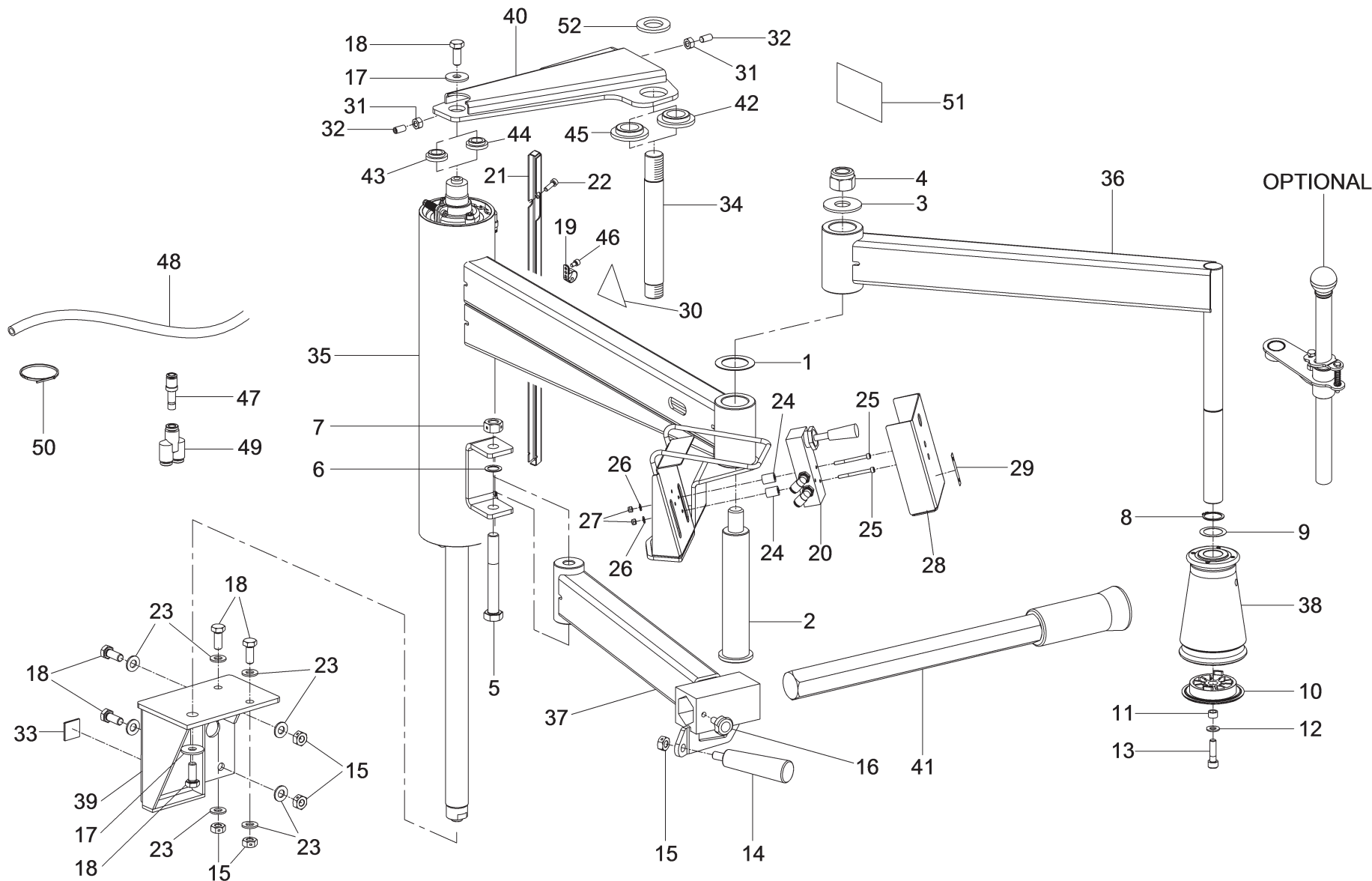
**Rev. 0**

PLUS91S - PLUS91N  
PLUS91SE - PLUS91SA  
VSG800A69

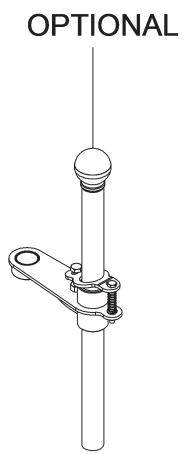
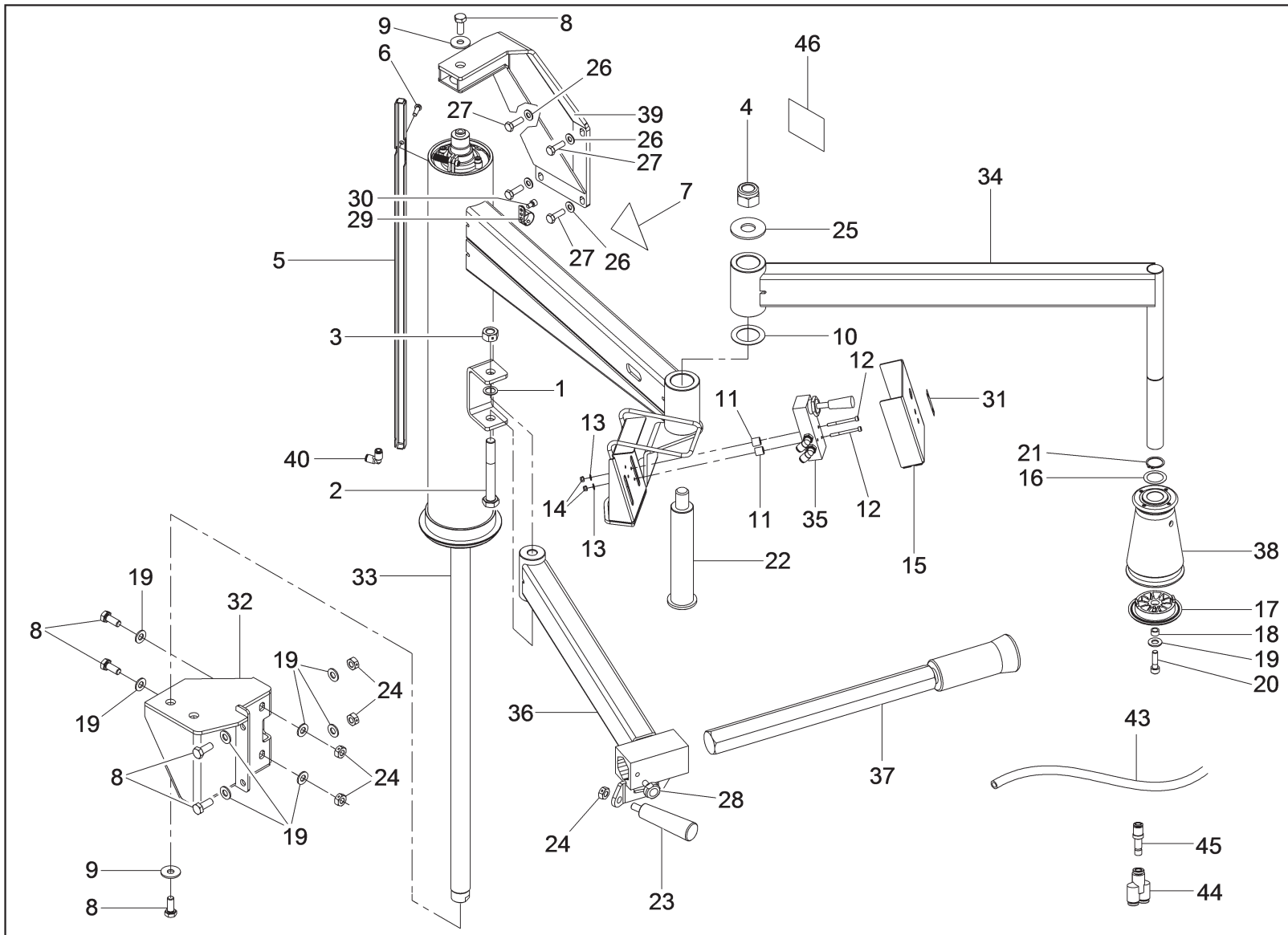
<b>Tav.</b>	<b>Cod.</b>	<b>PLUS91S</b>	<b>PLUS91N</b>	<b>PLUS91SE</b>	<b>PLUS91SA</b>	<b>VSG800A69</b>
1	PLUS91S	●				
2	PLUS91N		●			
3	PLUS91SE			●		
4	VSG800A69			OPT	OPT	●
5	VS770090041	●				
6	VS770090062		●			
7	VS770090093			●	●	
8	VS770090050	●	●	●	●	
9	VS770790421		●	●	●	
	VS770790420	●				
10	PLUS91SA				●	



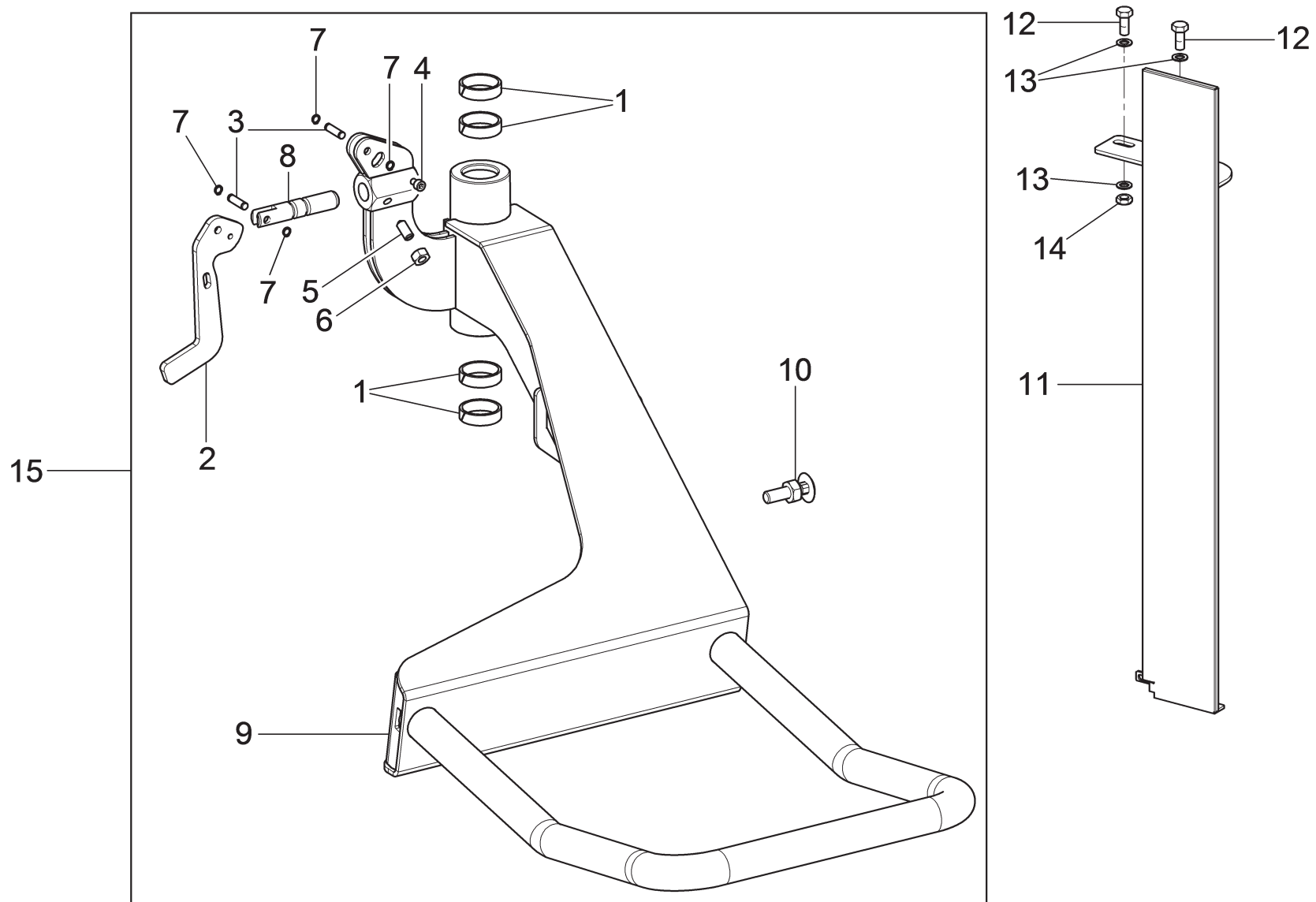
PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
•				
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			DISPOSITIVO PLUS91S PLUS91S DEVICE PLUS91S VORRICHTUNG DISPOSITIF PLUS91S DISPOSITIVO PLUS91S	
<b>Tavola N°1 - Rev. 1</b>		<b>PLUS91S</b>	<b>Pag. 4 di 14</b> PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69	



PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
	●			
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<i>DISPOSITIVO PLUS91N PLUS91N DEVICE PLUS91N VORRICHTUNG DISPOSITIF PLUS91N DISPOSITIVO PLUS91N</i>	
<b>Tavola N°2 - Rev. 3</b>		<b>PLUS91N</b>		<b>Pag. 5 di 14</b> PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69

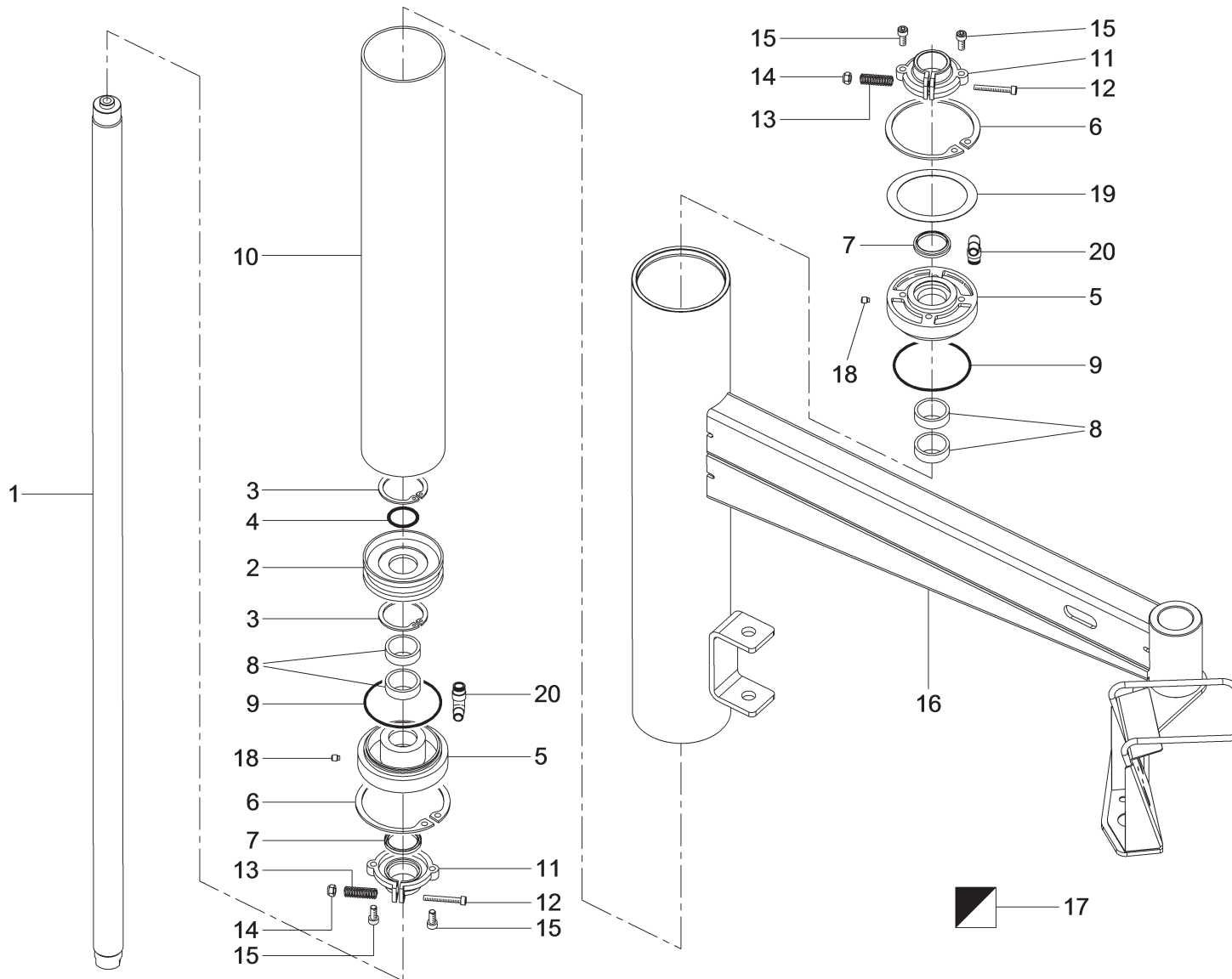


PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>		•	DISPOSITIVO PLUS91SE PLUS91SE DEVICE PLUS91SE VORRICHTUNG DISPOSITIF PLUS91SE DISPOSITIVO PLUS91SE	
<b>Tavola N°3 - Rev. 3</b>		<b>PLUS91SE</b>	<b>Pag. 6 di 14</b> PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69	

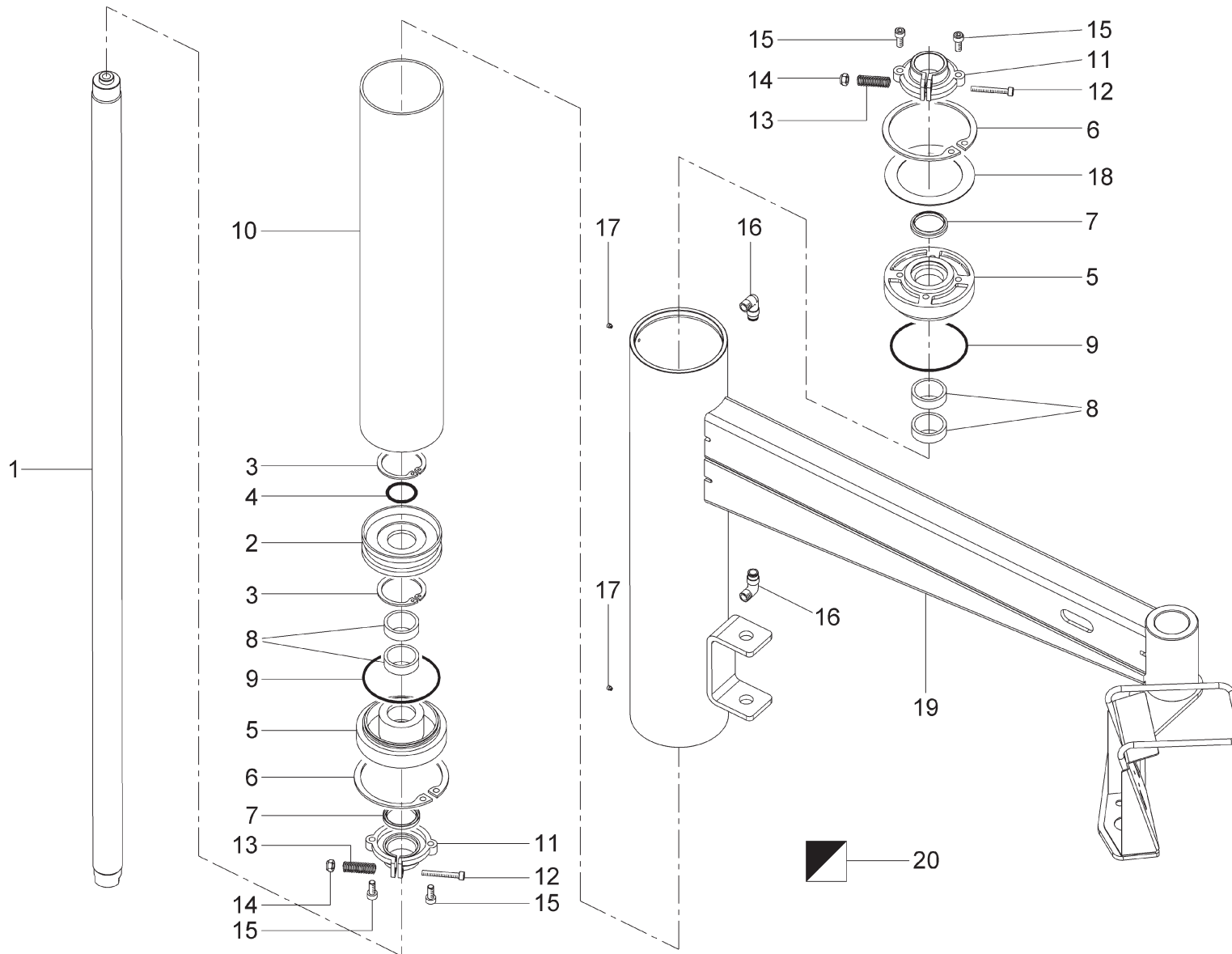


PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
		OPT	OPT	•
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			SUPPORTO RUOTA WHEEL SUPPORT REIFENHALTERUNG SUPPORT ROUE SOPORTE RUEDA	<b>Pag. 7 di 14</b>
<b>Tavola N°4 - Rev. 1</b>		<b>VSG800A69</b>		PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69

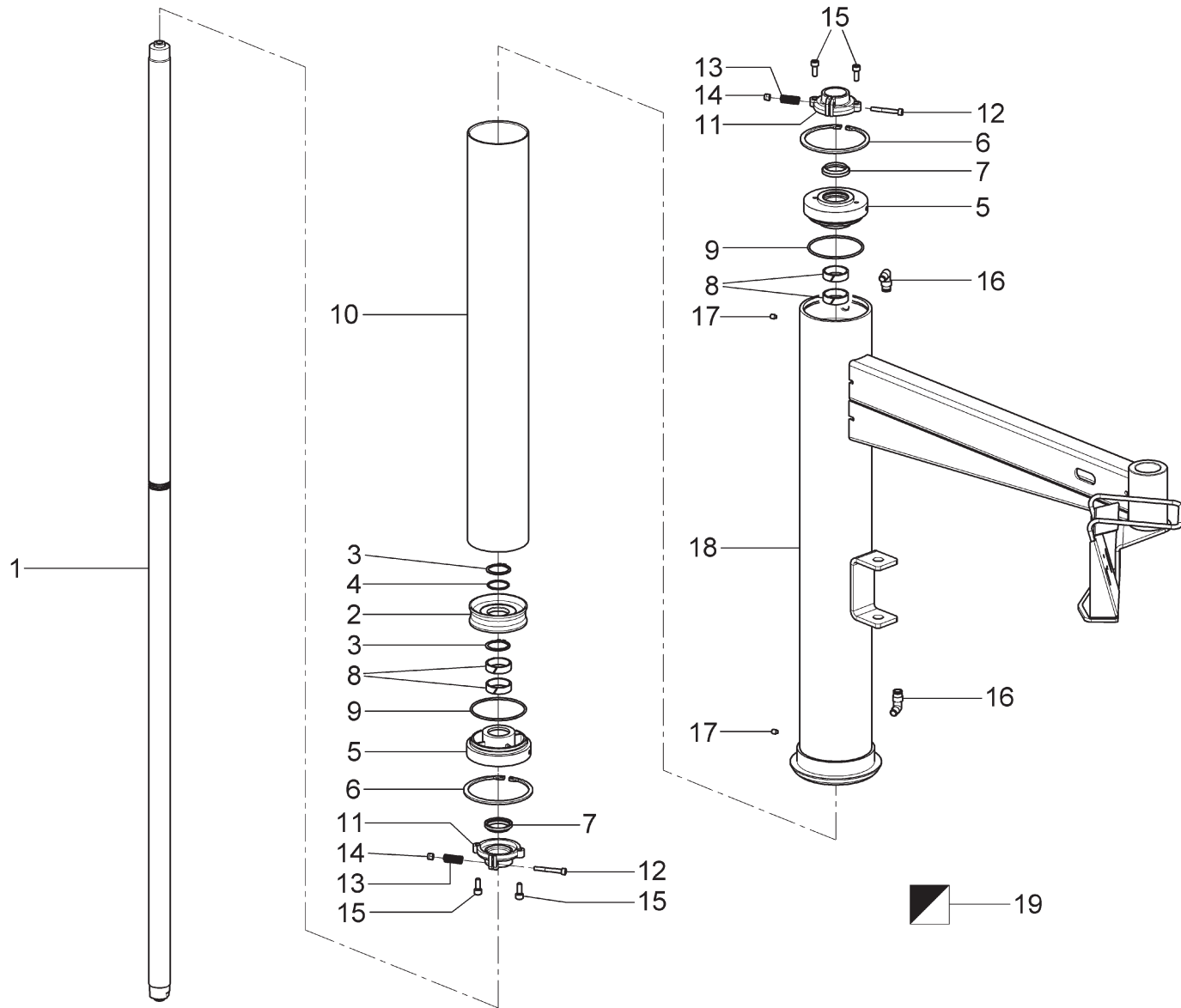




PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
•				
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<b>Pag. 8 di 14</b>	
<b>Tavola N°5 - Rev. 1</b>		<b>VS770090041</b>	GRUPPO CILINDRO ASSEMBLATO ASSEMBLED CYLINDER UNIT ZUSAMMENSETZER ZYLINDERSATZ GROUPE CYLINDRE ASSEMBLE GRUPO CILINDRO ENSEMBLADO	
			PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69	

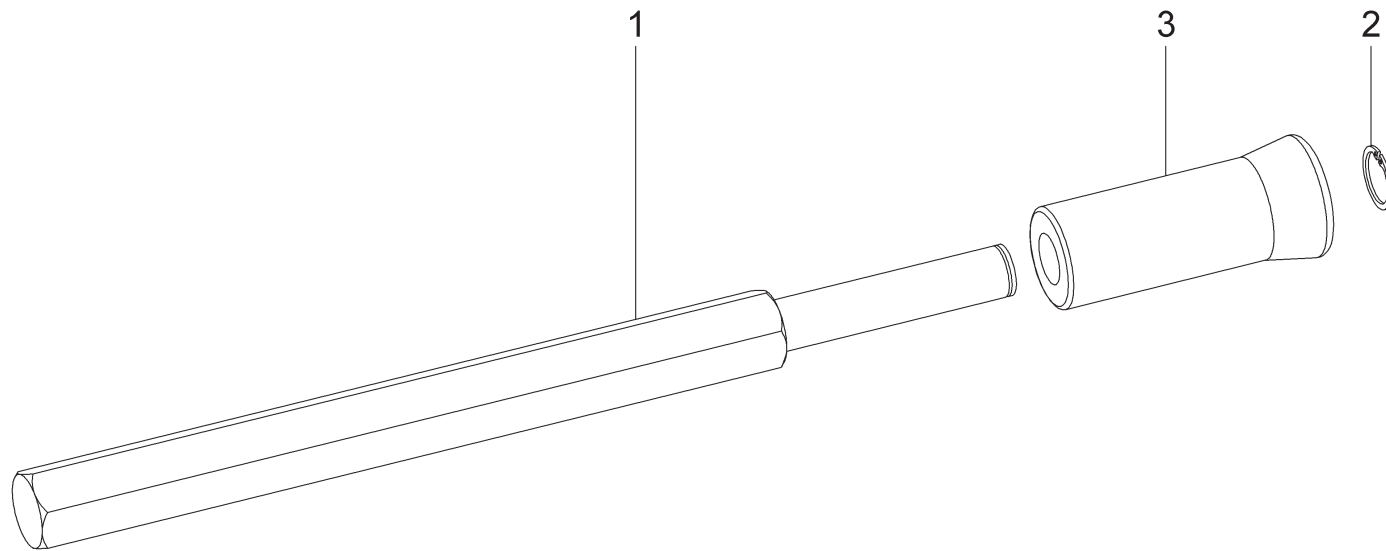


PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
	•			
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			GRUPPO CILINDRO ASSEMBLATO ASSEMBLED CYLINDER UNIT ZUSAMMENSETZER ZYLINDERSATZ GROUPE CYLINDRE ASSEMBLE GRUPO CILINDRO ENSEMBLADO	
<b>Tavola N°6 - Rev. 2</b>		<b>VS770090062</b>	<b>Pag. 9 di 14</b> PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69	

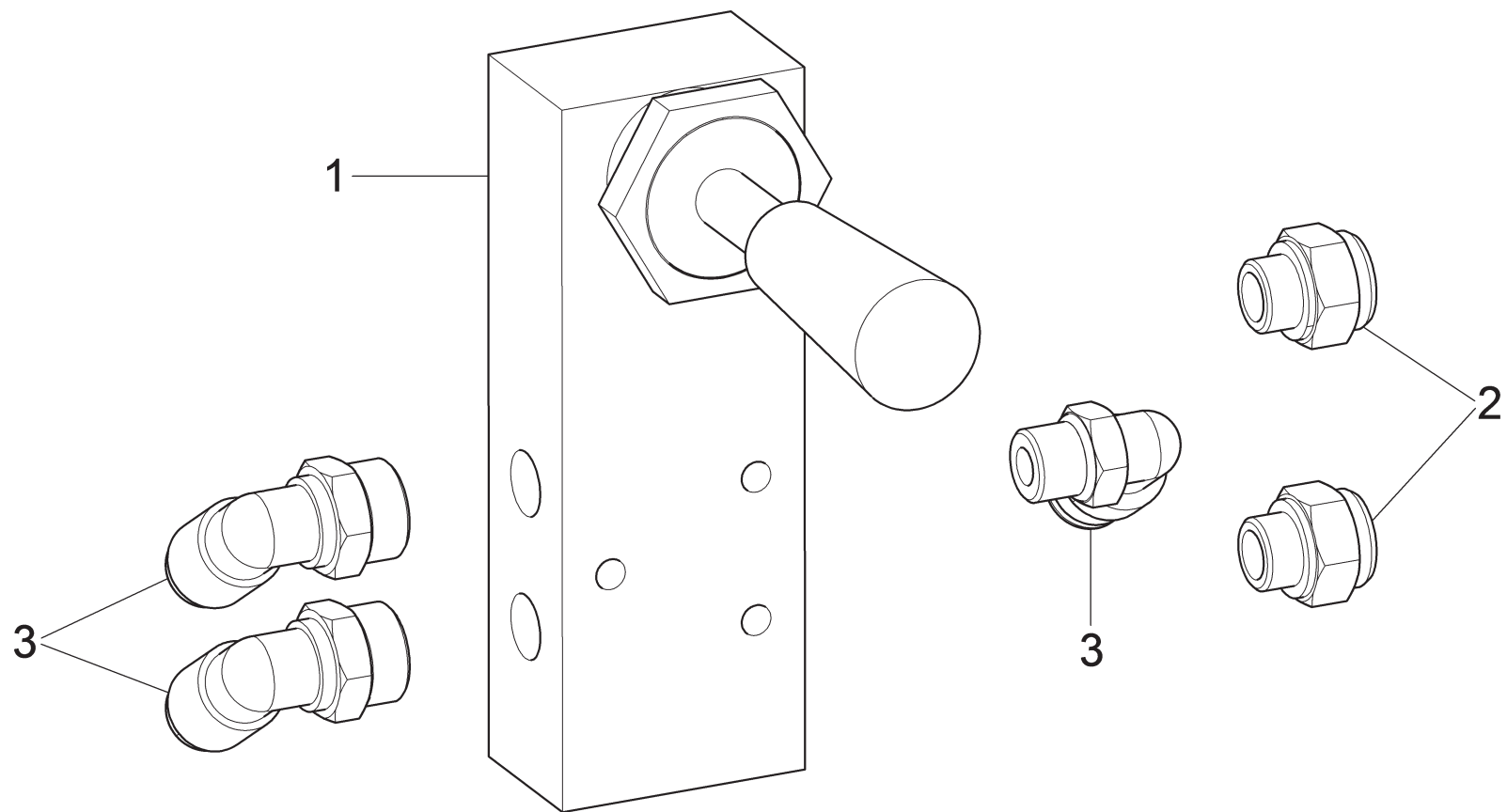


PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
		•	•	
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<b>Pag. 10 di 14</b>	
<b>Tavola N°7 - Rev. 2</b>		<b>VS770090093</b>		<b>PLUS91S - PLUS91N</b> <b>PLUS91SE - PLUS91SA</b> <b>VSG800A69</b>

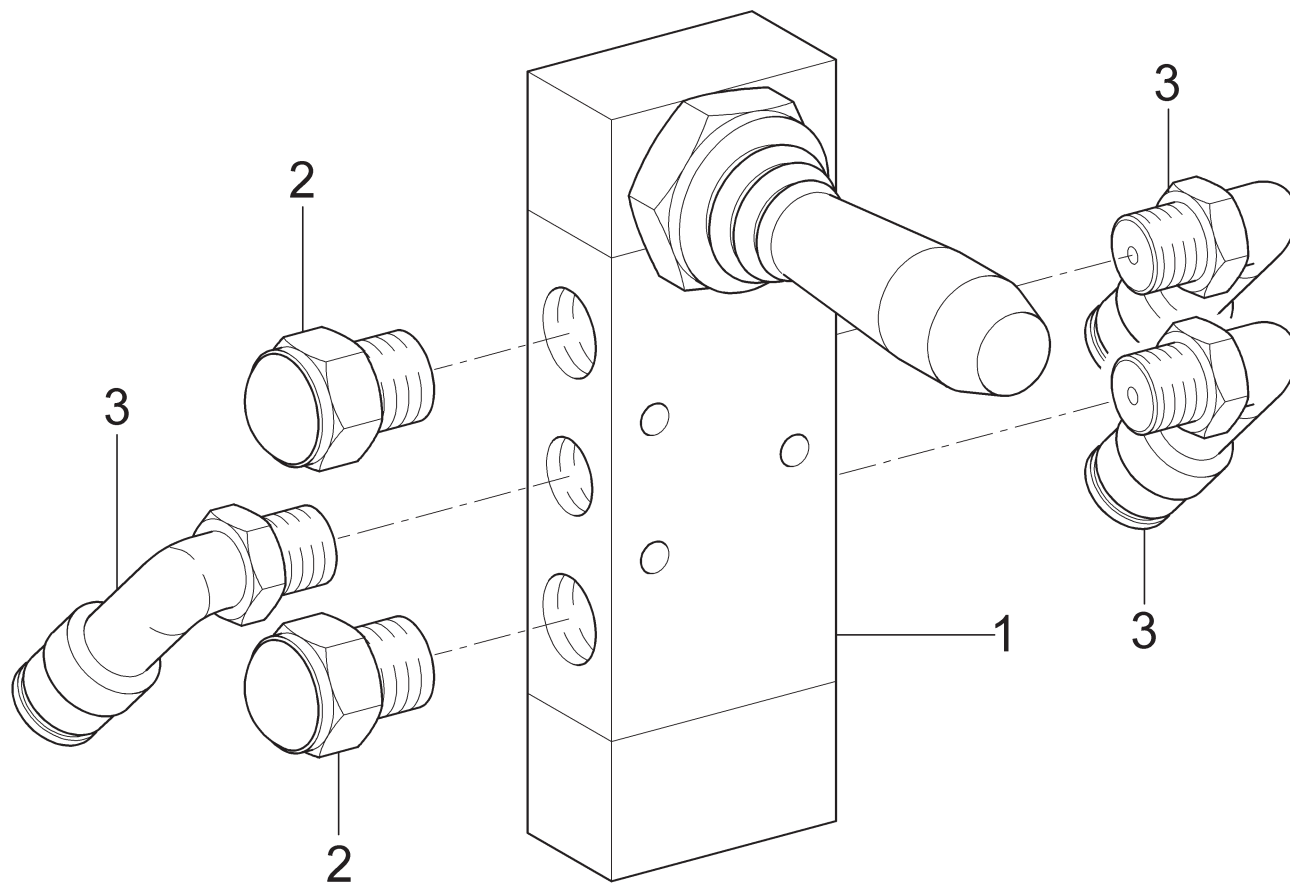
GRUPPO CILINDRO ASSEMBLATO  
 ASSEMBLED CYLINDER UNIT  
 ZUSAMMENSETZTER ZYLINDERSATZ  
 GROUPE CYLINDRE ASSEMBLÉ  
 GRUPO CILINDRO ENSEMBLADO



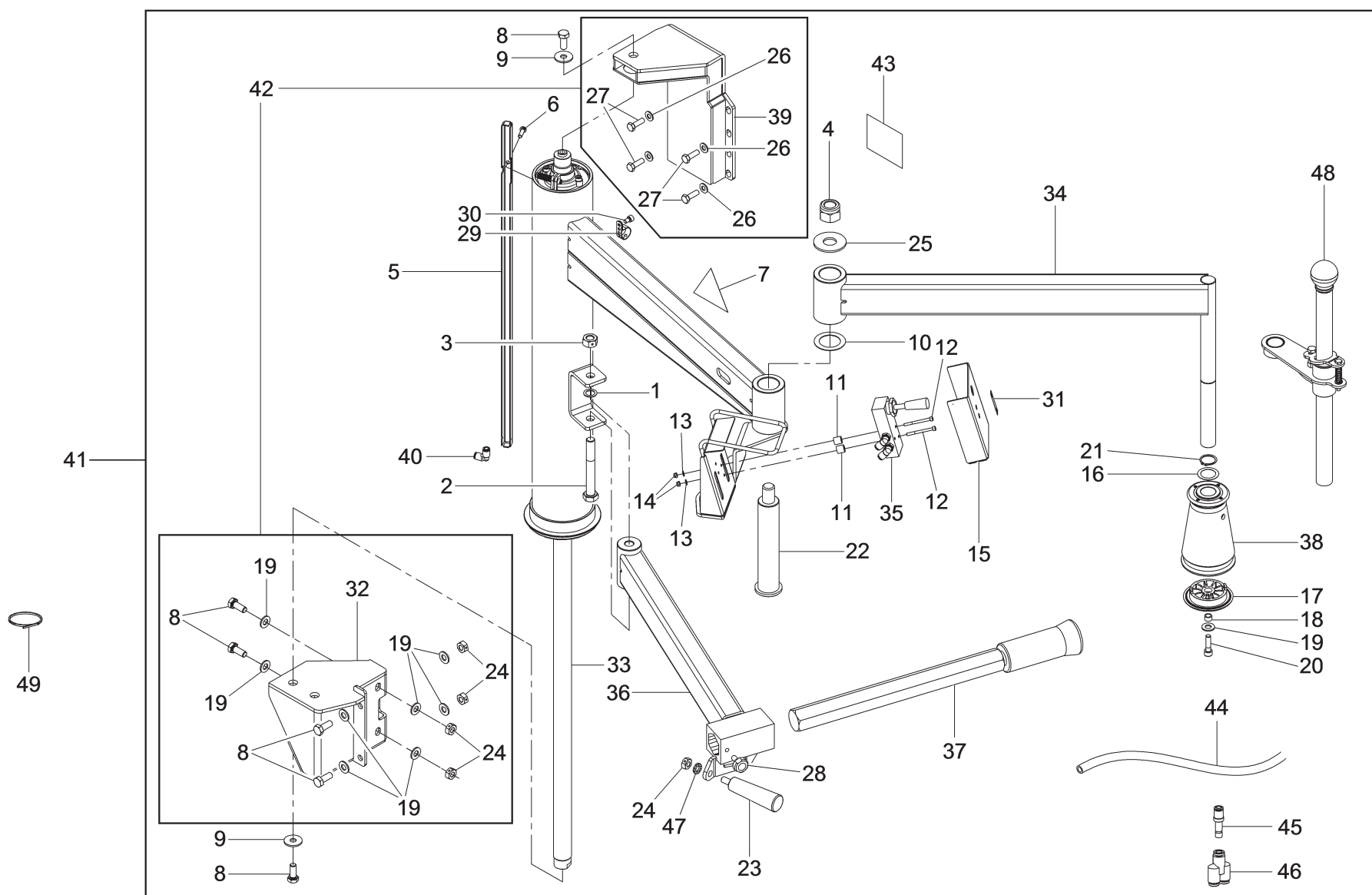
PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
•	•	•	•	
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			BRACCIO STALLONATORE BEAD BREAKER ARM ABRÜCKARM BRAS IMPRIMÉ BRAZO DESTALONADOR	<b>Pag. 11 di 14</b>
Tavola N°8 - Rev. 0		VS770090050		PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69



PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
	•	•	•	
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<b>Pag. 12 di 14</b>	
<b>Tavola N°9 - Rev. 1</b>		<b>VS770790421</b>	VALVOLA COMANDO CILINDRI CYLINDERS CONTROL VALVE VENTIL STEUERUNG ZYLINDEREN VANNE COMMANDE CYLINDRES VÁLVULA MANDO CILINDROS	
			<b>PLUS91S - PLUS91N</b> <b>PLUS91SE - PLUS91SA</b> <b>VSG800A69</b>	



PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
•	•	•	•	
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE</b> <b>LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<b>Pag. 13 di 14</b>	
<b>Tavola N°9 - Rev. 0</b>		<b>VS770790420</b>	VALVOLA COMANDO CILINDRI CYLINDERS CONTROL VALVE VENTIL STEUERUNG ZYLINDEREN VANNE COMMANDE CYLINDRES VÁLVULA MANDO CILINDROS	
			<b>PLUS91S - PLUS91N</b> <b>PLUS91SE - PLUS91SA</b> <b>VSG800A69</b>	



PLUS91S	PLUS91N	PLUS91SE	PLUS91SA	VSG800A69
			●	
<b>LISTA DEI COMPONENTI - LIST OF COMPONENTS - TEILELISTE LISTE DES PIÈCES DÉTACHÉES - LISTA DE PIEZAS</b>			<b>Pag. 14 di 14</b>	
<b>Tavola N°10 - Rev. 2</b>		<b>PLUS91SA</b>	DISPOSITIVO PLUS91SA PLUS91SA DEVICE PLUS91SA VORRICHTUNG DISPOSITIF PLUS91SA DISPOSITIVO PLUS91SA	
			PLUS91S - PLUS91N PLUS91SE - PLUS91SA VSG800A69	