

## ALLEGATO 1 AL MANUALE DI ISTRUZIONI INFORMAZIONI SUL FABBRICANTE

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

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

tale società deve essere intesa come:

### **Vehicle Service Group Italy S.r.l.**

P.IVA: 01426630388

C.F.: 01633631203

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

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

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

Simone Ferrari

Direttore Generale



**Vehicle Service Group Italy S.r.l.**

Via Filippo Brunelleschi 9  
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

## ANNEX 1 TO THE INSTRUCTION MANUAL MANUFACTURER INFORMATION

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

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

this company is to be understood as:

### **Vehicle Service Group Italy S.r.l.**

VAT Number: 01426630388

Tax Code: 01633631203

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

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

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

Simone Ferrari

Managing Director



**Vehicle Service Group Italy S.r.l.**

Via Filippo Brunelleschi 9  
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

## ANLAGE 1 ZUR BEDIENUNGSANLEITUNG HERSTELLERANGABEN

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

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

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

### **Vehicle Service Group Italy S.r.l.**

UMSATZSTEUER-IDENTIFIKATIONSNUMMER: 01426630388

ITALIENISCHE STEUERNUMMER: 01633631203

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

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

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

Simone Ferrari

Geschäftsführer



**Vehicle Service Group Italy S.r.l.**

Via Filippo Brunelleschi 9  
44020 Ostellato (FE) Italy  
VAT no.: 01426630388 | Tax no.: 01633631203

## ANNEXE 1 DU MANUEL D'INSTRUCTIONS INFORMATIONS SUR LE FABRICANT

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

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

cette société doit être sous-entendue comme:

### **Vehicle Service Group Italy S.r.l.**

numéro de TVA: 01426630388

code fiscal: 01633631203

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

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

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

Simone Ferrari

Directeur Général



**Vehicle Service Group Italy S.r.l.**

Via Filippo Brunelleschi 9  
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

## ANEXO 1 AL MANUAL DE INSTRUCCIONES INFORMACIÓN DEL FABRICANTE

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

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

que debe entenderse por sociedad:

### **Vehicle Service Group Italy S.r.l.**

Número de IVA: 01426630388

código fiscal: 01633631203

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

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

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

Simone Ferrari

Director Gerente



**Vehicle Service Group Italy S.r.l.**

Via Filippo Brunelleschi 9  
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

**1294-M017-03**

**LIBRAK280RTL**

INSTRUCTION MANUAL

EN

TRANSLATION FROM THE  
ORIGINAL INSTRUCTIONS

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

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

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

**1294-M017-03 - Rev. n. 03 (07/2022)**

**SUMMARY**

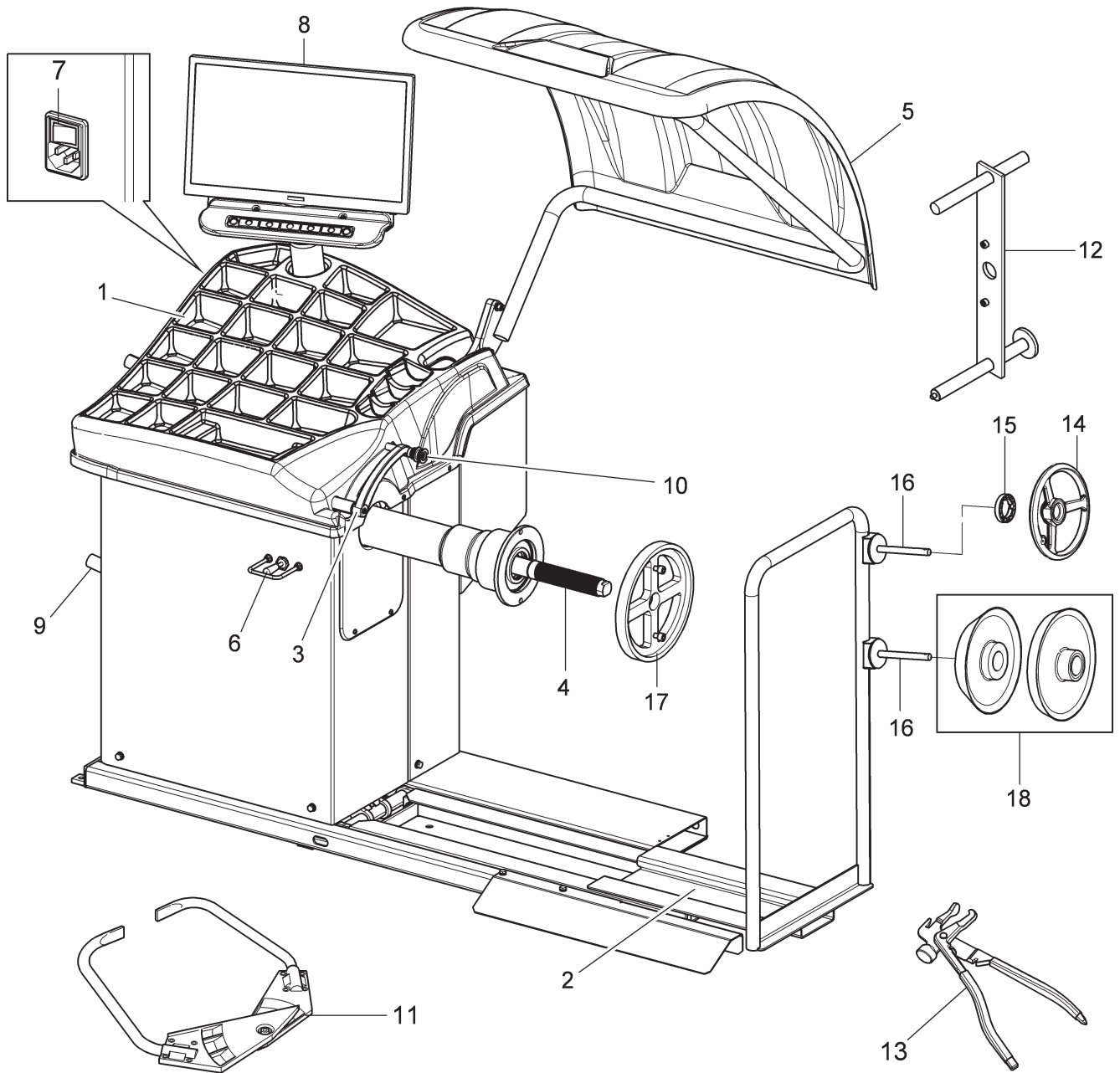
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### GENERAL DESCRIPTION







Fig. 1








#### KEY

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| 1 - Weight top cover             | 10 - Pliers for weight fitting        |
| 2 - Wheel lifting device         | 11 - Trucks width manual caliper      |
| 3 - Distance-diameter caliper    | 12 - Trucks calibrator                |
| 4 - Threaded chuck               | 13 - Pliers for weights               |
| 5 - Protection guard             | 14 - Handwheel trucks ring nut        |
| 6 - Wheel lifting device control | 15 - Pressure ring                    |
| 7 - Main switch                  | 16 - Accessory support stake          |
| 8 - Monitor                      | 17 - Flange for trucks wheels bearing |
| 9 - Flange holder stake          | 18 - 2 cones D. 202-221;281 trucks    |

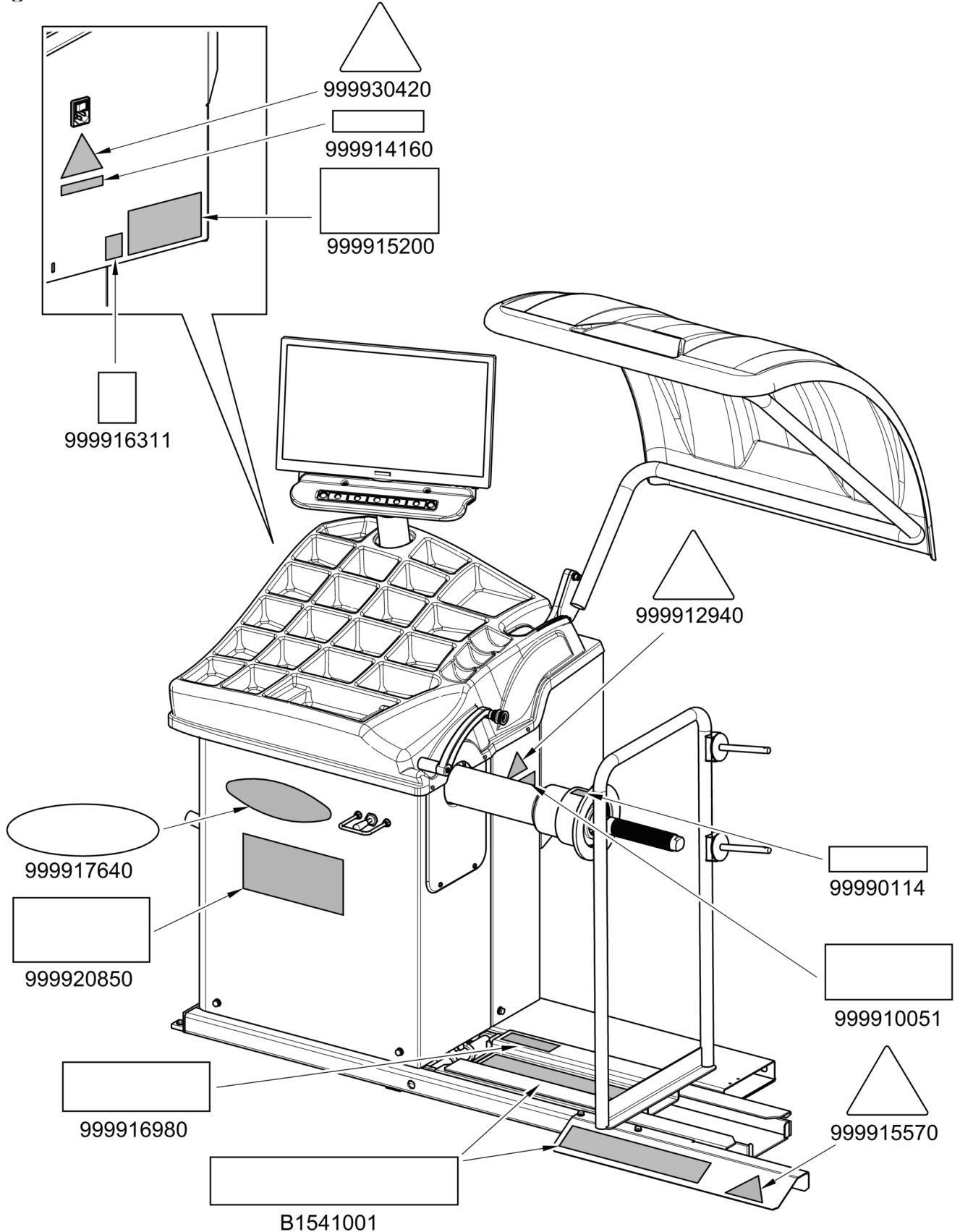
## SYMBOLS USED IN THE MANUAL

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

Symbols	Description
	Danger! Be particularly careful.
	Note. Indication and/or useful information.
	Move with fork lift truck or pallet truck.
	Lift from above.
	Attention: never lift the equipment by means of the chuck.

### NAMEPLATES LOCATION DRAWING

Fig. 2



LIBRAK280RTL

## Code numbers of nameplates

<b>B1541001</b>	<i>Danger nameplate</i>
<b>99990114</b>	<i>Arrow nameplate</i>
<b>999910051</b>	<i>Protection device use nameplate</i>
<b>999912940</b>	<i>Lifting nameplate</i>
<b>999914160</b>	<i>230 V - 1 Ph - 50/60 Hz voltage nameplate</i>
<b>999915200</b>	<i>Serial number nameplate</i>
<b>999915570</b>	<i>Crushing danger nameplate</i>
<b>999916311</b>	<i>Rubbish skip nameplate</i>
<b>999916980</b>	<i>Max. capacity load 200 kg (441 lbs) nameplate</i>
<b>999917640</b>	<i>Butler logo nameplate</i>
<b>999920850</b>	<i>Librak280 truck nameplate</i>
<b>999930420</b>	<i>Electric shock danger nameplate</i>



**IF ONE OR MORE NAMEPLATES ARE MISSING FROM THE EQUIPMENT OR BECOMES DIFFICULT TO READ. REPLACE IT AND QUOTE ITS/THEIR CODE NUMBER/S WHEN REORDERING.**



**SOME OF THE PICTURES AND/OR DISPLAY SCREEN PAGES PRESENT IN THIS MANUAL HAVE BEEN OBTAINED FROM PICTURES OF PROTOTYPES, THEREFORE THE STANDARD PRODUCTION EQUIPMENTS AND ACCESSORIES CAN BE DIFFERENT IN SOME COMPONENTS/DISPLAY SCREEN PAGES.**

## **1.0 GENERAL INTRODUCTION**

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

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



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



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

### **1.1 Introduction**

Thank you for purchasing this wheel balancer. We feel sure you will not regret your decision.

This equipment has been designed for use in professional workshops and stands out for its reliability and easy, safe and quick operation. With just a small degree of maintenance and care, this wheel balancer will give you many years of trouble-free service and lots of satisfaction.

## **2.0 INTENDED USE**

The equipment described in this manual is a wheel balancing machine for car and light transport, intended to be used exclusively to cancel out, or at least reduce to acceptable limits the vibrations of the wheels, by fitting counterweights of suitable size and in specific positions to the same wheels that are not correctly balanced.



**DANGER: EMPLOYING THIS EQUIPMENT OUTSIDE THE USE DESTINATION IT HAS BEEN DESIGNED FOR (AS INDICATED IN THIS MANUAL) IS INAPPROPRIATE AND DANGEROUS.**



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

### **2.1 Training of personnel**

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

Given the complexity of the operations necessary to manage the equipment 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.



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

### 3.0 SAFETY DEVICES



**DAILY CHECK THE INTEGRITY AND THE FUNCTIONALITY OF THE SAFETY AND PROTECTION DEVICES ON THE EQUIPMENT.**


- **Main switch positioned on the rear of the equipment**

Its function is to disconnect equipment electric supply.

- **Protection guard**

Its function is to protect the operator from possible projections of materials on the wheel during its spin. Wheel spinning is normally prevented if the wheel protection guard is raised (open). When the protection guard is open, this interrupts the circuit that triggers the motor and automatic start is prevented, including in the case of an error.



Press  stop key to stop wheel rotation in emergency conditions.

### 3.1 Residual risks

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

Possible residual risks have been emphasized through pictorial representations and warnings which placing is indicated in "PLATES LOCATION DRAWING" (see **Fig. 2**).

#### 4.0 GENERAL SAFETY RULES



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



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

- The installation must be performed by qualified and authorized personnel in full compliance with the instructions given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the equipment if it malfunctions and contact the customer service of the authorized dealer.
- In emergency situations, and before carrying out any maintenance or repairs, isolate the equipment from energy sources by disconnecting the power supply using the main switch.
- The equipment power supply system must be supplied with an appropriate earth wire, to which the yellow-green equipment protection wire must be connected.
- Ensure that the area around the machine is free of potentially dangerous objects and that the area is oil free since this could damage the tyre. Oil on the floor is also a potential danger for the operator.
- **UNDER NO CIRCUMSTANCES** must the equipment be used to spin anything but vehicle wheels. Bad locking can cause rotating parts to come loose, with potential damage to the machine and anything in the vicinity and injury to the operator.



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

- The equipment 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 equipment can be operated by a single operator at a time. Unauthorized personnel must remain outside the working area, as shown in **Fig. 4**. Avoid any hazardous situations. Do not use air-operated or electrical equipment when the shop is damp or the floor slippery and do not expose such tools to atmospheric agents.
- When operating and servicing this equipment, carefully follow all in force safety and accident-prevention precautions. The equipment must not be operated by untrained personnel.

## 5.0 PACKING AND MOBILIZATION FOR TRANSPORT

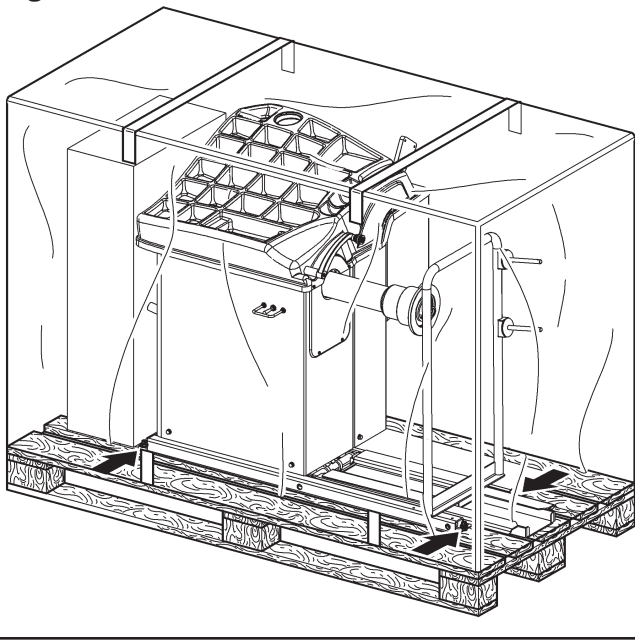


**HAVE THE EQUIPMENT HANDLED BY SKILLED PERSONNEL ONLY.**

**THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE PACKED EQUIPMENT (SEE PARAGRAPH "TECHNICAL SPECIFICATIONS").**

The equipment is packed partially assembled. Movement must be by pallet-lift or fork-lift trolley. The fork lifting points are indicated on the packing, (see **Fig. 3**).

**Fig. 3**



## 6.0 UNPACKING



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



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

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

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

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



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



## 7.0 MOBILIZATION



**THE LIFTING EQUIPMENT MUST WITHSTAND A MINIMUM RATED LOAD EQUAL TO THE WEIGHT OF THE EQUIPMENT (SEE PARAGRAPH TECHNICAL SPECIFICATIONS). NON FAR ALLOW THE LIFTED EQUIPMENT TO SWING.**



**NEVER LIFT THE EQUIPMENT BY MEANS OF THE CHUCK.**

If the equipment has to be moved from its normal work post the transport must be conducted by following the instructions listed below.

- Protect the exposed corners with suitable material (Pluribol/cardboard).
- Do not use metallic cables for lifting.
- Make sure the power and pneumatic supply of the equipment is disconnected.
- Place again the equipment onto the original pallet with whom it was delivered.
- Use transpallet or fork-lift for handling.

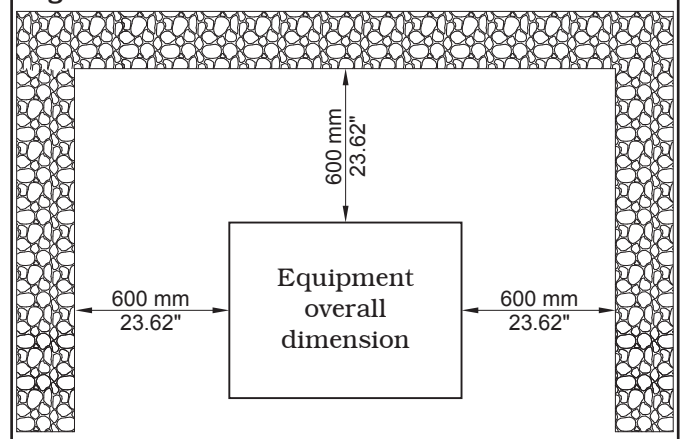
## 8.0 WORKING ENVIRONMENT CONDITIONS

The equipment must be operated under proper conditions as follows:

- temperature: +5 °C - +40 °C (+41 °F - +104 °F)
- relative humidity: 30 - 95% (dew-free)
- atmospheric pressure: 860 - 1060 hPa (mbar) (12.5 - 15.4 psi).

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

### 8.1 Working area

**Fig. 4**

**USE THE EQUIPMENT IN A DRY AND SUFFICIENTLY ILLUMINATED PLACE, CLOSED, PROTECTED FROM ALL WEATHER CONDITIONS AND COMPLYING WITH THE REGULATIONS IN FORCE REGARDING WORK SAFETY.**

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

The equipment must be secured to a flat floor surface, preferably of cement or tiled. Avoid yielding or irregular surfaces.

The equipment base floor must be able to support the loads transmitted during operation.

This surface must have a capacity load of at least 500 kg/m<sup>2</sup> (100 lb/ft<sup>2</sup>).

The depth of the solid floor must guarantee the tightness of the anchor plugs.

## 8.2 Lighting

The equipment must be used in an adequately lit environment.

## 9.0 EQUIPMENT ASSEMBLY



**ANY MECHANICAL ATTACHMENTS  
MUST BE CARRIED OUT BY QUALIFIED  
STAFF**

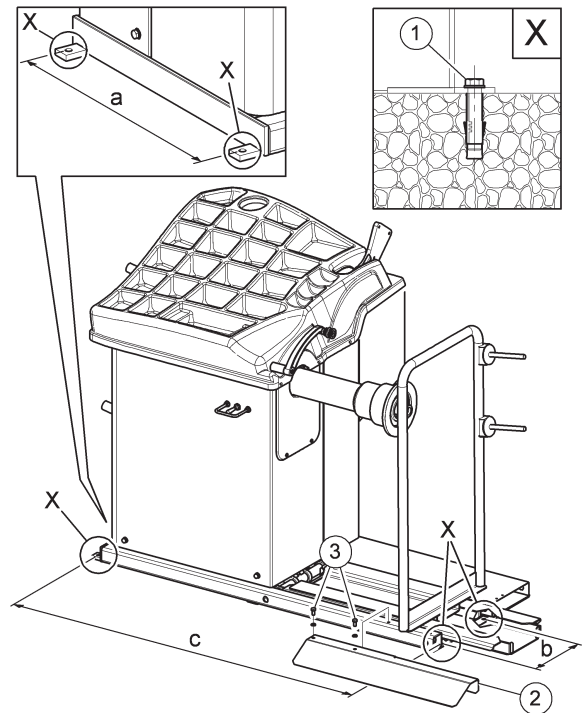
After having freed the various components from the packing check that they are complete, and that there are no anomalies, then comply with the following instructions for the assembly of the components making use of the attached series of illustrations.

### 9.1 Anchoring system

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



**IT IS MANDATORY TO SECURE, IF  
WHEELS WEIGHING MORE THAN  
30 kg (66 lbs) ARE USED.**



**a** = 485 mm / 19.09"  
**b** = 240 mm / 9.45"  
**c** = 1296 mm / 51.02"

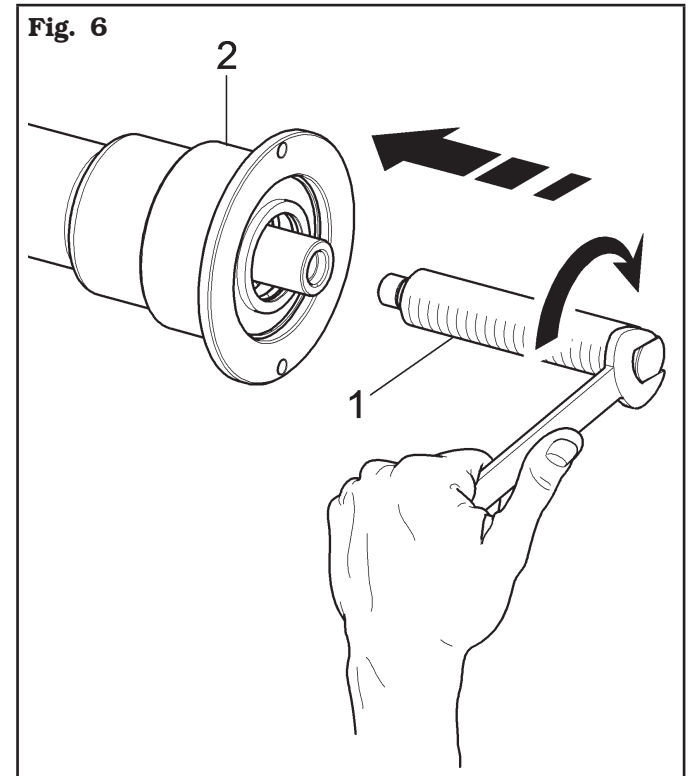
**Fig. 5**

- To fasten the equipment to the ground, use anchors (**Fig. 5 ref. 1**) with a threaded shank M8 (UNC 5/16) suitable for the floor on which the wheel balancer and in a number equal to the number of fixing holes arranged on the bottom chassis;
- drill holes in the floor, suitable for inserting the chosen anchors, in correspondence with the holes arranged on the bottom chassis;
- insert the anchors into the holes made in the floor through the holes on the bottom chassis and tighten the threaded elements;
- tighten the anchors on the base chassis by applying a torque equal to that indicated by the manufacturer of the anchors.

## **9.2 Assembly procedures**

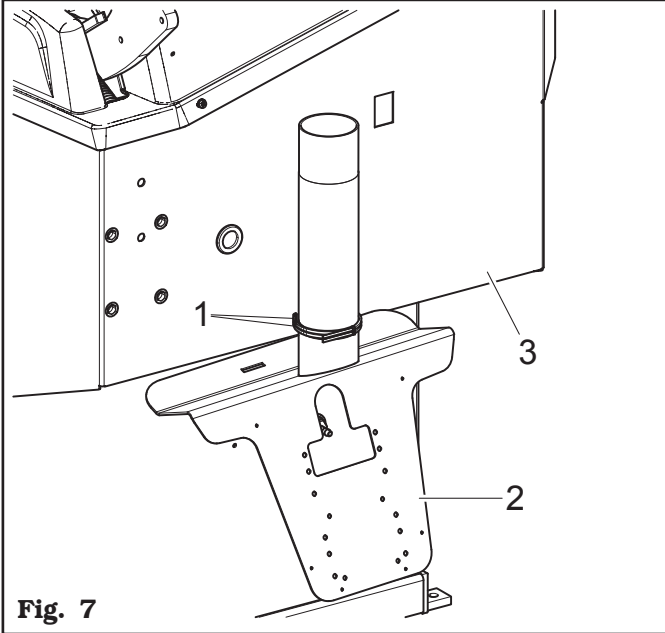
### **9.2.1 Fitting the chuck on the flange**

Screw the chuck with a 27 mm open wrench (**Fig. 6 ref. 1**) on the flange (**Fig. 6 ref. 2**).

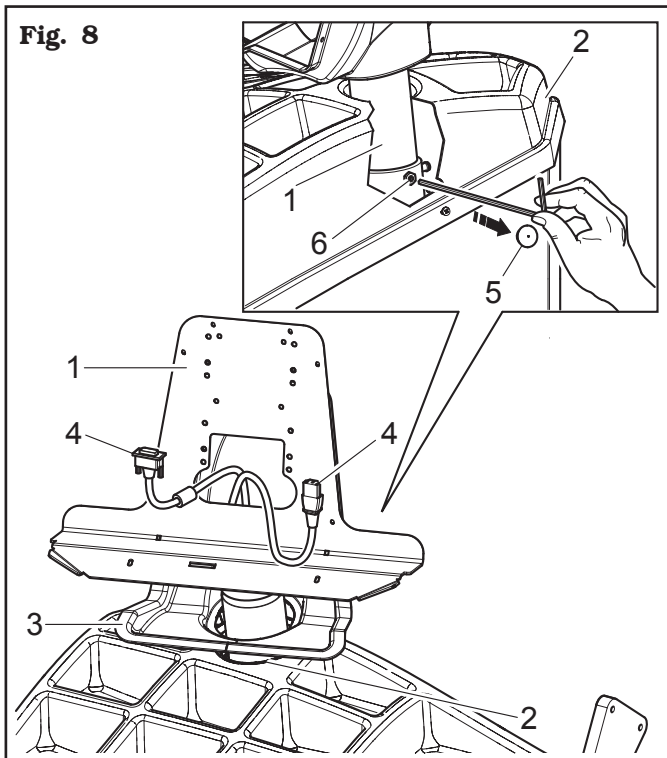


### 9.2.2 Monitor fitting

1. Cut the two clamps (**Fig. 7 ref. 1**) and release the support (**Fig. 7 ref. 2**) from the chassis (**Fig. 7 ref. 3**);



2. introduce the monitor support hose (**Fig. 8 ref. 1**) into the prearranged hole on the top cover (**Fig. 8 ref. 2**), interposing the guard (**Fig. 8 ref. 3**) and making the cables (**Fig. 8 ref. 4**) pass through its interior;
3. remove the provided cap (**Fig. 8 ref. 5**) from the top cover (**Fig. 8 ref. 2**) and block the monitor support hose (**Fig. 8 ref. 1**) tightening the prearranged grub screw (**Fig. 8 ref. 6**) on the rear side. Mount the cap again (**Fig. 8 ref. 5**);



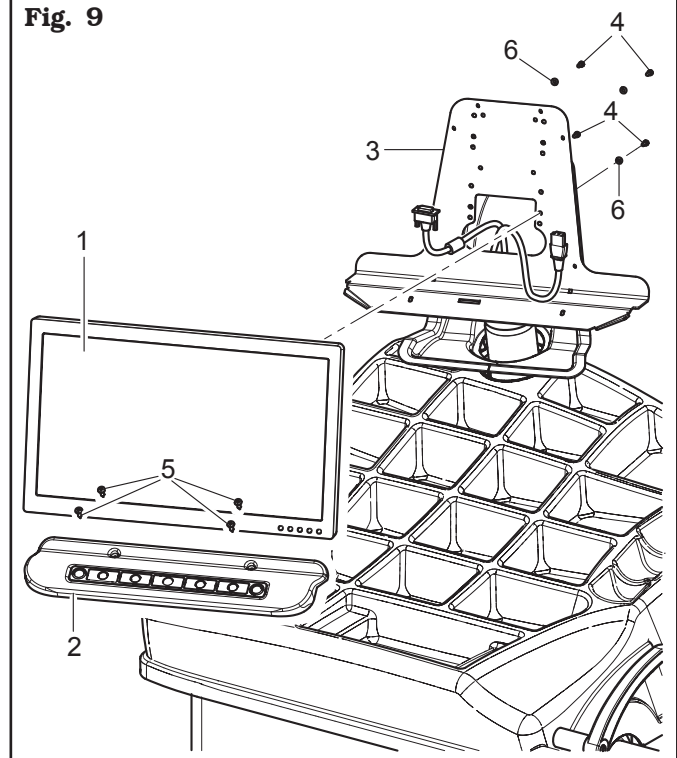
4. connect the wiring of the keyboard;



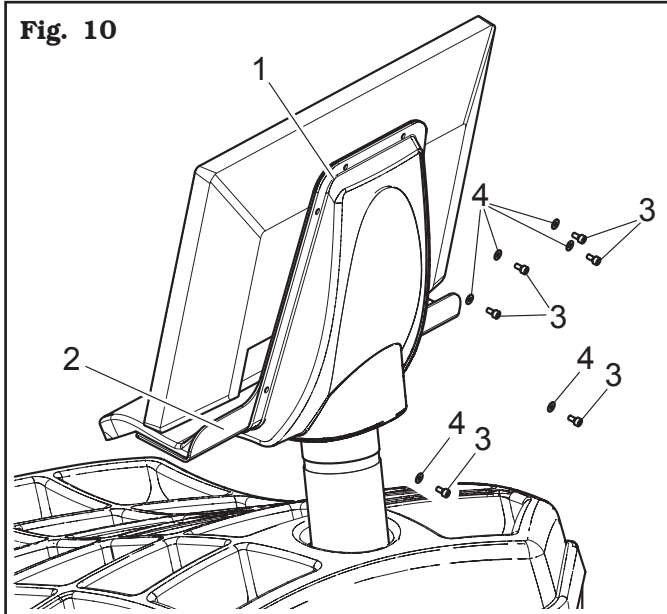
**WIRE 1 (RED OR BLUE COLOURED) MUST CORRESPOND TO CONTACT 1 OF THE KEYBOARD CONNECTOR (MARKED WITH A SMALL ARROW). KEYBOARD OPERATION CAN BE TESTED. IN CASE OF POLARITY REVERSAL, THE KEYBOARD DOESN'T WORK CORRECTLY, BUT THERE ARE NO DAMAGES.**

5. connect the plugs on the power supply sockets and monitor signal. Make the cables pass through the support hole;
6. mount the monitor (**Fig. 9 ref. 1**) and the keyboard (**Fig. 9 ref. 2**) to the support (**Fig. 9 ref. 3**) by means of the supplied bolts (**Fig. 9 ref. 4** and **5**) and the washers (**Fig. 9 ref. 6**);

Fig. 9

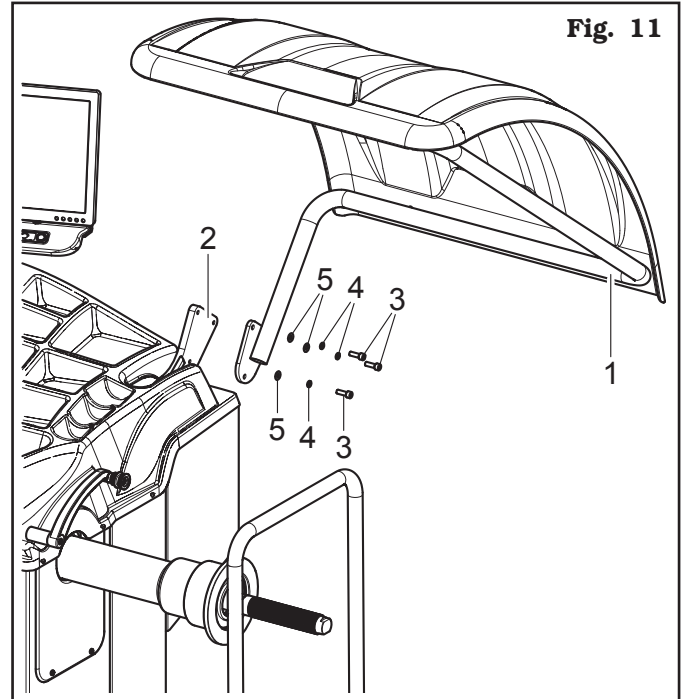


7. secure the guard (**Fig. 10 ref. 1**) to the support (**Fig. 10 ref. 2**) with the bolts (**Fig. 10 ref. 3**) and the washers (**Fig. 10 ref. 4**) supplied.



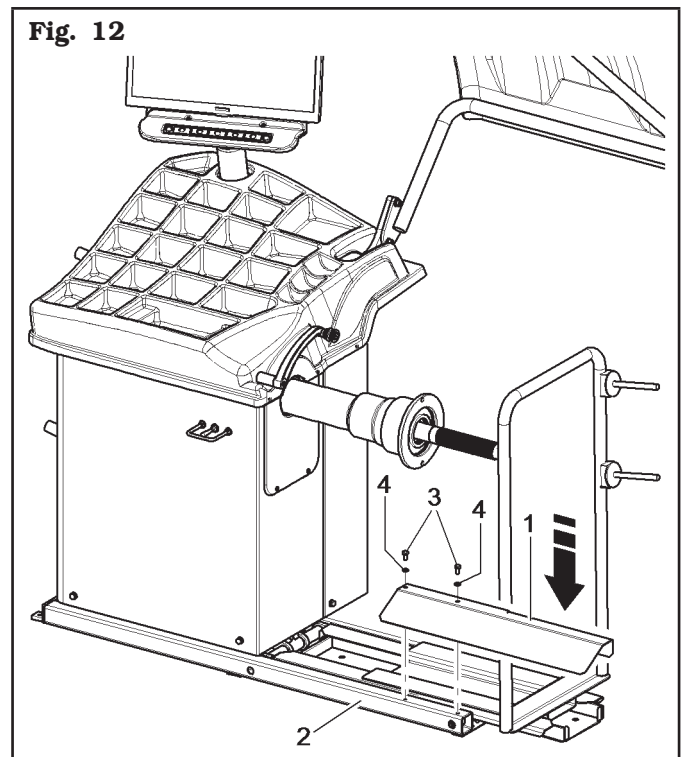
### **9.2.3 Fitting the protection guard**

1. Mount the protection guard (**Fig. 11 ref. 1**) to the support (**Fig. 11 ref. 2**) with the bolts (**Fig. 11 ref. 3**) and interposing the supplied washers (**Fig. 11 ref. 4-5**).



### **9.2.4 Mounting of foot guard protection**

- Fasten the foot guard protection (**Fig. 12 ref. 1**) at the base of the lifting device (**Fig. 12 ref. 2**) using the bolts (**Fig. 12 ref. 3**) and the washers (**Fig. 12 ref. 4**) supplied.



## 10.0 ELECTRICAL CONNECTIONS



**ANY ELECTRICAL ATTACHMENTS MUST BE CARRIED OUT BY QUALIFIED STAFF**



**BEFORE CONNECTING THE EQUIPMENT MAKE SURE THAT:**

- POWER LINE SPECIFICATIONS CORRESPOND TO EQUIPMENT REQUIREMENTS AS SHOWN ON THE MACHINE NAMEPLATE;
- ALL MAIN POWER COMPONENTS ARE IN GOOD CONDITION;
- THE ELECTRICAL SYSTEM IS PROPERLY GROUNDED (GROUND WIRE MUST BE THE SAME CROSS-SECTION AREA AS THE LARGEST POWER SUPPLY CABLES OR GREATER);
- MAKE SURE THAT THE ELECTRICAL SYSTEM FEATURES A CUTOFF WITH DIFFERENTIAL PROTECTION SET AT 30 mA.

Connect the equipment up to the mains by means of the plug provided.

If the plug supplied is not suitable for the wall socket, provide the equipment with a plug complying with the local laws and with the applicable rules and regulations. This operation must be performed by expert and professional personnel.



**FIT A TYPE-APPROVED (AS REPORTED BEFORE) PLUG TO THE EQUIPMENT CABLE (THE GROUND WIRE IS YELLOW/GREEN AND MUST NEVER BE CONNECTED TO ONE OF THE TWO PHASE LEADS).**



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



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

## 10.1 Electrical checks

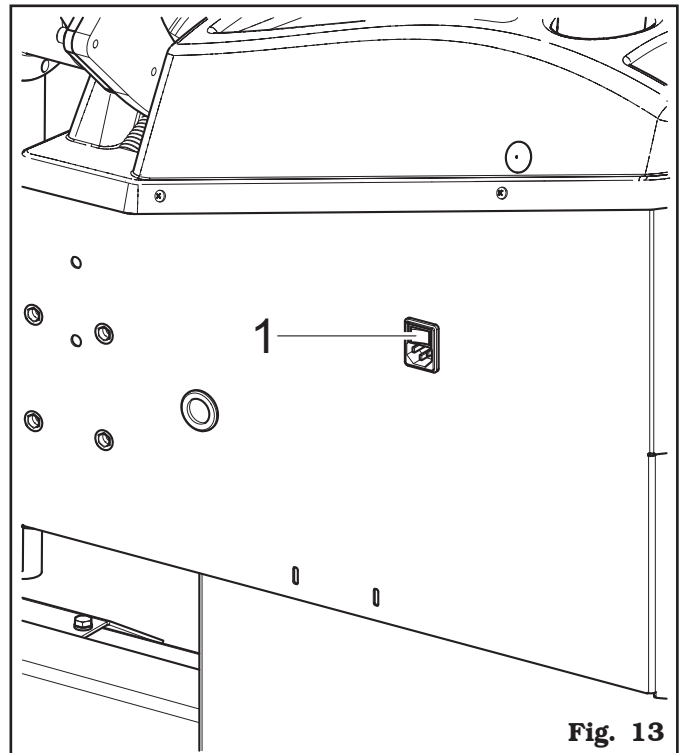


**BEFORE STARTING UP THE WHEEL-BALANCER, BE SURE TO BECOME FAMILIAR WITH THE LOCATION AND OPERATION OF ALL CONTROLS AND CHECK THEIR PROPER OPERATION (SEE PAR. "CONTROLS").**



**CARRY OUT A DAILY CHECK OF THE HOLD-TO-RUN CONTROL CONTROLS FOR PROPER FUNCTIONING, BEFORE STARTING EQUIPMENT OPERATION.**

Once the plug/socket connection has been made, turn on the equipment using the main switch (**Fig. 13 ref. 1**).



**Fig. 13**

## 11.0 CONNECTION TO THE COMPRESSED AIR SUPPLY

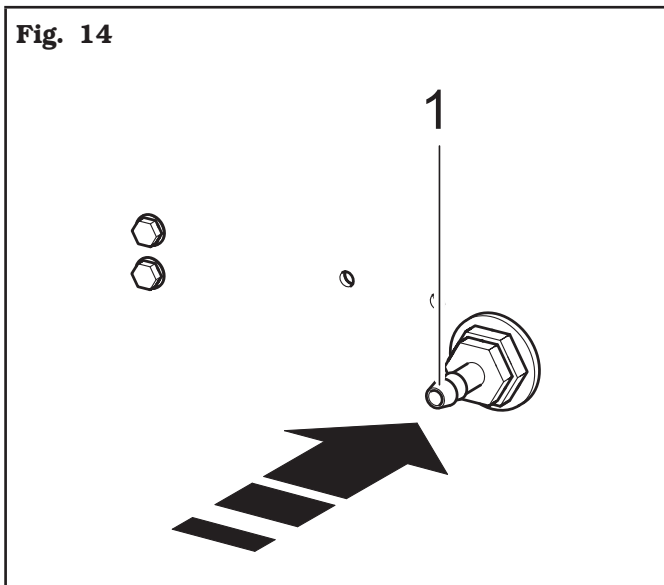


**ANY PNEUMATIC ATTACHMENTS MUST BE CARRIED OUT BY QUALIFIED STAFF.**

Connect the wheel balancer to the centralised compressed-air system by means of the connection on the back of the machine (see **Fig. 14 ref. 1**).

The air system supplying the equipment must be able to supply filtered and de-humidified air at a pressure between 8 - 10 bar (116 - 145 psi). It must feature an on-off valve upstream of the equipment.

**Fig. 14**



## 12.0 FITTING THE WHEEL ON THE CHUCK



To achieve perfect balancing, the wheel must be carefully and properly fitted on the chuck. Imperfect centring will inevitably cause unbalances.



**WHAT IS MOST IMPORTANT IS THAT ORIGINAL CONES AND ACCESSORIES, SPECIALLY DESIGNED TO BE EMPLOYED WITH THE WHEEL BALANCERS, ARE USED.**

Wheel fitting using the cones provided is illustrated below. For alternative fittings, using optional accessories, refer to the special instructions provided separately.

### **12.1 Wheel assembly**

1. Move the wheel support (**Fig. 15 ref. 1**) towards the right;
2. remove any type of foreign body from the wheel (**Fig. 15 ref. 2**): pre-existing weights, stones and mud, and make sure the chuck (**Fig. 15 ref. 3**) and the rim centring area are clean before fitting the wheel on the chuck;
3. place the wheel (**Fig. 15 ref. 2**) on the wheel support (**Fig. 15 ref. 1**) with rim inner side towards the wheel balancer. Operate the lifting device control (**Fig. 15 ref. 4**) and, keeping it lifted, raise the footboard (**Fig. 15 ref. 5**);

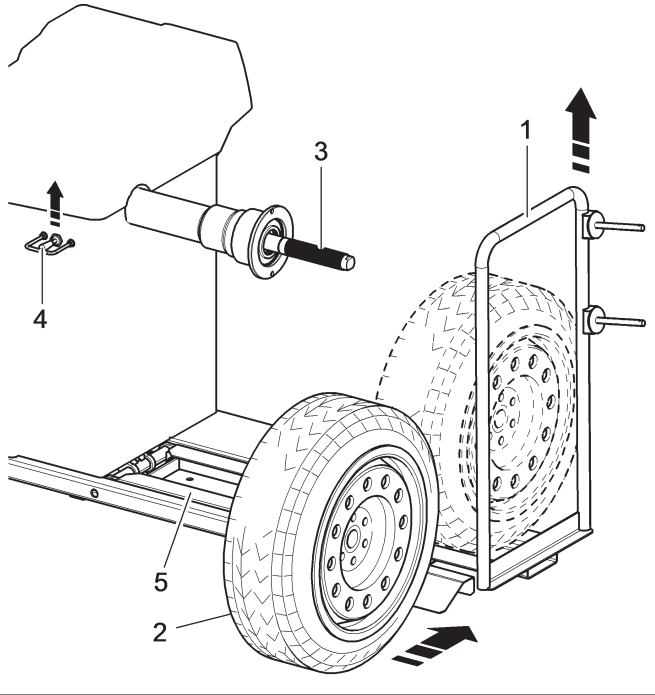


**ONCE THE DESIRED HEIGHT HAS BEEN REACHED, RELEASE THE LIFTING DEVICE CONTROL.**

4. move the wheel support to the left (**Fig. 15 ref. 1**) and, at the same time, centre the wheel on the chuck with minimal effort, regardless of its weight;

LIBRAK280RTL

Fig. 15

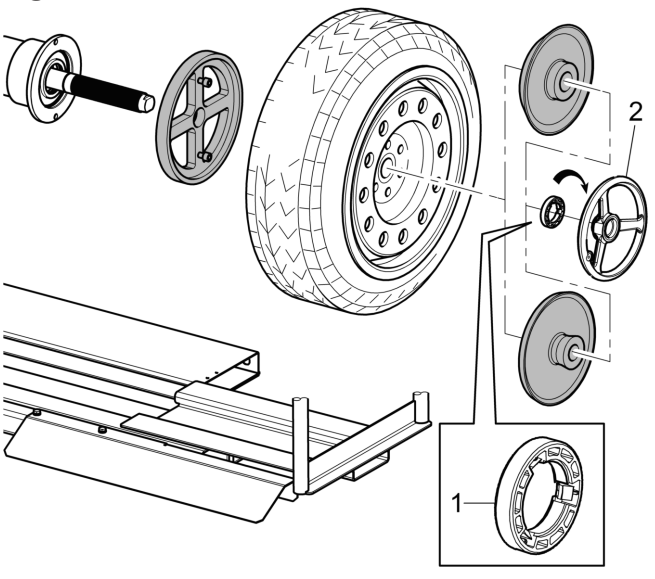


5. depending on the type of wheel to be balanced, it is necessary to carefully choose the accessories suitable for correctly locking the wheel on the chuck:



**PAY PARTICULAR ATTENTION TO THE ASSEMBLY SEQUENCE OF THE LOCKING ACCESSORIES, AS SHOWN IN FIG. 16.**

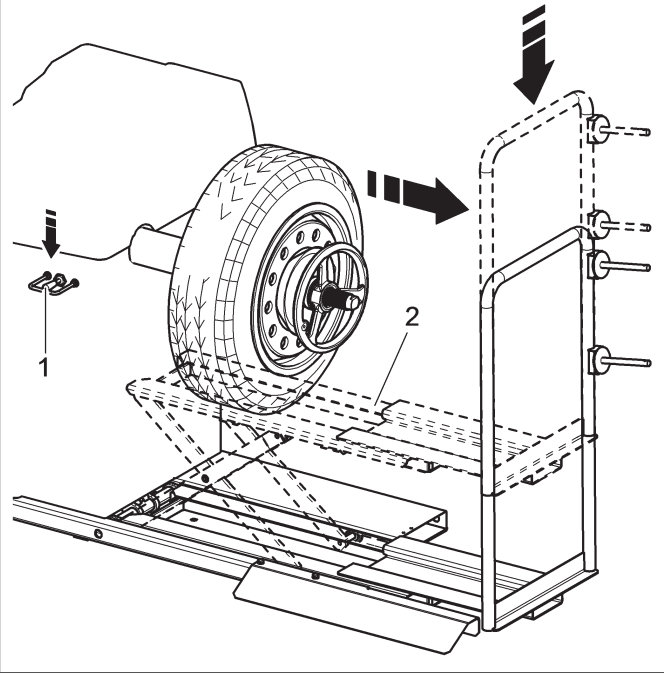
Fig. 16



**THE PRESSURE RING (FIG. 16 REF. 1) MUST BE MOUNTED WITH THE TEETH, OR DISCHARGE SIDE, TOWARDS THE RING NUT (FIG. 16 REF. 2).**

6. lower the lifting device control (Fig. 17 ref. 1) and then lower the footboard (Fig. 17 ref. 2).

Fig. 17





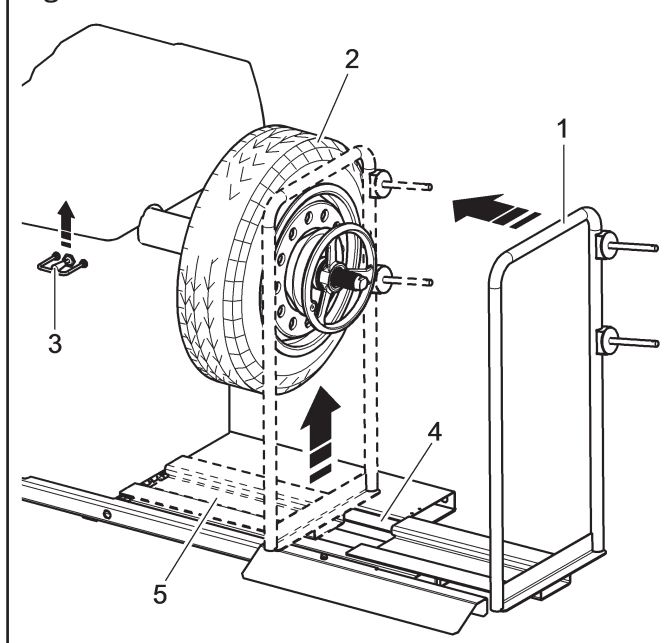
### 12.2 Demounting of the wheel

1. Move the wheel support (Fig. 18 ref. 1) towards the left and bring the wheel support plane (Fig. 18 ref. 5) under the tyre (Fig. 18 ref. 2);
2. lift the lifting device control (Fig. 18 ref. 3) and lift the footboard (Fig. 18 ref. 4) until the wheel support (Fig. 18 ref. 5) comes into contact with the tyre (Fig. 18 ref. 2);



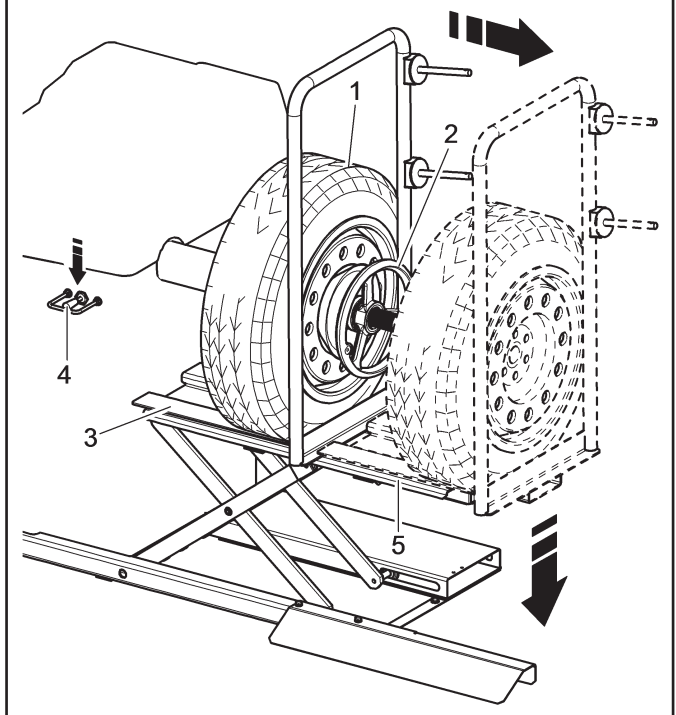
ONCE THE DESIRED HEIGHT HAS BEEN REACHED, RELEASE THE LIFTING DEVICE CONTROL.

Fig. 18



3. unlock the wheel (Fig. 19 ref. 1) engaged to the chuck, removing the locking devices (Fig. 19 ref. 2);
4. move the wheel support towards the right (Fig. 19 ref. 3) together with the tyre that is leaning against it;
5. lower the lowering device control (Fig. 19 ref. 4) and then lower the footboard (Fig. 19 ref. 5);

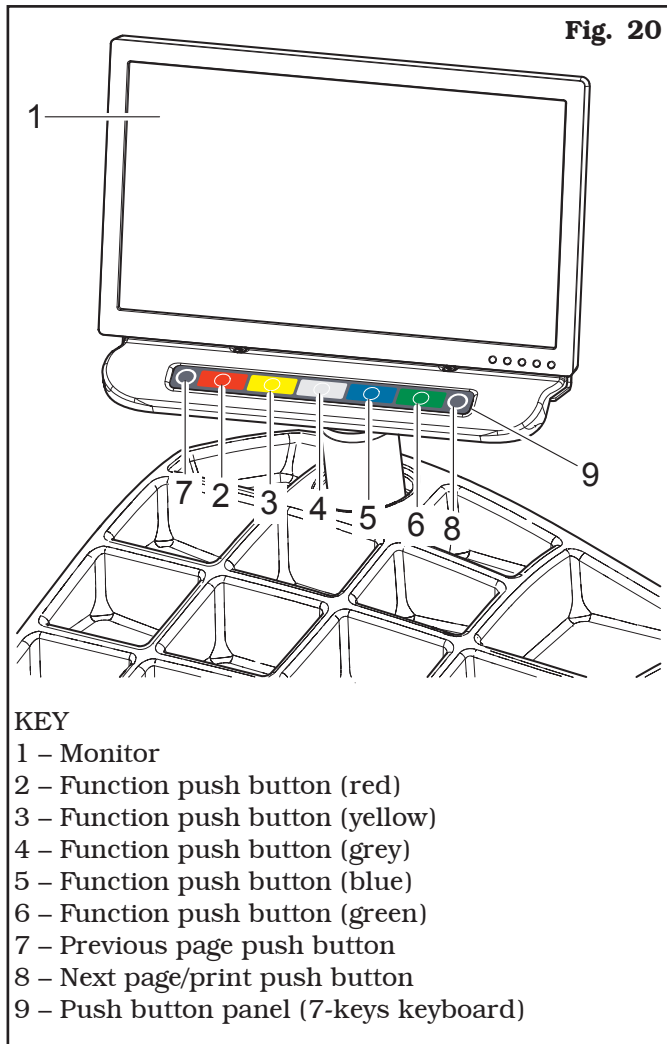
Fig. 19



6. remove the wheel from the lifting device.

### 13.0 CONTROL PANEL

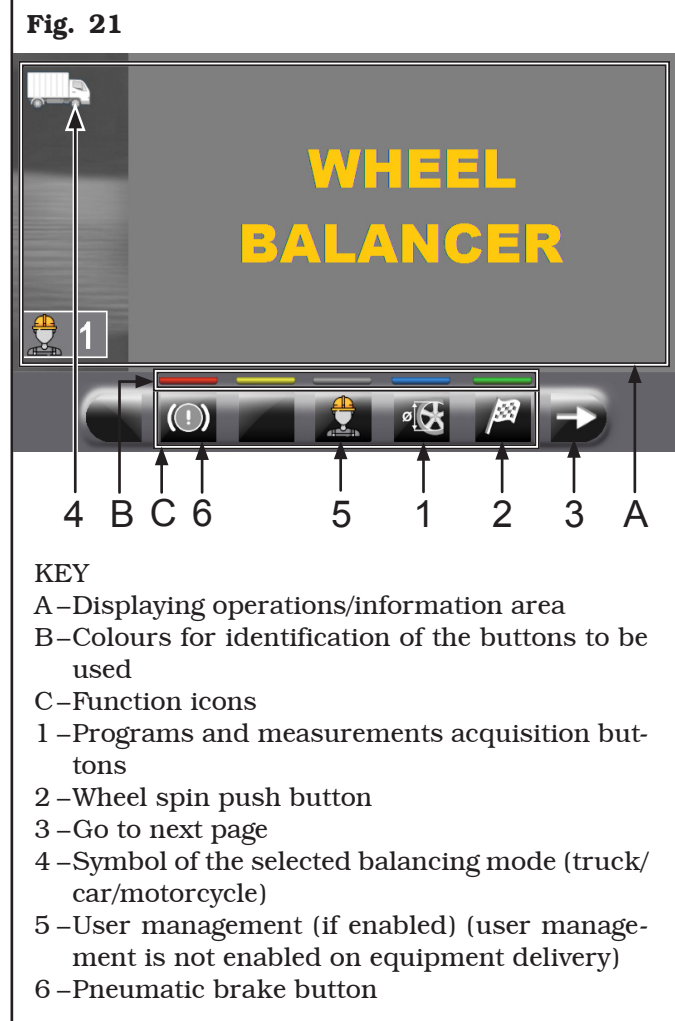
The wheel balancers are equipped with a control panel equipped with a keyboard to interact/operate the controls presented in graphical form on the monitor. On the monitor are displayed all the instructions for the correct wheel balancing, for example indicating where the operator shall fit adhesive or clip weights and the balancing mode and/or option used, as well as correct wheel rotation for inner/outer weights positioning.




### 14.0 WHEEL BALANCING

#### 14.1 Switching the machine on and off


Press the "ON" switch (**Fig. 13 ref. 1**), located in the rear part of the equipment. Wait a few seconds up to the complete loading of the operational program. The equipment is ready to operate when the main screen "Home" appears on the monitor.





At the bottom of the main screen page and of each screen page described below, there will be coloured rectangles (**Fig. 21 ref. B**) located above function identification icons (**Fig. 21 ref. C**). These functions are activated by pressing the appropriate coloured button on the push-button panel (**Fig. 20 ref. 9**).

The symbol  which appears on the screen on the first page indicates that the machine is in TRUCK


mode; the symbol  on the other hand indicates


CAR mode and the symbol  indicates MOTORCYCLE mode (**Fig. 21 ref. 5**).

Using the "TRUCK" mode  wheels can be balanced with a max. static or dynamic unbalance of 1990 g (70.19 oz) (there is an automatic scale change from 990 g (34.92 oz) (to 1990 g (70.19 oz)). The indicated resolution is 50 g (1.76 oz), however by pressing key


 the unbalance can be displayed with a max. resolution of 10 g (0.35).






**FOR UNBALANCES FROM 40 g (1.41 oz) A 100 g (3.52 oz) THE RESOLUTION IS ALWAYS 10 g (0.35 oz). FOR UNBALANCES BELOW 40 g (1.41 oz) THIS IS NORMALLY INDICATED AS 0 g (0 oz), HOWEVER BY PRESSING THE KEY  THE UNBALANCE IS DISPLAYED WITH MAX. RESOLUTION OF 10 g (0.35 oz).**


In "TRUCK" mode , the "MATCHING" procedure cannot be performed (Rim-tyre optimization) nor can All AUXILIARY functions be selected.

By using "CAR" mode  and "MOTORCYCLE"

mode  wheels can be balanced with a max. static or dynamic unbalance of 300 g (10.58 oz).

The indicated resolution is 5 g (0.17 oz), however by pressing the key  the unbalance can be displayed with a max. resolution of 1 g (0.03 oz).

In "CAR" mode  and "MOTORCYCLE" mode  the "MATCHING" procedure (Rim-tyre optimization), "SPLIT" and "WEIGHTS HIDDEN BEHIND SPOKES" procedures can be performed.

ALL AUXILIARY functions and ECO-WEIGHT mode can also be selected in "CAR" mode  only.



**IN ORDER TO FIT CAR WHEELS ON THE BALANCER SHAFT, THE SPECIFIC CONES AND RING NUTS WILL BE REQUIRED SUPPLIED SEPARATELY AS ACCESSORIES.**

Press the button (**Fig. 21 ref. 3**) to display a second page where you can access the "Technical assistance" menu and the "Run-out" menu (see **Fig. 22**).

**Fig. 22****KEY**

- 1 –User menu
- 2 –Run-out menu (visible only if active)
- 3 –Return to previous page
- 4 –Measurement unit setting.

The equipment is supplied with "grams" option




enabled (see Chap. 15.0), so weights will be displayed only in grams and no icons will be displayed onto push button 4.



In order to modify the measurement unit carry out the following procedure: if "ounce" option



is activated from user menu (see Chap. 15.0), "ounce" weight displaying mode is set,

and push button  will be displayed. Press

the button  to set equipment weight display in grams and on the screen will be displayed


icon . Press the button  to set machine weight display in ounces and on the screen

will be displayed icon .

In order to turn off the equipment, simply press the "OFF" main switch (**Fig. 13 ref. 1**).





**WHEN THE EQUIPMENT IS TURNED OFF LOSES ALL THE MEASUREMENTS AND THE STORED DATA (SIZE, SPINS, USERS, ETC ...). AT RESTARTING,**

**PRESSING THE BUTTON  (IN THE CASE HAVE NOT YET BEEN STORED ON THE NEW MEASURES AFTER THE SWITCHING ON), THE EQUIPMENT DOES NOT PERFORM ANY OPERATION.**

#### **14.1.1 Setting of balancing modes**


To set the type of balancing TRUCK/CAR/MOTORCYCLE proceed as follows:

1. from the "Home" page press push button  (**Fig. 21 ref. 1**). On the screen that appears, press

the button  to switch to measuring mode selection screen below;

**Fig. 23**




2. press the button  to switch to programs and car measurements acquisition selection screen below.

Press  to confirm;

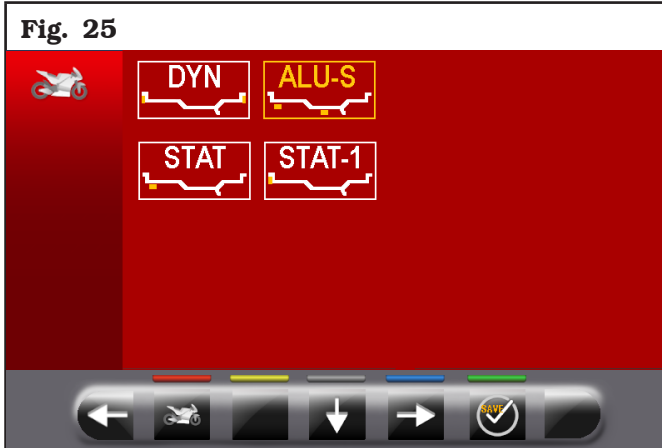
**Fig. 24**



3. press the button  to switch to programs and motorcycle measurements acquisition selection screen below.

Press  to confirm;

Fig. 25




4. Press key  to return to truck mode.

Press  to confirm.

### 14.2 Balancing programs setting

The setting of the balancing programs can be performed in two ways:

- through the gauge arm (quick setting);
- through "Measurement being acquired" screen, ap-

pearing when the  button is pressed (**Fig. 21 ref. 1**).

The setting modes are completely different even if they allow to reach the same result (but with different times).

### 14.2.1 Programs rapid setting and measurements through distance-diameter caliper arm

The use of the distance-diameter caliper arm allows the quick automatic wheel balancing program and the measures entry. From page "Home":

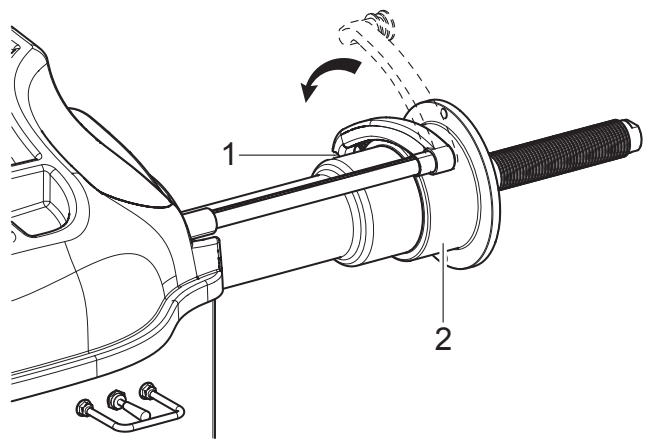
1. bring into contact the weights fitting pliers with the inner part of the rim (1 contact only) to select "STATIC" program (see **Fig. 26**).

Fig. 26



REPEATEDLY BRINGING THE GAUGE ARM (FIG. 27 REF. 1) IN CONTACT WITH THE CHUCK (FIG. 27 REF. 2), THE PROGRAM WILL CYCLE FROM "STATIC" TO "STATIC 1" TO "STATIC 2" RETURNING THEN AT THE BEGINNING.

Fig. 27



2. bring into contact the weights fitting pliers with the inner part of the rim (2 contact points) (see **Fig. 26**) to select "ALU-S" program.



REPEATEDLY BRINGING THE CALIPER ARM (FIG. 27 REF. 1) IN CONTACT WITH THE CHUCK (FIG. 27 REF. 2), THE PROGRAM WILL CYCLE FROM "ALU-S" TO "ALU-S1" TO "ALU-S2", RETURNING THEN AT THE BEGINNING.



WHENEVER THE DISTANCE-DIAMETER CALIPER IS KEPT IN POSITION FOR A FEW SECONDS AGAINST THE RIM (UNTIL THE EQUIPMENT MAKES AN APPROPRIATE SOUND NOTIFICATION), THE POSITION IS STORED AND THE VALUES MEASURED IN THE PRE-ARRANGED FIELDS IN THE SELECTED WHEEL BALANCING PROGRAM ARE LOADED.

3. After entering all the required measures, you can




spin the wheel by pressing the button and closing the protective guard.

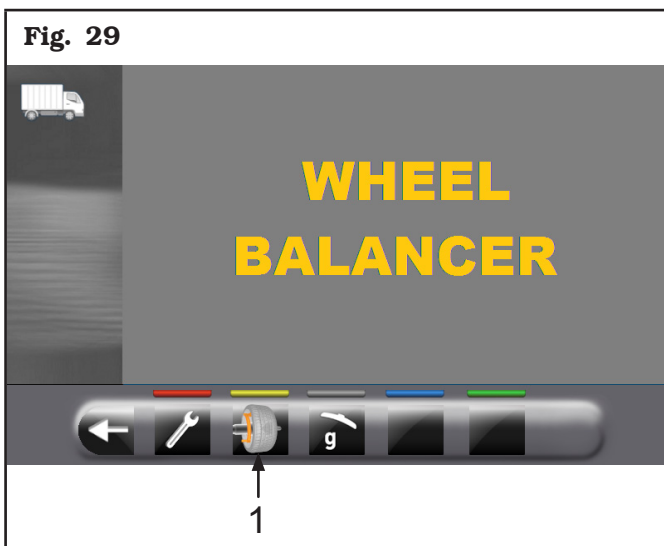
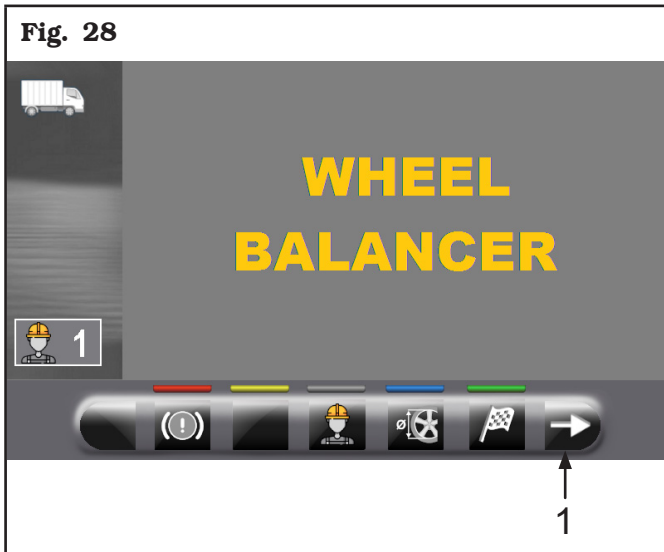
• **Measuring procedure of electronic RUN-OUT with the distance-diameter caliper arm.**

The electronic RUN-OUT measuring device is useful to check if the rim has some imperfections.

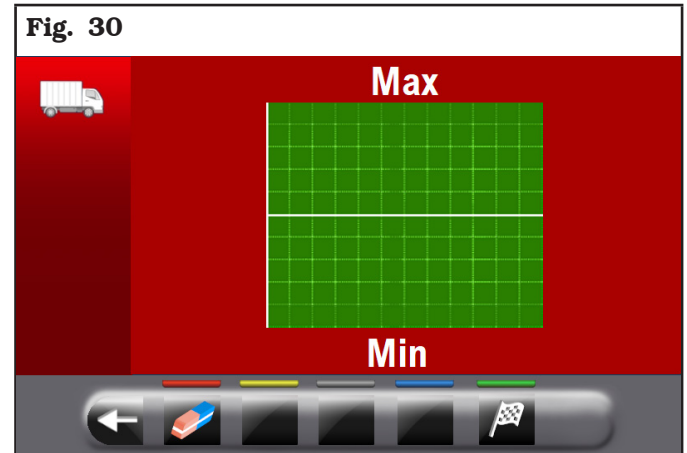
To access the screen to choose the rim control mode, proceed as follows:

1. from the "Home" page, press the button 

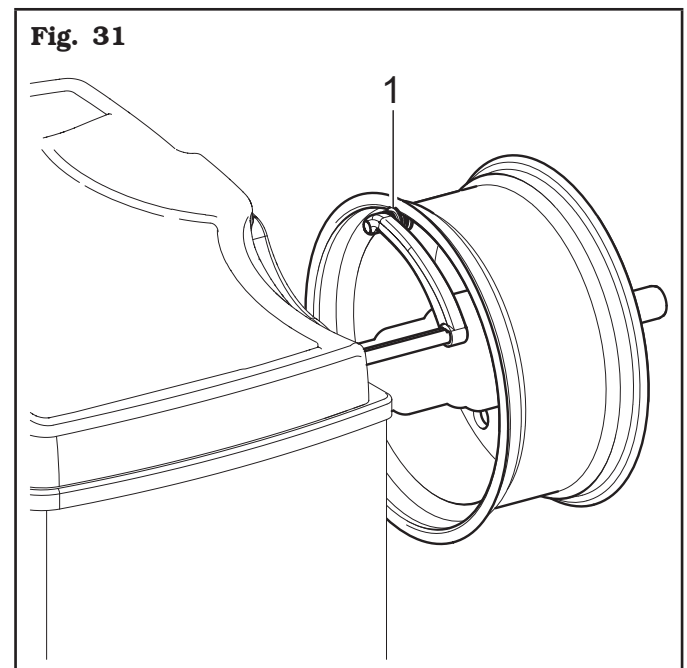
(**Fig. 28 re. 1**) and then the button  (see **Fig. 29 ref. 1**);



2. the following screen page will appear on the monitor:



3. place the distance-diameter caliper pliers (**Fig. 31 ref. 1**) in contact with the rim.




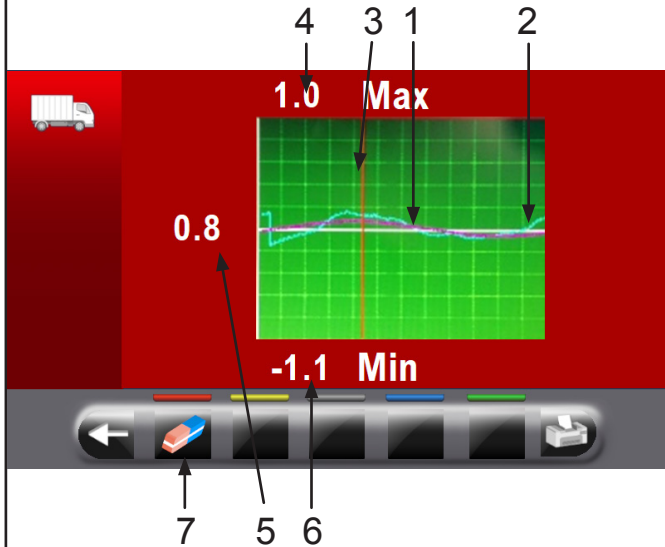
Press the green button on the monitor  to start the rim analysis procedure. The circle starts to spin at low speed (30 rpm) and at the end of the measurement the eccentricity graph appears, as shown in the **Fig. 32**.

Fig. 32



## KEY

- 1 – Fundamental sine wave (fuchsia-coloured-graph)
- 2 – Graph of detected eccentricity (blue)
- 3 – Slider that indicates the current position of the rim ("12 o'clock") (red)
- 4 – Value in mm of the highest peak of imperfection detected on the rim
- 5 – Value in mm of imperfection of the rim at the current position
- 6 – Value in mm of the lowest peak of imperfection detected on the rim
- 7 – Graph deleting button

The blue graph (**Fig. 32 ref. 2**) represents exactly the geometric shape of the rim. The more the circle is round and linear, the more the graph is flat, unlike the more the circle has deficiencies, the more the graph is large.

You can follow the eccentricity in the graph by manually turning the rim, the red-coloured-slider (**Fig. 32 ref. 3**), indicates the position of the rim in "12 o'clock" position.

#### 14.2.2 Programs setting through "Measurements acquisition" screen page


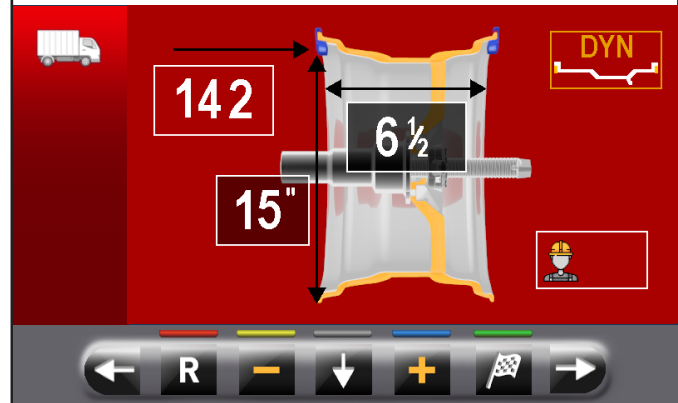


From the "Home" page, press the  (**Fig. 21 ref. 1**) button to display "Measurements acquisition" screen page below:

Fig. 33



**PRESS THE BUTTON  (Fig. 21 ref. 1) TO DISABLE THE AUTOMATIC FUNCTIONS FOR THE SELECTION OF THE BALANCING PROGRAM OF DISTANCE-DIAMETER CALIPER ARM, DESCRIBED IN PAR. 14.2.1. TO BE ABLE TO REUSE THE AUTOMATIC FUNCTION TO SELECT THE WHEEL BALANCING PROGRAM WITH GAUGE ARM, IT IS NECESSARY TO RETURN TO "HOME" PAGE, BY PRESSING THE BUTTON .**

The selection of the wheel balancing program is possible in 2 ways:

1. with highlighted program (yellow) by pressing the



until you see the desired program.

With this mode only the 11 standard programs can be selected (DYN, ALU-S, ALU-S1, ALU-S2, STAT, STAT-1, STAT-2, ALU-1, ALU-2, ALU-3, ALU-4).





**IF THE PROGRAM NAME IS NOT HIGHLIGHTED (YELLOW), PRESS**

**THE BUTTON  REPEATEDLY UNTIL THE ABOVE CONDITION IS REACHED.**



2. Press the button  to display the following programs selection screen page:

**Fig. 34**

Use the arrows  and/or  to select the desired mode (yellow). In this mode you can select the 11 standard programs (listed above) and special programs (PAX360, PAX420, PAX460, PAX700).




**AFTER YOU HAVE SELECTED THE DESIRED PROGRAM, USE THE DISTANCE-DIAMETER CALIPER TO DETECT THE MEASURES REQUIRED BY THE PROGRAM.**



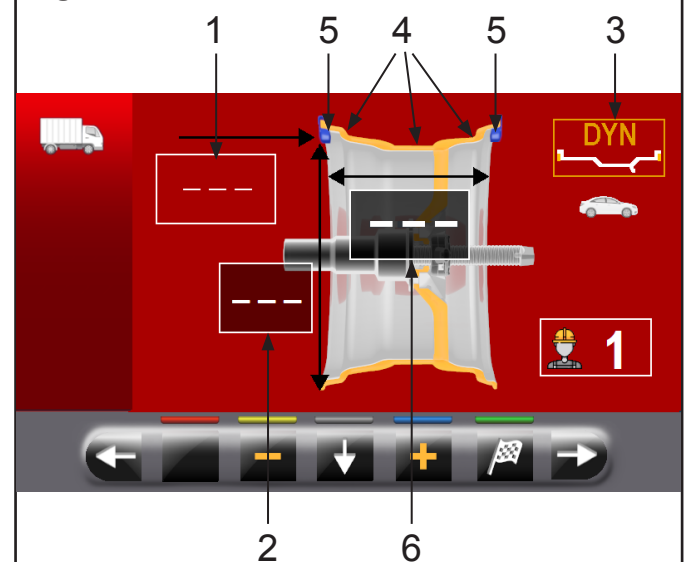
**WHENEVER THE DISTANCE-DIAMETER CALIPER IS KEPT IN POSITION FOR A FEW SECONDS AGAINST THE RIM (UNTIL THE EQUIPMENT MAKES AN APPROPRIATE SOUND NOTIFICATION), THE POSITION IS STORED AND THE VALUES MEASURED IN THE PRE-ARRANGED FIELDS IN THE SELECTED WHEEL BALANCING PROGRAM ARE LOADED.**

After entering all the required measures, you can spin

the wheel by pressing the button  and closing the protective guard.

### 14.3 Indicative display of points where to detect measures/to fit weight

Depending on the type of program selected, the equipment shows on the monitor the guideline points where to take measures and, consequently, where you must apply weights (**Fig. 35 ref. 4-5**).

**Fig. 35****KEY**

- 1 – 1<sup>st</sup> weight fitting point distance
- 2 – Rim diameter
- 3 – Balancing mode
- 4 – Point at which to take the measure/adhesive weight fitting
- 5 – Point at which to take the measure/clip weight fitting
- 6 – Rim width



**THE MORE THE POINTS CHOSEN FOR THE PROBING ARE DISTANT FROM EACH OTHER THE MORE THE BALANCING WILL BE EFFEC-TIVE.**

### 14.3.1 Weights positioning

The monitor displays when it is absolutely necessary that the weight is applied at "12 o'clock" position. Pay particular attention to the weights identification icons



since if the following words are displayed, then the icon corresponding weight has to be applied at "12 o'clock" position (typical of STAT-2, ALU-S2 programs).

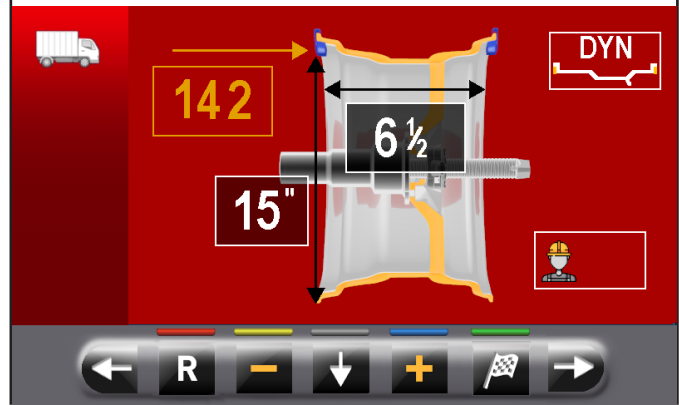




**IF ALL MEASURES REQUIRED BY THE PROGRAM HAVE NOT BEEN TAKEN/INSERTED, THE EQUIPMENT DOES NOT ALLOW THE WHEEL SPIN TO DETECT THE UNBALANCE.**

### 14.4 Displaying the active/modifiable field

During the various phases of measures detection, the active field turns yellow.

Fig. 36



Pressing the buttons  or  you can change the value and/or program inside the active field. To change the selected active field, simply press the but-

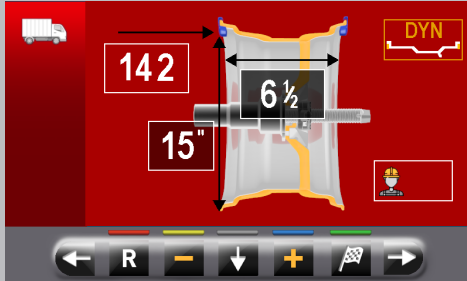


ton  until the desired field is coloured yellow.

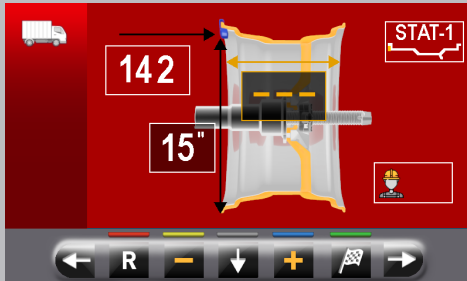


**THE SELECTION OF THE ACTIVE FIELD IS DONE BY HIGHLIGHTING THE FIELDS IN A CLOCKWISE DIRECTION.**

NORMALLY DURING THE DETECTION OF MEASUREMENTS, THE 1ST ACTIVE FIELD WILL BE THE ONE FOR THE SELECTION OF THE PROGRAM.



THERE IS A CASE, HOWEVER, IN WHICH THE 1ST ACTIVE FIELD WILL BE THE RIM WIDTH.

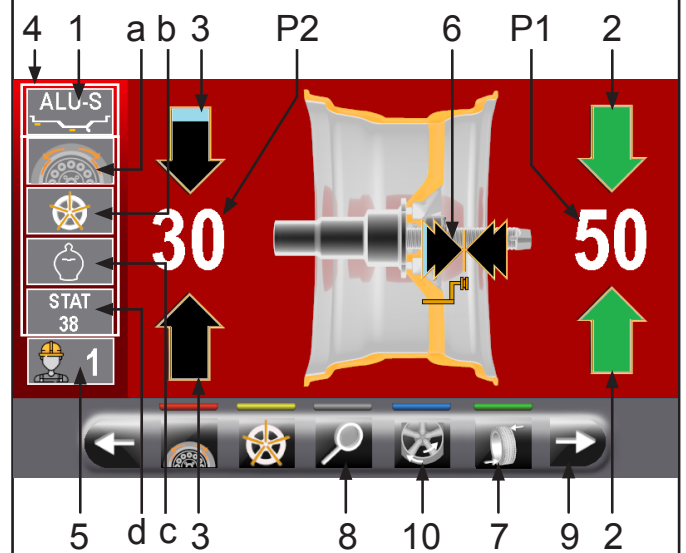


THIS CASE WILL OCCUR ONLY IF FROM "HOME" PAGE IS DETECTED ONLY ONE MEASUREMENT INSIDE THE RIM. THE PROGRAM WILL AUTOMATICALLY SET TO "STATIC" BUT IT WILL MAKE IT POSSIBLE (IN CASE OF ABSENCE OF EXTERNAL DATA GAUGE) TO MANUALLY ENTER RIM WIDTH AND TO QUICKLY SWITCH TO THE PROGRAM "DYNAMIC".




### 14.5 Wheel balancing screen page description

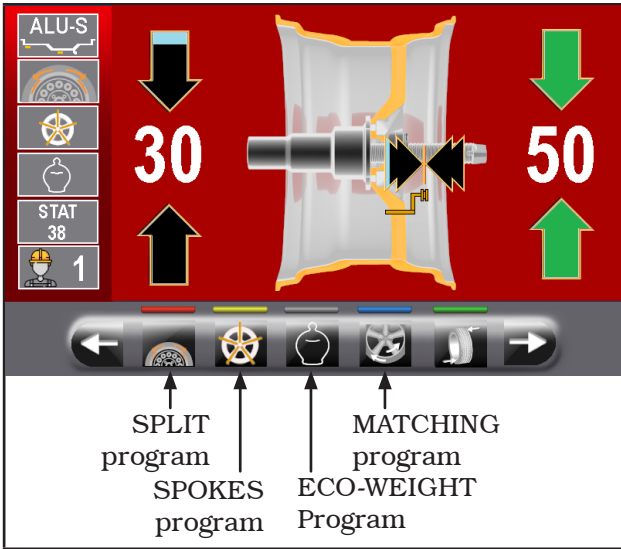
After executing the spin of the wheel, the monitor displays a series of important information that helps the operator in his operations and subsequent choices.


Fig. 37




KEY

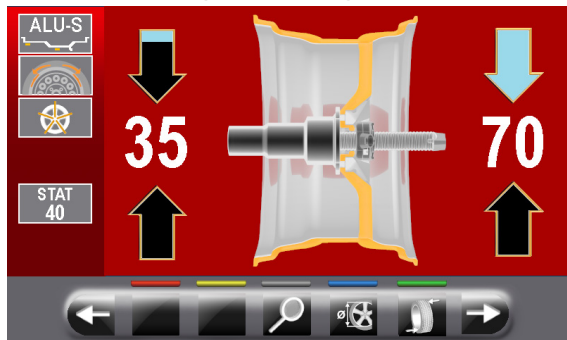
- 1 – Measures used by the program to perform the spin and detect the values in P1 - P2
- P1– Weight to be fitted on rim outer side
- P2– Weight to be fitted on rim inner side
- 2 – Wheel placed to fit the weight on wheel outer side (arrows both green)
- 3 – Wheel not placed to fit the weight on wheel inner side (blue/black arrows)
- 4 – Wheel balancing suggestions
- 4a– SPLIT Program (Clip weights program)
- 4b– SPOKES Program (program with adhesive weights)
- 4c– ECO-WEIGHT Program
- 4d– STATIC Program
- 5 – N° user (if selected)
- 6 – Arrows indicating the weight fitting point with distance-diameter caliper arm
- 7 – Wheel repositioning button for weights fitting
- 8 – Display of the weight with the maximum resolution of 1 g / 0.05 oz
- 8a– Display of the weights in grams 
- 8b– Display of the weights in ounces/grams 
- 9 – By pressing the button  you will see the following page where you can select one of the programs suggested by the equipment.
- 10– MATCHING program




**IF THE GUARD AND REPOSITIONING FUNCTION ARE DISABLED, ON THE BUTTON IN POS. 7 FIG. 37, YOU WILL SEE THE  ICON THAT WILL ALLOW WHEEL SPIN WITHOUT RETURNING TO THE PREVIOUS PAGE. THE POSITIONING OF THE WHEEL FOR THE APPLICATION OF THE WEIGHTS MUST BE DONE MANUALLY.**

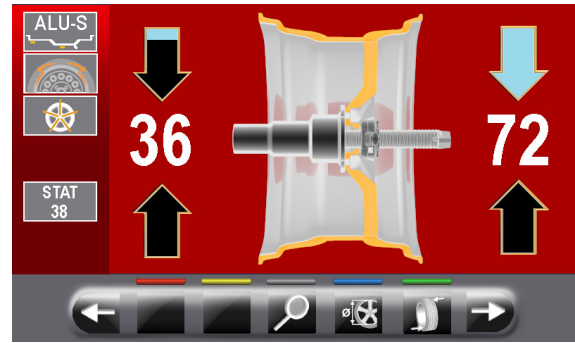
8a-Display of the weights in GRAMS  
Set the unit of measurement for weights display to GRAMS  (see Par. 15.1 "Options menu").

On the following screen page:

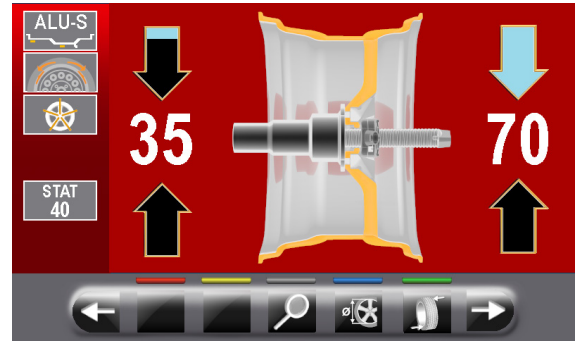


press the button  to display the weight with maximum resolution (1g) to be fitted on the wheel, expressed in grams.


The following screen will appear on the monitor:



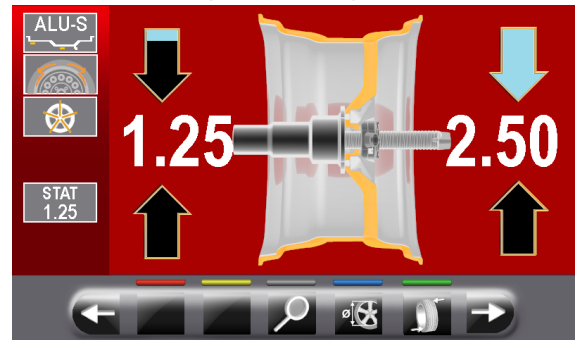
Press again the button  to display the approximated weight to be fitted to the wheel, expressed in grams.




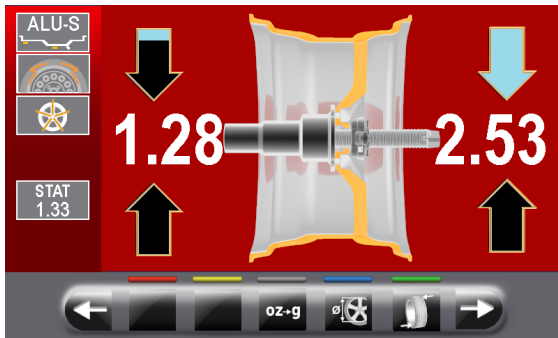
7b-Display of the weights in OUNCES/GRAMS  
Set the unit of measurement for weights

display to OUNCES/GRAMS  (see Par. 15.1 "Options menu").

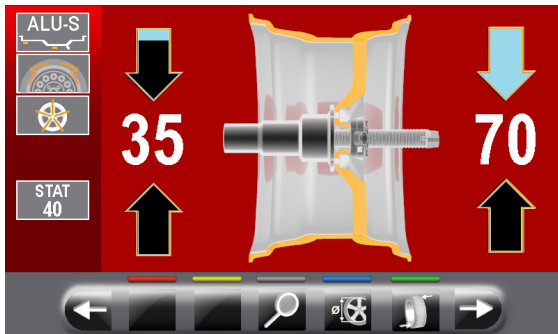
On the following screen page:




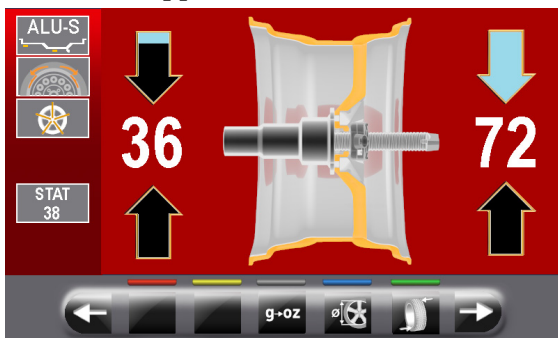
press the button  to display the weight with maximum resolution (0.05 oz) to be fitted on the wheel, expressed in ounces. The following screen will appear on the monitor:



Press the button **oz-g** to set the display of the weights to be fitted on the wheel in grams. The following screen will appear on the monitor:



Press the button  to display the weight with maximum resolution (1g) to be fitted on the wheel, expressed in grams. The following screen will appear on the monitor:



Press the button **g-oz** to set the display of the weights to be fitted again in ounces. The following screen will appear on the monitor:



### 14.5.1 Balancing mode

The equipment has the ability to perform the wheel balancing (weights fitting) in 2 different ways:

- using the distance-diameter caliper arm with weights fitting pliers;
- weights fitting at "6 o'clock" (without the use of laser emitter).

#### • **Weights fitting with distance-diameter caliper and pliers.**

1. Place the adhesive weight on the arm pliers;

**Fig. 38**

Fit the adhesive weight in the pliers of the gauge rod



2. pull out the gauge until the arrows (**Fig. 37 ref. 6**) both turn green;
3. rotate the gauge arm until the weight touches the rim;

**Fig. 39**

Fit weight on the position where pliers touches the wheel



4. bring the distance-diameter caliper arm in resting position, after having led it towards the chuck to unlock it from the position of weight application;



5. press the button to change the weight fitting side;
6. proceed in the same way as described in points 1-2-3.

- **Weights fitting at "6 o'clock" (without the use of laser emitter).**



TO USE THIS MODE, IT IS NECESSARY THAT THE RELEVANT FUNCTION IS ENABLED



ON THE "MENU OPTIONS" DESCRIBED IN PAR. 15.1.



TO USE THIS WEIGHT APPLICATION MODE THE OPERATOR MUST REMEMBER THE PRECISE POINT WHERE THE MEASUREMENT WAS TAKEN WITH THE DISTANCE-DIAMETER CALIPER ARM.



USING THIS MODE, THE EQUIPMENT ALLOWS YOU TO APPLY ANY ADHESIVE WEIGHTS THAT WOULD BE APPLIED WITH DISTANCE/DIAMETER CALIPER AT "6 O'CLOCK". IF, AFTER YOU ENABLE THIS MODE, ON BALANCING PROGRAM APPEARED AGAIN THE



ICON (ONLY IN THIS CASE) THE ADHESIVE WEIGHT WILL BE APPLIED TO "12 O'CLOCK".

At the end of the spin, the wheel stops in place to apply the weight at "6 o'clock". The positioning of the weight (s) in depth shall be at the discretion of the operator, depending on where remembers taking the measure.

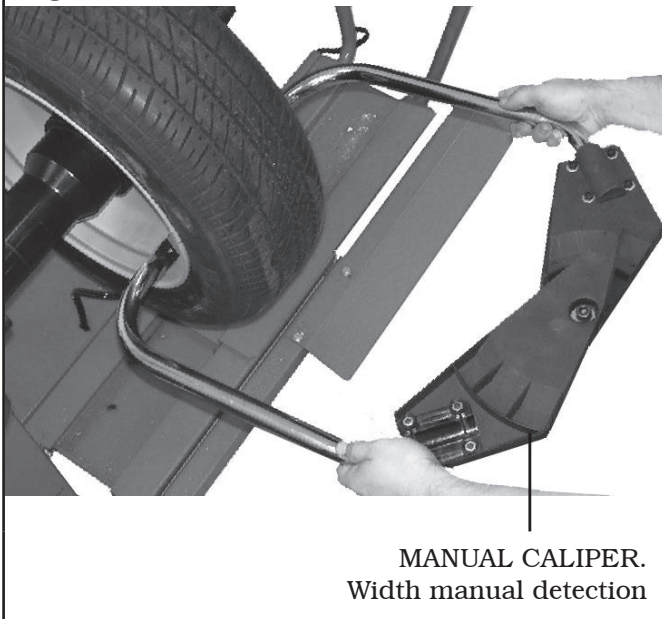


BE SURE TO APPLY THE (INTERNAL OR EXTERNAL) WEIGHT AS INDICATED BY THE 2 GREEN ARROWS (Fig. 37 ref. 2 or 3) ON THE CORRESPONDING MONITOR SCREEN.

### 14.6 Use of equipments with disabled automatic data gauge

The entry of diameter, width and distance measures of the equipment rim must be performed manually. The reading of these measures can be made as follows:

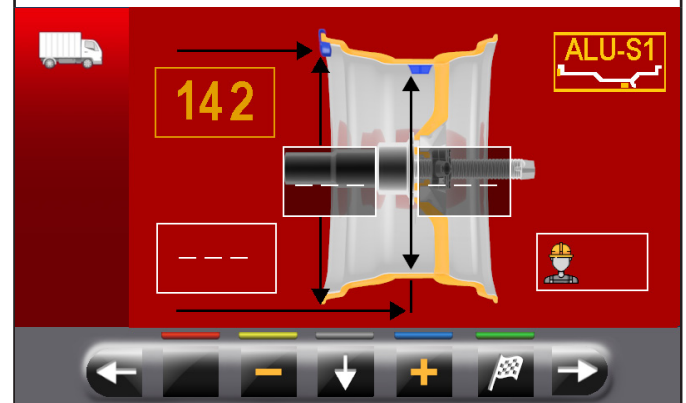
- visual readout on caliper graduated scale (distance);
- values readout on rim (diameter and width);
- width value detection with manual caliper (width) (see **Fig. 40**).

**Fig. 40**

### 14.6.1 Manual setting of wheel dimensions

In case the operator wants to edit and/or manually enter the wheel dimensions, proceed as follows:

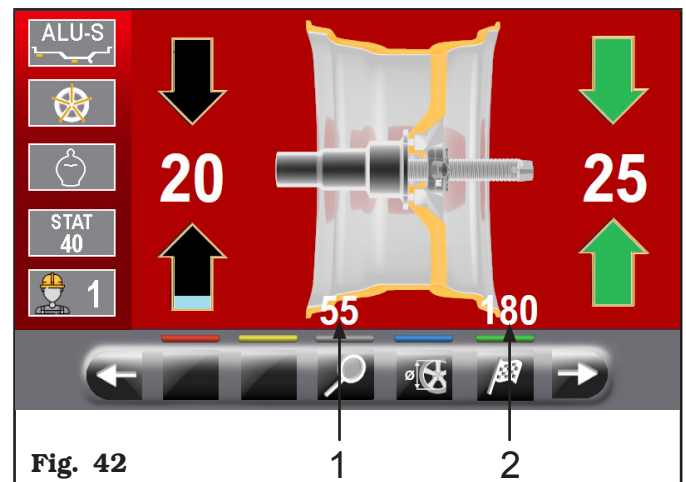
1. from the desired measurement mode screen, press the button until highlighting with yellow the field to modify/edit;
2. press the buttons or until reaching the desired value;
3. press button to shift to the next value.

**Fig. 41**

After entering all the required measures, you can spin

the wheel by pressing the button and closing the protective guard.

In case the distance-diameter caliper was disabled, the displayed page for detected unbalance is as follows:



Open the protection guard. In this screen page, in addition to the information of the detected unbalance, there are measurements in mm where you must remove the gauge arm (**Fig. 42 ref. 1-2**) to apply the weights inside the rim.

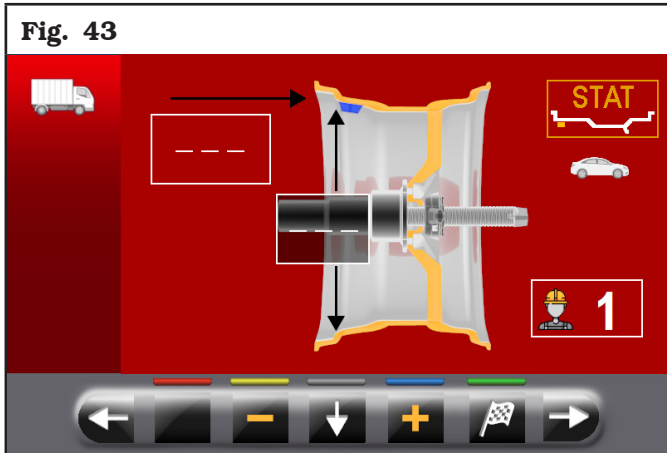
## 14.7 Standard balancing programs

### 14.7.1 Static

#### Applies to truck/car/motorcycle

The STATIC program permits balancing wheels by fitting adhesive weights on the outer and inner sides of the rim. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 43



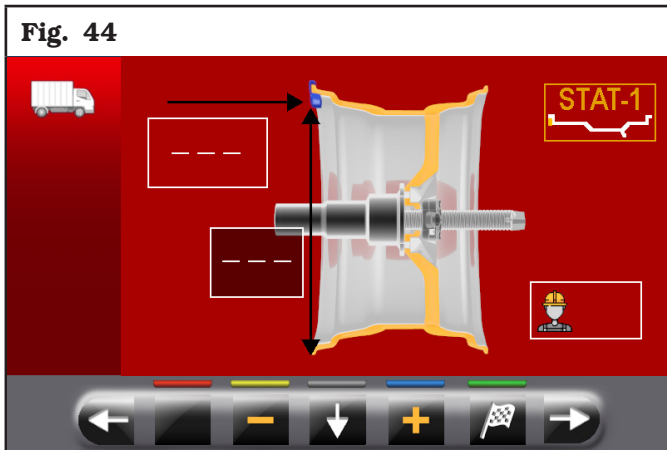
The procedure has now been completed.

### 14.7.2 Static-1

#### Applies to truck/car/motorcycle

STATIC 1 function is a procedure that offsets wheel vibrations using a single weight with clip on a single plane positioned exactly at "12 o'clock". Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 44



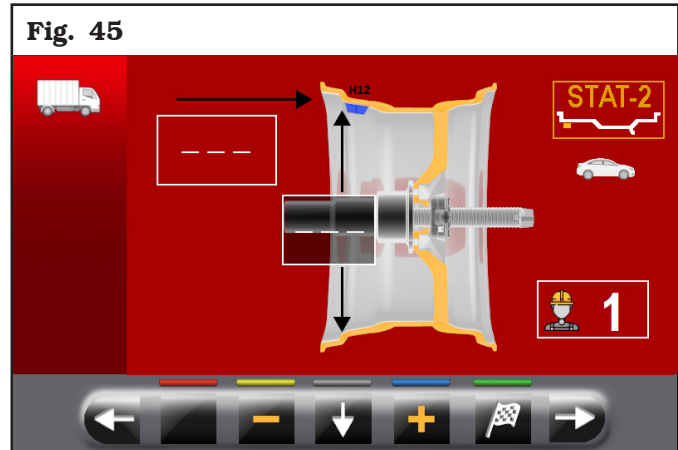
The procedure has now been completed.

### 14.7.3 Static-2

#### Applies to truck/car

STATIC 2 function is a procedure that offsets wheel vibrations using a single adhesive weight on a single plane positioned exactly at "12 o'clock". Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 45



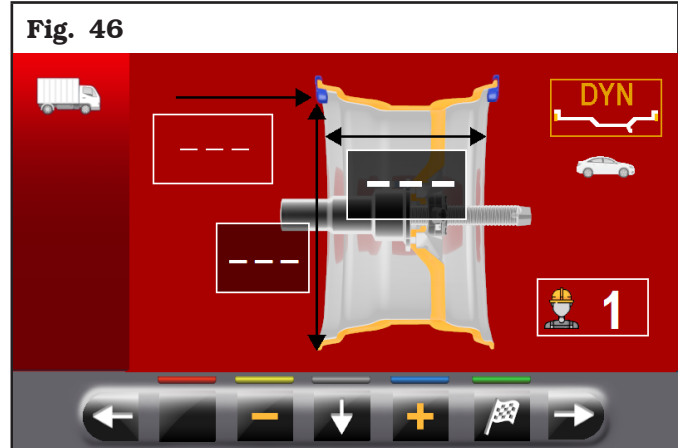
The procedure has now been completed.

### 14.7.4 Dynamic

#### Applies to truck/car/motorcycle

The DYNAMIC program allows the wheels balancing by fitting two clip adhesive weights: one on the outside and one on the inside rim. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 46



The procedure has now been completed.

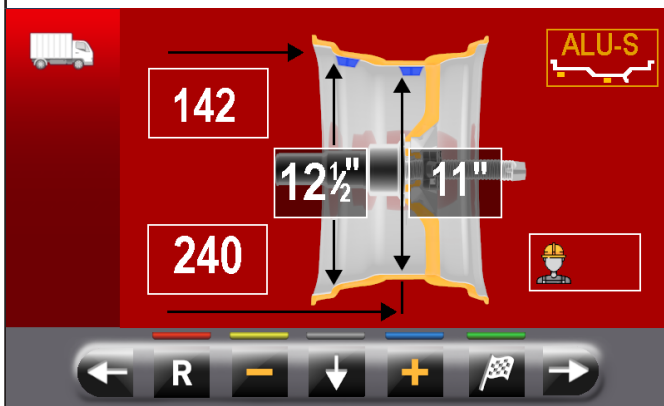


### 14.7.5 ALU-S

#### Applies to truck/car/motorcycle

ALU-S program permits balancing wheels by two fitting adhesive weights on the outer and inner sides of the rim. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 47



The procedure has now been completed.

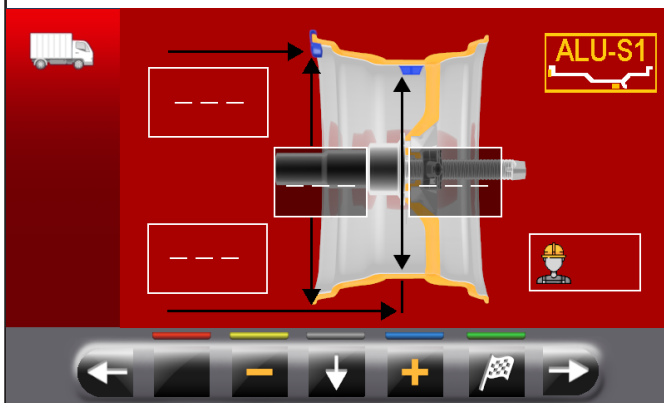
### 14.7.6 ALU-S1

#### Applies to truck/car

ALU-S1 function permits balancing wheels with light alloy rims by fitting adhesive weights on the outer side and weight with clip on inner side of wheel (at "12 o'clock").

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 48



The procedure has now been completed.

### 14.7.7 ALU-S2

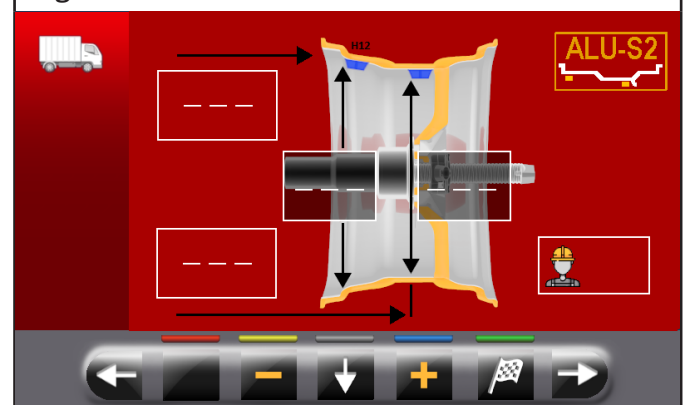
#### Applies to truck/car

ALU-S2 function permits balancing wheels with light alloy rims by fitting two adhesive weights: one on the outer and one on inner sides of the rim (the inner weight is at "12 o'clock").

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations.

At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 49



The procedure has now been completed.

### 14.7.8 ALU-1

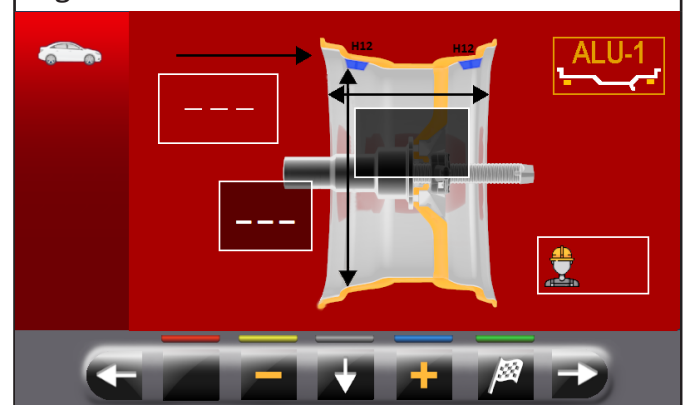
#### Applies to car

ALU-1 function permits balancing wheels with light alloy rims by fitting adhesive weights on the outer and inner sides of the rim at "12 o'clock".

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations.

At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

Fig. 50

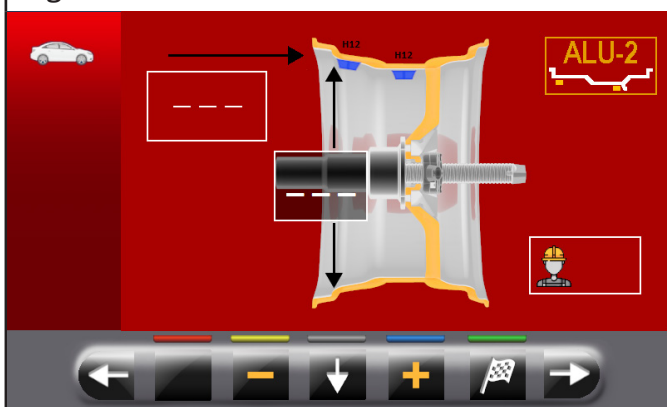


The procedure has now been completed.

**14.7.9 ALU-2****Applies to car**

ALU-2 function balances wheels with light alloy rims by fitting adhesive weights on the outside and inside of the rim. The position of the outer weight is not visible but hidden inside. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations.

At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

**Fig. 51**

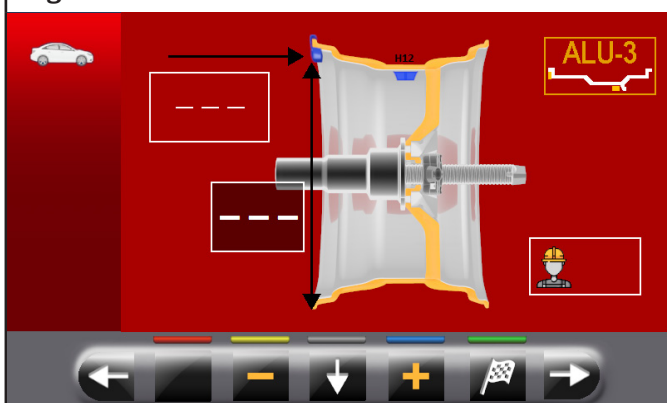
The procedure has now been completed.

**14.7.10 ALU-3****Applies to car**

ALU-3 function is a procedure that uses mixed weights to offset wheel unbalance: weight with clip on inner side of wheel, adhesive weight on outer side, not visible because inside the rim.

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations.

At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

**Fig. 52**

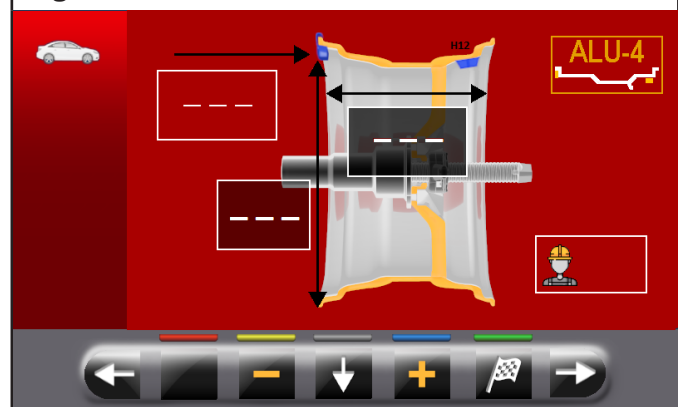
The procedure has now been completed.

**14.7.11 ALU-4****Applies to car**

ALU-4 function is a procedure that uses mixed weights to offset wheel unbalance: weight with clip on inner side of wheel, adhesive weight on outer side.

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed with the balancing operations.

At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

**Fig. 53**

The procedure has now been completed.

### 14.8 Optional balancing programs

#### 14.8.1 ECO-WEIGHT mode

Applies to car/motorcycle



TO USE THE ECO-WEIGHT PROCEDURE IT IS NECESSARY THAT THE DISTANCE-DIAMETER CALIPER ARM IS ENABLED IN THE "OPTIONS" MENU DESCRIBED IN PAR. 15.1.

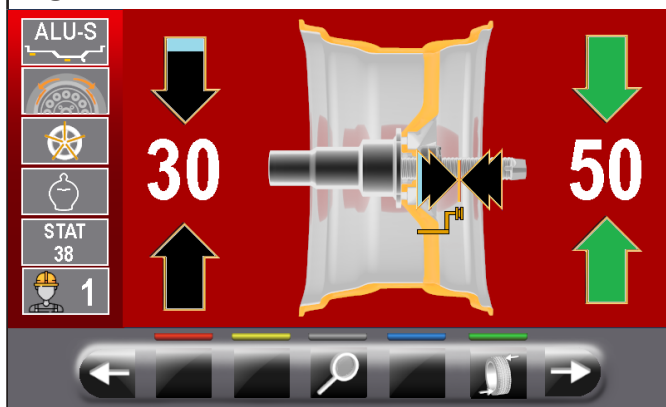


THE ECO-WEIGHT PROCEDURE CAN ONLY BE USED WITH THE PROGRAM ALU-S.

This procedure represents a modern system for the reset of the unbalance in order to reduce weights consumption. This procedure ensures a fastest execution of the operations, thanks to a lesser number of spins and repositioning.

After making the wheel spin in ALU-S mode, the monitor shows the total of 2 adhesive weights to precisely correct STATIC and DYNAMIC unbalance.

Fig. 54



It is possible to fit a single weight at a predetermined distance from the equipment, so as to optimize the weight consumption and reduce both the DYNAMIC and any remaining STATIC unbalance as much as possible.

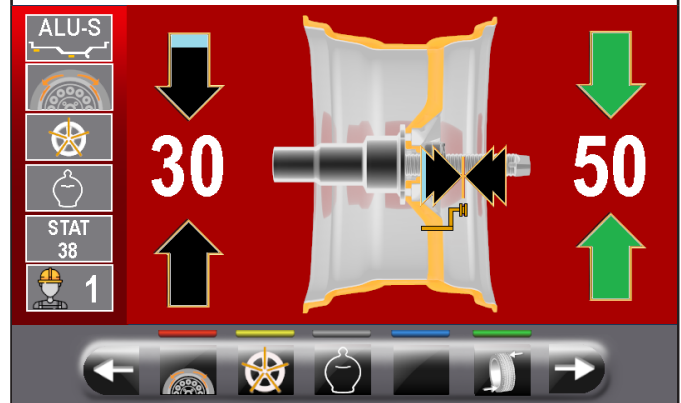
Unlike the standard STATIC procedure, the ECO-WEIGHT procedure, though only using one weight, also considerably reduces the DYNAMIC unbalance, because the fitting distance of the weight on the rim is also calculated.

From ALU-S unbalance results page, if there is con-



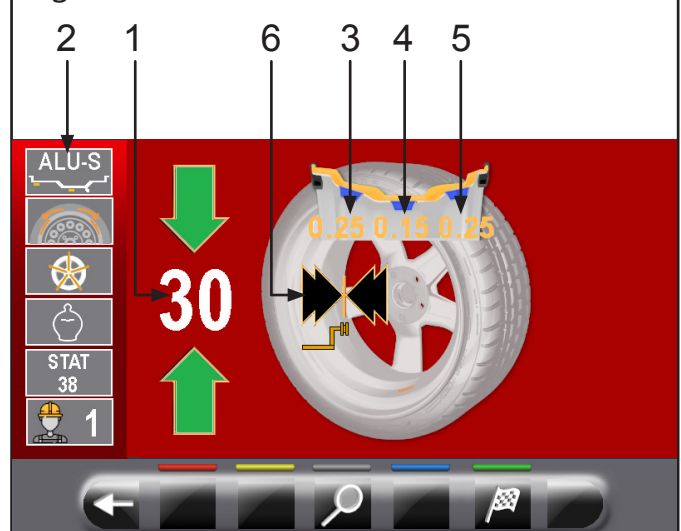
siderable static unbalance, press the button to display on the following monitor screen:

Fig. 55



Press button to select such procedure and bring automatically the wheel into weight fitting position.

Fig. 56



#### KEY

- 1 – Only weight to be fitted
- 2 – Last program and last values used for the spin
- 3 – Residual dynamic unbalance value (if the value is yellow, it is not recommended to carry out ECO-WEIGHT procedure)
- 4 – Static unbalance value (if the value is yellow, it is not recommended to carry out ECO-WEIGHT procedure)
- 5 – Residual dynamic unbalance value (if the value is yellow, it is not recommended to carry out ECO-WEIGHT procedure)
- 6 – Arrows indicating the weight fitting point with distance-diameter caliper arm

Insert the adhesive weight inside pliers as shown in **Fig. 57**.

**Fig. 57**

Fit the adhesive weight  
in the pliers of the gauge rod



Pull out the gauge rod until the arrows (**Fig. 56 ref. 6**) turn green.

**Fig. 58**

Fit weight on the position  
where pliers touches the wheel



At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin. The ECO-WEIGHT procedure has now been completed.



**IMMEDIATELY AFTER HAVING SELECTED THE ECO-WEIGHT PROCEDURE, YOU CAN KNOW IN ADVANCE THE TWO DYNAMIC UNBALANCES AND THE STATIC RESIDUE IN ORDER TO DECIDE WHETHER IT IS CONVENIENT TO CONTINUE (SEE FIG. 56).**

**IF BOTH DYNAMIC UNBALANCES AND STATIC RESIDUE ARE SHOWN AS WHITE VALUES ON THE MONITOR, THIS MEANS THAT THE PROGRAM HAS DECIDED THAT IT IS BETTER TO CONTINUE. WHILE IF, ON THE OTHER HAND, ONE OR MORE VALUES ARE YELLOW, THE PROGRAM SUGGESTS USING THE STANDARD ALU-S PROCEDURE.**

### 14.8.2 SPLIT mode

#### Applies to trucks/car/motorcycle

The Split procedure proves useful when the dynamic unbalance of a wheel is fairly high and the weight to be fitted is not available, for instance a 100 g (3.52 oz) weight. The unbalance can be corrected by splitting the total weight into two smaller weights.

Split procedure eliminates errors by using "DYNAMIC" program, for example by manually fitting two 50 g (1.76 oz) weights close to one another, instead of only a 100 g (3.52 oz) one.

#### For example:

Fig. 59

100 g WEIGHT (3.52 oz).  
TO BE FITTED TO CORRECT  
UNBALANCE



Fig. 60

TWO SMALLER WEIGHTS  
(50 g - 1.76 oz)  
FITTED MANUALLY



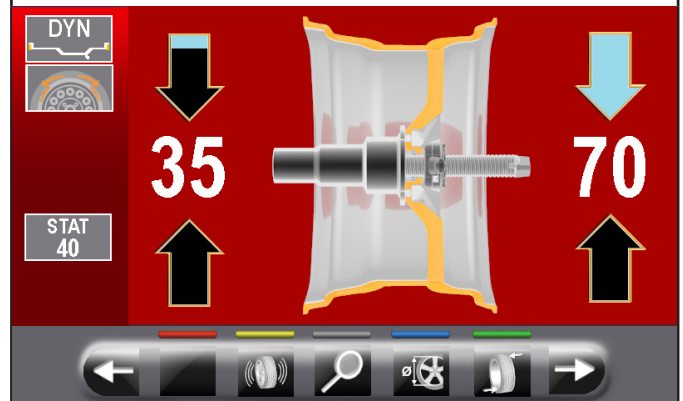
Fig. 61

TWO SMALLER WEIGHTS (55 g - 1.94 oz)  
USING SPLIT PROCEDURE



Proceed to "DYNAMIC" unbalance measurement displaying by performing a standard wheel spin.

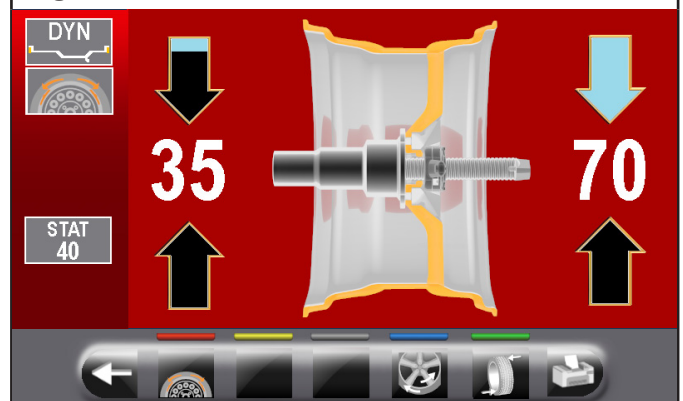
Fig. 62



Once detected the unbalance values, verify that the equipment displays the ability to use the "SPLIT" op-

tion (Fig. 37 ref. 4a). Press button  to shift to the next screen page.

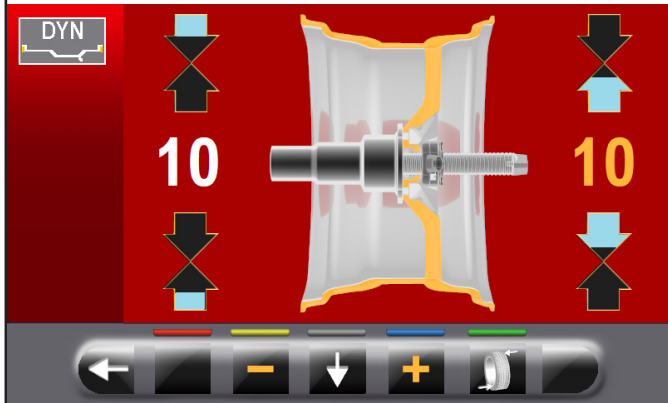
Fig. 63






Press button  to enter "SPLIT" function.

On the monitor screen will be displayed where you must enter the value of the weights to be fitted.

Fig. 64



Press button  to select the outer weight to edit.

Press buttons  or  to increase or decrease the total weight to be fitted.



**THE YELLOW VALUE INDICATES WHICH VALUE IS ACTIVE AND YOU ARE EDITING.**



**THE HIGHER THE CHOSEN WEIGHTS VALUE IS, THE MORE THEY WILL BE SPACED.**

After choosing the value of the weights to be fitted,


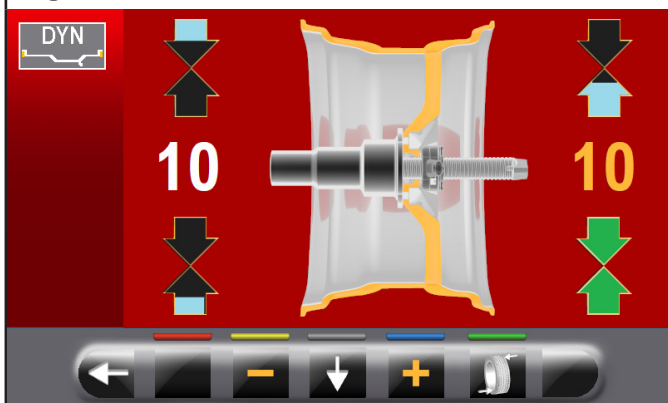
press button  to position the wheel for the application of the 1st clip weight.

Fig. 65

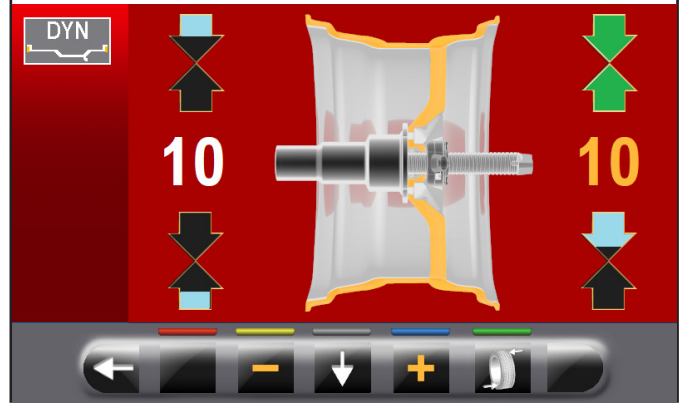


**THE TWO GREEN ARROWS INDICATE THAT THE WHEEL IS PROPERLY POSITIONED FOR THE APPLICATION OF THE 1ST WEIGHT.**

Fit the clip weight of the chosen value at "12 o'clock" on

the outside of the wheel. Press again button  to position the wheel for the fitting of the 2<sup>nd</sup> clip weight.

Fig. 66



Fit the clip weight of the chosen value at "12 o'clock"


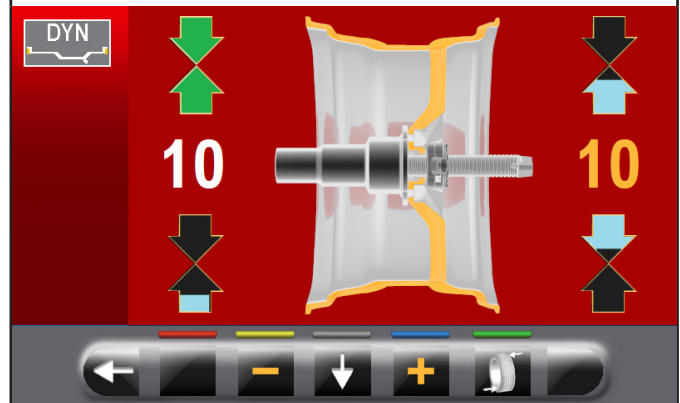
on the outside of the wheel. Press button  to highlight the value of the weights to be fitted on the inside of the wheel.

Fig. 67



Repeat the above steps for the weights to be fitted inside the wheel.

At the end perform again a checking spin to see that you have applied the weights correctly.

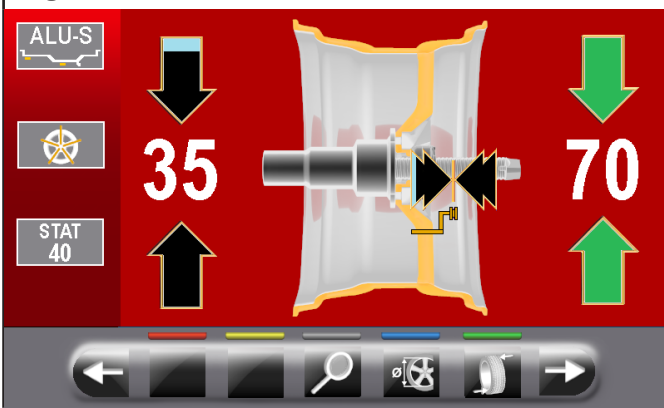
### 14.8.3 Weights hidden behind spokes mode

#### Applies to trucks/car/motorcycle

Adhesive correction weight positioning may not look attractive on some types of rims. In this case, "weights hidden behind spokes" mode can be used: it splits any correction weight on the outer side into two parts to be hidden behind rim spokes. It can be used in ALU-S mode.

Proceed to ALU-S unbalance measurement displaying by performing a standard wheel spin.

Fig. 68



Once detected the unbalance values, verify that the equipment displays the ability to use the "SPOKES"


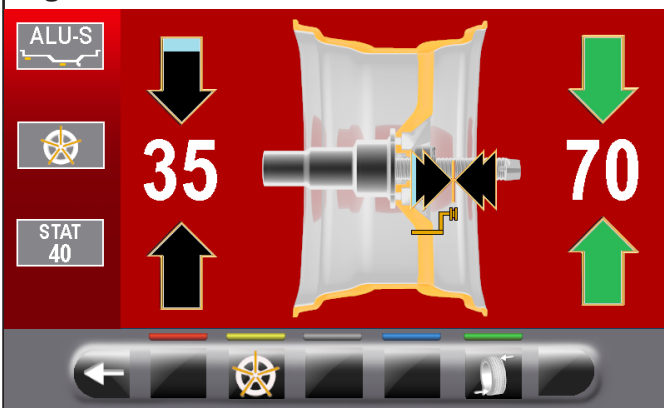
options (Fig. 37 ref. 4b). Press button  to shift to the next screen page.

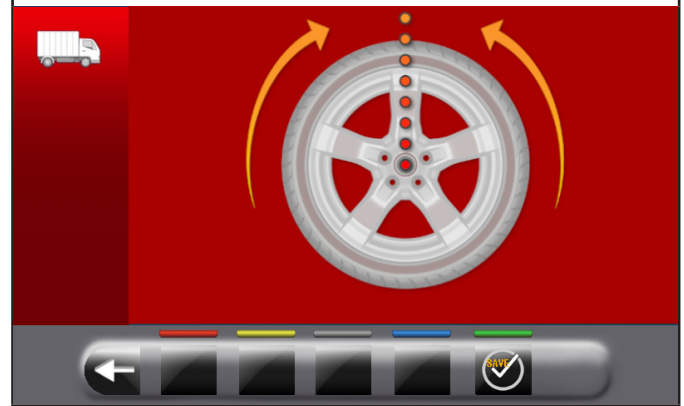
Fig. 69



Press button  to enter the relevant function.

On the monitor the next screen page will be displayed:

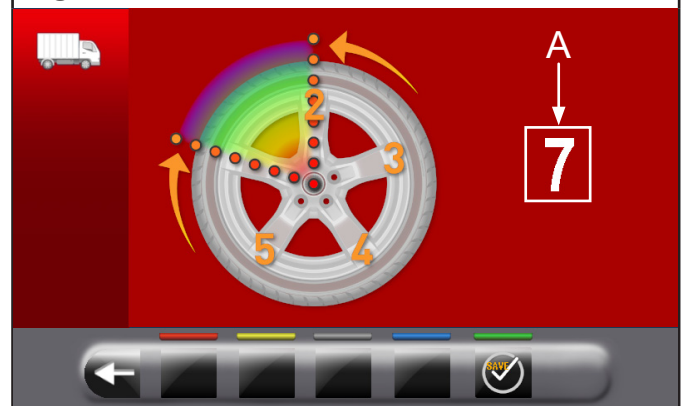
Fig. 70



Bring any spoke upwards at "12 o'clock" position and

press the button  to confirm and continue.

Fig. 71

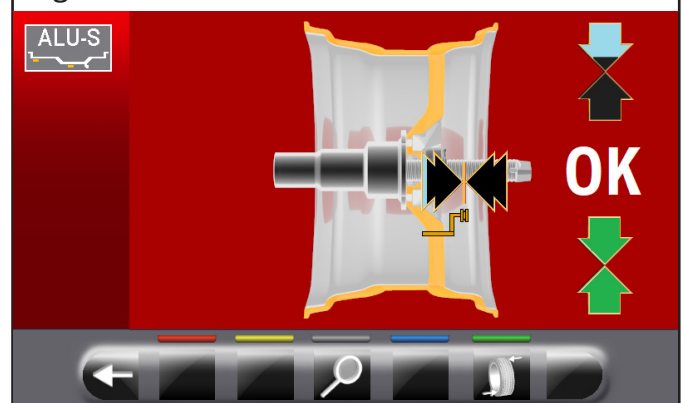


Lead to "12 o'clock" the 2nd spoke. The equipment will automatically calculate the total number of spokes. If the value shown on the screen (A) is correct, press the

button .


The equipment automatically calculates weight position in two positions hidden behind the spokes. The monitor shows the amount of weight to be applied behind the FIRST spoke and the rim will reach the position to apply the FIRST weight.

Fig. 72




Extract the gauge rod, and fit the FIRST weight in the position shown by the equipment, as explained in



Par. 14.5.1. Press the button  to confirm that they have applied the FIRST weight and to automatically position the wheel for the fitting of the 2nd weight. The monitor shows the amount of weight to be applied behind the SECOND spoke.

Pull out the gauge rod and fit the SECOND weight in the position shown by the equipment, as done for the first weight.

Press the button  to confirm that you have applied the SECOND weight and get back to the initial situation of unbalance, before performing the "weights hidden behind the spokes" procedure.

Perform another test spin.

The "weights hidden behind spokes" procedure is completed.

Complete the operation by adding an additional weight inside the rim as required by the selected mode (ALU-S).

#### 14.8.4 Matching mode

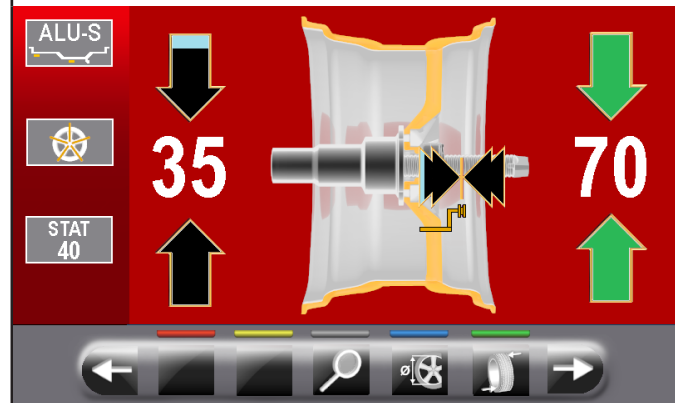
##### Applies to car/motorcycle

The Matching procedure offsets strong unbalance, reducing the weight quantity to be fitted on the wheel to achieve balancing. This procedure permits reducing unbalance as much as possible by offsetting the tyre unbalance with that of the rim in any used program. Proceed to unbalance measurement displaying by performing a standard wheel spin.



**THE MATCHING PROCEDURE CAN BE CARRIED OUT ONLY IF THE STATIC UNBALANCE IS > 30 g (1.05 oz).**

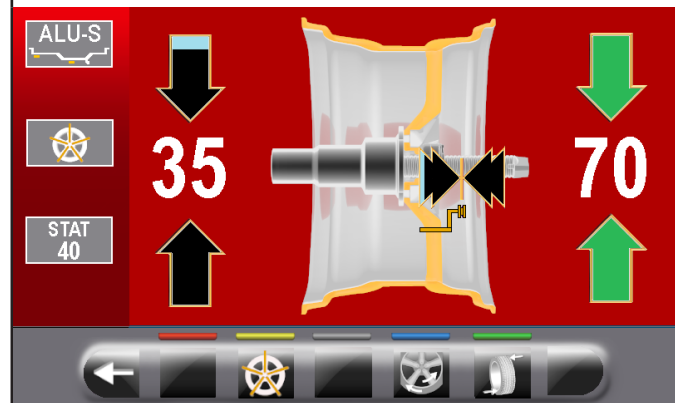
Fig. 73



Once detected the unbalance values, verify that the equipment displays the ability to use the "MATCHING" options (Fig. 37 ref. 10).

Press button  to shift to the next screen page.

Fig. 74



Press button  to enter the relevant function.



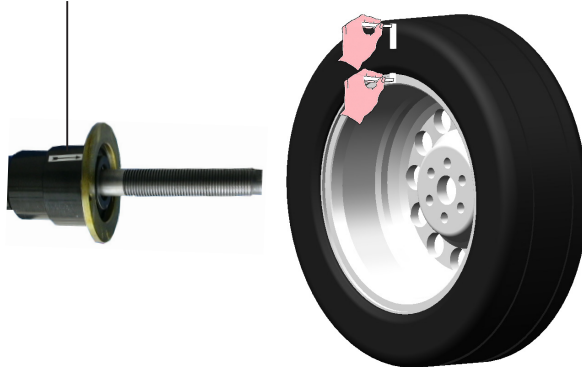
On the monitor the next screen page will be displayed:

**Fig. 75**

**STEP 1.** Move the slider on the flange to the "12 o'clock" position. Make a reference mark, using chalk for instance, on the rim and tyre, in line with the arrow on the flange, so as to be able to fit the rim back on in the same position on the equipment.

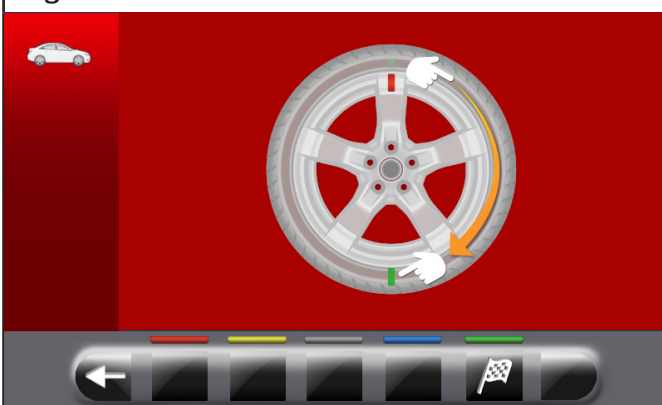
**Fig. 76**

Make a reference mark on the rim and tyre, in line with the arrow on the flange



Press button  to confirm that step 1 has been completed.

On the display the next screen page will be displayed:

**Fig. 77**

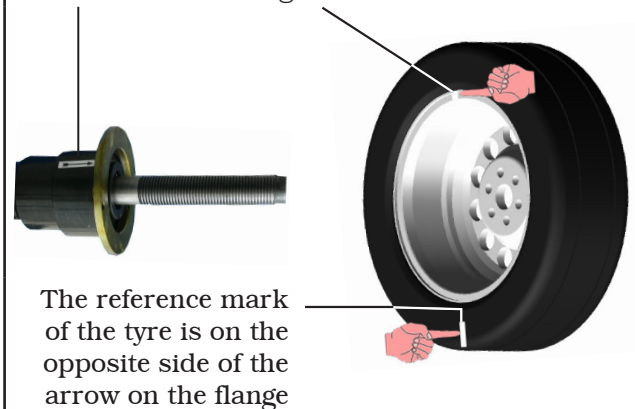
**STEP 2.** Remove the wheel from the wheel balancer. Remove the tyre and turn it on the rim through 180°.

**Fig. 78**

Fit the wheel back on the wheel balancer, positioning the reference mark on the rim in line with the arrow on the flange.

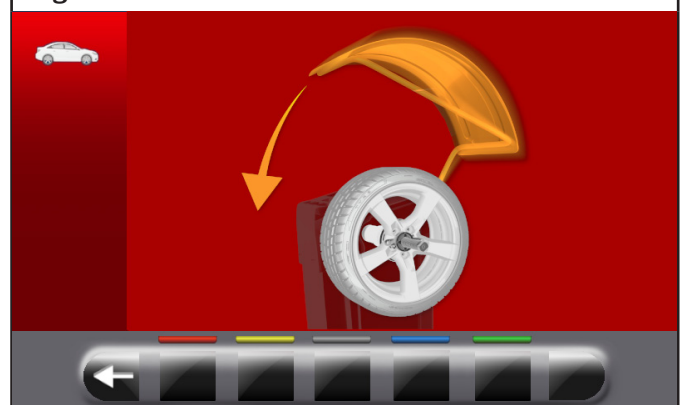
**Fig. 79**

Position the reference mark on the rim in line with the arrow on the flange

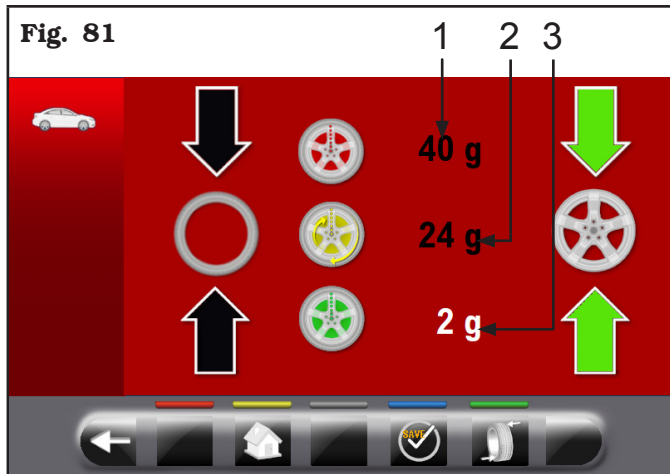


Press button  to confirm that step 2 has been completed.

On the display the next screen page will be displayed suggesting to perform a spin of the wheel.

**Fig. 80**

After having fitted wheel back in position, close the protection guard to make an automatic wheel spin. At the end of the spin the monitor will display the screen illustrated afterwards. Open the protection guard.



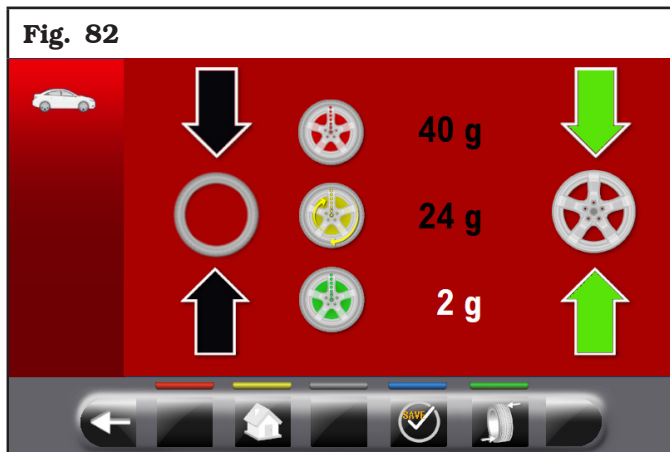
In this screen you will see the dynamic unbalance that the wheel had before performing the operation (**Fig. 81 ref. 1**), the dynamic unbalance after having rotated the tyre through 180° compared to the rim (**Fig. 81 ref. 2**) and the unbalance which can be obtained following the directions of the equipment (**Fig. 81 ref. 3**).

**STEP 3.** If the value of possible unbalance reduction is high, you can proceed as follows:

1. cancel the previously made reference marks. Put new signs, as described below;

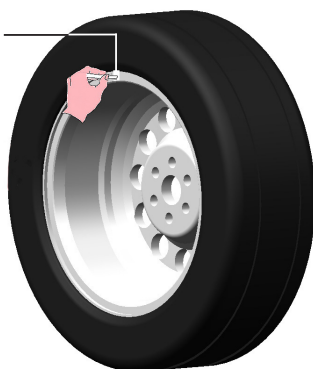


2. press the button  to bring the wheel into position.



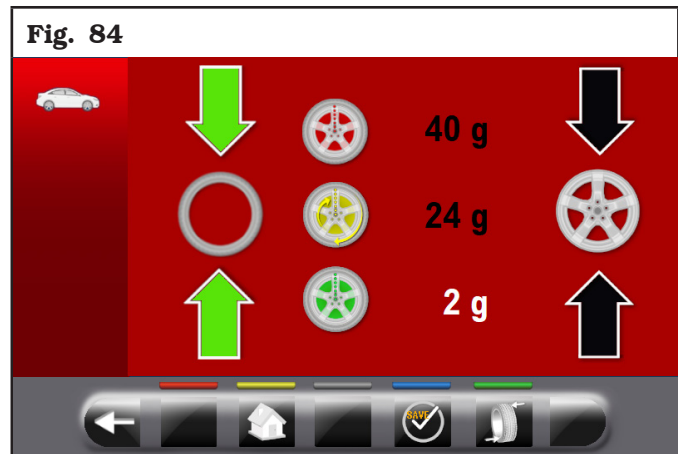
Make the reference mark on RIM at "12 o'clock" (see **Fig. 83**):

reference mark on  
RIM



**Fig. 83**

3. press the button  to bring the wheel into position.

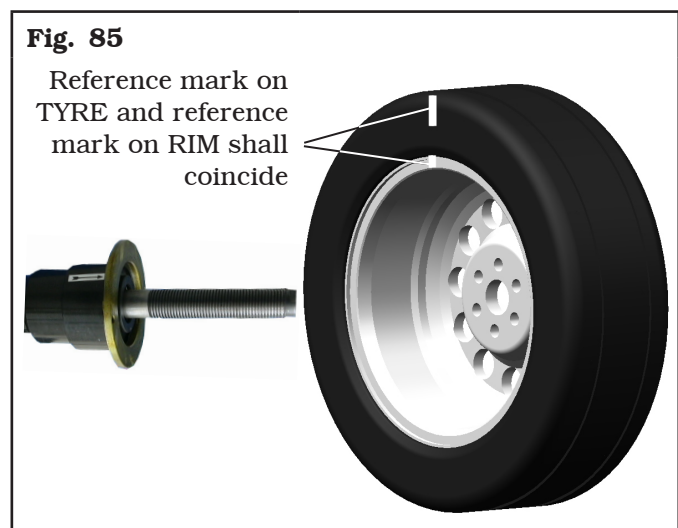


Mark the reference mark on the TYRE at "12 o'clock" position.



Press button  to confirm that step 3 has been completed.

**STEP 4.** Remove the wheel from the wheel balancer. Demount and mount the tyre again on the rim so as to bring the two reference marks (rim and tyre) to coincide. Refit the wheel on the balancer (see **Fig. 85**) with the two reference marks next to the arrow on the flange.



Press button  to confirm that step 4 has been completed.

Perform another spin closing the protection guard, to check the expected unbalance reduction and correct any residual unbalance, as described in Chap. 14.5.1. Open the protection guard.


## **14.9 Special balancing programs**


### **14.9.1 Pax**

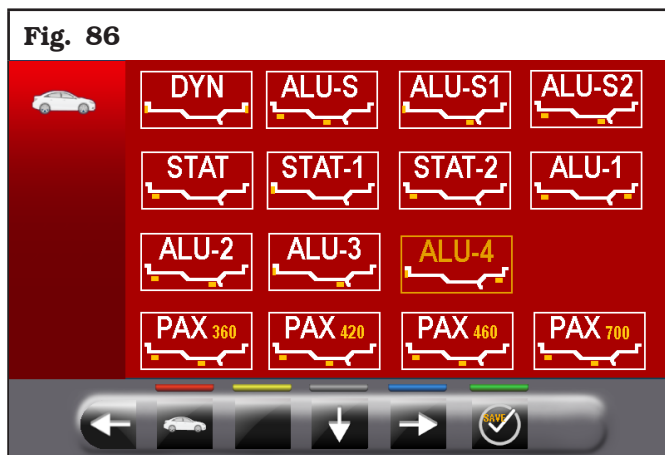
#### **Applies to car**

PAX mode is a special procedure specially devised to balance wheels using the "PAX System ®". 2 adhesive weights on different planes are used on rim inner side. To launch a PAX measurement, proceed as follows:


1. make sure there are no stones and/or mud on the wheel. Remove any counterweights. Fit the wheel and make sure it is properly fastened (see Chapt. 12);

2. press  button from "Home" page. On the

screen that appears, press the button  to switch to measuring mode selection screen below.



Use the arrows  or  to select the desired

PAX mode. At the end press push button . The equipment will be configured as follows to perform the measurement and on the video screen will appear the indication of the specific measures of the selected wheel type;

3. close the protection guard to perform the automatic wheel spin.

In just a few seconds, the wheel runs at normal speed and the monitor shows wheel rotation.

After the spin, the wheel stops automatically, taking into account the measured unbalance so that the fitting position of the weight will be at "12 o'clock".



The monitor show the weight required to correct the unbalance.

Open the protection guard and proceed to fit the adhesive weight as shown for the ALU-S mode (see Par. 14.7.5).

## **14.10 Recalculation function**

After making a spin, the wheel automatically stops, indicating the weight/s to be fitted and its/their position. In case the operator does not want the type of wheel balance proposed by the equipment (program type, weights size, etc ...), proceed with the re-calculation of the wheel balancing without rerunning the spin of the wheel.

To do this, proceed as described below:

1. press the button  to return to the measures detection/program selection page;
2. select a new balancing program as indicated in Par. 14.2.2;
3. take with the gauge arm the measures required by the selected program;
4. press button  to perform the re-calculation. The monitor will display the weights and the positions in which they will be applied.

If also in this case the operator should decide to further modify the balancing program, it is sufficient to proceed as described above without having to spin the wheel.

When the result of the recalculation does not satisfy the operator, it is recommended to do a spin of the wheel to confirm the findings from the operation of recalculation itself.

After the launch of the wheel, the equipment, in addition to displaying the unbalance value, draw up automatically all the programs measurement fields that are consistent with those measures that were taken previously and at the same time erases all measures which are not consistent.

### 14.11 Wheel balancing in Motorcycle mode (with distance caliper extension Kit)

By enabling "motorcycle wheel balancing" function, the wheel balancers can also balance motorcycle wheels. Before detecting the wheel sizes (see Par. 14.2.2), select motorcycle wheel balancing mode proceeding as described below:


press the button  then the button  and,

finally, press the button  to go to measurement acquisition program selection screen page.

Fig. 87



Use arrows  and/or  to select the desired mode.

At the end press push button . The equipment will be configured as follows to perform the measurement in the desired mode and on the screen will appear an indication showing the measures that will be acquired.

The "motorcycle" mode automatically recalculates the wheel distance measurement, increasing it by the length of the extension supplied with distance caliper extension kit (kit available on demand).



**THE EXTENSION MUST BE FITTED ONLY WHEN BALANCING IS PERFORMED IN "MOTORCYCLE" MODE.**



**TO MOUNT THE EXTENSION AND THE COMPONENTS OF CALIPER EXTENSION KIT, PLEASE REFER TO THE SPECIFIC INSTRUCTIONS INCLUDED IN THE KIT.**

Balancing procedures are identical for both modes (car/motorcycle).

By selecting motorcycle mode, besides DYNAMIC balancing (see Par. 14.7.4) STATIC balancing and/or ALU-S (Par. 14.7.1 and/or 14.7.5) can also be performed.

### 15.0 USER MENU (OPTIONS AND CALIBRATION)

From the main page "Home" press the button 


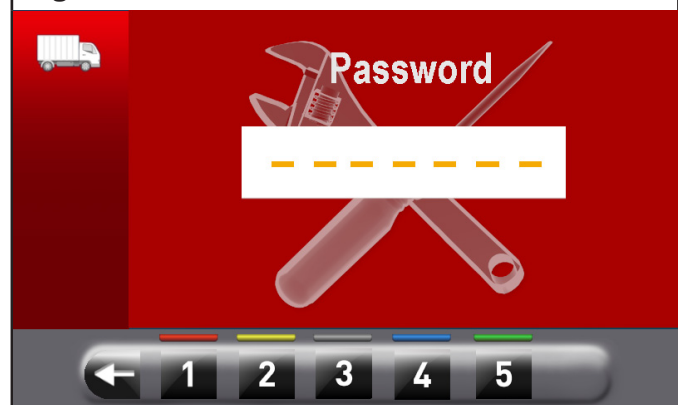
to move to the next screen page and the button  to access the user menu. On the monitor, the following screen appears where you can enter the password.

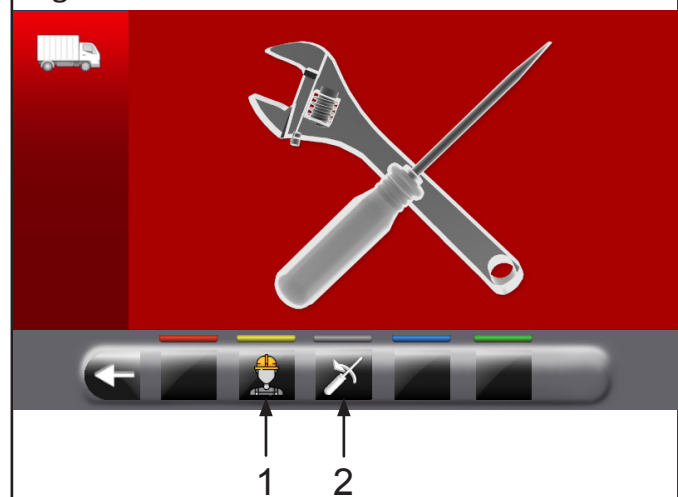
Fig. 88



The user login password is: **1234**.

After entering the correct password you will see the following screen:

Fig. 89




## KEY

- 1 - Options menu push button
- 2 - Calibrations menu push button

## 15.1 Options menu



Press the button  (Fig. 89 ref. 1), to display the monitor screen to enable/disable options as shown below:

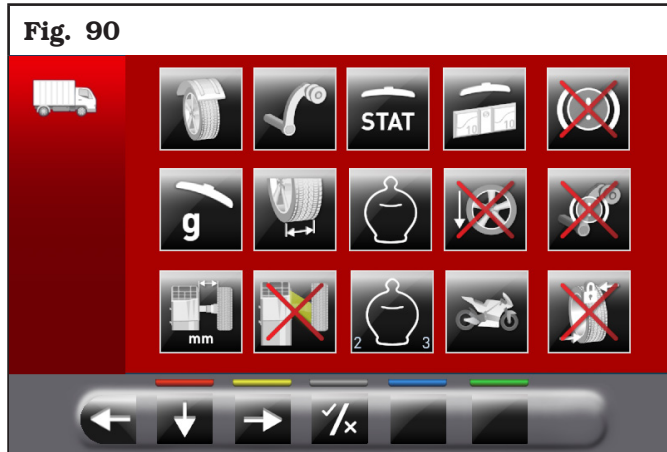


Fig. 90





Press button  several times to display the second option screen page reported as follows.




Fig. 91

To enable / disable individual functions simply high-

light the icon using the buttons  and/or 

and press the button .

Pressing the button  may involve, besides, the change in the unit of measure from "mm" to "inch" and vice versa (where applicable) or access to a sub-screen for values settings values (see Par. 15.1.1 or 15.1.2). After you select/deselect the desired options, exit the

menu by pressing push button .

## List of available options



THE ICONS OF THE AVAILABLE OPTIONS WILL TURN BLUE WHEN THEY ARE SELECTED.



OPTIONS THAT ARE NOT AVAILABLE ARE MARKED WITH A RED "X".



Enables/disables the spin/protection guard.



Enables/disables the distance/diameter detection caliper.



Enable/disable the display of static threshold after each spin.



It allows you to set the thresholds for each of the balancing mode weights (see Par. 15.1.1).



Enable/disable the pneumatic brake after the spin.



When activated, gram weight display unit is set.



When activated, ounce weight display unit is set. When this option is enabled, weight display unit can be modified from ounces to grams and vice versa.



It allows to enable/disable the width function detected by external data gauge.



Enable/disable ECO-WEIGHT function.



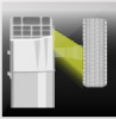
Enable/disable the positioning of adhesive weights at "6 o'clock".



Enable/disable the lock function for caliper arm in position.



It allows you to change the unit of measure of the distance of the weights fitting point from mm to inches and vice versa.



Enable/disable the LED light.



Enable/disable the dynamic residues in the ECO-WEIGHT function.



Enable/disable the functions of motorcycle wheel balancing.



Enable/disable the encoder mounted on the spin motor.



It allows you to change the unit of measurement of the rims width from mm to inches and vice versa.



It allows you to set the size values of adhesive weights (see Par. 15.1.2).



Enable/disable the RUN-OUT functions.



Enable/disable the functions of equipment printing.



It allows you to change the unit of measurement of the rim diameter from mm to inches and vice versa.



Enable/disable the weights positioning laser function.



Enable/disable the repositioning of the wheel at the end of the spin.



Enable/disable user function.



It allows the setting of the retrieval of the measures by eye: readout of measures printed on the rim and the graduated scale of the distance-diameter caliper.

NOTE: it is activated only if distance-diameter caliper is disabled.



Enable/disable the use of the manual caliper to measure rim width.

NOTE: it is activated only if distance-diameter caliper is disabled.



Enable/disable the function of clip weights positioning laser wheel inner/outer side "at 12 o'clock".

### 15.1.1 Lower weight limit

Correction weight below a certain limit is normally shown equal to zero. This limit can be set from 10 g to 1 g (from 0.5 oz to 0.05 oz).

At the end of the spin however, by pressing the button



the weight can be displayed with maximum resolution of 1 g (0.05 oz), not considering the set lower limit.



**BOTH THE RESOLUTION AND THE LOWER LIMIT FOR DYNAMIC WHEEL BALANCING MODE ARE FACTORY-SET AT 50 g (1.76 oz) (TRUCK) OR AT 5 g (0.25 oz) (CAR/MOTORCYCLE). THE LOWER LIMIT FOR ALL THE OTHER MODES IS FACTORY-SET AT 70 g (2.46 oz) (TRUCK) OR AT 7 g (0.35 oz) (CAR/MOTORCYCLE).**

Fig. 92

	Default values		Work range	
	g	oz	g	oz
1 →  DYN OK	5	0.25	2 - 50	0.05 - 2.00
2 →  STAT ALU OK	7	0.35	2 - 50	0.05 - 2.00
3 →	5	0.25	2 - 50	0.05 - 2.00
4 →	100	100	0 - 50 - 100 150 - 200	0 - 50 - 100 150 - 200

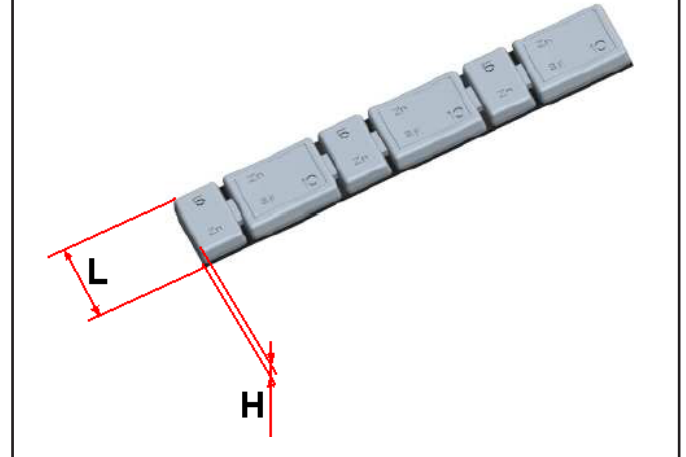
**KEY**

- 1 - Lower weight limit in the DYNAMIC program to display "OK" (50 g (1.76 oz) default value (truck) or default value or 5 g (0.25 oz) (car/motorcycle))
- 2 - Lower weight limit in the ALU-STATIC program to display "OK" (70 g (2.46 oz) or default value (truck) or default value 7 g (0.35 oz) (car/motorcycle))
- 3 - Weights display resolution (50 g (1.76 oz) default value (truck) or 5 g (0.25 oz) default value (car/motorcycle))
- 4 - Weight % reduction in the ECO-WEIGHT function (0 - 200) (default value 100)

### 15.1.2 Setting adhesive weight dimensions and static threshold percentage

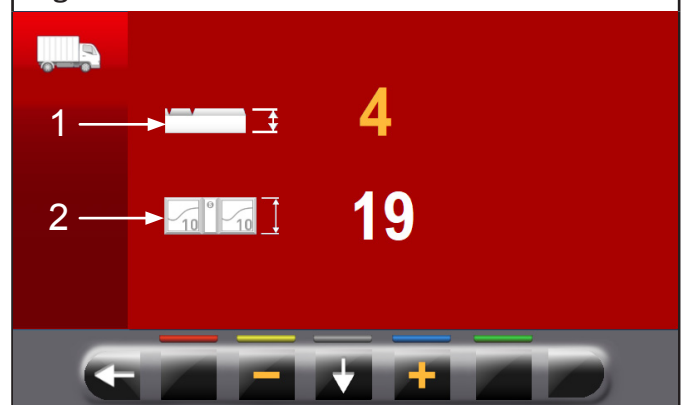
To ensure the balancing machine precisely calculates the dimensions and total adhesive weights, set the height (thickness) and width of the adhesive weights at your disposal (see Fig. 93).

Fig. 93



To carry out this setting, press the icon (see Fig. 91). You will see the following screen:

Fig. 94



**KEY**

- 1 - Weights thickness (height) (default value (4 mm (0.16")))
- 2 - Weights width (default value 19 mm (0.75"))

From this screen page, change the size values of weights

using the buttons and .

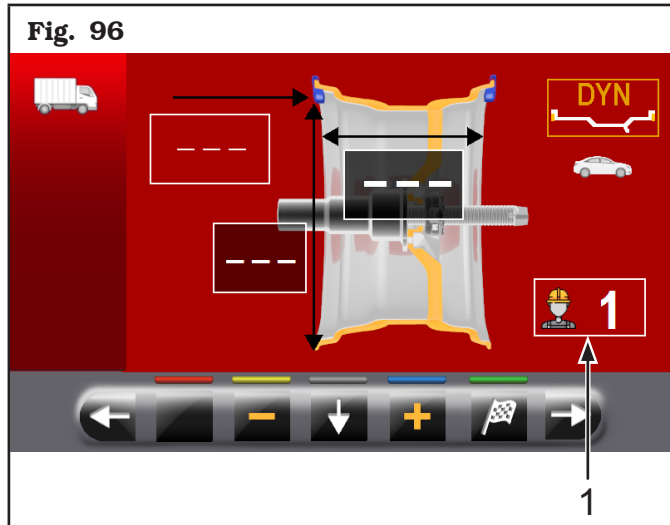
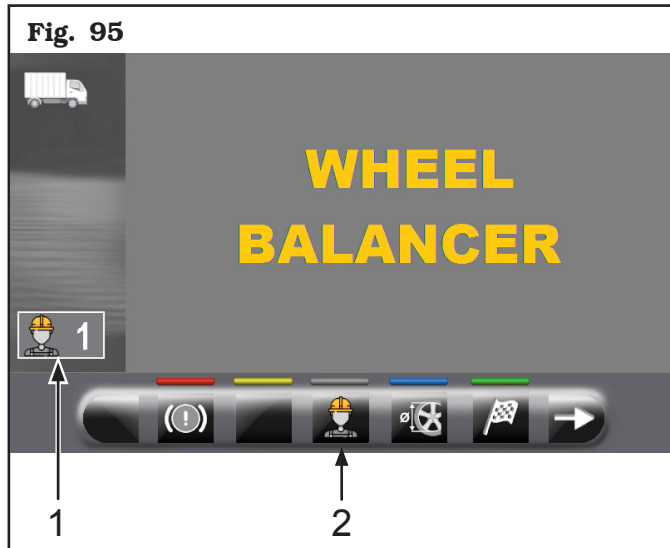




**THE YELLOW-COLOURED-VALUE IS THE ACTIVE FIELD AND THE MODIFIABLE ONE.**

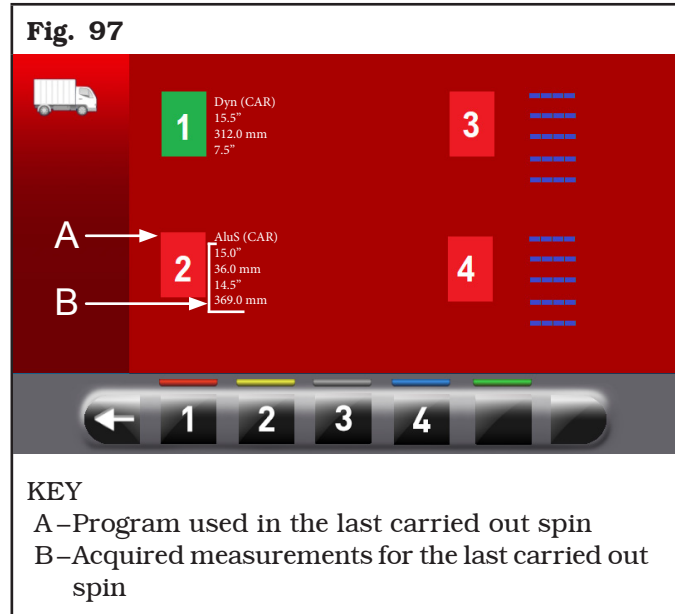
### 15.1.3 User management

The "User Management" function is disabled on equipment delivery. To enable it, proceed as described in Para 15.1. After enabling, the icon will be displayed on every page (**Fig. 95 ref. 1**).

The wheel balancers can be used simultaneously by 4 different users.




Press button  (**Fig. 95 ref. 2**), shown on the monitor or select the field (**Fig. 96 ref. 1**) and , subsequently , press button  to display the screen page below:



Press any of the available numbers on the buttons at the bottom of the page to select the corresponding user. The system stores the data relating to the last performed spin according to the different operators. You can recall the desired user each time the program displays the specific button (**Fig. 95 ref. 2 and Fig. 96 ref. 1**). The measurements stored for each user are lost when the equipment is switched off. User management is valid for any wheel balancer function.



**TO ENABLE OR DISABLE "USER MANAGEMENT" FUNCTION, SEE PARAGRAPH 15.1. IF THE FUNCTION IS DEACTIVATED, BUTTON  IS DISPLAYED.**



### 15.2 Enabling of electronic Run-out measuring device (optional)

From the main page "Home" press the button

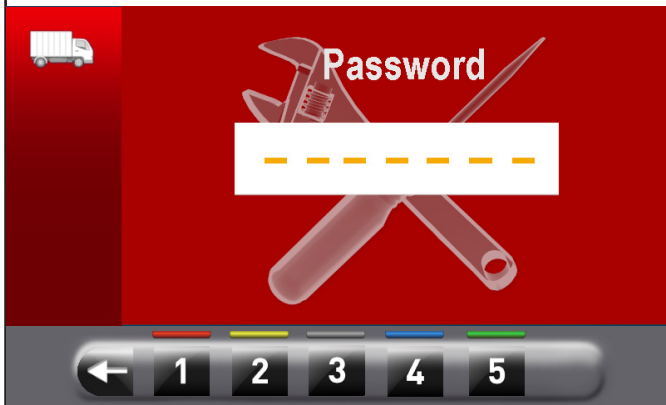


to move to the next screen page and the button



to access the user menu. On the monitor, the following screen appears where you can enter the password.

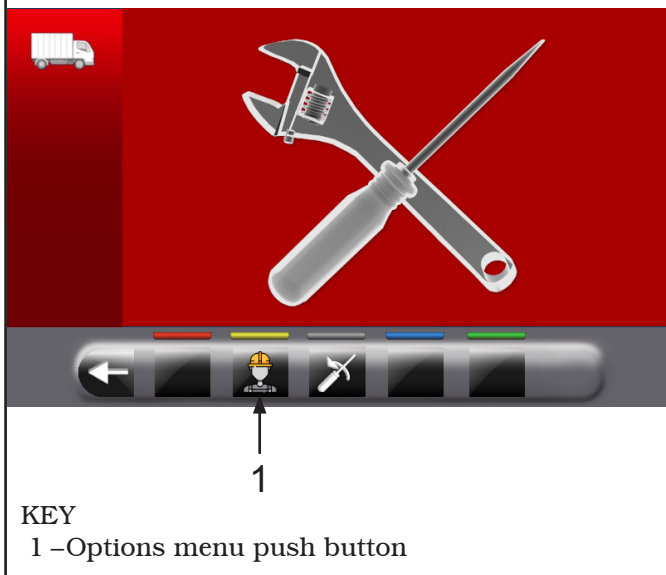
Fig. 98



The user login password is: **1234**.

After entering the correct password you will see the following screen:

Fig. 99



KEY

1 - Options menu push button

Press the button  (Fig. 99 ref. 1), to display the monitor screen to enable/disable options as shown below:

Fig. 100




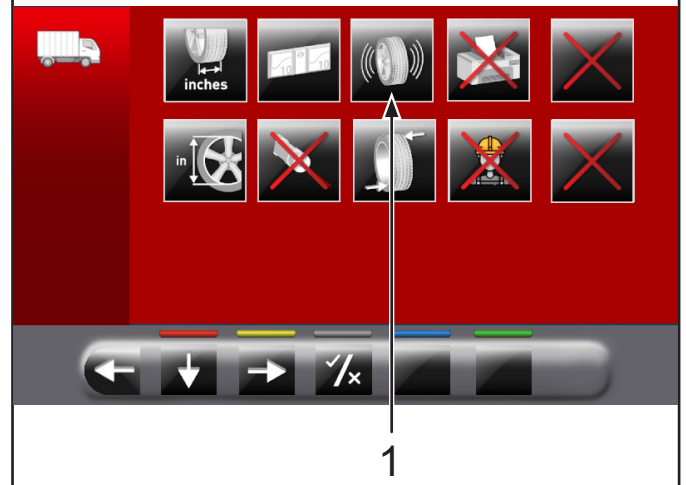


Press button  several times to display the second option screen page reported as follows.

Fig. 101



To enable / disable individual functions simply highlight the icon using the buttons  and/or 

and press the button .

Remove symbol "X" on the icon (Fig. 101 ref. 1). After you select/deselect the desired options, exit the

menu by pressing push button .

### 15.3 Equipment calibration


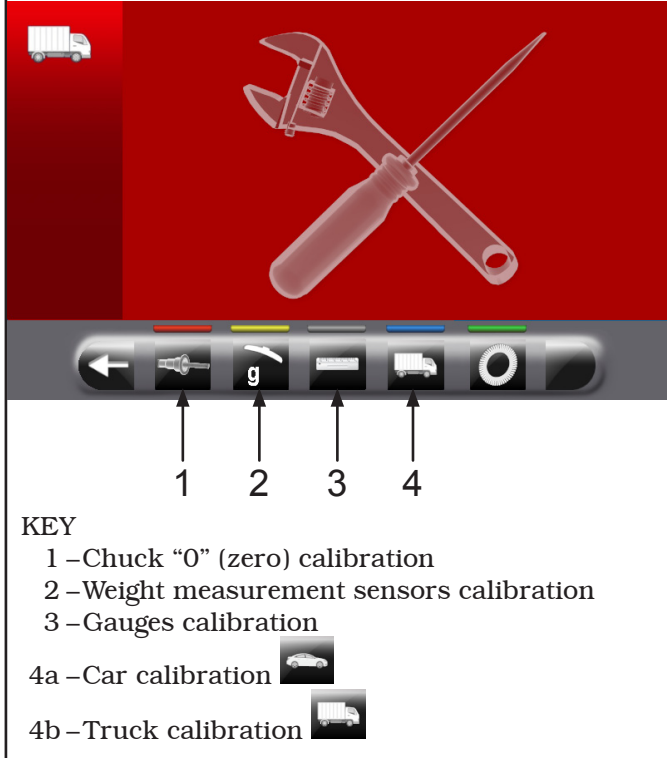
Press the button  (Fig. 89 ref. 2) to display the following screen page on monitor:

Fig. 102



#### 15.3.1 Chuck “0” (zero) calibration


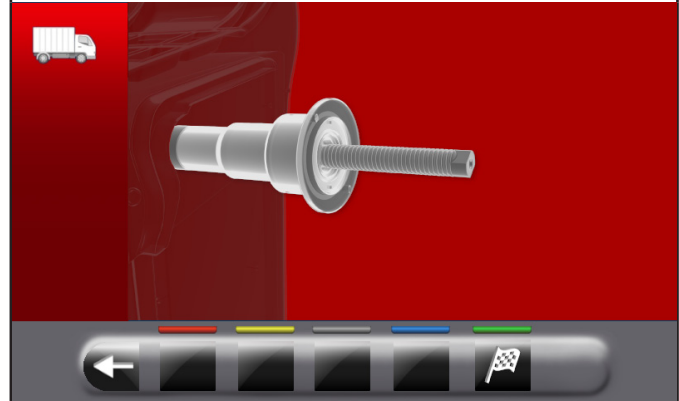
Press the button  (Fig. 102 ref. 1) to display the following screen page on the monitor:

Fig. 103



After making sure that the chuck is unloaded (no wheel or mounted accessories) and in the case of closed


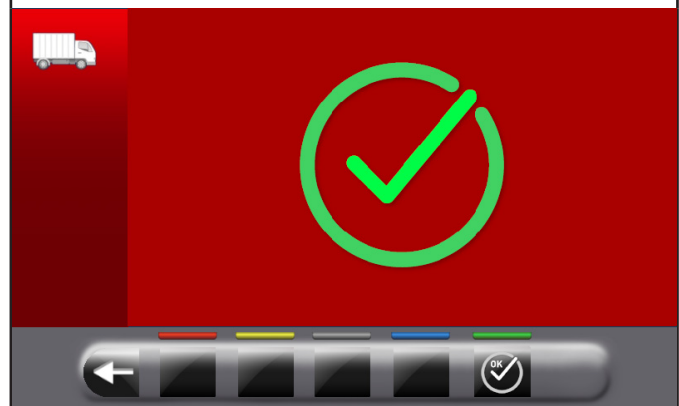
pneumatic chuck, press the button  and close the guard. The chuck will rotate for a few minutes until you see the screen below:

Fig. 104





At this point the equipment has zeroed all its measur-

ing ranges. Press button  to return to calibrations screen page.

**15.3.2 Weight measurement sensors calibration for car**

**THE NUMERICAL VALUES SHOWN IN THE FIGURES BELOW ARE PURELY ILLUSTRATIVE.**



**MAKE SURE THE BUTTON (FIG. 102 REF. 4) DISPLAYS "CAR" CALIBRATION . IN CASE "TRUCK" ICON  APPEARS, PRESS TO PASS TO "CAR" CALIBRATION.**


To calibrate the weight measurement sensors, follow the following three steps:

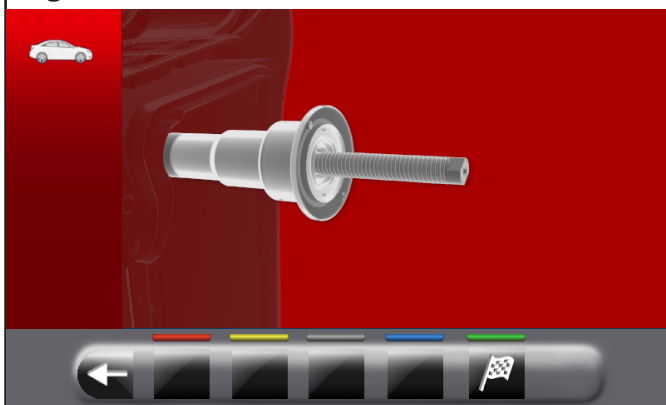
1. Chuck "0" (zero) calibration WITH wheel mounted (and locking device);
2. Weight measurement sensors calibration WITH wheel mounted (and locking device);
3. Chuck "0" (zero) calibration WITHOUT wheel and locking device.

**FASE 1**

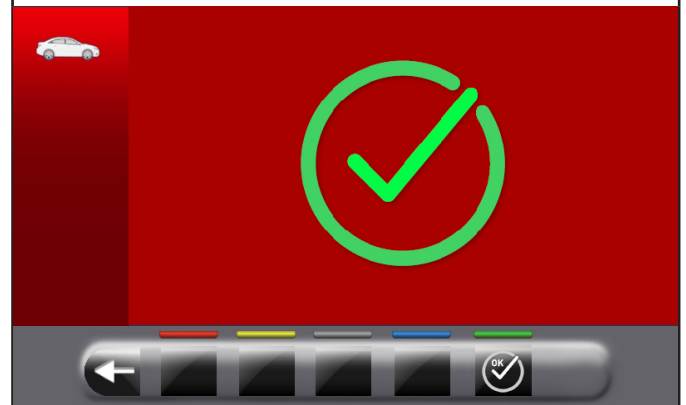
- Fit a balanced wheel on the chuck and secure it with the special locking device.




- Press the button  (Fig. 102 ref. 1) to display the following screen page on the monitor:

**Fig. 105**

- Press the button  and then close the guard. The chuck will rotate for a few minutes until you see the screen below:

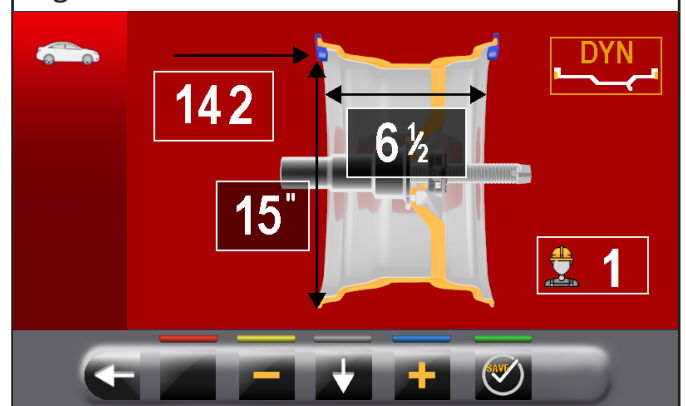
**Fig. 106**

At this point the equipment has zeroed all its measuring ranges.

- Press button  to return to calibrations screen page.

**FASE 2**

- Press the button  (Fig. 102 ref. 2) to display the following screen page on the monitor:

**Fig. 107**

- Set the size of the rim on the chuck using the distance-diameter caliper arm.
- Set the rim width using one of the following calipers:
  - Trucks width manual caliper
  - Wheels width external data gauge (optional)

LIBRAK280RTL




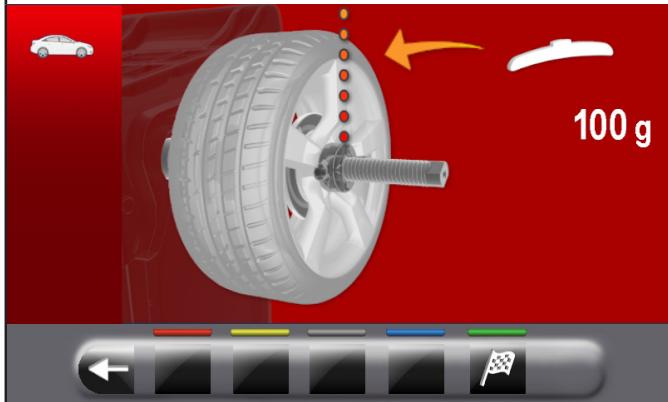
- Press button  and close the guard to the perform the 1st spin of the wheel without weights.
- At the end, on the monitor will appear the following screen, saying that you should apply a weight of 100 g (3.52 oz) to the "12 o'clock" outer rim.

Fig. 108



**APPLY THE WEIGHT AT A POINT IN WHICH BOTH SIDES OF THE RIM THERE IS THE POSSIBILITY OF APPLYING A CLIP WEIGHT OF 100 g (3.52 oz).**

- Apply the weight and position it perfectly to the "12 o'clock".




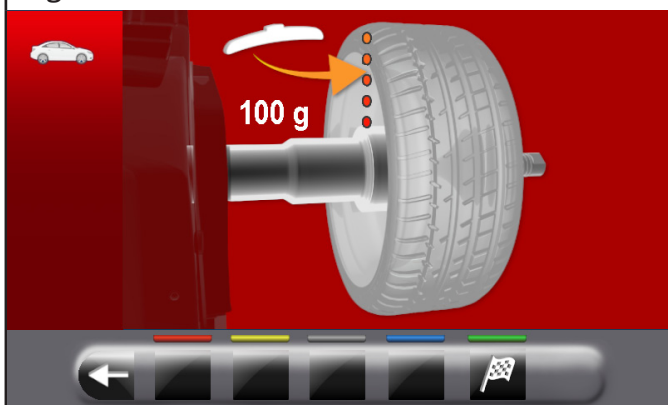
- Press the button  and close the guard to perform the 2nd spin of the wheel (100 g (3.52 oz) weight placed on the outside of the wheel).
- At the end the following screen will appear on the monitor, suggesting to remove the weight of 100 g (3.52 oz) previously applied on the outer side and apply it on the inside of the rim.

Fig. 109



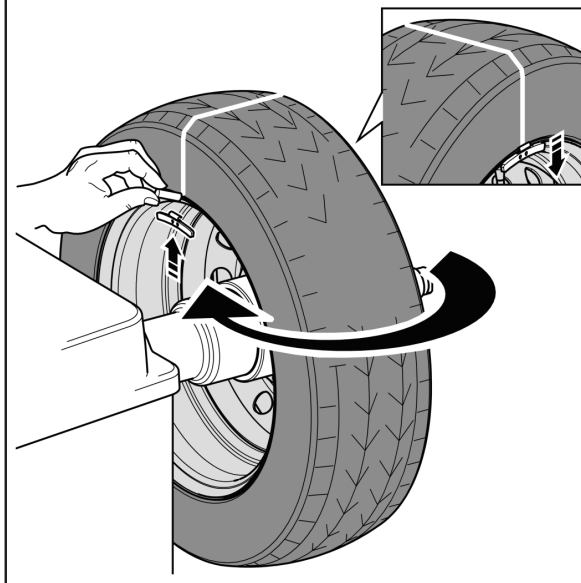
- Turn manually the wheel until You have the weight of 100 g (3.52 oz) on the outer side at "12 o'clock".

- Remove the weight from 100 g (3.52 oz) from the outside of the wheel and apply it on the inner side at "12 o'clock".



**AT THIS POINT TAKE THE WEIGHT POSITIONED ON THE EXTERNAL SIDE AND PLACE IT EXACTLY IN THE SAME POSITION BUT ON THE INTERNAL SIDE, HELPING BY DRAWING A LINE ON THE TYRE AS A REFERENCE (SEE FIG. 110).**

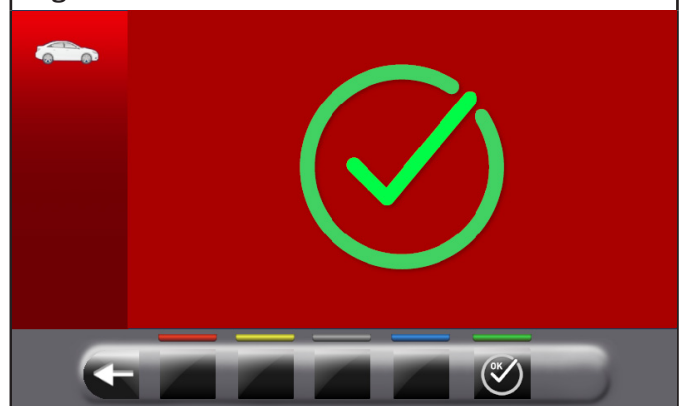
Fig. 110



- Close the guard to perform the 3rd spin of the wheel (100 g (3.52 oz) placed on the inside wheel).

At the end of the rotation, the video screen below will be displayed to indicate that the operation is finished.

Fig. 111



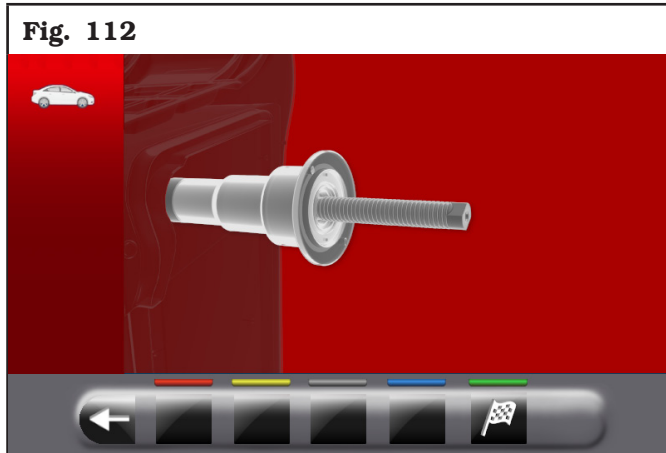
Press button  to return to calibrations screen page.

### FASE 3

- Remove the wheel from the chuck and perform a complete calibration procedure "0" (zero) chuck as described hereafter.



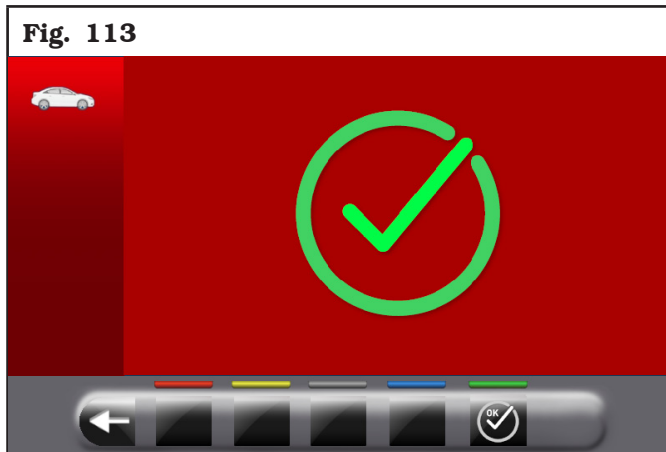
- Press the button (Fig. 102 ref. 1) to display the following screen page on the monitor:



- After making sure that the chuck is unloaded (no wheel or mounted accessories), press the button



and close the guard. The chuck will rotate for a few minutes until you see the screen below:



At this point the equipment has all its measuring



ranges. Press button  to end the calibration procedure.

### 15.3.3 Weight measurement sensors calibration for truck



THE NUMERICAL VALUES SHOWN IN THE FIGURES BELOW ARE PURELY ILLUSTRATIVE.



MAKE SURE THE BUTTON (FIG. 102 REF. 4) DISPLAYS "TRUCK" CALIBRATION . IN CASE "CAR" ICON  APPEARS, PRESS TO PASS TO "TRUCK" CALIBRATION.

To calibrate the weight measurement sensors, follow the following three steps:

1. chuck "0" (zero) calibration WITH calibration tool mounted and retaining bolts;
2. weight measurement sensors calibration WITH calibration tool and retaining bolts;
3. Chuck "0" (zero) calibration WITHOUT calibration tool mounted and retaining bolts.

### FASE 1

- Mount the calibration tool on the chuck and tighten it with the two bolts supplied (see Fig. 114).

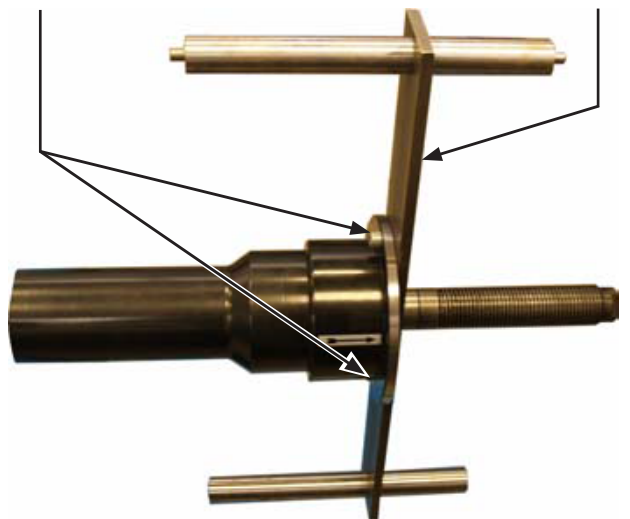


THE CALIBRATION TOOL MUST BE POSITIONED WITH THE LONGER CYLINDERS IN THE SHAFT INNER SIDE.

**Fig. 114**

2 M10x25 TCEI bolts

Calibration tool for truck mode




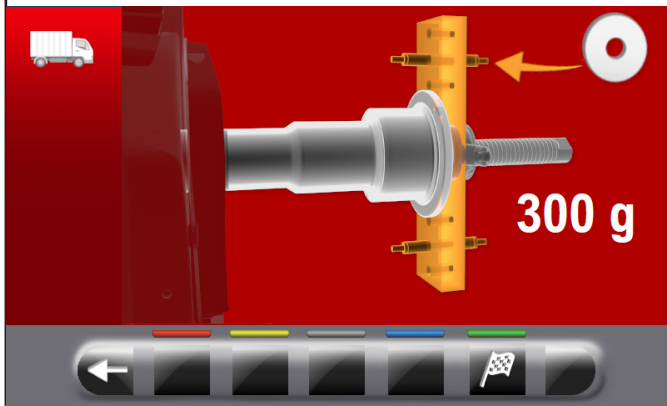
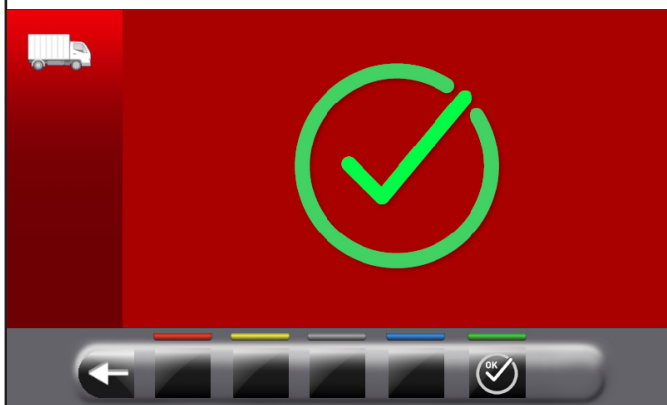
- Press the button  (Fig. 102 ref. 1) to display the following screen page on the monitor:

Fig. 115




- Close the guard. The chuck will rotate for a few minutes until you see the screen below:

Fig. 116



At this point the equipment has zeroed all its measuring ranges.

- Press button  to return to calibrations screen page.

## FASE 2


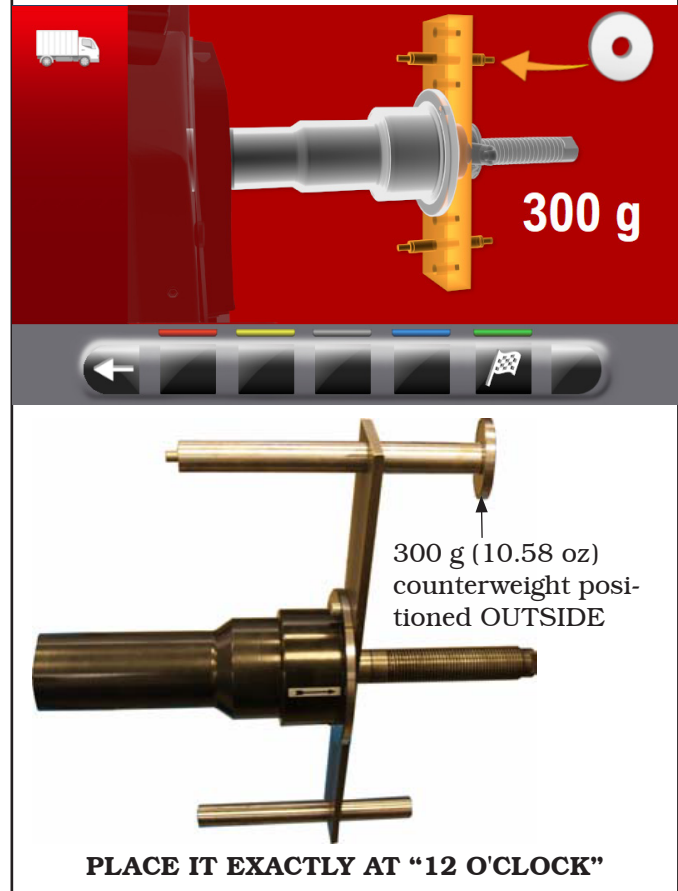
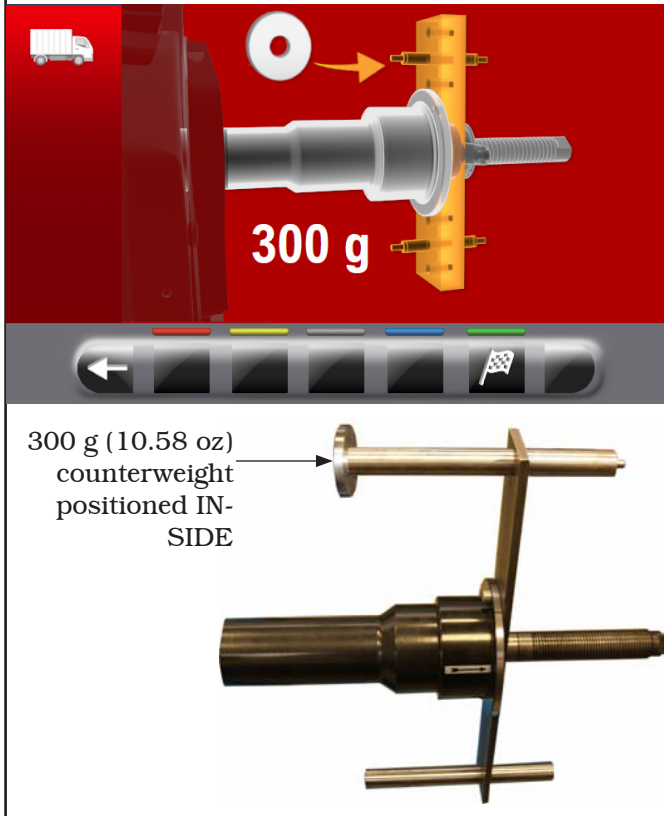
- Press push button  (Fig. 102 ref. 2).
- Close the guard to the perform the 1st spin of the calibration tool without weights.
- At the end, on the monitor will appear the following screen, saying that you should apply a weight of 300 g (10.58 oz) at 12 o'clock on the outside of the calibrator.

Fig. 117



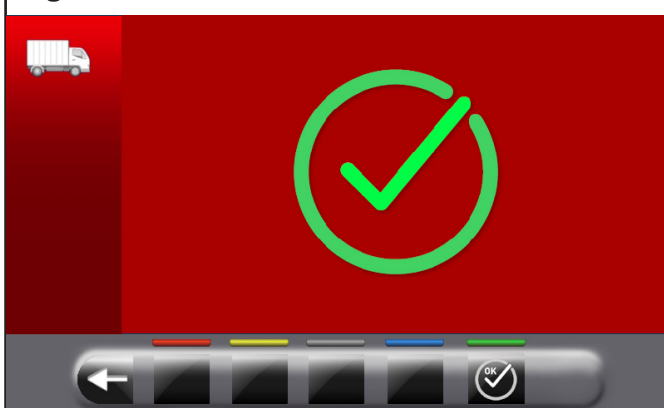
- Open the guard.
- Fit the 300 g (10.58 oz) counterweight on the external side and place it **exactly at "12 o'clock"**.
- Close the guard to the perform the calibration spin.

- At the end of the calibration spin, the following screen will appear on the monitor which will suggest removing the 300 g (10.58 oz) counterweight from the outside and applying it to the inside of the calibration tool.

**Fig. 118**

- Open the guard.
- Remove the counterweight from the external side of the calibrator and apply it to the internal side.
- Press the button to perform the spin by lowering the guard, with the counterweight on the internal side.

At the end of the rotation, the video screen below will be displayed to indicate that the operation is finished.

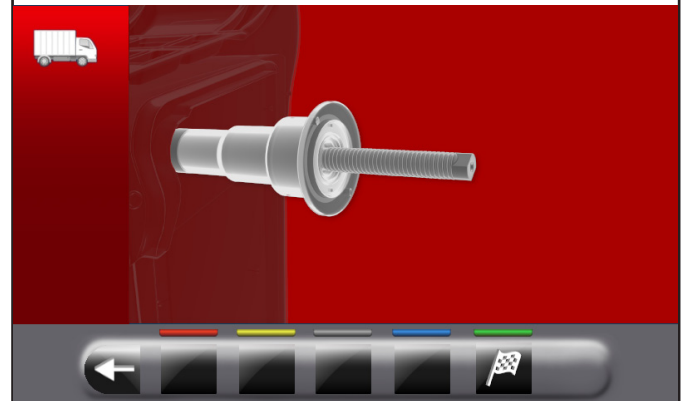
**Fig. 119**

### **FASE 3**

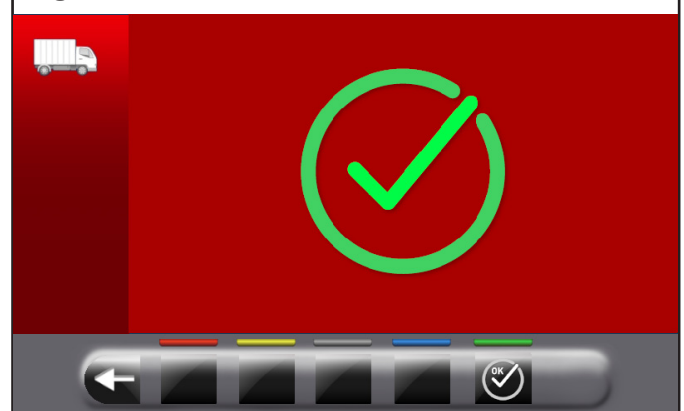
- Remove the calibration tool from the chuck and perform a complete calibration procedure "0" (zero) chuck as described hereafter.




- Press the button (Fig. 102 ref. 1) to display the following screen page on the monitor:

**Fig. 120**

- After making sure that the chuck is unloaded (no calibration tool), close the guard. The chuck will rotate for a few minutes until you see the screen below:

**Fig. 121**

At this point the equipment has all its measuring

ranges. Press button  to end the calibration procedure.

### 15.3.4 Gauges calibration


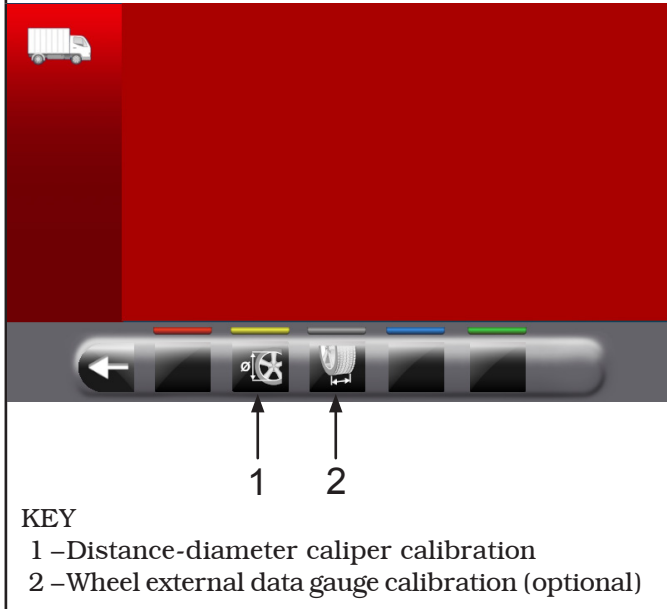
Press the button  (Fig. 102 ref. 3) to display the following screen page on the monitor:

Fig. 122



#### Distance-diameter caliper calibration



THE NUMERICAL VALUES SHOWN IN THE FIGURES BELOW ARE PURELY ILLUSTRATIVE.


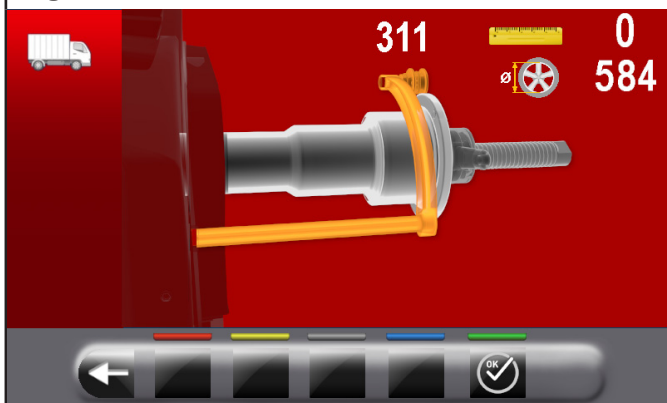
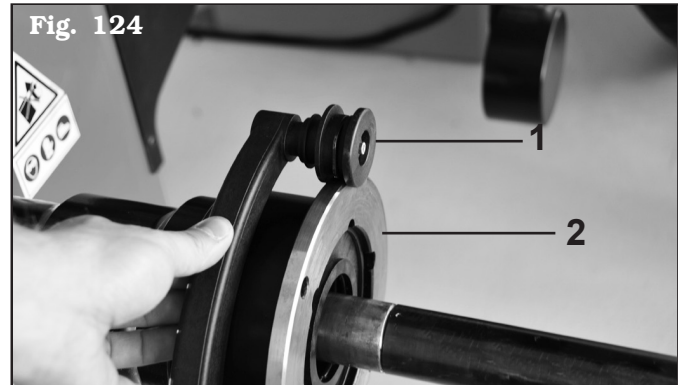
Press the button  (Fig. 122 ref. 1) to display the following screen page on the monitor:

Fig. 123

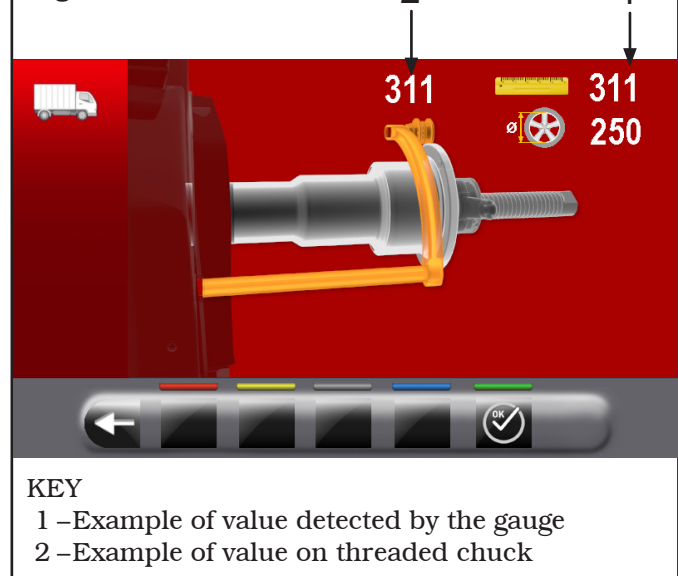


Place the gauge (Fig. 124 ref. 1) on the chuck flange (Fig. 124 ref. 2).



The following screen will appear on the monitor to indicate the measured values:

Fig. 125



The value next to the symbol "scale" (Fig. 125 ref. 1) must be equal to or  $\pm 1$  mm with respect to what is indicated above the caliper (Fig. 125 ref. 2).




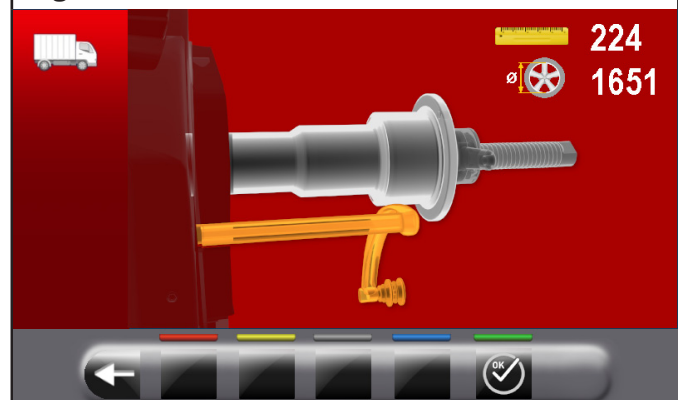
Press push button . The following screen will appear on the monitor:

Fig. 126

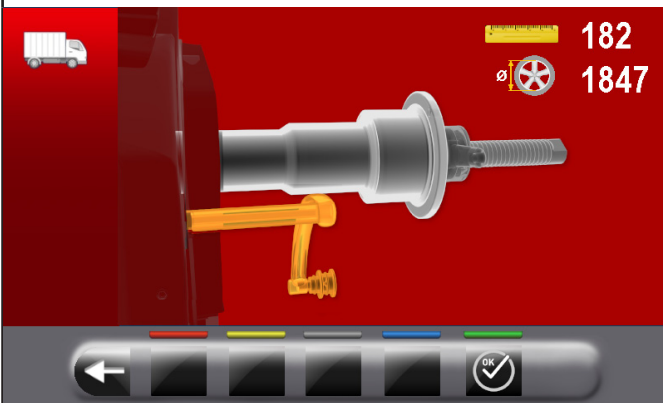




Place the gauge as shown in the following figure:

**Fig. 127**

Press button . Wait a few seconds until you see the following screen:

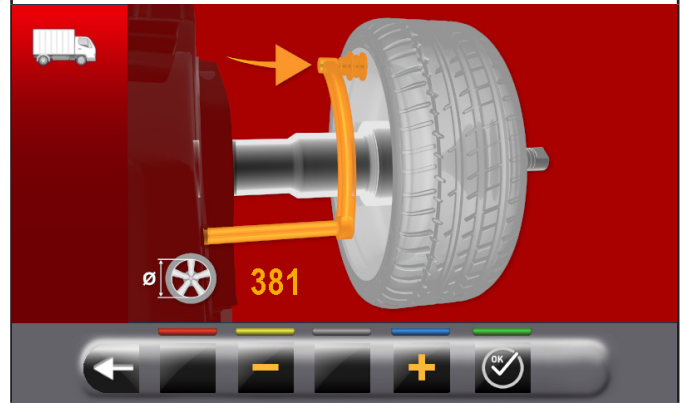
**Fig. 128**

Place the gauge against the chuck in the lower part of the it but on a smaller diameter than before as indicated on the image on the monitor.



Press button .

On the monitor the next screen page will be displayed:

**Fig. 129**

Measure the exact diameter of a rim (see **Fig. 130**) and place it on the screen on the monitor by pressing

the  or  buttons.

**Fig. 130**

Fit the measured wheel on the balancer and lock it on the chuck.

Turn the gauge bushing (**Fig. 131 ref. 1**) on the inner edge of the wheel upwards (see **Fig. 131**).

Fig. 131




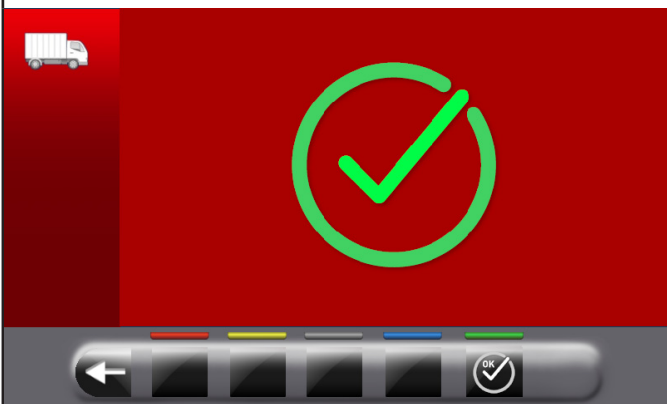
Press button  to end the operation. On the monitor the next screen page will be displayed:

Fig. 132



The calibration of the distance-diameter caliper is finished.

### Calibration of wheel width external data gauge (optional)



THE NUMERICAL VALUES SHOWN IN THE FIGURES BELOW ARE PURELY ILLUSTRATIVE.




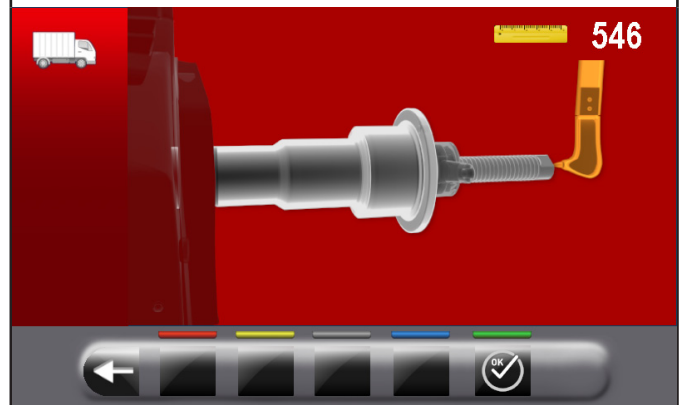
Press the button  (**Fig. 122 ref. 2**) to display the following screen page on the monitor:

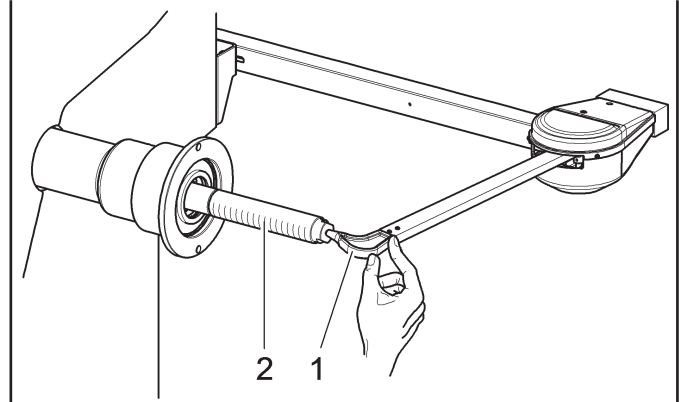
Fig. 133



TO PERFORM THIS CALIBRATION, THE CHUCK MUST BE UNLOADED (NO WHEEL OR ACCESSORIES MOUNTED ON IT).

Move the tip of the width measuring device (**Fig. 134 ref. 1**) by the chuck end (**Fig. 134 ref. 2**) (in case of pneumatic chuck, move it next to upper edge of the open chuck).

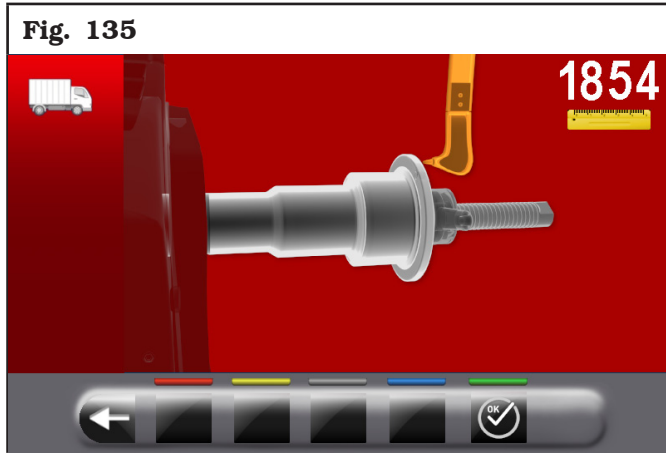
Fig. 134



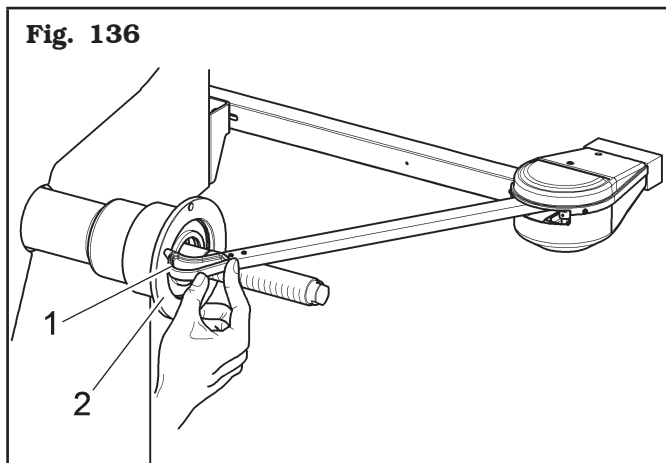


Press button

On the monitor the next screen page will be displayed:

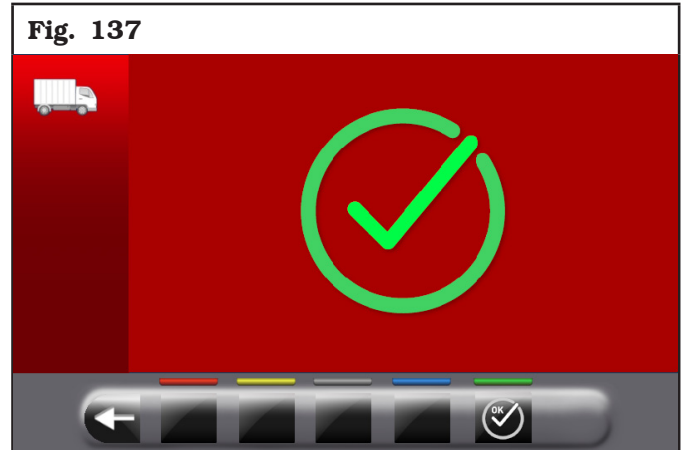


Move the tip of the width measuring device (**Fig. 136 ref. 1**) in line with the outer surface of the flange (**Fig. 136 ref. 2**).



Press button

At the end of the operation, the following screen will appear on the monitor:



The calibration of the external data gauge is finished.

## 16.0 ERROR SIGNALS

During wheel balancer operation, if wrong commands are given by the operator or device faults occur, an error code may appear on the monitor.

Below is a troubleshooting chart.

Error code	Description
2	Planned wheel speed not reached
3	Calibration overcoming
4	Wheel speed stability out of tolerance
5	Encoder calibration error
6	Encoder samples not sufficient
7	Chuck calibration error
8	Piezo calibration values out of tolerance
9	Wheel rotations not completed
11	Incorrect gain calibration
14	Firmware error
15	Runout samples not sufficient
28	Piezo calibration error
29	Distance out of tolerance level
31	Distance-diameter caliper released
32	Parameters format incompatible

## 17.0 ROUTINE MAINTENANCE



**BEFORE CARRYING OUT ANY ROUTINE MAINTENANCE OR ADJUSTMENT PROCEDURE, POSITION THE MAIN SWITCH "0", DISCONNECT THE EQUIPMENT FROM THE ELECTRICITY SUPPLY USING THE SOCKET/PLUG COMBINATION AND CHECK THAT ALL MOBILE PARTS ARE AT A STANDSTILL.**



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



**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!!**

To guarantee the efficiency and correct functioning of the equipment, 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.

- Remove deposits of tyre powder and other waste materials with a vacuum.

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

- Do not use solvents to clean the pressure regulator.

## 18.0 TECHNICAL DATA

### 18.1 Technical electrical data

Max. absorbed voltage (W)		250
Power supply	Voltage (V)	230
	Phases	1
	Frequency (Hz)	50 - 60
Typical current draw (A)		0.7
Rotation speed (rev/min)		100 (car) - 80 (truck)

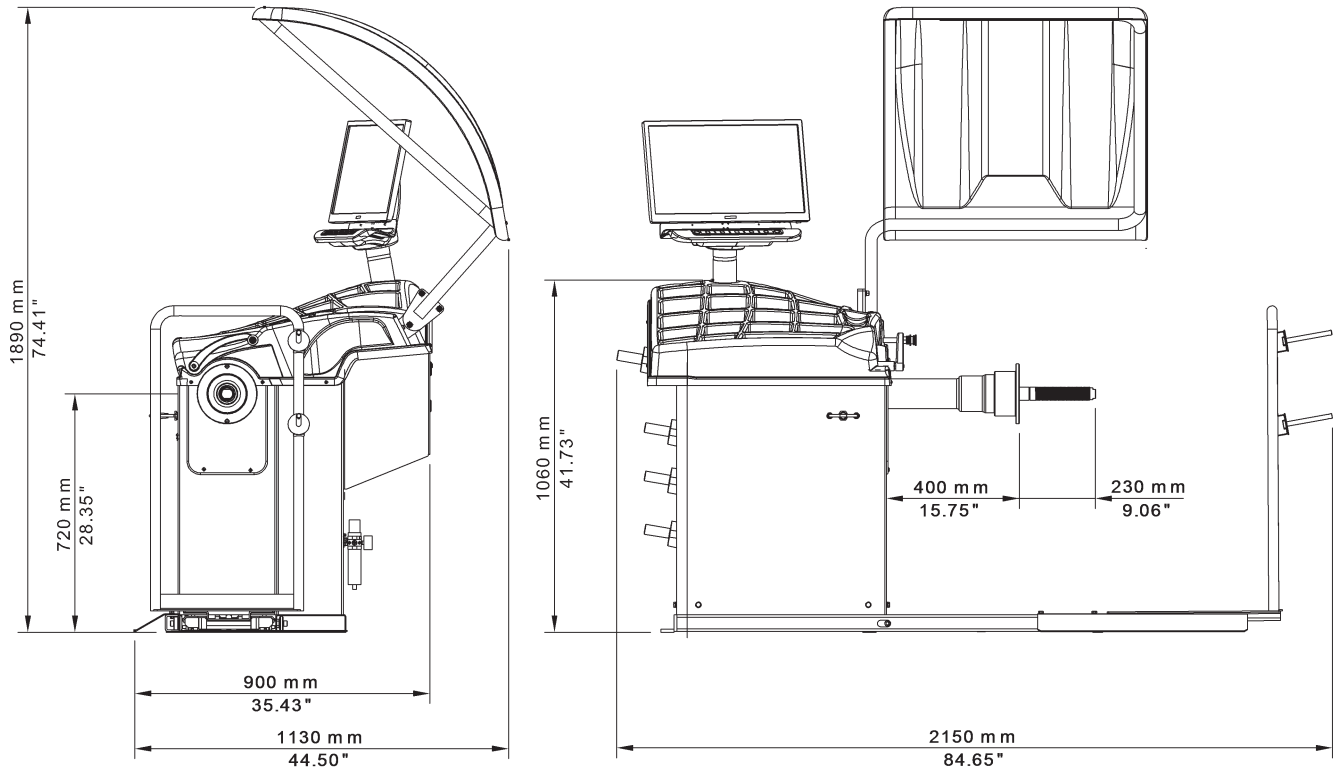
### 18.2 Technical mechanical data

Rim diameter setting (inches)	10 - 26 (manually up to 30)
Wheel max. diameter (mm)	1300 (51")
Wheel max. width (mm)	700 (28")
Rim width setting (inches)	1.5 - 2.2
Balancing precision (g)	± 1 (car) - ± 10 (truck)
Cycle time (sec)	6
Sound emission level (dBA)	< 70
Wheel max. weight (kg)	200 (441 lbs)
Air supply (Tyre lifting device) (bar)	8 - 10 (116 - 145 psi)

Weight (kg)	225 (496 lbs)
-------------	---------------

### 18.3 Dimensions

Fig. 138



## 19.0 STORING

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

## 20.0 SCRAPPING

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



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

In order to inform the users on the correct way to dispose the equipment (as required by the article 26, paragraph 1 of the Italian legislative decree 49/14 and subsequent amendments), we communicate what follows: the meaning of the crossed dustbin symbol reported on the equipment indicates that the product must not be thrown among the undifferentiated rubbish (that is to say together with the "mixed urban waste"), but it has to be managed separately, to let the WEEE go through special operations for their reuse or treatment, in order to remove and dispose safely the waste that could be dangerous for the environment and to extract and recycle the raw materials to be reused.

Fig. 139



## 21.0 REGISTRATION PLATE DATA

		Via Dell'Ecologia, 6 42047 ROLO (RE) ITALY
ENGINEERING and MARKETING S.P.A.		
MODEL		
SERIAL N°	YEAR	

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



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

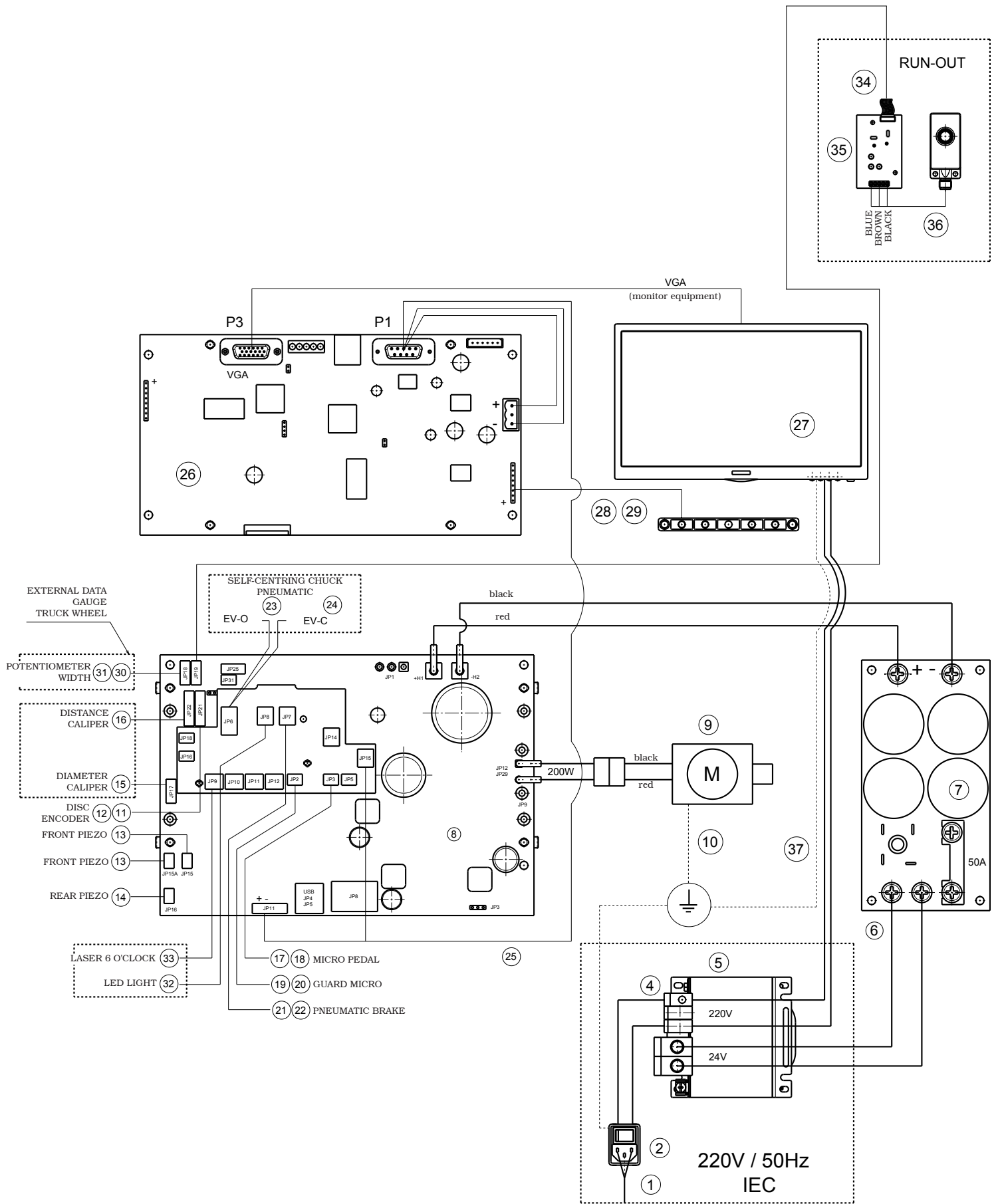
**Said plate must always be kept clean from grease residues or filth generally.**

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

## 22.0 FUNCTIONAL DIAGRAMS

Here follows a list of the equipment functional diagrams.





LIBRAK280RTL C

**Butler**

ENGINEERING and MARKETING S.P.A.

**WIRING CONNECTION  
DIAGRAM**

**Drawing N°A - Rev. 1**

**129405542**

1294-M017-03

**Page 68 of 70**

**EN**

**KEY**

- 1 - Power supply cable L=2000
- 2 - Wired switch + cable
- 3 - Delayed fuse
- 4 - Delayed fuse
- 5 - Transformer
- 6 - Power board transformer cable
- 7 - Power board
- 8 - Power board kit
- 9 - Motor
- 10 - Motor support ground cable
- 11 - Wheel position encoder cable
- 12 - Buffered encoder board
- 13 - Piezo with front cable
- 14 - Piezo with cable
- 15 - Potentiometer with cable
- 16 - Cable
- 17 - Cable with pedal micro-switch connector
- 18 - Foot switch
- 19 - Cable for wheel micro protection with connector
- 20 - Limit switch
- 21 - Cable for solenoid valve EVB with connector
- 22 - Solenoid valve mounting EV3
- 23 - Cable for solenoid valve EVO
- 24 - Solenoid valve mounting EV5
- 25 - Supply cable with connector
- 26 - Monitor board kit
- 27 - Monitor 22"
- 28 - 7-keys keyboard extension cable
- 29 - 7-keys keyboard
- 30 - Width potentiometer extension cable
- 31 - Potentiometer with shielded cable
- 32 - LED light with connector
- 33 - Calibrated line laser with connector
- 34 - Ultrasound sensor extension
- 35 - Run-out board
- 36 - Calibrated ultrasound sensor
- 37 - Monitor cable transformer diagram

LIBRAK280RTL

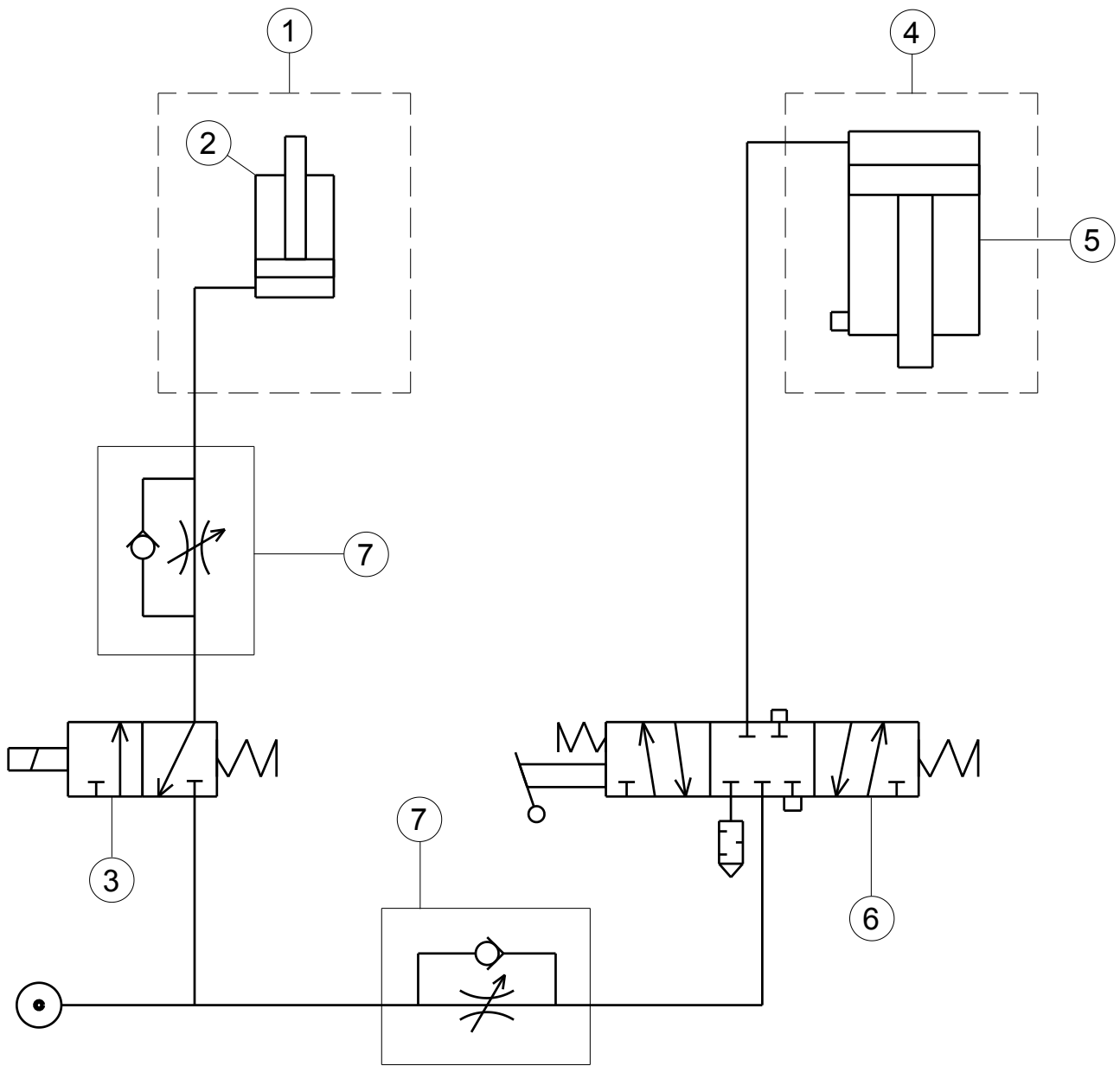
**Butler**

ENGINEERING and MARKETING S.P.A.

**WIRING CONNECTION  
DIAGRAM****Drawing N°A - Rev. 1****129405542**

1294-M017-03

**Page 69 of 70****EN**



KEY

- 1 - Pneumatic brake
- 2 - Brake operating cylinder
- 3 - Pneumatic brake solenoid valve SV-B 3/2 NC
- 4 - Lifting device
- 5 - Lifting device operating cylinder
- 6 - Lever distributor 5/3 CC
- 7 - Unidirectional pneumatic reducer

LIBRAK280RTL

**Butler**

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PNEUMATIC CONNECTION  
DIAGRAM

Drawing N°B - Rev. 0

129405020

1294-M017-03

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EN



Noi  
We / Wir / Nous / Nosotros

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

**dichiariamo sotto la nostra esclusiva responsabilità che il prodotto**

*declare, undertaking sole responsibility, that the product*  
*erklären unter unserer alleinigen Verantwortung, dass das Produkt*  
*déclarons, sous notre entière responsabilité, que le produit*  
*declaramos bajo nuestra exclusiva responsabilidad, que el producto*

**Equilibratrice**  
Wheel Balancer  
Auswuchtmaschine  
Équilibreuse de roue  
Equilibradora

**al quale questa dichiarazione si riferisce, risponde alle seguenti Direttive applicabili:**

*to which this declaration applies is in compliance with the following applicable Directives:*  
*auf das sich diese Erklärung bezieht, den nachstehenden anwendbaren Normen entspricht:*  
*objet de cette déclaration est conforme aux Directives applicables suivantes:*  
*al que se refiere esta declaración cumple con las siguientes normas aplicables:*

**2006/42/CE**

Direttiva Macchine

**2014/30/UE**

Direttiva Compatibilità Elettromagnetica

**Per la conformità alle suddette direttive sono state seguite le seguenti norme Armonizzate:**

*To comply with the above mentioned Directives, we have followed the following harmonized standards:*  
*In Übereinstimmung mit o.g. Richtlinien wurden folgende harmonisierte Normen benutzt:*  
*Pour la conformité aux normes ci-dessus, nous avons suivi les normes harmonisées suivantes:*  
*Para la conformidad a las Normas arriba mencionadas, hemos seguido las siguientes normas armonizadas:*

**UNI EN ISO 12100:2010**

Sicurezza del macchinario – Principi generali di progettazione – Valutazione del rischio e riduzione del rischio

**CEI EN 60204-1:2018**

Sicurezza del macchinario – Equipaggiamento elettrico delle macchine – Parte 1: Regole generali

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*The technical documentation file is constituted by Butler S.p.A. s.u.*  
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Rolo,



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



**Vehicle Service Group Italy S.r.l.**  
**via Brunelleschi, 9**

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**44020 San Giovanni di Ostellato (Ferrara) – ITALIA**

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

Equilibratrice / Wheel balancer Radauswuchtmaschinen / Equilibreuse Equilibradora	
---	--

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

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

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

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

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**SIMONE FERRARI**  
**VP VSG Europe Managing Director**

S.G. di Ostellato, / /

1294-DC004P 01/07/2023 **Il modello della presente dichiarazione è conforme alla norma**  
*The version of this declaration conforms to the regulation*  
*Das Modell der vorliegenden Erklärung entspricht der Norm*  
*Le modèle de la présente déclaration est conforme à la norme*  
*El modelo de la presente declaración cumple la norma*

**UNI CEI EN ISO/IEC 17050-1**



UK Declaration of Conformity



We

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

declare, undertaking sole responsibility, that the product

Wheel balancer	
----------------	--

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

**The Supply of Machinery (Safety) Regulations 2008**

**The Electrical Equipment (Safety) Regulations 2016**

**Electromagnetic Compatibility Regulations 2016**

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

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

The technical documentation file is constituted by

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

S.G.di Ostellato, / /

**SIMONE FERRARI**  
**VP VSG Europe Managing Director**

UK1296-DC013P 01/07/2023

The version of this declaration conforms to the standard BS EN ISO/IEC 17050- 1:2010