

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 1st, 2023.

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

Simone Ferrari

Managing Director



Vehicle Service Group Italy S.r.l.

Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

ANLAGE 1 ZUR BEDIENUNGSANLEITUNG HERSTELLERANGABEN

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

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

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

Vehicle Service Group Italy S.r.l.

UMSATZSTEUER-IDENTIFIKATIONSNUMMER: 01426630388

ITALIENISCHE STEUERNUMMER: 01633631203

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

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

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

Simone Ferrari

Geschäftsführer



Vehicle Service Group Italy S.r.l.

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

ANNEXE 1 DU MANUEL D'INSTRUCTIONS INFORMATIONS SUR LE FABRICANT

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

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

cette société doit être sous-entendue comme:

Vehicle Service Group Italy S.r.l.

numéro de TVA: 01426630388

code fiscal: 01633631203

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

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

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

Simone Ferrari

Directeur Général



Vehicle Service Group Italy S.r.l.

Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

ANEXO 1 AL MANUAL DE INSTRUCCIONES INFORMACIÓN DEL FABRICANTE

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

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

que debe entenderse por sociedad:

Vehicle Service Group Italy S.r.l.

Número de IVA: 01426630388

código fiscal: 01633631203

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

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

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

Simone Ferrari

Director Gerente



Vehicle Service Group Italy S.r.l.

Via Filippo Brunelleschi 9
44020 Ostellato (FE) Italy

VAT no.: 01426630388 | Tax no.: 01633631203

1294-M015-03

LIBRAK240RTLCD

INSTRUCTION MANUAL

EN

TRANSLATION FROM THE
ORIGINAL INSTRUCTIONS

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

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

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

1294-M015-03 - Rev. n. 03 (08/2022)

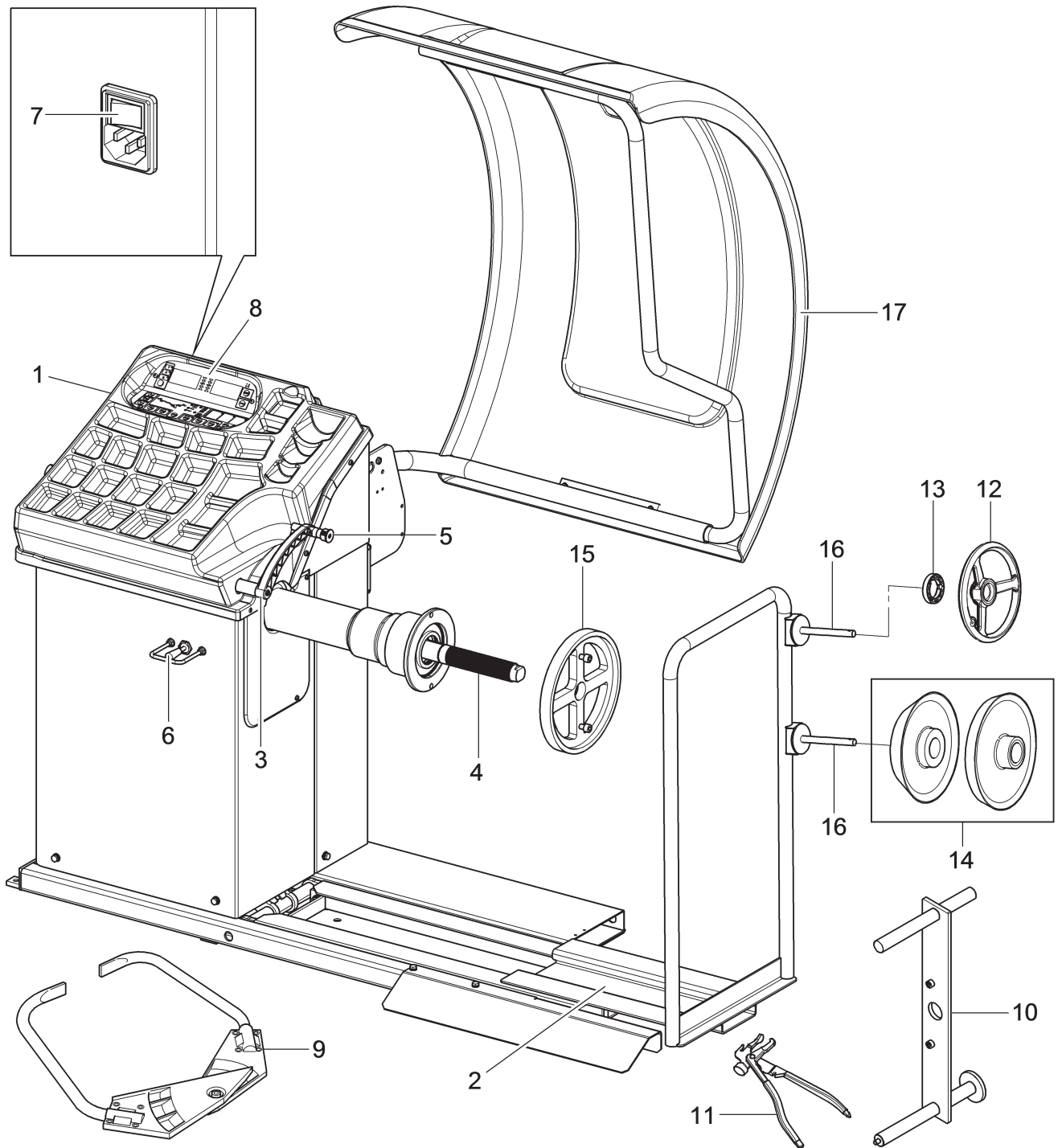
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GENERAL DESCRIPTION







Fig. 1








KEY

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

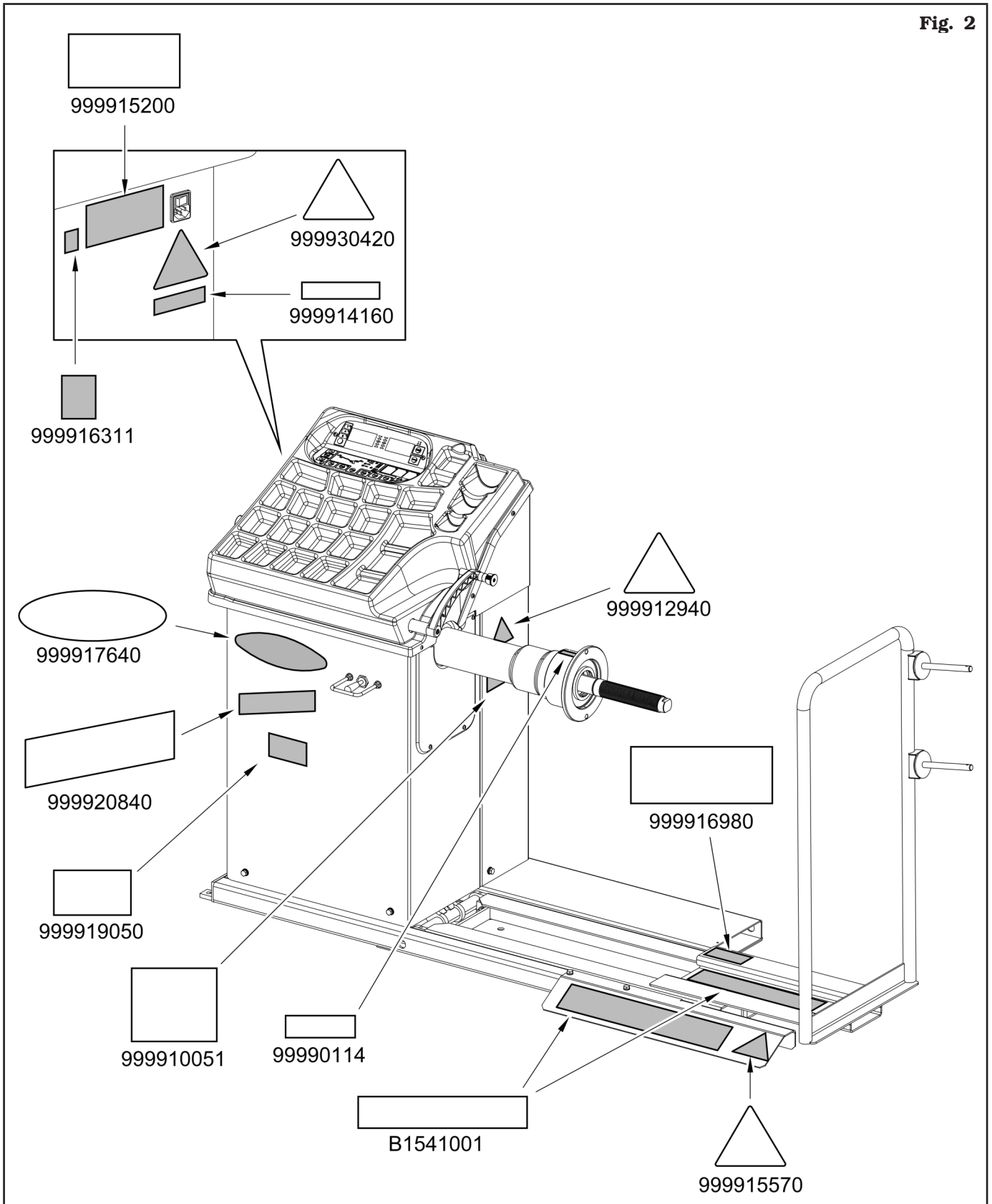
SYMBOLS USED IN THE MANUAL

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



LIBRAK240RTLCD

Code numbers of nameplates

B1541001	<i>Danger nameplate</i>
99990114	<i>Arrow nameplate</i>
999910051	<i>Protection device use nameplate</i>
999912940	<i>Lifting nameplate</i>
999914160	<i>230 V - 1 Ph - 50/60 Hz voltage nameplate</i>
999915200	<i>Serial number nameplate</i>
999915570	<i>Crushing danger nameplate</i>
999916311	<i>Rubbish skip nameplate</i>
999916980	<i>Max. capacity load 200 kg (441 lbs) nameplate</i>
999917640	<i>Butler logo nameplate</i>
999919050	<i>Digital Series nameplate</i>
999920840	<i>Librak240 Truck nameplate</i>
999930420	<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 machines for car, light transport and truck wheels, intended to be used exclusively to cancel out, or at least reduce to acceptable limits wheels' vibrations, 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 (optional)**

Its function is to protect the operator from possible projections of materials on the wheel during its spin.

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

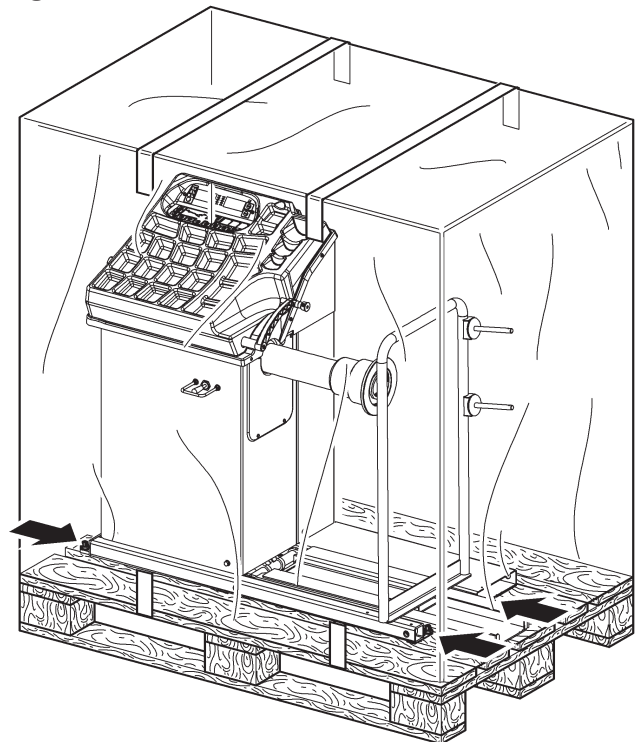


HAVE THE EQUIPMENT HANDLED BY SKILLED PERSONNEL ONLY.

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.

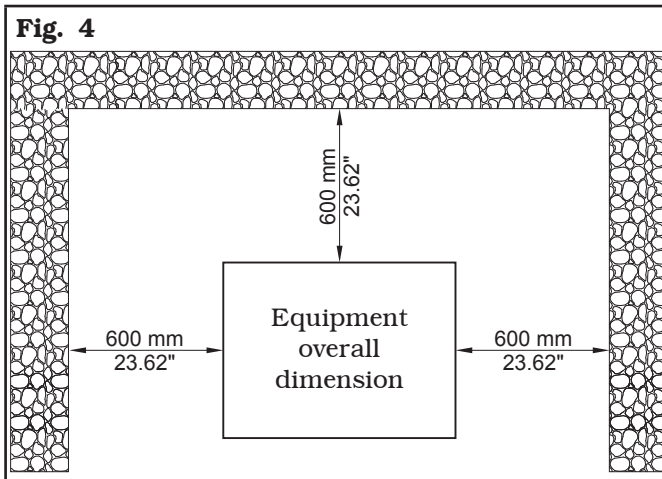
8.0 WORKING ENVIRONMENT CONDITIONS

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



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. Operator 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/m² (100 lb/ft²).

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 QUALI-
FIED 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.

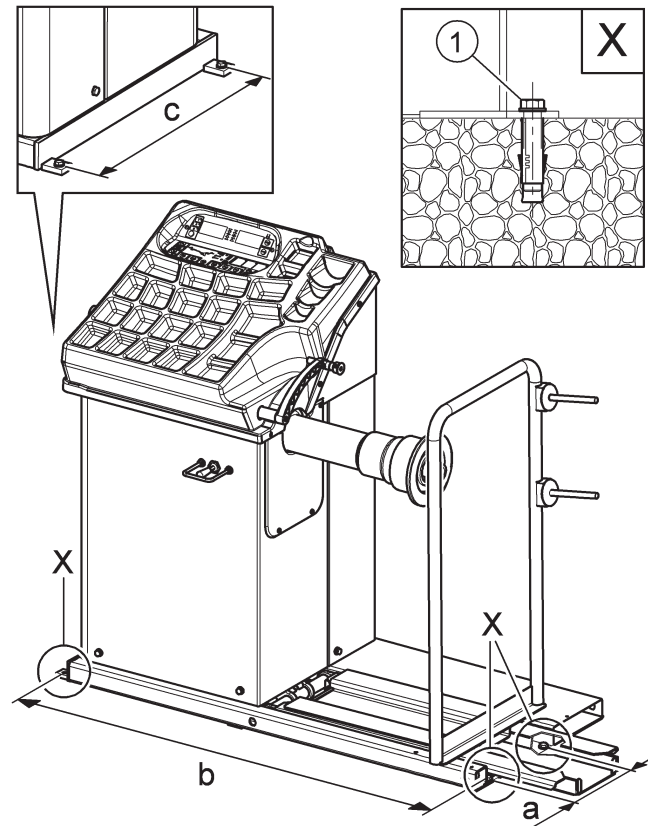
9.1 Anchoring system

The packed machine 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 machine 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.**

Fig. 5



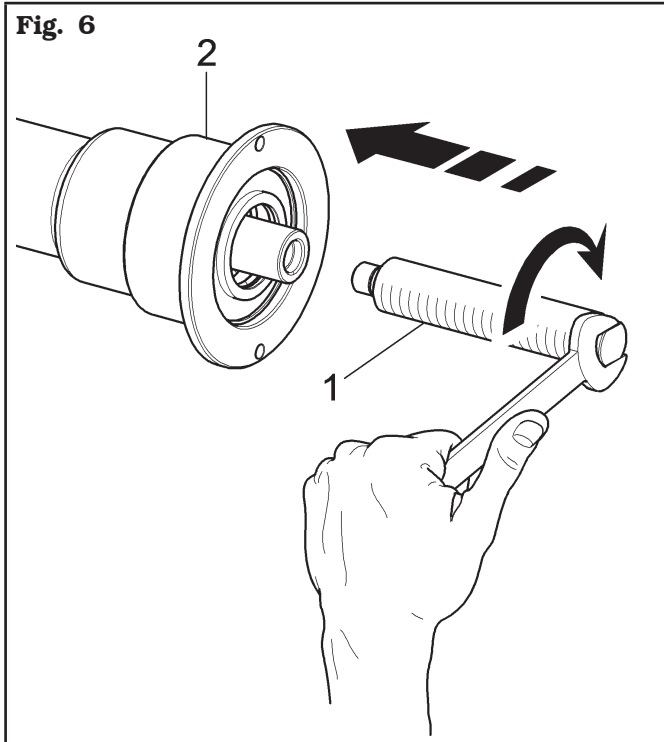
a = 240 mm / 9.45"
b = 1200 mm / 47.24"
c = 485 mm / 19.09"

- To fasten the product to the ground, use anchors (**Fig. 5 ref. 1**) with a threaded shank M8 (UNC 5/16) suitable for the floor on which the tyre changer will be fixed 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

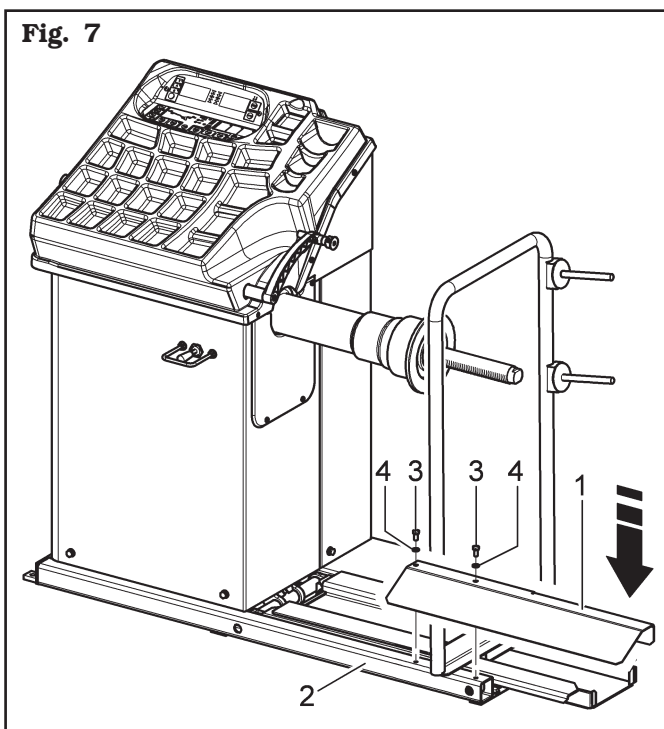
9.2.1 Fitting the chuck on the flange

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



9.2.2 Mounting of foot guard protection

Fasten the foot guard protection (Fig. 7 ref. 1) at the base of the lifting device (Fig. 7 ref. 2) using the bolts (Fig. 7 ref. 3) and the washers (Fig. 7 ref. 4) supplied.



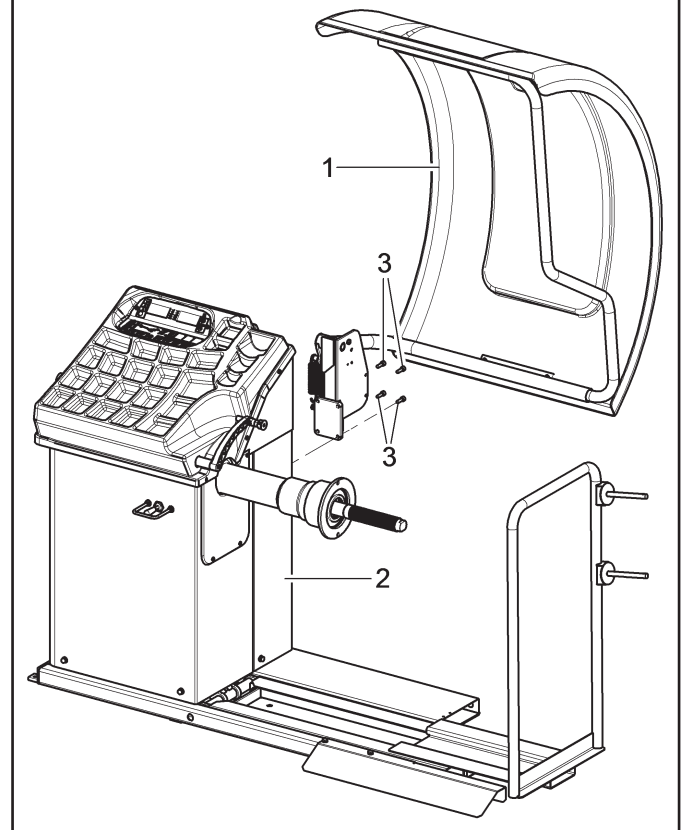
9.2.3 Fitting the protection guard (optional)

Mount the protection guard (Fig. 8 ref. 1) in the threaded inserts placed on the rear side of the chassis (Fig. 8 ref. 2) using the bolts (Fig. 8 ref. 3).



TO MOUNT WHEEL COVER UNIT, REPLACE THE TOP COVER AND THE REAR CLOSING WITH THOSE SUPPLIED WITH THE PROTECTION GUARD.

Fig. 8



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 PADLOCKABLE MAIN SWITCH AND A CUTOUT 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



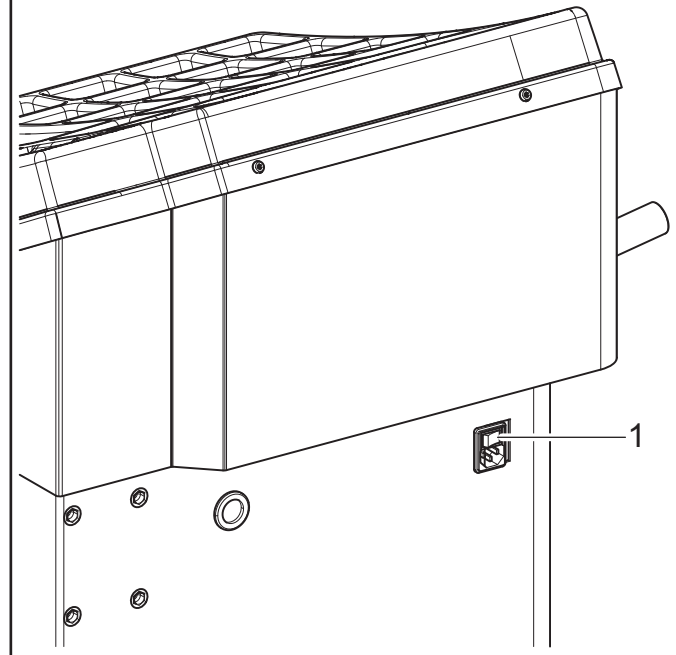
BEFORE STARTING UP THE WHEEL-BALANCER, BE SURE TO BECOME FAMILIAR WITH THE LOCATION AND OPERATION OF ALL CONTROLS AND CHECK THEIR PROPER OPERATION (SEE PAR. "CONTROLS").



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. 9 ref. 1**).

Fig. 9



11.0 CONNECTION TO THE COMPRESSED AIR SUPPLY

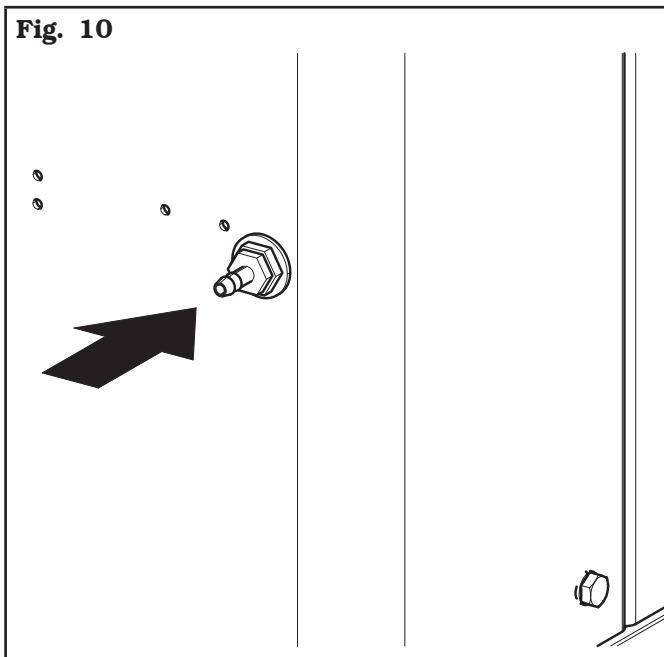


ANY PNEUMATIC ATTACHMENTS MUST BE CARRIED OUT BY QUALIFIED STAFF.

Connect the wheel balancer to the centralised compressed-air system by means of the connection on the back of the machine (see **Fig. 10**).

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. 10



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. 11 ref. 1**) towards the right;
2. remove any type of foreign body from the wheel (**Fig. 11 ref. 2**): pre-existing weights, stones and mud, and make sure the chuck (**Fig. 11 ref. 3**) and the rim centring area are clean before fitting the wheel on the chuck;
3. place the wheel (**Fig. 11 ref. 2**) on the wheel support (**Fig. 11 ref. 1**) with rim inner side towards the wheel balancer. Operate the lifting device control (**Fig. 11 ref. 4**) and, keeping it lifted, raise the footboard (**Fig. 11 ref. 5**);

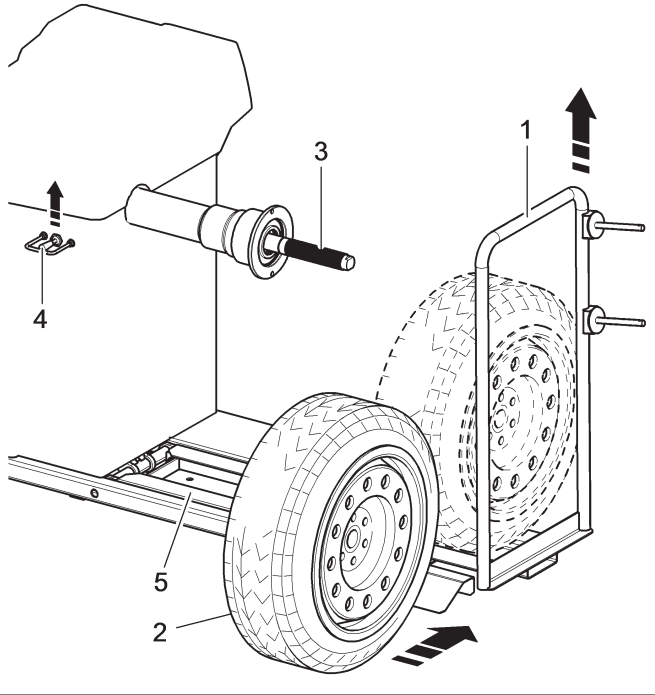


ONCE THE DESIRED HEIGHT HAS BEEN REACHED, RELEASE THE LIFTING DEVICE CONTROL.

4. move the wheel support to the left (**Fig. 11 ref. 1**) and, at the same time, centre the wheel on the chuck with minimal effort, regardless of its weight;

LIBRAK240RTLCD

Fig. 11

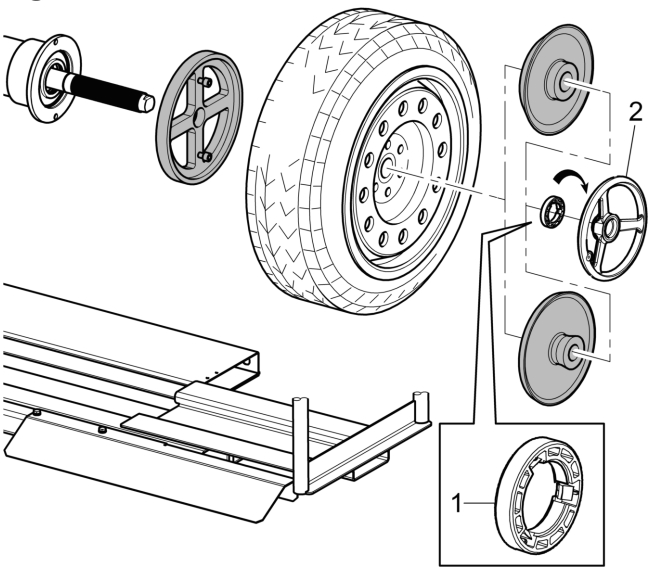


5. depending on the type of wheel to be balanced, it is necessary to carefully choose the accessories suitable for correctly locking the wheel on the chuck:



PAY PARTICULAR ATTENTION TO THE ASSEMBLY SEQUENCE OF THE LOCKING ACCESSORIES, AS SHOWN IN FIG. 12.

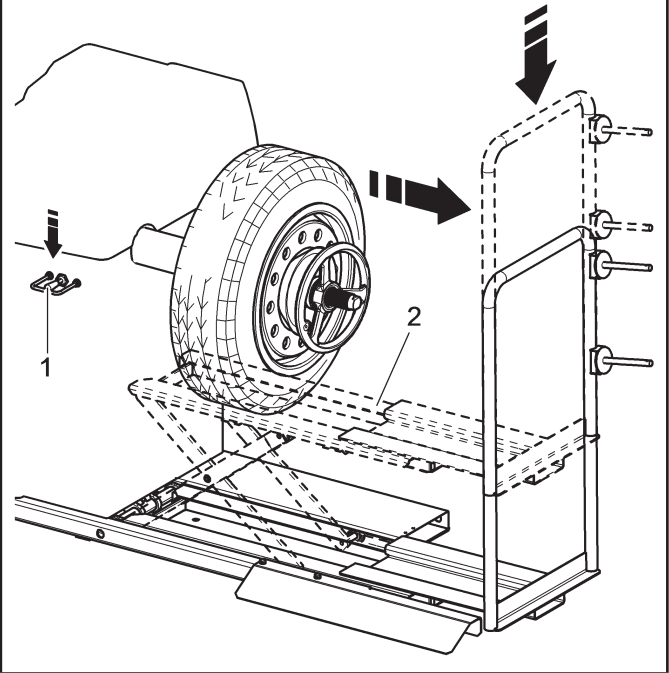
Fig. 12



THE PRESSURE RING (FIG. 12 REF. 1) MUST BE MOUNTED WITH THE TEETH, OR DISCHARGE SIDE, TOWARDS THE RING NUT (FIG. 12 REF. 2).

6. lower the lifting device control (Fig. 13 ref. 1) and then lower the footboard (Fig. 13 ref. 2).

Fig. 13

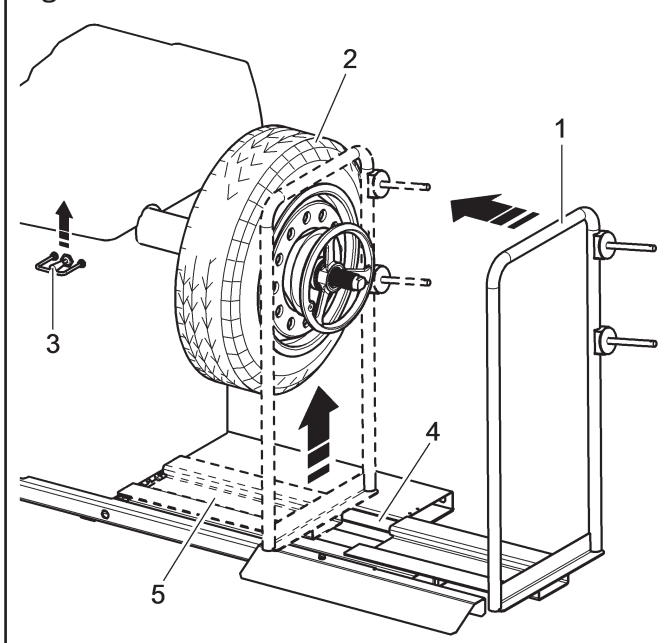


12.2 Demounting of the wheel

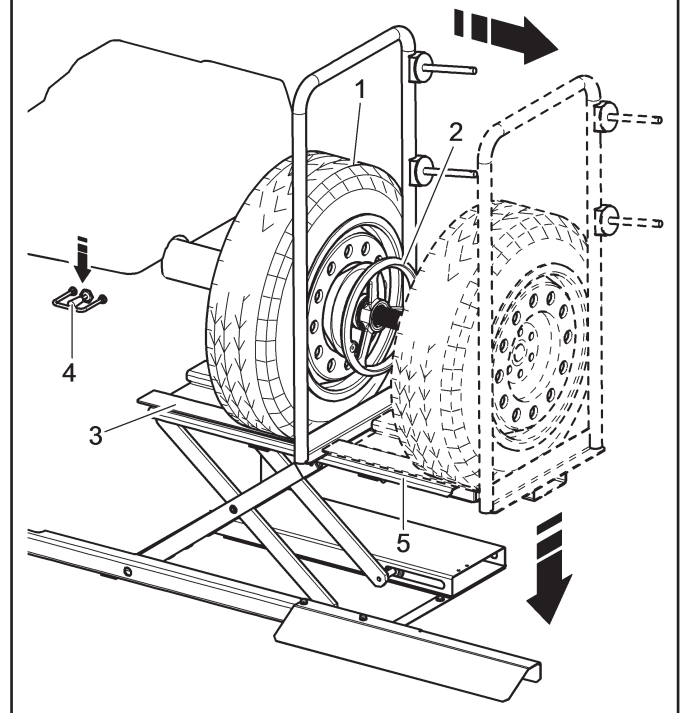
1. Move the wheel support (Fig. 14 ref. 1) towards the left and bring the wheel support plane (Fig. 14 ref. 5) under the tyre (Fig. 14 ref. 2);
2. lift the lifting device control (Fig. 14 ref. 3) and lift the footboard (Fig. 14 ref. 4) until the wheel support (Fig. 14 ref. 5) comes into contact with the tyre (Fig. 14 ref. 2);



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

Fig. 14

3. unlock the wheel (Fig. 15 ref. 1) engaged to the chuck, removing the locking devices (Fig. 15 ref. 2);
4. move the wheel support towards the right (Fig. 15 ref. 3) together with the tyre that is leaning against it;
5. lower the lowering device control (Fig. 15 ref. 4) and then lower the footboard (Fig. 15 ref. 5);

Fig. 15

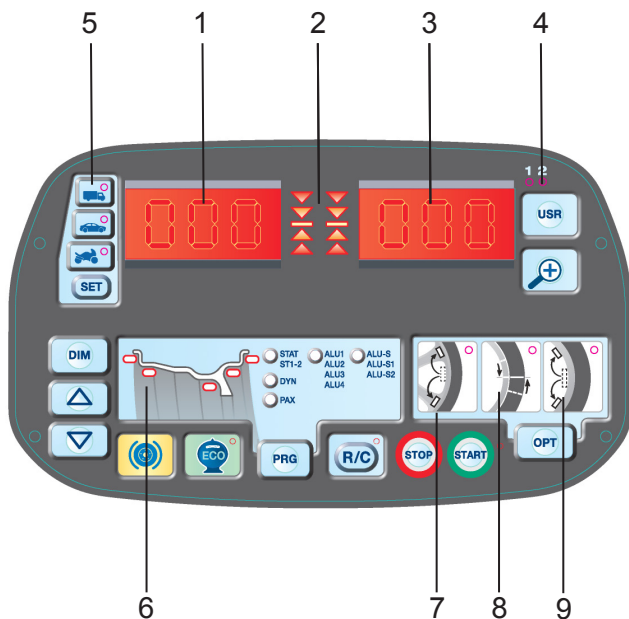
6. remove the wheel from the lifting device.

13.0 MULTIFUNCTION LED PANEL

The wheel balancers are equipped with a multi-function display panel with signal LEDs, together with a silk-screen representing the shape of a rim and the various available options.

This panel also includes LEDs 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.

Fig. 16





KEY

- 1 – Display screen “D1” showing INNER/DIMENSIONS unbalance
- 2 – LED showing wheel rotation inner/outer
- 3 – Display screen “D2” showing OUTER/DIMENSIONS unbalance
- 4 – Indication of the selected USER
(see Paragraph 15.2)
- 5 – Selected mode indication
- 6 – Rim shape diagram with weights position
- 7 – OPTION Weights hidden behind spokes
(see Chapter 18)
- 8 – MATCHING OPTION (see Chapter 19)
- 9 – SPLIT OPTION (see Chapter 17)

13.1 DISPLAY and LEDs brightness adjustment

Press the keys indicated below to adjust DISPLAY and LEDs brightness.

Keep key  , pressed and, at the same time, press key  to increase brightness.

Brightness is gradually increased up to the max. level, then display screens and LEDs will become dark; if you continue brightness max. level will be reached again, and so on.



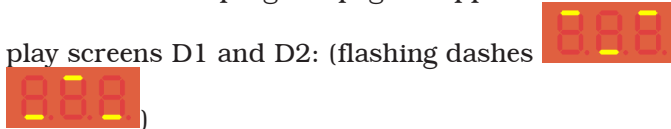
THE ADJUSTMENT IS STORED AUTOMATICALLY AND REMAINS ALSO AFTER EQUIPMENT SHUT-DOWN.

14.0 SWITCHING THE MACHINE ON AND OFF

The ON/OFF main switch is located on the rear of the machine.

To start the machine and access the program, switch on the system by turning the main switch.

Wait a few seconds for the operating program to load and for the first program page to appear on the display screens D1 and D2: (flashing dashes



Use operative keyboard keys (see **Fig. 16**) to use all machine available functions.



Key for balancing cycle start.



Key for stop / end procedure.



Key for data recalculation / confirmation.



Key for wheel dimensions entry.



Keys to increase/decrease entered values.



Key for MOTORCYCLE/CAR/TRUCK wheel cycle.



Key for balancing program selection.



Key for Option selection.



Key for Eco-Weight procedure.



"Zoom" key to display unbalance with resolution 1 g (0.05 oz).



Key for U1-U2 user selection.



Key for threaded chuck lock/unlock.

During program running, the different keys may have meanings different from the previously described ones. The following pages of this manual will supply a detailed description of these keys.

In addition, some functions are achieved by pressing a combination of several keys, that will be described later on in this manual.

Usually, to go back and abort the procedure, press



15.0 WHEEL BALANCING



15.1 Determination of wheel dimensions

15.1.1 Manual setting of wheel dimensions


The wheel balancer features a graduated scale for the manual detection of the distance for weight fitting.

The value of equipment distance from rim is always set with "mm" measurement unit.


Rim width and diameter values, on the other hand, can be set in "inches" or "mm"; in the examples in this manual "inch" introduction is indicated.

The rim diameter and width have to be measured directly on the rim itself or detected by means of the manual caliper (supplied) only for the rim width (see **Fig. 21**).

In order to insert such values or to check them again the operator will have to carry out the following procedures:

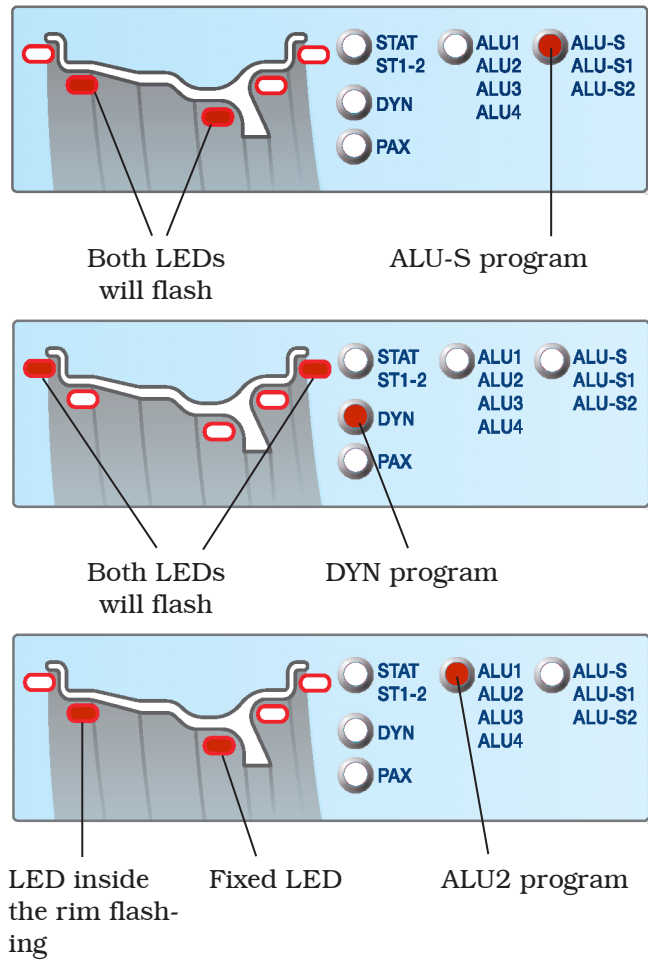
1. from wheel dimensions page, press key  to select the value to be edited or set; the digit on the display corresponding to the value to be edited is flashing;

2. press the  /  keys until the desired value is reached;

3. press the  key to confirm and to move to the next value to be edited or set.


The graduated scale shall be positioned inside the rim, at the distance where any adhesive weight shall be fitted (for example **ALU-S**), or sometimes against rim inner edge (for example **DYN**). To make user's job easier, the corresponding LED will flash on rim shape displaying.


Fig. 17



To make a measurement in STATIC mode (STAT):

Press key  to select STATIC balancing program.

The corresponding LED turns on. Press key  to switch to the entry of the measures required.

Letter  will appear on "D1" display to indicate rim diameter value entry. The value on display "D2" starts flashing.



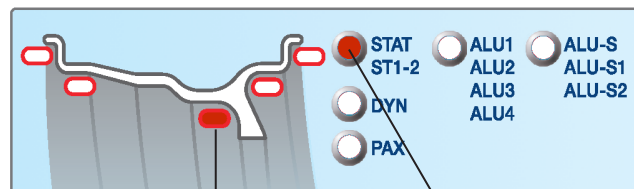
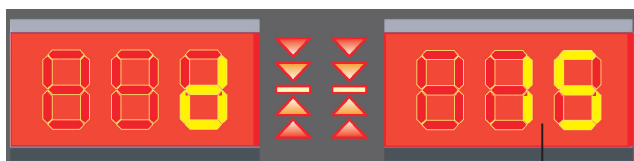
Use keys  /  to set the value required on "D2" display. Dimension entry for static mode is completed.

Fig. 18

Weight application point

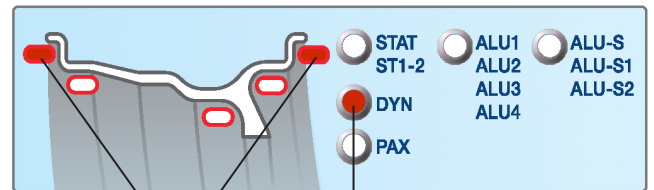
STAT mode point



Diameter measurement acquired

To make a measurement in DYNAMIC mode (DYN):

Press key  to select DYNAMIC balancing program. The corresponding LED turns on.

Fig. 19

Weight application points

DYN mode


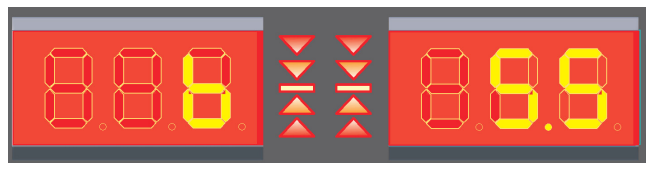



Letter  will appear on "D1" display to indicate the entry of the rated width value indicated on the rim. The value on display "D2" starts flashing.

Fig. 20

This measure can be detected with a graduated caliper: place it on wheel outer and inner side (see Fig. 21).

Fig. 21

MANUAL CALIPER.
Width manual measurement

Use keys  /  to set the measured value on "D2" display. Press key  to shift to the next value.


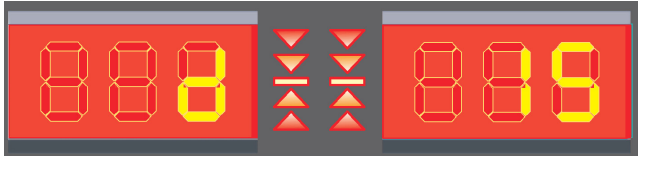



Letter  will appear on “D1” display to indicate rim diameter value entry. The value on display “D2” starts flashing.

Fig. 22



Use keys  /  to set the detected value on “D2” display.

Press key  to switch to the entry of the next required.


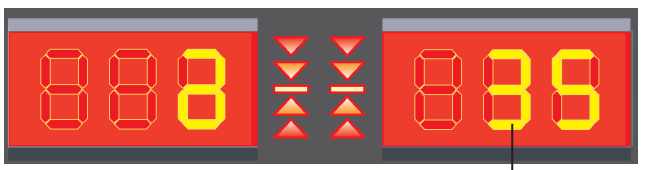
Letter  will appear on “D1” display, to indicate to enter the value of the distance from the point of application of the weight to the equipment (see Fig. 23). The value on display “D2” starts flashing.

Fig. 23



Width measurement



Use keys  /  to set the value read on the graduated scale on “D2” display (see Fig. 24).

Fig. 24

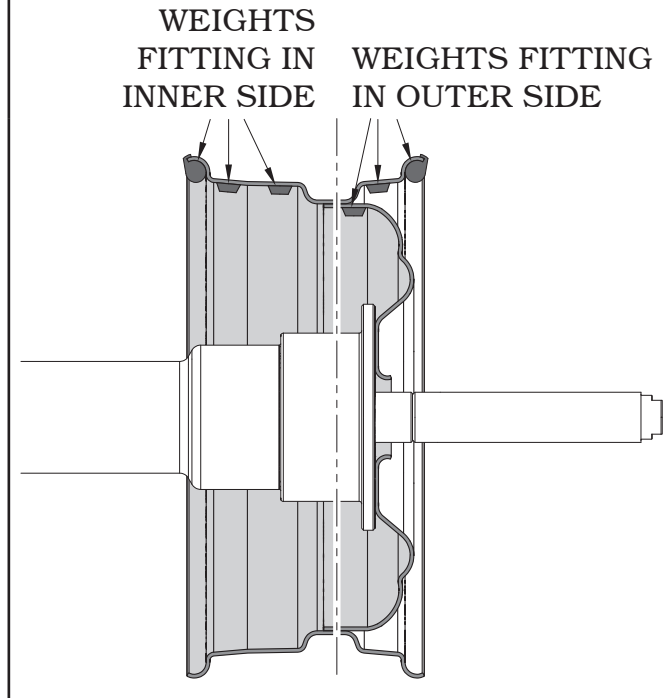


Dimension entry for **DYNAMIC** mode is completed.

15.1.2 Entry of measures

Below is the representation of the inside (towards the equipment) and outside of the rim.

Fig. 25



TO ENTER THE MEASURES OF
THE SELECTED PROGRAM, PRESS

THE KEY .

• To make a measurement in static mode ST1-ST2:


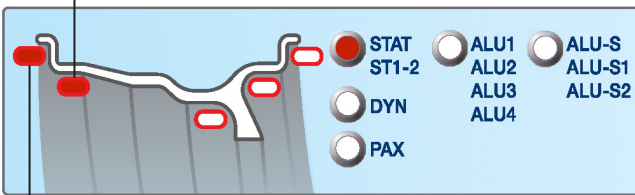
press key  until selecting **STAT-2 (LED STAT/ST1-2 + LED inner adhesive weight)** or **STAT-1 (LED STAT/ST1-2 + LED clip weight onto inner edge)** mode.

Fig. 26

STATIC 2 weight application point



STATIC 1 weight application point


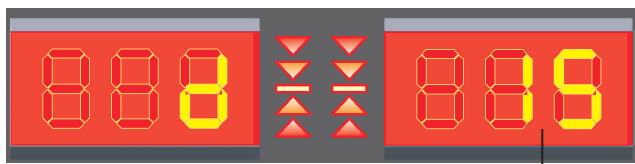



Letter  will appear on “D1” display to indicate rim diameter value entry.

Fig. 27



Diameter measurement input

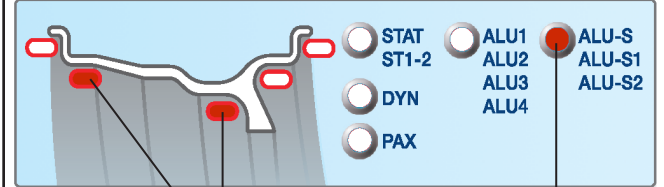
Use keys  /  to set the value required on “D2” display.

Confirm the entered value by pressing key . Dimension entry for **ST1** or **ST2** mode is completed.

• To make a measurement in ALU-S mode:

Press key  to select ALU-S balancing program. The corresponding LED turns on.

Fig. 28



Weight application

ALU-S mode points


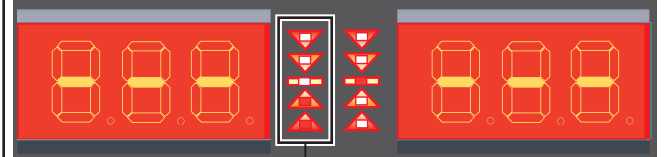



Press key  to switch to the entry of the measures required. The displays will show some flashing LED, as indicated in the example below:

Fig. 29



Flashing LED

When key  is pressed, “D2” display starts flashing; use keys  /  to enter “rim diameter” value.


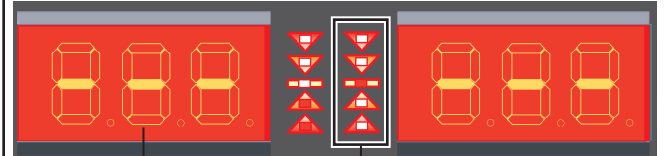
When key  is pressed, “D1” display starts flashing.

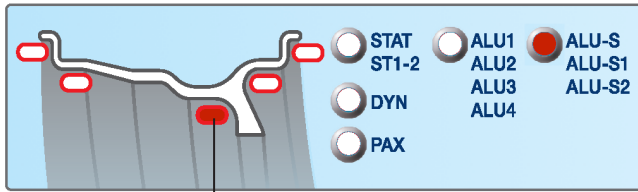
Fig. 30





Flashing display Flashing LED

In order to acquire the value required, extract the graduated scale and place it where indicated by weight application LED, lit up on the display.

Fig. 31



Weight application point

Use keys  /  to set the value read on the graduated scale on "D1" display ("outer distance").


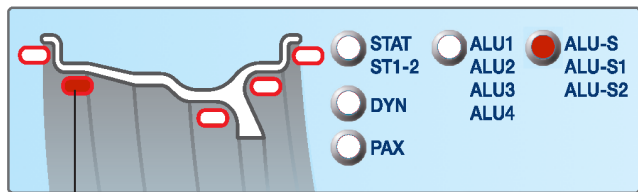


Press key  to come back to the first page. "D1" value, blinking on the display, indicate the "inner distance", to be detected as follows: extract the graduated scale and place it where indicated by the LED as indicated in the example below.


Fig. 32






Weight application point

Use keys  /  to set the value read on the graduated scale on "D1" display ("inner distance"). Dimension entry for **ALU-S** mode is completed.

- To take a measurement in **ALU-S1** and **ALU-S2** modes:

Press key  until selecting **ALU-S1** (LED **ALU-S** + LED clip weight onto inner edge) or **ALU-S2** (LED **ALU-S** + LED inner adhesive weight).

Press key  to display the values on "D1" and

"D2" displays. Press key  again: display "D2" starts flashing: use keys  /  to enter "rim


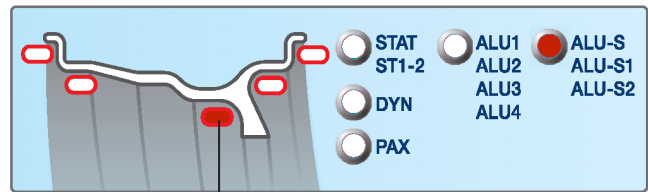


diameter" value. When key  is pressed, "D1" display starts flashing. In order to acquire the value required, extract the graduated scale and place it where indicated by weight application LED, lit up on the display as indicated in the example below.

Fig. 33



Weight application point

Use keys  /  to set the value read on the graduated scale on "D1" display ("outer distance").


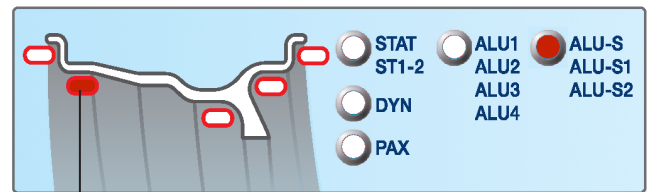


Press key  to come back to the first page. "D1" value, blinking on the display, indicate the "inner distance", to be detected as follows: extract the graduated scale and place it where indicated by the LED as indicated in the example below.

Fig. 34




Weight application point

Use keys  /  to set the value read on the graduated scale on "D1" display ("inner distance"). Dimension entry for **ALU-S1** or **ALU-S2** mode is completed.

• **To take a measurement in ALU1, ALU2, ALU3 and ALU4 modes:**

PRG

Press key  until selecting **ALU1** (LED **ALU1/2/3/4** + **inner adhesive weight at "12 o'clock"** + **outer adhesive weight at "12 o'clock"**), **ALU2** (LED **ALU1/2/3/4** + **inner adhesive weight at "12 o'clock"** + **outer adhesive weight at "12 o'clock"** not visible), **ALU3** (LED **ALU1/2/3/4** + **clip weight onto inner edge** + **outer adhesive weight at "12 o'clock"** not visible) or **ALU4** (LED **ALU1/2/3/4** + **clip weight onto inner edge** + **outer adhesive weight at "12 o'clock"**).

Extract the graduated scale and position it inside the rim, at the distance where any adhesive weight shall be fitted (**ALU-1** or **ALU2**) or against rim outer edge (**ALU3** or **ALU4**).

Read the measurement on the graduated scale.

According to the amount of values to be entered, the programs are divided into:

ALU2 - ALU3 → require the entry of 2 values (distance-diameter)

ALU1 - ALU4 → require the entry of 3 values (distance-diameter and width)

ALU2 and **ALU3** modes only require the entry of "distance" and "rim diameter" values.

DIM

Press key  to switch to the entry of the measures required.


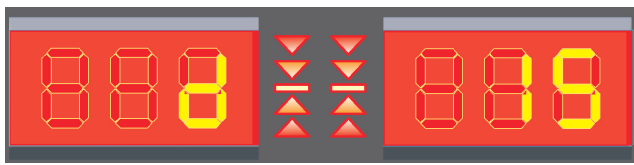



Letter  will appear on "D1" display to indicate rim diameter value entry. The value on display "D2" starts flashing.

Fig. 35

Use keys  /  to set the detected value on "D2" display.

DIM

Press key  to shift to the next value.


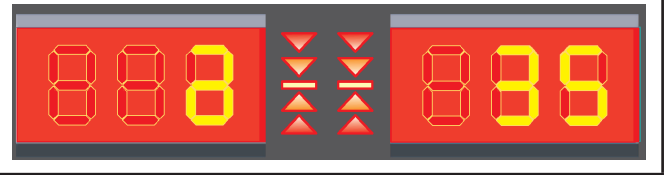


Letter  will appear on "D1" display, to indicate the entry of distance value of weight application point on the rim.


Fig. 36

Use keys  /  to set the value read on the graduated scale on "D2" display.

The dimension entry for **ALU-2** and **ALU-3** mode is completed.

To complete the entry of all the data necessary for **ALU1** or **ALU4**, modes, wheel width shall be entered.

DIM

Press key  to switch to the entry of the such value.


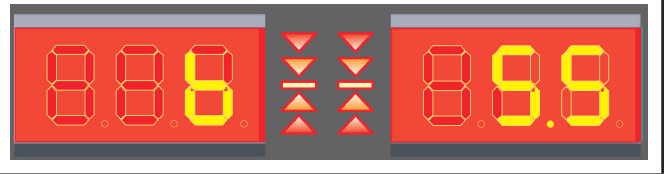


Letter  will appear on "D1" display to indicate the entry of the rated width value indicated on the rim. The value on display "D2" starts flashing.


Fig. 37

Input the nominal width shown on the rim, using the

keys  / , or manually check by using the graduated caliper, positioning it on the outer and inner side of the wheel (**Fig. 21**).

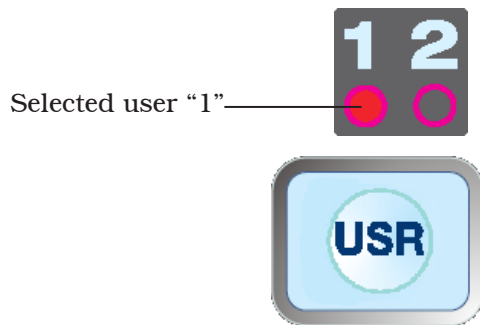
Dimension entry for **ALU1** or **ALU4** mode is completed.

15.2 User control function

Wheel balancers can be used by 2 different users at the same time, pressing the “user”  , key, selecting user 1 or 2.


When the “user” key is pressed, the LED corresponding to the selected user comes on.

Fig. 38



The system stores the data relating to the last performed spin according to the different operators. The desired user can be called every time the program displays the specific key. 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 THE “USER CONTROL” FUNCTION, SEE PAR. 21.2. IF THE FUNCTION IS DISABLED, NO LED WILL COME ON (FIG. 38), AND THE PRESSURE OF “  ” DOES NOT ENTAIL ANY PROGRAM CHANGE.

15.3 Unbalance measurement

15.3.1 Indicative display of points where to fit weight



IT IS VERY IMPORTANT TO REMEMBER THE POINTS SELECTED FOR MEASUREMENT INSIDE THE RIM SINCE DURING THE WEIGHTS FITTING AT "6 O'CLOCK" YOU WILL NOT HAVE ANY OTHER REFERENCE. THE POSITIONING IN DEPTH WILL BE ANYWAY AT THE DISCRETION OF THE OPERATOR.

15.3.2 Balancing mode

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

- using the distance caliper arm with weights fitting pliers;
- weights fitting at “6 o'clock”.

• Weights fitting with distance caliper and pliers

Insert the adhesive weight inside pliers as shown in **Fig. 39**.

Fig. 39

Fit the adhesive weight in the pliers of the gauge rod



Pull out the gauge rod until reading, on its graduated scale, the measure entered in the setting. Rotate the gauge arm until the weight touches the rim.

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The fact that the weight fitting position is no longer at "12 o'clock" (**Fig. 40**) is automatically offset.

Fig. 40

Fit the weight in the position where weight pliers touch the wheel



Bring the distance caliper arm into rest position.

• Weights fitting at "6 o'clock".

TO USE THIS MODE, THE RELEVANT FUNCTION MUST BE ENABLED ON THE MENU USER - PARAMETERS CONFIGURATIONS - PARAMETER 9 (PAR. 21.4).



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



USING THIS MODE, THE EQUIPMENT ALLOWS YOU TO APPLY ANY ADHESIVE WEIGHTS AT "6 O'CLOCK". AFTER YOU ENABLE THIS MODE, THE PROGRAMS WITH FIXED LED ON THE RESULTS PAGE WILL REQUIRE THE FITTING OF THE WEIGHT AT "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.



MAKE SURE TO FIT THE WEIGHT (INNER OR OUTER) AS INDICATED BY THE FLASHING LED ON THE RIM SHAPE GRAPHICAL DISPLAYING.

15.3.3 Dynamic balancing

Dynamic balancing is a procedure that offsets the wheel vibrations using 2 weights on different planes. Clip weights are used on rim inner/outer edge, and usually on iron rims.

To perform a dynamic measurement spin:

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. 12.0);
2. determine and enter wheel dimensions using the specific graduated scale (see Par. 15.1.1);
3. close the protection guard (if present) or press



key to perform wheel spin manually.

In just a few seconds, the wheel runs at normal speed and the display screens D1-D2 show wheel rotation. After the spin, the wheel stops automatically, also taking into account the measured unbalance so that the fitting position of the outer weight is **exactly at "12 o'clock"**.

Open the protection guard (if present).

Display screens D1-D2 show the weight required to correct the unbalance. The nearby LEDs show the direction the wheel has to be moved into to fit the weights (**Fig. 41**).

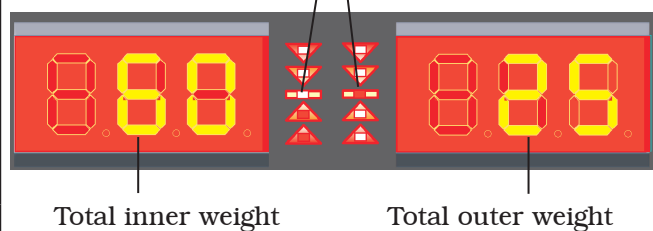
Weight can be determined in "grams" or "ounces"; in this manual examples are shown in grams. To change the unit of measurement from "grams" to "ounces", (see Par. 21.1).

Once the unbalance of the inside and outside of the wheel is known, it is possible to proceed with positioning for correction of unbalance.

Should wheel dynamic unbalance be quite high and the weight to be fitted not available, the "SPLIT" procedure can be used so as to correct the dynamic unbalance dividing the weight amount into two smaller weights (see Chap. 17).

Fig. 41

LED showing positioning in correct weight fitting point



The DYNAMIC balancing procedure is completed.

15.3.4 ALU-S procedure

The ALU-S balancing is a procedure that offsets the wheel vibrations using 2 weights on different planes. Adhesive weights are used inside the rim, and usually on alloy rims.

To launch a ALU-S 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. 12.0);
2. determine and enter wheel dimensions using the specific graduated scale (see Par. 15.1.1);
3. close the protection guard (if present) or press



key to perform wheel spin manually.

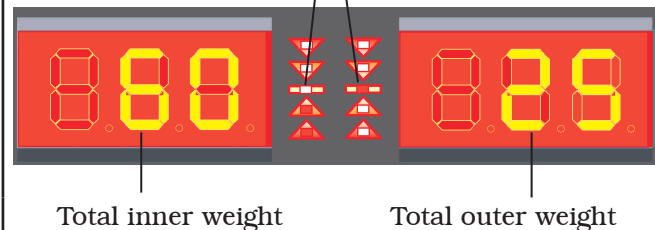
In just a few seconds, the wheel runs at normal speed and the display screens D1-D2 show wheel rotation. After the spin, the wheel stops automatically, taking into account the measured unbalance so that the fitting position of the outer weight is at "12 o'clock".

Open the protection guard (if present).

Display screens D1-D2 show the weight required to correct the unbalance. The nearby LEDs show the direction the wheel has to be moved into to fit the weights (**Fig. 42**).

Fig. 42

LEDs showing positioning in correct weight fitting point



Once the unbalance value of the inner and outer wheel side is known, the wheel can be positioned by turning it in the direction indicated by the LEDs until the correct position is reached (see Par. 15.3.6).

Fit the weight to the wheel as indicated in Par. 15.3.2. Repeat wheel and weight positioning procedure for both inner/outer positions. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

If the adhesive weight has to be hidden behind spokes, refer to "weights hidden behind spokes mode", (see Chap. 18).

The ALU-S balancing procedure is completed.

15.3.5 Static balancing (STAT)

The STATIC balancing procedure is used to offset wheel vibrations using 1 weight on a single plane. An adhesive weight is used inside the rim.

To launch a STATIC 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. 12.0);

 DIM

2. press key 3 times and enter rim diameter (see Par. 15.1.1);

3. close the protection guard (if present) or press

 START

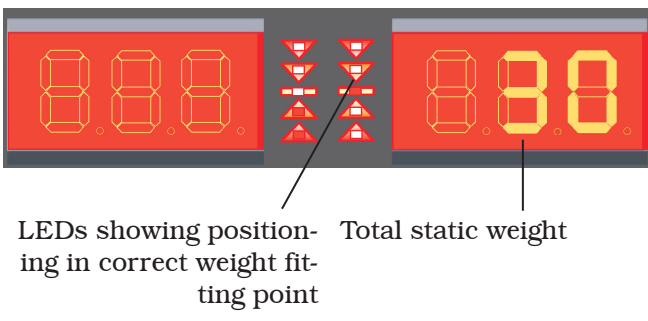
key to perform wheel spin manually.

In just a few seconds, the wheel runs at normal speed and the display screens D1-D2 show wheel rotation. After the spin, the wheel stops automatically, taking also into account the measured unbalance so that weight fitting position is at "12 o'clock".

Open the protection guard (if present).

The D2 display screen shows the weight required to correct the unbalance. The nearby LED show the direction wheel has to be moved in to fit the weight (**Fig. 43**).

Fig. 43



Once the static unbalance value is known, the wheel can be positioned by turning it in the direction indicated by the LEDs until the correct position is reached (see Par. 15.3.6).

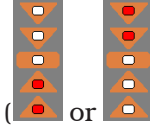
Fit the weight to the wheel as indicated in Par. 15.3.2. At the end of the procedure, the wheel balancing conditions can be checked by performing a trial spin.

If the adhesive weight has to be hidden behind spokes, refer to "weights hidden behind spokes mode", (see Chap. 18).

The STATIC balancing procedure is completed.

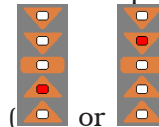
15.3.6 Positioning the correction weights on the wheel

The weights must be positioned at the top part of the wheel, at 12 o'clock, so that the unbalance will be at the bottom and the weight fitting point will be at the top. When the wheel balancer display shows 2 LEDs on at



the top or bottom (or) this means you are far away from the point where the counterweight is to be positioned.

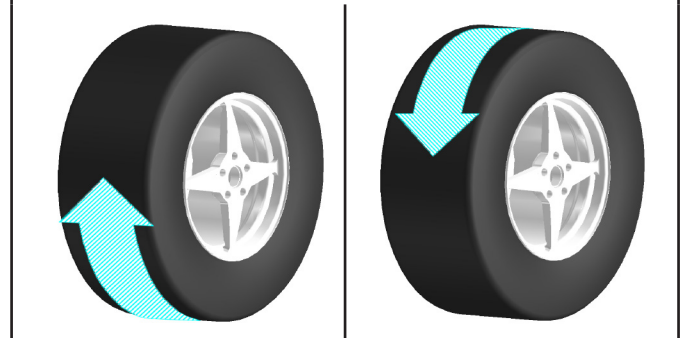
Wheel position is over 30° from the exact fitting point. When the wheel balancer display shows 1 LED on at



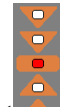
the top or bottom (or) this means you are not far from the point where the counterweight is to be positioned.

Wheel position is within 30° from the exact fitting point.

Fig. 44



When the wheel balancer display shows the central



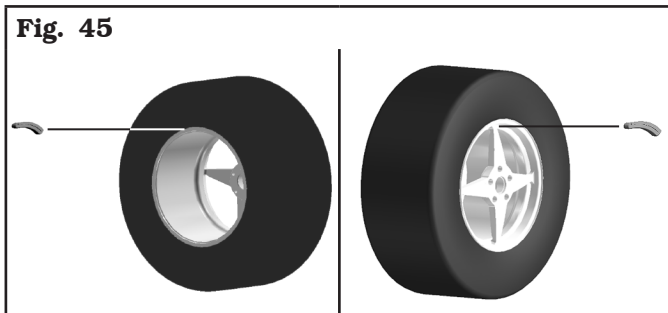
LED on () the exact position for both sides has been reached and the pneumatic brake clamps the wheel in position.



**TO RELEASE THE WHEEL AND
THUS MOVE IT FROM ONE SIDE
TO THE OTHER, PRESS KEY**



The fitting point has been found. Now the unbalance can be corrected by fitting the necessary weight.



Once the wheel has been correctly positioned, fit the weight indicated by the equipment on both sides of the wheel. The program automatically indicates the best weights to be fitted and rounds these off according to their position.

15.4 Measuring the unbalance with auxiliary programs

The available functions allow to select the appropriate weight positions to be placed in different positions compared to the standard ones (dynamic unbalance). The ALU programs measure rims by means of pre-set data in the wheel balancer.

The measurements entered by the operator will therefore be automatically corrected by the equipment according to the selected program.

On the left side of the panel are indicated the possible selection modes. Select the desired function by means

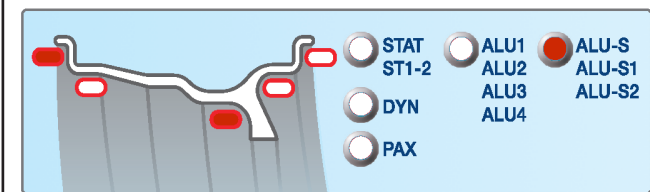
of key  and enter the measurements.

POSSIBLE SELECTABLE FUNCTIONS

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. 15.1.2) and proceed with the balancing operations.

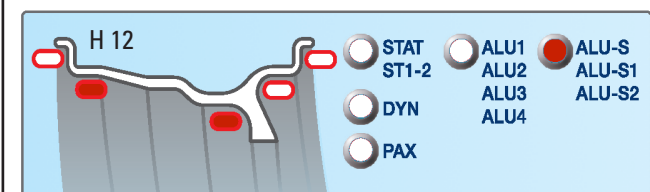
Fig. 46



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

Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

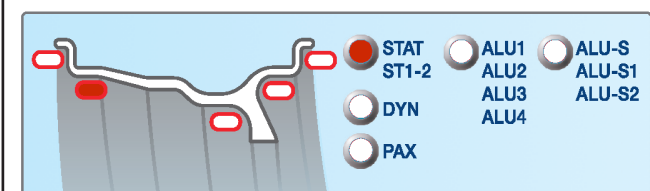
Fig. 47



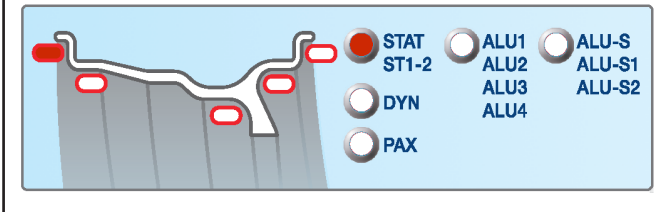
The ST2 function is a procedure that offsets wheel vibrations using a single adhesive weight on a single plane positioned exactly at 12 o'clock.

Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

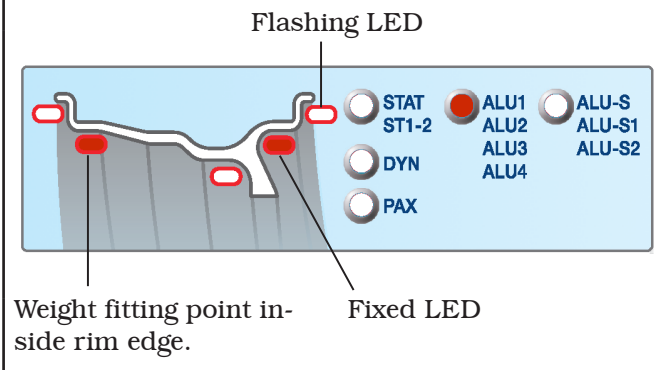
Fig. 48



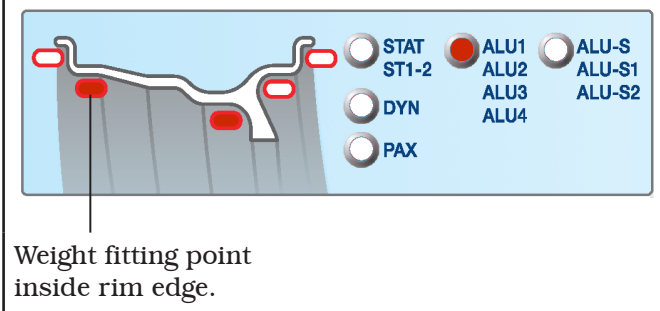
The ST1 function is a procedure that offsets wheel vibrations using a single weight with clip on a single plane positioned exactly at "12 o'clock". Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

Fig. 49

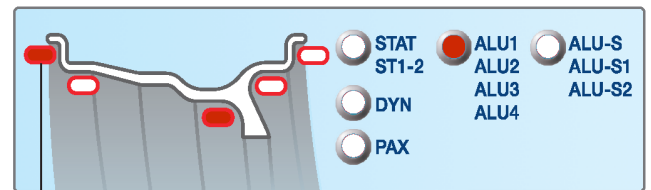
ALU1 function permits balancing wheels with light alloy rims by fitting adhesive weights on the outer and inner sides of the rim at 12 o'clock (both). Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

Fig. 50

ALU2 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. 15.1.2) and proceed with the balancing operations.

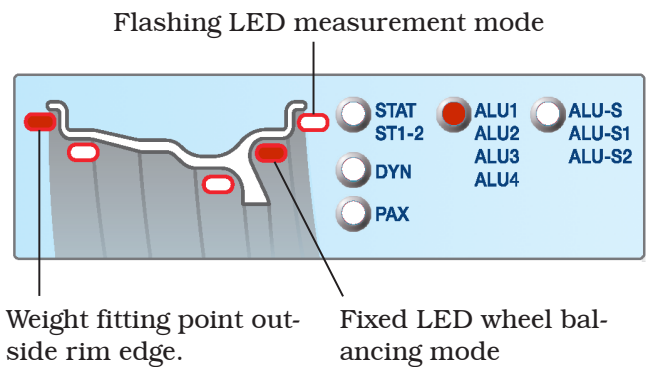
Fig. 51

The ALU3 function is a procedure that uses mixed weights to offset wheel unbalance: weight with clip on inner side of wheel, adhesive weight at 12 o'clock on outer side, not visible because inside the rim. Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

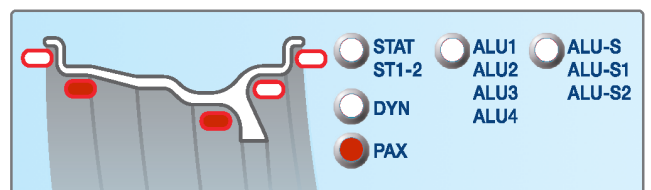
Fig. 52

Weight fitting point outside rim edge.

The ALU4 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 "at 12 o'clock". Enter the measurements (see Par. 15.1.2) and proceed with the balancing operations.

Fig. 53

PAX function is a procedure that permits balancing PAX wheels using adhesive weights at pre-set distances to offset wheel unbalance. Select the wheel type model and proceed as described in Par. 15.4.2.

Fig. 54


15.4.1 ALU1 procedure

ALU1 balancing is a procedure that offsets wheel vibrations using 2 weights on different planes. Adhesive weights are used on rim inner and outer edge, and is usually carried out on alloy rims.

To launch an ALU1 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. 12.0);


 PRG

2. press key  to select the type of ALU1 correction (see Par. 15.4);

3. determine wheel dimensions (see Par. 15.1);

4. close the protection guard (if present) or press

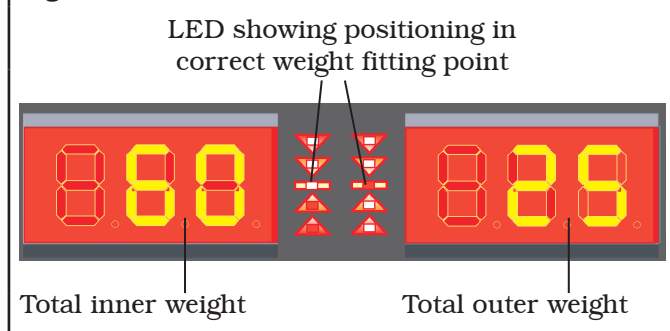


key to perform wheel spin.

In just a few seconds, the wheel runs at normal speed and the display screens D1-D2 show wheel rotation. After the spin, the wheel stops automatically, taking into account the measured unbalance so that the fitting position of the outer weight is around at "12 o'clock". Open the protection guard (if present).

Display screens D1-D2 show the weight required to correct the unbalance. The nearby LEDs show the direction wheel has to be moved in to fit weights (see Fig. 55).

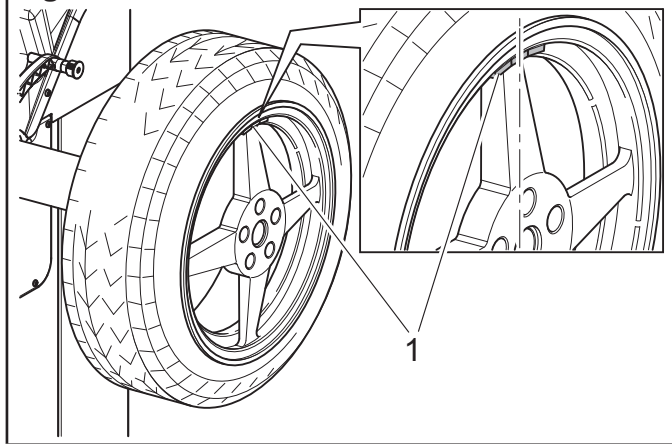
Fig. 55



To position wheel on the OUTER side, turn it in the direction shown by the LEDs, until reaching the correct position (see Par. 15.3.6). Upon reaching the correct position, the wheel is locked automatically.

Fit the adhesive weight on wheel outer side (in the example 25 g - 0.9 oz). The outer side weight must be positioned **by hand on the vertical** - "at 12 o'clock" (see Fig. 56 ref. 1).

Fig. 56

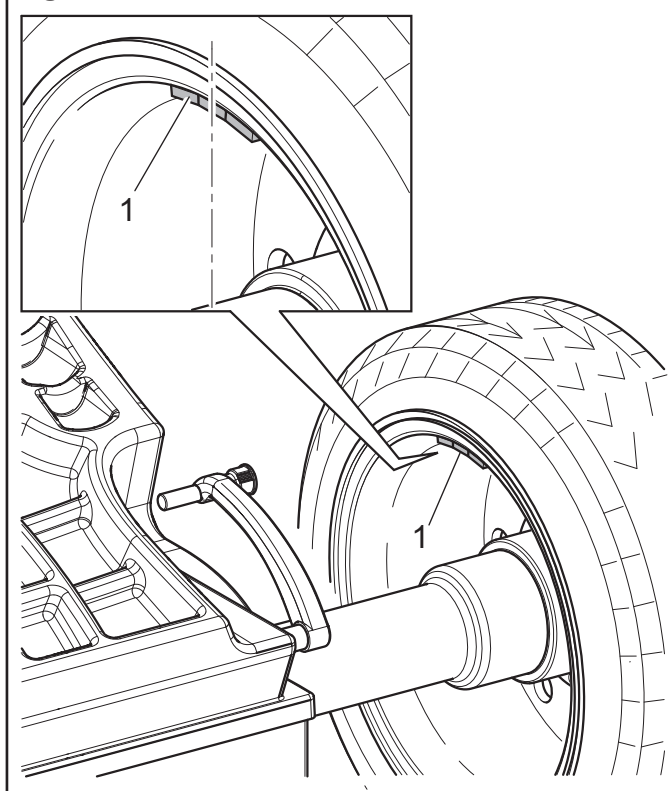


Unlock the wheel by pressing key .

To fit the adhesive weight on the INNER part of the wheel, turn it in the direction shown by the LEDs until the correct position is reached "at 12 o'clock" (see Par. 15.3.6). Upon reaching the correct position, the wheel is locked automatically.

The adhesive weight on the inner side of the wheel. The inner side weight must be positioned **by hand on the vertical** - at "12 o'clock" (see Fig. 57 ref. 1).

Fig. 57





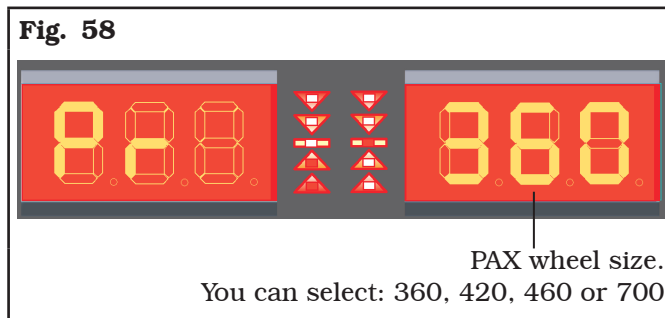
ALU1 balancing procedure is completed.



15.4.2 PAX mode


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 key  repeatedly to select the type of PAX correction (see Par. 15.4). Then press key . The selection of PAX wheel size will be displayed on the dimensions display screens (see **Fig. 58**).



Select PAX wheel correct size using keys  / , until reaching the desired size.

3. close the protection guard (if present) or press  key to perform wheel spin.


In just a few seconds, the wheel runs at normal speed and the display screens D1-D2 show wheel rotation. After the spin, the wheel stops automatically, taking into account the measured unbalance so that the fitting position of the outer weight is around at “12 o'clock”. Open the protection guard (if present). Display screens D1-D2 show the weight required to correct the unbalance. The nearby LEDs show the direction wheel has to be moved in to fit weights. Proceed to fit the adhesive weights as shown for ALU-S mode (see Par. 15.3.4).

15.5 Recalculation Function

After making a spin, the wheel automatically stops, and the required weight/s and its/their position is/are always indicated.

If a test is performed in DYNAMIC, ALU-S, or STATIC mode, the data of the other modes can be obtained without making another spin by simply setting other di-

mensions and pressing the “Recalculation key” . From the results page (see for example **Fig. 55**), press

key ; the entered measurements page will be displayed (see Par. 15.1).


At this point, simply set the dimensions again, in ALU-S, STATIC or again DYNAMIC mode, as explained in


Par. 15.3, and press key “Recalculation” .

The display screens will show a new page with weights and position, in the new ALU-S, STATIC or DYNAMIC modes, taking also into account the new dimensions. **No new spin has to be made because the equipment continues to store the data of the previous spin.**

Similarly, new weight and position data can be obtained by switching from an “Auxiliary Programs” mode (see Par. 15.4) to another mode (ALU-S1 – ALU-S2 - STATIC1 - STATIC2 - ALU1 – ALU2 – ALU3 - ALU4 – PAX) without making another spin.

If, for example, from the page where ALU1 results

are shown (see **Fig. 55**), key  is pressed, the program displays the list of auxiliary programs (see Par. 15.4). At this point, if necessary, set the new di-

mensions, and press “Recalculation”  key again to obtain the weight and position values in the new mode, taking into account the new dimensions.



15.6 ECO-WEIGHT procedure

This procedure represents a 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. 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.

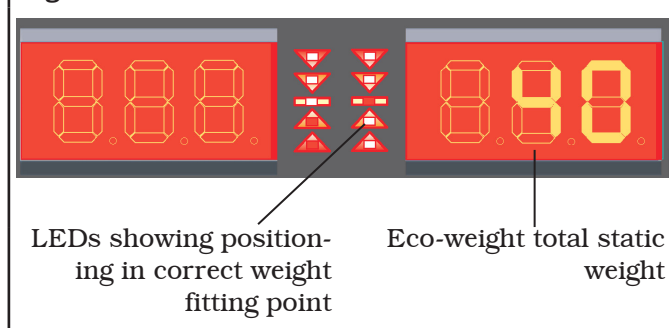
Unlike the standard STATIC procedure, the ECO-WEIGHT procedure, though only using one weight, also considerably reduces the DYNAMIC unbalance, because the fitting distance of the weight on the rim is also calculated.

From ALU-S unbalance result page (see **Fig. 42**), should a great static unbalance be present, the LED

on key  will flash. Press Eco-Weight “” key to select this procedure - the corresponding LED will turn on.

The page shown in **Fig. 59** will be displayed.

Fig. 59



The wheel can be positioned by turning it in the direction indicated by the LEDs until the correct position is reached (see Par. 15.3.6).


Fit the weight to the wheel as indicated in Par. 15.3.2.


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 (SEE FIG. 59), YOU CAN KNOW IN ADVANCE THE TWO DYNAMIC UNBALANCES AND THE STATIC RESIDUE IN ORDER TO DECIDE WHETHER IT IS CONVENIENT TO CONTINUE.

IF BOTH DYNAMIC UNBALANCES AND STATIC RESIDUE ARE SHOWN AS STILL (NOT FLASHING) VALUES ON THE DISPLAY, THIS MEANS THAT THE PROGRAM HAS DECIDED THAT IT IS BETTER TO CONTINUE. WHILE IF, ON THE OTHER HAND, ONE OR MORE VALUES ARE FLASHING, THE PROGRAM SUGGESTS USING THE STANDARD ALU-S PROCEDURE.

PRESS KEY  ONCE. THE TWO RESIDUAL DYNAMIC UNBALANCES WILL BE DISPLAYED ON D1 AND D2 SCREENS.


PRESS KEY  ONCE MORE. THE CALCULATED REAL STATIC WEIGHT WILL BE DISPLAYED ON D1 AND THE RESIDUAL STATIC WEIGHT WILL BE DISPLAYED ON D2 SCREEN.

IF YOU DO NOT WISH TO OPERATE WITH THE ECO-WEIGHT

PROCEDURE, PRESS KEY  ONCE MORE, ALU-S UNBALANCE VALUES WILL BE DISPLAYED AGAIN (SEE FIG. 42).

WHILE IF YOU WISH TO OPERATE WITH THE ECO-WEIGHT PROCEDURE, PRESS KEY

 FOR A

LONGER TIME (OR KEY ) TO GO BACK TO THE RESIDUAL DYNAMIC / ECO-WEIGHT WEIGHT DISPLAY SCREENS (SEE FIG. 59).



16.0 WHEEL BALANCING IN MOTORCYCLE MODE (WITH DISTANCE CALIPER EXTENSION KIT)

By enabling the "Motorcycle wheel balancing" function (see Par. 21.3), the wheel balancers can also balance motorcycle wheels. Before measuring wheel size (see Par. 15.1), if you press key "SET", you can select motorcycle wheels balancing mode. The "MOTORCYCLE" symbol LED will come on the corresponding key (see Fig. 60).

To disable the MOTORCYCLE function, press "SET" key once more, the corresponding LED will turn off.

Fig. 60

Selected "BIKE" (MOTORCYCLE) function

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. 15.3.3) STATIC balancing and/or ALU-S (Par. 15.3.5 and/or Par. 15.3.4) can also be performed.

17.0 SPLIT PROCEDURE

The SPLIT procedure proves useful when the dynamic unbalance (see Par. 15.3.3) of a wheel is fairly high and the weight to be fitted is not available, for instance a 100 g (3.52 oz). The unbalance can be corrected by splitting the total weight into two smaller weights. The SPLIT procedure eliminates errors caused by manually fitting two 50 g (1.76 oz) weights close to one another, which could leave considerable outstanding unbalance.

For example:

Fig. 61

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

**Fig. 62**

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



Fig. 63

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



Proceed to unbalance measurement displaying by performing a standard wheel spin (see Par. 15.3.3). Once the unbalance values have been determined,


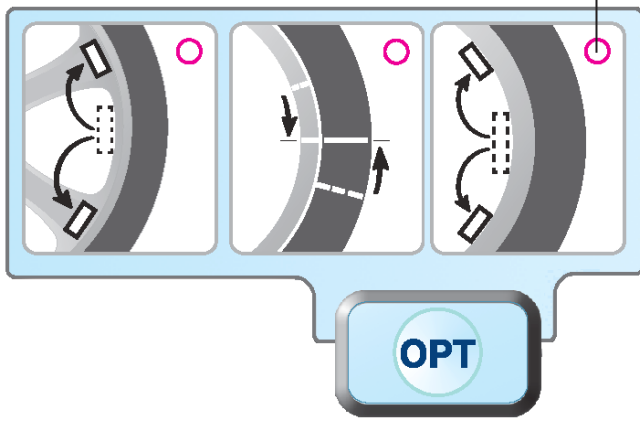
press the OPTIONS key  several times. The LED relevant to the "SPLIT" symbol (see Fig. 64).

Fig. 64

Selected "SPLIT" function




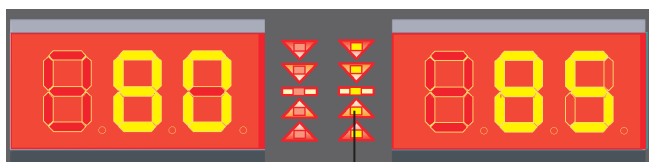



Press key  to confirm. The LED close to D2 outer display indicate the SPLIT selection on the outer edge (see Fig. 65).

Fig. 65



"SPLIT" function selected on OUTER edge

If necessary, press key  again to select wheel INNER side, the LEDs close to the inner display D1 will turn on. The example below refers to the OUTER side.

Press keys  /  to confirm. The system will display the dimension of the two weights to be fitted



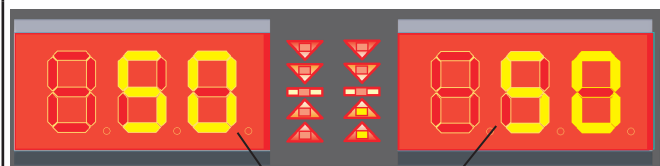
on the wheel. Press keys  /  again to increase or decrease the dimension of the weights in the awareness that, the bigger the weights, the bigger the distance will automatically be between them.

Fig. 66



Choose the weights
to be fitted and confirm

Choose the value of the weights to be fitted and press

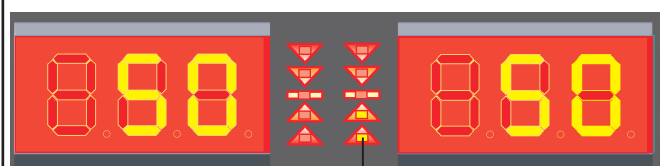
key  to confirm.

The LEDs close to the D2 display now indicate the direction wheel shall be moved in to fit the FIRST weight. Turn the wheel at the point indicated by the LEDs, until the right position for unbalance correction has been reached (see Par. 15.3.6).


Upon reaching the correct position, the wheel is locked independently.

Fit the FIRST weight.

Fig. 67



LEDs showing positioning in
correct weight fitting point

Press key  to release the wheel: the LED beside D2 display now indicate the direction in which the wheel shall be moved to fit the SECOND weight. Place the wheel at the point indicated by the direction LED. Upon reaching the correct position, the wheel is locked independently.

Fit the SECOND weight.

The outer side operation has been completed, press



key twice to quit.

If you wish to repeat the procedure also on wheel INNER side, select the SPLIT option, as shown above, and perform the same operation on the other side of the wheel, or simply fit the inner weight at 12 o'clock.

18.0 WEIGHTS HIDDEN BEHIND SPOKES MODE

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.

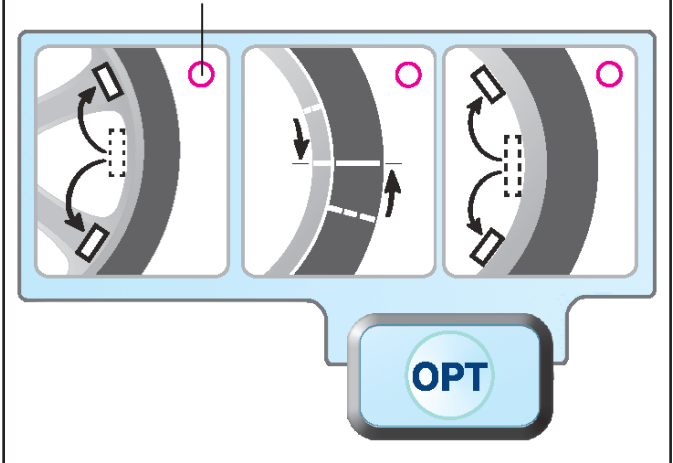
Proceed to dynamic unbalance measurement displaying ALU-S a standard wheel spin (see Par. 15.3.4) Once the unbalance values have been determined,



press OPTIONS key; "SPOKES" symbol LED turns on (see Fig. 68).

Fig. 68

"SPOKES" function selected



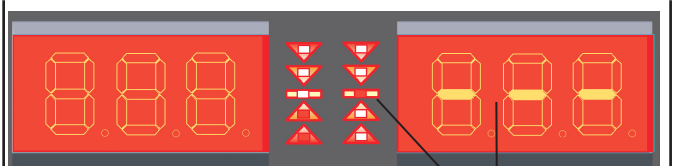
Press key to confirm the performance of the "weights hidden behind the spokes" mode.

The symbol "- - -" will flash on the outer display screen D2, and the beside LEDs will flash as well. (see Fig. 69).

Move any spoke up to "12 o'clock" (in many cases, the position could already be behind or near one of the spokes) and press key to confirm and continue.





Fig. 69



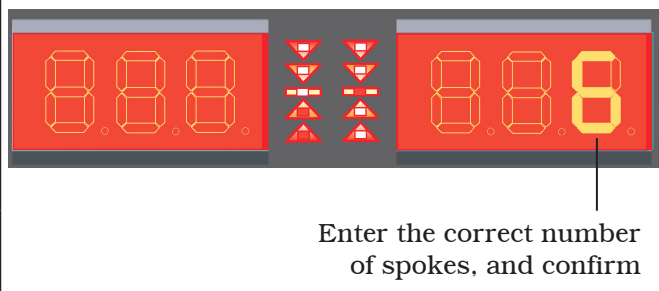
Symbol "- - -" and LEDs are flashing.
Move a spoke up to "12 o'clock" and confirm

A number corresponding to the number of spokes of the wheel will be shown on display screen D2 (see **Fig. 70**).

Enter the correct number of spokes, increasing or decreasing it using keys  / . A minimum of 3 spokes and a maximum of 20 can be entered.

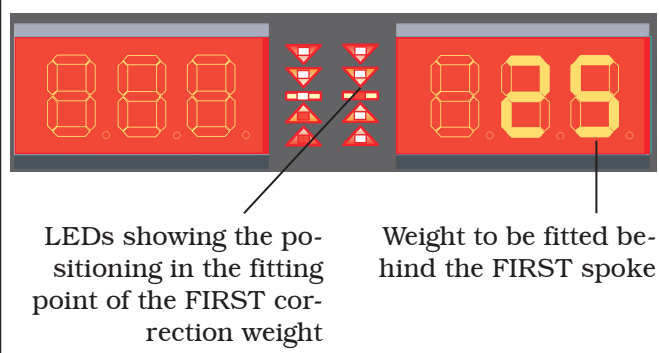
Press key  to confirm and continue.

Fig. 70



The equipment automatically calculates weight position in two positions hidden behind the spokes. The quantity of weight to be fitted behind the **FIRST** spoke is shown on D2 outer display; the LED close to D2 display show the direction the wheel shall be moved in to fit the **FIRST** weight (see **Fig. 71**). Turn the wheel at the point indicated by the LEDs, until the right position for unbalance correction has been reached (see Par. 15.3.6).

Fig. 71



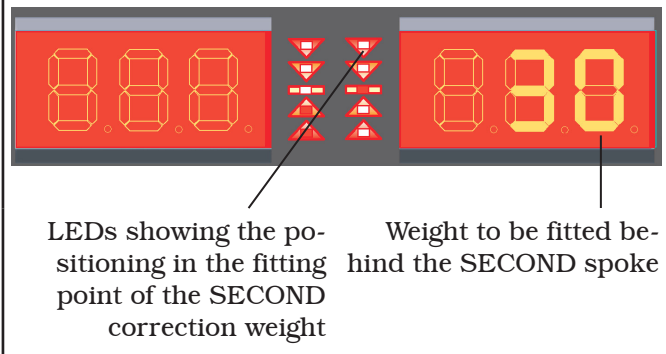
Upon reaching the correct position, the wheel is locked independently.

Extract the gauge rod, and fit the **FIRST** weight (25 g - 0.9 oz) in the position shown by the equipment, as explained in Par. 15.3.4.

Press key  to release the wheel.

The quantity of weight to be fitted behind the **SECOND** spoke is shown on outer display screen D2; the LEDs close to the display screen D2 show the direction wheel shall be moved in to fit the **SECOND** weight (see **Fig. 72**). Turn the wheel at the point indicated by the LEDs, until the right position for unbalance correction has been reached (see Par. 15.3.6).

Fig. 72



Upon reaching the correct position, the wheel is locked independently.


Pull out the gauge rod and fit the **SECOND** weight (30 g - 1.05 oz) in the position shown by the equipment, as done for the first weight.

Press key  to confirm.

The display screens D1 and D2 show again the initial unbalance situation before performing the "weights hidden behind spokes" procedure.


Perform another test spin. The "weights hidden behind spokes" procedure is completed.


IF NECESSARY, YOU CAN PRESS


KEY  **TO GO BACK STEP-BY-STEP THROUGH THE DIFFERENT STAGES OF THIS PROCEDURE.**



BY ALU-S MODE, ON REACHING WEIGHT APPLICATION POINT, D2 DISPLAY FLASHES AND SHOWS THE DISTANCE AT WHICH THE WEIGHT WITH CALIPER SHALL BE FITTED. IF YOU WISH TO DISPLAY BALANCING WEIGHT, PRESS

KEY  **. SUCH VALUE WILL BE DISPLAYED ONLY FOR A MOMENT, THEN WEIGHT FITTING DISTANCE IS DISPLAYED AGAIN.**

19.0 MATCHING PROCEDURE (Rim - Tyre Optimization)

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.

Proceed to dynamic unbalance measurement displaying by performing a standard wheel spin (see Par. 15.3.4).



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

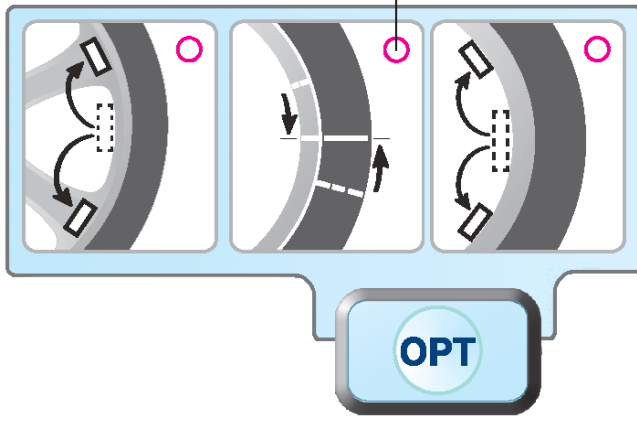
Once the unbalance values have been determined,

OPT

press the OPTIONS key several times. The LED relevant to the "MATCHING" symbol (see Fig. 73).

Fig. 73

"MATCHING" function selected



Press key to confirm "MATCHING" mode performance.

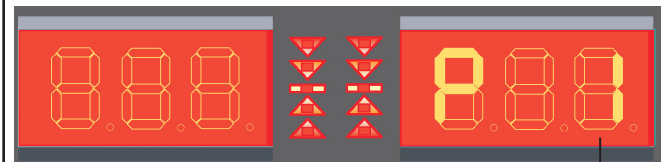
The "P 1" symbol flashes on outer D2 display to indicate that the 1st step of the procedure shall be carried out (see Fig. 74).

STEP 1. Make a reference mark, using chalk for instance, of the position of the rim and tyre, remaining 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. Press key to confirm that step 1 has been completed.

Fig. 74

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



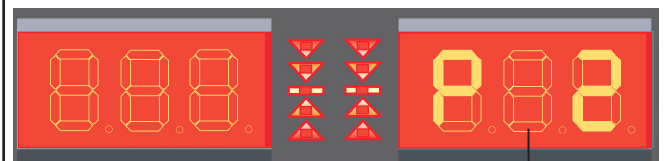
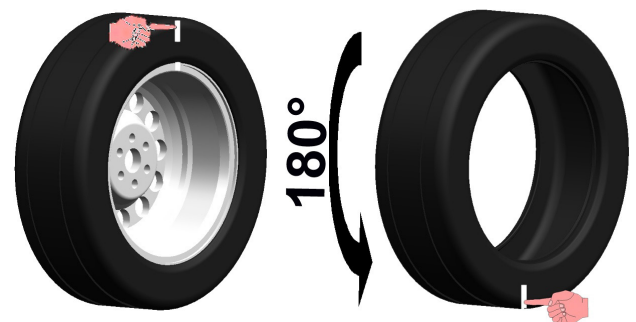
Once STEP 1 operations are completed, press key R/C to confirm

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



Press key to confirm that step 2 has been completed.

Fig. 75

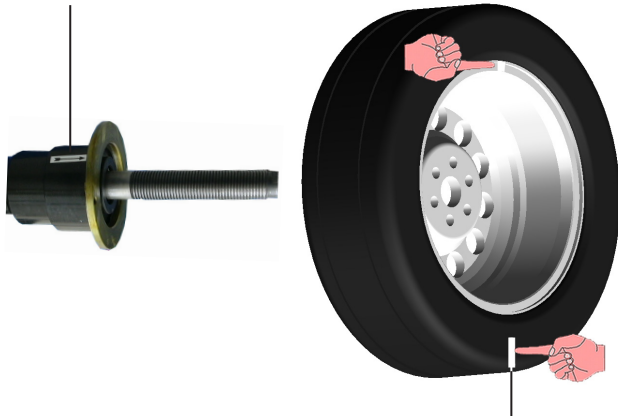


Once STEP 2 operations are completed, press key R/C to confirm

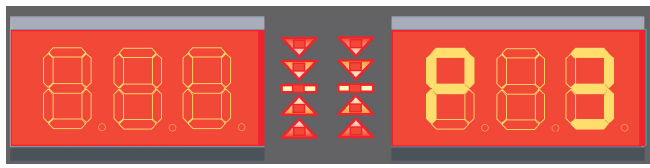
STEP 3. Fit the wheel back on the wheel balancer, positioning the reference mark on the rim in line with the arrow on the flange.

Fig. 76

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



Position the reference mark on the opposite side to the arrow on the flange



After having fitted wheel back in position, press key



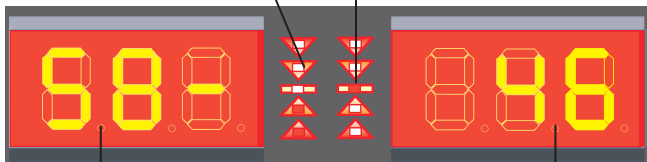
to perform a wheel spin.

Once wheel spin is completed, D1 display shows the % value of possible unbalance reduction compared to wheel current situation, while D2 display shows current static unbalance in grams (see **Fig. 77**).

Fig. 77

LEDs showing RIM reference mark positioning

LEDs showing TYRE reference mark positioning



% value of the possible unbalance reduction compared to wheel current situation

Current static unbalance value in grams. It can be reduced with a further wheel and rim rotation

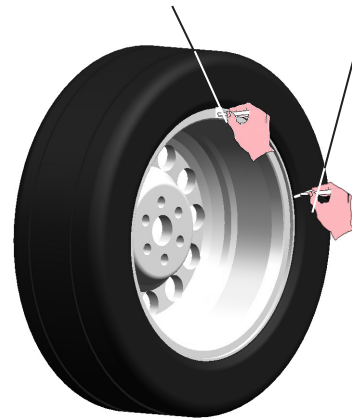
If the % value of possible unbalance reduction is high, you can proceed as follows:

1. cancel the previously made reference marks. Make new marks, as described hereinafter, on TYRE and RIM (see **Fig. 78**);
2. when the LEDs on the RIGHT show that the position has been reached (see Par. 15.3.6) make the reference mark on TYRE;
3. when the LEDs on the LEFT show that the position has been reached (see Par. 15.3.6) make the reference mark on RIM.

Fig. 78

Reference mark on RIM (LED on display LEFT side)

Reference mark on TYRE (LED on display RIGHT side)



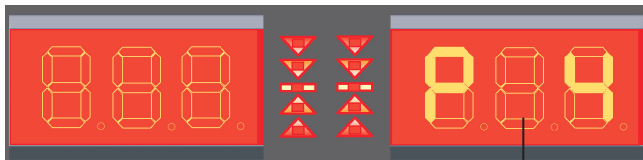
Press key to confirm that step 3 has been completed.

STEP 4. Remove the wheel from the wheel balancer. Remove the wheel and turn the tyre on the rim so that the two points coincide with the wheel fitted on the wheel balancer (see **Fig. 79**). The two reference marks must be in line with the arrow on the flange.


Fig. 79



Reference mark on TYRE and reference mark on RIM shall coincide





End of the operations STEP 4

Press key  to carry out a further spin. If necessary, correct any residual unbalance, as indicated in Chapt. 15.3.





20.0 CALIBRATION

From the opening program presentation page




press keys  and  at the same time; the following symbols will be shown on D1 and D2 display screens:



Enter password , , , ; the following symbols will be shown on D1 and D2 display screens:



Press key  again to confirm; the following symbols will be shown on D1 and D2 display screens:





Now you can perform "Zero chuck" calibration (see Par. 20.1).


20.1 "Zero chuck" setting

When the following symbols are shown on display screens D1 and D2 (see Chapt. 20.0):




use  /  keys to select calibration. The following symbols will be shown on D1 and D2 display screens (display D2 must scroll up up to number 2):




Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:



Press key  to start the spin for chuck reset without having fitted any part. If after wheel spin, the following symbols will be shown on display screens D1 and D2:



the calibration has been completed.

Press key  to come back to the main menu.

20.2 Weight measurement sensors calibration in car mode



START FROM SELECTED "CAR" MODE.



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

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.

When the following symbols are shown on display screens D1 and D2 (see Chapt. 20.0):




use  /  keys to select calibration. The following symbols will be shown on D1 and D2 display screens (display D2 must scroll up up to number 2):



Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:



Close the protection guard (if present) or press key  to perform wheel spin for chuck reset with the wheel mounted.

If after wheel spin, the following symbols will be shown on display screens D1 and D2:



the calibration has been completed.

Open the protection guard (if present).





Press key  to come back to the main menu.


FASE 2

When the following symbols will be shown displays D1 and D2



using keys   select the weight measurement sensors calibration "Piezo sensors". These symbols will be shown on D1 and D2 displays:



Press key . The following symbols will be shown on D1 and D2 display screens:




Press key . The following symbols will be shown on D1 and D2 display screens:




flashing
display D2

Now enter rim width pressing keys  or 

manually and press key  to confirm. The display shows symbols

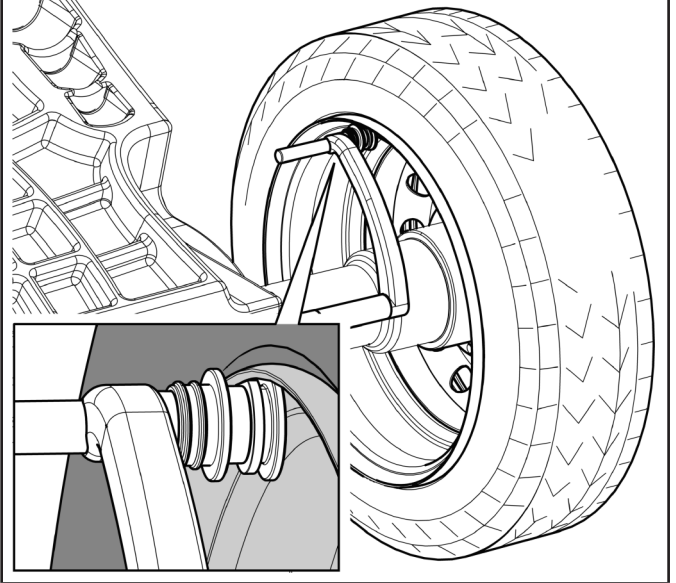


Enter rim diameter and press key . The display shows symbols



Take the pliers of the automatic distance/diameter caliper and bring it to the rim edge.

Fig. 80



Detect the measure in mm and enter it through keys



DYN LEDs will be flashing as well.

Press the  key.

These symbols will be shown on D1 and D2 displays:



Close the protection guard (if present) or press  key to perform wheel spin.

Open the protection guard (if present).

These symbols will be shown on D1 and D2 displays:



fit the 100 g (3.52 oz) weight provided outside the rim, exactly at "12 o'clock".



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).

Fig. 81



Close the protection guard (if present) or press key to perform wheel spin.

Open the protection guard (if present).

These symbols will be shown on D1 and D2 displays:



Press key  to release the wheel.

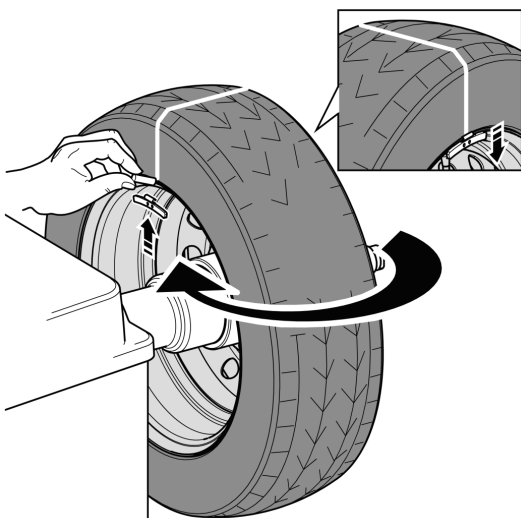
Turn manually the wheel until You have the weight of 100 g (3.52 oz) on the outer side at "12 o'clock".


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. 82).

Fig. 82





Close the protection guard (if present) or press key  to perform wheel spin (100 g (3.52 oz) weight placed on the inside wheel). At the end of the spin the following symbols will be displayed:



if the procedure has been brought to a satisfactory conclusion; on the contrary the error code will be displayed.

Open the protection guard (if present).



Press key  to confirm and press key , several times, to return to the starting page with blinking symbols




FASE 3

Remove the wheel from the chuck and perform a complete calibration procedure "0" (zero) chuck as described hereafter. When the following symbols are shown on display screens D1 and D2 (see Chapt. 20.0):




use  /  keys to select calibration. The following symbols will be shown on D1 and D2 display screens (display D2 must scroll up up to number 2):



Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:



Close the protection guard (if present) or press key  to perform wheel spin for chuck reset without having fitted any part.

If after wheel spin, the following symbols will be shown on display screens D1 and D2:



the calibration has been completed.

Open the protection guard (if present).

Press key  to come back to the main menu.

20.3 Weight measurement sensors calibration in truck mode



START FROM SELECTED "TRUCK" MODE.



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

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

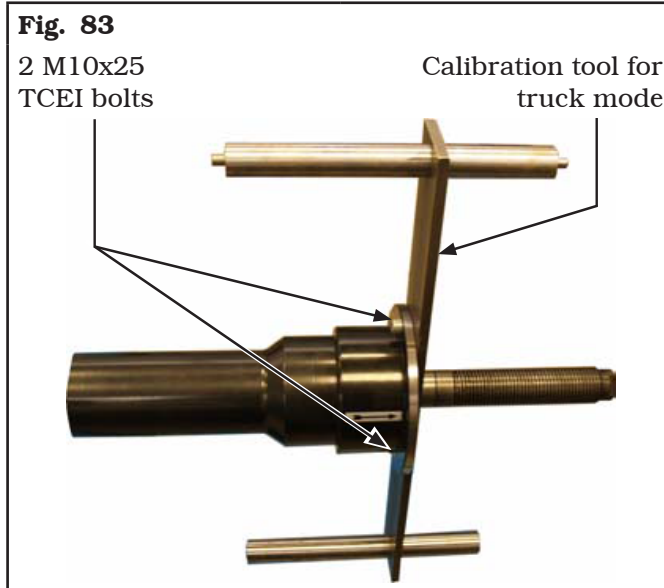
1. chuck "0" (zero) calibration WITH calibration tool mounted (and locking device);
2. weight measurement sensors calibration WITH calibration tool mounted (and locking device);
3. chuck "0" (zero) calibration WITHOUT calibration tool and locking device.

FASE 1

Fit the calibration tool (see **Fig. 83**), using the two M10 bolts provided.





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




When the following symbols are shown on display screens D1 and D2 (see Chapt. 20.0):




use   keys to select calibration. The following symbols will be shown on D1 and D2 display screens (display D2 must scroll up up to number 2):



Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:




Close the protection guard (if present) or press  key to perform wheel spin for chuck reset with the calibration tool mounted.

If after wheel spin, the following symbols will be shown on display screens D1 and D2:



the calibration has been completed. Open the protection guard (if present).

Press key  to come back to the main menu.


FASE 2

When the following symbols will be shown displays D1 and D2




using keys   select the weight measurement sensors calibration "Piezo sensors". These symbols will be shown on D1 and D2 displays:



Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:



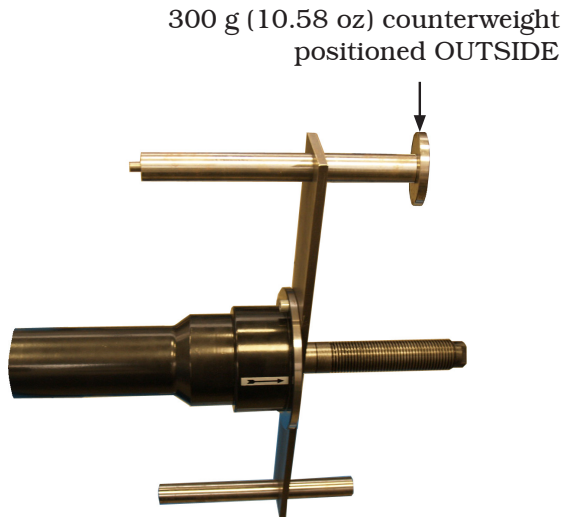
Close the protection guard (if present) or press  key to perform the spin. Open the protection guard (if present).

After wheel spin, the following symbols will be shown on display screens D1 and D2:




Apply 300 g (10.58") on the outer side of the wheel, placing the weight at "12 o'clock" (see **Fig. 84**).

Fig. 84



PLACE IT EXACTLY AT "12 O'CLOCK"

Close the protection guard (if present) or press  key to perform wheel spin with 300 g (10.58") weight on the outer side.

Open the protection guard (if present). After wheel spin, the following symbols will be shown on display screens D1 and D2:



Remove the 300 g weight (10.58") from the outer side and apply it on the tool inner side (see **Fig. 85**).

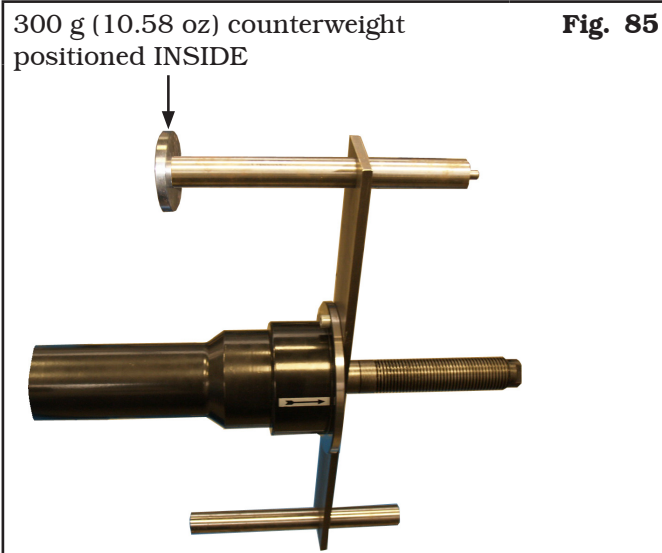



Fig. 85

Close the protection guard (if present) or press  key to perform wheel spin with a 300 g (10.58") weight placed on the inside. Open the protection guard (if present). After wheel spin, the following symbols will be shown on display screens D1 and D2:



Weight measurement sensors calibration is over, press

key  to confirm; D1 and D2 displays will shown these symbols:





Press keys  ,  in a sequence to quit the calibration stage and to come back to program presentation page.


FASE 3

Remove the calibration tool and perform a complete calibration procedure "0" (zero) chuck as described hereafter. When the following symbols are shown on display screens D1 and D2 (see Chapt. 20.0):




use  /  keys to select calibration. The following symbols will be shown on D1 and D2 display screens (display D2 must scroll up to number 2):




Press key  to confirm "piezo" calibration procedure selection; the following symbols will be shown on D1 and D2 display screens:





Close the protection guard (if present) or press  key to perform wheel spin for chuck reset without having fitted any part. If after wheel spin, the following symbols will be shown on display screens D1 and D2:







the calibration has been completed. Open the protection guard (if present).

Press key  to come back to the main menu.

21.0 USER'S SETTING AND CUSTOMIZATIONS

From program starting page, press keys  and  at the same time; the following symbols will be shown on D1 and D2 display screens:



Enter password , , , ; the following symbols will be shown on D1 and D2 display screens:



Use keys  /  to select the **PARAMETERS setting** (P stands for Parameters). These symbols will be shown on D1 and D2 displays:






Press key  to confirm. The following symbols will be shown on D1 and D2 display screens:




PARAMETER NUMBER At first it flashes (it can be scrolled)	PARAMETER VALUE At first it does NOT flash
---	---

The D1 display screen on the left shows a parameter number, while the corresponding parameter value is shown on D2 display screen on the right side. The number on D1 display is flashing.


To scroll parameters from 1 to 24, press keys  .

To edit a parameter value, press key  first to move the "flashing" on D2 right display, then press

keys  / .

To move again the "flashing" on D1 display screen on the left side, press  again.

A special setting is connected to each parameter, as described in the following paragraphs. Modifying the


ones requiring it and at the end press  key to quit, press it several times to return to the starting page.


21.1 Selection of unit of measurement for weights display

Selection in ounces


To set the wheel balancer to ounces, follow the indications in Chapt. 21.0, in order to display the following values (see Parameters Par. 21.2):




At the end of the configuration, press key  several times to return to the starting page. Enter the wheel measurements and close the protection

guard (if any) and press  key to perform the spin. Open the protection guard (if present). The values of the weights to be fitted on the wheel, expressed in ounces, will be shown on display screens D1 and D2, as shown below:




Press button . The values of the weights to be fitted on the wheel will be shown on display screens, at the highest resolution in ounces:




Press button . The values of the weights to be fitted on the wheel will be shown on display screens, approximated in grams:



Press button . The values of the weights to be fitted on the wheel will be shown on display screens, at the highest resolution in grams:




Press again the button  to return to the approximated measurement of the weights to be fitted on the wheel in ounces and D1 and D2 display screens will show again the values expressed in ounces:




Selection in grams

The values of the weights to be fitted on the wheel, approximated in grams, will be shown on display screens D1 and D2, as shown below:



Press button . The values of the weights to be fitted on the wheel will be shown on display screens, at the highest resolution in grams:



Press again the button  to return to the approximated measurement of the weights to be fitted on the wheel in grams and D1 and D2 display screens will show again the values expressed in grams:



21.2 Setting measurements units for rim weight and width/diameter

The weight determining wheel unbalance can be indicated on the display in "gram" or "ounce" measurement unit.

Parameter 1 (GRAMS/OUNCES)	VALUE 000 = grams
	VALUE 001 = ounces

The width and diameter can be indicated in "inches" or "mm"

Parameter 2 (MM/INCHES)	VALUE 000 = millimetres
	VALUE 001 = inches

21.3 Users management - Motorcycle mode setting

"USERS' MANAGEMENT" function (see Par. 15.2) can be ENABLED or DISABLED

Parameter 3 (USER MANAGEMENT)	VALUE 000 = Disabled
	VALUE 001 = Enabled

The MOTORCYCLES balancing procedure (see Chap. 16) can be ENABLED or DISABLED.

Parameter 5 (MOTORCYCLE PROGRAM)	VALUE 000 = Disabled
	VALUE 001 = Enabled

21.4 Setting of Repositioning - Comfort - Guard - Pax

"WEIGHT H6" function can be ENABLED or DISABLED

Parameter 9 (WEIGHT H6)	VALUE 000 = Disabled
	VALUE 001 = Enabled

"GUARD" Function can be ENABLED or DISABLED

Parameter 13 (GUARD)	VALUE 000 = Disabled
	VALUE 001 = Enabled

"PAX PROGRAMS" Function can be ENABLED or DISABLED

Parameter 14 (PAX PROGRAMS)	VALUE 000 = Disabled
	VALUE 001 = Enabled

21.5 Distance/diameter setting

The wheel external data gauge can be ENABLED or DISABLED (default setting: DISABLED)

Parameter 16 (DISTANCE/DIAMETER CALI- PER)	VALUE 000 = Disabled
	VALUE 001 = Enabled

The diameter meter can be ENABLED or DISABLED (default setting: ENABLED)

Parameter 17 (TYPE OF DIAMETER ENTRY)	VALUE 000 = diameter entry on rim/tyre
	VALUE 001 = diameter entry with manual measurement

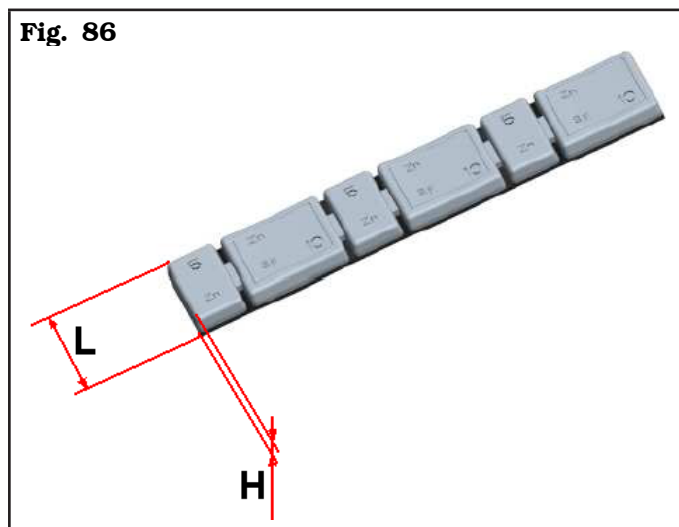
21.6 Weights display management

Parameter 20 (DYN PROGRAM LOWER LIMIT)	CAR = from 1 to 20 grams (from 0.05 to 1 ounce)
	TRUCK = from 10 to 200 grams (from 0.5 to 10 ounces)

Parameter 21 (ALU PROGRAM LOWER LIMIT)	CAR = from 1 to 20 grams (from 0.05 to 1 ounce)
	TRUCK = from 10 to 200 grams (from 0.5 to 10 ounces)

21.7 Setting adhesive weight dimensions

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. 86**).



Adhesive weight height (H) is set with

Parameter 22 (HEIGHT ADHESIVE WEIGHT)	CAR = from 1 to 20 mm (from 0.04 to 0.79 inches)
	TRUCK = from 1 to 30 mm (from 0.04 to 1.18 inches)

Adhesive weight width (L) is set with

Parameter 23 (WIDTH ADHESIVE WEIGHT)	CAR = from 5 to 50 mm (from 0.20 to 1.97 inches)
	TRUCK = from 5 to 75 mm (from 0.20 to 2.95 inches)

22.0 ERROR SIGNALS

During wheel balancer operation, if wrong commands are given by the operator or device faults occur, an error code or symbol may appear on the display screen D1.



Press key  to return to the previous program phase after remedying the fault.

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
12	Diameter error
14	Firmware error
27	Rotate the wheel to make a complete rotation
28	Piezo calibration error
29	Distance out of tolerance level
32	Parameters format incompatible

23.0 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.

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.



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!!

24.0 TECHNICAL DATA

24.1 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)

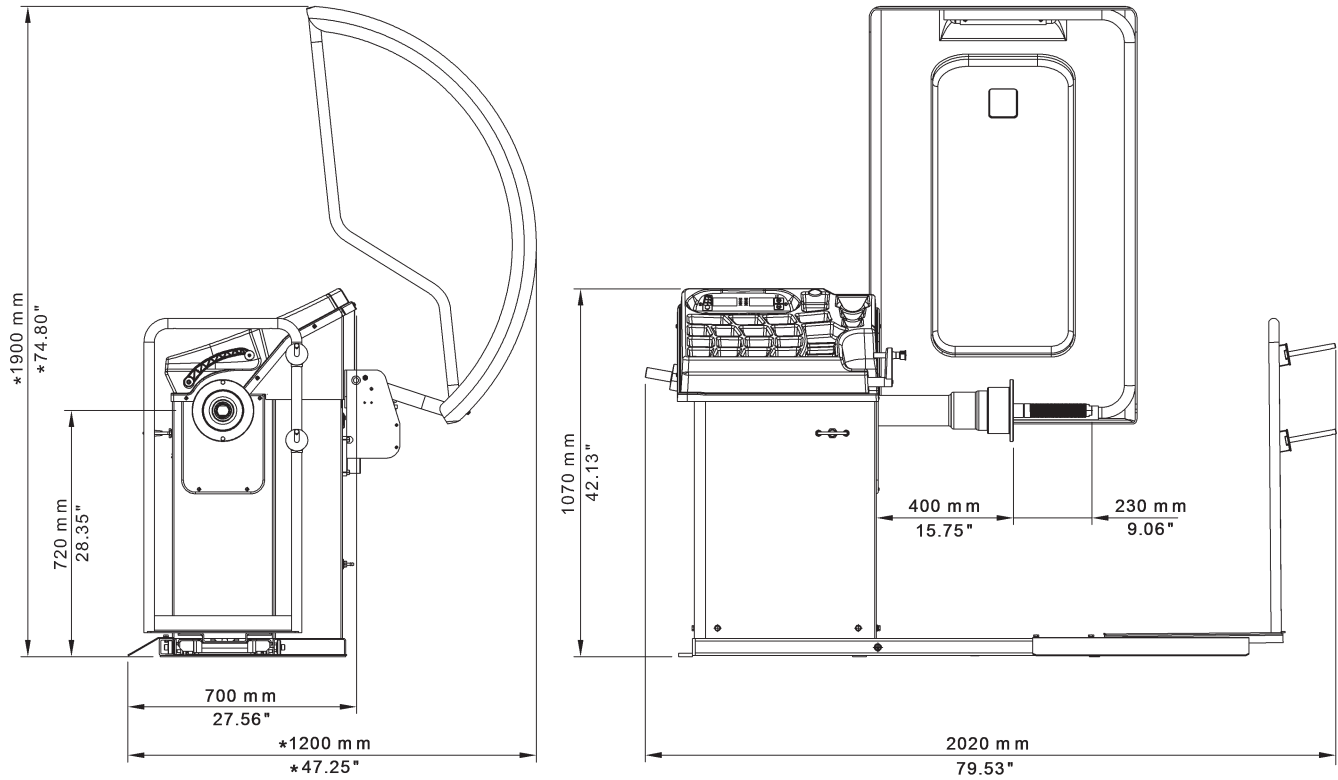
24.2 Technical mechanical data

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)	180 (397 lbs)
-------------	---------------

24.3 Dimensions

Fig. 87



* optional

25.0 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.

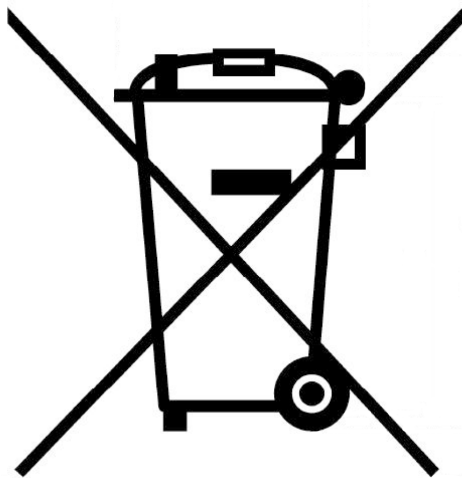
26.0 SCRAPPING

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.

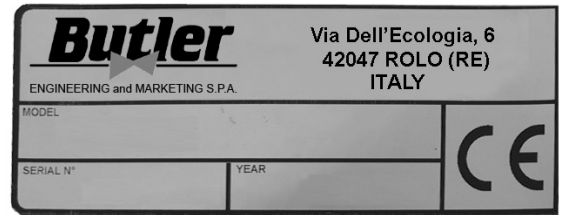
Instructions for the correct management of waste from electric and electronic equipment (WEEE) according to the Italian legislative decree 49/14 and subsequent amendments.

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. 88



27.0 REGISTRATION PLATE DATA



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.



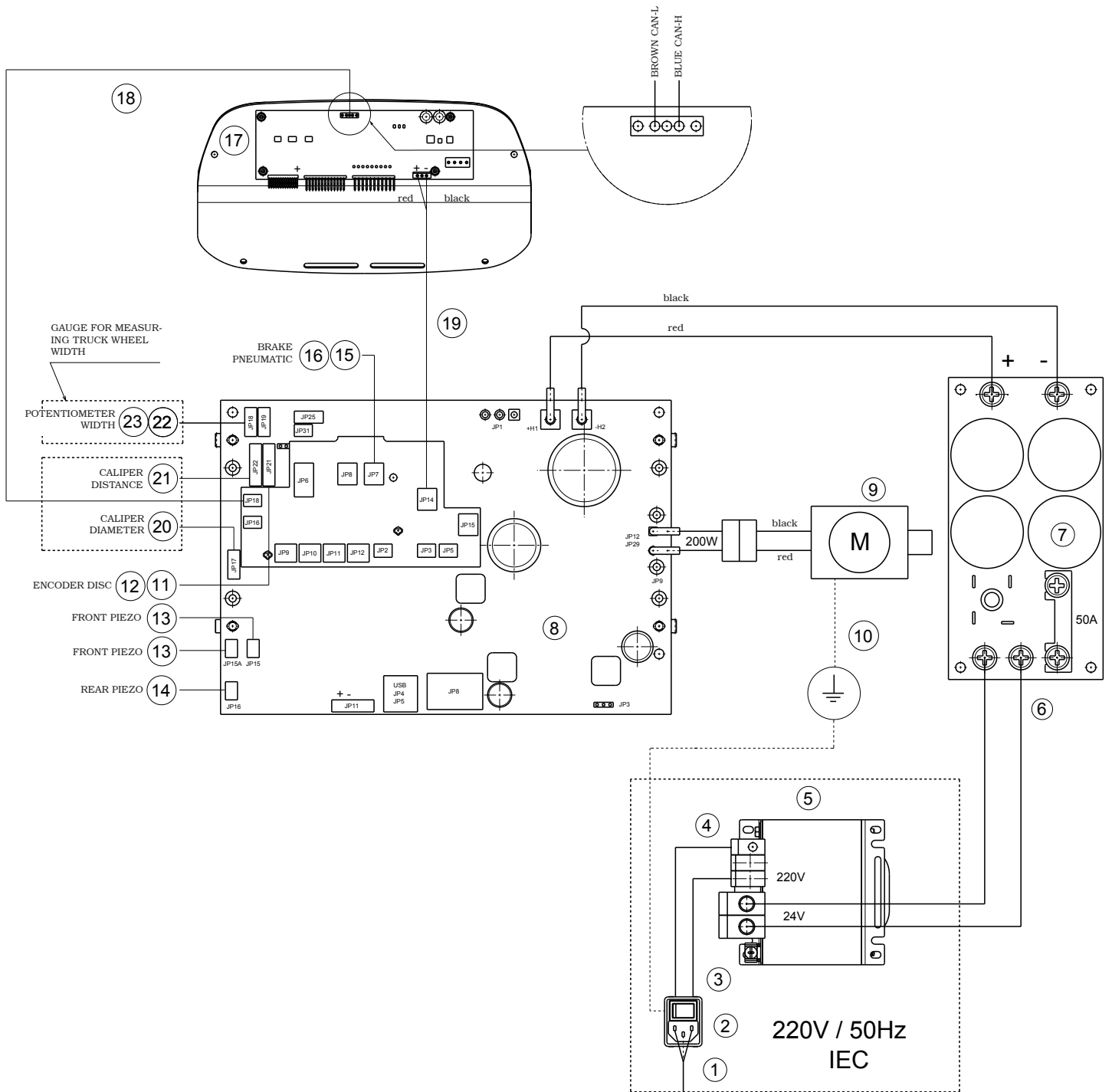
ATTENTION: TAMPERING WITH, SCRATCHING, CHANGING OR REMOVING EQUIPMENT IDENTIFICATION NAMEPLATE IS ABSOLUTELY FORBIDDEN; DO NOT COVER IT WITH TEMPORARY PANELS, ETC., SINCE IT MUST ALWAYS BE VISIBLE.

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) contact the manufacturer.

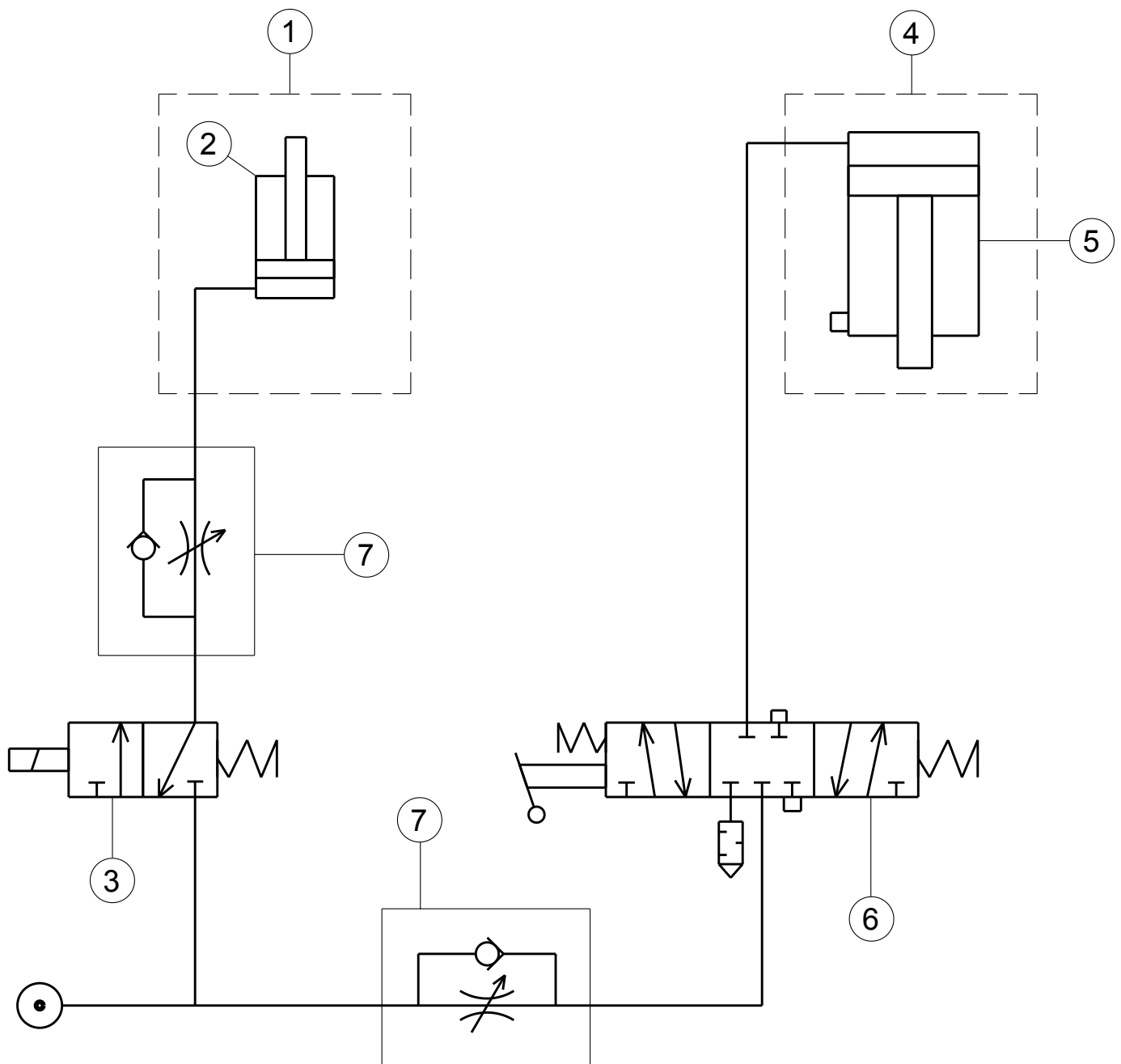
28.0 FUNCTIONAL DIAGRAMS

Here follows a list of the equipment functional diagrams.



KEY

- 1 - Power supply cable
- 2 - Wired switch with plug
- 3 - Cable from switch to transformer
- 4 - Fuse
- 5 - Transformer
- 6 - Power board transformer cable
- 7 - Power board
- 8 - Connectorized power board kit
- 9 - Motor
- 10 - Motor support ground cable
- 11 - Wheel position encoder cable
- 12 - Encoder board
- 13 - Piezo with front cable
- 14 - Piezo with cable
- 15 - Cable for solenoid valve SV-B with connector
- 16 - Solenoid valve mounting
- 17 - Kit for 6-DIGITS LED wheel balancer with connector
- 18 - CANBUS cable with connector
- 19 - Display power supply cable with connector
- 20 - Potentiometer with cable
- 21 - Cable
- 22 - Width potentiometer extension cable
- 23 - Potentiometer with shielded cable



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

LIBRAK240RTLCD

**PNEUMATIC CONNECTION
DIAGRAM**

1294-M015-03



Noi
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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 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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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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declare, undertaking sole responsibility, that the product
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déclarons, sous notre entière responsabilité, que le produit,
declaramos bajo nuestra exclusiva responsabilidad, que el producto

Equilibratrice / Wheel balancer Radauswuchtmaschinen / Equilibreuse Equilibradora	
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al quale questa dichiarazione si riferisce, risponde alle seguenti Direttive applicabili:
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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
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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

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SIMONE FERRARI
VP VSG Europe Managing Director

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