

1294-M017-7

**VSB280PRTLC
RWB280PRTLC**

INSTRUCTION MANUAL

GB

TRANSLATION FROM THE
ORIGINAL INSTRUCTIONS

For spare parts drawings refer to "LIST OF COMPONENTS" section.

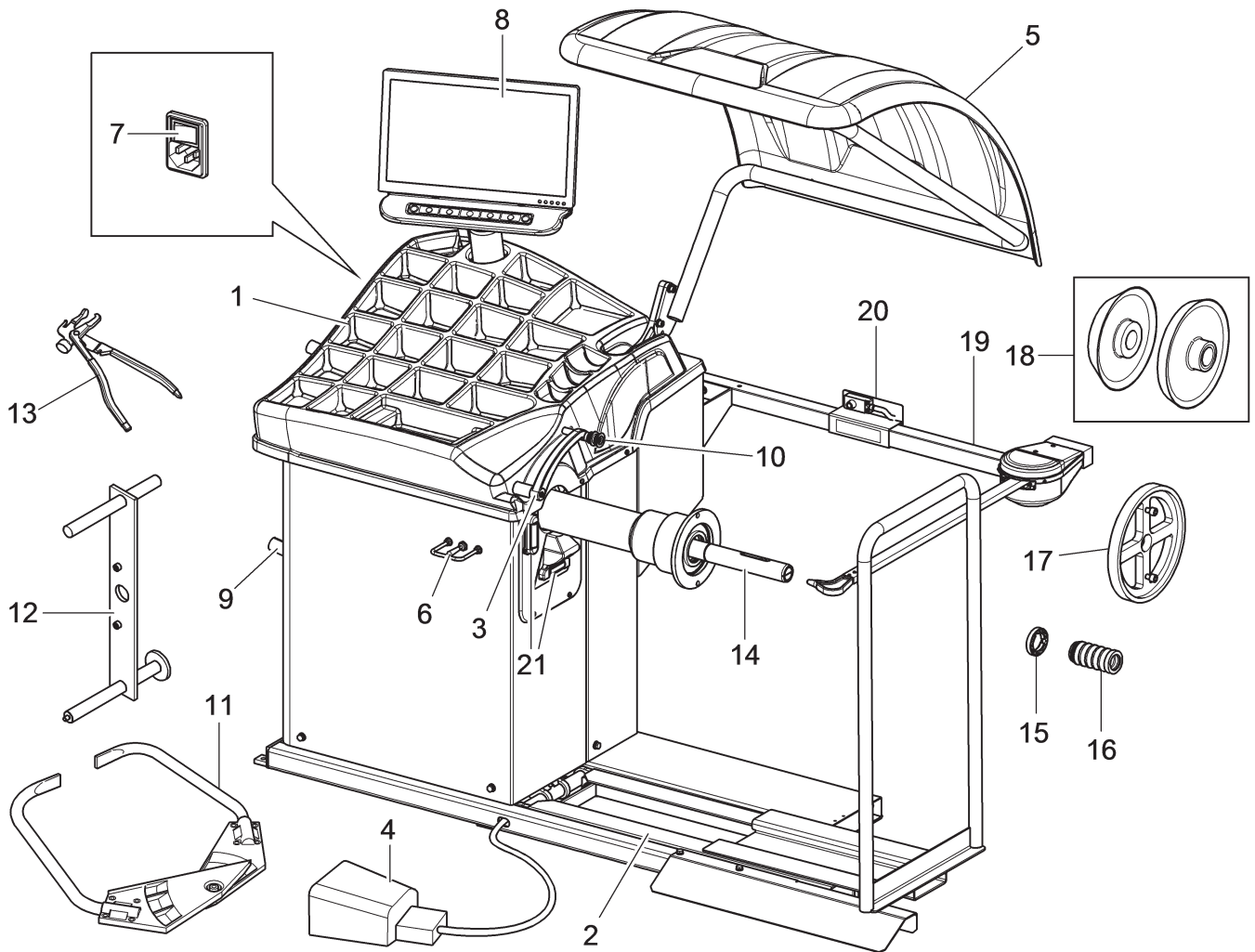
- For any further information please contact your local dealer.

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Fig. 1









KEY

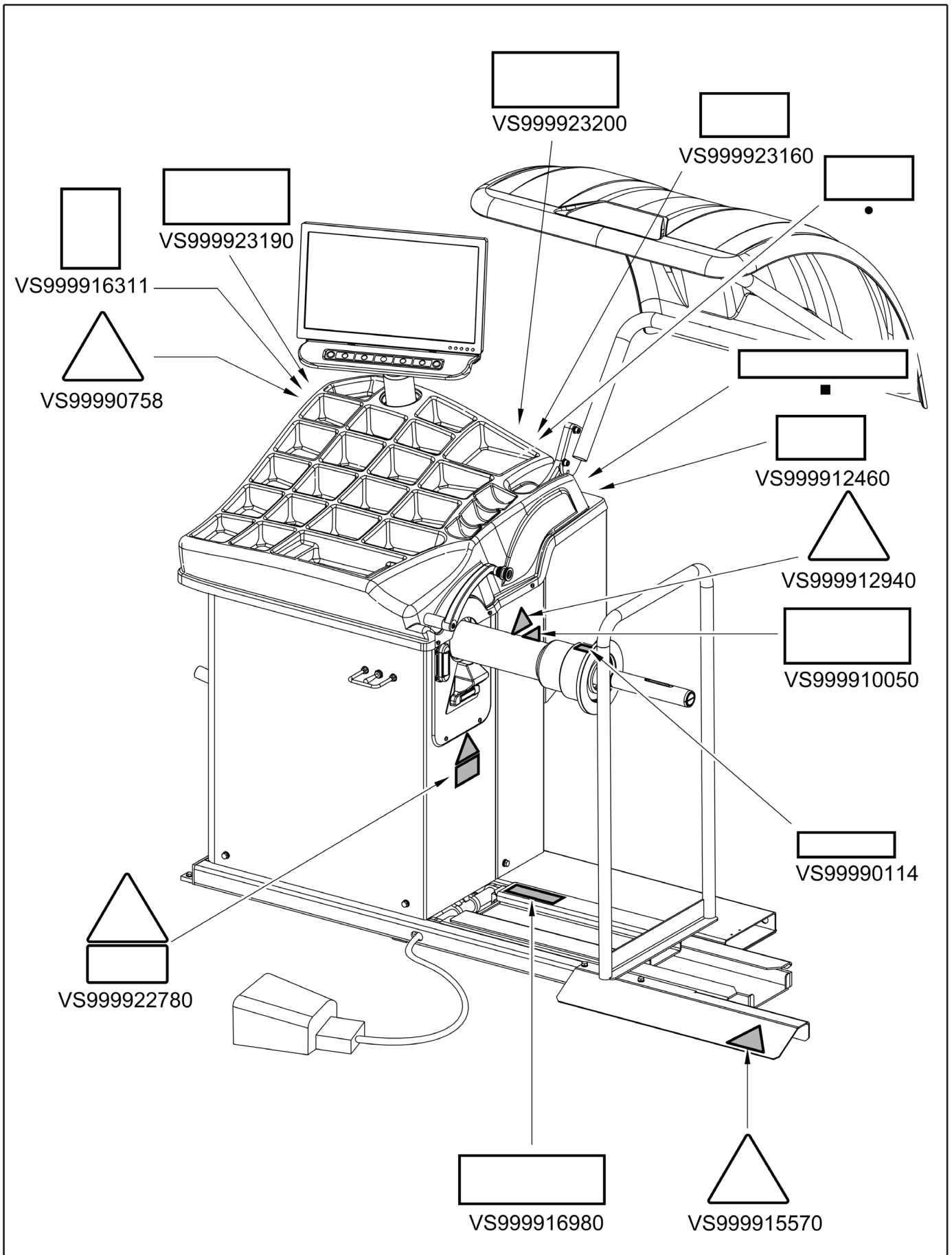
- 1 - Weight holding bridge
- 2 - Wheel lifting device
- 3 - Distance-diameter caliper
- 4 - Pneumatic mandrel opening/closing pedalboard
- 5 - Protection guard
- 6 - Wheel lifting device control
- 7 - Main switch
- 8 - Monitor
- 9 - Flange holding stake
- 10 - Grippers for weight fitting
- 11 - Gauge for measuring truck rim width
- 12 - Truck calibration tool
- 13 - Grippers for weights
- 14 - Pneumatic mandrel
- 15 - Pressure ring
- 16 - Locking sleeve
- 17 - Adapter flange
- 18 - Cone $\varnothing 202 \div 221$ + cone $\varnothing 281$ for trucks
- 19 - Wheels width external data gauge (Optional)
- 20 - Electronic RUN-OUT measuring device (Optional)
- 21 - Fixed laser + led light (Optional)

SYMBOLS USED IN THE MANUAL

Symbols	Description
	Read instruction manual.
	Wear work gloves.
	Wear work shoes.
	Wear safety goggles.
	Warning. Be particularly careful (possible material damages).
	Note. Indication and/or useful information.

Symbols	Description
	Mandatory. Operations or jobs to be performed compulsorily.
	Danger! Be particularly careful.
	Move with fork lift truck or pallet truck.
	Lift from above.
	Attention: never lift the machine by means of the mandrel.
	Danger! Laser presence.

INFORMATION PLATE LOCATION TABLE



Code numbers of plates

VS99990114	<i>Arrow plate</i>
VS99990758	<i>Electricity danger plate</i>
VS999910050	<i>Protection device use plate</i>
VS999912460	<i>Supply pressure indicating plate</i>
VS999912940	<i>Lifting plate</i>
VS999915570	<i>Crushing danger plate</i>
VS999916311	<i>Rubbish skip label</i>
VS999916980	<i>Capacity load 200 Kg plate</i>
VS999922780	<i>Laser aperture plate (in case the laser device is present)</i>
VS999923160	<i>Prop 65 Attention plate</i>
VS999923190	<i>Laser aperture plate (in case the laser device is present)</i>
VS999923200	<i>Laser certification plate (in case the laser device is present)</i>
▪	<i>Plate of voltage values and frequencies of operation</i>
•	<i>Serial number plate</i>



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



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

1.0 GENERAL INTRODUCTION

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

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



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



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

1.1 Introduction

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

This machine has been designed for use in professional workshops and stands out for its reliability and easy, safe and rapid 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 machines described in this manual and their different versions, are wheels balancing machines for car, light transport and truck wheels, projected 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 THESE MACHINES OUTSIDE THE USE DESTINATION THEY HAVE BEEN DESIGNED FOR (AS INDICATED IN THIS MANUAL) IS INAPPROPRIATE AND DANGEROUS.



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



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

2.1 Training of personnel

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

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



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

3.0 SAFETY DEVICES



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


- **Master switch positioned on the rear of the machine**

Its function is to disconnect machine electric supply.

- **Protection guard**

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



Press  stop key to stop wheel rotation in emergency conditions.

- **Laser safety (in case the laser device is present)**

This is a Class I/1 (with Class II/2 embedded) laser product which, during normal operation, does not permit human access to laser radiation in excess of Class I/1. This product complies with 21CFR1040.10/.11 and IEC EN60825. The system is fully interlocked to prevent accidental access to laser radiation. Any attempt to defeat the safety interlock elements of this product is a violation of Safety Standards which this product complies with, and the protection provided by the product may be impaired.



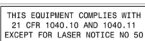
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.



APERTURE
Side of product nearest port (see "Plates location table").



CLASSIFICATION
Rear of product (see "Plates location table").



CERTIFICATION
Rear of product (see "Plates location table").

3.1 Residual risks

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

Possible residual risks have been emphasized through pictorial representations and warnings which placing is indicated in "PLATE POSITIONING TABLE" at page 6.

In case the laser device is present

THIS DEVICE IS EQUIPPED WITH A LASER, A TOOL THAT USES LASER BEAMS, PROPERLY INTERFACED WITH THE SOFTWARE THE DEVICE IS EQUIPPED WITH. IT ENSURES PRECISION MEASUREMENTS AND INDICATIONS OF THE SHAPE AND SIZE OF THE WHEEL RIM.

THIS DEVICE IS EQUIPPED WITH A CLASS 1 LASER PRODUCT. WARNING AND INFORMATION PLATES HAVE BEEN APPLIED OUTSIDE THE DEVICE (AS ILLUSTRATED BELOW), IN ORDER TO INDICATE THE PRESENCE AND EMPLOYMENT OF LASER MEASURING INSTRUMENTS.

DO NOT STARE THE LASER BEAM DIRECTLY AT CLOSE RANGE WHILE THE EQUIPMENT IS OPERATING.




THIS EQUIPMENT COMPLIES WITH
21 CFR 1040.10 AND 1040.11
EXCEPT FOR LASER NOTICE NO 50

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

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

- Installation must be conducted only by qualified personnel exactly according to the instructions that are given below.
- Ensure that there are no dangerous situations during the machine operating manoeuvres. Immediately stop the machine if it miss-functions and contact the assistance service of an authorized dealer.
- In emergency situations and before carrying out any maintenance or repairs, disconnect all supplies to the machine by using the main switch, placed on the machine itself, and unplugging the power supply.
- The machine electrical supply system must be equipped with an appropriate earthing, to which the yellow-green machine protection wire must be connected.
- Ensure that the work area around the machine is free of potentially dangerous objects and that there is no oil since this could damage the tyre. Oil on the floor is also a potential danger for the operator.
- **UNDER NO CIRCUMSTANCES** must the machine 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 machine handles and operating grips must be kept clean and free from oil.
- The workshop must be kept clean and dry. Make sure that the working premises are properly lit. The machine can be operated by a single operator. Unauthorized personnel must remain outside the working area, as shown in **Fig. 3**. Avoid any hazardous situations. Do not use air-operated or electrical equipment when the shop is damp or the floor slippery and do not expose such tools to atmospheric agents.
- When operating and servicing this machine, carefully follow all applicable safety and accident-prevention precautions. The machine must not be operated by untrained personnel.



DURING MANDREL OPENING/CLOSING OPERATIONS, BE CAREFUL NOT TO LET YOUR HANDS AND OTHER BODY PARTS NEAR THE MOVING MANDREL.

5.0 PACKING AND MOBILIZATION FOR TRANSPORT

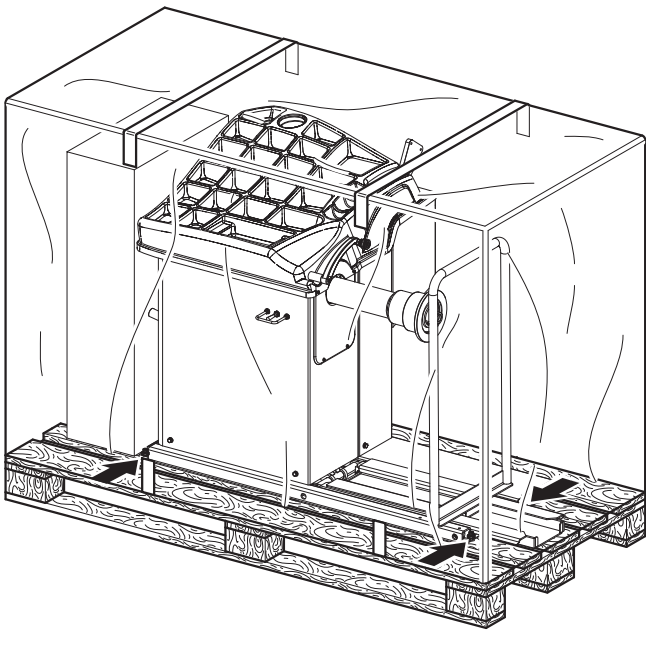


HAVE THE MACHINE HANDLED BY SKILLED PERSONNEL ONLY.

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

The machine is packed partially assembled. Movement must be by pallet-lift or fork-lift trolley. The fork lifting points are indicated on the packing.

Fig. 2



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 machine packed fully assembled, check that the machine is complete and that there is no visible damage.

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

The packing (plastic bags, expanded polystyrene, nails, screws, 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 FIXTURES 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 MACHINE (SEE PARAGRAPH TECHNICAL SPECIFICATIONS). DO NOT ALLOW THE LIFTED MACHINE TO SWING.



NEVER LIFT THE MACHINE BY MEANS OF THE MANDREL.

If the machine has to be moved from its normal work post, the movement must be conducted following the instructions listed below.

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

8.0 WORKING ENVIRONMENT CONDITIONS

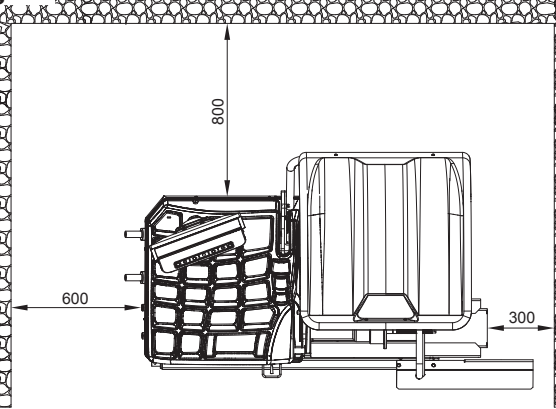
The machine must be operated under proper conditions as follows:

- temperature: 0° + 45° C
- relative humidity: 30 - 90% (dew-free)
- atmospheric pressure: 860 - 1060 hPa (mbar).

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

8.1 Working area

Fig. 3



USE THE MACHINE IN A DRY AND ADEQUATELY LIT PLACE, POSSIBLY INDOORS OR ANYWAY IN A ROOFED AREA, THIS PLACE MUST BE IN COMPLIANCE WITH APPLICABLE SAFETY REGULATIONS.

The location of the machine requires a usable space as indicated in **Fig. 3**. The positioning of the machine must be according to the distances shown. From the control position the operator is able to observe all the machine and surrounding area. He must prevent unauthorized personnel or objects that could be dangerous from entering the area.

The machine must be fixed on a flat floor surface, preferably of cement or tiled. Avoid yielding or irregular surfaces.

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

This surface must have a capacity load of at least 500 kg/m².

The depth of the solid floor must be sufficient to guarantee that the anchoring bolts hold.

8.2 Lighting

The machine does not require its own lighting for normal working operations. However, it must be used in an adequately lit environment.

In case of poor lighting use lamps having total power of 800/1200 Watt.



IF IT IS INSTALLED, EACH TIME THE ROD OF THE GAUGE IS EXTRACTED FROM ITS HOUSING, THE LED LIGHT (FIG. 1 REF. 21) TURNS ON MAKING THE INSIDE OF THE WHEEL WHERE THE OPERATOR MUST WORK BRIGHTER.

9.0 MACHINE ASSEMBLY

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 frame. Such holes can be used also to fix the machine to the ground, through floor anchor small blocks (excluded from supply). Before carrying out the definitive fixing, check that all the anchor points are laid down flat and correctly in contact with the fixing surface itself. If not so, insert shimming profiles between the machine and the fixing lower surface, as indicated in **Fig. 4**.



IN CASE OF WHEEL WEIGHING MORE THAN 30 KG, IT IS COMPULSORY TO FIX TO THE GROUND BY MEANS OF SCREW ANCHORS.

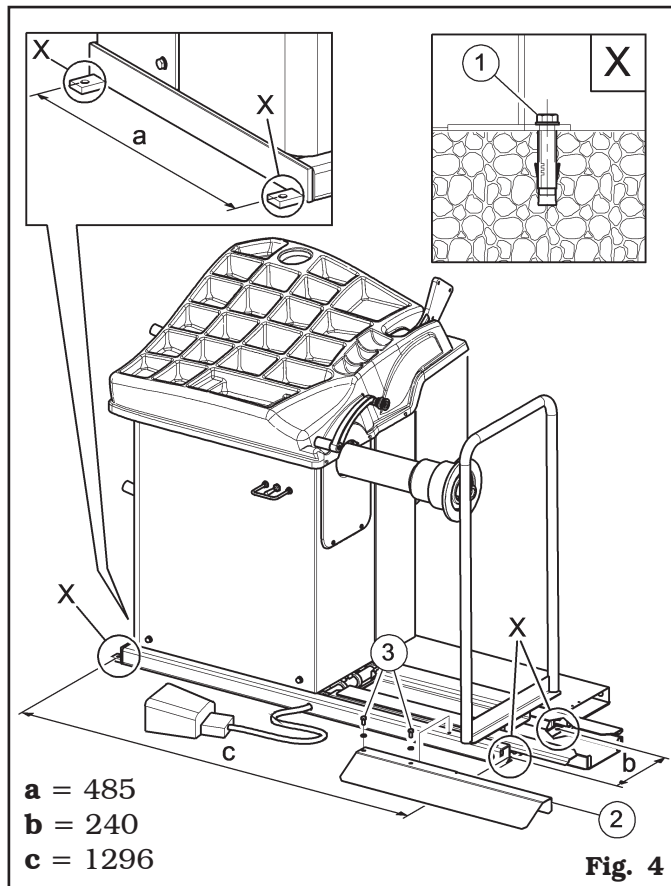


Fig. 4

- Fix the foot guard protection (**Fig. 4 ref. 2**) in using the 2 issued screws (**Fig. 4 ref. 3**).
- Execute 4 holes with 10 mm diameter on the floor by the holes on the bottom floor;
- insert the small blocks (excluded from supply) into the holes;

- fix the machine to the ground with 4 M8x80 mm screws (excluded from supply) (**Fig. 4 ref. 1**) (or with 4 8x80 mm stud bolts (excluded from supply)). Tighten the screws with an approximate tightening torque of 70 Nm.

9.2 Fixtures contained in the packing

The packing case contains also the fixtures box. Check that all the parts listed below are there (see **Fig. 5**).

Code	Description	N.
GAR351	Locking sleeve + pressure ring	1
GAR114	2 cones D. 202-221;281 trucks	1
VS129401060	Trucks width gauge	1
VS1300A004	Weight pliers	1
VS129480020	Trucks calibrator	1
GAR122	Flange for trucks wheels bearing	1

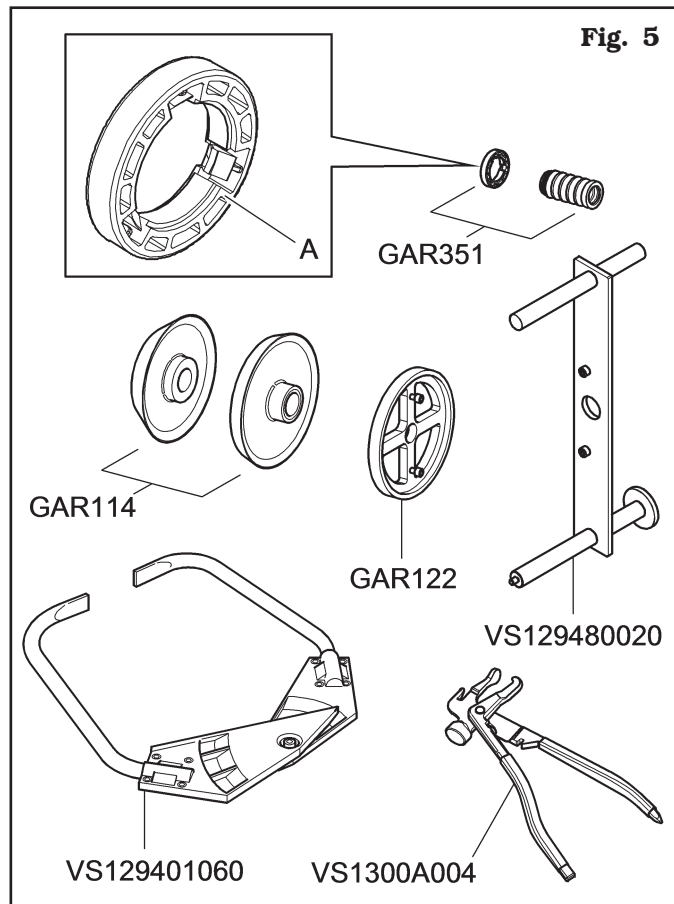


Fig. 5



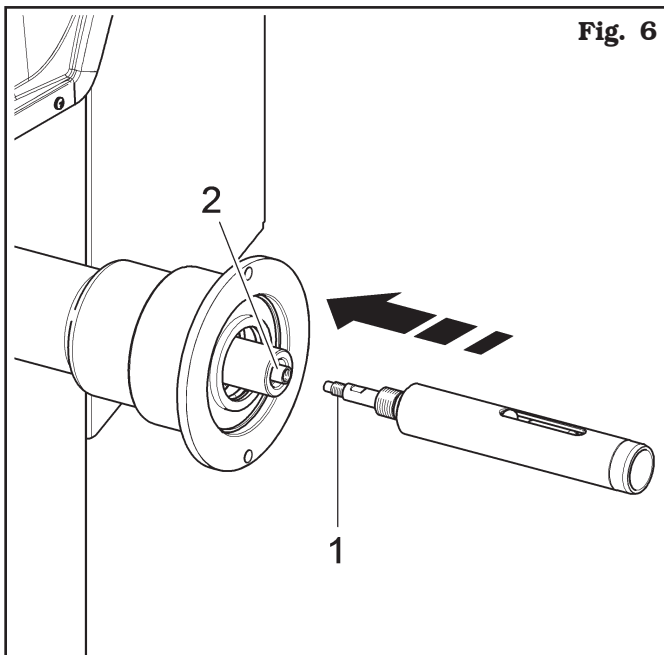
THE PRESSURE RING (FIG. 5 REF. A) MUST BE MOUNTED WITH THE TEETH OR DISCHARGE SIDE TOWARDS THE SLEEVE (SEE FIG. 5).

9.3 Assembly procedures

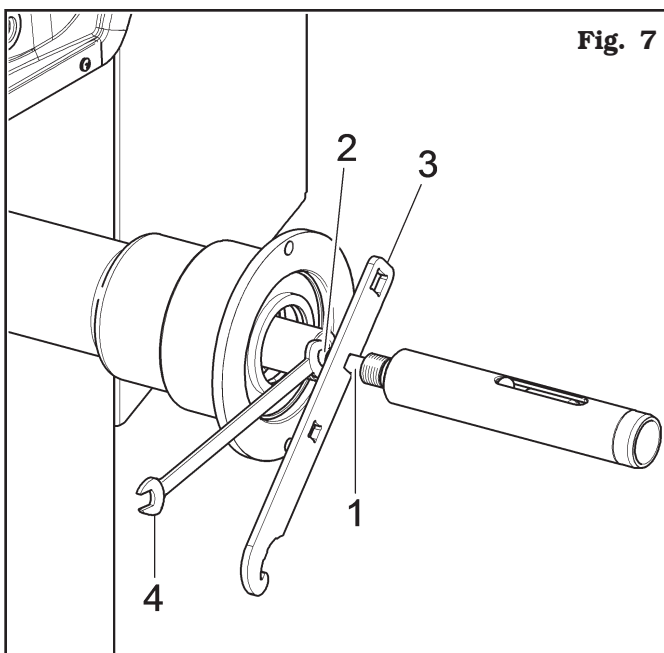
9.3.1 Fitting and removal of the pneumatic mandrel on the flange

FITTING

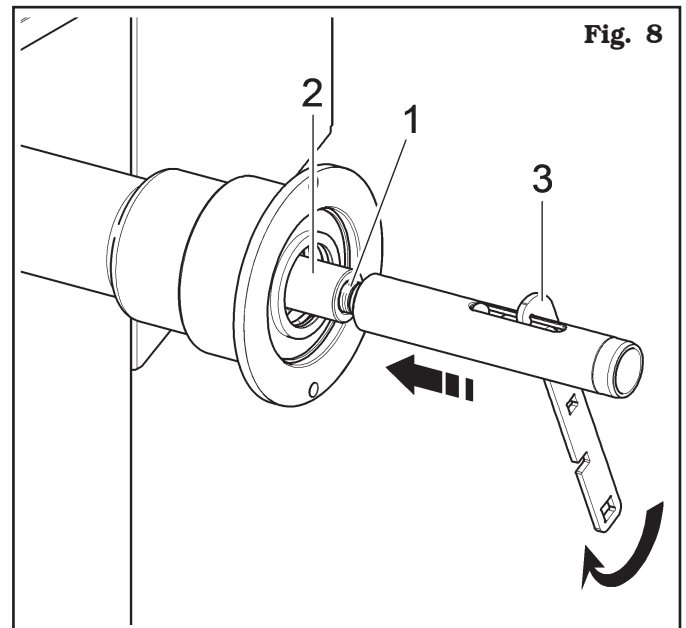
1. After making power and air connections switch on the machine (the pneumatic mandrel always opens when the machine is switched on).
2. Switch the machine off by using the master switch (**Fig. 22 ref. 1**). Couple tyre's inner rod (**Fig. 6 ref. 1**) with flange's inner rod (**Fig. 6 ref. 2**) (see **Fig. 6**).



3. Tighten tyre's inner rod (**Fig. 7 ref. 1**) with flange's inner rod (**Fig. 7 ref. 2**) by using the wrench provided (**Fig. 7 ref. 3**) and a 12 mm wrench (**Fig. 7 ref. 4**).



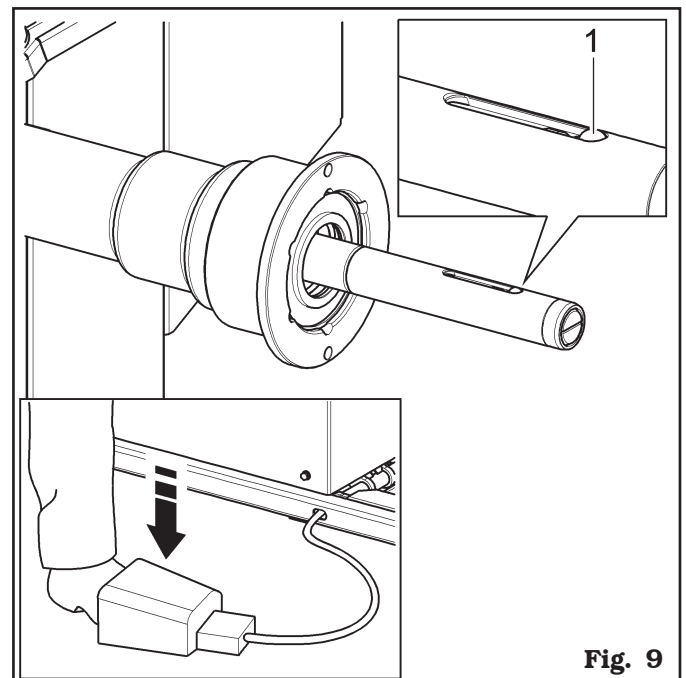
4. Screw pneumatic shaft's screw (**Fig. 8 ref. 1**) onto flange (**Fig. 8 ref. 2**) as far as it will go.



5. Tighten with the wrench provided (**Fig. 8 ref. 3**).

REMOVAL

1. Open the pneumatic mandrel by means of the pedal provided and make sure the outer ball (**Fig. 9 ref. 1**) is in the position indicated in **Fig. 9**.



2. Release the pneumatic shaft (Fig. 10 ref. 1) using the wrench provided (Fig. 10 ref. 2).

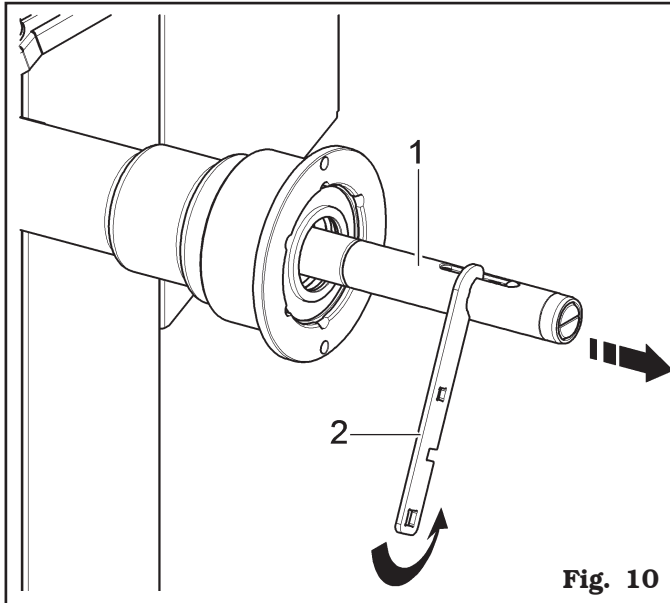


Fig. 10

3. Unscrew pneumatic shaft's screw (Fig. 11 ref. 1) and release the two inner rods with the special wrench provided (Fig. 11 ref. 2) and a 12 mm wrench (Fig. 11 ref. 3).

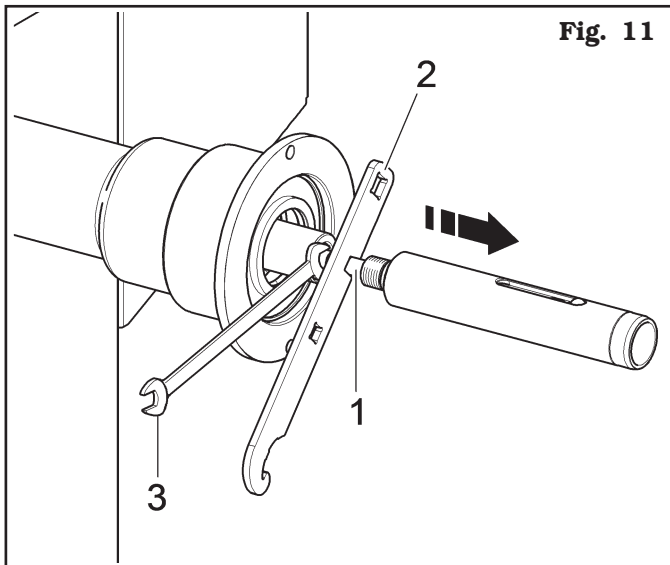
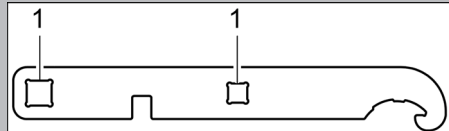


Fig. 11

IF A DYNAMOMETRIC SPANNER IS BEING USED, USE THE WRENCH PROVIDED WITH THE PREARRANGED HOLES (REF. 1) AND TIGHTEN AT 30 NM.



9.3.2 Monitor fitting

1. Cut the two clamps (Fig. 12 ref. 1) and release the support (Fig. 12 ref. 2) from the frame (Fig. 12 ref. 3).

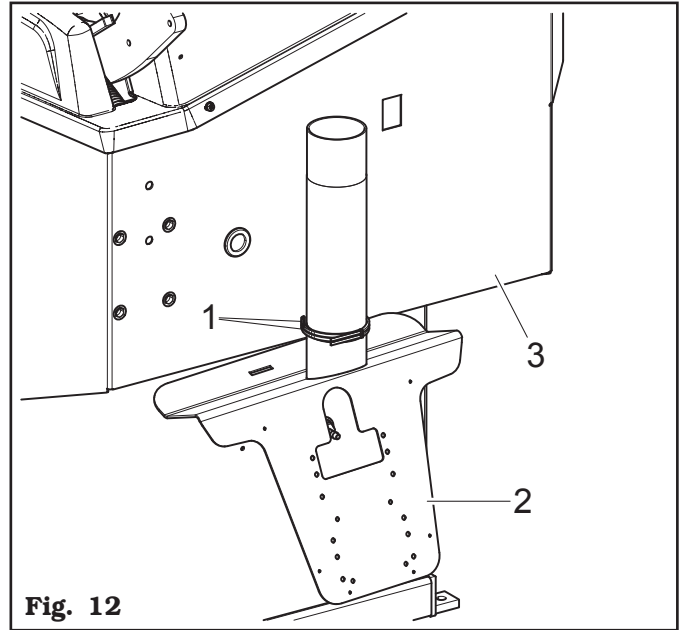
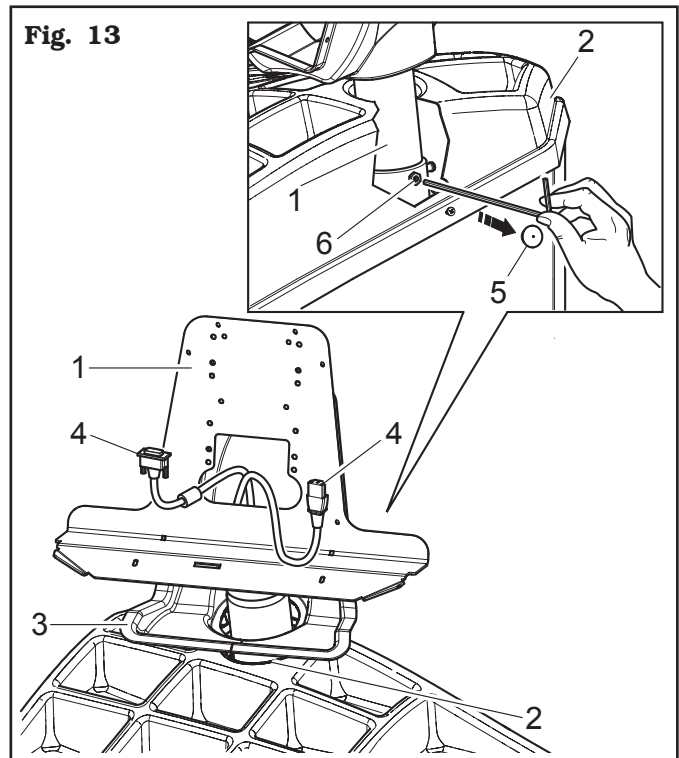


Fig. 12

2. Introduce the monitor support tube (Fig. 13 ref. 1) into the prearranged hole on the bridge (Fig. 13 ref. 2), interposing the guard (Fig. 13 ref. 3) and making the cables (Fig. 13 ref. 4) pass through its interior.
3. Remove the provided cap (Fig. 13 ref. 5) from the bridge (Fig. 13 ref. 2) and block the monitor support tube (Fig. 13 ref. 1) tightening the prearranged grub screw (Fig. 13 ref. 6) on the rear side. Remount the cap (Fig. 13 ref. 5).

Fig. 13



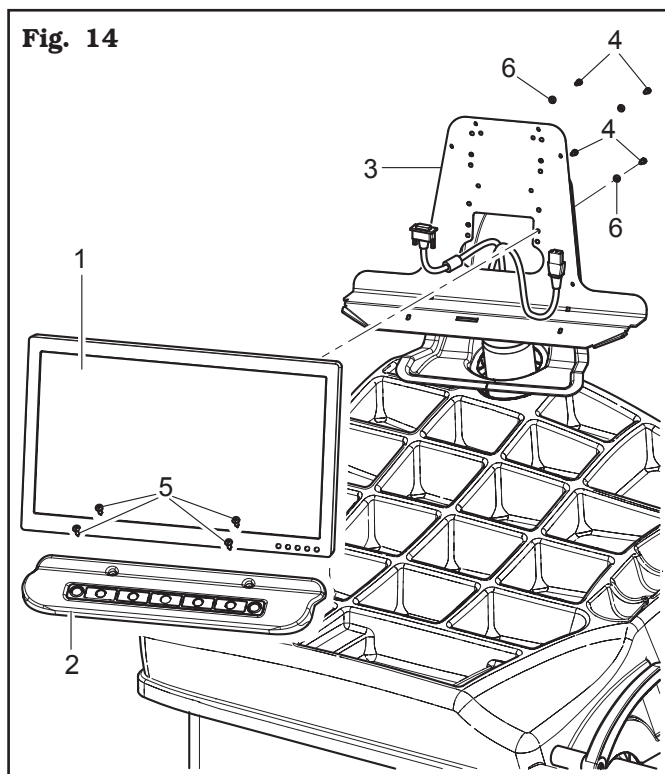
4. Connect the wiring of the keyboard.



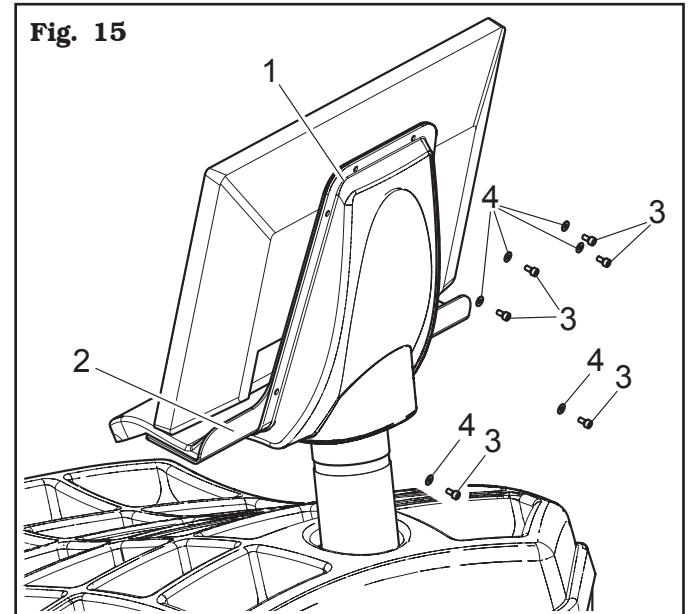
WIRE 1 (RED OR BLUE COLOURED) MUST CORRESPOND TO CONTACT 1 OF THE KEYBOARD'S CONNECTOR (MARKED WITH A SMALL ARROW). KEYBOARD'S OPERATION CAN BE TESTED. IN CASE OF POLARITY REVERSAL, THE KEYBOARD DOESN'T WORK CORRECTLY, BUT THERE ARE NO DAMAGES.

5. Connect the plugs on the power supply sockets and monitor signal. Make the cables pass through the support hole.

6. Mount the monitor (**Fig. 14 ref. 1**) and the keyboard (**Fig. 14 ref. 2**) to the support (**Fig. 14 ref. 3**) by means of the supplied screws (**Fig. 14 ref. 4 and 5**) and the washers (**Fig. 14 ref. 6**).

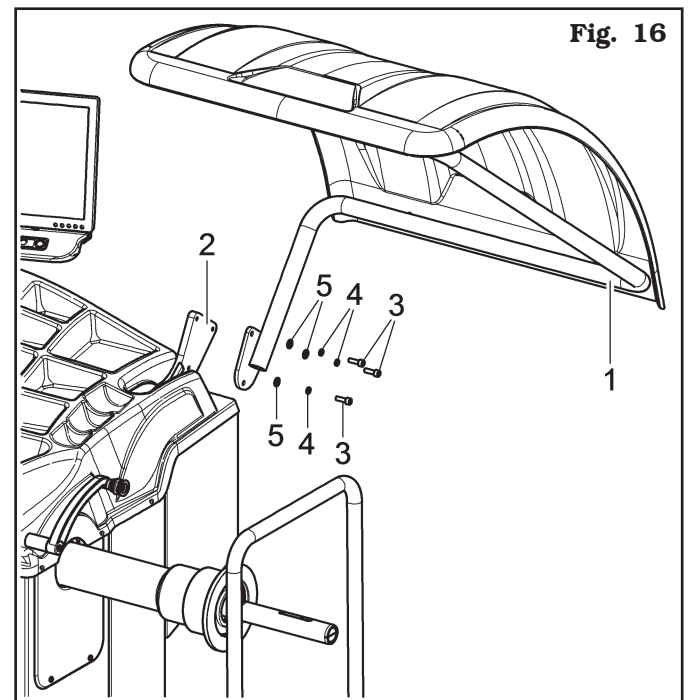


7. Fix the guard (**Fig. 15 ref. 1**) to the support (**Fig. 15 ref. 2**) with the screws (**Fig. 15 ref. 3**) and the washers (**Fig. 15 ref. 4**) supplied.



9.3.3 Fitting the protection guard

1. Mount the protection guard (**Fig. 16 ref. 1**) to the support (**Fig. 16 ref. 2**) with the screws (**Fig. 16 ref. 3**) and interposing the supplied washers (**Fig. 16 ref. 4-5**).



9.3.4 Fitting of external data gauge (optional)

1. Introduce the 4 screws (**Fig. 17 ref. 1**) in the gauge bracket (**Fig. 17 ref. 2**) and screw them on the threaded rivets placed on the rear side of the frame. Lock the gauge arm (**Fig. 17 ref. 3**) to the bracket (**Fig. 17 ref. 2**) using the 2 screws (**Fig. 17 ref. 4**) and the washers (**Fig. 17 ref. 5**). Lock the screws (**Fig. 17 ref. 4**) with the washers (**Fig. 17 ref. 5**) and the nuts (**Fig. 17 ref. 6**) so that the shaft and the gauge arm are levelled out (see **Fig. 18**).

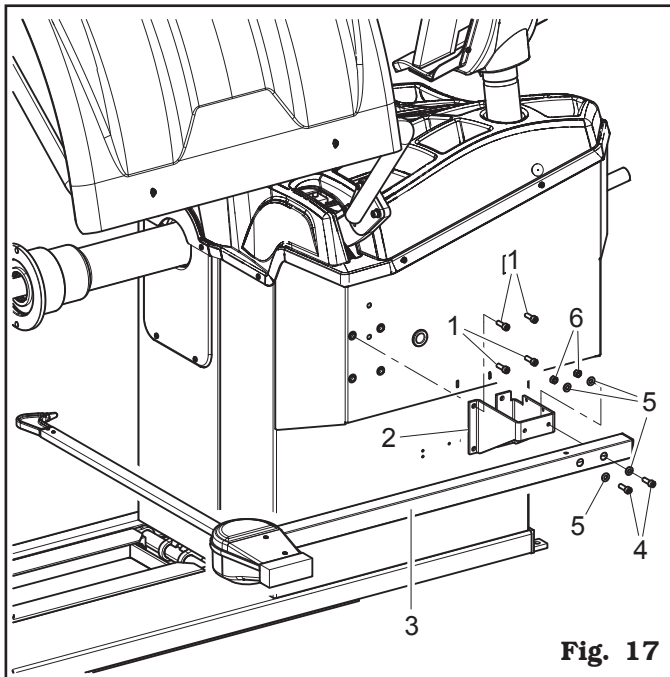


Fig. 17

2. Also make sure the gauge tip (**Fig. 18 ref. 1**) is positioned at the centre of the mandrel.

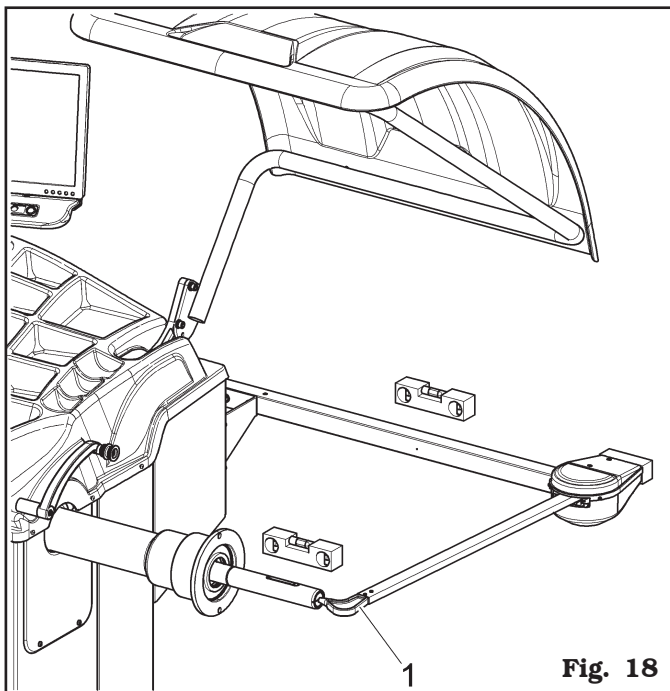


Fig. 18

3. Connect connector (**Fig. 19 ref. 1**) of the cable coming from inside the machine to connector (**Fig. 19 ref. 2**) of the cable coming from the gauge arm. Fit the section of the cable coming from the gauge arm to the connectors inside the arm (**Fig. 19 ref. 3**).
4. Fasten the cable with clamps.
5. Enable the external data gauge and carry out the device's calibration.

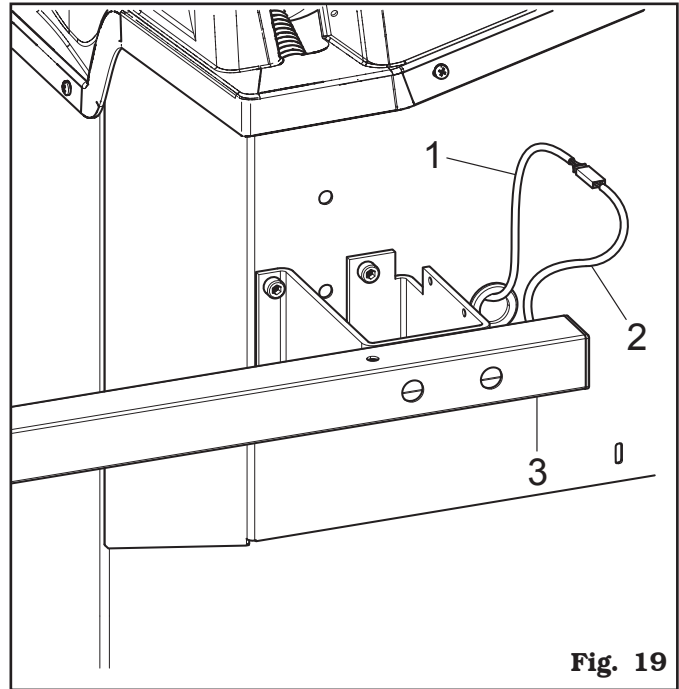


Fig. 19

9.3.5 Fitting the electronic Run-out measuring device (optional)

1. Remove the external data gauge (**Fig. 20 ref. 1**) from the bracket (**Fig. 20 ref. 2**) unscrewing the corresponding screws and nuts.
2. Fit the electronic measuring device (**Fig. 20 ref. 3**) to the external data gauge, as shown in **Fig. 20**.
3. Fit the external data gauge to the bracket again using the previously unscrewed screws and nuts.

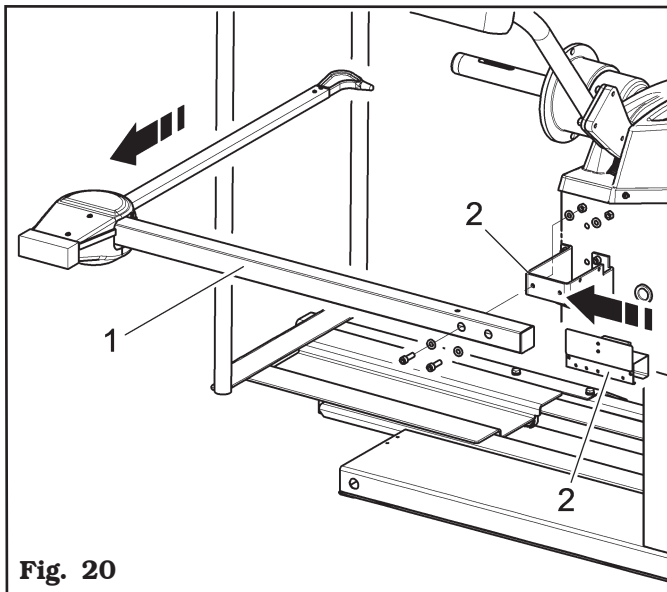


Fig. 20

4. Remove the wheel cover unit, the wheel balancer monitor and board.

5. Mount the card (**Fig. 21 ref. 2**)(# 18363), as shown in **Fig. 21**.
6. Connect connector of GAR214TK cable (**Fig. 21 ref. 1**) to the electronic card (**Fig. 21 ref. 2**)(# 18363), as shown in **Fig. 21** (blue **ref. 4 cable**, brown **ref. 5 cable** and black **ref. 6 cable**). Connect GAR214TK card (**Fig. 21 ref. 2**)(# 18363) to the wheel balancer main card, using the supplied cable JP19 (**Fig. 21 ref. 3**). Carry out the connection as shown in **Fig. 21**.

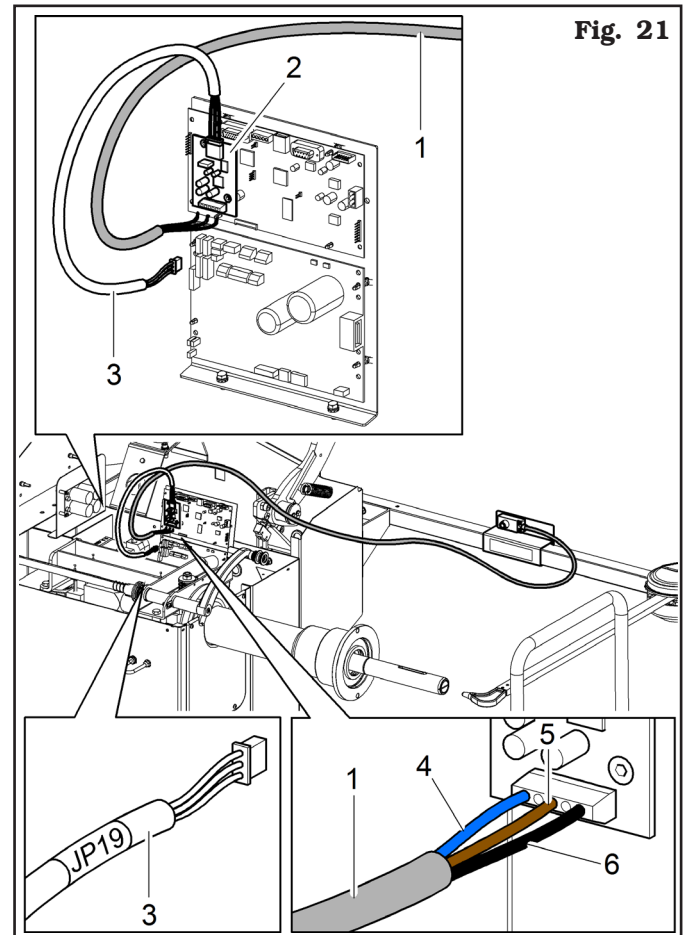


Fig. 21

7. Fix the cables with clamps not to let them hinder the ordinary operation of the machine.
8. Mount again the wheel cover unit, the wheel balancer monitor and board.

10.0 ELECTRICAL CONNECTIONS

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



BEFORE CONNECTING THE MACHINE MAKE SURE THAT:

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

Connect the machine up to the mains by means of the 3-pole plug provided (110V single - 1ph - 60Hz).

If the plug provided is not suitable for the wall socket, fit a plug that complies with local and applicable regulations. This operation must be performed by expert and professional personnel.



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



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



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 MAINTAINED-TYPE CONTROLS CORRECT FUNCTIONING, BEFORE STARTING MACHINE OPERATION.

Once the plug/socket connection has been made, turn on the machine using the master switch (**Fig. 22 ref. 1**).

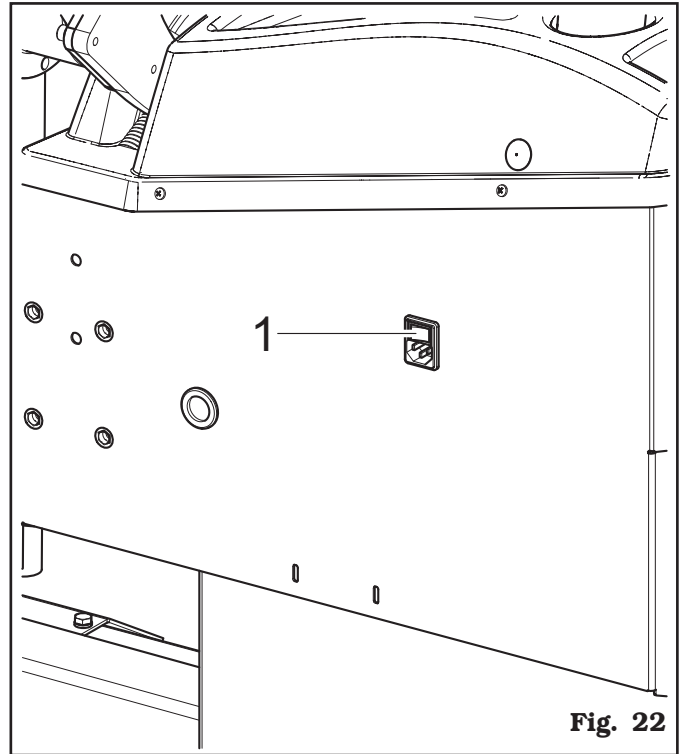


Fig. 22

11.0 AIR CONNECTION

Connect the wheel balancer to the centralised compressed-air system by means of the connection on the back of the machine (see **Fig. 23 ref. 1**).

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

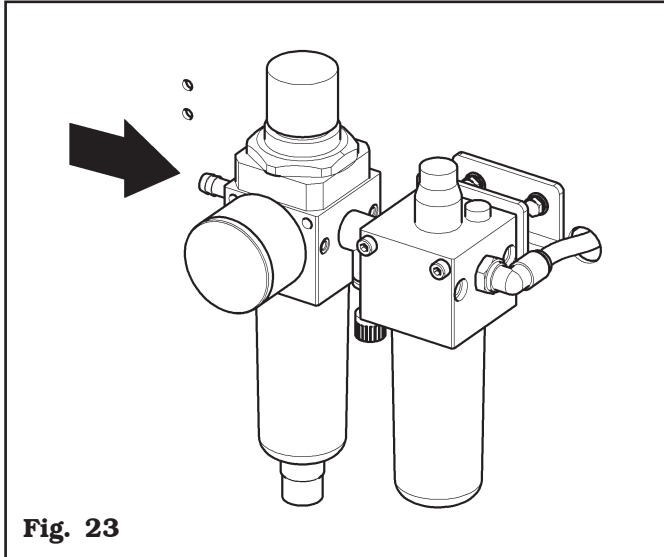


Fig. 23

12.0 FITTING THE WHEEL ON THE MANDREL



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

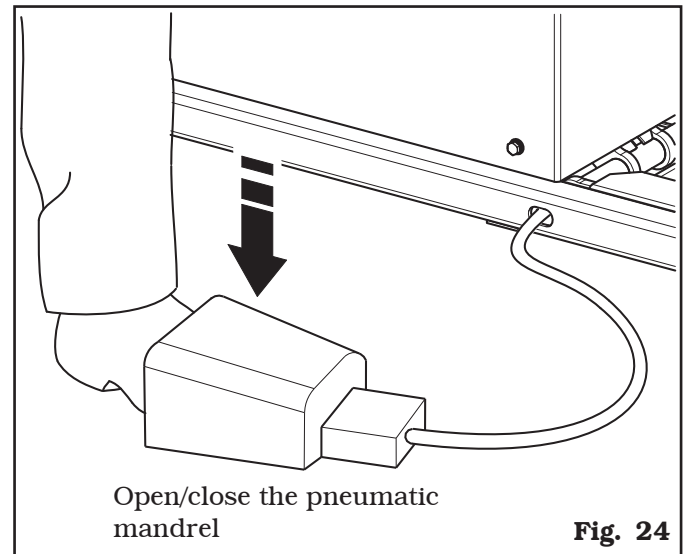


MOST IMPORTANT IS THAT ORIGINAL CONES AND ACCESSORIES ARE USED MADE SPECIFICALLY FOR USE ON THE WHEEL BALANCER.

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. Open the pneumatic mandrel by pressing the special pedal. (see **Fig. 24**).



Open/close the pneumatic mandrel

Fig. 24

2. Move rightwards excluded from supply (**Fig. 25 ref. 1**). Fit the adapter flange (**Fig. 25 ref. 2**) on the mandrel flange (**Fig. 25 ref. 3**).
3. Remove any type of foreign body from the wheel (**Fig. 25 ref. 4**): pre-existing weights, stones and mud, and make sure the mandrel (**Fig. 25 ref. 5**) and the rim centring area are clean before fitting the wheel on the mandrel.

4. Place the wheel (**Fig. 25 ref. 4**) on the wheel support (**Fig. 25 ref. 1**) with the rim inner side towards the wheel balancer. Operate the lifting device control (**Fig. 25 ref. 6**) and, keeping it lifted, lift the footboard (**Fig. 25 ref. 7**) and centre manually the wheel on the mandrel, with a minimum strain independently from its weight.



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

5. Move leftwards excluded from supply (**Fig. 25 ref. 1**).

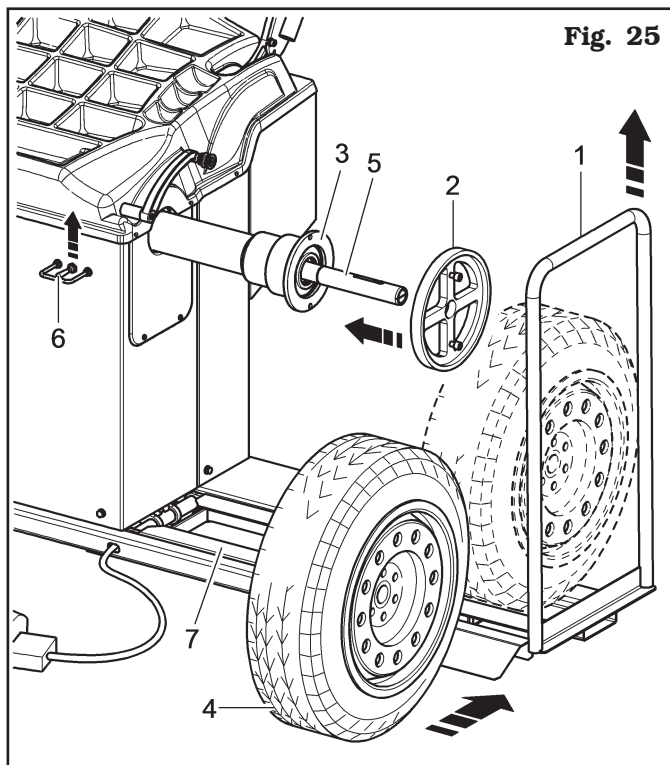


Fig. 25

6. Fit the cone (**Fig. 26 ref. 1**) against the wheel (**Fig. 26 ref. 2**) to be balanced with the narrowest part against the wheel. This accessory should be selected according to the shape of the rim.
7. Fit the pressure ring (**Fig. 26 ref. 3**) in the sleeve (**Fig. 26 ref. 4**) and screw everything against the cone (**Fig. 26 ref. 1**).

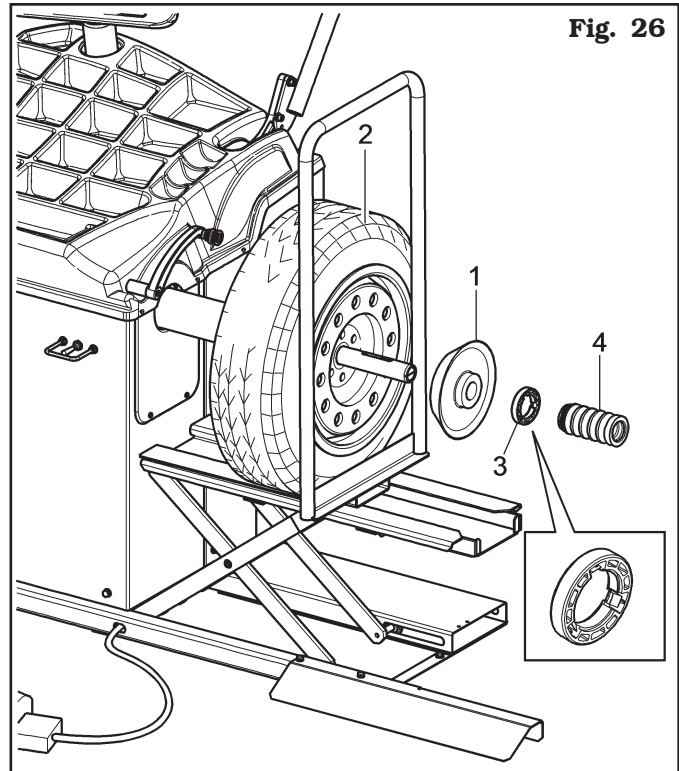


Fig. 26



THE PRESSURE RING (FIG. 26 REF. 3) MUST BE MOUNTED WITH THE TEETH SIDE TOWARDS THE SLEEVE (FIG. 26 REF. 4).

8. Lower the lifting device control (**Fig. 27 ref. 1**) and then lower the footboard (**Fig. 27 ref. 2**).

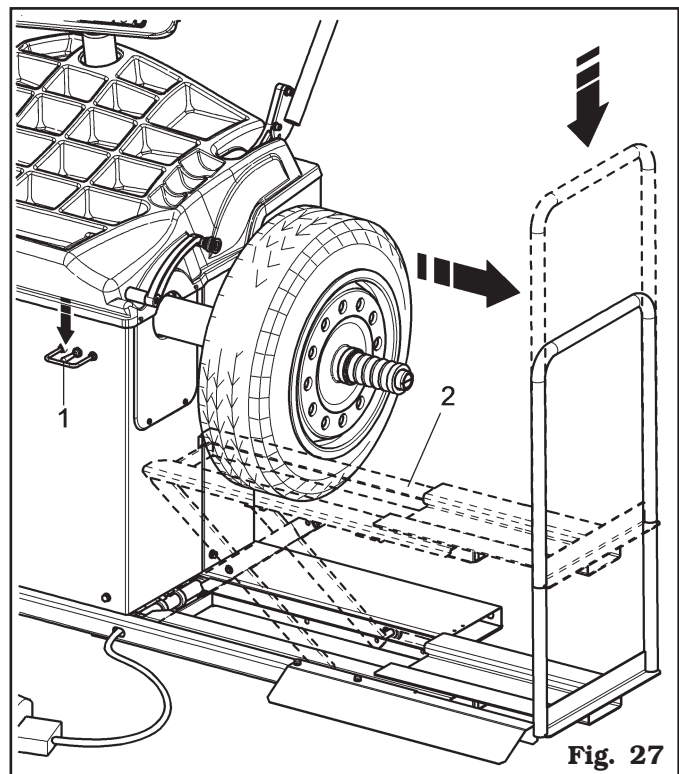


Fig. 27

9. Close the pneumatic mandrel by pressing the special pedal, (see **Fig. 24**).



DURING MANDREL OPENING/CLOSING OPERATIONS, BE CAREFUL TO KEEP YOUR HANDS AND OTHER PARTS OF THE BODY AWAY FROM THE MOVING MANDREL.

12.2 Demounting of the wheel

1. Move leftwards the wheel support (**Fig. 28 ref. 1**) and bring the wheel support plane (**Fig. 28 ref. 5**) under the tyre (**Fig. 28 ref. 2**).
2. Lift the lifting device control (**Fig. 28 ref. 3**) and lift the footboard (**Fig. 28 ref. 4**) until the wheel bearing (**Fig. 28 ref. 5**) comes in contact with the tyre (**Fig. 28 ref. 2**).



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

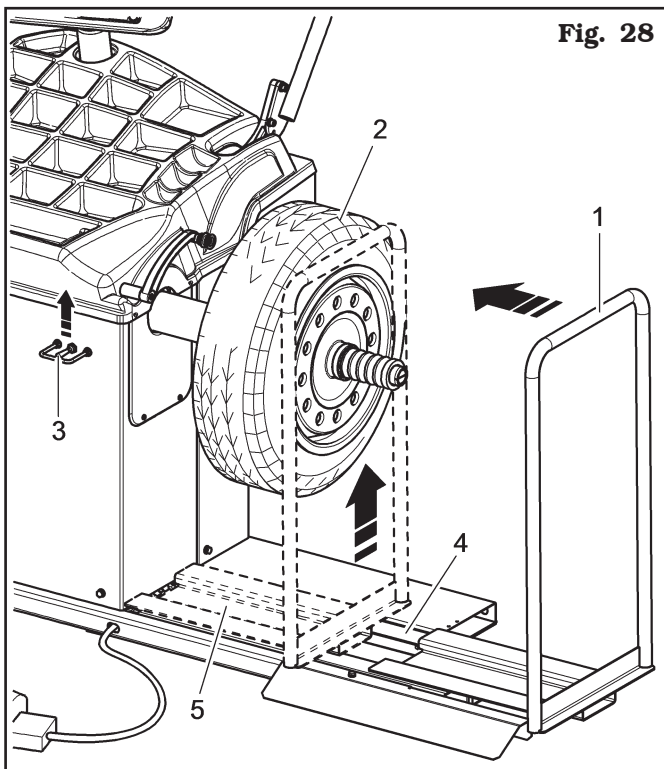


Fig. 28

3. Unlock the wheel (**Fig. 29 ref. 1**) engaged to the mandrel, removing the locking devices (**Fig. 29 ref. 2**).
4. Move rightwards the wheel support (**Fig. 29 ref. 3**) together with the tyre that is leaning against it.
5. Lower the lowering device control (**Fig. 29 ref. 4**) and then lower the footboard (**Fig. 29 ref. 5**).

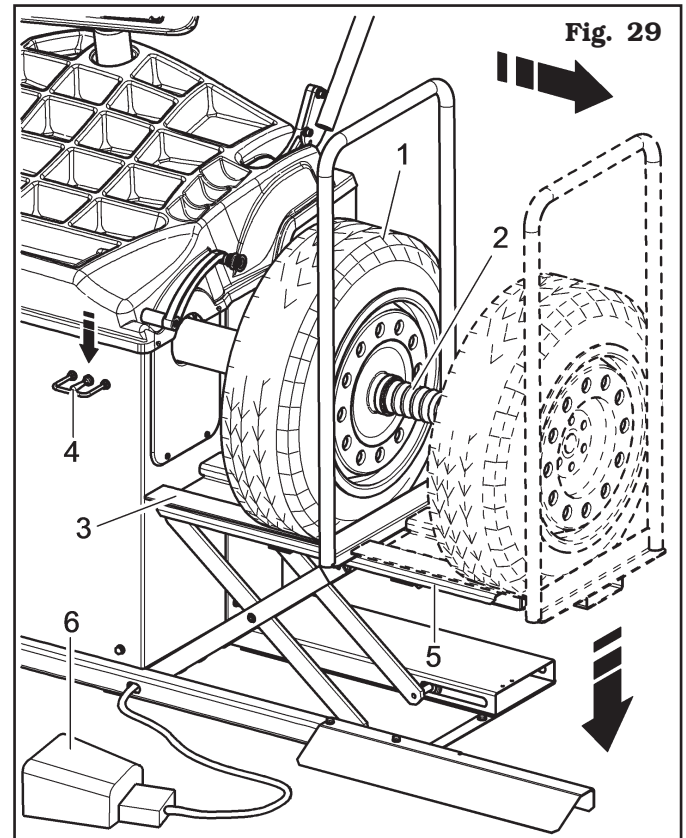


Fig. 29

6. Open the pneumatic mandrel by pressing the special pedal, see (**Fig. 29 ref. 6**).
7. Remove the wheel from the lifting device.

13.0 CONTROL PANEL

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

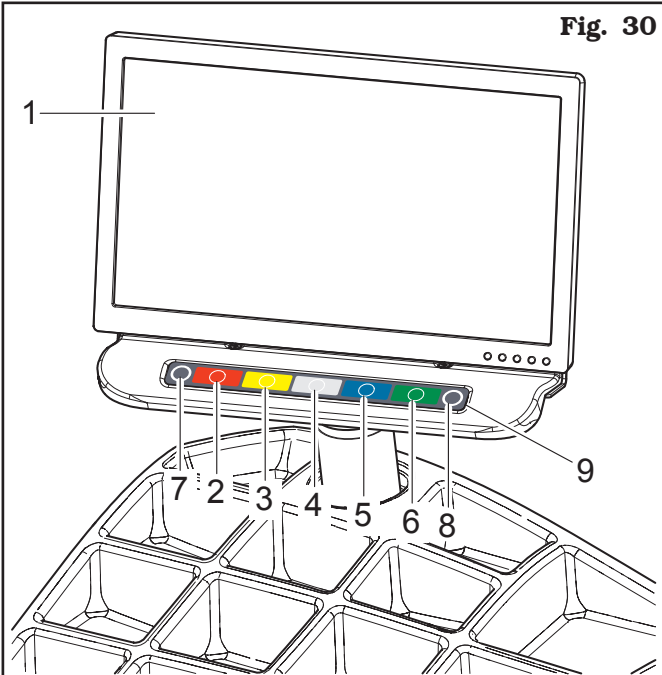


Fig. 30

KEY

- 1 - Monitor
- 2 - Function push button (red)
- 3 - Function push button (yellow)
- 4 - Function push button (grey)
- 5 - Function push button (blue)
- 6 - Function push button (green)
- 7 - Previous page push button
- 8 - Next page/print push button
- 9 - Push button panel (keyboard with 7 keys)

14.0 WHEEL BALANCING

14.1 *Switching the machine on and off*

Press the "ON" switch (**Fig. 22 ref. 1**), located in the rear part of the equipment.

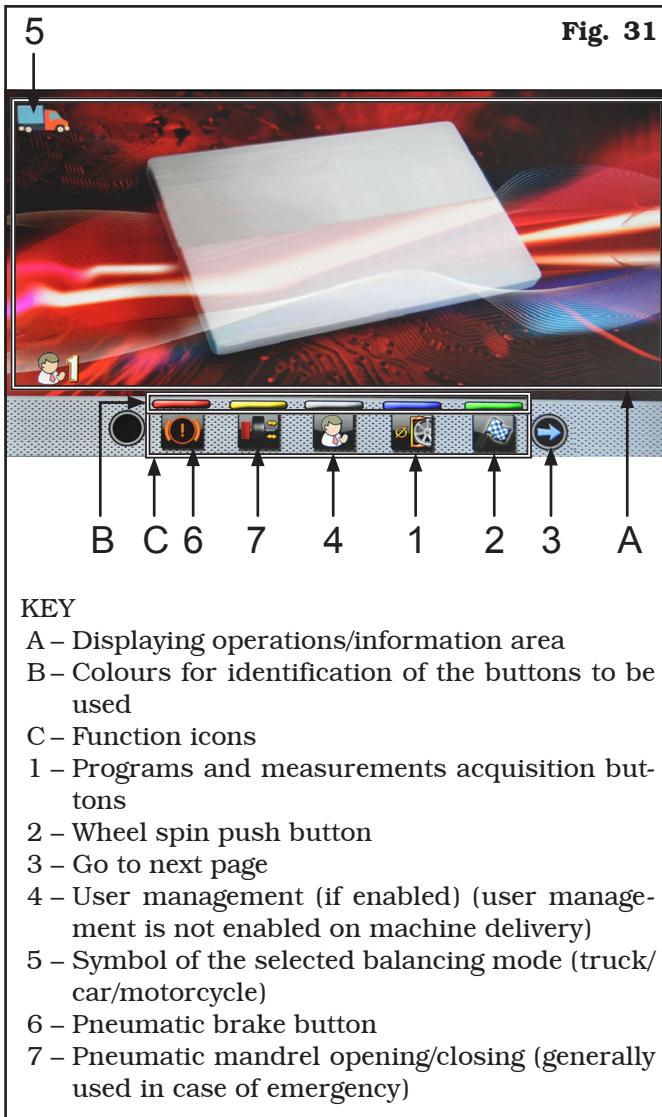


ON SWITCHING THE PNEUMATIC MANDREL IS ALWAYS OPENED. ALWAYS KEEP YOUR HANDS AND OTHER PARTS OF THE BODY AWAY FROM THE MOVING MANDREL. ALSO TAKE CARE IF A WHEEL IS ALREADY FITTED ON THE MANDREL, AS THIS COULD BE FORCED OFF THE SHAFT DURING THE OPENING OF THE MANDREL ITSELF.




Wait a few seconds until the complete loading of the operational program. The equipment is ready to operate when the main screen "Home" appears on the monitor.





ALL SCREEN PAGES LISTED IN THE MANUAL, UNLESS OTHERWISE SPECIFIED, DISPLAY THE MEASUREMENTS EXPRESSED IN GRAMS.





At the bottom of the main screen page and of each screen page described below, there will be coloured rectangles (**Fig. 31 ref. V**) located above function identification icons (**Fig. 31 ref. C**). These functions are activated by pressing the appropriate coloured button on the push-button panel (**Fig. 30 ref. 9**).



The symbol  which appears on the screen on the first page indicates that the machine is in TRUCK mode; the symbol  on the other hand indicates CAR mode and the symbol  indicates MOTORCYCLE mode (**Fig. 31 ref. 5**).


The indicated resolution is 50 g (2.00 oz), however by pressing the key  the unbalance can be displayed with a max resolution of 10 g (0.50 oz).







FOR UNBALANCES FROM 40 G (1.50 OZ) TO 100 G (4 OZ) THE RESOLUTION IS ALWAYS 10 G (0.50 OZ); FOR UNBALANCES BELOW 40 G (1.50 OZ) THIS IS NORMALLY INDICATED AS 0 G (0 OZ), HOWEVER BY PRESSING THE KEY  THE UNBALANCE IS DISPLAYED WITH MAX RESOLUTION OF 10 G (0.50 OZ).

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

By using “CAR” mode  and “MOTORCYCLE” mode  wheels can be balanced with a max static or dynamic unbalance of 300 g (12 oz).

The indicated resolution is 5 g (0.25 oz), however by pressing the key  the unbalance can be displayed with a max resolution of 1 g (0.05 oz).

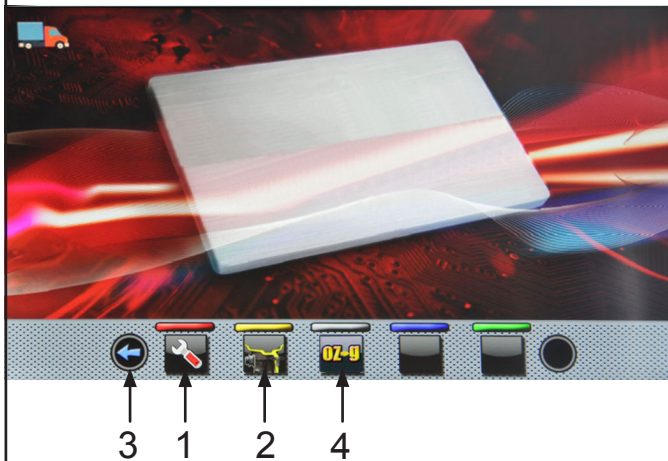
In “CAR” mode  and “MOTO” mode  the "MATCHING" procedure (Rim-tyre optimization), “SPLIT” and “WEIGHTS HIDDEN BEHIND SPOKES” procedures can be performed. ALL AUXILIARY functions can also be selected in “CAR” mode  only.



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



Press the button (**Fig. 31 ref. 3**) to display a second page where you can access "Technical assistance" and "Run-out" menu (see **Fig. 32**).



Fig. 32



KEY

- 1 – User menu
- 2 – Run-out menu (visible only if the machine is fit or if Run-out device is enabled)
- 3 – Return to previous page
- 4 – Unit of measurement modification.


The machine is set to perform the weight measurements in ounces. Press the button  to set the measurement in grams and on the screen will be displayed the icon .

Press the button  to set the measurement in ounces and on the screen will be displayed the icon .

In order to turn off the machine, simply press the "OFF" switch (**Fig. 22 ref. 1**).





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


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

14.1.1 Setting of balancing modes

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


- From the "Home" page press push button  (**Fig. 31 ref. 1**). On the screen that appears, press the button  to switch to measuring mode selection screen below.



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


Press  to confirm.




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

Press  to confirm.




Press key  to return to truck mode.

Press  to confirm.

14.2 Balancing programs setting

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

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

pearing when the  button is pressed (Fig. 31 ref. 1).

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

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

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

- bring into contact the weights fitting gripper with the inner part of the rim (1 contact only) to select "STATIC" program (see Fig. 33).



Fig. 33



REPEATEDLY BRINGING THE GAUGE'S ARM (FIG. 34 REF. 1) IN CONTACT WITH THE MANDREL (FIG. 34 REF. 2), THE PROGRAM WILL CYCLE FROM "STATIC" TO "STATIC 1" TO "STATIC 2" THEN RETURNING TO THE BEGINNING.

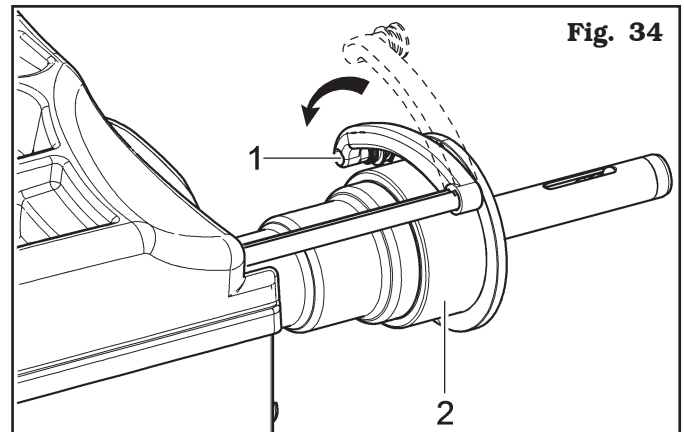


Fig. 34

- bring into contact the weights fitting gripper with the inner part of the rim (2 contact points) (see Fig. 33) to select "ALU-S" program.



REPEATEDLY BRINGING THE GAUGE'S ARM (FIG. 34 REF. 1) IN CONTACT WITH THE MANDREL (FIG. 34 REF. 2), THE PROGRAM WILL CYCLE FROM "ALU-S" TO "ALU-S1" TO "ALU-S2" THEN RETURNING TO THE BEGINNING.



WHENEVER THE DISTANCE-DIAMETER CALIPER AND/OR THE EXTERNAL DATA GAUGE (GAR266T, SEE FIG. 35, IF ANY) IS KEPT IN POSITION FOR A FEW SECONDS AGAINST THE RIM (UNTIL THE MACHINE MAKES AN APPROPRIATE SOUND NOTIFICATION), THE POSITION IS STORED AND THE VALUES MEASURED IN THE PRE-ARRANGED FIELDS IN THE SELECTED WHEEL BALANCING PROGRAM ARE LOADED.

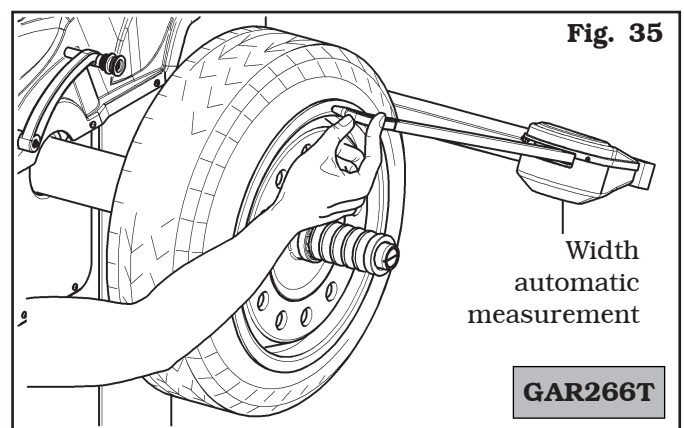



Fig. 35

Width
automatic
measurement



GAR266T

- After entering all the required measures, you can spin

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

14.2.2 Run-out measuring procedure of (lateral inner side) with the distance-diameter caliper arm

The RUN-OUT device is useful to check if the rim has some imperfections. To access the screen to choose the rim control mode, proceed as follows:

- from the "Home" page, press the button  (Fig. 36 re. 1) and then the button  (see Fig. 37 ref. 1).

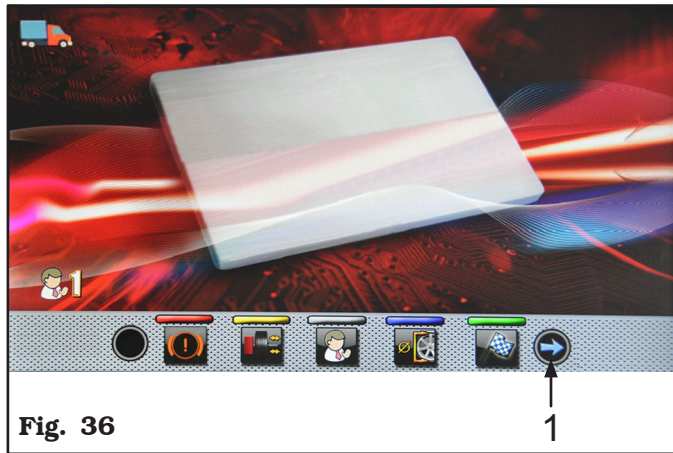


Fig. 36

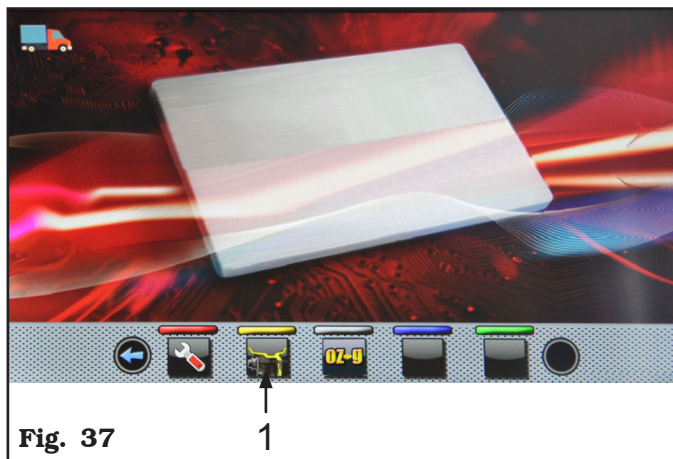


Fig. 37

- On the display the next screen page will be displayed:

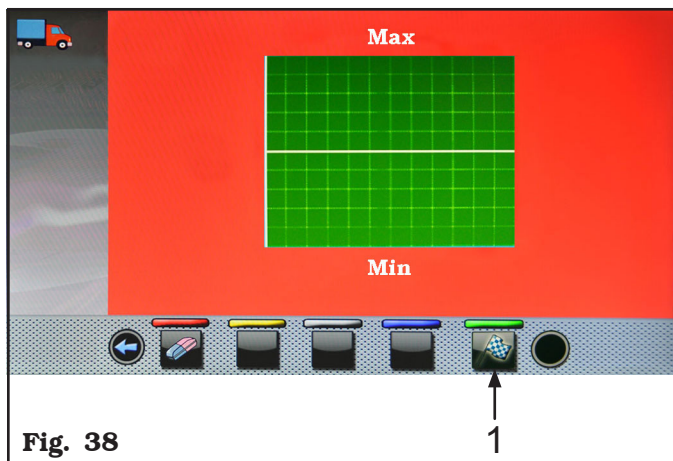


Fig. 38

Place the distance-diameter caliper grippers (Fig. 39 ref. 1) on the inner side of the rim, as shown in Fig. 39.



Press the green button (Fig. 38 ref. 1) to start the rim analysis procedure.

The circle starts to spin at low speed (30 rpm) and at the end of the measurement the roundness graph appears, as shown in the Fig. 40.

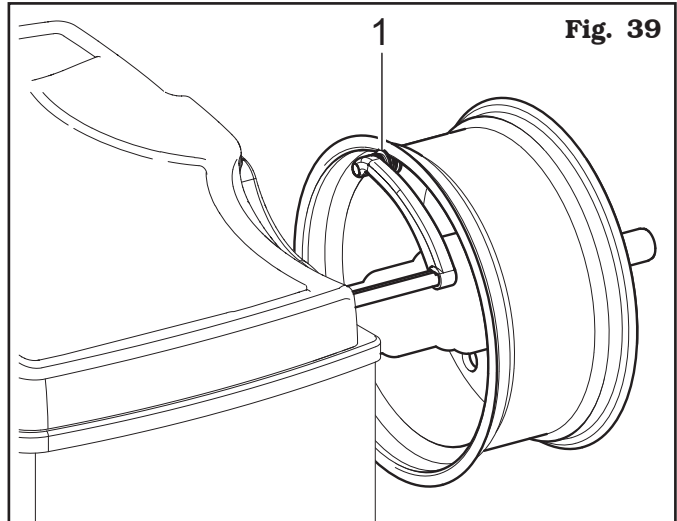


Fig. 39

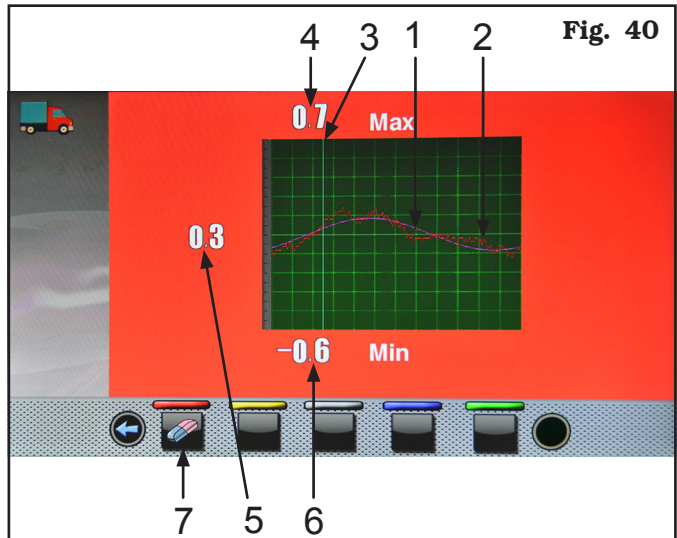


Fig. 40

KEY

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

The red graph (**Fig. 40 ref. 2**) represents exactly the geometric shape of the rim. The more the circle is round and linear, the more the graph is flat, unlike the more the circle has deficiencies, the more the graph is large.

You can follow the eccentricity in the graph by manually turning the rim, the green-coloured-slider (**Fig. 40 ref. 3**), indicates the position of the rim in "12 o'clock" position.

14.2.3 Correct positioning of the device during Run-out detection (Optional)

To make sure that the rim/tyre "Run-out" detection is correct, place the device as shown in **Fig. 41**: place the measurement sensor so that it is turned to the tyre centre line.

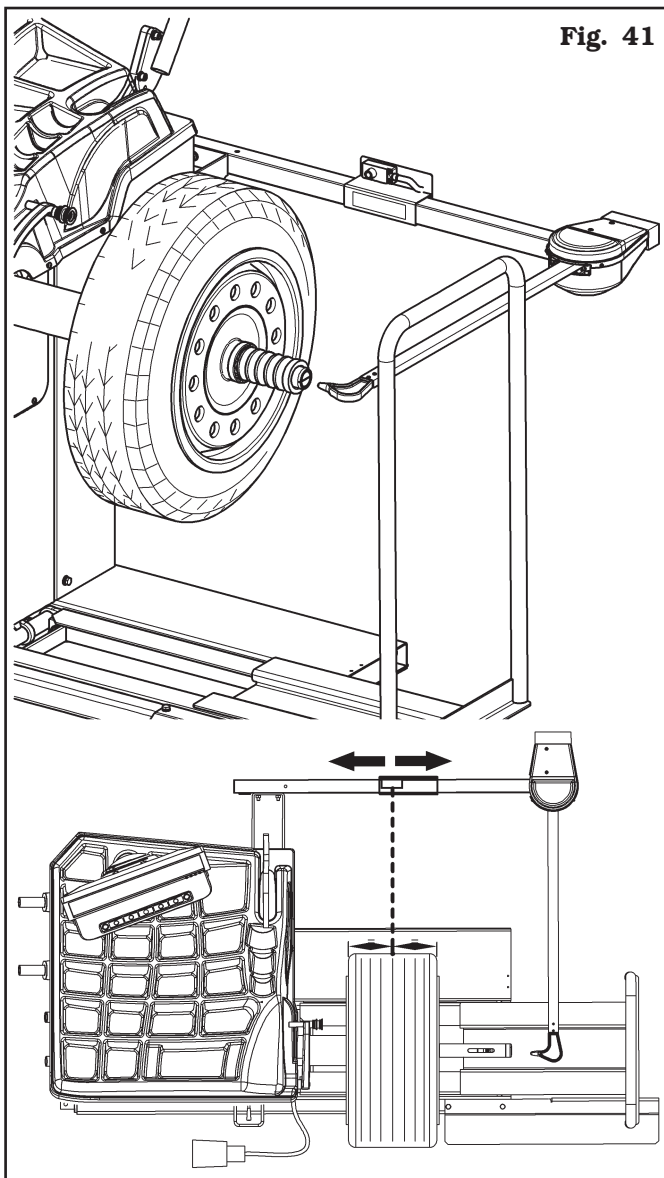
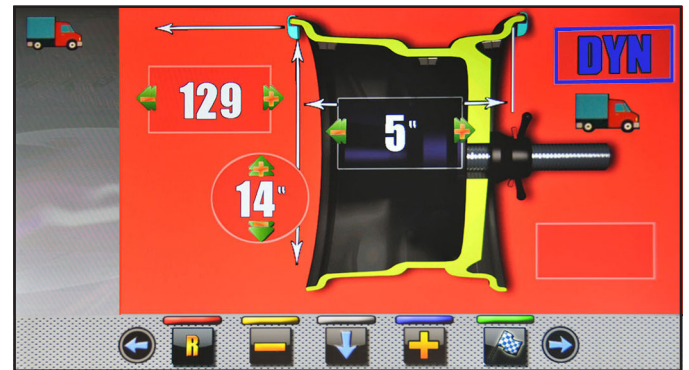




Fig. 41

14.2.4 Programs setting through "Measurements acquisition" screen page



From the "Home" page, press the (Fig. 31 ref. 1) button to display "Measurements acquisition" screen page below:



PRESS THE BUTTON  **(Fig. 31 ref. 1) TO DISABLE THE AUTOMATIC FUNCTIONS FOR THE SELECTION OF THE BALANCING PROGRAM OF DISTANCE-DIAMETER CALIPER ARM, DESCRIBED IN PAR. 14.2.1. TO BE ABLE TO REUSE THE AUTOMATIC FUNCTION TO SELECT THE WHEEL BALANCING PROGRAM WITH GAUGE ARM, IT IS NECESSARY TO RETURN TO "HOME" PAGE, BY PRESSING THE**  **BUTTON**

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


- with highlighted program (blue colour) by pressing the




until you see the desired program.

With this mode the 7 standard programs can be selected (DYN, ALU-S, ALU-S1, ALU-S2, STAT, STAT-1, STAT-2). After selecting the wished program, take the measurements.





IF THE PROGRAM NAME IS NOT HIGHLIGHTED (BLUE), PRESS  **THE BUTTON REPEATEDLY UNTIL THE ABOVE CONDITION IS REACHED.**



- Press the button  to display the following programs selection screen page:



Use the arrows  and/or  to select the wished mode (blue). With this mode you can select the 7 standard programs (listed before).




After selecting the wished program press  to confirm the choice.



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

- After entering all the required measures, you can spin



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

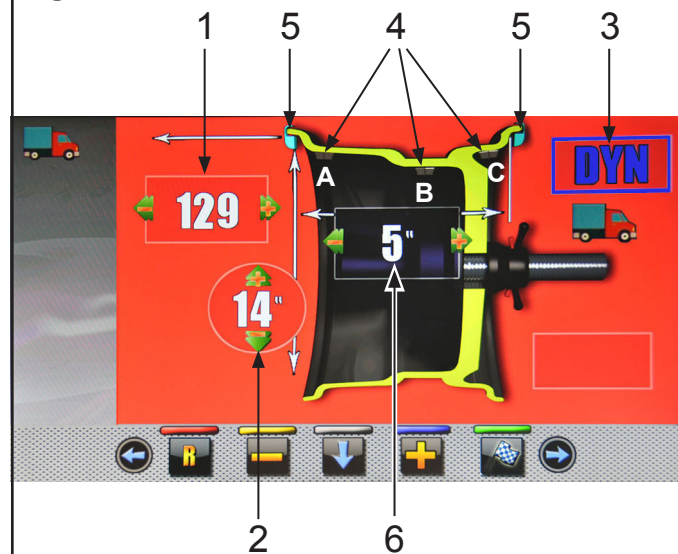
14.3 Indicative display of points where to detect measures/to fit weight



IT IS VERY IMPORTANT TO REMEMBER THE POINTS SELECTED FOR MEASUREMENT INSIDE THE RIM SINCE DURING THE WEIGHTS FITTING WITH FIXED LASER YOU WILL NOT HAVE ANY OTHER REFERENCE EXCEPT FOR THE CROSS LINE ON THE RIM, GENERATED BY THE LASER ITSELF. THE POSITIONING IN DEPTH WILL BE AT THE DISCRETION OF THE OPERATOR.

Depending on the type of program selected, the machine shows on the monitor the guideline points where to take measures and, consequently, where you must apply weights (**Fig. 42 ref. 4-5**).

Fig. 42



KEY

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



THE MORE THE POINTS CHOSEN FOR THE PROBING ARE DISTANT FROM EACH OTHER THE MORE THE BALANCING WILL BE EFFECTIVE.

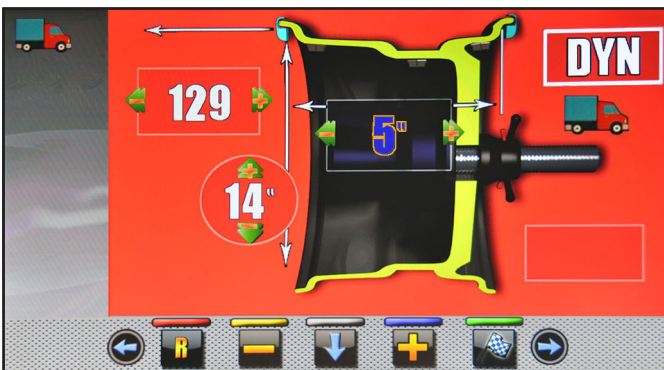
14.3.1 Weights positioning

The monitor displays when it is absolutely necessary that the weight is applied at "12 o'clock" position. Pay particular attention to the content of the weights identification icons since if the following words **H 12** are displayed, then the icon corresponding weight has to be applied at "12 o'clock" position (typical of ALU-S1, ALU-S2 programs).

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

14.4 Displaying the active/modifiable field

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



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



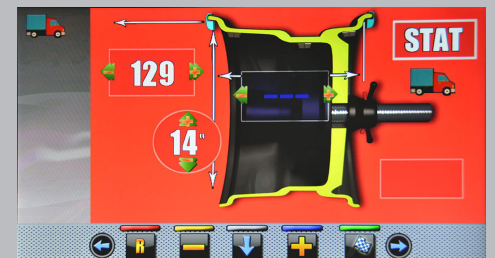
until the desired field is coloured blue.

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

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



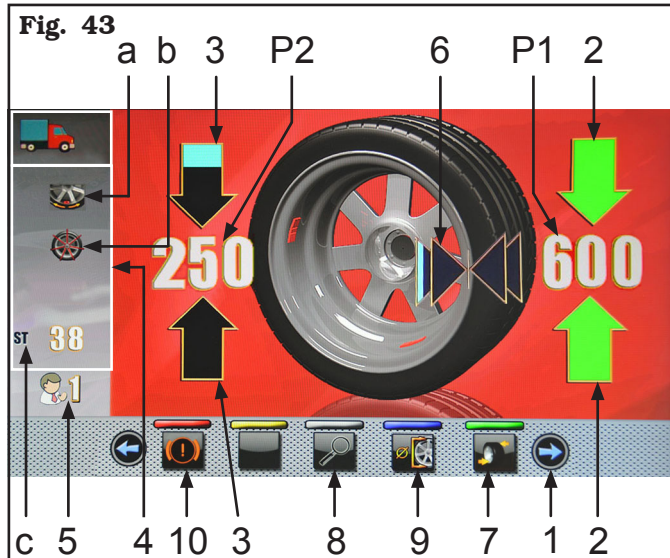
THERE IS A CASE, HOWEVER, IN WHICH THE 1ST ACTIVE FIELD WILL BE THE RIM WIDTH.




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


14.5 Wheel balancing screen page description

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



KEY

- 1 –By pressing the button  you will see the following page (**Fig. 43a**) where you can select one of the programs suggested by the machine.
- P1–Weight to be fitted on rim outer side
- P2–Weight to be fitted on rim inner side
- 2 –Wheel placed to fit the weight on wheel outer side (arrows both green)
- 3 –Wheel not placed to fit the weight on wheel inner side (blue/black arrows)
- 4 –Wheel balancing suggestions
- 4a–MATCHING program (only in “CAR” and “MOTORCYCLE” mode)
- 4b–SPLIT Program (clip weights program) or SPOKES Program (adhesive weights program).
- 4c–STATIC Program (*)
- 5 –N° user (if selected)
- 6 –Arrows indicating the weight fitting point with distance-diameter caliper arm
- 7 –Wheel repositioning button for weights fitting
- 8 –Display of the weight with the maximum resolution of 1 g / 0,05 oz (CAR) - 10 g / 0.50 oz (TRUCK)

8a–Display of the weights in grams 

8b–Display of the weights in ounces/grams 

9 –Programs and measurements acquisition buttons

10–Pneumatic brake button


(*) To enter STATIC program press key **ref. 9**, select “STATIC” and press key  (recalculation)


Fig. 43a




(*) only in “CAR” and “MOTORCYCLE” mode

IF THE GUARD AND REPOSITIONING FUNCTION ARE DISABLED, ON THE BUTTON FIG. 43 REF. 7) WILL BE DIS-




PLAYED THE ICON , WHICH ALLOWS THE WHEEL SPIN WITHOUT RETURNING TO THE PREVIOUS PAGE. WHEEL POSITIONING FOR WEIGHTS FITTING MUST BE CARRIED OUT MANUALLY.

8a –Display of the weights in GRAMS
Set the unit of measurement for weights

display to GRAMS  (see Par. 15.1 “Options menu”).

On the following screen page:



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


The following screen will appear on the monitor:



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




8b-Display of the weights in OUNCES/GRAMS
Set the unit of measurement for weights

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


On the following screen page:




press the button  to display the weight with maximum resolution (0.05 oz CAR / 0.50 oz TRUCK) to be fitted on the wheel, expressed in ounces.

The following screen will appear on the monitor:




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



Press the button  to display the weight with maximum resolution (1 g CAR / 10 g TRUCK) to be fitted on the wheel, expressed in grams. The following screen will appear on the monitor:



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



14.5.1 Balancing mode

The machine has the ability to perform the wheel balancing (weights fitting) in 3 different ways:

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

• **Weights fitting with distance-diameter caliper arm.**

1. Place the adhesive weight on the arm grippers.

Fit the adhesive weight
in the pliers of the gauge rod




2. Pull out the gauge until the arrows (Fig. 43 ref. 6) both turn green.
3. Rotate the gauge arm until the weight touches the rim.

Fit weight on the position
where pliers touches the wheel



4. Bring the distance-diameter caliper arm into resting position.



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

- **Weights fitting with laser (at "6 o'clock") (Optional).**



TO USE THIS MODE, IT IS NEC-

CESSARY THAT FUNCTION



AND FUNCTION  ARE EN-
ABLED BY PRESSING RELEVANT
BUTTONS FROM THE MENU "OP-
TIONS" (PAR. 15.1).





TO USE THIS WEIGHT APPLI-
CATION MODE THE OPERATOR
MUST REMEMBER THE PRECISE
POINT WHERE THE MEASURE-
MENT WAS TAKEN WITH THE
DISTANCE-DIAMETER CALIPER
ARM.


At the end of the spin, on the rim at "6 hours" is displayed a laser beam (blade) indicating the axis on which to apply the weight. The positioning of the weight (s) in depth shall be at the discretion of the operator, depending on where remembers taking the measure.




BE SURE TO APPLY THE (INTER-
NAL OR EXTERNAL) WEIGHT AS
INDICATED BY THE 2 GREEN
ARROWS (Fig. 43 ref. 2 or 3) ON
THE CORRESPONDING MONITOR
SCREEN.


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

 TO USE THIS MODE, IT IS NECESSARY THAT THE RELEVANT FUNCTION IS ENABLED  ON THE MENU "OPTIONS" DESCRIBED IN PAR. 15.1.

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

 USING THIS MODE, THE MACHINE ALLOWS YOU TO APPLY ANY ADHESIVE WEIGHTS THAT WOULD BE APPLIED TO "12 HOURS" TO "6 O'CLOCK". IF, AFTER YOU ENABLE THIS MODE, ON BALANCING PROGRAM APPEARED AGAIN THE **H 12** ICON (ONLY IN THIS CASE) THE ADHESIVE WEIGHT WILL BE APPLIED TO "12 HOURS".

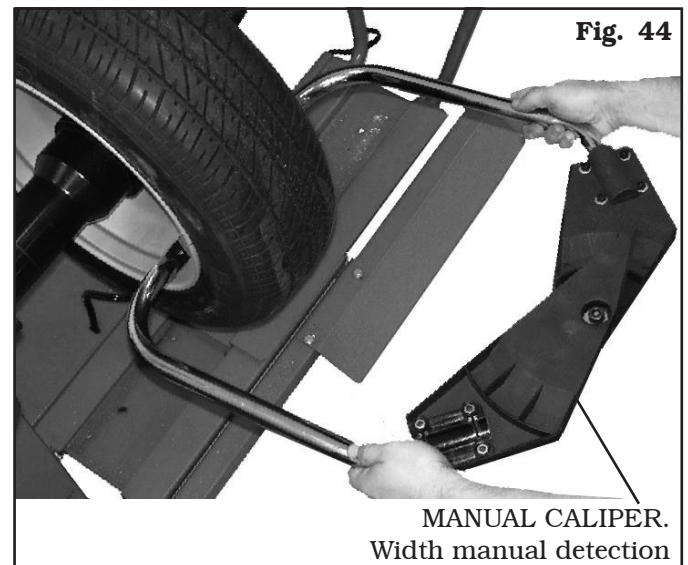
At the end of the spin, the wheel stops in place to apply the weight at "6 o'clock". The positioning of the weight (s) in depth shall be at the discretion of the operator, depending on where remembers taking the measure.

 BE SURE TO APPLY THE (INTERNAL OR EXTERNAL) WEIGHT AS INDICATED BY THE 2 GREEN ARROWS (Fig. 43 ref. 2 or 3) ON THE CORRESPONDING MONITOR SCREEN.

14.6 Use of machines with disabled automatic gauge





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

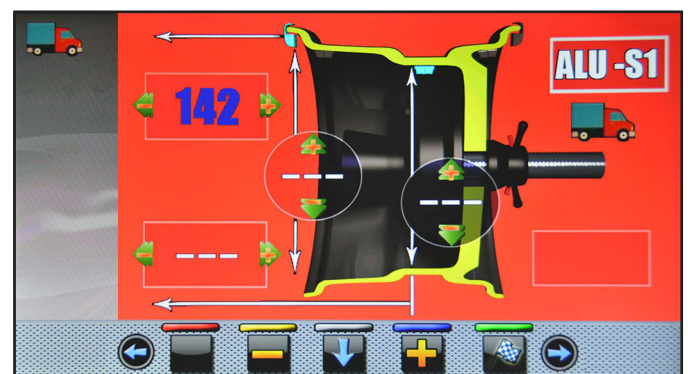
- visual readout on caliper graduated scale (distance);
- values readout on rim (diameter and width);
- width value detection with manual caliper (width) (see Fig. 44).



14.6.1 Manual setting of wheel dimensions

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

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



After entering all the required measures, you can spin



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

NOTE: if the distance-diameter caliper is disabled, the displayed page for detected unbalance is as follows:

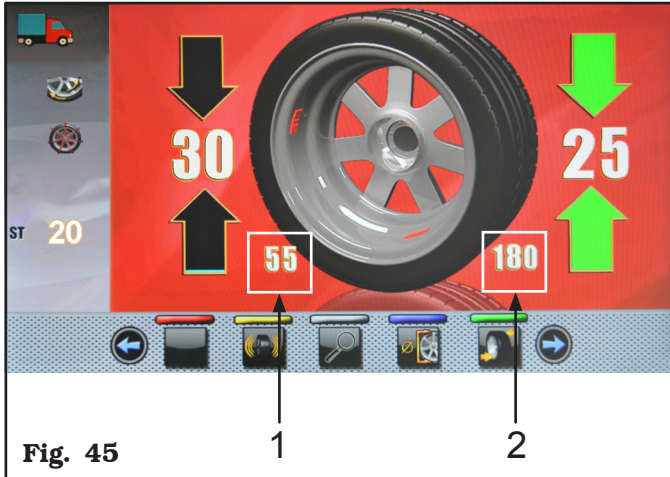


Fig. 45

In this screen page, in addition to the information of the detected unbalance, there are measurements in mm where you must remove the gauge arm (Fig. 45 ref. 1-2) to apply the weights inside the rim.

14.7 Standard balancing programs

14.7.1 Static

Valid for truck/car/motorcycle

The STATIC program permits balancing wheels by fitting adhesive weights on the outer and inner sides of the rim. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5.

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



The procedure has now been completed.

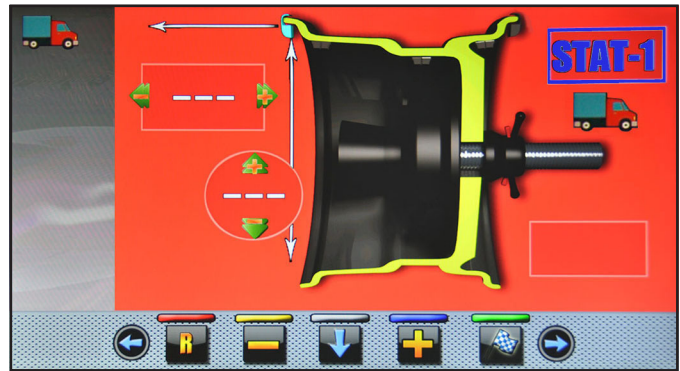
14.7.2 Static-1

Valid for truck/car/motorcycle

STATIC 1 function is a procedure that offsets wheel vibrations using a single weight with clip on a single plane positioned exactly at "12 o'clock".

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5 "Dynamic balancing" (only for wheel inner side).

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



The procedure has now been completed.

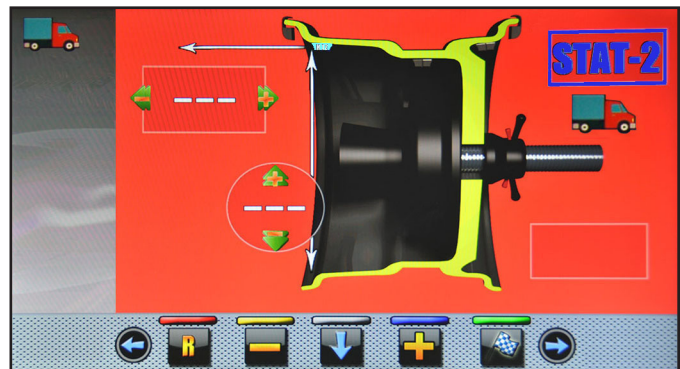
14.7.3 Static-2

Valid for truck/car

STATIC 2 function is a procedure that offsets wheel vibrations using a single adhesive weight on a single plane positioned exactly at "12 o'clock".

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5 "Dynamic balancing" (only for wheel inner side).

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



The procedure has now been completed.

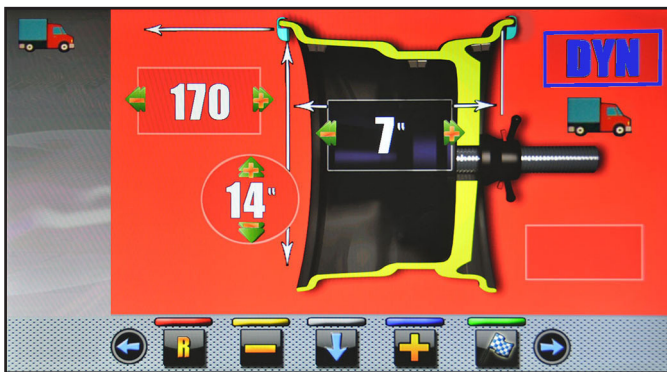
14.7.4 Dynamic

Valid for truck/car/motorcycle

The DYNAMIC program allows the wheels balancing by fitting two clip weights in "12 o'clock" position: one on the outside and one on the inside rim. It is possible to enter the measurements in two ways:

- with distance and diameter caliper and outer width feeler pin. If the feeler pin is missing, enter the measurement manually (see **Fig. 46**);
- follow the procedure in Par. 14.6.1 and proceed as described in Par. 14.5.

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



The procedure has now been completed.

14.7.5 ALU-S

Valid for truck/car/motorcycle

ALU-S program permits balancing wheels by two fitting adhesive weights on the outer and inner sides of the rim. Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5.

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



The procedure has now been completed.

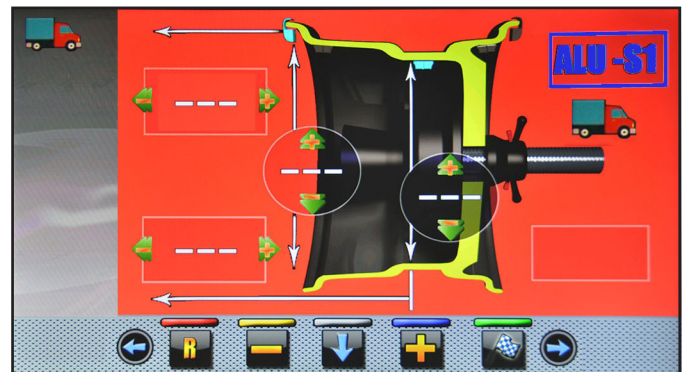
14.7.6 ALU-S1

Valid for truck/car

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

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5 (the inner weight is with clip).

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



The procedure has now been completed.

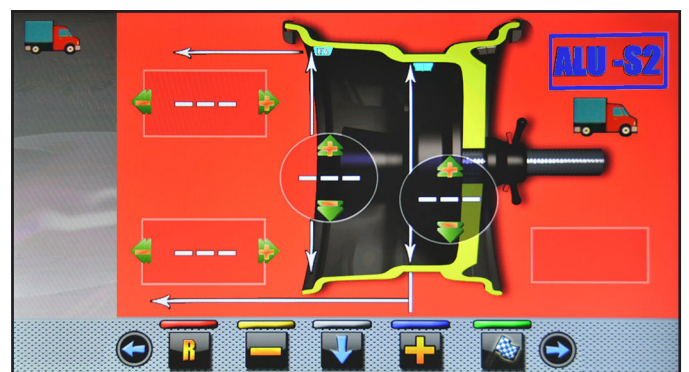
14.7.7 ALU-S2

Valid for truck/car

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

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5.

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



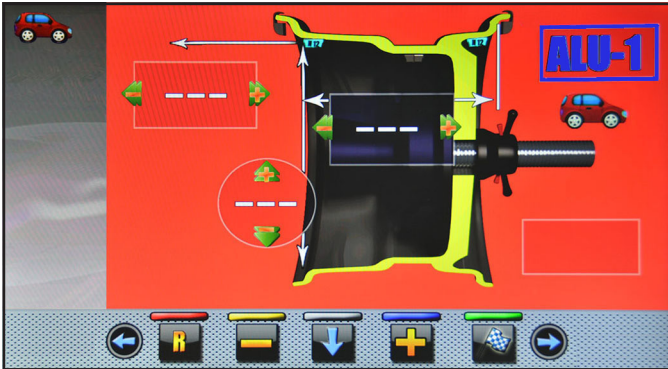
The procedure has now been completed.

14.7.8 ALU-1**Valid for car**

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

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as described in Par. 14.5.

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

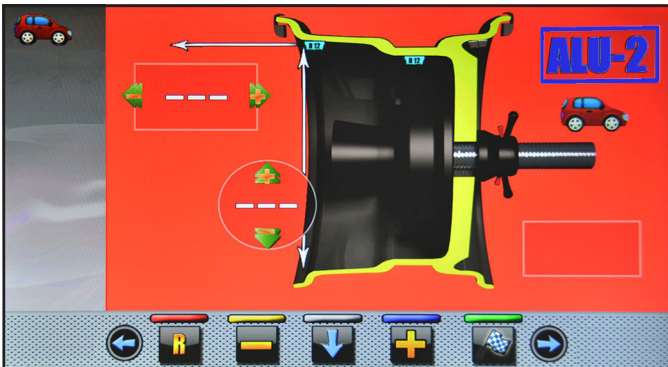


The procedure has now been completed.

14.7.9 ALU-2**Valid for car**

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

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



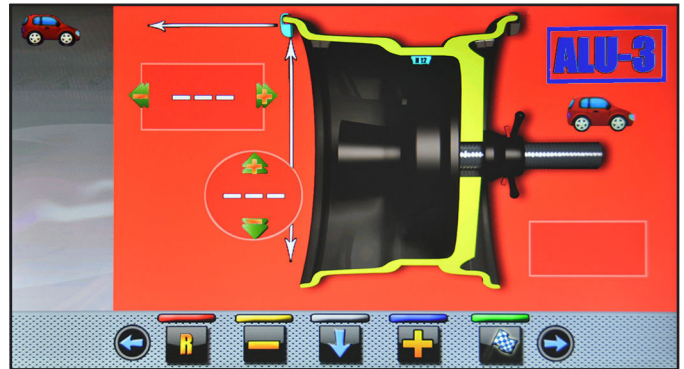
The procedure has now been completed.

14.7.10 ALU-3**Valid for car**

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

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as for dynamic unbalance.

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



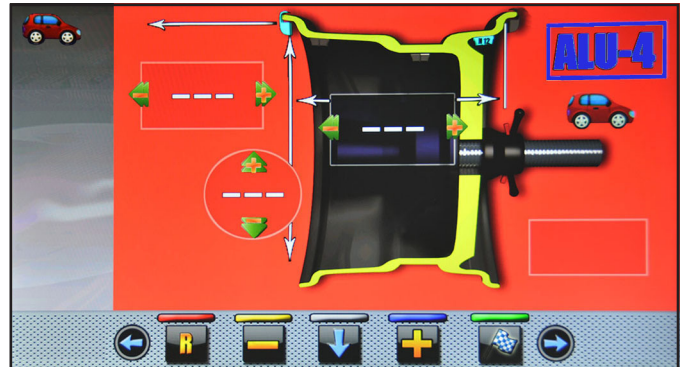
The procedure has now been completed.

14.7.11 ALU-4**Valid for car**

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

Enter the measurements (see Par. 14.2.1 or 14.6.1) and proceed as for dynamic unbalance.

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



The procedure has now been completed.

14.8 Optional balancing programs

14.8.1 SPLIT mode

Valid for trucks/car/motorcycle

The SPLIT procedure proves useful when the dynamic unbalance of a wheel is fairly high, for instance a 100 g weight. It's possible then to correct the unbalance dividing the amount of weight into two weights of smaller size.

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

For example:

100 g WEIGHT TO BE FITTED TO
CORRECT UNBALANCE



TWO SMALLER WEIGHTS (50g)
FITTED MANUALLY




TWO SMALLER WEIGHTS (55g)
BY SPLIT PROCEDURE




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




Once detected the unbalance values, verify that the machine displays the ability to use the "SPLIT" option



(Fig. 43 ref. 4a). Press button  to shift to the next screen page.



Press button  to enter "SPLIT" function. On the monitor screen will be displayed where you must enter the value of the weights to be fitted.



Press button  to select the outer weight to edit.

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




THE BLUE VALUE INDICATES WHICH VALUE IS ACTIVE AND YOU ARE EDITING.



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


After choosing the value of the weights to be fitted,

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




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

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

on the outside of the wheel. Press again button  to position the wheel for the fitting of the 2nd clip weight.



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

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



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

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

14.8.2 Weights hidden behind spokes mode

Valid for trucks/car/motorcycle

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


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

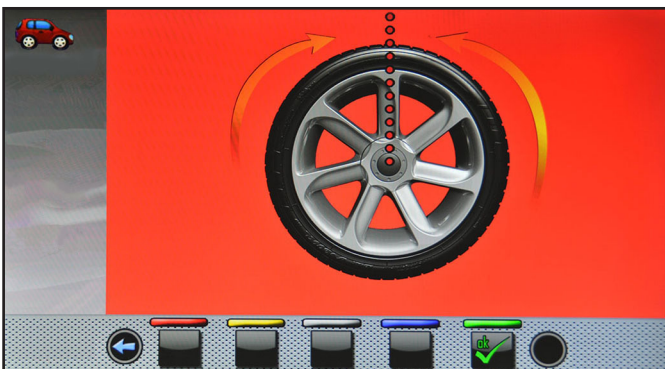


Once detected the unbalance values, verify that the machine displays the ability to use the "SPOKES" op-


tions (Fig. 43 ref. 4b). Press button  to shift to the next screen page.

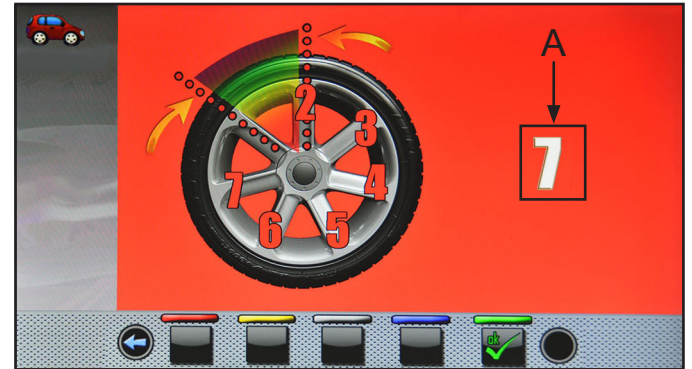


Press button  to enter the relevant function. On the monitor the next screen page will be displayed:



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

press the button  to confirm and continue.



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


button .

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




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



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

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

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

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

14.8.3 *matching mode*

Valid for car/motorcycle

The "MATCHING" procedure offsets strong unbalance, reducing the weight quantity to be fitted on the wheel to achieve balancing. This procedure permits reducing unbalance as much as possible by offsetting the tyre unbalance with that of the rim in any used program.


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




THE MATCHING PROCEDURE CAN BE CARRIED OUT ONLY IF THE STATIC UNBALANCE IS > 30 G.



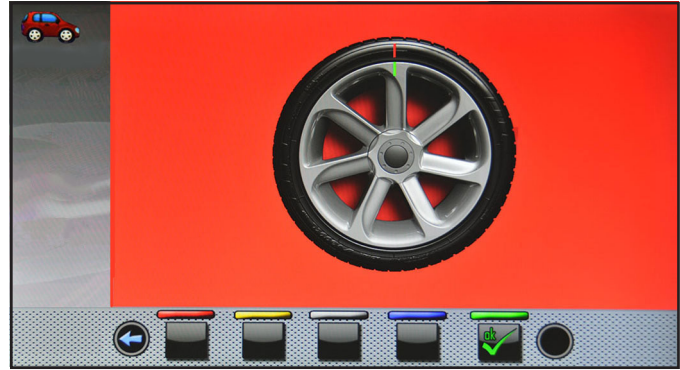
Once detected the unbalance values, verify that the machine displays the ability to use the "MATCHING" options (Fig. 43 ref. 4a).

Press button  to shift to the next screen page.



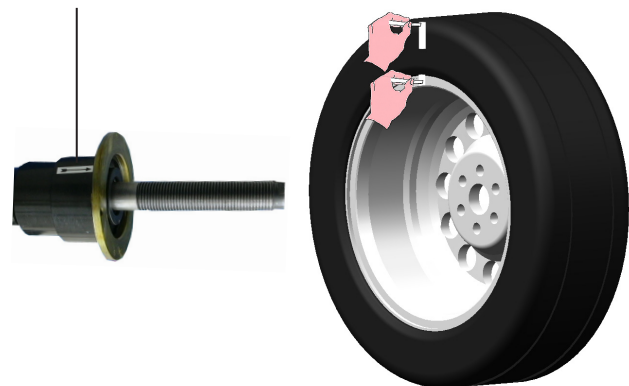
Press button  to enter the relevant function.

On the monitor the next screen page will be displayed:



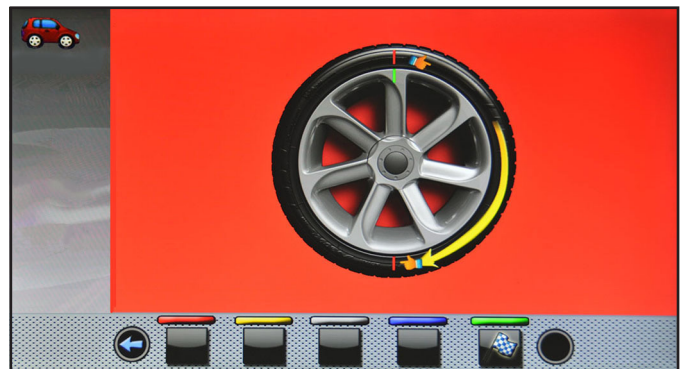
STEP 1. Move the slider on the flange to the "12 o'clock" position. Make a reference mark, using chalk for instance, on the rim and tyre, in line with the arrow on the flange, so as to be able to fit the rim back on in the same position on the machine.

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

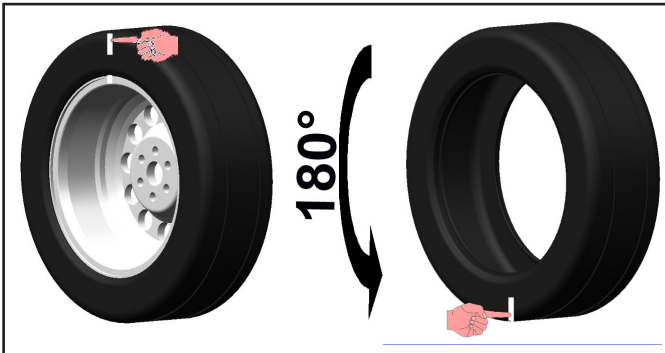


Press button  to confirm that step 1 has been completed.

On the display the next screen page will be displayed:

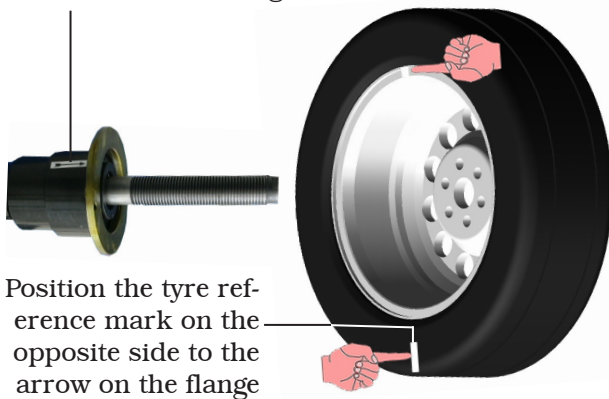


STEP 2. Remove the wheel from the wheel balancer. Remove the tyre and turn it on the rim through 180°.



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

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



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



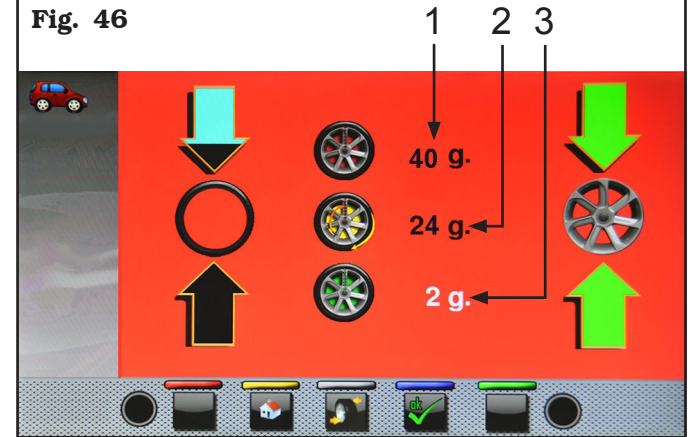
Press button  to confirm that step 2 has been completed.

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



After having fitted wheel back in position, close the protection guard to make an automatic wheel spin.

At the end of the spin the monitor will display the following screen:




In this screen you will see the dynamic unbalance that the wheel had before performing the operation (**Fig. 46 ref. 1**), the dynamic unbalance after having rotated the tyre through 180° compared to the rim (**Fig. 46 ref. 2**) and the unbalance which can be obtained following the directions of the machine (**Fig. 46 ref. 3**).

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

- Cancel the previously made reference marks. Put new signs, as described below.



- Press the button  to bring the wheel into position.



Make the reference mark on RIM at "12 o'clock" (see **Fig. 47**).

Reference mark on RIM

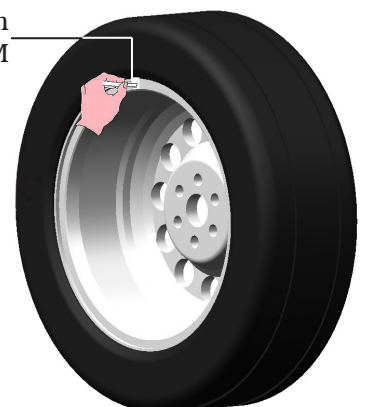



Fig. 47



- Press the button  to bring the wheel into position.



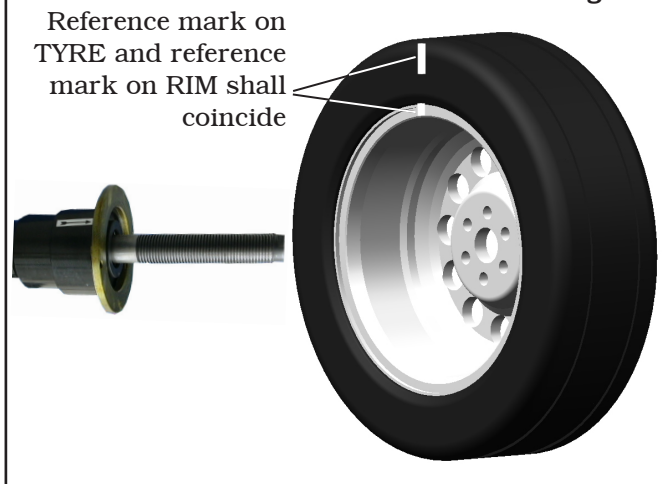
Mark the reference mark on the TIRE at "12 o'clock" position.



Press button  to confirm that step 3 has been completed.

STEP 4. Remove the wheel from the wheel balancer. Dismount and remount the tyre on the rim so as to bring the two reference marks (rim and tyre) to coincide. Refit the wheel on the balancer (see **Fig. 48**) with the two reference marks next to the arrow on the flange.

Fig. 48



Press button  to confirm that step 4 has been completed.

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

14.9 Special balancing programs

14.9.1 Pax


Valid for car

PAX mode is a special procedure specially devised to balance wheels using the "PAX System®". 2 adhesive weights on different planes are used on rim inner side.



To launch a PAX measurement, proceed as follows:


- 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 Chap. 12).

- Press  button from "Home" page. On the screen

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



Use the arrows  or  to select PAX mode.

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

- Close the protection guard to perform the automatic wheel spin.

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

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




The monitor show the weight required to correct the unbalance.

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

14.10 Recalculation function

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

To do this, proceed as described below:

- press key  to select a new balancing program through the arrows;
- take with the gauge arm the measures required by the selected program (if key  is missing);
- press button  to perform the re-calculation. The monitor will display the weights and the positions in which they will be applied.

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

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




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

14.11 Motorbike mode wheel balancing

By enabling "motorbike wheel balancing" function, the wheel balancers can also balance motorbike wheels. Before detecting the wheel sizes (see Par. 14.2.3), select motorcycle wheel balancing mode proceeding as described in paragraph 14.1.1.

The measurements acquisition selection screen will be displayed.



Use the arrows  or  to select the wished mode. At the end press push button .

The machine will be configured as follows to perform the measurement in the desired mode and on the screen will appear an indication showing the measures that will be acquired.

The "motorcycle" mode automatically recalculates the wheel distance measurement, increasing this by the length of the optional extension GAR181 A1.

To fit the extension (**Fig. 49 ref. 2**), first press the threaded ring nut (**Fig. 49 ref. 1**) in the hole provided and then screw the plastic terminal (see **Fig. 49**).



THE EXTENSION WILL ONLY HAVE TO BE SCREWED UP WHEN BALANCING IS PERFORMED IN "MOTORBIKE" MODE.

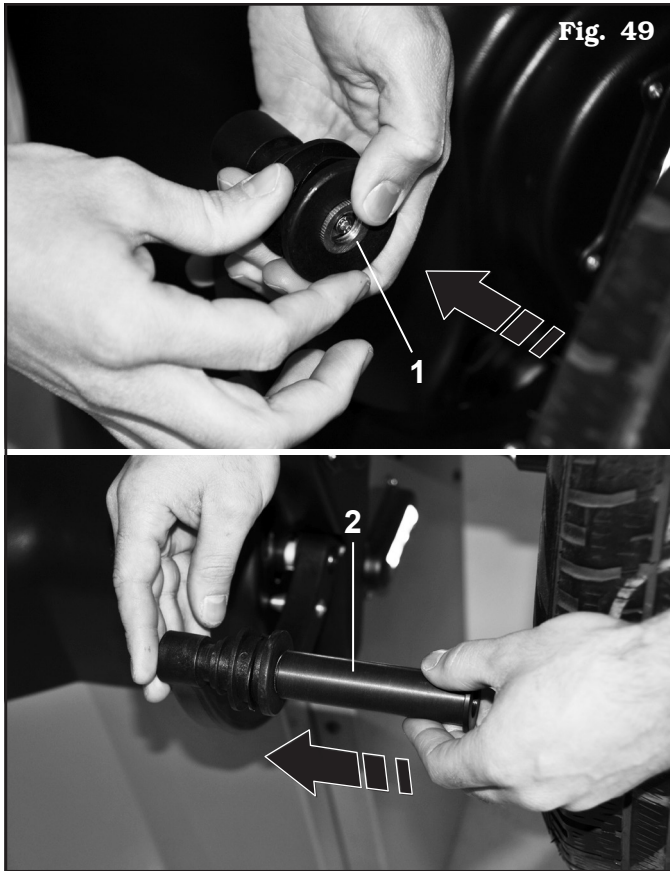


Fig. 49

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

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

15.0 USER MENU (OPTIONS AND CALIBRATION)

From the main page "Home" press the button



to move to the next screen page and the button



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



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

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

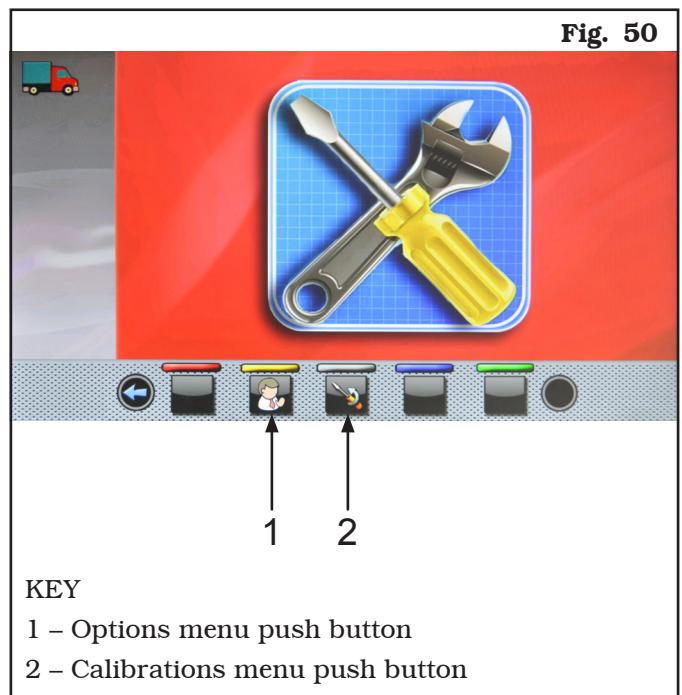


Fig. 50

KEY

1 - Options menu push button

2 - Calibrations menu push button

15.1 Options menu





Press the button  (Fig. 50 ref. 1), to display the screen pages to enable/disable options as shown below:





Press three times the button  to go to the next page of options.



To go back to the previous page of options, press two times the button .

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

and press the button .

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

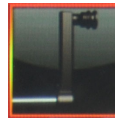
menu by pressing push button .

These options will be automatically stored.

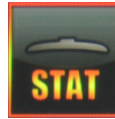
List of available options



Enable/disable the protection guard/spin (enabled on machine delivery).



Enable/disable the distance/diameter detection caliper (enabled on machine delivery).



Enable/disable the display of static threshold after each spin (enabled on machine delivery).



It allows you to set the thresholds for each of the balancing mode weights (see Par. 14.1.1).



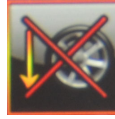
Enable/disable the pneumatic brake after the spin (enabled on machine delivery).



It allows you to change the unit of measurement of the weights from ounces/grams to grams and vice versa.



It allows you to enable/disable the width function detected by GAR (enabled when fitted as standard on the machine).



Enable/disable the positioning of weights at "6 o'clock" (disabled on machine delivery).



Enable/disable the lock function for caliper arm in position (disabled on machine delivery).



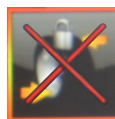
It allows you to change the unit of measure of the distance of the weights fitting point from mm to inches and vice versa.



Enable/disable the led light (enabled if mounted on the machine).



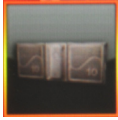
Enable/disable the functions of motor-bike balancing (disabled on machine delivery).



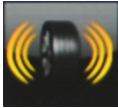
Enable/disable the encoder mounted on the spin motor (disabled on machine delivery).



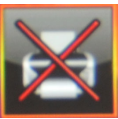
It allows you to change the unit of measurement of the rims width from mm to inches and vice versa.



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



Enable/disable the RUN-OUT functions (enabled on machine delivery).



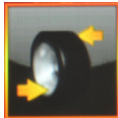
Enable/disable machine print functions (disabled on machine delivery).



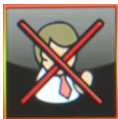
It allows you to change the unit of measurement of the rim diameter from mm to inches and vice versa.



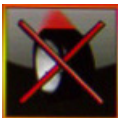
Enable/disable the functions of weights positioning laser (GAR328) (disabled on machine delivery).



Enable/disable the repositioning of the wheel at the end of the spin (enabled on machine delivery).



Enable/disable user function (disabled on machine delivery).



Enable/disable the function of weights positioning laser wheel inner/outer side at 12 hours (disabled by default).

15.1.1 Lower weight limit

Correction weight below a certain limit is normally shown equal to zero. This limit can be set from 500 g to 20 g (from 20.00 oz to 0.50 oz) (truck) or from 50 g to 2 g (from 2.00 oz to 0.05 oz) (car/motorcycle). At the end of the spin however, by pressing the button



, the weight can be displayed with max resolution of 10 g (0.50 oz) (truck) or 1 g (0.05 oz) (car/motorcycle).



BOTH THE RESOLUTION AND THE LOWER LIMIT FOR DYNAMIC WHEEL BALANCING MODE ARE SET AT 50 G (2.00 OZ) (TRUCK) OR AT 5 G (0.25 OZ) (CAR/MOTORCYCLE). THE LOWER LIMIT FOR ALL THE OTHER MODES IS SET AT 70 G (2.50 OZ) (TRUCK) OR AT 7 G (0.35 OZ) (CAR/MOTORCYCLE).

Truck

	Default values	Work range		
		g	oz	
1 → DYN OK	50	2.00	20 ÷ 500	0.50 ÷ 20.00
2 → STAT ALU OK	70	2.50	20 ÷ 500	0.50 ÷ 20.00
3 →	50	2.00	20 ÷ 500	0.50 ÷ 20.00
	100	100	0 - 50 - 100	0 - 50 - 100
			150 - 200	150 - 200
		%		%

KEY

- 1 – Lower weight limit in the DYNAMIC program to display "OK" (default value 50 g (2.00 oz))
- 2 – Lower weight limit in the ALU-STATIC program to display "OK" (default value 70 g (2.50 oz))
- 3 – Weights display resolution (default value 50 g (2.00 oz))



- Press the push button to shift among the field to modify.



- Press or to modify the highlighted value.



THE BLUE-COLOURED-VALUE IS THE ACTIVE FIELD AND THE MODIFIABLE ONE.

Car/motorcycle

		Default values		Work range	
		g	oz	g	oz
1	→	5	0.25	2 ÷ 50	0.05 ÷ 2.00
2		7	0.35	2 ÷ 50	0.05 ÷ 2.00
3		5	0.25	2 ÷ 50	0.05 ÷ 2.00
		100	100	0 - 50 - 100 150 - 200	0 - 50 - 100 150 - 200
		%		%	

KEY

- 1 – Lower weight limit in the DYNAMIC program to display "OK" (default value 5 g (0.25 oz))
- 2 – Lower weight limit in the ALU-STATIC program to display "OK" (default value 7 g (0.35 oz))
- 3 – Weights display resolution (default value 5 g (0.25 oz))

- Press the push button to shift among the field to modify.

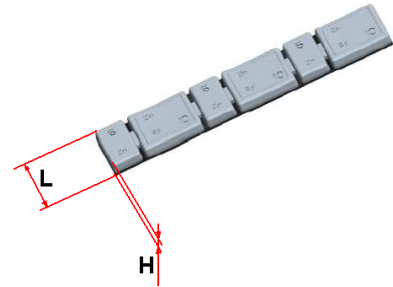
- Press or to modify the highlighted value.

THE BLUE-COLOURED-VALUE IS THE ACTIVE FIELD AND THE MODIFIABLE ONE.

15.1.2 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. 51**).

Fig. 51



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

		DEFAULT VALUES	
		CAR	TRUCK
1		4	8
2		19	20

KEY

- 1 – Weights thickness (height) (default value 4 mm CAR / 8 mm TRUCK)
- 2 – Weights width (default value 19 mm CAR / 20 mm TRUCK)

From this screen page, change the size values of weights

using the buttons and .

THE BLUE-COLOURED-VALUE IS THE ACTIVE FIELD AND THE MODIFIABLE ONE.

15.1.3 User management

The "User Management" function is disabled on machine delivery. To enable it, proceed as described in Para 15.1. After enabling, the icon will be displayed on every page (Fig. 52 ref. 1).

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

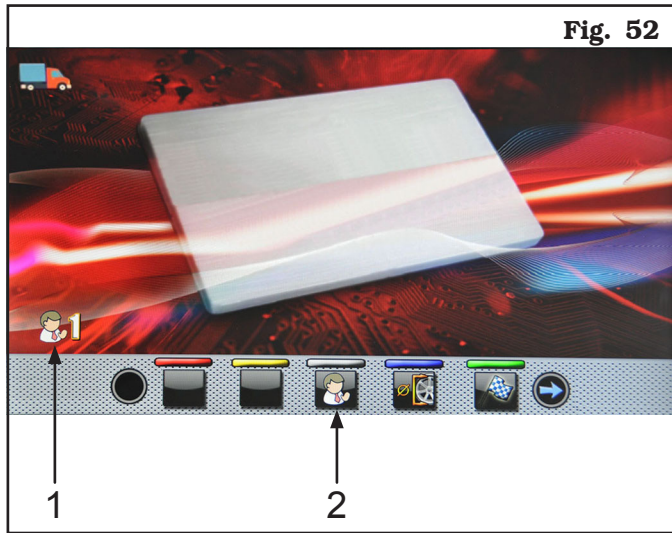




Fig. 52



Fig. 53

Press button  shown on the monitor (Fig. 52 ref. 2) or select the field (Fig. 53 ref. 1) and subsequently press the button  to display the screen page below:



KEY

A – Program used in the last carried out spin

B – Acquired measurements for the last carried out spin

Press any of the available numbers on the buttons at the bottom of the page to select the corresponding user. The system stores the data relating to the last performed spin according to the different operators. You can recall the desired user each time the program displays the specific button (Fig. 52 ref. 2 and Fig. 53 ref. 1). The measurements stored for each user are lost when the machine is switched off.

User management is valid for any wheel balancer function.




TO ENABLE OR DISABLE "USER MANAGEMENT" FUNCTION, SEE PARAGRAPH 15.1. IF THE FUNCTION IS DEACTIVATED, THE BUT-

TION  IS DISPLAYED.

15.2 Enabling of electronic Run-out measuring device (Optional)

From the main page "Home" press the button



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



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

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



1

KEY

1 - Options menu push button

Press button  to display the monitor screen to enable/disable the options as shown below:





Press three times the button  to go to the next page of options.




Fig. 54


1

To enable / disable individual functions simply high-

light the icon using the buttons  and/or 

and press the button .

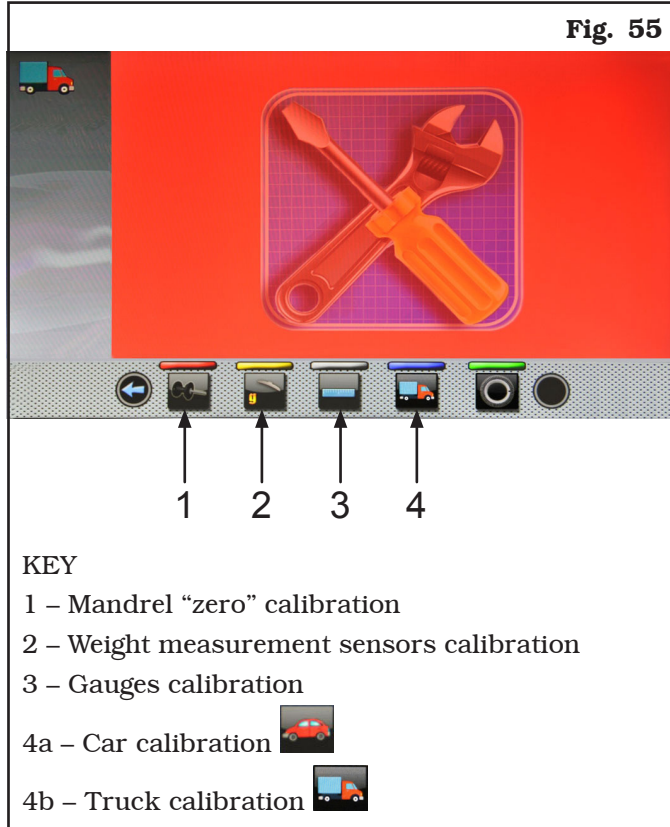
After you select/deselect the desired options, exit the

menu by pressing push button .

Remove symbol "X" on the icon (Fig. 54 ref. 1).

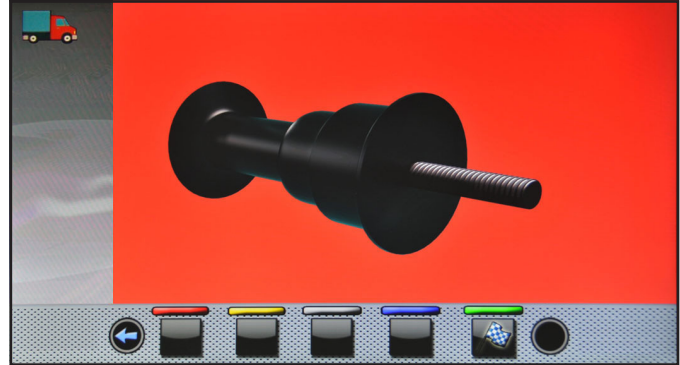
15.3 Machine calibrations


Press the button  (Fig. 50 ref. 2) to display the following screen page on monitor:



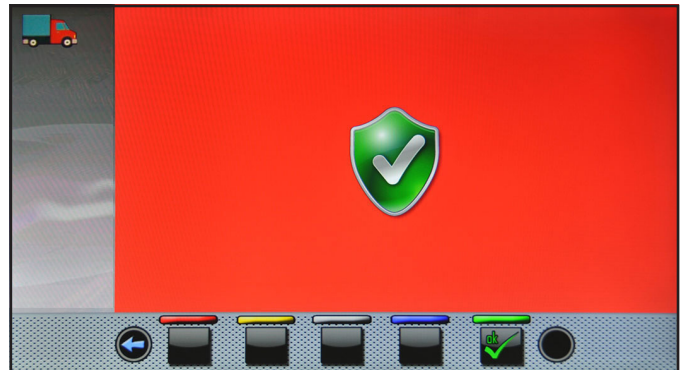
15.3.1 Mandrel “zero” calibration

Press the button  (Fig. 55 ref. 1) to display the following screen page on the monitor:




After making sure the mandrel is unloaded (no wheel or mounted accessories) and closed, press the button  and close the guard.

The mandrel will rotate for a few minutes until you see the screen below:





At this point the machine has all its measuring fields.

Press button  to return to calibrations screen page.


15.3.2 Weight measurement sensors calibration for car

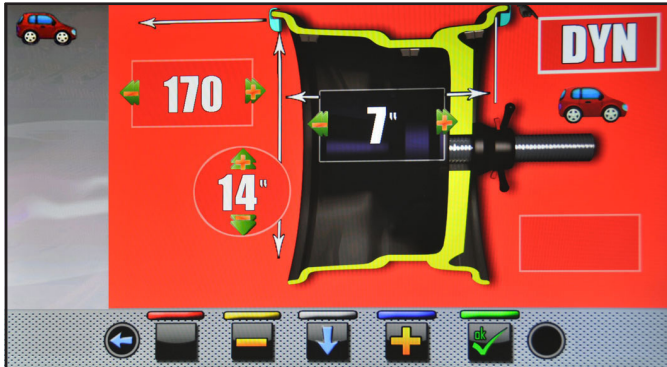



MAKE SURE THE BUTTON (FIG. 55 REF. 4) DISPLAYS “CAR” CALIBRATION . IN CASE “TRUCK” ICON  APPEARS, PRESS TO PASS TO “CAR” CALIBRATION.

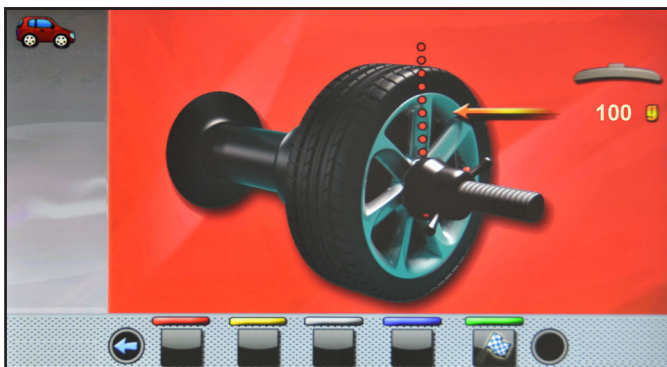



ASSEMBLE A BALANCED WHEEL ON THE MANDREL AND PERFORM MANDREL “ZERO” CALIBRATION PROCEDURE DESCRIBED IN PAR. 15.3.1 (WITH WHEEL MOUNTED).

- Press the button  (Fig. 55 ref. 2) to display the following screen page on the monitor:




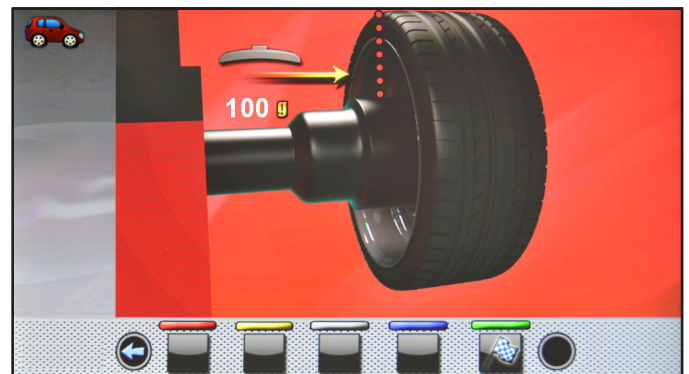
- Set the size of the rim on the mandrel using the distance-diameter caliper arm and the external data gauge (if present) or manual caliper.
- Press button  and close the guard to perform the 1st spin of the wheel without weights.
- At the end, on the monitor will appear the following screen, saying that you should apply a weight of 100 g to the "12 o'clock" outer rim.



 **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.**

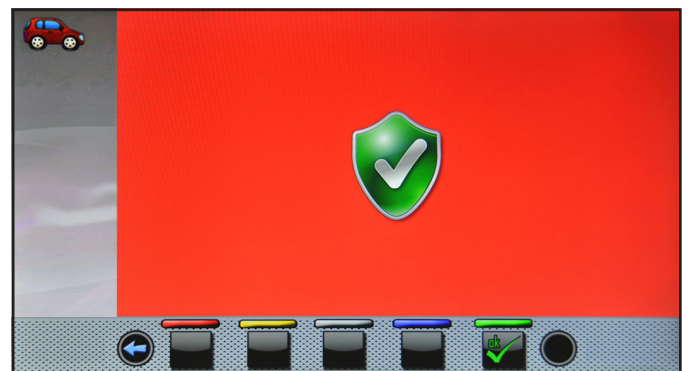
- Apply the weight and position it perfectly to the "12 o'clock".


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



- Turn manually the wheel until you have the weight of 100 g on the outer side at "12 o'clock".
- Press the brake pedal and hold it down during the whole the following operation to avoid unexpected rotation of the spindle.
- Remove the weight from 100 g from the outside of the wheel and apply it on the inner side at "12 o'clock".
- Close the guard to perform the 3rd spin of the wheel (100 g weight placed on the inside wheel).



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



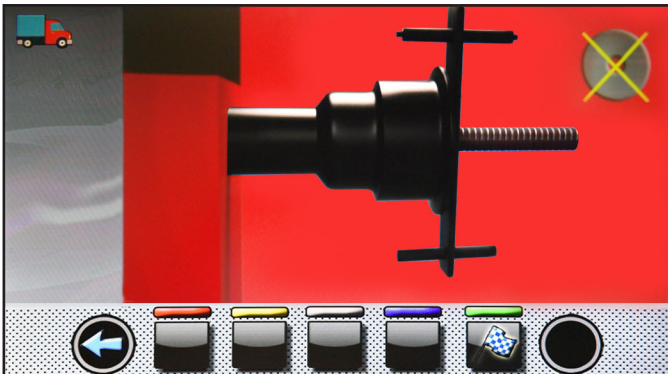
 **WHEN THE OPERATION IS CONCLUDED, REMOVE THE WHEEL FROM THE MANDREL AND PERFORM A COMPLETE CALIBRATION PROCEDURE "ZERO" MANDREL AS DESCRIBED IN PAR. 15.3.1.**

15.3.3 Weight measurement sensors calibration for truck



MAKE SURE THE BUTTON (FIG. 55 REF. 4) DISPLAYS "TRUCK" CALIBRATION . IN CASE "CAR" ICON  APPEARS, PRESS TO PASS TO "TRUCK" CALIBRATION.

- The following screen page will be displayed:

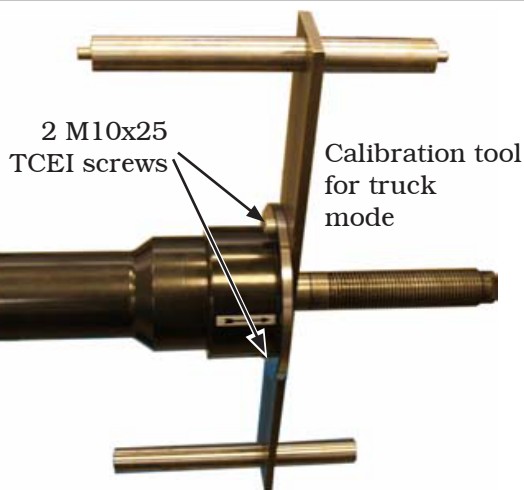



- Fit the calibration tool in as indicated in **Fig. 56**, using the two M10 screws provided.

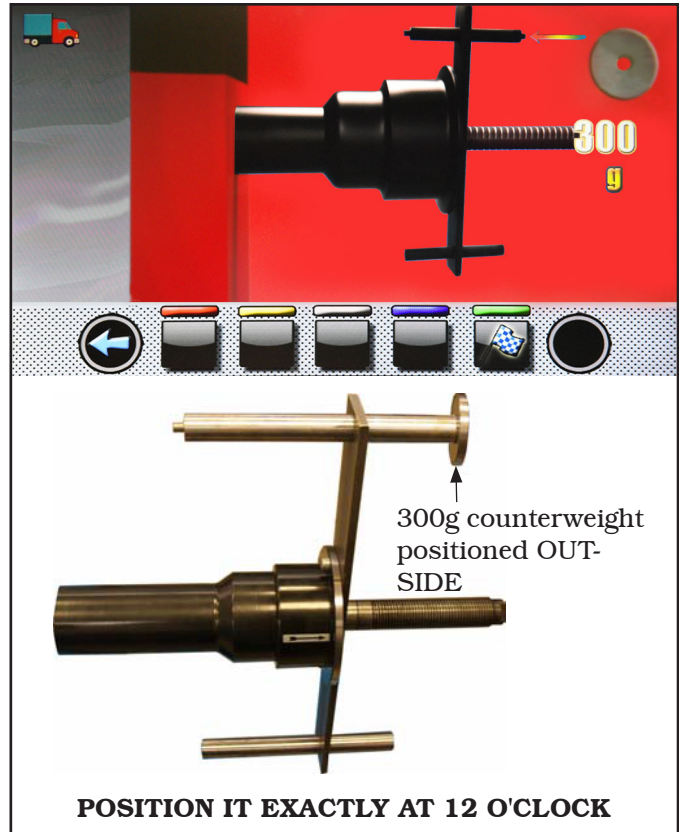


THE CALIBRATION TOOL MUST BE POSITIONED WITH THE LONGER CYLINDERS IN THE SHAFT INNER SIDE.

Fig. 56




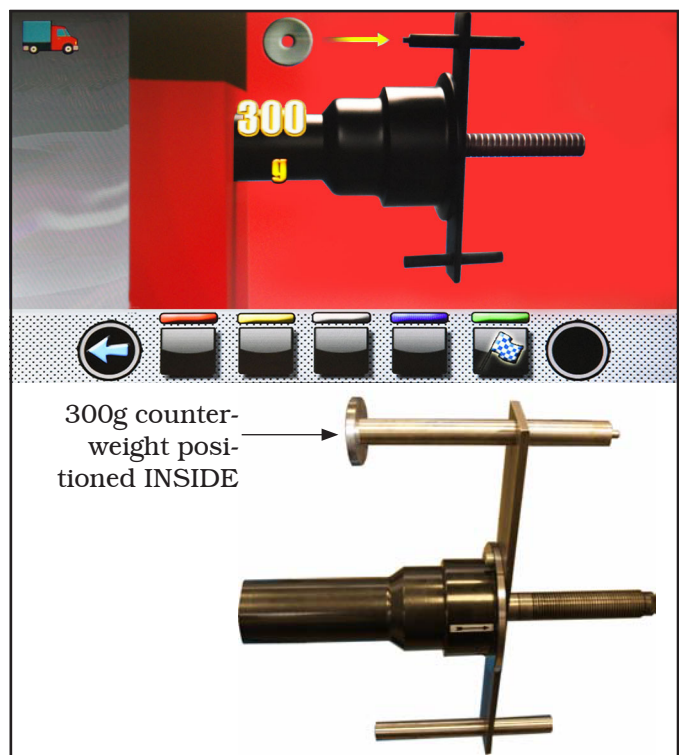
- Press the button  and close the guard to the perform the 1st spin of the calibration tool without weights.
- At the end, on the monitor will appear the following screen, saying that you should apply a weight of 300 g to the "12 o'clock" outer rim.
- After executing the spin, the program displays the following figure:




- Put the counterweight of 300 gr on the external side and place it exactly at 12 hours.



- Press the key  to perform a spin.
- At the end of the spin, remove the 300 gr. counterweight and place it on the internal side of the calibration tool, as indicated in the following figure.





- Press the button  to execute the spin, with the counterweight on the internal side.

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



WHEN THE OPERATION IS CONCLUDED, REMOVE THE CALIBRATION TOOL FROM THE MANDREL AND PERFORM A COMPLETE CALIBRATION PROCEDURE "ZERO" MANDREL AS DESCRIBED IN PAR. 15.3.1.

15.3.4 Gauge calibration




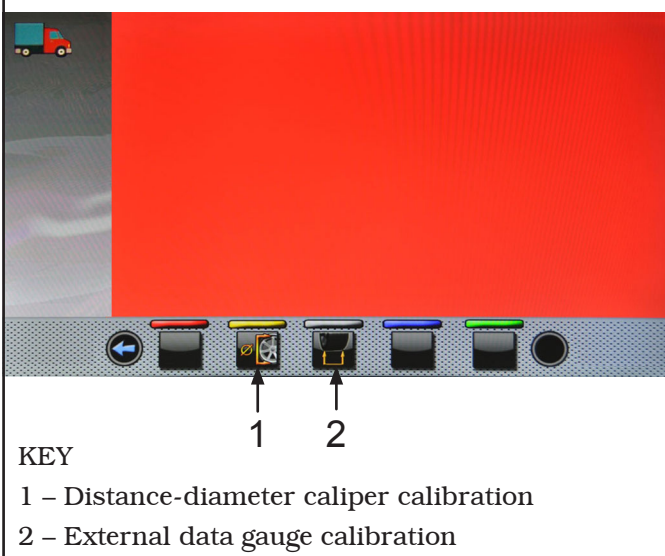

Press the button  (Fig. 55 ref. 3) to display the following screen page on the monitor:

Fig. 57



Distance-diameter caliper calibration

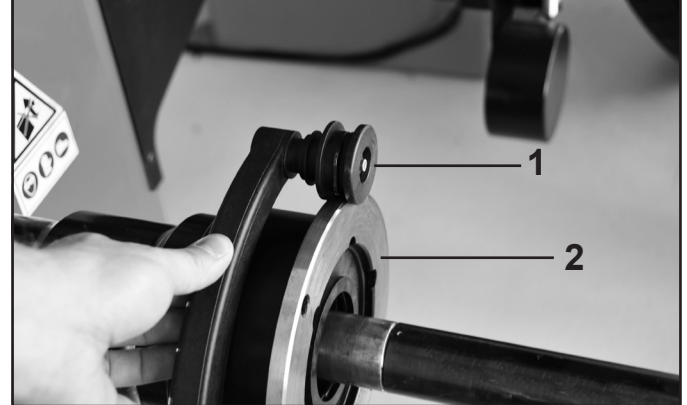


Press the button  (Fig. 57 ref. 1) to display the following screen page on the monitor:



Place the gauge (Fig. 58 ref. 1) on the mandrel flange (Fig. 58 ref. 2).

Fig. 58



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

Fig. 59



- The value next to the symbol "scale" (Fig. 59 ref. 1) must be equal to the value positioned above the gauge (Fig. 59 ref. 2) ± 1 mm.



- Press push button

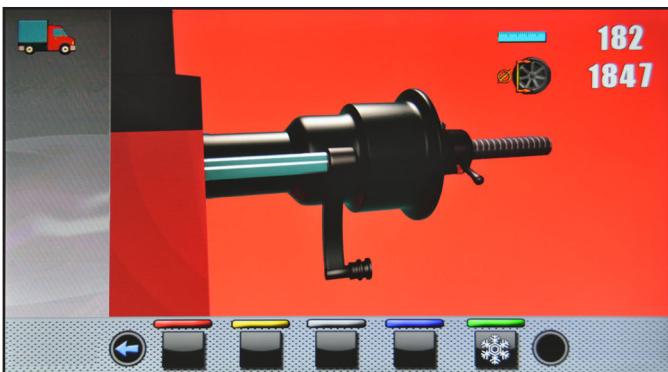
The following screen will appear on the monitor:



- Place the gauge as shown in the following figure:



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

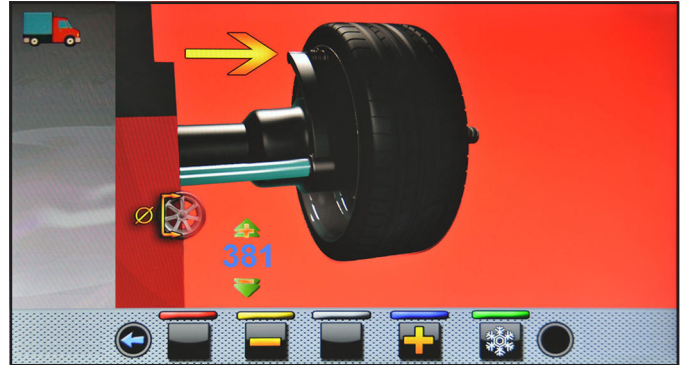


- Place the gauge against the mandrel in the lower part of it but on a smaller diameter than before as indicated on the image on the monitor.



- Press push button

On the monitor the next screen page will be displayed:



Measure the exact diameter of a rim (see **Fig. 60**) and place it on the screen on the monitor by pressing the



 or  buttons.



Fig. 60


- Fit the measured wheel on the balancer and lock it on the mandrel.

- Turn the gauge ferrule (**Fig. 61 ref. 1**) on the inner edge of the wheel upwards (see **Fig. 61**).



Fig. 61




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

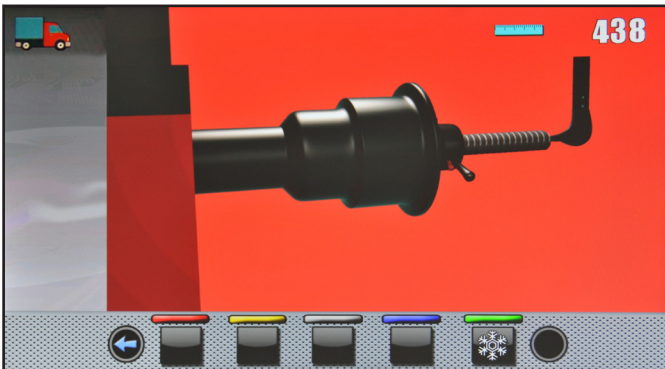


The calibration of the distance-diameter caliper is finished.

Calibration of external data gauge (Optional)



Press the button  (Fig. 57 ref. 2) to display the following screen page on the monitor:



! TO PERFORM THIS CALIBRATION, THE MANDREL MUST BE UNLOADED (NO WHEEL OR ACCESSORIES MOUNTED ON IT) AND CLOSED.

Move the tip (Fig. 62 ref. 1) just next the mandrel's edge (with the pneumatic mandrel, move it just next the upper edge of the closed mandrel), as illustrated in Fig. 62.

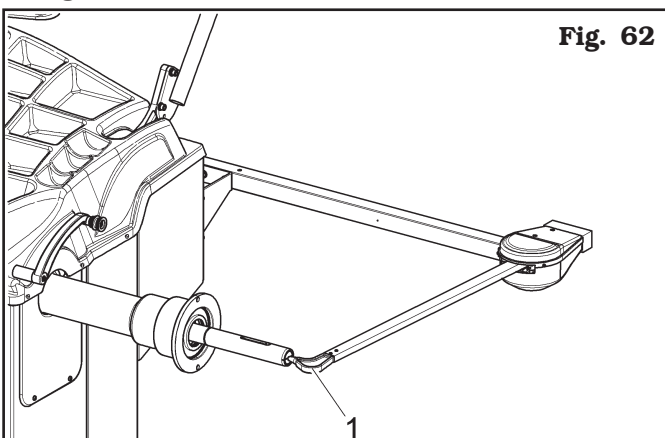

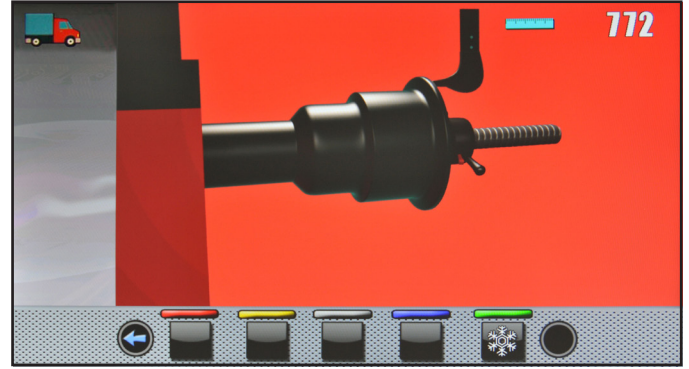


Fig. 62



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



Place the tip (Fig. 63 ref. 1) just next the flange's outer plane, as illustrated in Fig. 63.

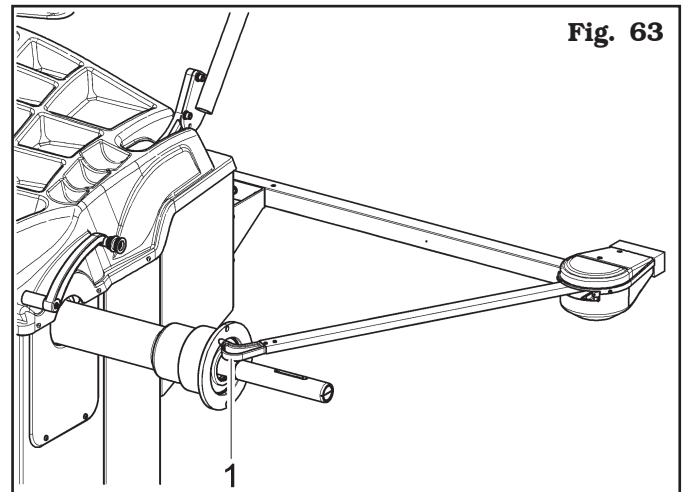

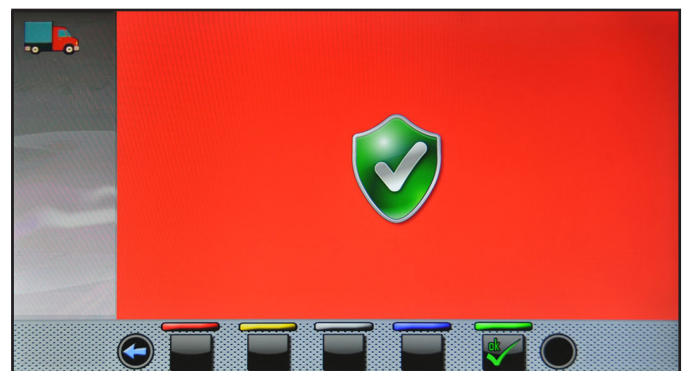


Fig. 63



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




The calibration of the automatic width measuring device is finished.

16.0 ERROR SIGNALS


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

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	Mandrel calibration error
8	Piezo calibration values out of tolerance
9	Wheel rotations not completed
10	Pneumatic mandrel open
11	Incorrect gain calibration
12	Distance-diameter caliper value not released
13	Distance-diameter caliper value not released
14	Firmware error
15	Runout samples not sufficient
17	External data gauge enabled
27	Rotate the wheel to make a complete rotation
28	Piezo calibration error
29	Distance out of tolerance level
31	Distance-diameter caliper released
32	Parameters format incompatible


17.0 ROUTINE MAINTENANCE



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



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



PNEUMATICALLY UNPLUG THE MACHINE


To guarantee the efficiency and correct functioning of the machine, it is essential to carry out daily or weekly cleaning and weekly routine maintenance, as described below.

Cleaning and routine maintenance must be conducted by authorized personnel and according to the instructions given below.

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

DO NOT BLOW IT WITH COMPRESSED AIR.

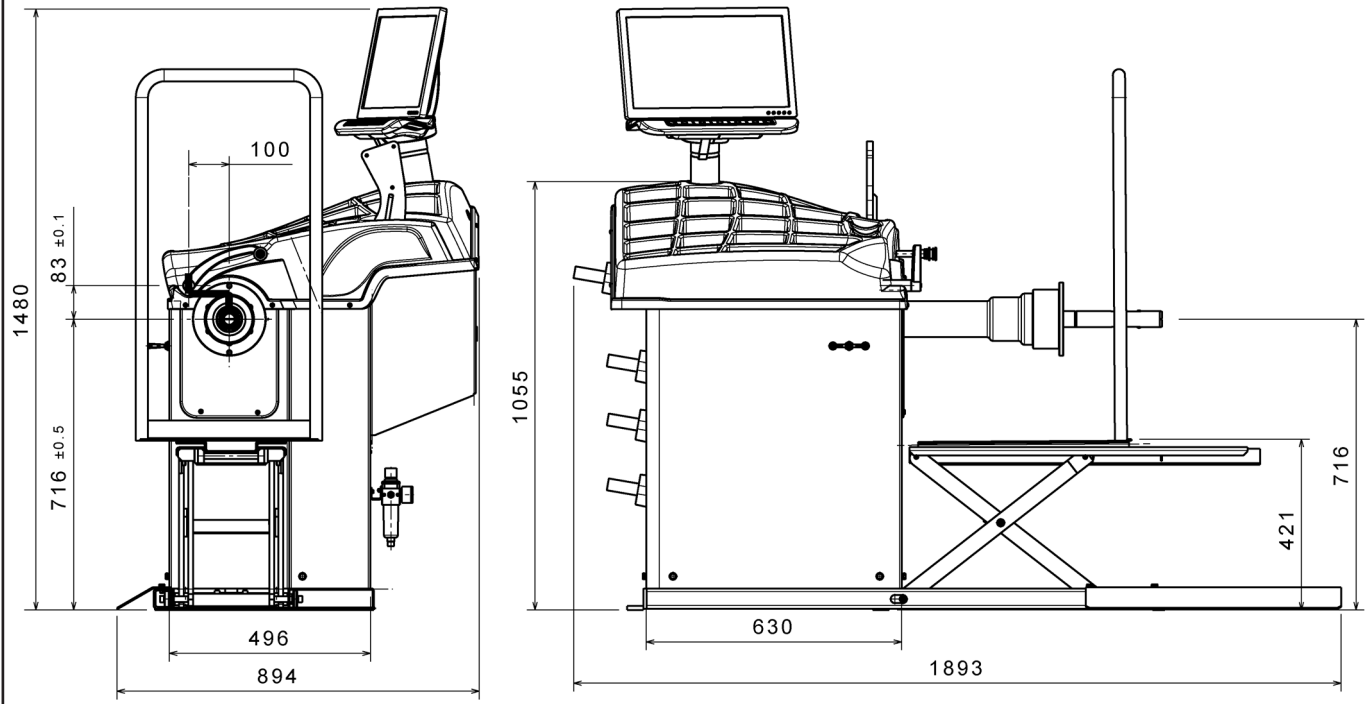
- Do not use solvents to clean the pressure regulator.



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!!

18.0 TECHNICAL DATA

Wheel max. weight (Kg):	200
Max. absorbed voltage (W):.....	250
Power supply:.....	110V 60Hz 1 Ph
Balancing precision (g):.....	± 1 (car)
.....	± 10 (truck)
Balancing precision (oz):.....	± 0.05 (car)
.....	± 0.50 (truck)
Balancing speed (rpm):	100 (car)
.....	80 (truck)
Rim width setting (inches):.....	1,5" ÷ 22"
Rim diameter setting (inches):.....	10" ÷ 26"
.....	(manually up to 30")
Max wheel diameter inside protection (mm):....	1300
Max wheel width inside protection (mm):.....	700
Sound emission level (dBA):.....	<70
Cycle time (sec):	6
Weight (Kg):	215
Air supply (wheel lifting device) (bar):	4 ÷ 10
Unbalanced value range (g):	0 ÷ >990 (car)
Unbalanced value range (g):	0 ÷ >1990 (truck)
Unbalanced value range (oz):.....	0 ÷ >35.00 (car)
Unbalanced value range (oz):.....	0 ÷ >70.00 (truck)
Car rim max. distance (mm):	400

18.1 Dimensions**Fig. 64**

19.0 STORING

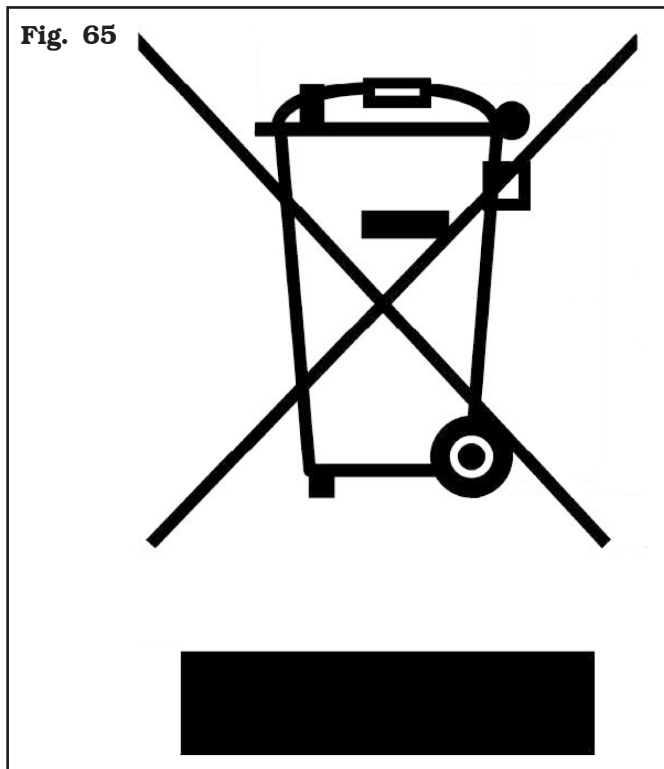
If storing for long periods disconnect the main power supply and take measures to protect the machine from dust build-up. Lubricate parts that could be damaged from drying out.

20.0 SCRAPPING

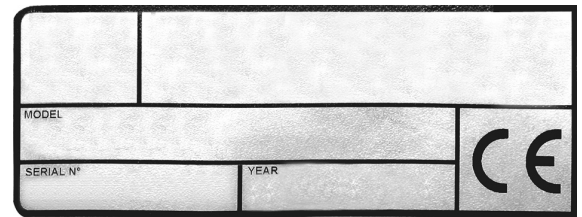
When the decision is taken not to make further use of the machine, it is advisable to make it inoperative by removing the connection pressure hoses. The machine is to be considered as special waste and should be dismantled into homogeneous parts. Dispose of it in accordance with current legislation.

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

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



21.0 REGISTRATION PLATE DATA



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



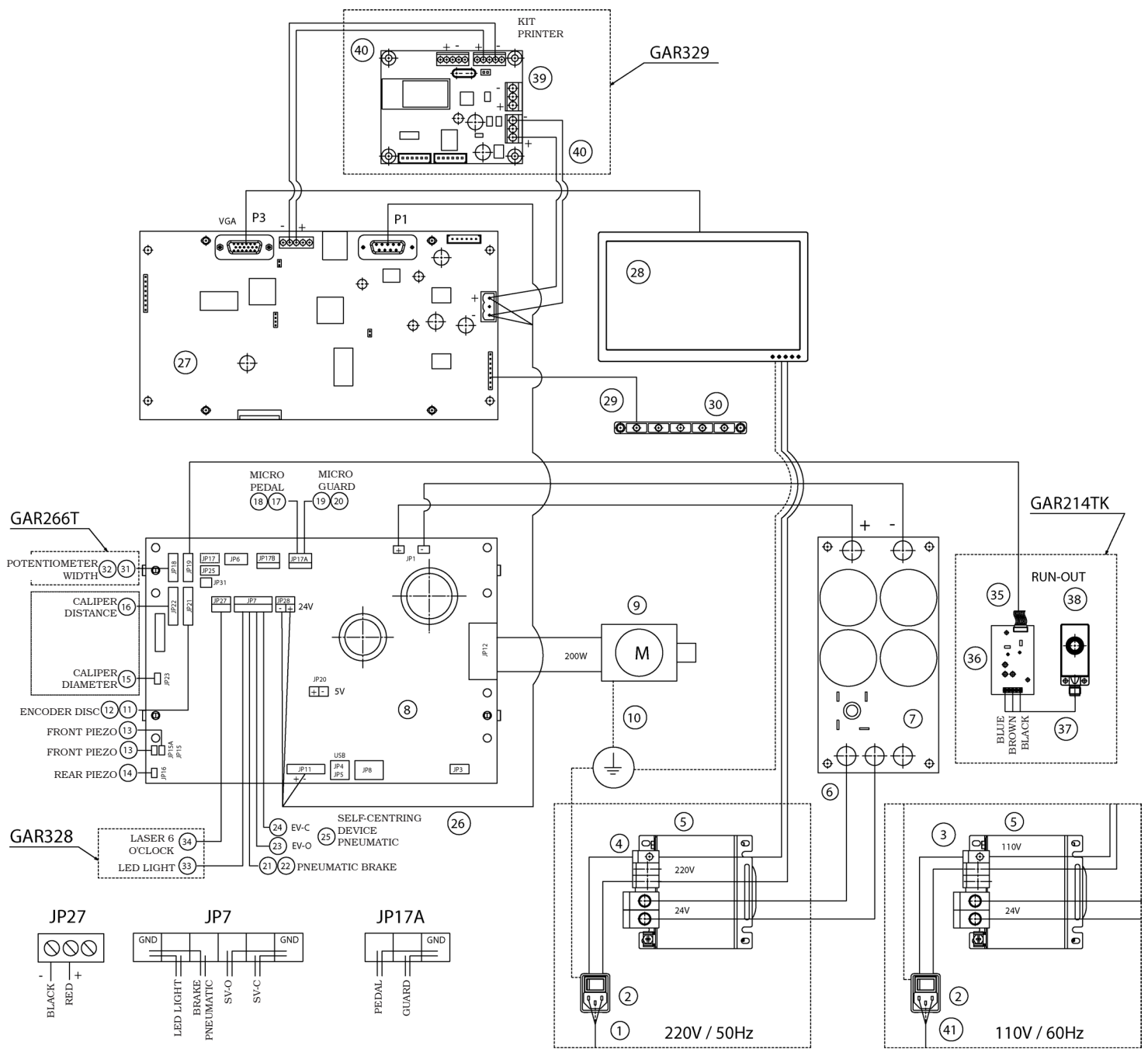
ATTENTION: TAMPERING WITH, CARVING, CHANGING ANYHOW OR EVEN REMOVING MACHINE IDENTIFICATION PLATE IS ABSOLUTELY FORBIDDEN; DO NOT COVER IT WITH TEMPORARY PANELS, ETC., SINCE IT MUST ALWAYS BE VISIBLE.

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

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

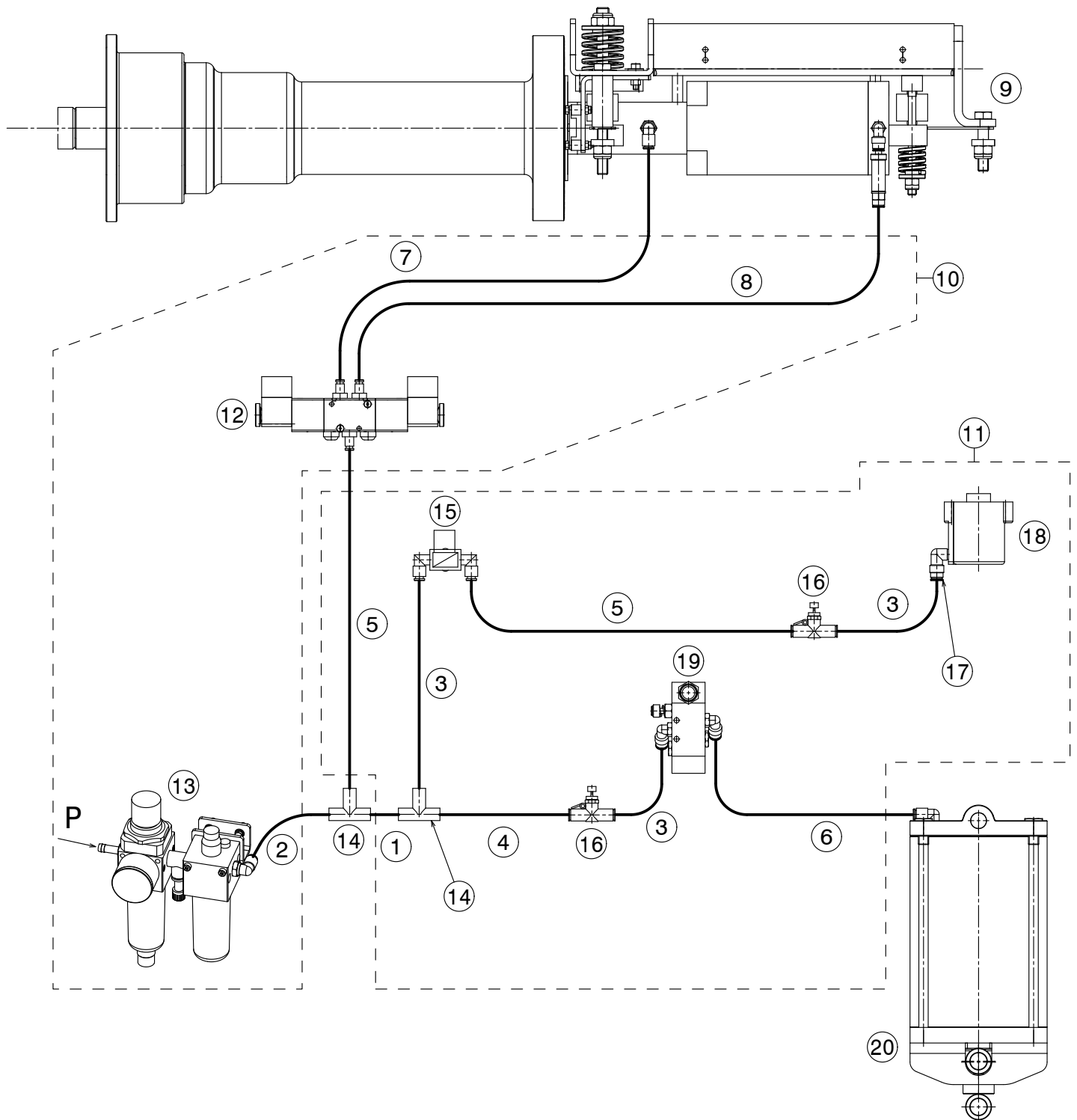
22.0 FUNCTIONAL DIAGRAMS

Here follows a list of the machine functional diagrams.



KEY

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> 1 - Power supply cable 2 - Wired switch with plug 3 - USA fuse 4 - Fuse 5 - Transformer 6 - Power card transformer cable 7 - Power card 8 - Power card kit 9 - Motor 10 - Motor support ground cable 11 - Wheel position sensor cable 12 - Encoder card 13 - Front piezo cables 14 - Rear piezo cables 15 - Potentiometer with cable | <ul style="list-style-type: none"> 16 - Optical line card 17 - Cable for pedal micro (only for pneumatic mandrel models) 18 - Pedal switch (only for pneumatic mandrel models) 19 - Cable for wheel micro protection 20 - Limit switch 21 - Cable for solenoid valve SV-B 22 - Solenoid valve mounting SV3 23 - Cable for solenoid valve SV-O (only for pneumatic mandrel models) 24 - Cable for solenoid valve SV-C (only for pneumatic mandrel models) 25 - Solenoid valve mounting SV5 26 - 24V power supply cable + serial 27 - Monitor card kit | <ul style="list-style-type: none"> 28 - Monitor 20" 29 - 7-keys keyboard extension cable 30 - 7-keys keyboard 31 - Width potentiometer extension cable 32 - Potentiometer with shielded cable 33 - Led light 34 - Line laser (with cable) 35 - Ultrasound sensor extension cable 36 - Run-out card 37 - Cable for ultrasound 38 - Ultrasound sensor 39 - CAN to BTH 40 - 2-wires cable 41 - USA power supply cable |
|--|--|--|



KEY

- | | |
|----------------------------------|------------------------------------|
| 1 - Rilsan Pipe 6x4 bl L=50 | 12 - Solenoid valve unit |
| 2 - Rilsan Pipe 6x4 bl L=150 | 13 - Air filter mounting |
| 3 - Rilsan Pipe 6x4 bl L=200 | 14 - Union |
| 4 - Rilsan Pipe 6x4 bl L=350 | 15 - Solenoid valve mounting |
| 5 - Rilsan Pipe 6x4 bl L=500 | 16 - Flow regulator |
| 6 - Rilsan Pipe 6x4 bl L=700 | 17 - L-union 6 1/8" |
| 7 - Rilsan Pipe 6x4 bl L=800 | 18 - Cylinder |
| 8 - Rilsan Pipe 6x4 bl L=900 | 19 - Distributor |
| 9 - Pneumatic rotating unit | 20 - Pneumatic cylinder 125x30x137 |
| 10 - Pneumatic tightening system | |
| 11 - Pneumatic system | |

**PNEUMATIC CONNECTION
DIAGRAM**

1294-M017-6

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