USE AND MAINTENANCE MANUAL

TC 65

(HANDSPIN WHEEL BALANCER)

REVIEW 00
B12-121

TRUCK CENTER

CONTENTS

1. INTRODUCTION

1.1. INTRODUCTION

Thank you for purchasing a product from the line of wheel balancer. The machine has been manufactured in accordance with the very best quality principles. Follow the simple instructions provided in this manual to ensure the correct operation and long life of the machine. Read the entire manual thoroughly and make sure you understand it.

1.2. MANUAL KEEPING

For a proper use of this manual, the following is recommended:

- Keep the manual near the lift, in an easily accessible place.
- Keep the manual in an area protected from the damp.
- Use this manual properly without damaging it.
- Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

This manual is an integral part of the manual: it shall be given to the new owner if and when the machine is resold.

TO THE READER

Every effort has been made to ensure that the information contained in this manual is correct, complete and up-to date. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes due the development of the product, at any time.

2. GENERAL INFORMATION

2.1. TYRE CHANGER IDENTIFICATION

Serial number plate attached to the equipment must not be removed. It will facilitate the identification of it when technical assistance is required.

2.2. DESCRIPTION

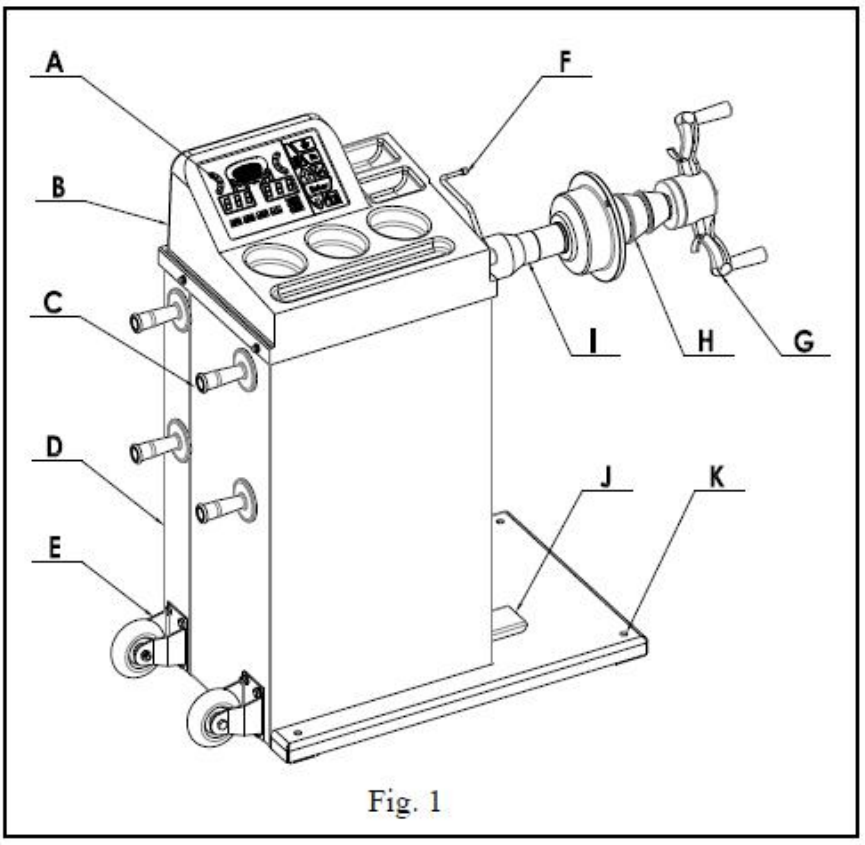


Fig. 1

A: Control panel
B: Wheel weight tray/cover
C: Cone holder
D: Machine body
E: Mobile wheels
F: Measuring gauge
G: Handspin locking nut
H: Cone adaptor t
I: Balancing shaft
J: Foot brake
K: Foot

2.3. TECHNICAL SPECIFICATION

Max. Wheel weight ……..…65 kg
Wheel diameter ……33”
Rim diameter ……10” - 26” (255-660mm)
Wheel width ……1,5” - 20” (39 - 510mm)
Balancing precision …….. ±1
Resolution .....1,4 degrees
Cycle time ……7s
Handspin speed ……100 - 150 rpm
Power Supply ……110V-230V/1ph, 12V-24VDC
Noise level in working condition……<70 dB (A)

2.4. PACKING

- The machine must be transported in its original packaging and kept in the position shown on the package itself.
- The packaged machine may be moved by means of a fork lift truck of suitable capacity. Insert the forks at the points shown in figure 2.

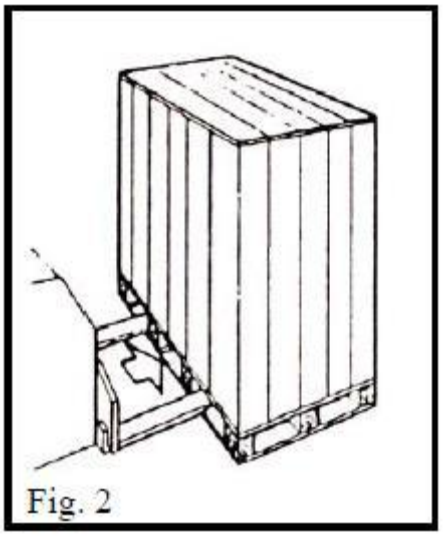


Fig. 2

3. INSTALLATION

3.1. SPACE REQUIRED

- The balancer must be located on a flat floor of solid construction, preferably concrete. The balancer must sit solidly on its three feet. If the balancer is not leveled, the balancer will not function properly and may produce inaccurate balance readings.
- Select a location for the balancer that provides a level, solid floor, and adequate clearance around and above the balancer. The place of installation must also provide at least the space shown in pictures Fig. 3 and Fig. 4 so as to allow all parts of the machine to operate correctly and without any restriction.
- Make sure the location selected has enough room above and behind the machine so the wheel guard can be raised completely. The location must also provide working room for mounting and removing wheels. Make sure the area has adequate lighting.
- If the machine is installed outside it must be protected by a lean-to.

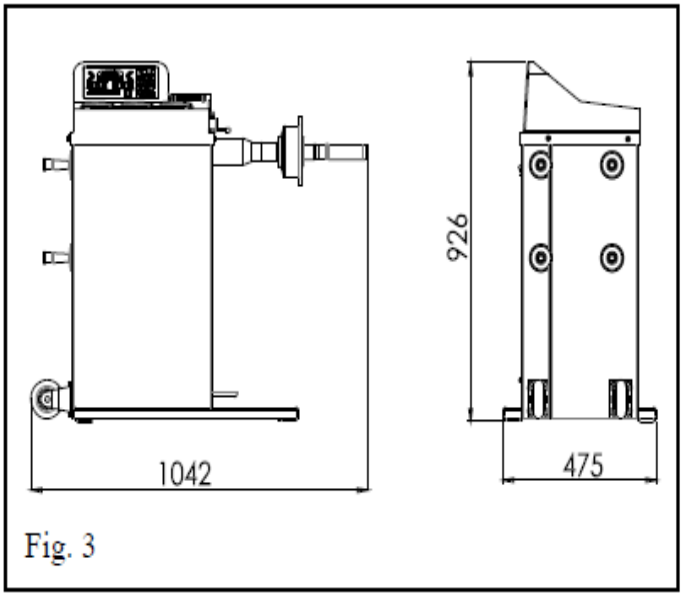


Fig. 3

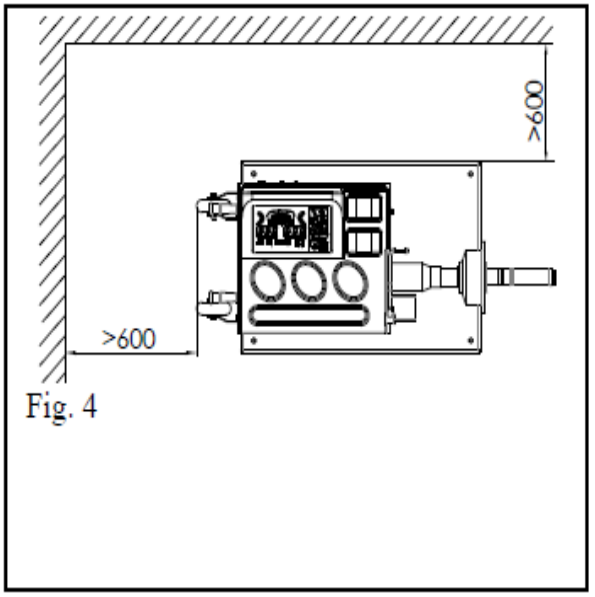


Fig. 4

3.2. ELETRIC CONNECTION

- The machine is supplied with a single phase mains cable plus earth (ground) and AC/DC adaptor. The machine include the electric plug conforms to the voltage of the machine, in compliance with the regulations in force.
- Check to make sure the characteristics of your systems correspond to those required by the machine. The supply voltage (and mains frequency) is given on the machine nameplate. It cannot be changed.
- Connect the machine to the main electric power supply via the AC/DC adaptor.
- Or connect the machine directly to the 12V-24V battery with DC power plug supplied with the machine.
- The machine should not be started up without proper earthing.

4. SAFETY

4.1. GENERAL SAFETY PRECAUTIONS

The machine may only be used by specially trained and authorized expert personnel.

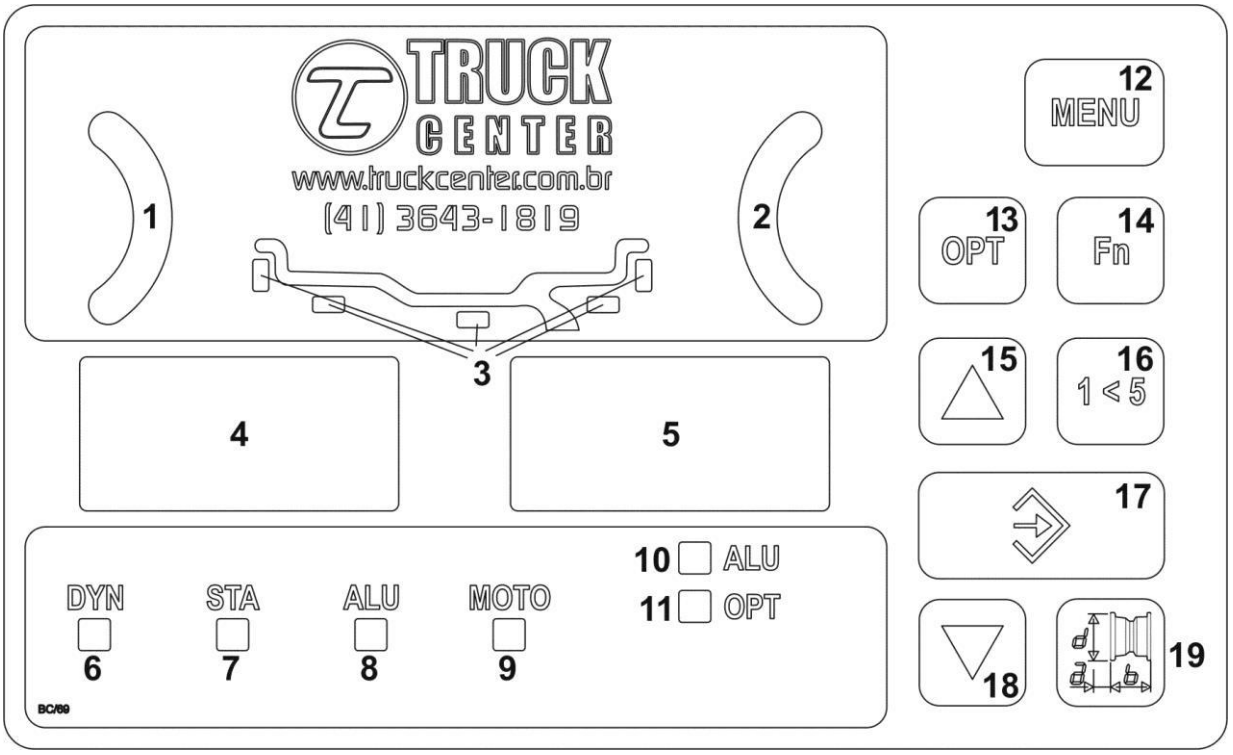
- The wheel balancing machine should only be used by duly authorized and trained personnel.
- The wheel balancing machine should not be used for purposes other than those described in the instruction manual.
- Under no way should the wheel balancing machine be modified except for those modifications made explicitly by THE MANUFACTURER.
- Never remove the safety devices. Any work on the machine should only be carried out by specialist personnel.
- Avoid using strong jets of compressed air for cleaning.
- Use alcohol to clean plastic panels or shelves (AVOID LIQUIDS CONTAINING SOLVENTS).
- Before starting the wheel balancing cycle, make sure that the wheel is securely locked on the adapter.
- The machine operator should avoid wearing clothes with flapping edges. Make sure that unauthorized personnel do not approach the machine during the work cycle.
- Avoid placing objects inside the base as they could impair the correct operation of the machine.
- Stop key for stopping the wheel under emergency conditions.
- A wheel guard of high impact plastic that is designed to prevent the counterweights from flying out in any directing except toward the floor.
- A switch interlock system prevents the machine from starting if the guard is not lowered and stops the wheel whenever the guard is raised.
- Chains, bracelets, loose clothing or foreign objects in the vicinity of the moving parts can represent a danger for the operator.

5. INTENDED USE

- This wheel balancer has been designed and manufactured exclusively for balancing wheel with a maximum diameter of 840mm and maximum weight of 65kg. The calibration system is sufficient to cover different wheels from motorcycles to cars.
- In particular THE MANUFACTURER cannot be held responsible for any damage caused through the use of wheel balancer for purposes other than those specified in this manual, and therefore inappropriate, incorrect and unreasonable.

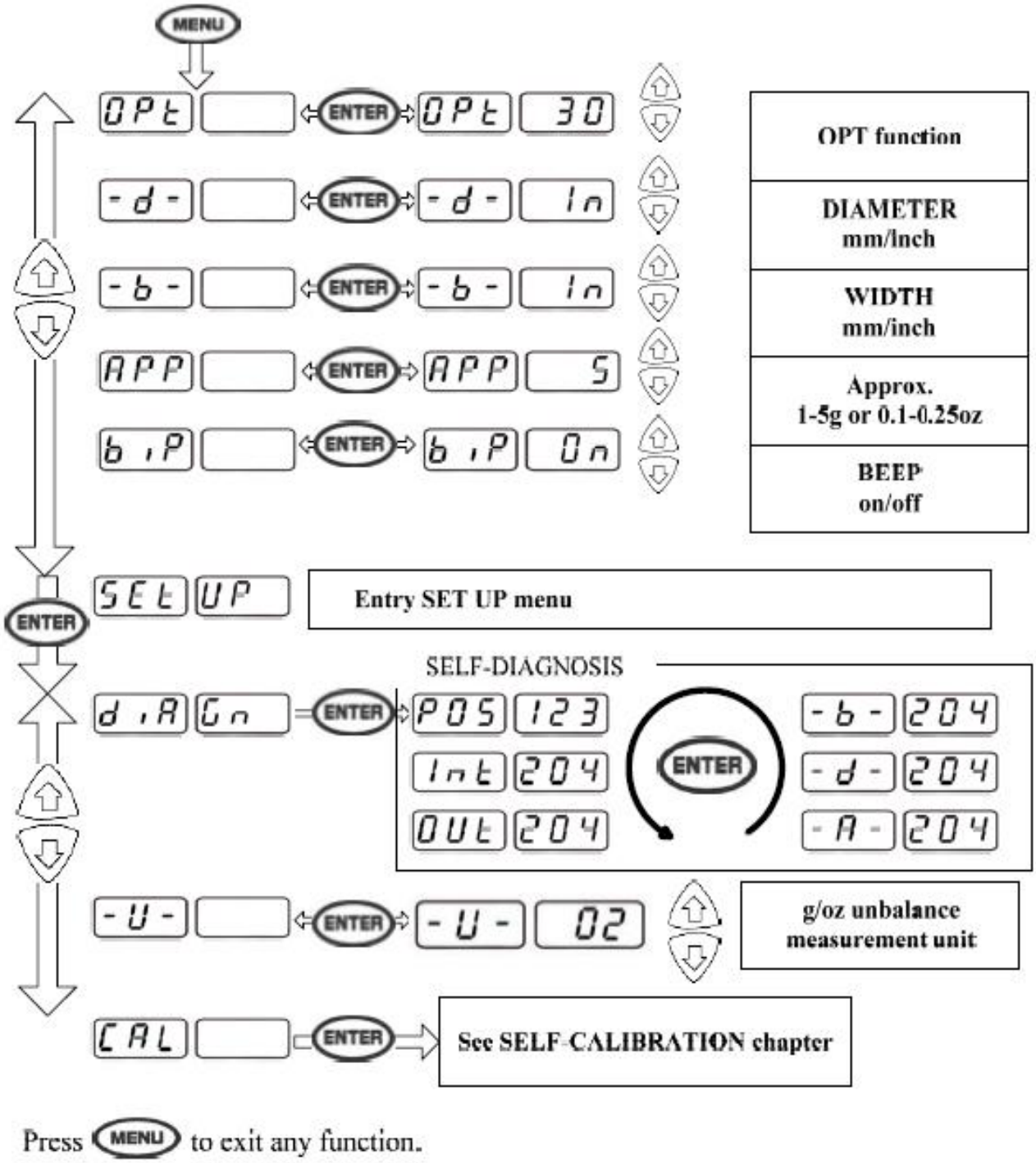
5.1. CONTROL PANEL

Press buttons only with your fingers. Never use the counterweight pincers or other pointed objects. When the beep signal is enabled, pressing of any push button is accompanied by a "Beep".



1. LED indicator, POSITION OF UNBALANCE inside
2. LED indicator, POSITION OF UNBALANCE outside
3. Indicators, position of application for correction weights
4. Digital readouts, AMOUNT OF UNBALANCE inside
5. Digital readouts, AMOUNT OF UNBALANCE outside
6. Indicator, DYNAMIC mode selected
7. Indicator, STATIC mode selected
8. Indicator, ALU mode selected
9. Indicator, MOTORCYCLE WHEEL mode selected
10. Indicator, ALU☆mode selected (this function is not available in this model.
11. Indicator, OPT.
12. Push button, MENU/EXIT
13. Push button, SPLIT/OPT selection (Split function is not available in this model)
14. Push button, FUNCTION selection
15. Push button, forward/+
16. Push button, unbalance reading < 5g (25oz)
17. Push button, confirm
18. Push button, backward/- M. Indicator, Split
19. Push button, A/B/D measurement selection

5.2. MENU FUNCTIONS (fig. 7)



6. OPERATION

The initial screen when switching on is in DYNAMIC mode.

- Mount the wheel on the shaft of machine. Use the most appropriate mounting method. Always remove any weight attached to the wheel.
- Switch on the machine.
- Measure and entry the wheel data.
- Select the most appropriate balancing mode. Start the machine.
- After the machine stops, the unbalanced amounts are shown on the digital readouts.
- Rotate the wheel by hand at 100-150rpm until is displayed in the LED indicator.
- Break the machine.
- Apply weights on the position (12 o'clock position) for correction.
- With the counterweights correctly in position, restart the machine to check the correct balancing of the wheel.
- Reset the balancing mode referring to Fig. 7.

6.1. MOUNTING WHEEL ON SHAFT

- Select the most appropriate mounting method for the wheel you are balancing. Using the proper method ensures secure mounting and safe balancer operation, and prevents damage to the wheel.
- On most wheels, the inner side of the wheel hub usually has the most uniform surface for wheel balancing. Always center the wheel by the most uniform shaped side of the hub to achieve the most accurate balance.
- Regardless of mounting type, always make sure that the wheel is forced firmly against the shaft faceplate and that the quick locking nut is tightened. To assist in centering the wheel properly, rotate the wheel and the shat while tightening the nut.

6.2. STANDARD BACK CONE MOUNTING

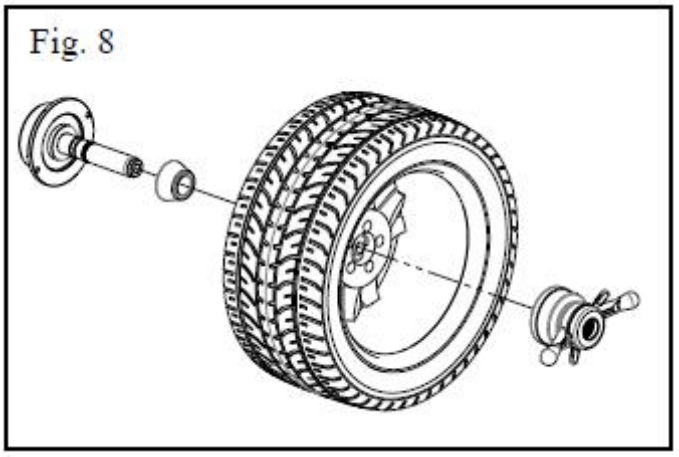


Fig. 8

- Most steel wheels can be mounted properly using this method. The wheel is centered on a cone from the inner side of the hub.
- Select the cone that best fits the center hole in the wheels. Slide the cone onto the shaft with the large end towards the faceplate.
- Lift the wheel onto the shaft and center it on the cone.
- Attach the pressure cup to the quick locking nut and install the assembly onto the shaft. Tighten securely.

6.3. STANDARD FRONT CONE MOUNTING

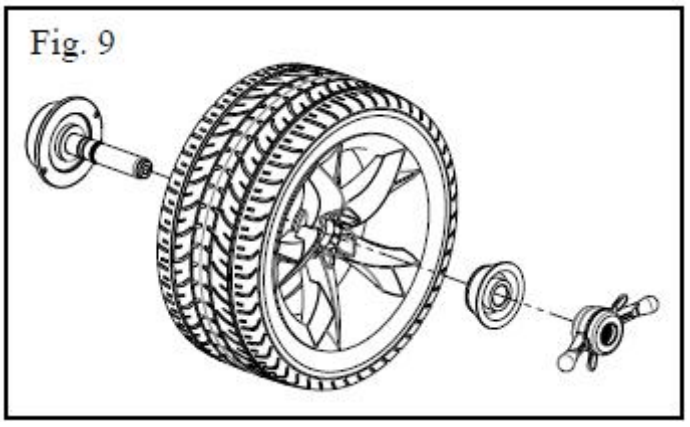


Fig. 9

- A wheel should be centered by the outer side of the hub only when the inner surface will not provide an accurate surface to center on.
- Select the cone that best fits the center hole in the wheel.
- Lift the wheel onto the shaft and slide it back against the shaft faceplate.
- Slide the cone onto the shaft and into the center of the wheel. You will need to lift the wheel to seat the cone in the center hole.
- Install the quick locking nut (without the pressure cup) onto the shaft. Tighten securely against the cone

6.4. WHEEL DATA ENTRY

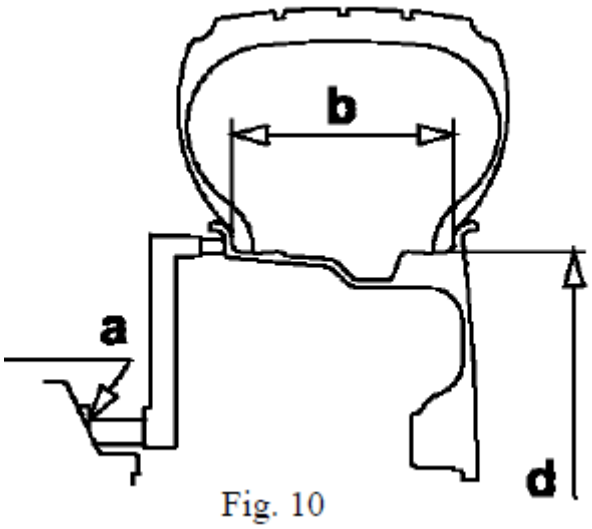


Fig. 10

A: The distance, measured from the machine to the inner side of the rim

B: The wheel width

D: The wheel diameter

6.5. MANUAL ENTRY

Measure the distance from the machine (“0” on the gauge) to the inner side of the rim as shown in the figure 11. Entry the data manually.

Measure the width at the rim with the supplied caliper as shown in the figure 12. Entry the data manually.

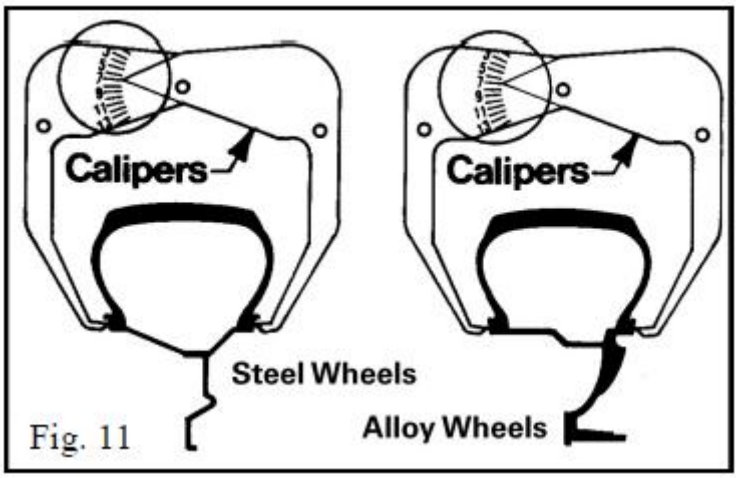
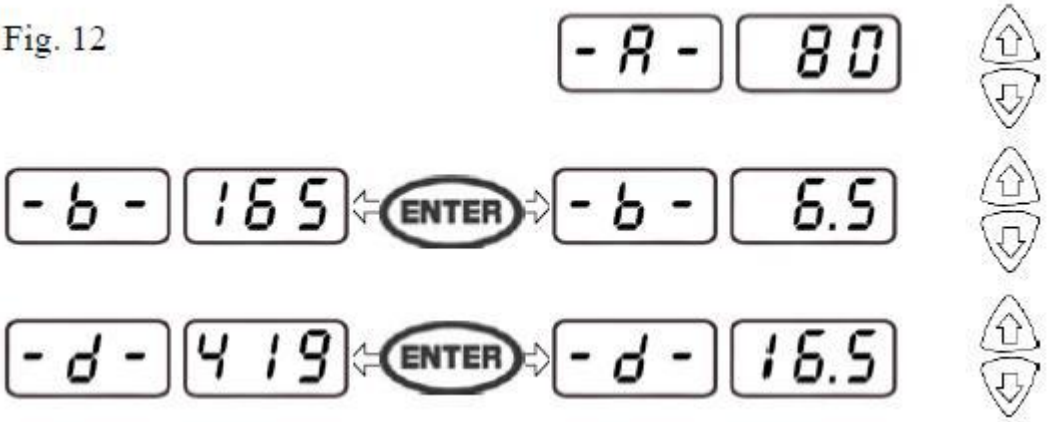


Fig. 11

Check the diameter indicated on the rim.

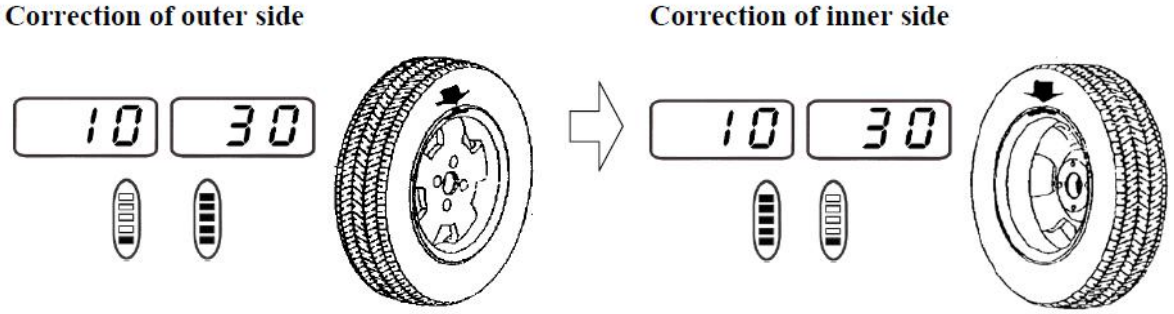
Entry the data manually.

Fig. 12



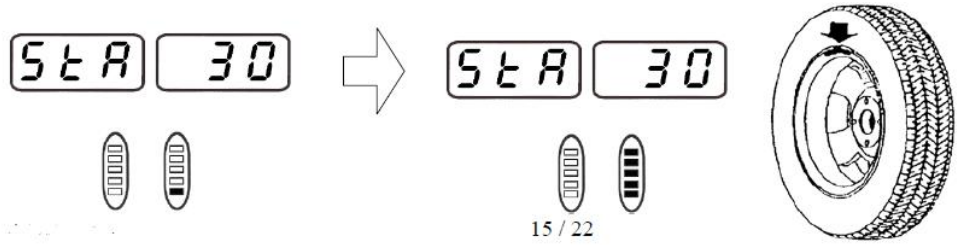
6.6. DYNAMIC MODE

- The dynamic mode is used for most passenger and light truck wheels using the most common location for corrective weights. Clip-on weights are placed on the inner and outer sides of the rim.
- On the initial screen or press Fn to select Dynamic mode when the LED indicator **DYN** lights up.
- Spin the wheel by hands at 100-150rpm 
- Brake the machine by foot.
- Apply the correction weight following the instruction shown in the figure bellow.



6.7. STATIC MODE

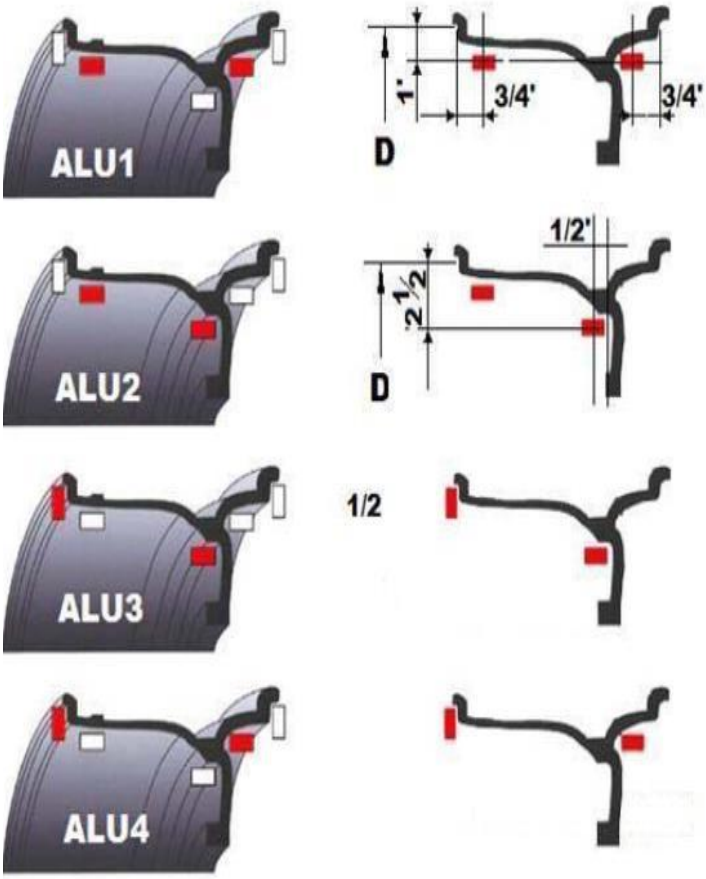
- The static mode is used for motorcycles or narrow wheels when it is not possible to place the counterweights on both sides of the rim. Clip a single weight on one of sides of the rim or in center of wheel according to the diameter of the wheel mounted.
- Press Fn to select Static mode when the LED indicator STA lights up.
- Spin the wheel by hands at 100-150rpm 
- Brake the machine.
- Apply the correction weight following the instruction shown in the figure bellow.



6.8. STANDARD ALU MODE

All the ALU modes are dynamic balance. Choose the option that best fits the available locations as shown in the figure 16.

From the measurement screen, press Fn to select the modes ALU1, ALU2, ALU3, ALU4.



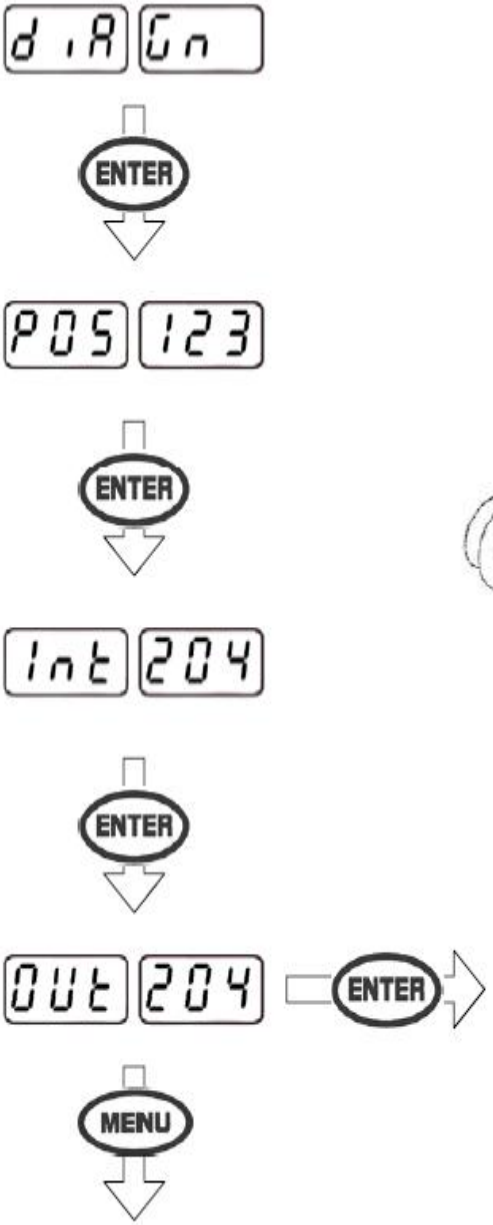
ALU 1 - Balancing of light alloy rims with application of adhesive weights on the rim shoulders.

ALU 2 - Balancing of light alloy rims with hidden application of adhesive weights.

ALU 3 - Combination application: clip-on weight inside and hidden adhesive weight on outside.

ALU 4 -Combination adhesive weight on the rim shoulders same ALU 1 and clip-on weight same ALU 3.

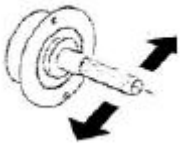
6.9. SELF-DIAGNOSIS



Diagnosis of phase

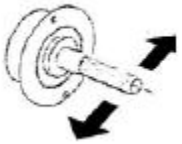
Rotate the wheel in direction of rotation, the readouts display from 0 to
255.
Rotate the wheel in reverse direction of rotation, the readouts displays from 255 to 0.

Diagnosis of inner piezo



Push the balancing shaft from any direction, the readouts change.

Diagnosis of outer piezo



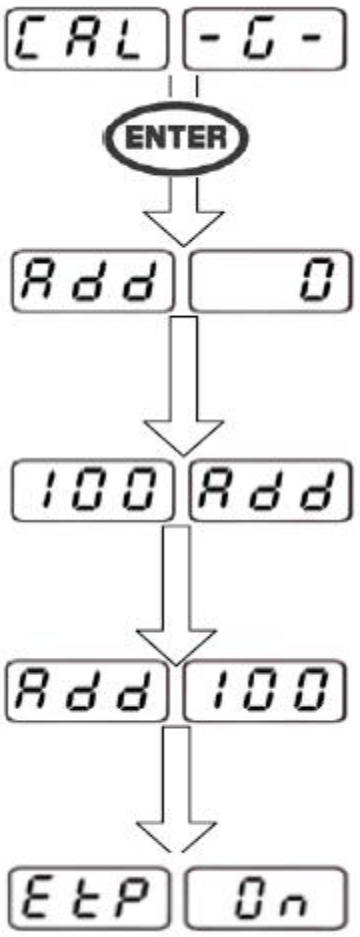
Push the balancing shaft from any direction, the readouts change.

Press MENU to end SELF-DIAGNOSIS.

6.10. SELF-CALIBRATION

To access SELF-CALIBRATION menu, refer to figure 7

For the self-calibration proceed as follows:



Mount a wheel with average data on the shaft. Entry the exact data of the wheel mounted.

Perform the first spin under normal condition

Rotate the wheel manually to 12 o'clock and apply 100g weight on the inner side of the rim.

Start the second spin.

After the second spin, rotate the wheel manually to 12 o'clock, then remove the 100g weight applied on the inner side of the rim and apply 100g weight on the outer side of the rim.

Start the third spin.

After the spin, flashes seconds to exit the weight calibration automatically.

Remove the 100g weight from the wheel.

7. MAINTENANCE

7.1. GENERAL WARNINGS

Unauthorized personnel may not carry out maintenance work.

- Regular maintenance as described in the manual is essential for correct operation and long lifetime of the balancer machine
- If maintenance is not carried out regularly, the operation and reliability of the machine may be compromised, thus placing the operator and anyone else in the vicinity at risk.

  Before carrying out any maintenance work, disconnect the electric and pneumatic supplies.

- Defective parts must be replaced exclusively by expert personnel using the manufacturer's parts.
- Removing or tampering with safety devices (pressure limiting and regulating valves) is extremely forbidden.

7.2. MAINTENANCE OPERATIONS

This balancer requires only minor maintenance to keep the machine operating properly.

- Keep the area around the machine clear.
- Keep the display clean and clear. Use a vaporizing cleaner only. Do not use cleaners or the solvents which leave oil or firmly residues behind.
- Keep the adaptors, cones, thread shaft, pressure cup, and the quick locking nut clean. Grease and dirt buildup will cause inaccurate balancing and premature wear. Clean these items at once a day using a vaporizing solvent.
- Clean the weight tray, the cone holders and accessories using a vaporizing solvent. Weights stored in a dirty tray may pick up grease and dirt which may keep them from attaching to the wheel securely.

8. TROUBLE-SHOOTING

8.1. ERROR DISPLAY

During machine operation, various cause of faulty operation can occur. If defected by the micro- processor, they appear on the display as follows:

ERRORS:	MEANING:	SOLUTION:
Err -0-	The machine is not preset up by the manufacturer before delivery.	Call for the technical service.
Err -CAL-	Faulty calibration.	Recalibration.
Err -2-	Speed too low during balancing measurement spin.	Repeat the spin at the correct speed Check the driven belt Check the bearings Check the quick locking nut tightness
Err -6-	The balancing measurement spin is stopped by carelessness.	

8.2. TROUBLE-SHOOTING

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
No display when switching on	1. There is no power. 2. The faulty power plug. 3. The electrical wires are disconnected. 4. Wrong power voltage. 5. Fuses are blown.	1. Check power on. 2. Replace. 3. Reconnect. 4. Check for correct voltage. 5. Replace.
The diameter measured is not correct.	1. The gauge is not positioned correctly when measuring.	1. Position the gauge correctly.
The measurement gauge cannot function properly.	1. The gauge fails to return onto its orginal position automatically.	1. Reset the gauge. 2. Switch off and switch on the machine again
Inconsistent unbalance reading	1. The machine is shocked. 2. The machine is not rested solidly. 3. The wheel is not tightened. 4. Wrong data entry. 5. The machine is not calibrated.	1. Do not shock the machine and restart a spin. 2. Sit the machine solidly. 3. Tighten the wheel. 4. Entry the correcgt data. 5. Calculate the machine.