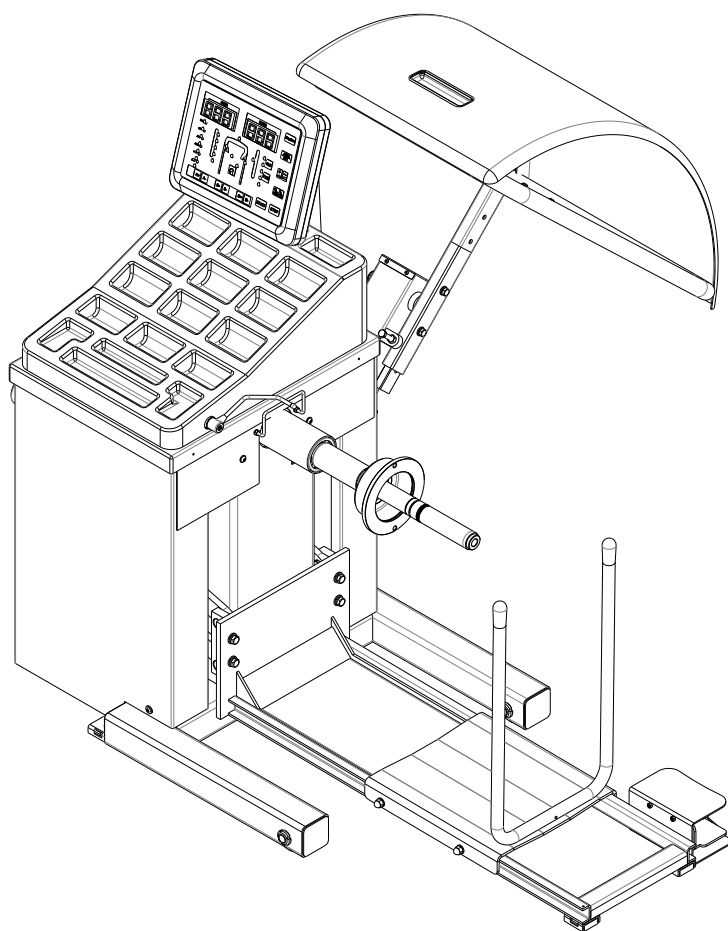


USE AND MAINTENANCE MANUAL




WHEEL BALANCER FOR TRUCK/CAR

GM - U462 PRO



PRINTING CHARACTERS AND SYMBOLS

Throughout this manual, the following symbols and printing characters are used to facilitate reading:

	Indicates the operations which need proper care
	Indicates prohibition
	Indicates a possibility of danger for the operators
BOLD TYPE	Important information

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CHAPTER 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 MACHINE IDENTIFICATION DATA

A complete description of the “Wheel balancer model” and the “Serial number” will make it easier for our technical assistance to provide service and will facilitate delivery of any required spare parts. For clarity and convenience, we have inserted the data of your machine in the box below. If there is any discrepancy between the data provided in this manual and that shown on the name plate fixed to the wheel balancer, the latter should be taken as correct.


LOGO		
Type:		
Volt	Amp	Kw
Ph	Hz	
Year of manufacturing:		

1.3 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.

	The illustrations have been made out of prototypes pictures. It is therefore possible that some parts or components of standard production differ from those represented in the pictures.
---	--

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

CHAPTER 2 – GENERAL INFORMATION

2.1 GENERAL SAFETY

- 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.

2.2 STANDARD SAFETY DVICES

- 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.

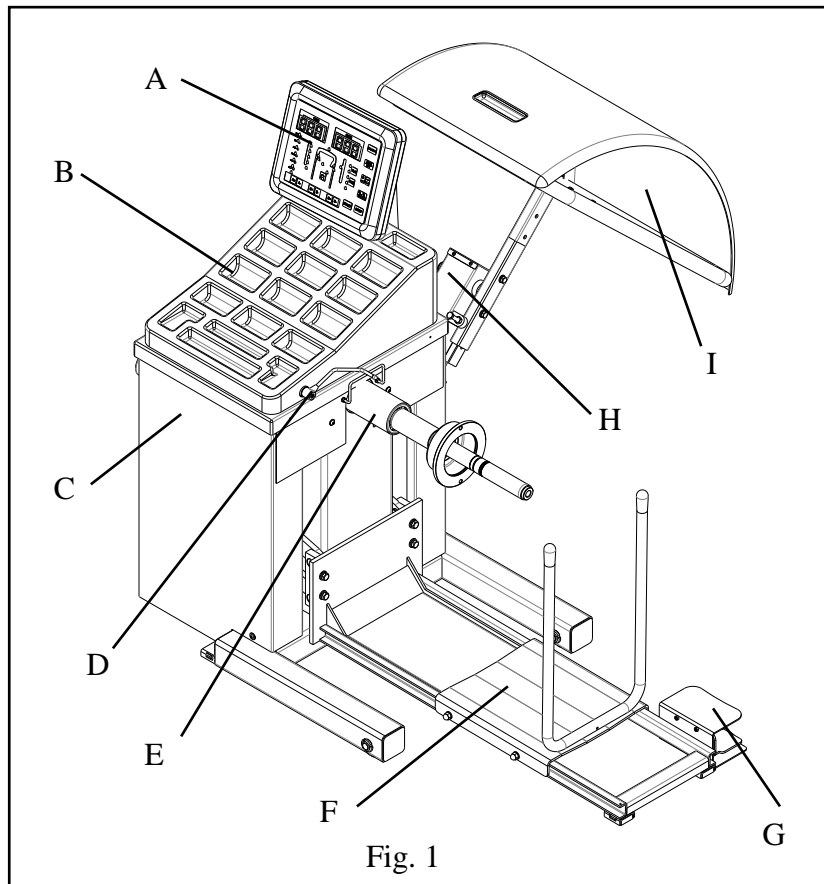
2.3 INTENDED USE

- This wheel balancer has been designed and manufactured exclusively for balancing wheel with a maximum diameter of 1200mm and maximum weight of 200kg. The calibration system is sufficient to cover different wheels from cars to trucks.
- 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.

2.4 GENERAL CHARATERISTICS

- Automatic braking after spin
- Automatic start/stop when the hood is lowered/raised
- STOP pushbutton to stop the machine immediately
- Static and dynamic balancing modes
- Four ALU modes
- Rapid optimization (OPT)
- Self-diagnosis
- Self-calibration
- Exceptional stability in reading the unbalance between planes
- Display in grams or ounces, in mm or inch
- Anchor-down installation unnecessary

2.5 MACHINE DESCRIPTION



- A. Control panel
- B. Weight tray
- C. Body with the main switch and the cone holder
- D. Distance gauge
- E. Shaft
- F. Wheel lift
- G. Wheel lift pedal
- H. Micro switch protection
- I. Wheel guard

2.6 TECHNICAL SPECIFICATION

Power supply	220V/230V-1Ph
Motor power	250W
Shaft diameter	40mm
Max. wheel weight	200kg
Wheel diameter	1200mm
Rim diameter	10" - 32" (255 - 810mm)
Wheel width	1.5" - 20" (39 - 510mm)
Balancing precision	$\pm 1g$ for car mode
	$\pm 10g$ for truck mode
Cycle time	7s for car mode
	15s for truck mode
Balancing speed	150 rpm for car mode
	90 rpm for truck mode
Noise level	< 70 dbA
Air supply	8 – 10 bar
Packing dimension	1145(L) x 835 (W) x 1140 (H)
Packing weight	320kg

CHAPTER 3 – TRANSPORTATION, UNPACKING AND STORAGE

3.1 TRANSPORTATION

- 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.

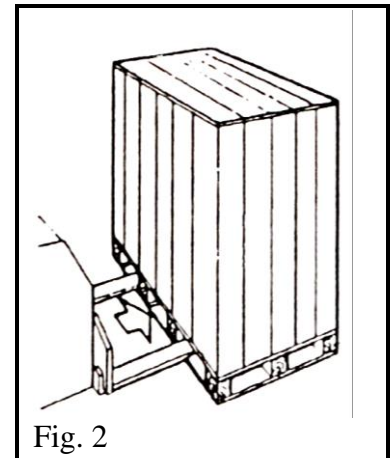


Fig. 2

3.3 UNPACKING

- Remove the protective cardboard and the nylon bag.
- Remove the fixing bolts from the packing pallet.
- Check that the equipment is in perfect condition, making sure that no parts are damaged or missing. Use fig. 1 for reference.



If in doubt do not use the machine and contact your retailer.

3.3 STORAGE

Packages must be stored in a covered place, out of direct sunlight and in low humidity, at a temperature between -10 °C and +40 °C.

In the event of storage for long periods of time, be sure to disconnect all sources of power and grease the clamp sliding guides on the turntable to prevent them from oxidizing.

CHAPTER 4 – COMMISSIONING

4.1 SPACE REQUIRED



When choosing the place of installation, make sure that it complies with current safety at work regulations.

Do not operate the balancer while it is on the pallet.

- 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.

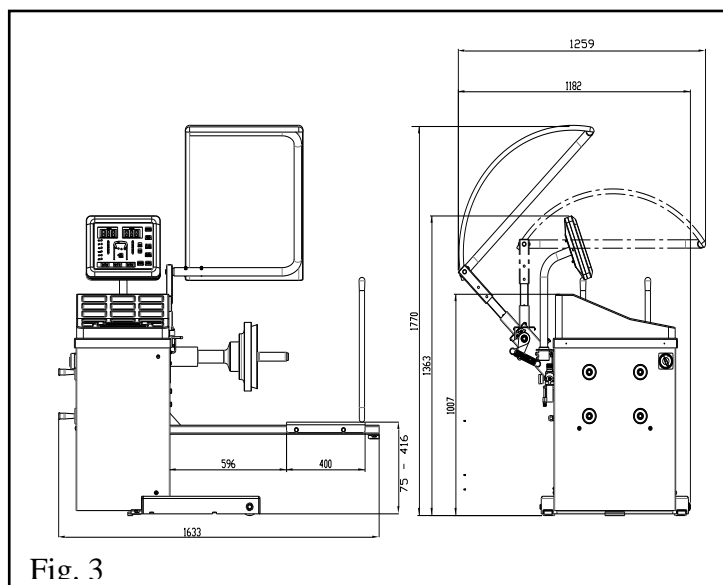


Fig. 3

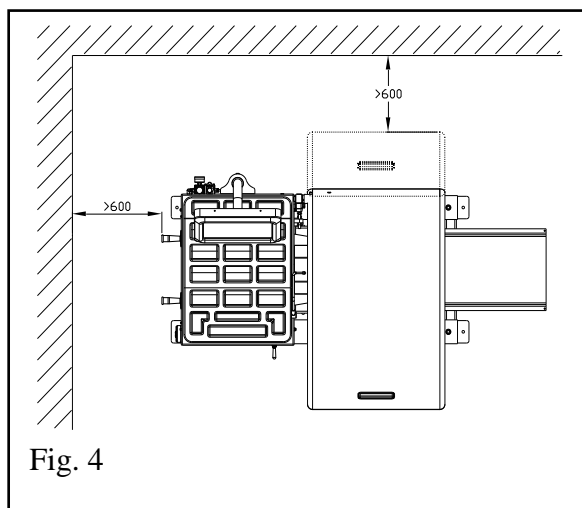


Fig. 4

4.2 SHAFT ASSEMBLY

- Mount the thread end piece (A) onto the shaft by screwing the retaining screw (B).
- Tighten the retaining screw (B) thoroughly by using the supplied wrench (C).

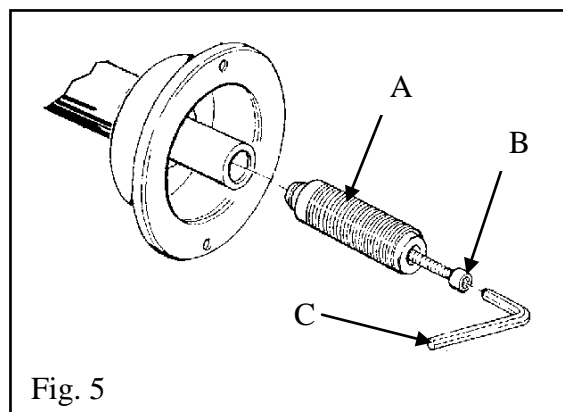


Fig. 5

4.3 WHEEL GUARD MOUNTING

- Remove the wheel guard and installation accessories from the package.
- Mount the wheel guard onto the arm then fix it onto the machine.

4.4 PANEL INSTALLTION (ref. fig. 6-1)

- Remove the panel and installation accessories from the package.
- Mount the panel to the body. Tighten the screws.
- Connect the cable onto the sockets fixed on the panel and the body.

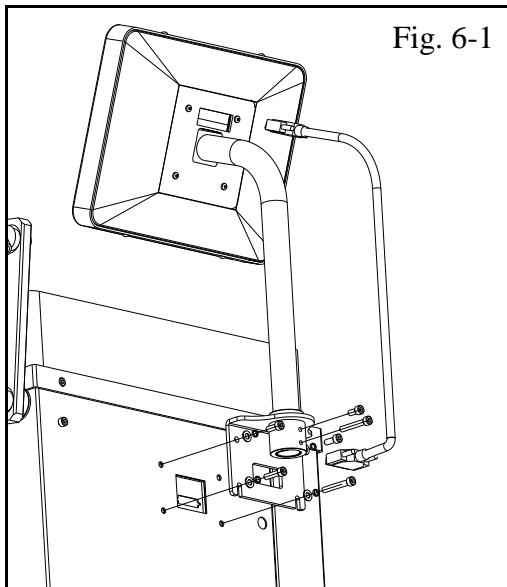


Fig. 6-1

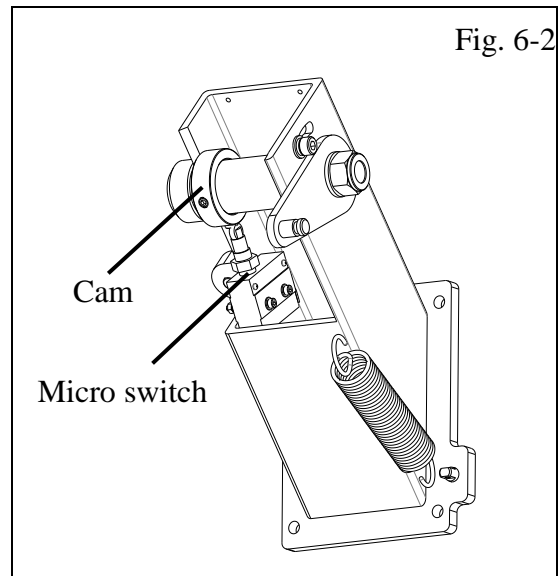




Fig. 6-2

4.5 COMMISSIONING

	<p>Any electric connection job must be carried out by professionally qualified personnel.</p> <p>Make sure that the power supply is right.</p> <p>Make sure the connection of the phases is right. Improper electrical hook-up can damage motor and will not be covered under warranty.</p> <p>Make sure the machine has a good earthing.</p>
---	---

- 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 compressed air system by means of a servicing unit composed of water separator, lubricator and pressure regulator supplied on the rear section.
- Check the micro switch is held down when the guard is closed. If necessary, adjust it by turning the cam to the proper position (ref. fig.6-2).

	<p>For correct operation of the pneumatic system, the compressed air supply pressure must be within 8 – 10 bar.</p>
---	--

CHAPTER 5 – CONTROL PANEL AND MENU FUNCTION

5.1. CONTROL PANEL


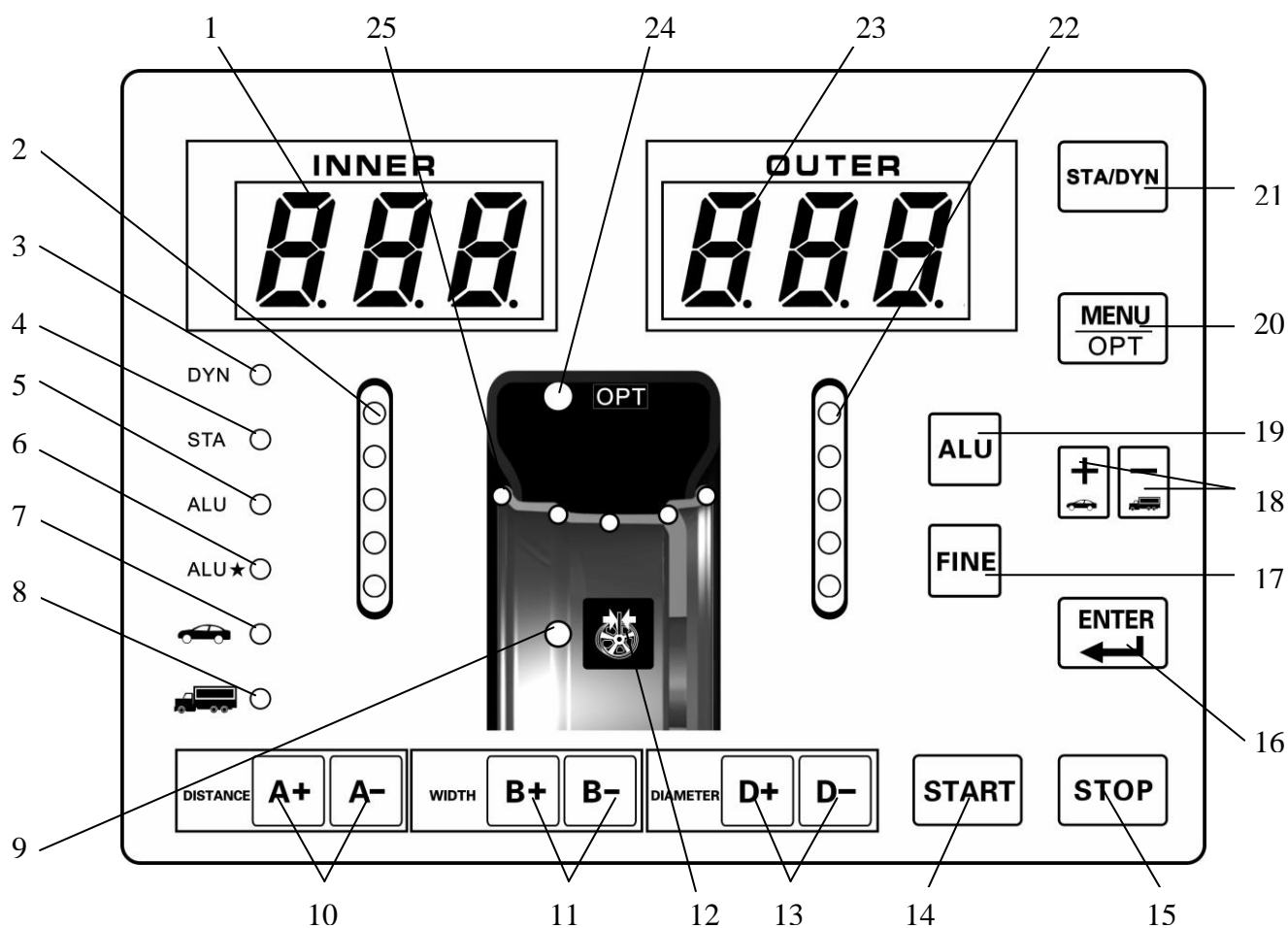
	<p>Press buttons only with your fingers. Never use the counterweight pincers or other pointed objects.</p> <p>When the beep signal is enabled, pressing of any push button is accompanied by a “Beep”.</p>
---	--

Fig. 7 – CONTROL PANEL

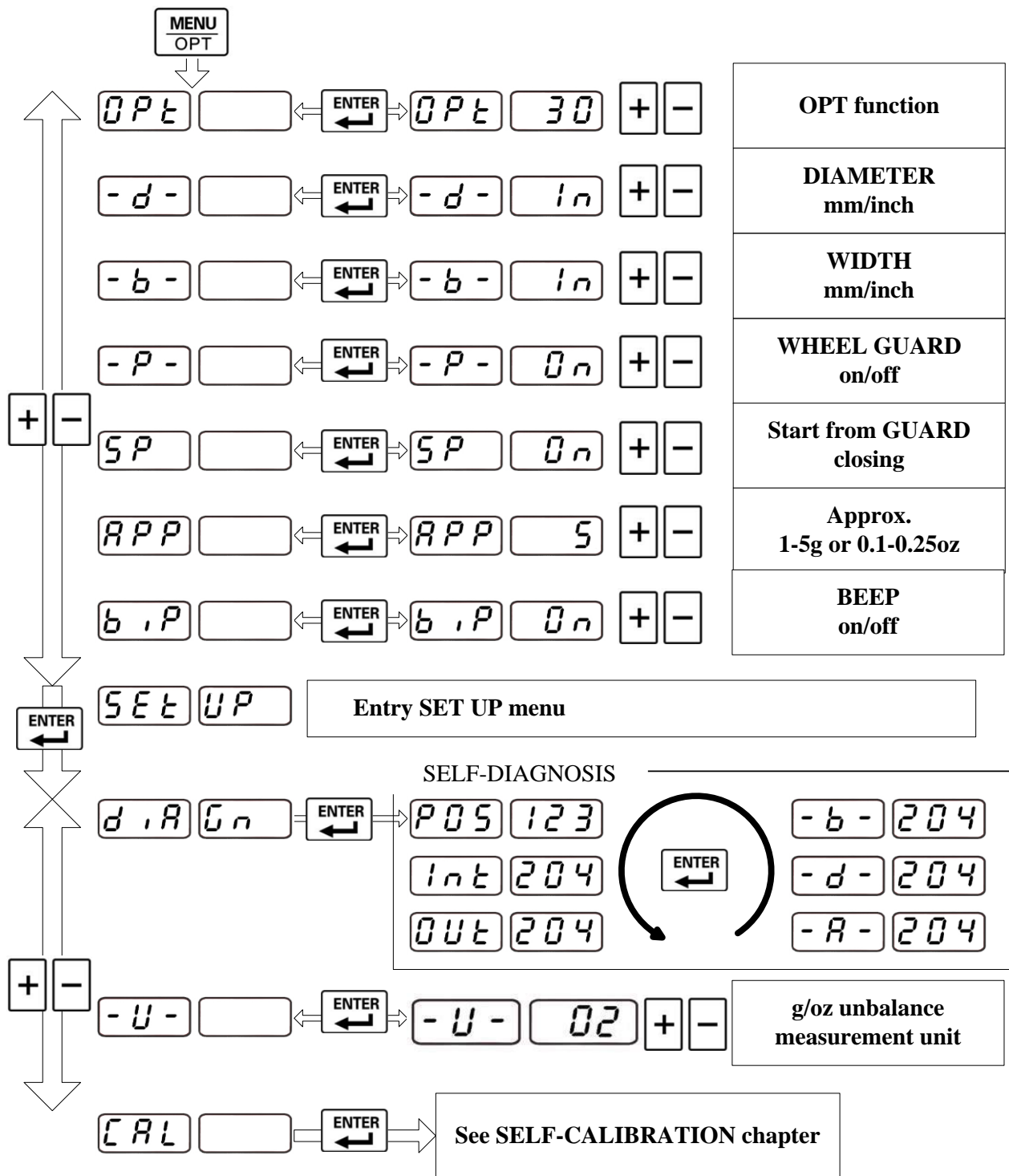


1. Digital readouts, AMOUNT OF UNBALANCE inside
2. LED indicator, POSITION OF UNBALANCE inside
3. Indicator, DYNAMIC mode selected
4. Indicator, STATIC mode selected
5. Indicator, ALU mode selected
6. Indicator, ALU☆ mode selected (*)
7. Indicator, CAR mode selected
8. Indicator, TRUCK mode selected
9. Indicator, SPLIT function (*)
10. Push button, manual DISTANCE (A) setting
11. Push button, manual WIDTH (B) setting
12. Push button, SPLIT selection (*)

13. Push button, manual DIAMETER (D) setting
14. Push button, start
15. Push button, emergency/home/braking
16. Push button, confirm
17. Indicator, unbalance reading < 5g (0.25oz) for car mode, <10g (0.5oz) for truck mode
18. Push button, CAR/TRUCK mode and FUNCTIONS selection
19. Push button, ALU mode selection
20. Push button, SET UP MENU/OPT
21. Push button, STATIC/DYNAMIC modes selection
22. LED indicator, POSITION OF UNBALANCE outside
23. Digital readouts, AMOUNT OF UNBALANCE outside
24. Indicator, OPT
25. Indicators, position of application for correction weights


(*) those functions are disabled in this model.


5.2 MENU FUNCTIONS (figure 8)




Press **STOP** to exit any function.




CHAPTER 6 – OPERATION OF THE WHEEL BALANCER

	<p>Do not use the machine until you have read and understood the entire manual and the warning provided.</p> <p>The wheel guard must not be opened before the wheel stops. The STOP button serves to stop the machine immediately in emergencies.</p> <p>Do not permit the control panel to get wet!</p> <p>Make sure to tighten the quick locking nut. Failure to do so may result in serious personal injury</p>
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	<p>Chains, bracelets, loose clothing or foreign objects in the vicinity of the moving parts can represent a danger for the operator.</p>
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6.1 BASIC OPERATION INFORMATION

	<p>Do not spin the truck wheel when CAR mode is set.</p> <p>Carefully clean the component surface before performing any operation.</p> <p>Before balancing a wheel, the wheel data must be entered into the machine.</p>
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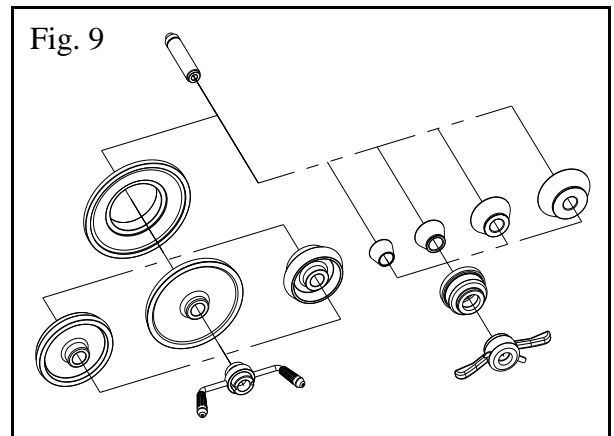
- Mount the wheel on the shaft of machine. Use the most appropriate mounting method. Always remove any weight attached to the wheel.
- Switch on the machine.
- Select CAR or TRUCK mode by pressing the keys  .
- Measure and entry the wheel data.
- Select the most appropriate balancing mode.
- Performing a spin can be started by pressing START button or closing the wheel guard if START FROM GUARD CLOSING is enabled.
- When the figures have been established, the spin is automatically braked to a stop in the correction zone. After the spin, the unbalanced amounts are shown on the digital readouts.
- Rotate the wheel slowly by hand until LED indicators light up to indicate the correct angular wheel position to apply the counterweights.
- Press the key  to stop the wheel rotation then 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 the figure 8.

6.2 WHEEL MOUNTING

The wheel lift incorporated in the wheel balancer for fast and fatigue-free mounting/demounting of truck wheels weighting up to 200kg. For correct operation of the wheel lift, the air supply pressure must be within 8 – 10 bar.

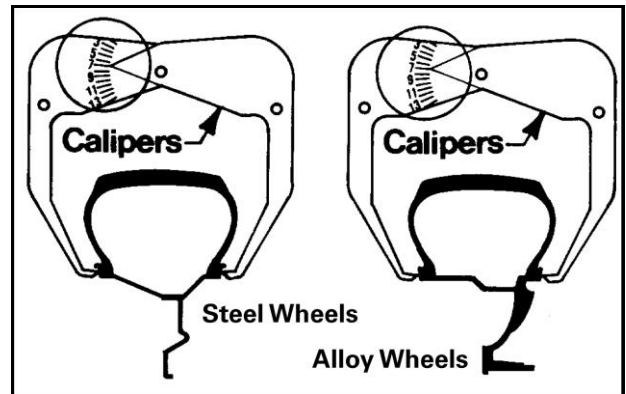
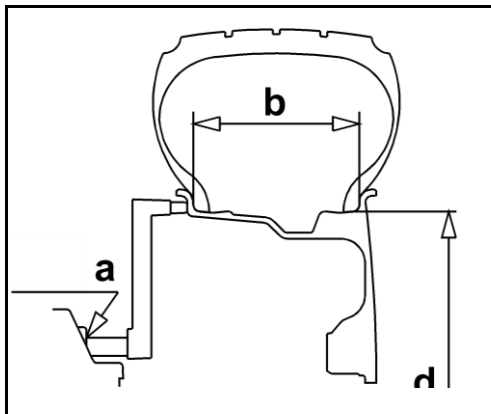
	<p>During lifting, hold the wheel in position with one hand to stop it falling.</p> <p>The upmost attention is required to avoid the risk of crushing hands or feet.</p>
---	--

- Fit the flange or a cone depending on whether you intend to centre the wheel using a flange or a cone (ref, fig. 9);
- Place the wheel lift at the lowest height and bring the wheel lift to its fully extended position;
- Roll the wheel onto the wheel lift platform through the ramp
- Raise the wheel by pressing the lift pedal (H - fig. 1) until the central hole of wheel is aligned with the shaft;
- Push the lift carriage toward the balancer so that the shaft enters the central hole. To ensure accurate centering do not lower the lift before the wheel is properly clamped;
- Select the cone that best fits the center hole in the wheel and secure using the quick locking nut (ref. fig. 9);
- Lower the lift by another side of the pedal and then put the carriage back to its rest position so that it is well clear off the working area;



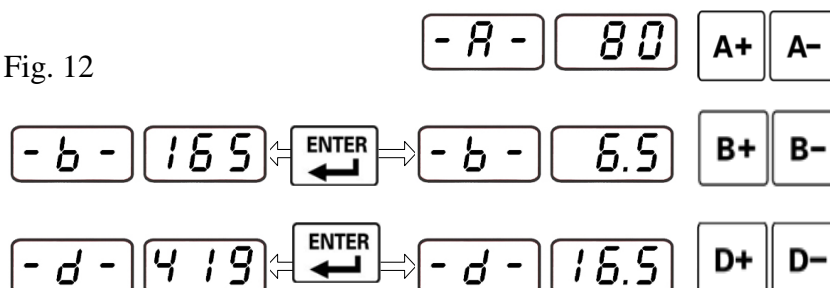
6.3 WHEEL DATA ENTRY

	<p>Before balancing a wheel, wheel data must be entered into the processor. Make sure that the wheel must be balanced in the correct mode: CAR mode for passenger wheels. TRUCK mode for truck wheels.</p>
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- Measure the distance “a” from the machine (“0” on the gauge) to the inner side of the rim as shown in the figure 11. Entry the data manually referring to the figure 12;
- Measure the width “b” at the rim with the supplied caliper as shown in the figure 11. Entry the data manually referring to the figure 12;.
- Check the diameter “d” indicated on the rim. Entry the data manually referring to the figure 12.

Fig. 12



6.4 BALANCING MODE

	Be sure to balance the car wheel in CAR mode and to balance the truck wheel in TRUCK mode.
---	--

6.4.1 DYNAMIC MODE

	The initial screen when switching on is in 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 press **START** → **00** **00**

Correction of outer side

Correction of inner side

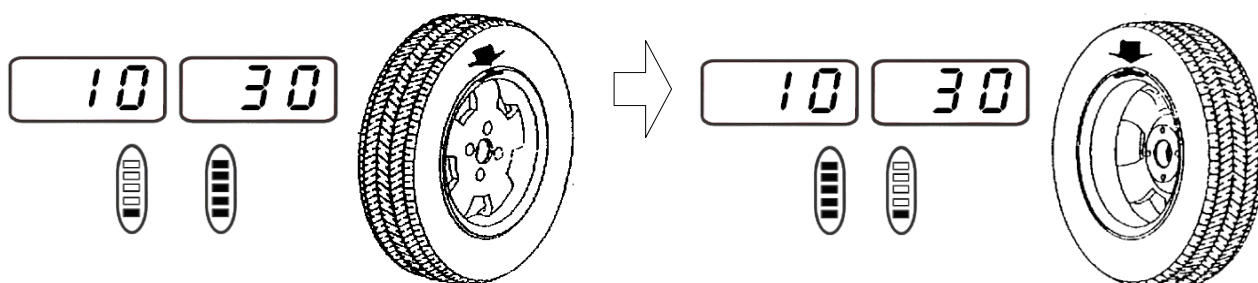


Fig. 13

6.4.2 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 centre of wheel according to the diameter of the wheel mounted.

Press **STA/DYN** to select “Static mode”.

When the LED indicator STA lights up and then press **START** **00** **00**

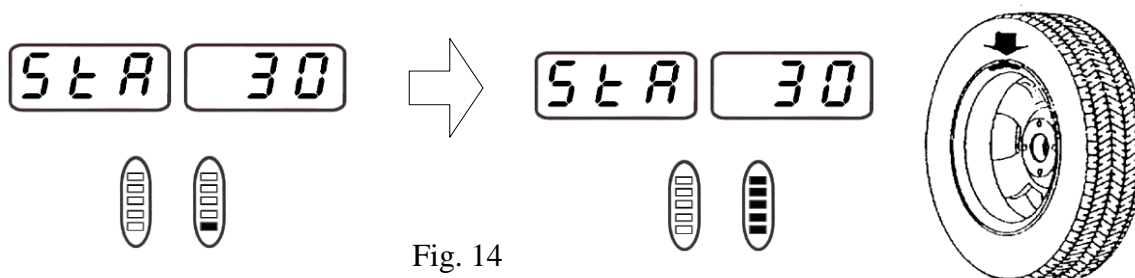


Fig. 14

6.4.3 ALU MODE

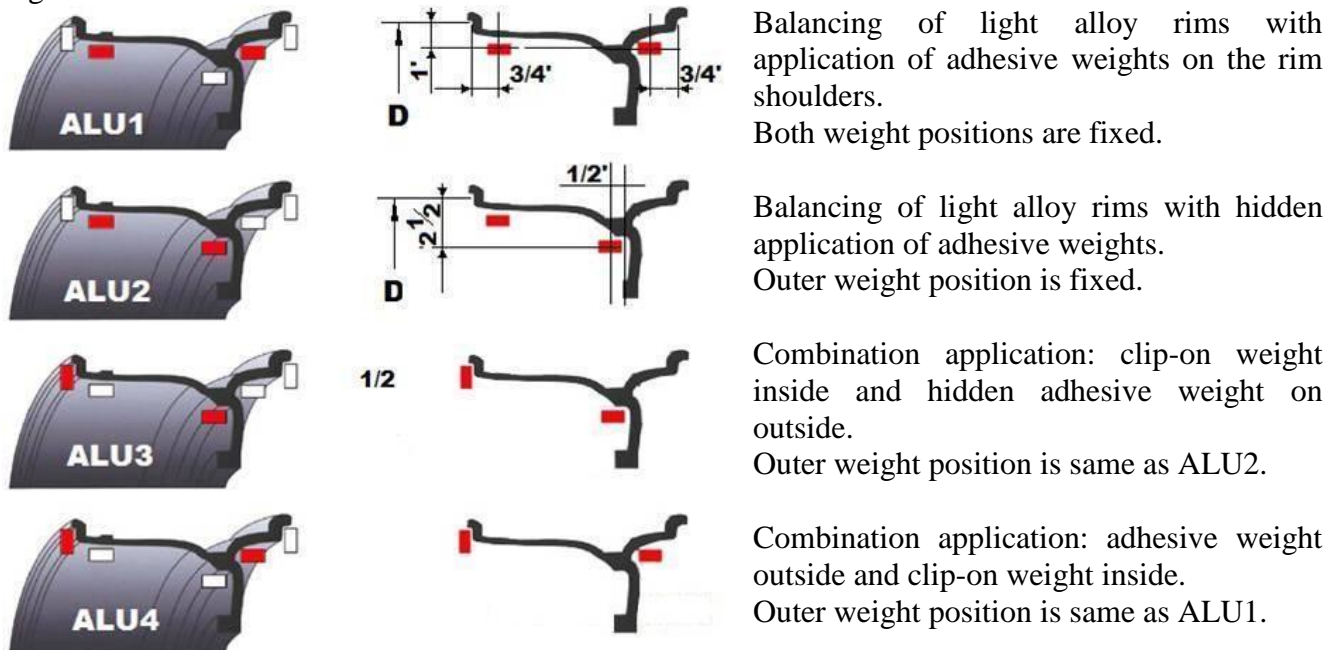
All ALU modes in this machine are of dynamic balance.

6.4.3.1 ALU MODE FOR CAR WHEEL

Four modes **ALU1**, **ALU2**, **ALU3** and **ALU4** are available for CAR mode.


Choose the option that best fits the available locations as shown in the figure 15 by pressing **ALU**.

Fig. 15



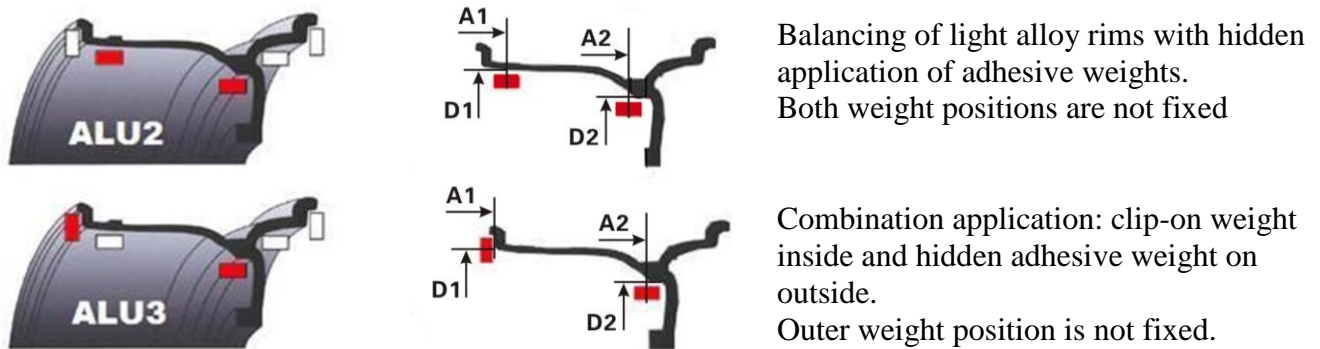
6.4.3.2 ALU MODE FOR TRUCK WHEEL

Two modes **ALU2** and **ALU3** are available for TRUCK mode.









	<p>It is suggested to measure the diameter of wheel before assembling the wheel to the machine as it is difficult to do so when the wheel is on the machine.</p> <p>If not possible to measure the distance “A2” value with the gauge, the extension is needed to be applied thus 50mm needs to be added on the value.</p>
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Choose the option that best fits the available locations as shown in the figure 16.

Fig. 16

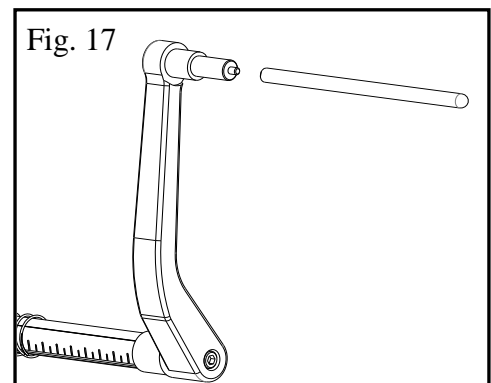


The data “A1”, “A2”, “D1” and “D2” can be entered manually as follows:

- Enter “A1” value by pressing  .
- Enter “A2” value by pressing  .
- Enter “D1” value by pressing  .
- Enter “D2” value by pressing  .


For the wheel that is not possible to measurement the distance “A2” value, the extension is needed to be fitted on the gauge as shown in the figure 17.

When the extension is applied, be sure to add 50mm on the “A2” value.



6.4.4 UNBALANCE OPTIMIZATION – OPT (only for CAR mode)


This function is used to determine the best mating of tire and rim that will result in the least amount of total unbalance of the wheel. It serves to reduce the amount of weight to be added in order to balance the wheel. It is suitable for static unbalance exceeding 30g.





	A high unbalance may indicate the improper mounting of the wheel on the balancer. If the unbalance is excessive, it may be prudent to replace the rim, the tire, or both. If either is replaced, do not continue with optimization. Balance the new tire and rim and evaluate the readings.
---	--

After performing the static balance, press .

If the unbalance amount shown on the digital readouts is exceeding 30g, the digital readouts display “YES” “OPT”. In this case, start OPT function:

- Mark with chalk reference points on the same position of both the tire and the rim.
- Rotate the wheel to move the marked points to 12 o'clock position.

- Press  to memorize the position.
- Remove the wheel from the balancer.
- Remove the tire from the rim with the aid of a tire changer.
- Only mount the rim on the balancer.
- Rotate the rim to move the mark to 12 o'clock position.

- Press   .
- Press  to spin the rim.

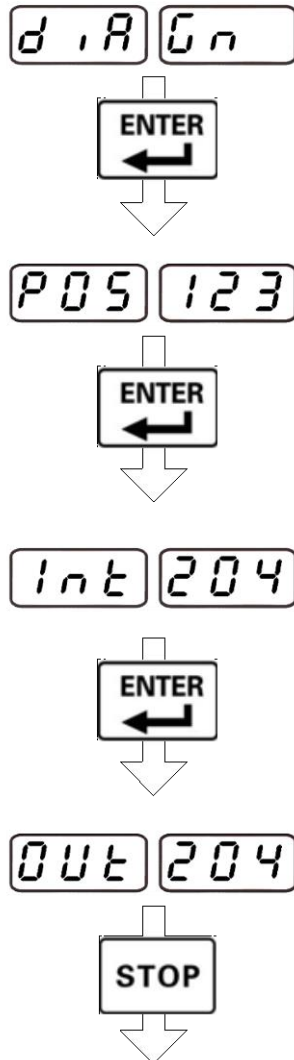
After performing the spin:

- Rotate the rim until LED indicator for outside lights up (ref. fig. 7).
- Mark with chalk on the rim at 12 o'clock position.
- With the aid of the tire changer, refit the wheel with the reference marks coinciding between the rim and tire.

CHAPTER 7 – SET UP

7.1 SELF-DIAGNOSIS

Fig. 18



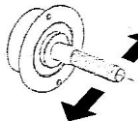
Diagnosis of phase



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

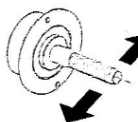
Rotate the wheel in reverse direction of rotation, the readouts displays from 255 to 0.

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.

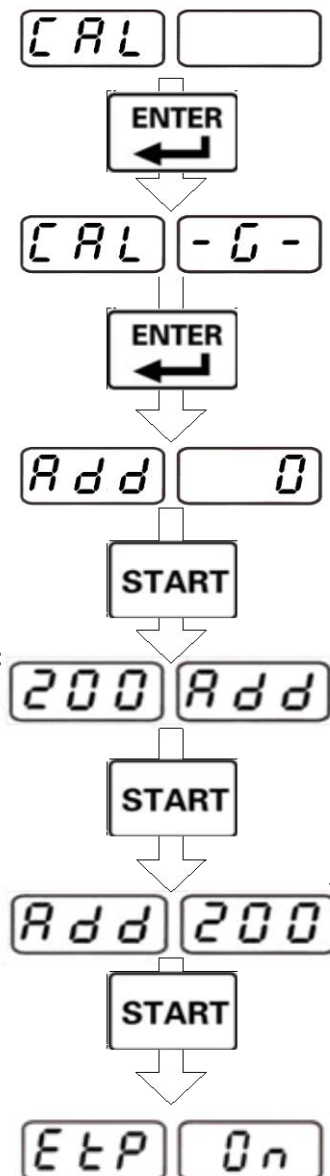
Press **STOP** to end SELF-DIAGNOSIS,

7.2 SELF-CALIBRATION

	<p>Make sure to calibrate the machine in CAR mode using a car wheel or in TRUCK mode using a truck wheel.</p> <p>Make sure to entry the exact date of the wheel mounted. Entry of incorrect data would mean that the machine is not correctly calibrated, therefore all subsequent measurements will be incorrect until the new self-calibration is performed with the correct data.</p>
---	--

To access SELF-CALIBRATION menu, refer to the figure 8.
For the self-calibration proceed as follows:

Fig. 19



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 200g weight for TRUCK MODE or 100kg for CAR MODE 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 weight applied on the inner side of the rim and apply 200g weight for TRUCK MODE or 100kg for CAR MODE on the outer side of the rim.

Start the third spin.
After the spin, **EtP** **0n** flashes seconds to exit the weight calibration automatically.
Remove the weight from the wheel.

CHAPTER 8 – MAINTENANCE

8.1 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 machine.
- If maintenance is not carried out regularly, the operation and reliability of the machine may be compromised.



Before carrying out any maintenance work, disconnect the electric supply.



Do not clean the machine with compressed air or jet of water.

- Defective parts must be replaced exclusively by expert personnel using the manufacturer's parts.
- Removing or tampering with safety devices is extremely forbidden.



In particular, the Manufacturer shall not be held responsible for complaints deriving from the use of spare parts made by other manufacturers or for damage caused by tampering or removal of safety systems.

8.2 ORDINARY MAINTENANCE

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.
- Check the oil level in the lubricator tank. If necessary, fill up the ISO VG viscosity ISOHG class oil.

CHAPTER 9 – ERRORS AND TROUBLE-SHOOTING

9.1 ERROR DISPLAY

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

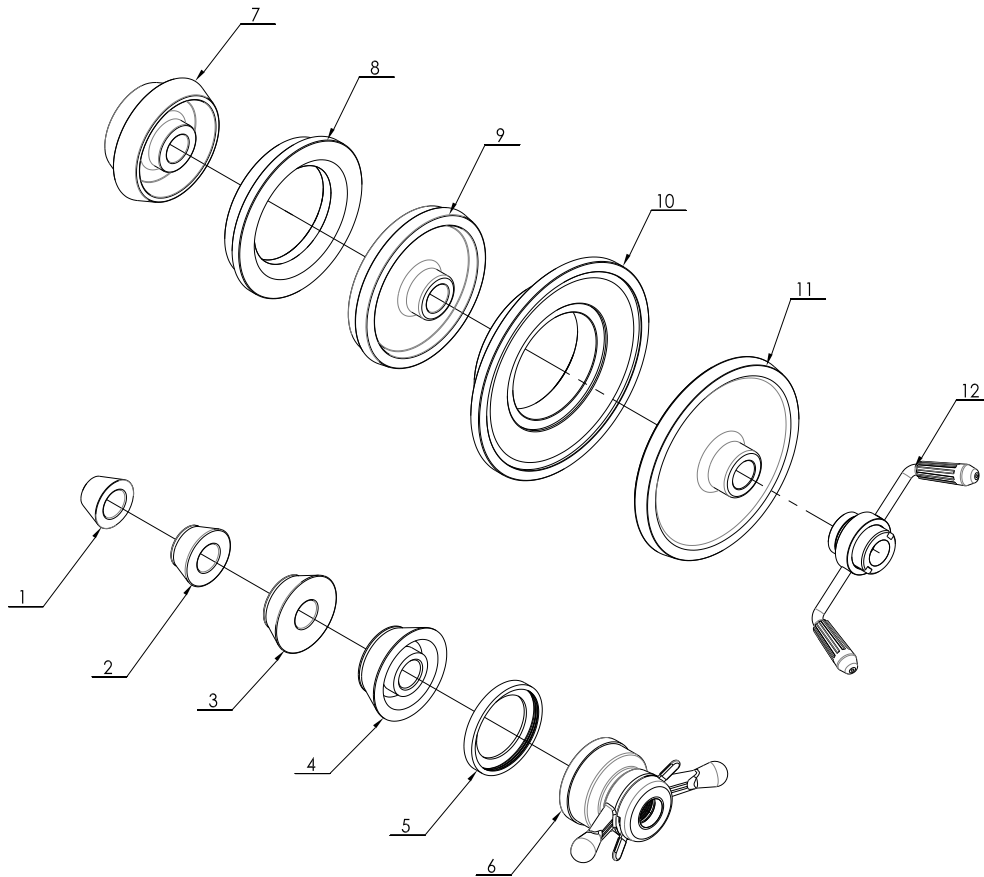
ERRORS:	MEANING:	SOLUTION:
Err -0-	The machine is not preset up by the manufacturer before delivery.	Call for the technical service.
Err -CAL-	Faulty calibration.	Recalibration.
Err -2-	Speed too low during balancing measurement spin.	Check the driven belt Check the bearings Check the motor Check the quick locking nut tightness
Err -5-	Micro switch is not adjusted properly or defective.	Check and adjust it or replace it if necessary.
Err -6-	The balancing measurement spin is stopped by carelessness.	

9.2 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 original position automatically.	1. Reset the gauge. 2. Switch off and switch on the machine again
The machine does not spin when the wheel guard is closing.	1. The function “start from the guard closing” is not enabled. 2. The wheel guard is not closed completely. 3. The electric wire for the micro switch is disconnected. 4. The micro switch is not adjusted properly or faulty.	1. Enable the function if necessary. 2. Close the guard completely. 3. Reconnect. 4. Check for correct adjustment or replace it if necessary.
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 correct data. 5. Calculate the machine.

CHAPTER 19 – STANDARD CLAMPING ACCESSORIES

Figure 22 – STANDARD CLAMPING ACCESSORIES



1	P1-12001W	Cone D.44-70
2	P1-12002W	Cone D.59-82
3	P1-12003W	Cone D.78-111
4	P1-12004W	Cone D.95-132
5	P1-50001	Rubber cap
6	P1-50000	Quick nut
7	P3A-00203	Cone D.125-174
8	P3A-00102	Spacer
9	P3A-00202	Cone D.211-224
10	P3A-00102	Spacer
11	P3A-00201	Cone D.277-284
12	P3-61000	Heavy wing nut

CHAPTER 11 –ELECTRIC AND PNEUAMTIC SCHEME

Figure 23 - ELECTRIC SCHEME

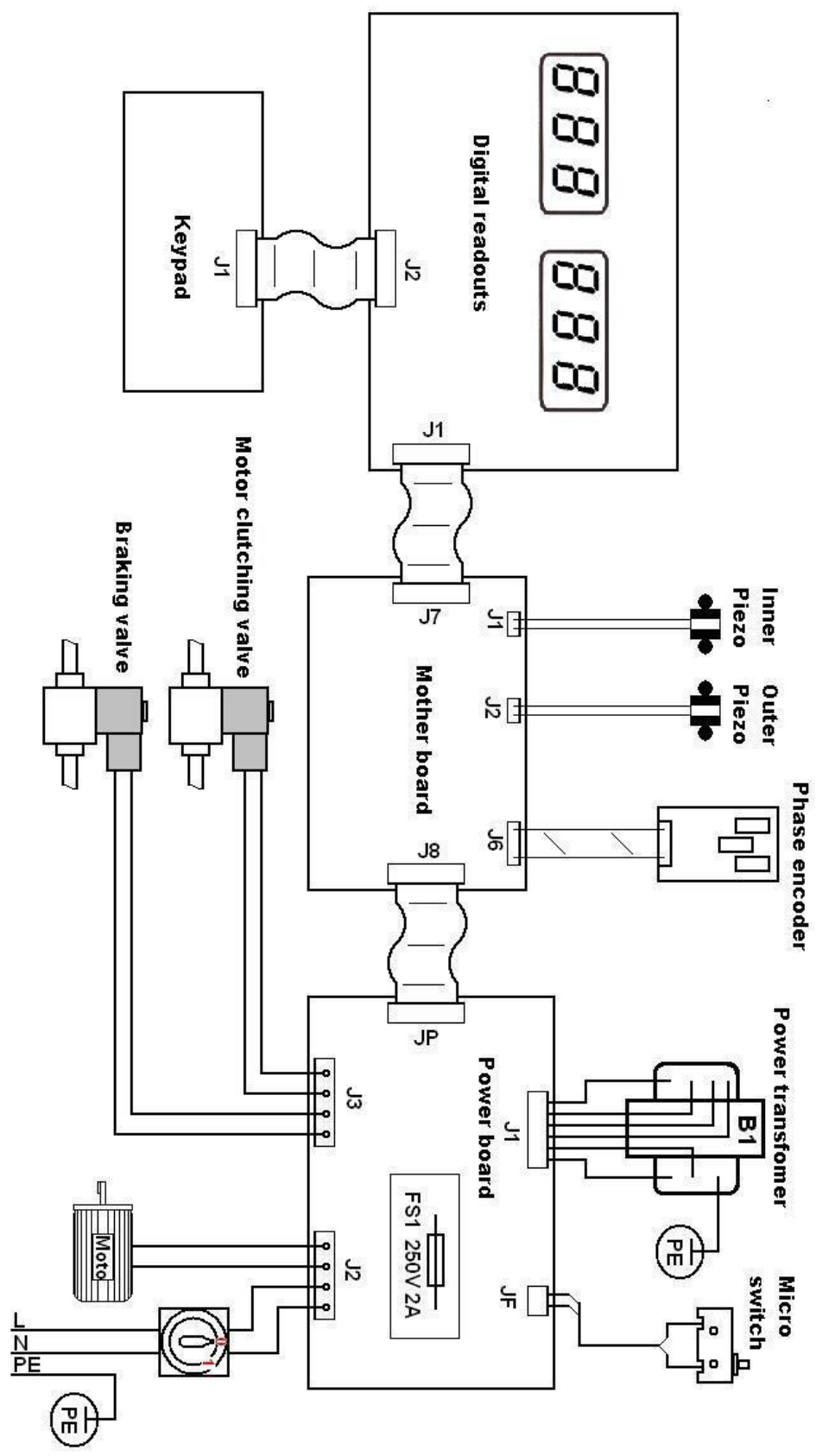


Figure 24 - PNEUMATIC SCHEME

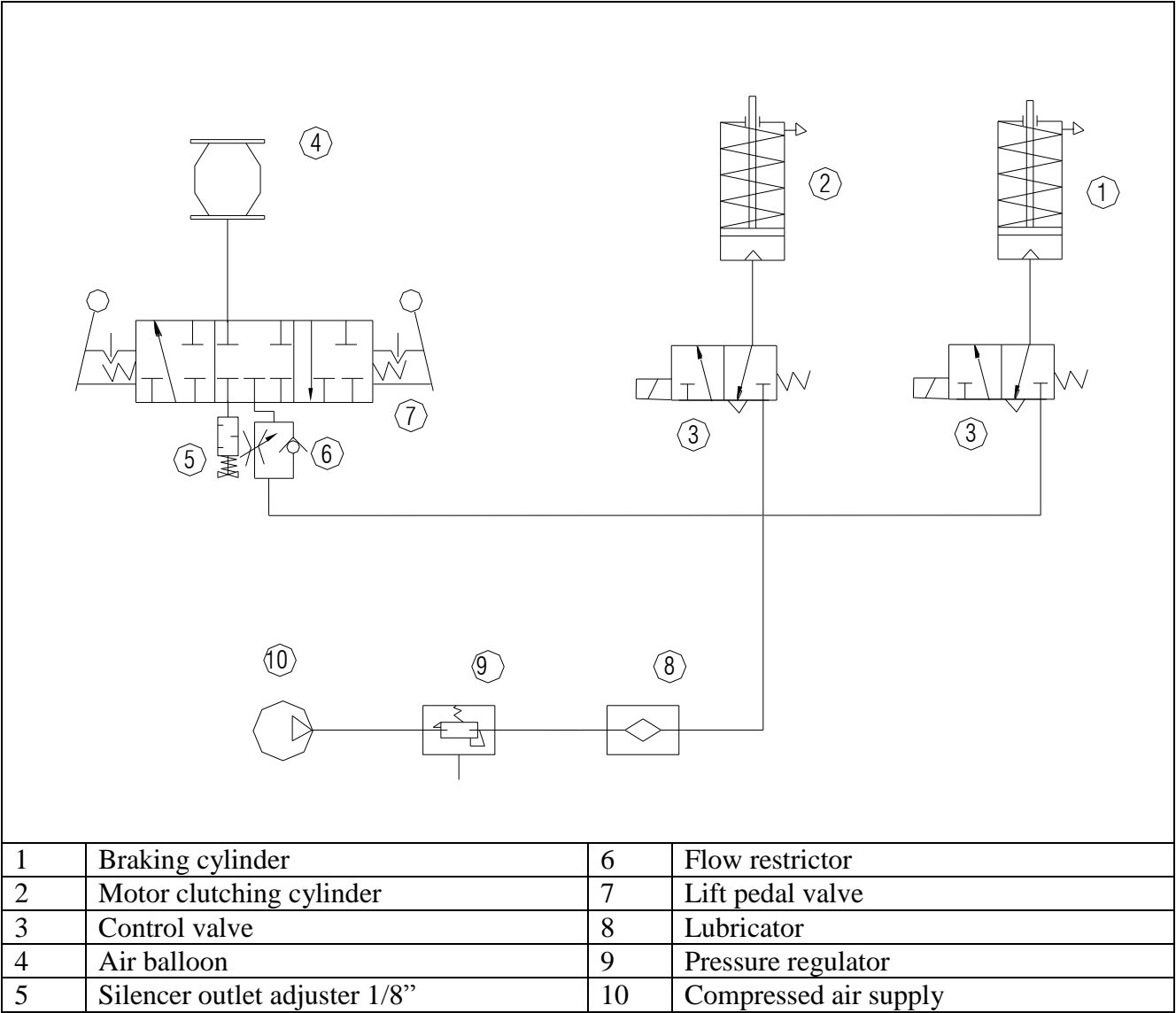


Figure 25 - PNEUMATIC CONNECTION

