



# ATLAS WB55 Wheel Balancer

## OPERATION MANUAL



### INDIANA

5800 MASSACHUSETTS AVE.  
INDIANAPOLIS, IN 46218

PHONE: (800) 262-1950  
FAX: (317) 542-1448

### DELAWARE

250 EXECUTIVE DRIVE, SUITE 1  
NEWARK, DE 19702

PHONE: (800) 715-1950  
FAX: (302) 894-9136

### GEORGIA

5405 BUFORD HWY.  
NORCROSS, GA 30071

PHONE: (800) 768-4104  
FAX: (678) 781-0149

### ARIZONA

8399 W VAN BUREN ST., SUITE 210  
TOLLESON, AZ 85353

PHONE: (800) 602-9928  
FAX: (602) 490-3495

### NEW HAMPSHIRE

8 INDUSTRIAL DRIVE  
HUDSON, NH 03051

PHONE: (800) 360-0053

### FLORIDA

12250 NW 25TH ST., SUITE 112  
MIAMI, FL 33182

PHONE: (800) 305-5609

## 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 |
| <b>BOLD TYPE</b>  | Important information                               |

# CONTENTS

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>INTRODUCTION</b>                          | <b>5</b>  |
|          | 1.1 - INTRODUCTION                           | 5         |
|          | 1.2 MACHINE IDENTIFICATION DATA              | 5         |
|          | 1.3 MANUAL KEEPING                           | 5         |
| <b>2</b> | <b>GENERAL INFORMATION</b>                   | <b>6</b>  |
|          | 2.1 GENERAL SAFETY                           | 6         |
|          | 2.2 STANDARD SAFETY DVICES                   | 6         |
|          | 2.3 INTENDED USE                             | 6         |
|          | 2.4 GENERAL CHARATERISTICS                   | 6         |
|          | 2.5 MACHINE DESCRIPTION                      | 7         |
|          | 2.6 TECHNICAL SPECIFICATION                  | 7         |
| <b>3</b> | <b>TRANSPORTATION, UNPACKING AND STORAGE</b> | <b>8</b>  |
|          | 3.1 TRANSPORTATION                           | 8         |
|          | 3.2 UNPACKING                                | 8         |
|          | 3.3 STORAGE                                  | 8         |
|          | 3.4 SCRAPPING                                | 8         |
| <b>4</b> | <b>COMMISSIONING</b>                         | <b>9</b>  |
|          | 4.1 SPACE REQUIRED                           | 9         |
|          | 4.2 SHAFT ASSEMBLY                           | 9         |
|          | 4.3 WHEEL GUARD MOUNTING                     | 10        |
|          | 4.4 ELECTRIC CONNECTION                      | 10        |
| <b>5</b> | <b>CONTROL PANEL AND MENU</b>                | <b>11</b> |
|          | 5.1. CONTROL PANEL                           | 11        |
|          | 5.2 SWITCH ON                                | 12        |
|          | 5.3 MEASUREMENT SCREEN                       | 12        |
|          | 5.4 BALANCING MODE SELECTION                 | 13        |
| <b>6</b> | <b>OPERATION OF THE WHEEL BALANCER</b>       | <b>14</b> |
|          | 6.1 BASIC OPERATION INFORMATION              | 14        |
|          | 6.2 MOUNTING WHEEL ON SHAFT                  | 14        |
|          | 6.2.1 STANDARD BACK CONE MOUNTING            | 15        |
|          | 6.2.2 STANDARD FRONT CONE MOUNTING           | 15        |
|          | 6.3 SETTING OF WHEEL DIMENSIONS              | 15        |
|          | 6.3.1 WHEEL DIMENSIONS                       | 15        |
|          | 6.3.2 AUTOMATIC SETTING OF DIMENSIONS        | 16        |
|          | 6.3.3 MANUAL SETTING OF DIMENSIONS           | 17        |
|          | 6.4 BALANCING MODE                           | 18        |
|          | 6.4.1 DYNAMIC MODE                           | 18        |
|          | 6.4.2 STATIC MODE                            | 19        |
|          | 6.4.3 UNBALANCE OPTIMIZATION (OPT)           | 20        |
|          | 6.4.4 ALU MODE                               | 21        |
|          | 6.4.5 ALU☆ MODES                             | 21        |
|          | 6.4.6 SPLIT FUNCTION                         | 23        |
|          | 6.4.7 MOTORCYCLE MODE                        | 24        |
| <b>7</b> | <b>SETUP</b>                                 | <b>25</b> |
|          | 7.1 MULTI-USERS                              | 25        |
|          | 7.2 WEIGHT CALIBRATION                       | 25        |
|          | 7.3 CALIBRATION OF A/D GAUGE                 | 27        |
|          | 7.3.1 CALIBARTION OF A GAUGE                 | 27        |
|          | 7.3.2 CALIBRATION OF D GAUGE                 | 27        |

|           |                         |           |
|-----------|-------------------------|-----------|
| 7.4       | CALIBRATION OF B GAUGE  | 28        |
| 7.5       | GENERAL SETTINGS        | 28        |
| 7.6       | SELF-DIAGNOSIS          | 29        |
| 7.7       | MULTI-LANGAGUE SETTINGS | 30        |
| 7.8       | SYSTEM INFORMATION      | 30        |
| <b>8</b>  | <b>ERRORS</b>           | <b>31</b> |
| <b>9</b>  | <b>TROUBLE-SHOOTING</b> | <b>32</b> |
| <b>10</b> | <b>MAINTENANCE</b>      | <b>33</b> |
| <b>11</b> | <b>ACCESSORIES</b>      | <b>34</b> |
| <b>12</b> | <b>ELECTRIC DIAGRAM</b> | <b>35</b> |

# 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.

|   |  |
|---|--|
|  | <b>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.</b> |
|---|--|

## 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

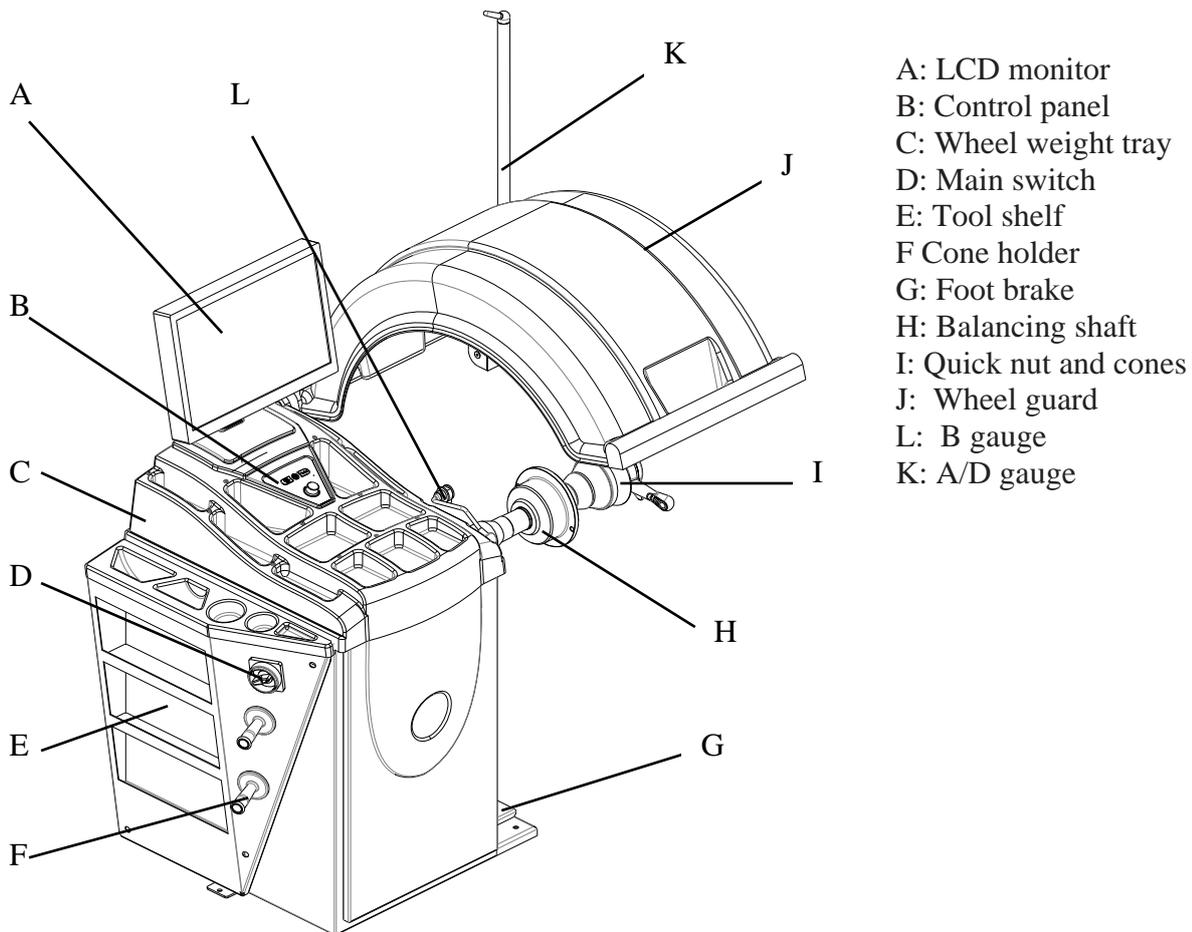
- This wheel balancer has been designed and manufactured exclusively for balancing wheel with a maximum diameter of 1000mm and maximum weight of 75kg. The calibration system is sufficient to cover different wheels from motorcycles to cars.
- In particular **THE MANUFACTURER** cannot be held responsible 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.

### 2.4 GENERAL CHARATERISTICS

- Automatic measure of wheel distance, diameter and width
- Automatic weight positioning where the balancing weight has to be applied
- Automatic braking after spin
- Automatic start/stop when the hood is lowered/raised
- Automatic application of adhesive weights on unbalanced positions
- STOP pushbutton to stop the machine immediately
- STATIC1 and STATIC2 balancing modes
- ALU balancing modes ALU1 - ALU7
- Special ALU balancing modes ALU1☆, ALU2☆
- Motorcycle wheel balancing mode
- Split function (or Hidden Weight) to hide the weights behind the spokes of rims

- Rapid optimization (OPT)
- Self-diagnosis
- Self-calibration
- Display in grams or ounces, in mm or inch
- Anchor-down installation unnecessary

## 2.5 MACHINE DESCRIPTION



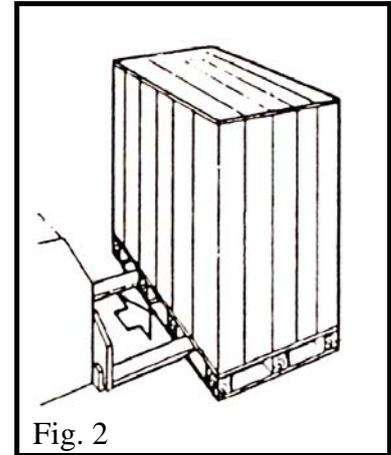
## 2.6 TECHNICAL SPECIFICATION

|                      |                         |
|----------------------|-------------------------|
| Max. wheel weight    | 75kg                    |
| Wheel diameter       | 39" (1000mm)            |
| Rim diameter         | 10" - 32" (255 - 810mm) |
| Wheel width          | 1.5" - 20" (39 - 510mm) |
| Balancing precision  | ± 1g                    |
| Resolution           | 1.4 degrees             |
| Cycle time           | 7 s                     |
| Max. balancing speed | 150 rpm                 |
| Power supply         | 110V/220V/230V-1Ph      |
| Motor power          | 180w                    |
| Noise level          | < 70 dbA                |
| Gross weight         | 166kg                   |

## 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.



### 3.2 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  $-10^{\circ}\text{C}$  and  $+40^{\circ}\text{C}$ .

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.

### 3.4 SCRAPPING

When your machine's working life is over and it can no longer be used, it must be made inoperative by removing any connection to power sources.

These units are considered as special waste material, and should be broken down into uniform parts and disposed of in compliance with current laws and regulations.

If the packing are not polluting or non-biodegradable, deliver them to appropriate handling station.

## 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.

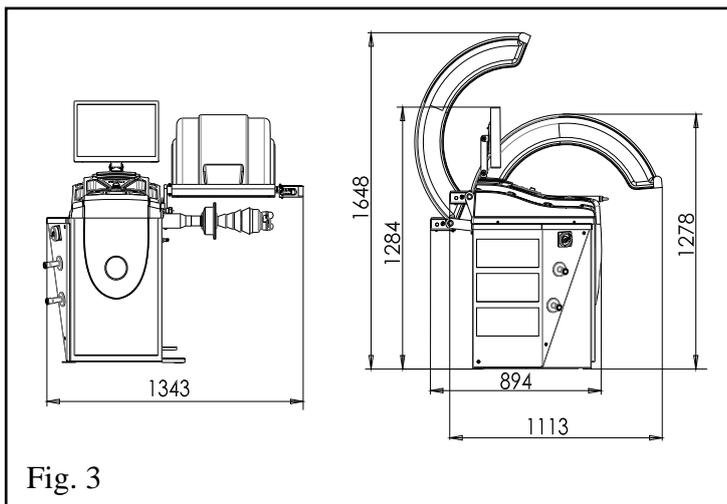


Fig. 3

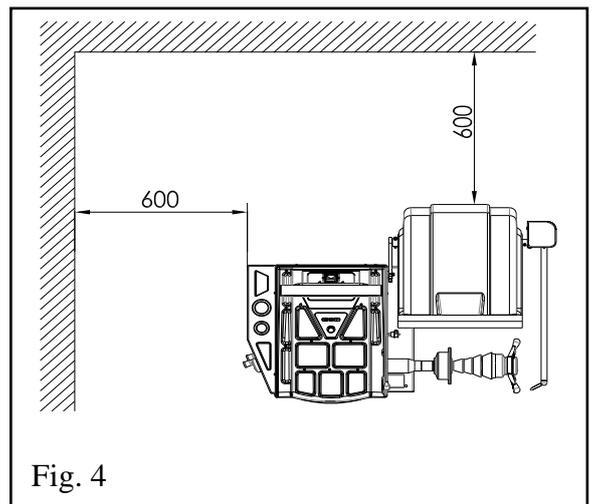


Fig. 4

### 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).

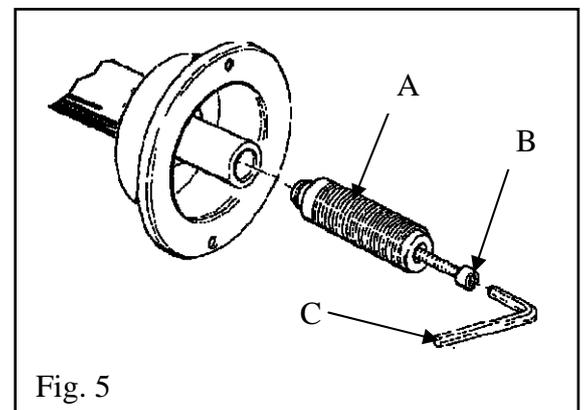
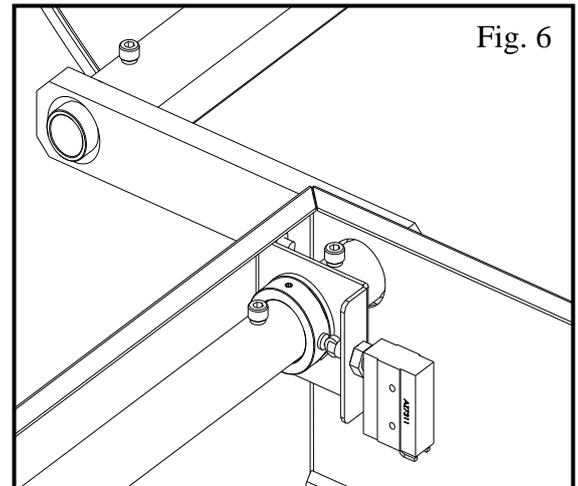


Fig. 5

### 4.3 WHEEL GUARD MOUNTING

- Remove the wheel guard and installation accessories from the package.
- Mount the guard onto the guard arms fixed on the machine. Tighten the screws.
- Mount the wheel guard onto the guard frame.
- Check the micro switch is held down when the guard is closed. Adjust it if necessary (ref. fig. 6).



### 4.4 ELECTRIC CONNECTION

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

- The machine is supplied with a single phase mains cable plus earth (ground)
- 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. If the machine does not include the electric plug, the user must set one, which must conform to the voltage of the machine, in compliance with the regulations in force.
- The machine should not be started up without proper earthing.

## CHAPTER 5 – CONTROL PANEL AND MENU

### 5.1 CONTROL PANEL

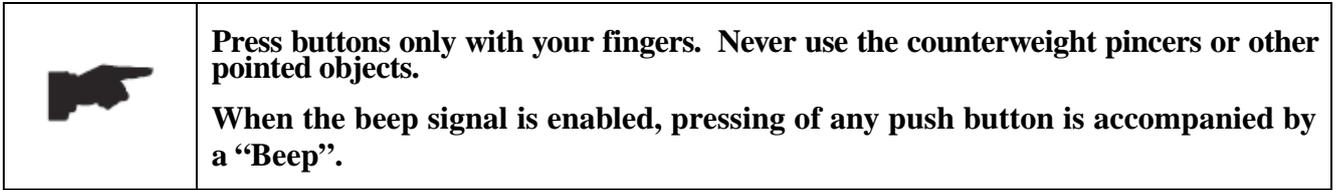
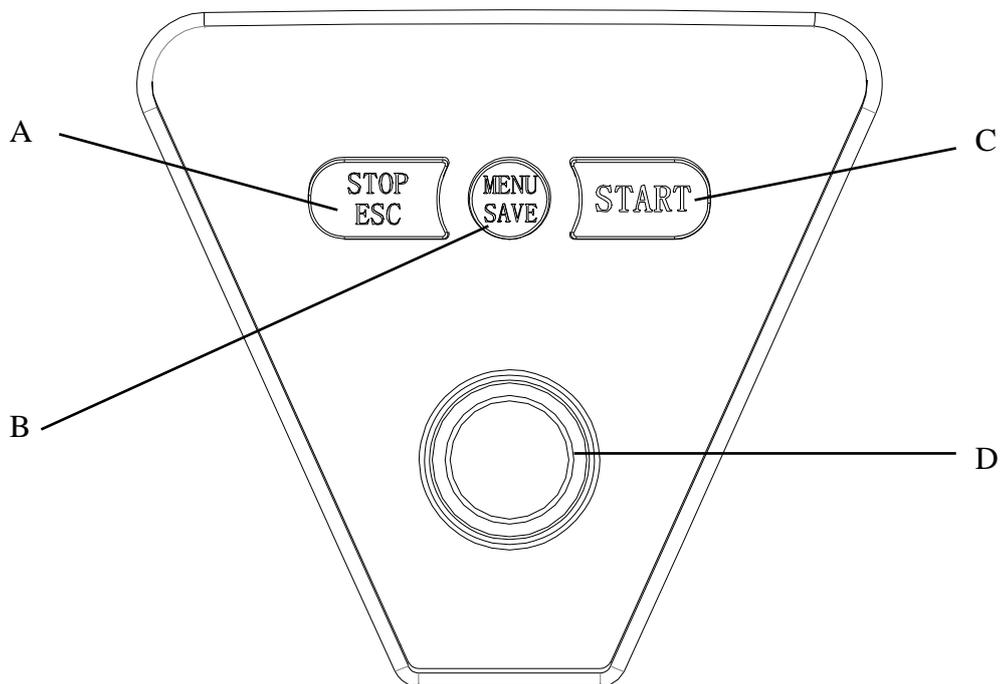


Fig. 7 – CONTROL PANEL



**A. STOP/ESC key:**

- When the machine is spinning, press it to stop the machine spinning immediately.
- In menu setup, press it to return the balancing modes.

**B. MENU/SAVE key:**

- At balancing modes, press it to entry the menu setup;
- At menu setup, press it to save the setup.

**C. START button:**

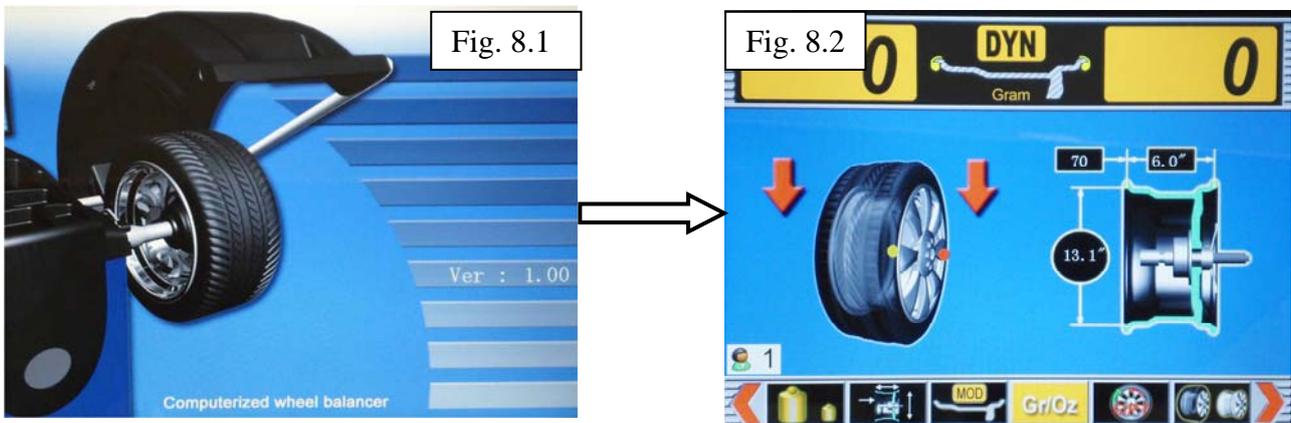
- Press it to start the machine spinning immediately.

**D. SELECTOR**

- Turn it clockwise or anticlockwise to choose the functions shown on the screen bottom. Once a function is selected, the respective icon of is highlighted.
- Press it to confirm the function selected.

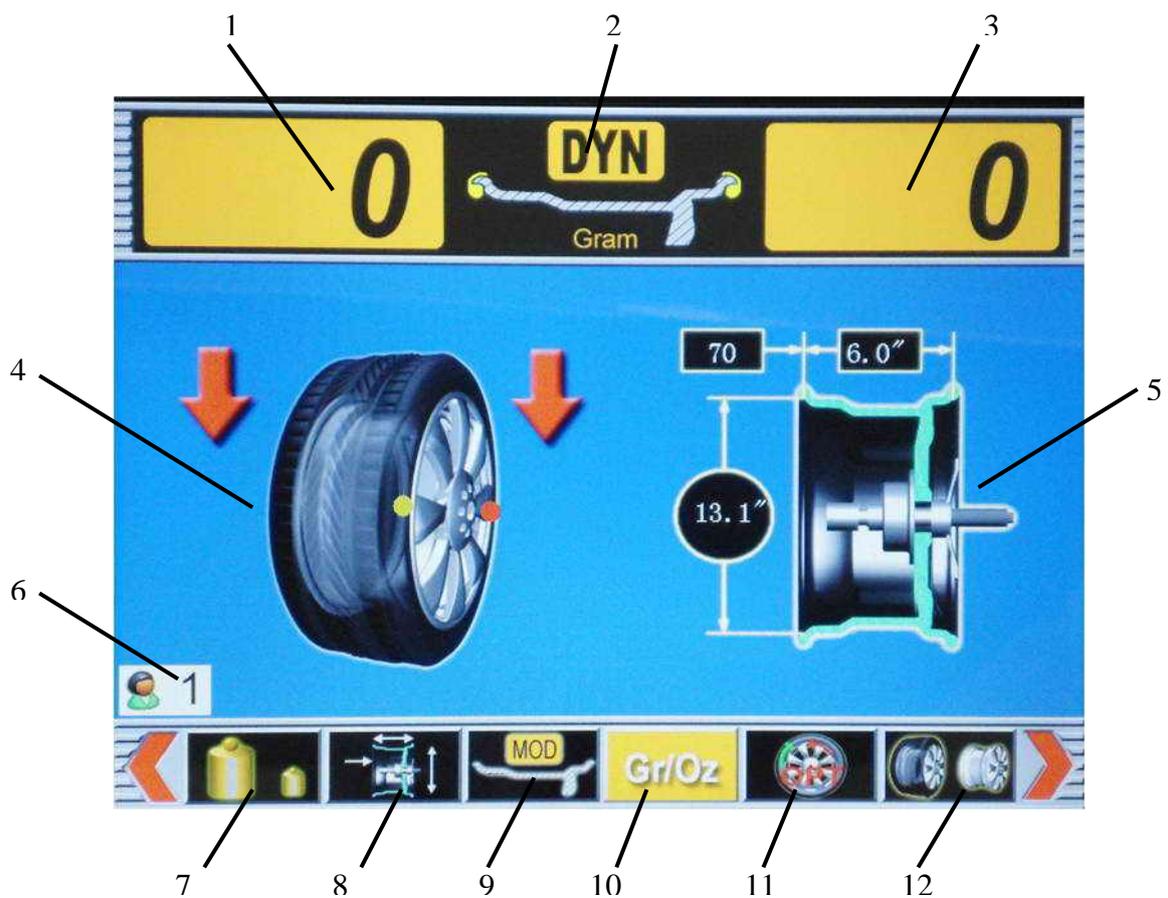
## 5.2 SWITCH ON

When the machine is switched on, the initial screen displays and seconds later changes to the measurement screen (ref. fig. 8).



## 5.3 MEASUREMENT SCREEN

Fig. 9 – MEASUREMENT SCREEN



1. Amount of unbalance, inner side
2. Balancing modes and dimension unit selected
3. Amount of unbalance, outer side
4. Unbalanced positions for both inner side and outer side of the rim

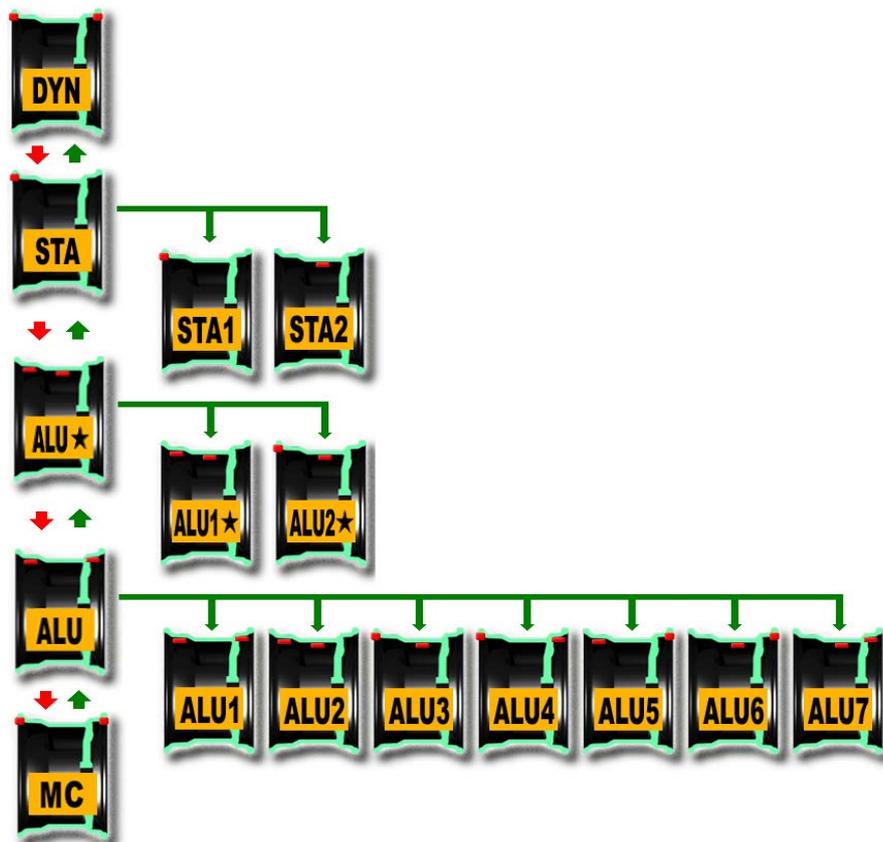
5. Wheel dimensions measured
6. User selected
7. Approx/fine readings 5g/1g or 0.25oz/0/1oz selection
8. Manual settings of wheel dimensions
9. Balancing modes selection
10. Units (gram or ounce) selection
11. OPT function selection
12. Graph image of unbalanced positions for wheel or rim.

#### 5.4 BALANCING MODE SELECTION

- Turn SELECTOR to select .
- Press SELETOR to enter the balancing mode screen (ref. fig. 10).
- Select the mode as shown in the diagram (fig. 11).



Fig. 11 – BALANCING MODE SELECTION PROCEDURE



## CHAPTER 6 – OPERATION OF THE WHEEL BALANCER



**Do not use the machine until you have read and understood the entire manual and the warning provided.**

**The wheel guard must not be opened before the wheel stops. The STOP button serves to stop the machine immediately in emergencies.**

**Do not permit the control panel to get wet!**



**Chains, bracelets, loose clothing or foreign objects in the vicinity of the moving parts can represent a danger for the operator.**

### 6.1 BASIC OPERATION INFORMATION

- 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 set the wheel dimensions.
- Select the most appropriate balancing mode.
- Perform a spin by pressing START key or closing the wheel guard if START BY LOWERING GUARD is enabled.
- When the figures have been established, the spin is automatically braked to a stop in the correction zone and the unbalanced amounts are shown on the screen.
- Rotate the wheel slowly by hand until the correct angular wheel position (12 o'clock position) for applying the counterweights is shown on the screen.
- Press the foot brake to avoid the wheel from rotation and 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 instruction shown in the chapter 5.

### 6.2 MOUNTING WHEEL ON SHAFT



**Avoid back injury, seek assistance when lifting a heavy wheel onto the balancer shaft.**

**Make sure to tighten the quick locking nut. Failure to do so may result in serious personal injury.**

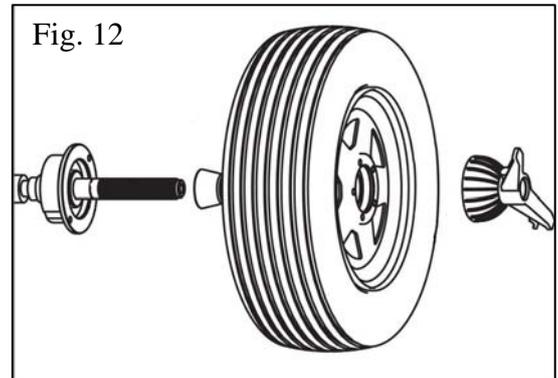
- Select the most appropriate mounting method for the wheel you are balancing. Using the proper method ensures secure mounting and safe balancer operation, and prevents damage to the wheel.
- On most wheels, the inner side of the wheel hub usually has the most uniform surface for wheel balancing. Always 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 shaft while tightening the nut.

### 6.2.1 STANDARD BACK CONE MOUNTING (ref. Fig. 12)

|   |   |
|---|---|
|  | <b>Carefully clean the component surface before performing any operation.</b> |
|---|---|

Most steel wheels can be mounted properly using this method. The wheel is centered on a cone from the inner side of the hub.

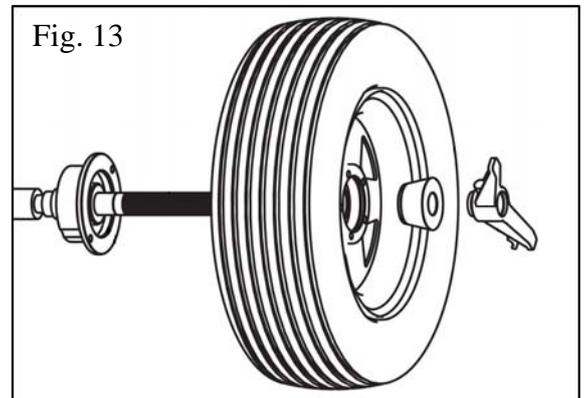
- Select the cone that best fits the centre hole in the wheels. Slide the cone onto the shaft with the large end towards the faceplate.
- Lift the wheel onto the shaft and centre it on the cone.
- Attach the pressure cup to the quick locking nut and install the assembly onto the shaft. Tighten securely.



### 6.2.2 STANDARD FRONT CONE MOUNTING (ref. Fig. 13)

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 centre hole.
- Install the quick locking nut (without the pressure cup) onto the shaft. Tighten securely against the cone



## 6.3 SETTINGS OF WHEEL DIMENSIONS

|   |   |
|---|---|
|  | <b>Before balancing a wheel, wheel dimensions must be measured correctly.</b> |
|---|---|

### 6.3.1 WHEEL DIMENSIONS

#### 6.3.1.1 STANDARD MODES

Measure the wheel dimensions as shown in the figure 14

#### 6.3.1.2 ALU☆ MODES

Measure the wheel dimensions as shown in the figure 15.

Fig. 14 – STANDARD MODES

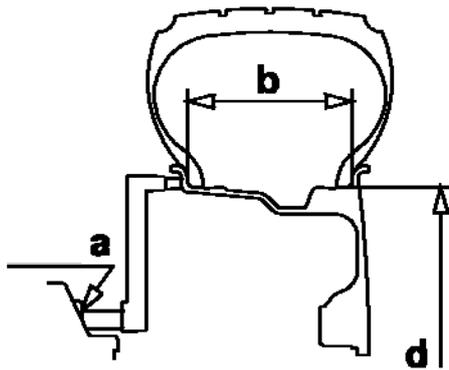
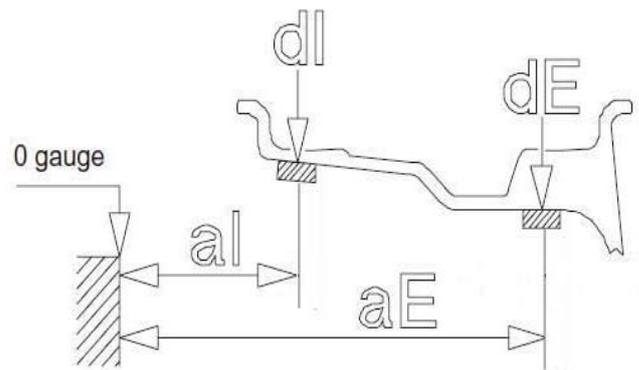


Fig. 15 – ALU☆ MODES



### 6.3.2 AUTOMATIC SETTING OF DIMENSIONS

#### 6.3.2.1 STANDARD MODES

- Move the A/D gauge to measure the A and D dimensions as shown in the figure 16. The dimensions A and D are determined and set automatically, and a beep sound is heard in the meantime. The determined dimensions are shown on the screen after releasing the gauge.
- Move the B gauge to measure the B dimension as shown in the figure 17. The dimension B is determined and set automatically. The determined dimension B is shown on the screen after releasing the gauge.

Fig. 16 – A/D MEASUREMENT



Fig. 17 – B MEASUREMENT



### 6.3.2.2 ALU☆ MODES

- Move the A/D gauge to the position “1” as shown in the figure 18, select  and press SELECTOR to confirm. The dimensions A1 and D1 are set automatically, and a beep sound is heard in the meantime. The set dimensions are shown on the screen after releasing the gauge.

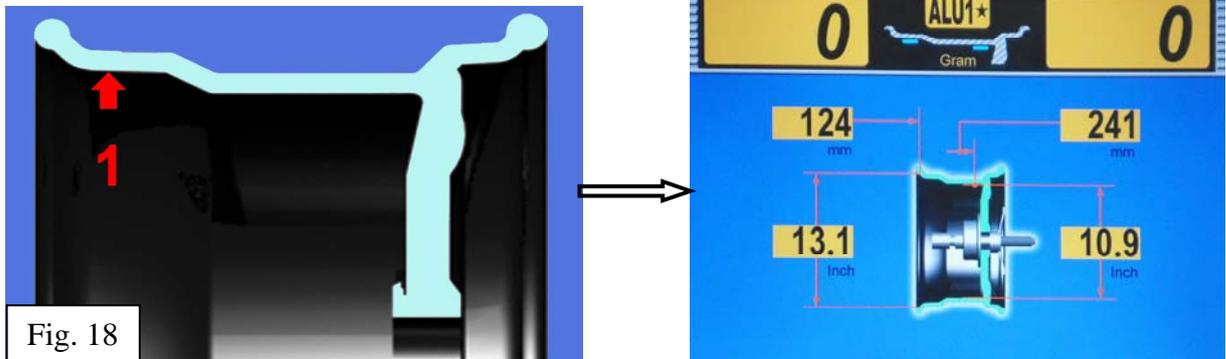


Fig. 18

- Move the AD gauge to the position “2” as shown in the figure 19. Two seconds later, the dimensions AE and DE are set automatically, and a beep sound is heard in the meantime. The set dimensions are shown on the screen after releasing the gauge.

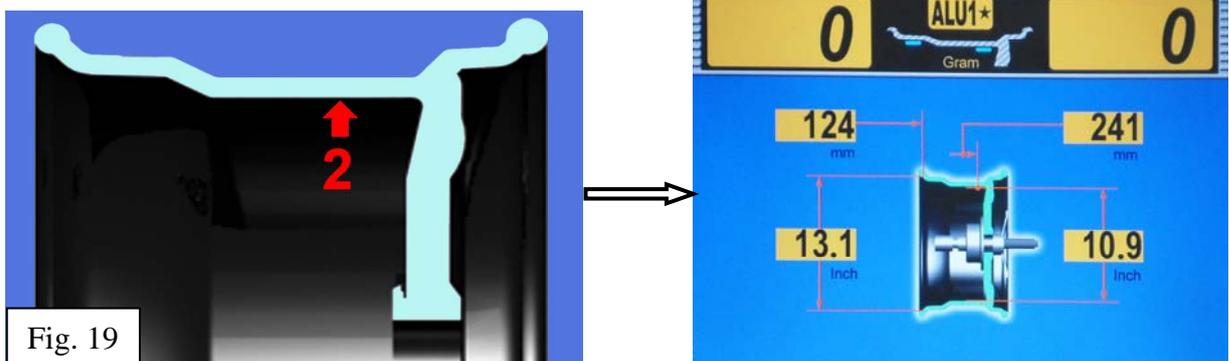


Fig. 19

 The positions “1” and “2” are determined by the operator according to the rim profiles. The distance between two positions must be more than 2.5 inch. Failure to do so, the measurements cannot be correct.

### 6.3.3 MANUAL SETTINGS OF DIMENSIONS

Wheel dimensions can also be set manually as follows:

- Turn SELECTOR to select  and press SELECTOR to enter the program for setting of wheel dimensions.
- Press SELECTOR to change the white dot to red color and to change the corresponding dimension text from grey to yellow (ref. fig. 20).
- Continue to turn SELECTOR until the correct dimension is selected.
- The unit for diameter and width of the rim can also be changed to mm or inch by turning and pressing SELECTOR to change the white dot under the dimensions to red.
- Press SELECTOR to save the dimension and then continue to set other dimensions.



Fig. 20

## 6.4 BALANCING MODES

|   |   |
|---|---|
|  | <p>During spinning, do not raise the wheel guard or press STOP button, do not press the brake pedal. The spin cannot be completed and the error information will be shown on the screen.</p> <p>A spin can be performed by pressing START button or closing the wheel guard if <b>START BY LOWERING GUARD</b> is enabled.</p> |
|---|---|

### 6.4.1 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.

- Select DYNAMIC mode.
- Measure and set the wheel dimensions automatically or manually.
- Start a spin.
- After the spin is completed, the unbalanced amounts for both inner side and outer side of the rim will be shown on the screen (ref. fig. 22 and 23).



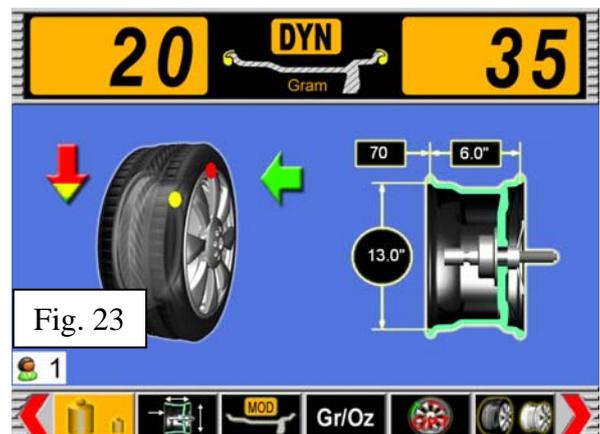
#### 6.4.1.1 CORRECTION OF INNER SIDE (ref. fig. 22)

- Following the arrow direction, rotate the wheel slowly by hand until the yellow dot on the inner side moves to the 12 o'clock position, and the arrow changes to be green color and points to the 12 o'clock position.
- Clip the correct weights on the position (12 o'clock position) for correction.



#### 6.4.1.2 CORRECTION OF OUTER SIDE (ref. fig. 23)

- Following the arrow direction, rotate the wheel slowly by hand until the red dot on the outer side moves to the 12 o'clock position, and the arrow changes to be green color and points to the 12 o'clock position.
- Clip the correct weights on the position (12 o'clock position) for correction.



**Tips (ref. fig. 24):**

- Select  and press SELECTOR to show the fine readings of unbalanced amounts.
- Select  and press SELECTOR to convert the reading units (gram or ounce).
- Select  and press SELECTOR to show the unbalanced positions of the rim in 3D graph.

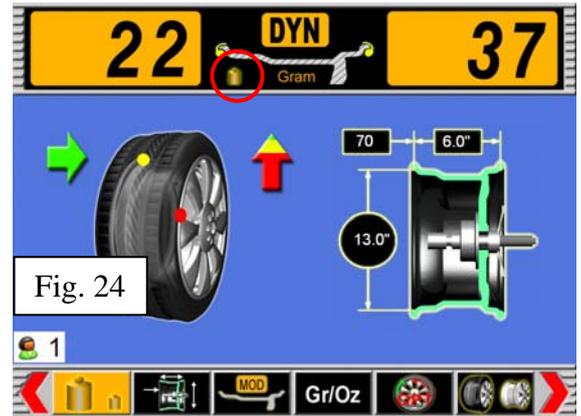


Fig. 24

**6.4.2 STATIC MODE**

The static modes are used for narrow wheels when it is not possible to place the counterweights on both sides of the rim. Apply a single weight on one of sides of the rim or in centre of wheel according to the diameter of the wheel mounted. The program of this machine has two static modes: STA1 and STA2 (ref. fig. 25).

- STA1 mode is used to clip the weights on the rim for correction.
- STA2 mode is used to apply the adhesive weights on the rim for correction.

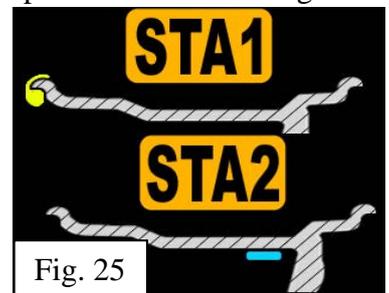


Fig. 25

To perform the static balancing, do as follows:

- Select STA1 or STA2.
- Measure and set the wheel dimensions automatically or manually.
- Start a spin.
- After the spin is completed, the unbalanced amount will be shown on the screen (ref. fig. 27).
- Following the arrow direction, rotate the wheel slowly by hand until the red dot moves to the 12 o'clock position, and the arrow changes to be green and points to the 12 o'clock position (ref. fig. 28).
- At STA1 mode, clip a correct weight on one of sides of the rim for correction.
- At STA2 mode, apply a correct adhesive weight in centre of wheel for correction.



Fig. 26



Fig. 28



### 6.4.3 UNBALANCE OPTIMIZATION (OPT)

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 and for improving the residual eccentricity of the tire.

To start OPT function, select  and press SELECTOR. Proceed following the diagram (fig. 30).

- Rotate the wheel to move the tire valve to the 12 o'clock position.
- Mark with chalk a reference point on the same position of the tire.
- Press SELECTOR 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 tire valve to 12 o'clock position.
- Press SELECTOR to memorize the position.
- Start a spin.
- After the spin is performed, rotate the rim until the red dot moves to the 12 o'clock position.
- Mark with chalk a reference point on the rim at 12 o'clock position.
- Remove the rim from the balancer.
- With the aid of the tire changer, refit the wheel with the reference marks coinciding between the rim and tire in order to obtain the optimization. The readings shown on the screen are the optimized value.



Fig. 29

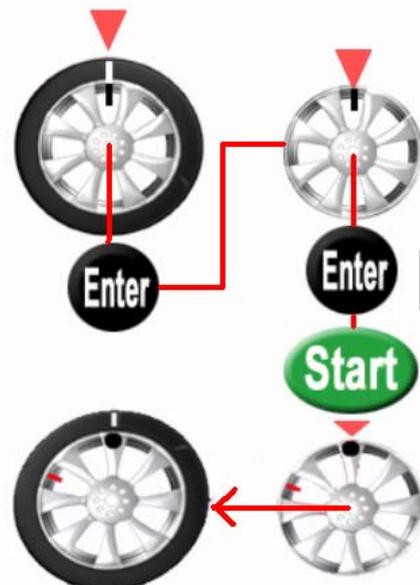


Fig. 30



Fig. 31

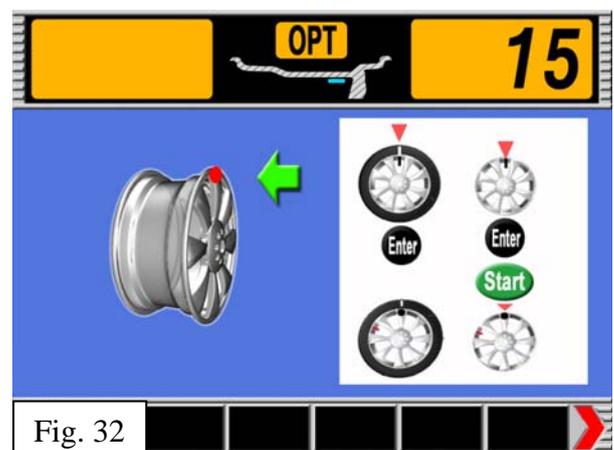


Fig. 32

## 6.4.4 ALU MODES

All the ALU modes are dynamic balance. The program of this machine includes seven ALU balancing modes from ALU1 to ALU7 for application of alloy rims with the different profiles (ref. fig. 33).

To perform the ALU balancing, do as follows:

- Select the mode that best fits the available locations.
- Measure and set the wheel dimensions automatically or manually.
- Start a spin.
- Following the procedure described in the chapter 6.4.1.1 and 6.4.1.2 for DYNAMIC mode to locate the unbalanced positions for both inner side and outer side of the rim.
- Apply the correct weights on the positions (ref. fig. 35). The adhesive weights can be applied by using the pusher of the A/D gauge.

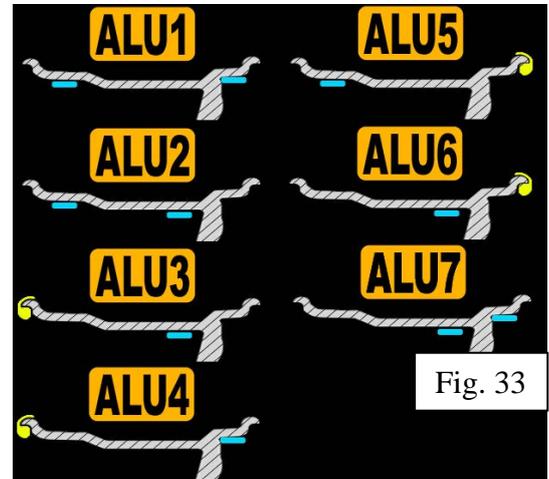


Fig. 33



Fig. 34

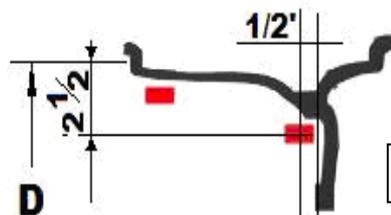
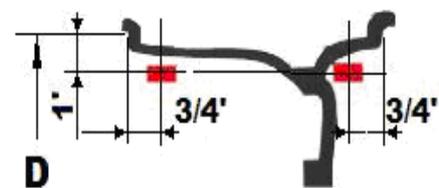


Fig. 35

## 6.4.5 ALU☆ MODES

ALU☆ modes are used to get the precise positions of alloy rims for application of the weights by using the A/D gauge directly and to avoid the approximate errors of standard ALU functions..

The program of this machine includes two ALU☆ modes: ALU1☆ and ALU2☆ (ref. fig. 36):

- ALU1☆ mode is used to apply the adhesive weights on the rim for correction.
- ALU2☆ mode is used to clip the weights on the rim for correction.

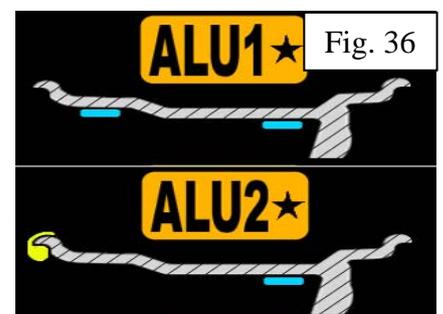


Fig. 36



**Be sure to set the wheel dimensions correctly following the chapter 6.3.2.2. Failure to do so, the correct balancing cannot be obtained.  
B sure the positions of the rim for application of adhesive weights are clean.**

To perform ALU☆ balancing, do as follows:

- Select the mode ALU1☆ or ALU2☆ that best fits the available locations.
- Measure and set the wheel dimensions automatically or manually. Be sure to set the dimensions referring to the chapter 6.3.2.2 for ALU☆ modes.
- Start a spin.



Fig. 37

- After the spin is completed, the unbalanced amount will be shown on the screen (ref. fig. 38).



Fig. 38

#### 6.4.5.1 CORRECTION OF INNER SIDE

- Following the arrow direction, rotate the wheel slowly by hand until the yellow dot on the inner side moves to the 12 o'clock position, and the arrow changes to be green color and points to the 12 o'clock position.
- Place the correct adhesive weights on the pusher of A/D gauge.
- Move the A/D gauge with the adhesive weight on it. At this time an arrow is shown on the screen for indication to apply the weights (ref. fig. 39).
- Continue to move the pusher of the A/D gauge to the position indicated by the arrow on the screen (ref. fig. 40).
- Apply the weight by hand onto the position of inner side of the rim.
- Release the A/D gauge, the program will return to the dimension screen.

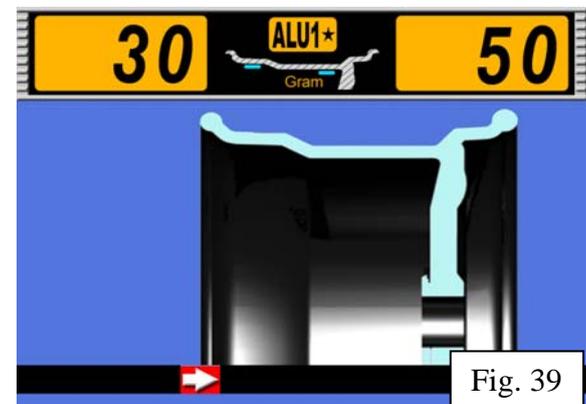


Fig. 39

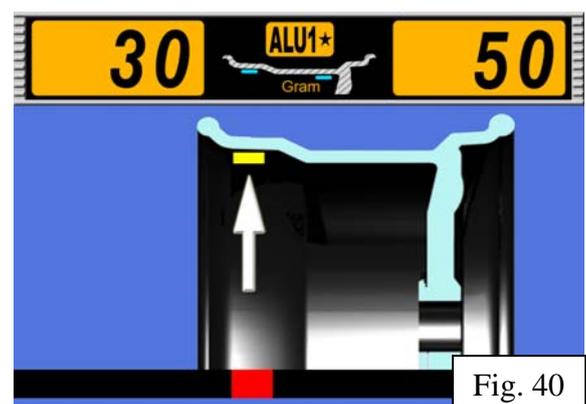


Fig. 40

### 6.4.5.2 CORRECTION OF OUTER SIDE

- Apply the weight onto the position indicated by the arrow shown on the screen (ref. fig. 41) following the same procedures for correction of inner side.
- In case that the unbalanced amounts are left on the outer side of the rim, it is advisable to perform SPLIT function.

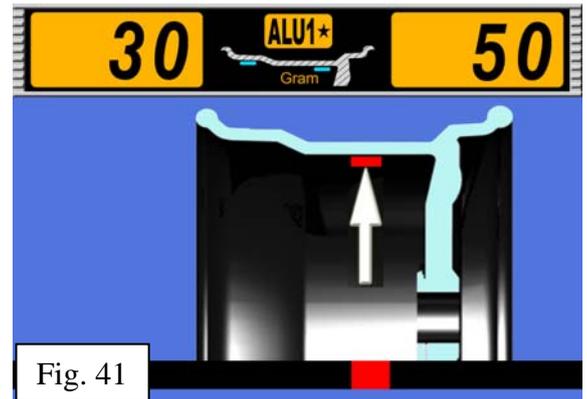


Fig. 41

### 6.4.6 SPLIT FUNCTION

The SPLIT function is used to position the adhesive weight behind the wheel spokes so that they are no longer visible. It is advisable to use this function only in the ALU★ modes.

To start the SPLIT function, in ALU1★ or ALU★ mode select  and press SELECTOR, and do as follows:

- Choose the first spoke of two adjacent spokes where is unbalanced.



Fig. 43

- Move the first spoke to the 12 o'clock position.
- Press SELECTOR to memorize the position. A green soft-dot will be shown on the screen to mark the first split point (ref. fig. 44).
- Choose the second spoke of two adjacent spokes where is unbalanced.
- Move the second spoke to the 12 o'clock position.



Fig. 44

- Press SELECTOR to memorize the position. Another green soft-dot will be shown on the screen to mark the second split point (ref. fig. 45), and in the meantime the original red dot disappears on the screen.



Fig. 45

- Press SELECTOR again and the program will return to the dimension screen. Two unbalanced points will be shown on the outer side of the rim on the screen for corresponding to the two spokes (ref. fig. 46).



- Rotate the wheel to any unbalanced point on the outer side of the rim, the readings on the right window of the screen will be changed from 50k to 30g and 25g, and the unbalanced points are hidden behind the spokes.
- Apply the weights on the positions for correction.



#### 6.4.7 MOTORCYCLE MODE

|   |   |
|---|---|
|  | <b>To perform the motorcycle wheel balancing, it is necessary to have the special adaptors and the A/D gauge extension, which can be ordered from the manufacturer as the optional accessories.</b> |
|---|---|

- Mount the wheel on the shaft on the machine with the adaptors and tighten the quick
- Mount the extension on the A/D gauge
- Select MC mode.
- Measure and set the wheel dimensions automatically or manually. .
- Start a spin by pressing START button or closing the wheel guard if START FROM GUARD CLOSING is enabled.
- After the spin is completed, the unbalanced amount will be shown on the screen (ref. fig. 48).
- Apply the correct weights on the position (12 o'clock position) for correction



## CHAPTER 7 – SETUP

On the measurement screen, press MENU/SAVE key to access the menu setup screen on which eight configurations are available. Each configuration can be selected by turning and pressing SELECTOR.

On the left side of the screen:

➤ Multi-users



➤ Weight calibration



➤ Calibration of A/D gauge



➤ Calibration of B gauge



On the right side of the screen:

➤ General settings



➤ Self-diagnosis



➤ Multi-language settings



➤ System information



### 7.1 MULTI-USERS

- Select  and press SELECTOR to entry the different user configuration.
- Turn SELECTOR to change the different users. The selected user is highlighted in light red on the right side (ref. fig. 49).
- Save the configuration or measurements by pressing MENU/SAVE key for future recalling.
- Different users can have the different configurations for recalling.



Fig. 49

### 7.2 WEIGHT CALIBRATION



**Make sure to set the exact dimensions 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 dimensions.**

#### Tips for weight calibration:

- Select  and press SELECTOR to select the reading units (gram or ounce).
- Select  and press SELECTOR to go back the previous screen.
- Select  and press SELECTOR to set the wheel dimensions.

To make the weight calibration, select  and press SELECTOR and then proceed as the diagram shown on the screen (fig. 50):



Fig. 50

- Mount a wheel with average dimensions on the shaft. Be sure the wheel is not mounted with any weight.
- Set the wheel dimensions of the wheel mounted automatically or manually.
- Perform the first spin under normal condition



Fig. 51

- Rotate the wheel manually to the position marked with the dot on the inner rim and apply 100g weight on the position (ref. fig. 52) .
- Start the second spin.
- After the spin is finished, remove the 100g weight from the rim.



Fig. 52

- Rotate the wheel manually to the position marked with the dot on the outer rim and apply 100g weight on the position (ref. fig. 53) .
- Start the third spin.
- After the spin is finished, a beep can be heard for three times and then the program of the weight calibration exits automatically.
- Remove the 100g weight from the wheel.
- Press STOP/ESC key to exit.

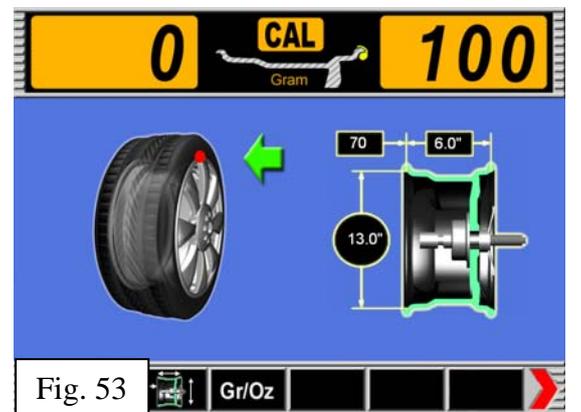
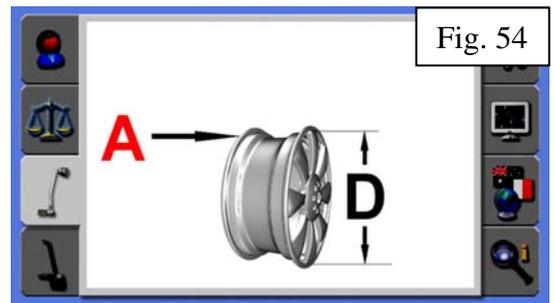


Fig. 53

### 7.3 CALIBRATION OF A/D GAUGE

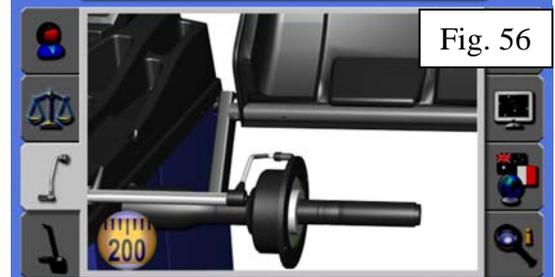
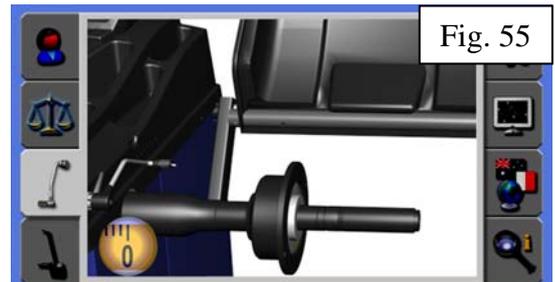


- Select  and press SELECTOR to entry the A/D gauge calibration program.
- Turn SELECTOR TO select A or D shown on the screen. The item highlighted in red is selected (ref. fig. 54).
- Press SELECTOR to make the calibration for the item selected.



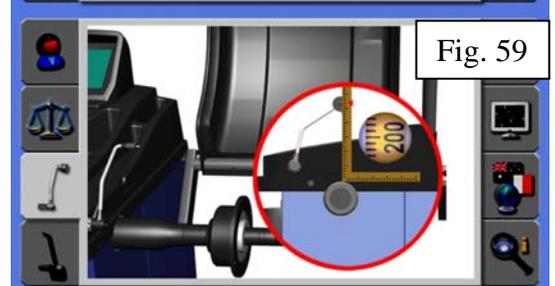
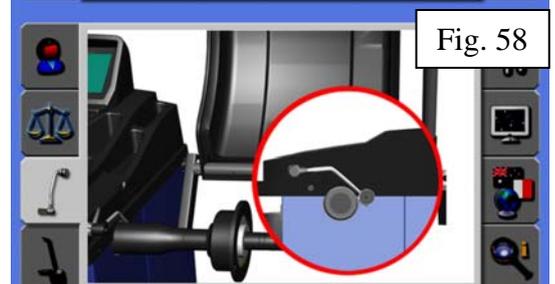
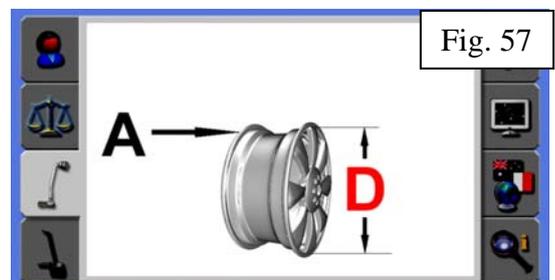
#### 7.3.1 CALIBRATION OF A GAUGE

- Select A by turning and pressing SELECTOR.
- Place the gauge to the “0” position as shown in the figure 55 .
- Press SELECTOR to memorize the position.
  
- Set the gauge at the distance 200mm as shown in the figure 56.
- Keep the gauge at 200mm distance and press SELECTOR to memorize the position.



#### 7.3.2 CALIBRATION OF D GAUGE

- Select D by turning and pressing SELECTOR.
  
- Place the gauge to the “0” position as shown in the figure 58.
- Press SELECTOR to memorize the position.
  
- With the aid of a meter, set the gauge tip and at 200mm measured from the HIGHER PROFILE surface of shaft (ref. fig. 59).
- Keep the gauge at 200mm distance and press SELECTOR to memorize the position.
  
- Press STOP/ESC key to exit.



## 7.4 CALIBRATION OF B GAUGE

- Select  and press SELECTOR to enter the B gauge calibration program (fig. 60).
- Place the gauge to the “0” position as shown in the figure 61.
- Press SELECTOR to memorize the position.
- Set the gauge head to the outer surface of the shaft flange as shown in the figure 62.
- Press SELECTOR to memorize the position.
- Press STOP/ESC key to exit.

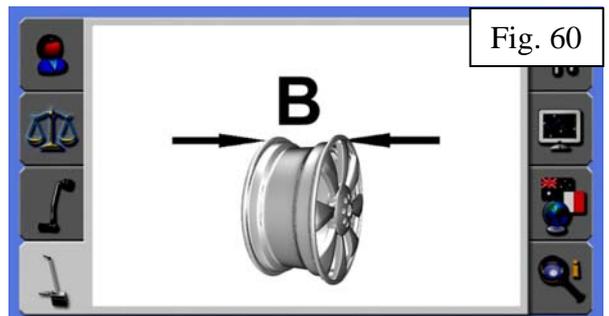


Fig. 60

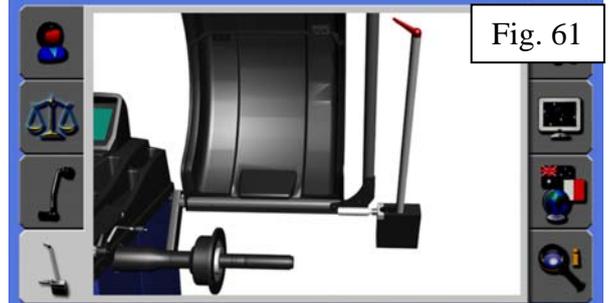


Fig. 61



Fig. 62

## 7.5 GENERAL SETTINGS

- Select  and press SELECTOR to enter the system settings (fig. 62).
- Turn SELECTOR to highlight the item to be selected in red and press it to confirm.
- Turn SELECTOR to make the different settings.
- Press MENU/SAVE key to memorize the settings.
- Press STOP/ESC key to exit the settings.

**Length unit:** mm/inch

**Weight unit:** gram/ounce

**Weight resolution:** 1g/5g or 0.10oz/0.35oz

**Approx/fine:** 1-30g or 0.1-0.3oz

**Beeper:** enable or disable

**Stop by lifting the guard:** enable or disable.

**Start by lowering the guard:** enable or disable.

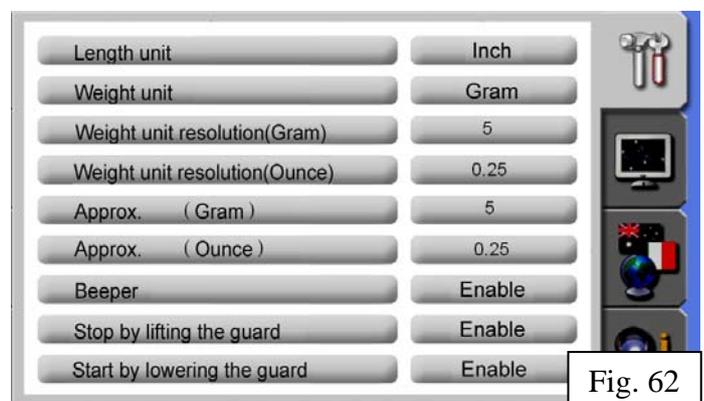
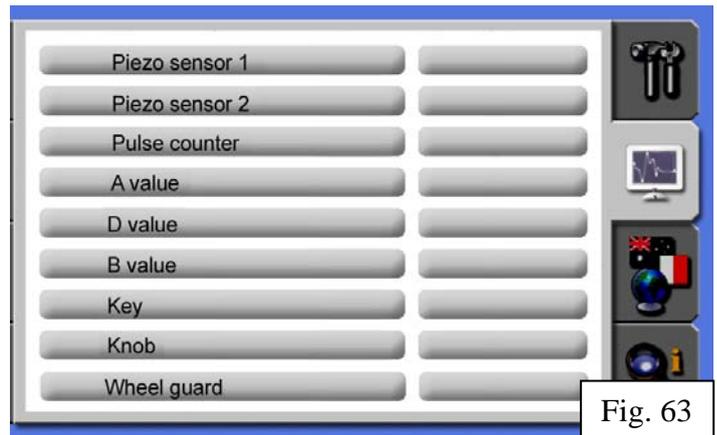


Fig. 62

## 7.6 SELF-DIAGNOSIS

- Select  and press SELECTOR to enter the diagnosis program (fig. 63).
- Select each item by turning and pressing SELECTOR.
- Check the dynamic status of each item shown on the right side of the screen.
- Exit by pressing both SELCTOR and STOP/ESC keys at same time.



To do the diagnosis, proceed with the following procedures:

### **Piezo sensor 1:**

- Push the balancing shaft by hand from any direction, the readings change.

### **Piezo sensor 2:**

- Push the balancing shaft by hand from any direction, the readings change.

### **Phase encoder (pulse counter):**

- Rotate the wheel in direction of rotation, the readings change from 0 to 255.
- Rotate the wheel in reverse direction of rotation, the readings change from 255 to 0.

### **A gauge (A value):**

- Move the gauge from “0” position outwards along the axis, readings change gradually.

### **D gauge (D value):**

- Lift the gauge from “0” position upwards, readings change gradually.

### **B gauge (B value):**

- Move the gauge from “0” position to the shaft flange, readings change from 40 to 245.

### **Keys:**

- Press STOP/ESC key, “STOP/ESC” is shown on the screen.
- Press MENU/SAVE key, “MENU/SAVE” is shown on the screen.
- Press START key, “START” is shown on the screen.

### **Selector (knob):**

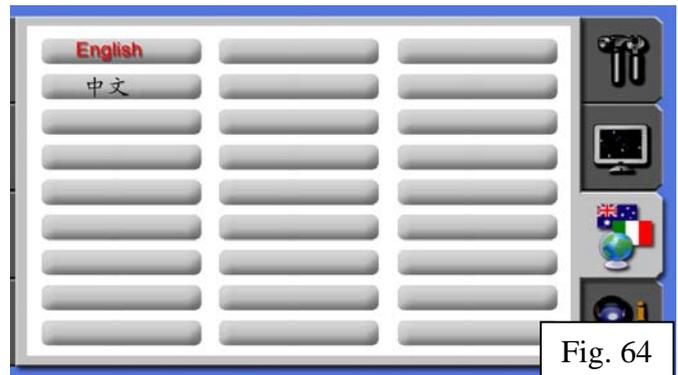
- Press it, “Enter” is shown on the screen.
- Turn it clockwise, “+” is shown on the screen.
- Turn it anticlockwise, “-” is shown on the screen.

### **Wheel guard:**

- Lower it, “ON” is shown on the screen if the function “START BY LOWERING GUARD” is enabled on the general settings (chapter 7.5).
- Lift it, “OFF” is on the screen if the function “STOP BY LIFTING GUARD” is enabled on the general settings (chapter 7.5).

## 7.7 MULTI-LANGUAGE SETTINGS

- Select  and press SELECTOR to enter the multi-language settings.
- Select the language item by turning SELECTOR. The selected language is highlighted in red
- Turn SELECTOR to select the language and confirm by pressing it.
- Press STOP/ESC key to exit.

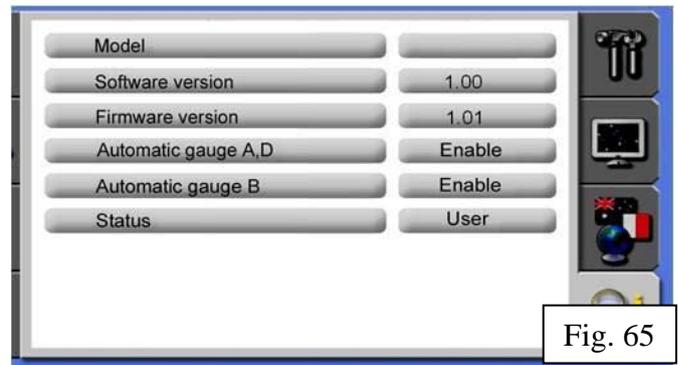


## 7.8 SYSTEM INFORMATION

All the information has been set by the manufacturer before delivery. It is not possible to make any change.

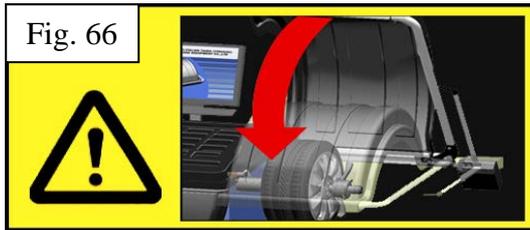
To check the information, select  and press SELECTOR. The following information will be shown on the screen.

- ✓ **Model**
- ✓ **Software version**
- ✓ **Firmware version**
- ✓ **A/D gauge**
- ✓ **B gauge**
- ✓ **Working status**



Press STOP/ESC key to exit.

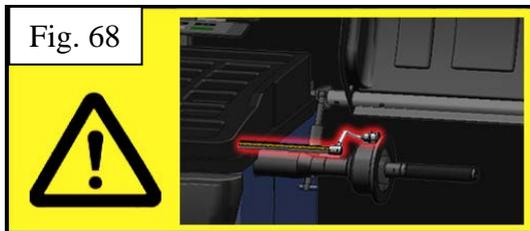
## CHAPTER 8 – ERRORS



START button is pressed when the wheel guard is not lowered and, if START BY LOWERING GUARD is enabled.



The wheel guard is raised when the machine is spinning.



A/D gauge is not moved to the correct position when the gauge is needed to be set measurement. Or A/D gauge is faulty.



The spin speed is too low.



B gauge is not moved to the correct position when the gauge is needed to be set measurement. Or the B gauge is faulty.



In SPLIT mode, the split angle is more than 120 degrees and cannot perform the correct split function.

## CHAPTER 9 – TROUBLE-SHOOTING

| <b>TROUBLE:</b>  | <b>POSSIBLE CAUSE:</b>   | <b>SOLUTION:</b>   |
|--|--|--|
| No display when switching on                               | <ol style="list-style-type: none"> <li>1. There is no power.</li> <li>2. The faulty power plug.</li> <li>3. The electrical wires are disconnected.</li> <li>4. Wrong power voltage.</li> <li>5. Fuses are blown.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check power on.</li> <li>2. Replace.</li> <li>3. Reconnect.</li> <li>4. Check for correct voltage.</li> <li>5. Replace.</li> </ol>   |
| The dimension measured is not correct.                     | <ol style="list-style-type: none"> <li>1. The gauge is not positioned correctly when measuring.</li> <li>2. The gauge is not calibrated.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Position the gauge correctly.</li> <li>2. Calibrate the gauge.</li> </ol>  |
| The measurement gauge cannot function properly.            | <ol style="list-style-type: none"> <li>1. The gauge fails to return onto its original position automatically when the machine is switched on.</li> <li>2. The gauge is not calibrated</li> </ol>   | <ol style="list-style-type: none"> <li>1. Reset the gauge. Switch off and switch on the machine again.</li> <li>2. Calibrate the gauge.</li> </ol>   |
| The machine does not spin when the wheel guard is closing. | <ol style="list-style-type: none"> <li>1. The function “start by lowering guard” is not enabled.</li> <li>2. The wheel guard is not closed completely.</li> <li>3. The electric wire for the micro switch is disconnected.</li> <li>4. The micro switch is not adjusted properly or faulty.</li> </ol> | <ol style="list-style-type: none"> <li>1. Enable the function.</li> <li>2. Close the guard completely.</li> <li>3. Reconnect.</li> <li>4. Check for correct adjustment or replace it if necessary.</li> </ol>                                |
| Inconsistent unbalance reading                             | <ol style="list-style-type: none"> <li>1. The machine is shocked.</li> <li>2. The machine is not rested solidly.</li> <li>3. The wheel is not tightened.</li> <li>4. Wrong dimension entry.</li> <li>5. The machine is not calibrated.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Do not shock the machine and restart a spin.</li> <li>2. Sit the machine solidly.</li> <li>3. Tighten the wheel.</li> <li>4. Entry the correct data.</li> <li>5. Calculate the machine.</li> </ol> |

## CHAPTER 10 – MAINTENANCE

### 10.1 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.**

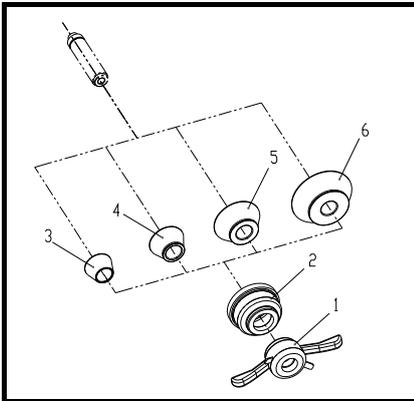
### 10.2 ORDINARY MAINTENANCE

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.

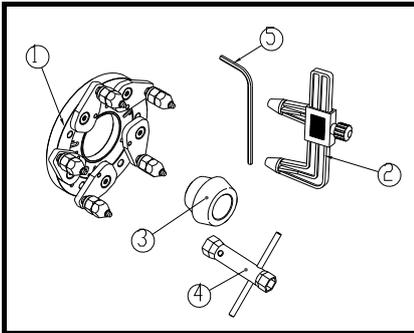
## CHAPTER 11 – ACCESSORIES

### 11.1 STANDARD ACCESSORIES



1. P1-50000 Quick locking nut TR40X3
2. P1-50005 Pressure cup
3. P1-12001W Cone D.44-70
4. P1-12002W Cone D.59-82
5. P1-12003W Cone D.78-111
6. P1-12004W Cone D.85-132

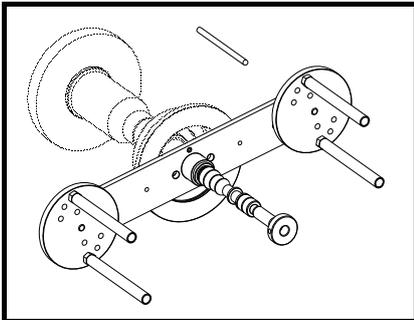
### 11.2 OPTIONAL ACCESSORIES



#### PF-211 Universal flange

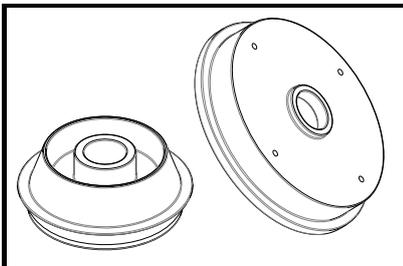
Universal flange for wheels with/without central hole, suitable for any vehicle wheel with 3-4-5 holes.

1. Complete flange
2. Holes detector
3. Pre-centering cone
4. T-hexagonal wrench
5. Hexagonal elbowed wrench



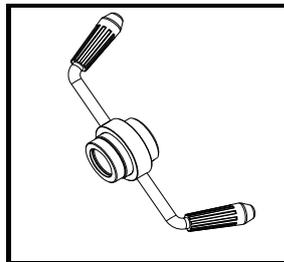
#### PF-14101 Motorcycle adaptor.

1. PF-141 Kit of adaptors
2. PF-811 Spoke support
3. PF-100001 A/D gauge extension



#### Light truck adaptor

1. PF-221201 Spacer
2. PF-221202 Cone D.111-165



#### Heavy locking nut P3-61000

# CHAPTER 12 – ELECTRIC DIAGRAM

