



## **Operation and Maintenance Manual**

### **Wheel Balancer**

#### **Model TROLL MICRO M**



Manufacturing – Sales – Maintenance

„UNI-TROL” Sp. z o.o.

ul. Estrady 56

01-932 Warszawa

tel/fax (0-22) 817 94 22, 834 90 13,834 90 14

**Operation and Maintenance Manual**  
**Wheel Balancer for Motobike Wheels**

**MODEL TROLL MICRO M**

Serial number:

Manufacturing year:

**MANUFACTURER:**

„UNI-TROL” Sp. z o. o.

ul. Estrady 56

01-932 Warszawa

tel/fax (0-22) 817 94 22, 834 90 13,834 90 14

**AUTHORISED SERVICE CENTRE**

**UNI - TROL Sp. z o.o.**

ul. Estrady 56

01-932 Warszawa

tel/fax (0-22) 817 94 22, 834 90 13,834 90 14 wew. 131

e-mail: [serwis@unitrol.pl](mailto:serwis@unitrol.pl)

# CONTENTS

1. PACKAGING, TRANSPORTATION, STORAGE .....	4
2. INTRODUCTION .....	5
3. MACHINE DESCRIPTION .....	8
4. SAFETY .....	10
5. INSTALLATION .....	12
6. PROGRAMMES.....	15
6.1 Balancer Computer Software.....	15
6.1.1 WIDTH.....	15
6.1.2 OFF-SET .....	16
6.1.3 DIAMETER .....	16
6.1.4 Balancing programme selection.....	17
6.1.5 Accuracy.....	17
6.1.6 Balancer memory / User memory .....	17
6.1.7 Balancer drive.....	18
6.2 Wheel balancing .....	18
6.2.1 Imbalance recalculation .....	23
6.2.2 Hidden-weight programme.....	23
6.3 Calibration with calibrating device.....	24
6.3.1 Calilbration with wheel .....	26
7. MAINTENANCE.....	26
8. SCRAPPING.....	27

THE MANUFACTURER RESERVES THE RIGHT TO MAKE MODERNIZATION CHANGES TO ITS PRODUCT WITHOUT ANY OBLIGATION TO MAKE SUCH CHANGES IN THIS MANUAL.

## **1.PACKAGING, TRANSPORTATION, STORAGE**

### **ATTENTION !**

Any operations related to packaging, lifting, moving, transportation and unpacking must be performed only by qualified staff.

### **Packaging**

The wheel balancer is dispatched as a complete machine (quick adapter, casing, wheel balancer). Rubber pads, calibration device and the manual.

The wheel balancer may be packaged in several ways:

- Pallet + stretch film +cardboard box
- Pallet + stretch film
- Pallet + cardboard box
- Stretch film

### **Transportation**

The packaging must be lifted or moved by means of forklift or pallet trucks. Upon delivery of the load to the place of destination it is required to check if it has not been damaged during transportation. It is also necessary to check completeness of the delivery against the waybill. If the shipment is found to be short or damaged during transportation, it is necessary to immediately report the fact to the person responsible or carrier.

Furthermore, special care must be taken when unloading the shipment.



### **Storage**

The machine should be stored in a dry and dust-free place.

## 2. INTRODUCTION

### WARNING

This manual is addressed to workshop staff who are authorised to operate a wheel balancer (an operator) as well as to workers performing on-going maintenance; read this manual thoroughly before starting unpacking and operation of the wheel balancer. The manual contains important information concerning **PERSONAL SAFETY** of operators and maintenance workers, **OPERATION OF THE WHEEL BALANCER**.

### Storage of the manual

The manual constitutes an integral part of the wheel balancer and should be kept near it at all times, even if the machine is sold.

The manual must be kept near the machine in a readily and immediately accessible location. The Operators and maintenance staff must have an immediate access to the manual at all time.

### ATTENTION !

**IT IS PARTICULARLY RECOMMENDED TO READ THOROUGHLY AND REPEATEDLY CHAPTER 3 WHICH CONTAINS IMPORTANT INFORMATION AND WARNINGS RELATED TO SAFETY.**

The machine was designed and created according to the following documents:

**Directives 2006/42/CE, 2006/95/CE, 2004/108/CE and**

**Polish standards adequate European regulations:**

- **PN-EN ISO 12100-1:2005** Safety of machinery. Basic concepts, general principles for design. Part 1: Basic terminology, methodology
- **PN-EN ISO 12100-2:2005** Safety of machinery.. Basic concepts, general principles for design. Part 2: Technical principles (orig.)
- **PN-EN 61000-6-3:2002** Electromagnetic compatibility (EMC). Part 6-3: Generic standards. Emission standard for residential, commercial and light industrial (orig.)
- **PN-EN 61000-6-4:2002** Electromagnetic compatibility (EMC). Part 6-4: Generic standards. Emission standard for industrial environments (orig.)
- **PN-EN ISO 13857:2008** Safety of machinery. Safety distances to prevent reaching the upper limbs and lower the danger zones (orig.)
- **PN-EN 349+A1:2008** Safety of machinery. Minimum gaps to avoid crushing of parts of human body.
- **PN-EN 60204-1:2006** Safety of machinery. Electrical equipment of machines. Part 1:General requirement(orig.)
- **PN - EN 61293 / 2000** Marking of electrical equipment with ratings related to electrical supply - Safety requirements;
- **PN-EN 983+A1:2008** Safety of machinery - Safety requirements for hydraulic and pneumatic systems and their components-Pneumatics (orig.)
- **PN - EN 61204 / 2001** Low voltage DC - Properties and safety requirements;
- **PN-EN ISO 11201:1999** Acoustics - Noise emitted by machinery and equipment - Measurement levels of sound pressure emission at a work station and other specified positions by engineering method .

- **PN-EN 50419 -1:2008** Marking of electrical and electronic equipment in accordance with Article 11 (2) of Directive 2002/96/CE (WEEE)
- **PN-EN 61190-1 -3:2008** Materials for connecting electronic components - Part 1-3: Particular requirements for solders for electronic applications and solders with fluxes or without fluxes for soldering electronic components .
- **PN-EN 61760-1 :2006** Surface mounting technology - Part 1: Method qualification standard components for surface mount (SMD)

## **ATTENTION !**

Lifting, transportation, unpacking, assembly, installation, start-up, preliminary adjustment, testing, maintenance do not require presence of service workers, but must be performed with special care.

**The manufacturer shall not be liable for any personal injuries or damages of vehicles or any other objects, if any of the aforementioned operations have been performed in a manner non-compliant with this manual, or if the wheel balancer has been used improperly.**

The manual includes only these maintenance and safety aspects which may help an operator or maintenance worker to understand better the construction and operation of the wheel balancer as well as to use it most efficiently.

In order to understand the terminology used in the manual, the operator must have specific experience in workshop, service, maintenance and repair works, ability to interpret correctly the drawings and descriptions included herein and knowledge of general and specific safety regulations applicable in the country of installation.

The word "operator" used in this manual should be understood as follows: OPERATOR: a person authorised to operate the wheel balancer.

Technical data:

- max. wheel diameter		0,9 m
- rim diameter		10" - 30"
- rim width		2" - 15"
- balancing accuracy		1g
- measuring time		6-7 s
- balancer's weight		60 kg
- dimensions:		
	- with hood opened	880x800x1400mm
	- with hood closed	880x550x1080mm
- max. wheel weight		60 kg
- rotation speed		140-170 rpm
- driving motor power		80 W
- power supply		230V / 50Hz
- noise level		<65 dB

### 3. MACHINE DESCRIPTION.

The wheel balancer TROLL – MICRO M serves for motorbike wheels dynamic balancing within one measuring cycle.



1. Switch on/off
2. Adjuster
3. Rubber pads (4 pcs)
4. Motorbike adapter
5. Keyboard
6. Hood
7. Calibration device













Fig.1 Wheel balancer parts.



Fig.2 Keyboard

Keys:

-  Wheel parameters selection
-  Blancing programme selection dynamic-static\*
-  Wheel parameters: off-set, diameter, width
-  Balancing accuracy
-  Measuring cycle stop [STOP]
-  Measuring cycle start [START]
-  Imbalance recalculating
-  Calibration
-  Hidden-weight programme
-  Memory M1 – M2

\* programme 1: adhesive weights  
programme 2: static balancing ( for thin rims, by one weight)

Sound signal confirms button pressing.

## 4. SAFETY

### **WARNING !**

The following chapter must be read in its entirety, since it provides important information concerning danger for the operator and other people in the case of improper use of the machine.

Explanations concerning threats and hazards that may occur during operation and maintenance of the wheel balancer as well as general and specific precautions intended to eliminate the potential dangers are provided below.

Before starting work with TROLL MICRO M, it is necessary to read carefully and understand these instructions.

### **ATTENTION !**

**The manufacturer and vendor shall not be liable for any personal injuries or damages to vehicles or any other objects caused by improper or unauthorised use of the wheel balancer.**

### **ATTENTION !**

<b>IT IS NOT RECOMMENDED TO USE THE WHEEL BALANCER WITHOUT PRIOR CLOSURE OF THE WHEEL GUARD.</b>
--

**FAILURE TO MEET THE AFOREMENTIONED REQUIREMENTS MAY RESULT IN SERIOUS PERSONAL INJURIES AND IRREPARABLE DAMAGE TO THE WHEEL BALANCER AND THE WHEEL.**

### **General precautions**

The operator and maintenance worker are required to follow the safety regulations applicable in the country of the machine installation.

The manual contains the following captions concerning safety:

**Danger** — indicates a possibility of danger which may lead to serious injuries

**Warning** — indicates dangerous situations and/or types of manoeuvres which may lead to major or minor injuries

**Caution** — indicates dangerous situations and/or types of manoeuvres which may lead to minor injuries and/or damage to the wheel balancer, wheel or any other objects

**Electric shock risk** — a specific caption placed on the machine where there is particularly high risk of electric shock.

### **Hazards for staff**

The paragraph describes possible threats for the operator or any other people present near the wheel balancer caused by its improper use.

### **Risk of hitting**

There is a risk of hitting the component of the machine.

In the event when the guard is opened, the staff must take special care not to hit themselves at the components of the machine.

### **Risk of wheel getting loose**

Before starting any balancing procedure, it is very important that the wheel is mounted on the adapter.

### **ATTENTION !**

**NEVER REMOVE THE WHEEL DURING OPERATION OF THE MACHINE. NEVER LEAVE THE MACHINE UNATTENDED WHILE IT IS IN OPERATION.**

### **Risk of slipping**

Danger caused by contamination of the floor around the machine with lubricants.

**AREA UNDER THE WHEEL BALANCER AND IN ITS DIRECT SURROUNDING AS WELL AS THE ADAPTERS MUST BE KEPT CLEAN AT ALL TIMES.**  
**Immediately remove any oil stains.**

### **Risk of electric shock**

Danger of electric shock in the areas where electric wiring is routed.

It is forbidden to use water or vapour atomizers (high pressure washing equipment), solvents or paints near the machine. These substances must not be allowed to spread to the control panel.

### **Dangers caused by inadequate lighting**

The operator and maintenance worker must be able to inspect if all the areas of the machine are correctly and evenly lit, in accordance with the regulations applicable in the country of installation.

### **Risk of damaging a component of the wheel balancer while it is in operation**

In order to manufacture a reliable and safe wheel balancer, the manufacturer used appropriate materials and manufacturing techniques adopted to the specified application of the machine. However, it should be noted that the wheel balancer must be operated in compliance with the manufacturer's recommendations. It is required to perform technical inspections with a specified frequency (upon expiry of the warranty period) and maintenance works described in Chapter 7 "MAINTENANCE".

**Never exceed admissible weight capacity of the balancer — i.e. 60 kg.**

## **IMPORTANT !**

**Every use of the wheel balancer in a manner contrary to its intended purpose shall entail the danger of causing serious injuries and accidents.**

**Therefore, it is particularly significant to strictly apply any and all recommendations concerning operation, maintenance and safety, stipulated in this manual.**

## **5. INSTALLATION**

### **WARNING !**

The following operations may be performed only by persons who were previously trained to operate the machine to which this manual pertains.

In order to prevent potential damage to the balancer or hazard of causing personal injuries, it is necessary to carefully follow the instructions below. It must be ensured that no people are present within the working field.

### **Requirements regarding installation**

The wheel balancer must be installed in the safe distance from walls, columns and other devices. The site must be equipped in advance with the power supply source and compressed air system. The wheel balancer may be placed on any even, stable and dry floor.

All the parts must be uniformly lit with the light sufficient to safely perform all the operational, adjustment and maintenance operations mentioned in this manual. Presence of any shaded areas, light reflections and blinding light is inadmissible; any situations which may cause eye strain should be avoided.

Lighting must be installed in accordance with the regulations applicable in the place of installation (the lighting contractor shall bear this liability).

Prior to installing, all the parts must be unpacked and inspected for any signs of damage. Issues regarding manoeuvring and lifting are discussed in the chapter "Packaging, transportation and storage".

### **Installation place**

The wheel balancer TROLL - 2305H must be installed in a closed and dry place which will be heated in the autumn and winter period. The machine should be installed on a stable level floor. The wheel balancer should be installed on four rubber pads enclosed which should be placed under the flat legs welded to the machine base. **The machine should not be screwed to the floor.**

### Adapter mounting.

Before mounting the adapter, it is necessary to clean thoroughly the cone areas of shaft and adapter with an oil-wetted cloth. Mount the adapter onto the shaft and tighten up the adapter to the shaft with the use of screw.

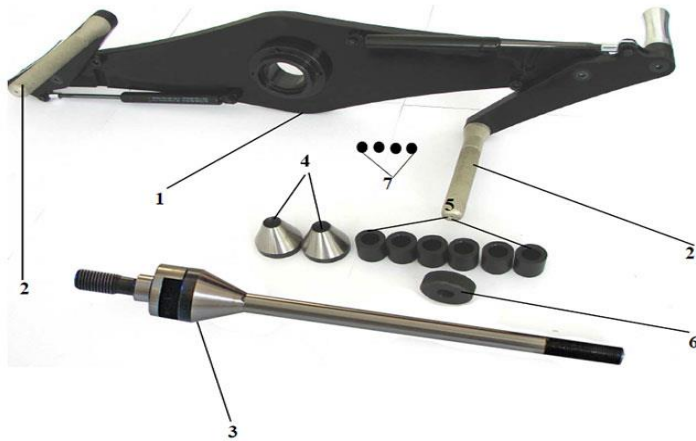


Fig.3. Motorbike adapter.

- 1. Adapter rod
- 2. Tyre tighter
- 3. Adapter axle - 1 pc
- 4. Conus sleeve - 2 pcs
- 5. Distance sleeve - 6 pcs
- 6. Adapter nut - 1 pc
- 7. Mounting screws - 4 pcs

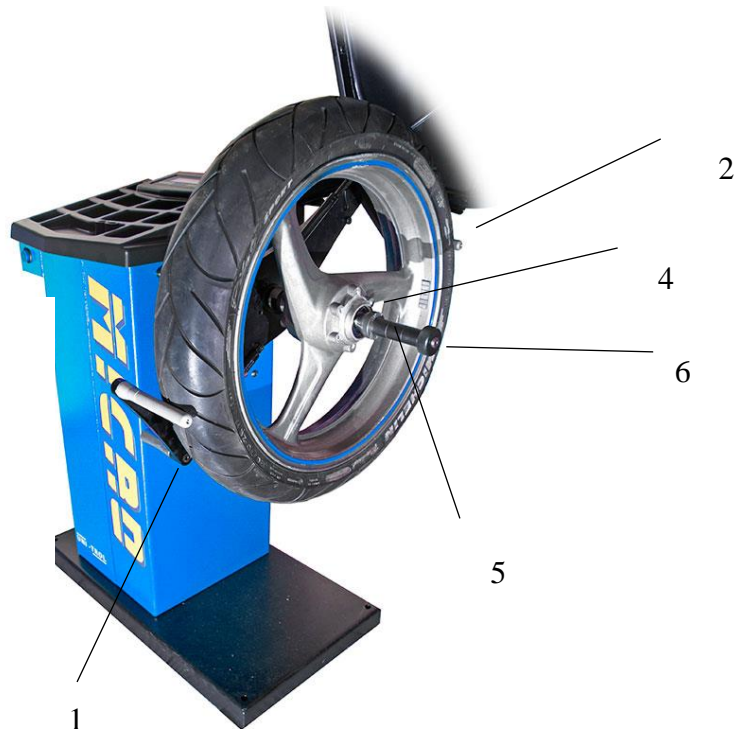


Fig.4 Wheel mounting on adapter

### **Wheel mounting on adapter. (Fig.4.)**

Center the wheel in conus sleeves (4) and block by distance sleeves (5) and nut (6). Eventually the wheel is fixed by tyre tighters (2).

### **Electrical connection of the wheel balancer**

#### **ATTENTION !**

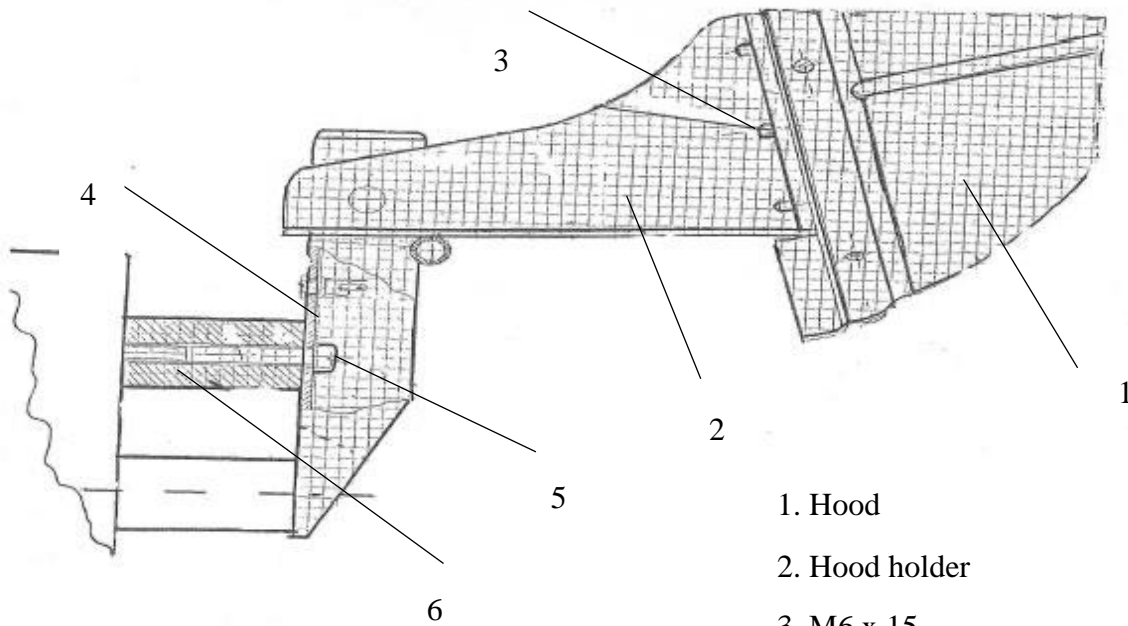
Plug the supply cable into the socket 230V/50Hz.

#### **ATTENTION !**

**SINCE UNEXPECTED WARMING OF FROZEN METAL AND PLASTIC SOLID GENERATES CONSIDERABLE QUANTITIES OF WATER VAPOUR CONDENSATE, IT IS FORBIDDEN TO PLUG IN COOLED WHEEL BALANCER TO THE POWER NETWORK BEFORE THE LAPSE OF 2 TO 3 HOURS REQUIRED TO DRY THE ELECTRONIC ELEMENTS AND THEIR REACHING THE WORKSHOP TEMPERATURE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY CAUSE DAMAGE TO THE WHEEL BALANCER. AND WITH FAULTY ELECTRICAL INSTALLATION IT MAY CAUSE ELECTRIC SHOCK.**

### **Hood Mounting (Fig.5)**

Screw the hood holder (2) to machine's body by two screws M8x80 (5). Screw the hood to the holder by screws M6x15 (3). Connect the cable to the socket (4) in hood holder (2). The cable informs about hood position (open-close).



- 1. Hood
- 2. Hood holder
- 3. M6 x 15
- 4. Socket
- 5. M8 x 80
- 6. Distance

Fig. 5 Hood mounting.

## 6. PROGRAMMES.

### 6.1 Balancer Computer Software.

Switch the balancer on. After control test and signal sound display shows



#### 6.1.1 WIDTH.

Press D until the display show (<->) and last entered width. Pressing (+) and (-) we change this parameter half an inch from 2 till 15.



### 6.1.2 OFF-SET.

Press D until the display show set-off symbol and its last entered value. Move adjuster's head (1) to rim (4) (Fig.10). Adjuster's nonius show the set-off value (3). Insert this value pressing (+) or (-).



### 6.1.3 DIAMETER.

Press D until the display show diameter symbol and its last entered value. Pressing (+) or (-) we change this parameter one inch from 10 till 30.



1. Adjuster head
2. Adjuster arm
3. Adjuster rod
4. Rim

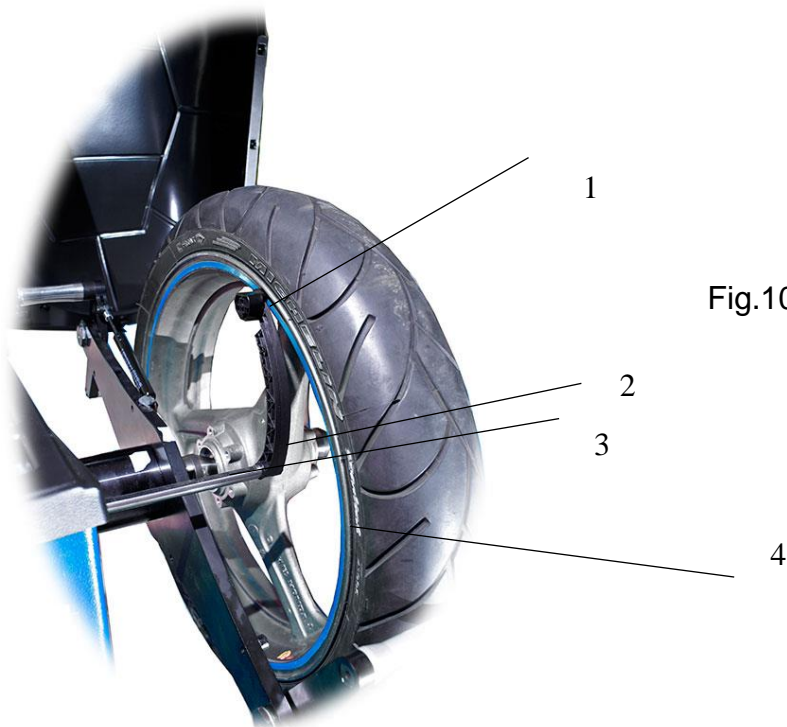
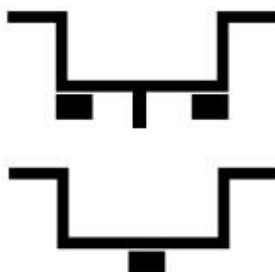
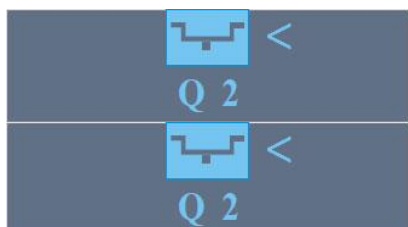


Fig.10 Parameters entering by adjuster.



### 6.1.4 Balancing programme selection.

Press **ALU**. On display marker stops in front of pictogram (a) or (b). Select the programme by pressing **+** or **-**.



Variant a) Dynamic balancing by two adhesive weights.

Variant b) Static balancing (for thin rims by one weight). This variant is not recommended for wheels wider than 2,5".

### 6.1.5 Accuracy.

Press (Q). Marker (<) stops in front of pictogram (Q). The balancer has three accuracy level: 2 g, 5 g, 10 g. Pressing (+) or (-) we increase or decrease accuracy. When result is lower than accuracy level set display shows 0.

#### ATTENTION !

If we press and hold (STOP) and then press (Q) we will switch the accuracy level off [value Q=0].





### 6.1.6 Balancer memory / User memory



Balancer has two memories: M1, M2 which make possible to memorize the parameters for two wheels. To insert data into memory M1: set parameters (width, diameter, set-off, ALU), push and hold **STOP** pressing simultaneously **M1**. To read previously recorded in **M1** data press **M1**. For memory **M2** - proceed by analogy.

## 6.1.7 Balancer drive.

- Manual start.

Press . If we don't close the hood the display shows CASE. The drive starts when hood is closed and key  pressed. Display shows pictogram of cycle start. When the display shows measuring result and the spindle stops the cycle is finish.



- Automatic start.

By closing the hood. To activate this function press and hold  simultaneously pressing . Display shows [ **AUTO ON** ] .

Pressing both keys again return to manual mode. Display shows [ **AUTO OFF** ].

## 6.2 Wheel balancing

Balancing of every wheel consists in determining the volume of imbalance expressed in grams for inner and outer correction plane and localising position of imbalance on the wheel. In order to clearly identify the volume of imbalance, it is necessary to enter the following data into the machine memory: WIDTH, DIAMETER, DISTANCE — corresponding to geometrical dimensions of the wheel to be balanced, select balancing programme (manner and positions of correction weights) and enter the value of accuracy.

If one wants to balance the wheel whose parameters were previously saved in the memory M of the computer, then it is enough to press button  or  to enter data on this wheel.

Upon entering the measuring setpoints, the wheel should be brought up to speed of at least 95 rpm. The measuring cycle is conducted with no interference on the side of the operator and is completed by displaying the value of imbalance in the indicator screen.



The indicator screen displayed exemplary values of imbalance:

- 15 g — applicable to inner left correction plane
- 18 g — applicable to outer right correction plane

spinning the wheel slowly, at each revolution one may hear sound signals slightly different from one another.

They occur in such wheel positions for which the arrows defining the position of imbalance are directed towards one another.

The value of 15 g displayed in the indicator screen means that the weight of 15 g should be attached on the inner edge of the rim in order to balance the imbalance. Watch the arrows while spinning the wheel in any direction. The sound signal shall be heard and arrows directed towards one another only for one position of the wheel against any reference point. For this wheel position, the weight of 15 g should be attached at the topmost point on the inner edge of the rim. The position of attaching weight of 18 g (20 g) on the outer correction plane shall be searched the same way

After attaching weights of particular weight in particular positions perform a control measurement. In theory, the indicator should now display two zeros meaning that the remaining volume of imbalance does not exceed No 5 g, according to the set cut-off threshold. In practice, it does not have to be this way. Why?



**Firstly** — correction weights, regardless of their type, are produced with certain acceptable deviation in weight.

**Secondly** — the wheel balancer measures volume of imbalance with the accuracy up to 1 g, and the position of imbalance is defined by means of points with the accuracy up to 3 degrees of angular measure.

**Thirdly** — a correction weight is not a point mass, but it has certain length — the greater the mass, the greater the length — therefore, while attaching the weight to the rim, it is very easy to make an error of positioning (moving the weight against the topmost point of the rim defined by the machine).

Thus, there may be a case when after a control measurement one gets a result of, for example, 6 g for the inner plane and 7 g for the outer one. What to do next?

**Case 1.**

The indicator displays value 0. It signifies that the wheel has been balanced with the accuracy up to 5 g, since such a cut-off threshold had been adopted. By pressing button  and setting the cut-off threshold to 2 g, it is possible to identify whether the wheel has been balanced with the accuracy up to 2 g. Such a case occurs when both indicators display value 0. If the indicator displays value 0 and, for example, value 4, it means that the wheel has been balanced with the accuracy of up to 4 g. After pressing button  and resetting the cut-off threshold to 5 g, the indicator screen shall again display value 0.

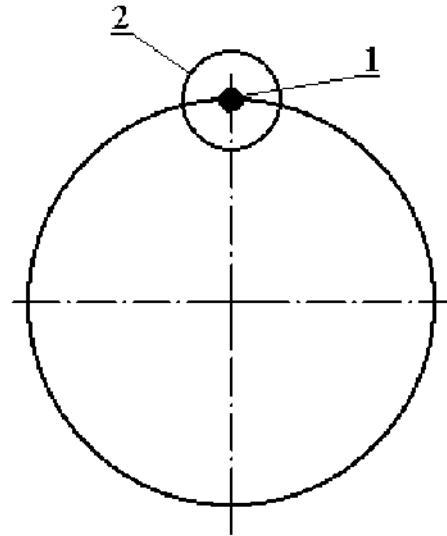
**Case 2.**

The following results are obtained in the control measurement: inner correction plane — result 6, outer correction plane — result 7.

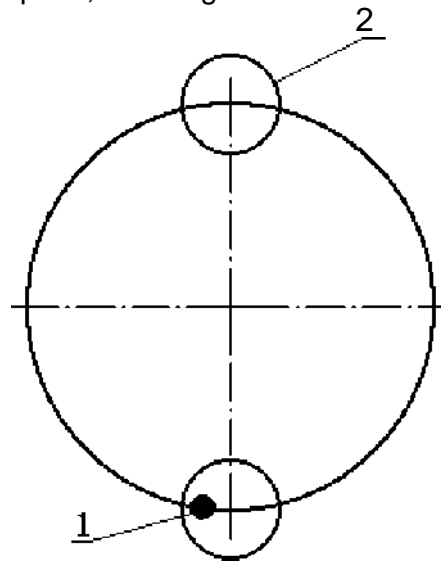
Then the wheel is placed according to the new position of imbalance (for each correction plane).

If new position of imbalance is the same as the previous one or it differs to only a small extent, the weight should be larger.

1 – weight    2 – new correction position



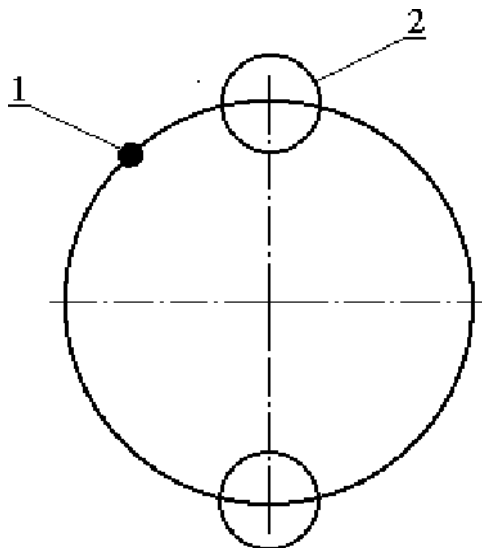
If the new position of imbalance is exactly at the opposite side of the previously attached weight, or it is slightly moved from this point, the weight should be decreased.



1 – weight

2 – new correction position

If previously attached weight is below the new correction position, it should be moved upwards.



1 – weight

2 – new correction position

It is difficult to clearly identify by what distance the weight should be moved in order to correct the residual imbalance. It depends on the value of imbalance to be corrected as well as the dimensions and position of the mounted weight. In general, it can be said that large weight and residual imbalance requires minor correction of the position.

Note:

If the indicator screen displays 0 (no imbalance), there are no signals regarding the position of imbalance (no arrows).

It may occur that in subsequent measurements of the wheel imbalance, with the cut-off threshold set to e.g. 5 g, the results will change as follows:


- first measurement: 0
- second measurement: 6 g
- third measurement: 0
- etc.

**The results are not incorrect. The imbalance is certainly close to the nominal value of the set threshold, i.e. 5 g, and thus the indicator displays alternatively the results 0 or 6. For threshold 10 g, the results may be 0 or 11.**

### 6.2.1 Imbalance recalculation

This function enables to quickly obtain the correct values of imbalance in the event when the measurement was performed upon entry of incorrect parameters of a wheel.

Example:

Incorrect data regarding the wheel to be balanced are entered to the machine's memory. The measurement is performed, but the results are not true. If one wants to know the real values of imbalances for this wheel without the necessity to perform another measurement, it suffices to enter correct data (←, ↓, → | Alu) to the machine's memory and press the button . The wheel balancer will display correct values of imbalances.

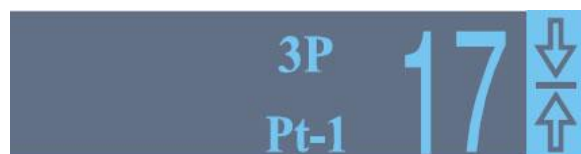
?

### 6.2.2 "Hidden weight" programme

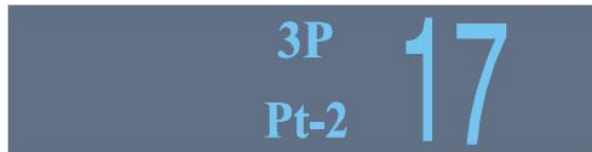
The "hidden weight" programme is used when the user wants the correction weight for the outer side of the wheel not to be visible in ALU programmes (variant 5 and 6). The programme enables to split the imbalance displayed in the indicator screen between two correction weights which should be stuck behind two arms of the rim (spokes) located in the nearest distance to the left and right from the imbalance position.

#### Procedure of the "hidden weight" programme

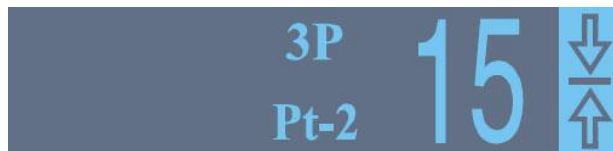
1. Select variant „2" from ALU programme
2. Start measuring cycle
3. If imbalance position is on spoke imbalance should be corrected by two weights according to the following procedure:
  - 3.1. Position the wheel so the correction place is in the lowmost point of the rim (sound signal and arrows directed towards each other).
  - 3.2. Press (3P). Display shows 3P and Pt-1 (See the pictogram below).



- 3.3. Spin the wheel to the left to the position defined in point 3.1 until the spoke where weight can be placed. To accept this position press (+). Balancer's computer memorize this position as a place for the first correcting weight. Display shows „Pt-2", that means the place for the second correcting weight should be found.



3.4 Spin the wheel to the right to the position defined in point 3.1 until the spoke where weight can be placed. To accept this position press (+) .



This is a point where correcting weight of 15 g should be placed.

3.5 Spin the wheel to the left until the place defined in point 3.3. Sound signal indicates the right wheel position, display shows the value of imbalance, arrows directed towards each other.



This is a point where correcting weight of 15 g should be placed

3.6. After the weights have been placed exit the programme 3P by pressing (STOP). Start measuring cycle and check whether the wheel has been balanced correctly.

### 6.3 CALIBRATION WITH CALIBRATING DEVICE

The wheel balancer is equipped with a self-calibration system enabling the user to calibrate the machine himself. Calibration shall be performed in the case of suspicion of incorrect indications displayed by the machine (caused by aging of electronic components, impact of temperature, vibrations in transport, etc.). Calibration of the wheel balancer should be carried out in the following way:

1. Automatically inserted calibrating parameters.

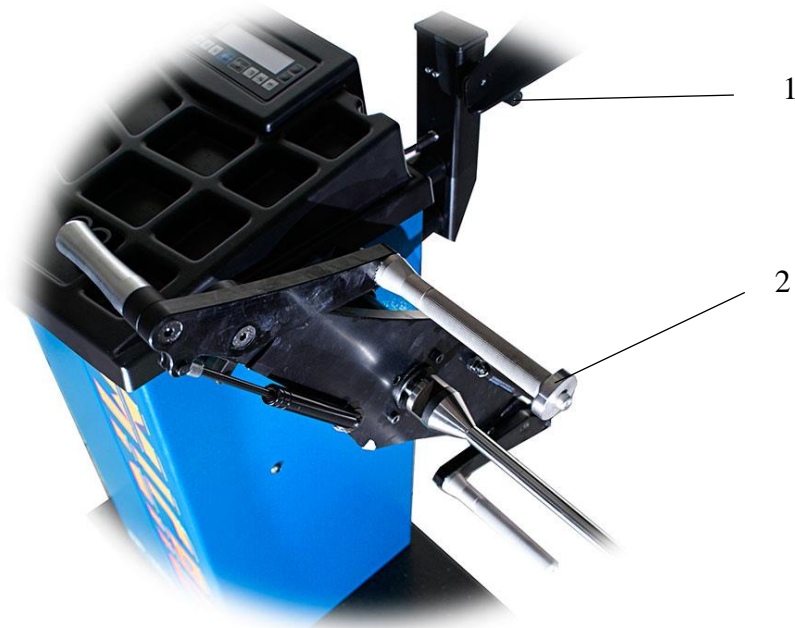
- off-set - 54,0

- diameter - 14,6

- width - 4,0



2. Screw calibrating device as it shown on Fig. 10 and close the hood.





- 1. Calibration device screwed to tighter
- 2. Calibration device position

Fig.10 Calibrating device mounting

3. Press and hold  (display shows CAL!) until sound signal and the pictogram shown below. Release  will switch the balancer's drive on.






4. Calibrating cycle finish when display shows figures: 0 and 59 or 0 and 60.



**ATTENTION !**

If display shows other figures that means wrong calibration – contact service. If there is no calibrating device calibration can be done by balanced wheel and weight of 60g.

### 6.3.1 CALIBRATION WITH A WHEEL

1. Use accurately balanced wheel with known parameters. Enter into the memory wheel DIAMETER, WIDTH, OFF-SET. Select programme ALU-1.
2. Place weight of 60 g on the outer rim side
3. Press and release , then press and hold  until sound signal and pictogram shown below. Release of  will switch the drive on.



4. Measuring cycle finish automatically, balancer's spindle will stop and display shows figures 0 and 59 or 0 and 60.



### GUARANTEE

The manufacturer shall perform any possible repairs and adjustments. Repair of machines by personnel within the guarantee period without consulting the manufacturer's service centre shall result in loss of guarantee.

The manufacturer reserves the right to make design changes or add improvements to its product, which may result in discrepancies with the information included in this operation manual.

If you have any doubts, please contact us via telephone or email — [serwis@unitrol.pl](mailto:serwis@unitrol.pl) 22 834 90 14 ext. 131

### 7. MAINTENANCE

Maintenance must be conducted by experienced personnel with profound knowledge of the principles of operation of the wheel balancer. All precautionary measures must be applied during maintenance operations in order to prevent accidental start-up of the wheel balancer. Master switch must set to 0. In addition it is required to follow any and all instructions provided in chapter 3 "Safety".

## **PERIODIC MAINTENANCE**

In order to maintain the wheel balancer in good technical condition, it is recommended to comply with the following instructions.

### **FAILURE TO APPLY THESE RECOMMENDATIONS SHALL ABSOLVE THE MANUFACTURER FROM ANY LIABILITY STIPULATED IN THE GUARANTEE.**

1. Clean the wheel balancer at least once a month without using chemical cleaning agents and high pressure spray guns.
2. Inspect the technical condition of the machine on a periodic basis.
3. Maintain conical connections on a periodic basis: adapter stud – shaft ending
4. Inspect condition of wiring once a year.
5. It is suggested to integrate pneumatic system with a dewatering filter.

## **WARNING**

**ALWAYS REMOVE CONTAMINATIONS AROUND THE WHEEL BALANCER!**

## **8. SCRAPPING**

**ALL THE PRECAUTIONARY MEASURES DESCRIBED IN CHAPTER 3, APPLIED ALSO DURING ASSEMBLY, MUST BE APPLIED DURING SCRAPPING THE MACHINE.**

As in the case of assembly, disassembly must also be performed exclusively by properly trained personnel. Metal parts may be used as metal scrap. In any cases of scrapping, the machine neutralization of all the materials must be conducted in accordance with the regulations applicable in the country of the machine installation.

It should also be noted that for taxation purposes, efficient hibernation of the machine must be documented in reports and forms compliant with the law applicable in the country of the machine installation.

### **Fire protection**

This machine does not pose any fire hazard. In every case, the place in which the wheel balancer is installed must comply with the requirements of fire protection regulations applicable in the county of the machine installation.

It is required to keep one or more portable fire extinguishers within the operator's reach (in the operator zone) so that he is able to stop fire immediately upon its appearance.

### **Accident prevention**

It is necessary to apply all precautionary measures provided for in regulations pertaining to accident prevention applicable in the country of machine installation while lifting/lowering, moving, installing, assembly or disassembly of the wheel balancer. Moreover, all the regulations regarding use of forklift trucks must be applied.