

# INSTALLATION & OPERATION MANUAL




# Atlas WB49-2 Pro Self-Calibrating Computer Wheel Balancer



**Atlas Automotive Equipment**  
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## 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

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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.

	<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>
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## 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

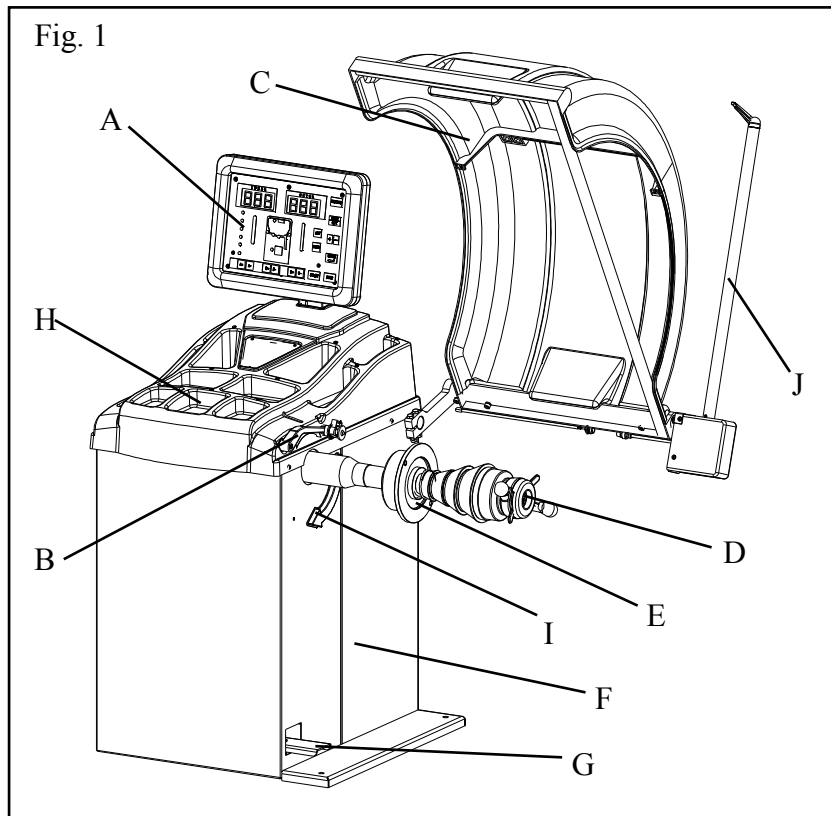
- This wheel balancer has been designed and manufactured exclusively for balancing wheel with a maximum diameter of 1000mm and maximum weight of 65kg. The calibration system is sufficient to cover different wheels from motorcycles to cars.
- In particular **THE MANUFACTURER** cannot be held responsible for any damage caused through the use of wheel balancer for purposes other than those specified in this manual, and therefore inappropriate, incorrect and unreasonable.

### 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
- Static and dynamic balancing modes
- Special balancing modes ALU, ALU☆
- Split function (or Hidden Weight) to hide the weights behind the spokes of rims
- 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: Measuring gauge A/D
- C: Wheel guard
- D: Quick locking nut
- E: Wheel shaft
- F: Machine body
- G: Foot brake
- H: Wheel weight tray/cover
- I: LED lighter
- J: Measuring gauge B (\*)

## 2.6 TECHNICAL SPECIFICATION

Max. wheel weight	65kg
Wheel diameter	39" (1000mm)
Rim diameter	10" - 26" (255 - 660mm)
Wheel width	1.5" - 20" (39 - 510mm)
Balancing precision	$\pm 1g$
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

## 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.

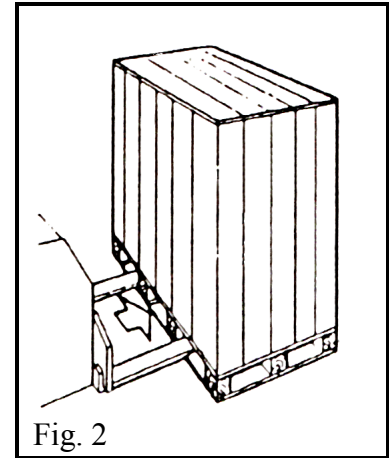


Fig. 2

### 3.2 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.



## 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.

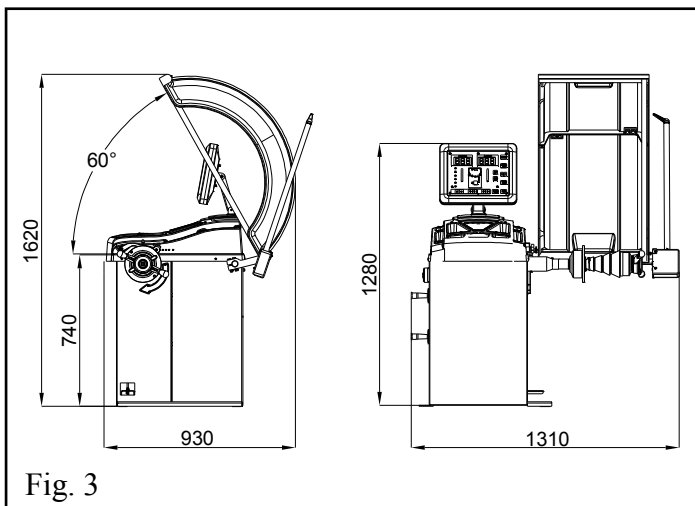


Fig. 3

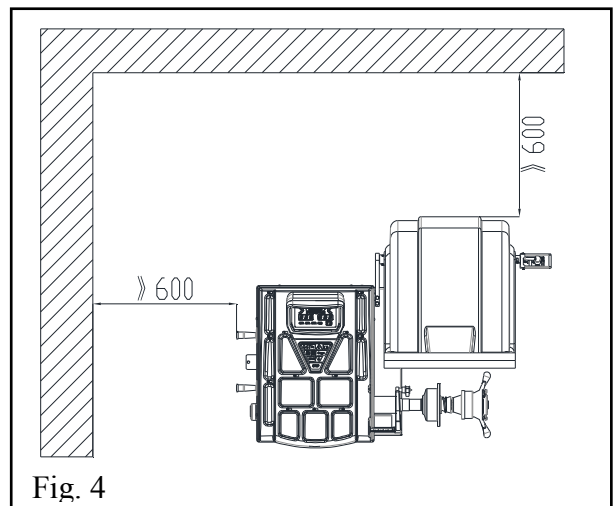


Fig. 4

### 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).

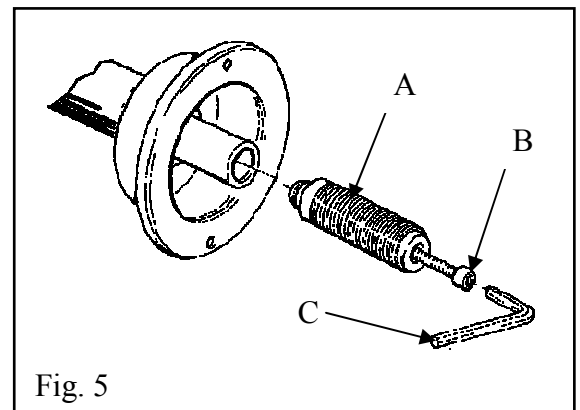
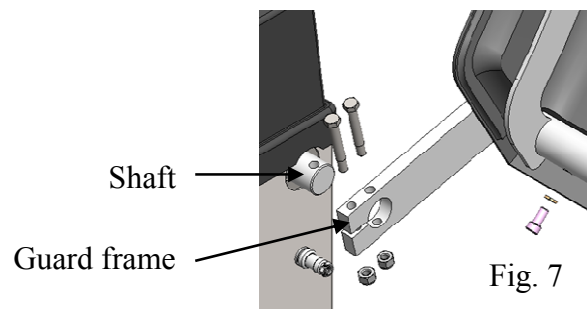
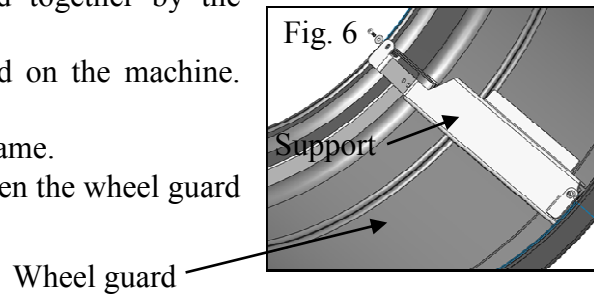


Fig. 5




### 4.3 WHEEL GUARD MOUNTING

- Connect two parts of the wheel guard together by the support and screws (ref. Fig. 6).
- Mount the guard frame onto shaft fixed on the machine. Tighten the screws (ref. Fig. 7).
- Mount the wheel guard onto the guard frame.
- Check the micro switch is held down when the wheel guard is closed. Adjust it if necessary.



	<b>Do not clean on the guard during the wheel balancing cycle.</b>
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### 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>
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- 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 FUNCTION

## 5.1. CONTROL PANEL


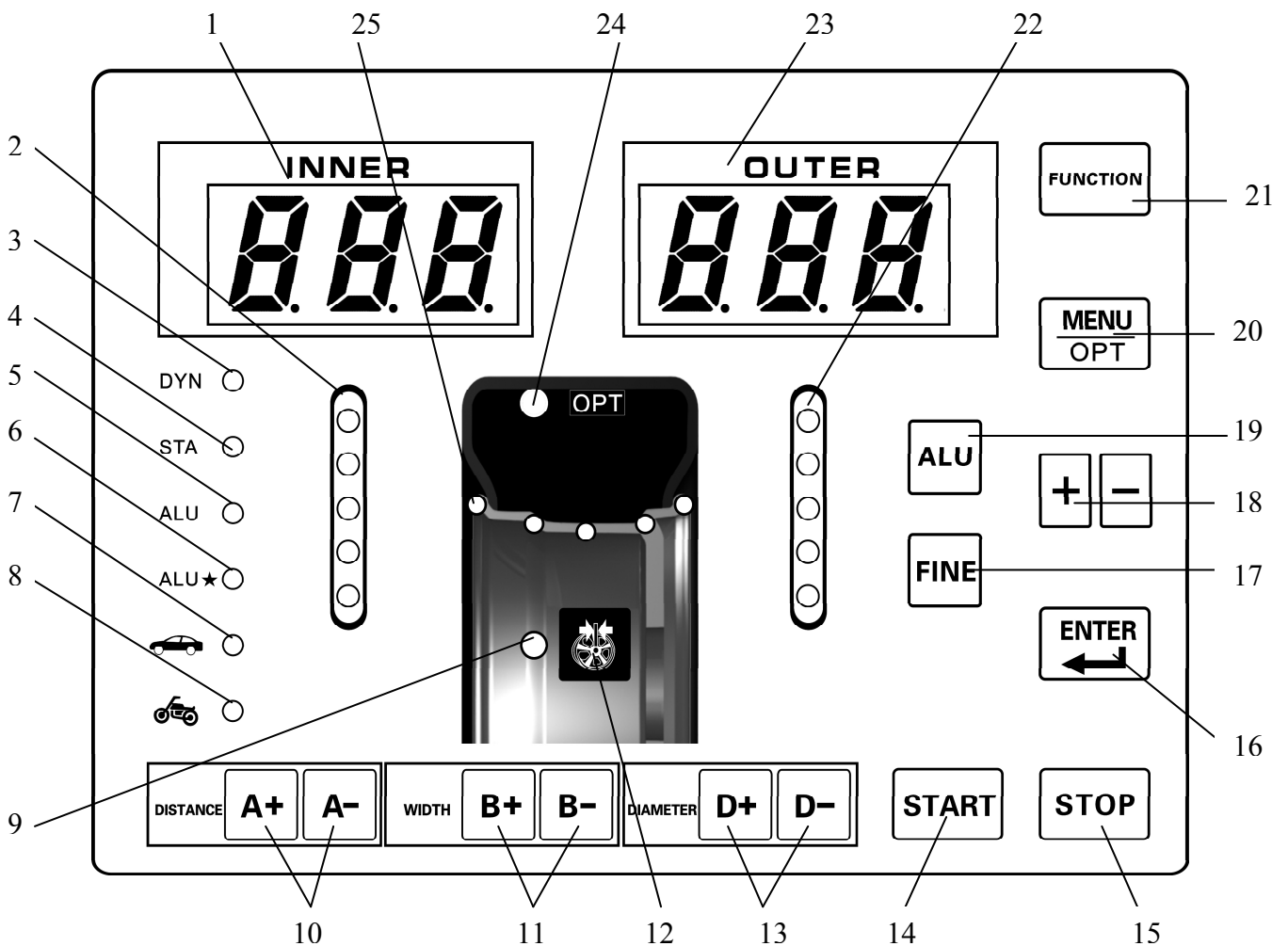
	<p><b>Press buttons only with your fingers. Never use the counterweight pincers or other pointed objects.</b></p> <p><b>When the beep signal is enabled, pressing of any push button is accompanied by a “Beep”.</b></p>
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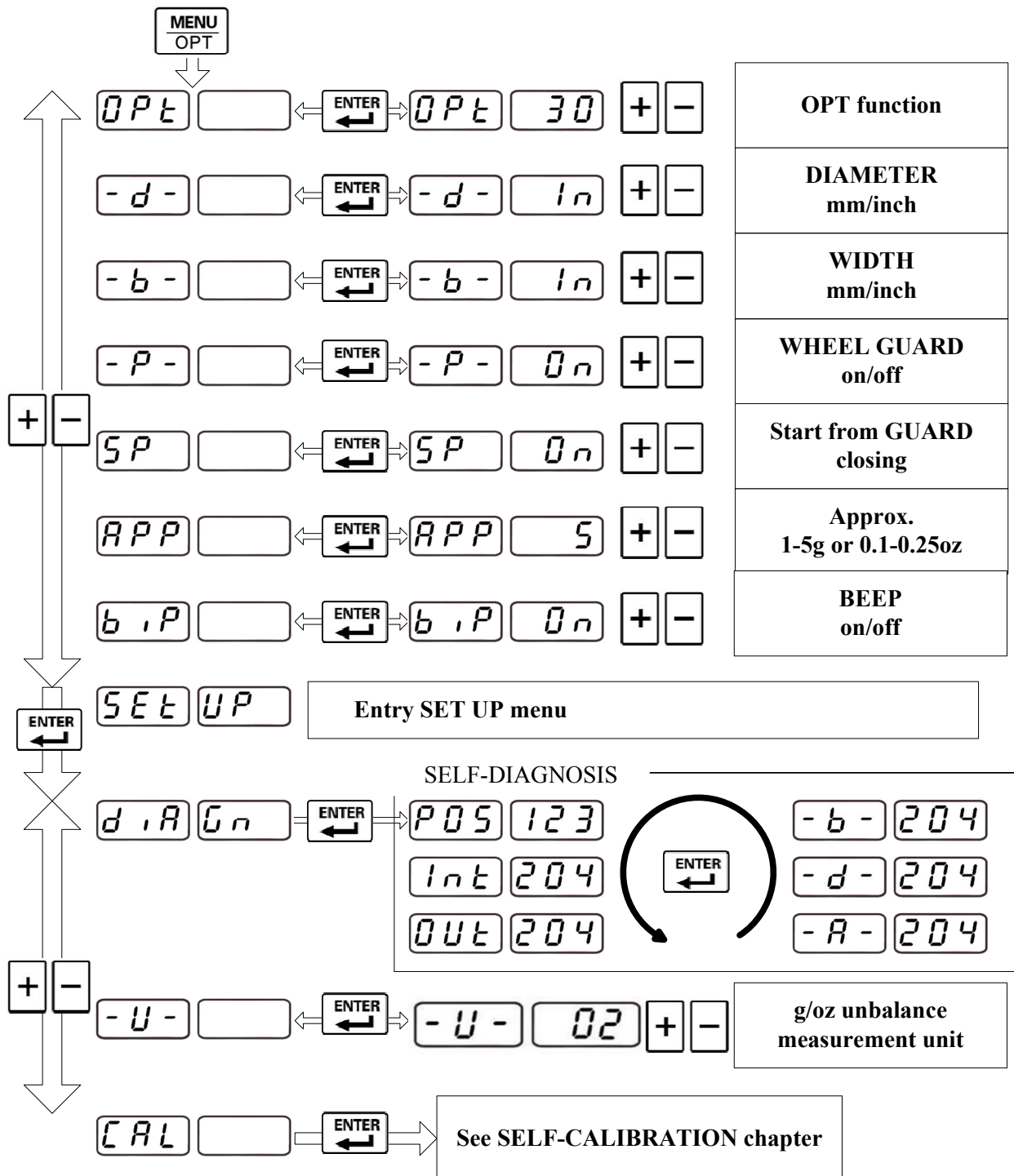
Fig. 8 – CONTROL PANEL



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, PASSENGER CAR mode selected
8. Indicator, MOTORCYCLE 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
16. Push button, confirm
17. Indicator, unbalance reading < 5g (25oz)
18. Push button, FUNCTION selection
19. Push button, ALU/ ALU☆ mode selection
20. Push button, SET UP MENU/OPT
21. Push button, STATIC/DYNAMIC/ MOTORCYCLE 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


## 5.2 MENU FUNCTIONS (figure 9)



Press **STOP** to exit any function.

## CHAPTER 6 – OPERATION OF THE WHEEL BALANCER

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

	<p><b>The initial screen when switching on is in DYNAMIC mode.</b></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.
- Measure and entry the wheel data.
- Select the most appropriate balancing mode. The initial screen when switching on is in DYNAMIC mode.
- Start the machine. 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 machine stops, the unbalanced amounts are shown on the digital readouts.
- Rotate the wheel slowly by hand until LED indicators light up indicate the correct angular wheel position to apply the counterweights.
- Apply weights on the position (12 o'clock position) for correction.
- With the counterweights correctly in position, restart the machine to check the correct balancing of the wheel.
- Reset the balancing mode referring to Fig. 8.

### 6.2 MOUNTING WHEEL ON SHAFT

	<p><b>Avoid back injury, seek assistance when lifting a heavy wheel onto the balancer shaft.</b></p> <p><b>Make sure to tighten the quick locking nut. Failure to do so may result in serious personal injury.</b></p>
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- 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.

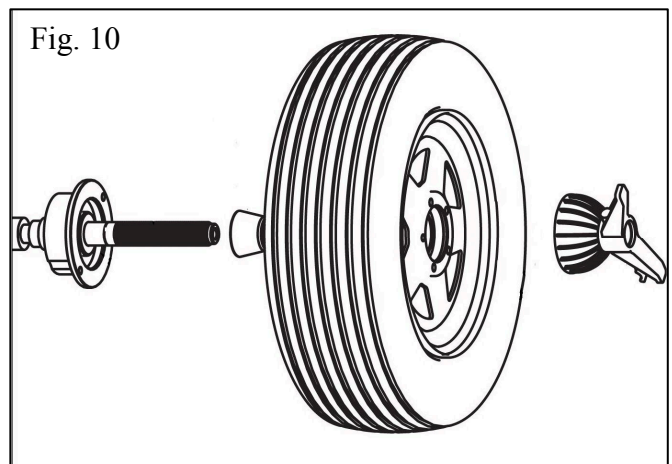
- On most wheels, the inner side of the wheel hub usually has the most uniform surface for wheel balancing. Always center the wheel by the most uniform shaped side of the hub to achieve the most accurate balance.
- Regardless of mounting type, always make sure that the wheel is forced firmly against 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. 10)

	<b>Carefully clean the component surface before performing any operation.</b>
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Most steel wheels can be mounted properly using this method. The wheel is centered on a cone from the inner side of the hub.

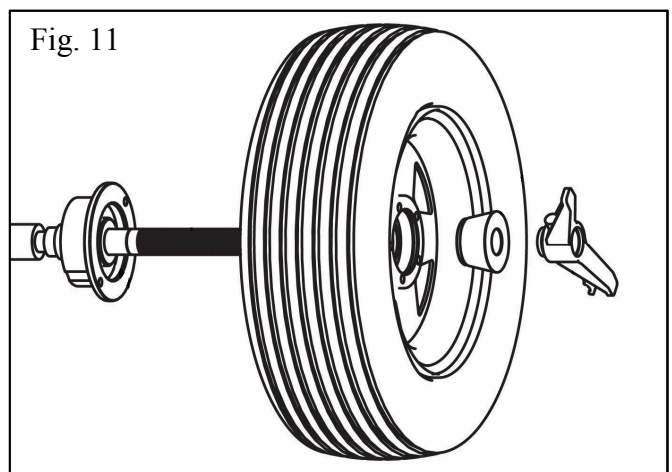
- Select the cone that best fits the centre hole in the wheels. Slide the cone onto the shaft with the large end towards the faceplate.
- Lift the wheel onto the shaft and centre it on the cone.
- Attach the pressure cup to the quick locking nut and install the assembly onto the shaft. Tighten securely.



### 6.2.2 STANDARD FRONT CONE MOUNTING (ref. Fig. 11)

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 WHEEL DATA ENTRY



### 6.3.1 WHEEL DATA

Fig. 12 – STANDARD MODES

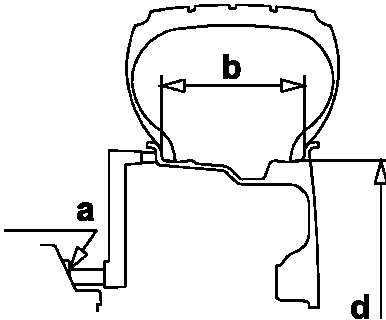
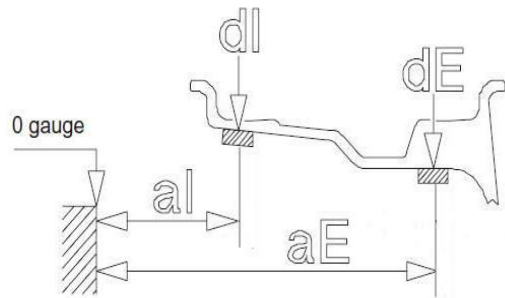


Fig. 13 – ALU☆ MODE



For STANDAD MODES, measure the wheel dimensions as shown in the figure 12.

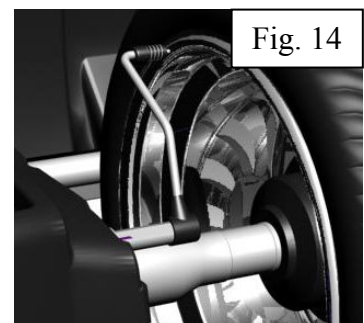
For ALU☆ MODE, measure the wheel dimensions as shown in the figure 13.

In this machine, A and D values also can be entered either manually or automatically.

At special request, the machine can be supplied with the automatic B gauge.

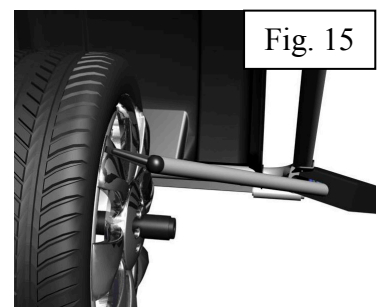
### 6.3.2 AUTOMATIC ENTRY OF A/D

- Move the A/D gauge to measure the A and D dimensions as shown in the figure 14. The dimensions A and D are determined and set automatically, and a beep sound is heard in the meantime.



### 6.3.3 AUTOMATIC ENTRY B (optional)

- Move the B gauge to measure the B dimension as shown in the figure 15. The dimension B is determined and set automatically.





## 6.4 BALANCING MODE

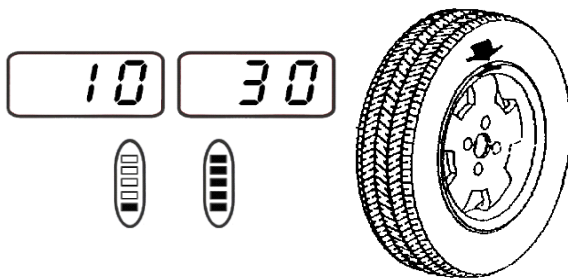
### 6.4.1 DYNAMIC MODE

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.

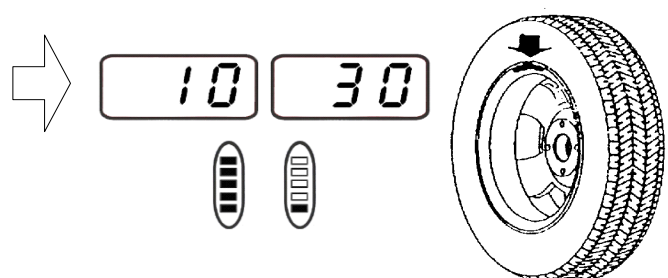
On the initial screen press **START** → **00** **00**

Fig. 16

#### Correction of outer side



#### Correction of inner side

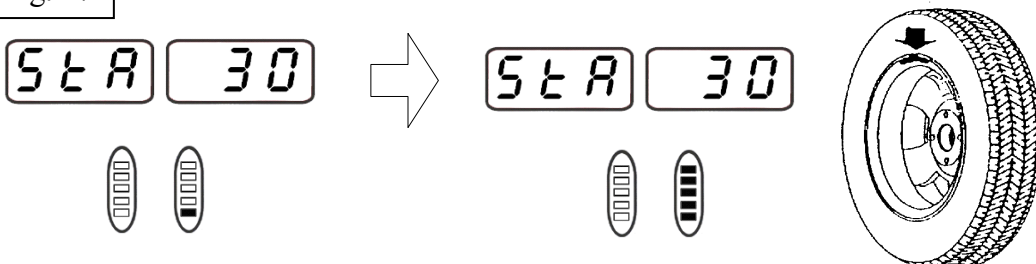


### 6.4.2 STATIC MODE

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 **FUNCTION** to select "Static mode".  
When the LED indicator STA lights up and then press **START** **00** **00**

Fig. 17

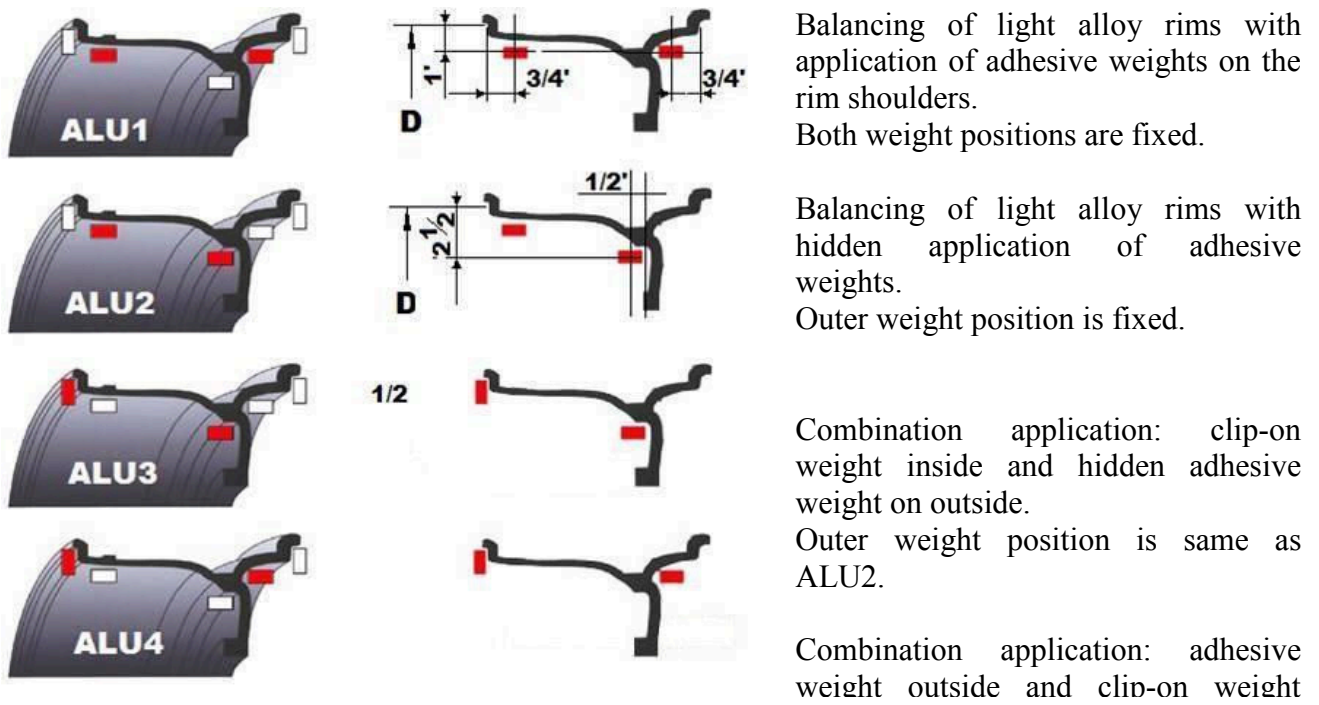


### 6.4.3 STANDARD ALU MODE

All the ALU modes are dynamic balance. Choose the option that best fits the available locations as shown in the figure 18

From the measurement screen, press **ALU** to select the modes **ALU1** → **ALU2** → **ALU3** → **ALU4**.

Fig. 18




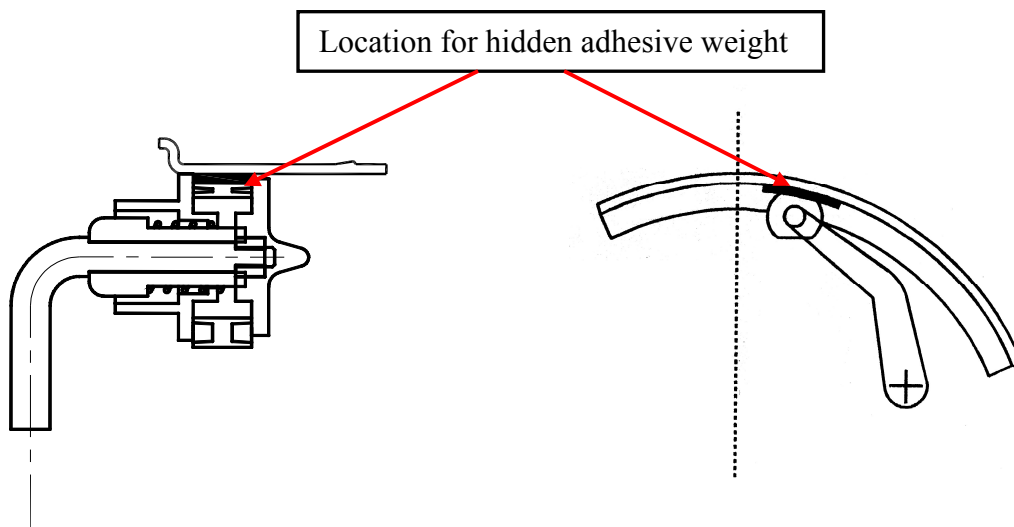
 Hidden adhesive weights can be applied by the pusher on the automatic gauge, as shown in the figure 19.

Fig. 19



### 6.4.4 ALU☆ MODE

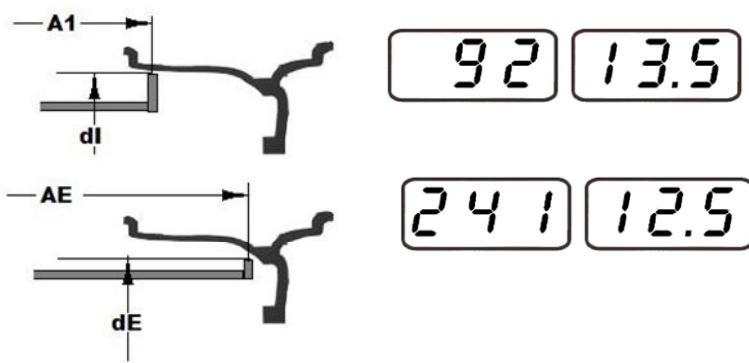
This is a special ALU mode for precise and fast application of the adhesive weights on the rim by means of the automatic gauge.

Press **ALU** to select ALU☆ mode.

Choose two positions on the rim where can be applied with the adhesive weights and then measure the dimensions as shown in the diagram (Fig. 20).

Pay attention to press **ENTER** to memorize A1 dimension which should be measured at first, then measure AE dimension which will be memorized automatically.

Fig. 20



**For an example**

A1 = 92

AE = 241

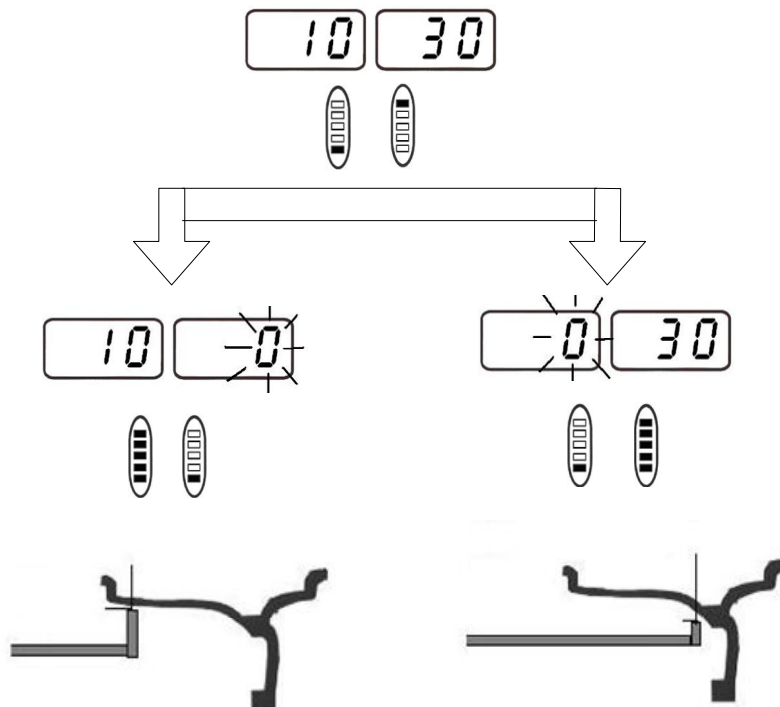
dI = 13.5

dE = 12.5

Press **START** **00** **00**

After performing the balancing spin, pull the gauge to the inner and outer position separately until “0” is shown on the digital readouts, where to apply the adhesive weights

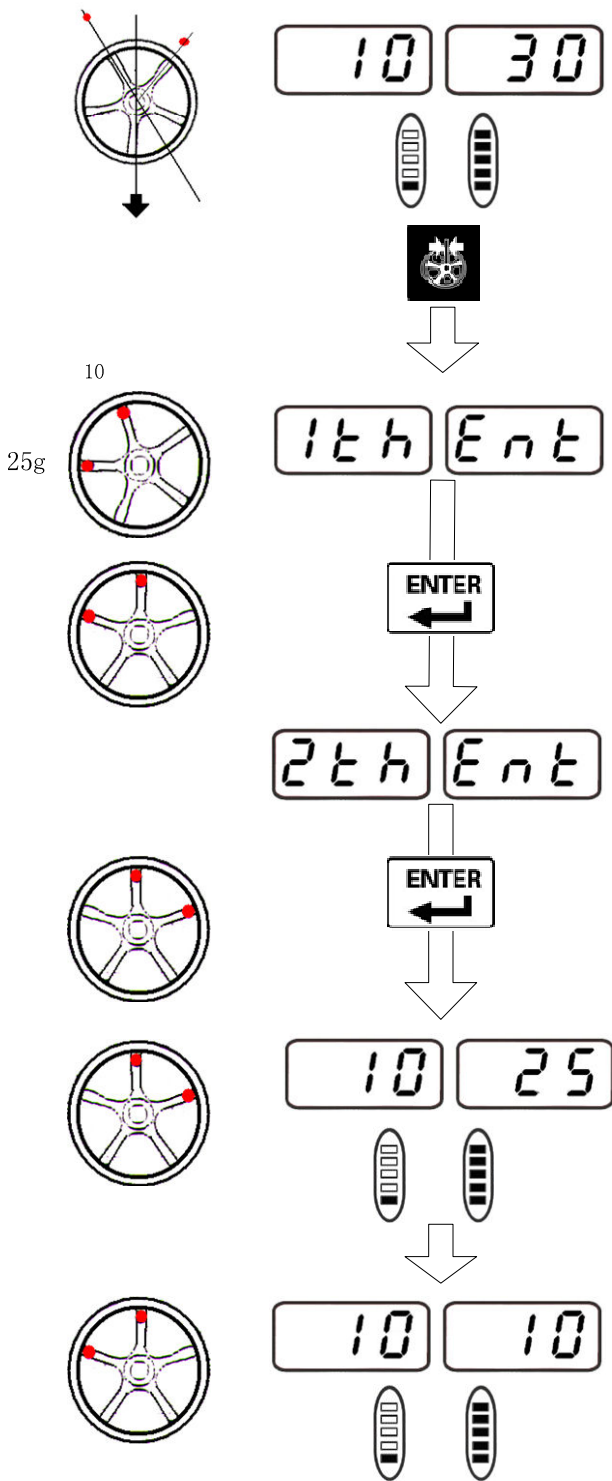
Fig. 21



### 6.4.5 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 event static unbalance or in the ALU☆ mode. Input the wheel data and start the spin. To start the SPLIT function, in the following data for an example:


Fig. 22



At ALU☆ mode, the unbalanced amount of the outer side of the rim shown on the digital readouts is 30g.

Press  to SPLIT function.

Choose the first spoke of two adjacent spokes. Rotate the wheel to move the first spoke to 12 o'clock position.



Press  to memorize the position.

Choose the second spoke of two spokes. Rotate the wheel to move the second spoke to 12 o'clock position.

Press  to memorize the position.


Move the first spoke back to the memorized position. Brake the pedal and then apply the adhesive weights on the position according to the unbalanced amounts shown on the digital readouts.


Move the second spoke back to the memorized position. Brake the pedal and then apply the adhesive weights on the position according to the unbalanced amounts shown on the digital readouts.

To exit SPLIT function, press  and then .



## 6.4.6 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.

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

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  to spin the rim.

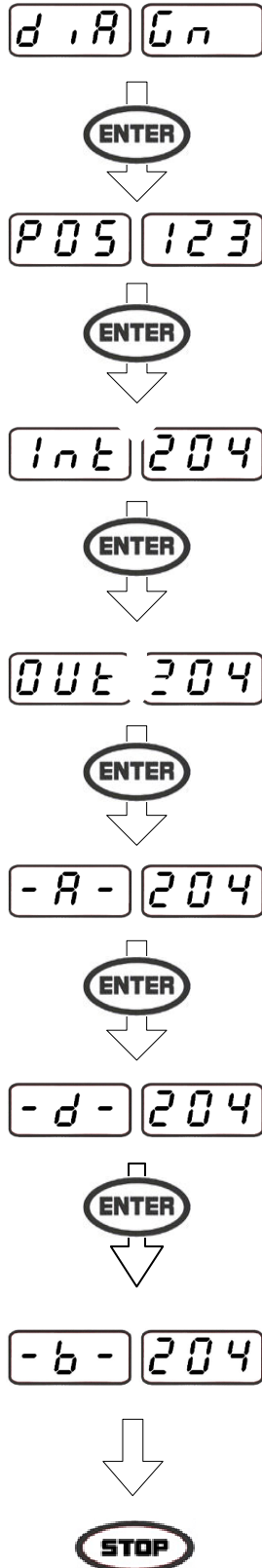
After performing the spin:

- Rotate the rim until LED indicator for outside (Fig. 7 – 22) lights up.
- 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. 23



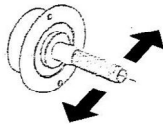
### Diagnosis of phase



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

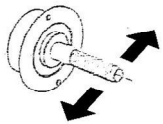
Rotate the wheel in reverse direction of rotation, the readouts displays from 255 to 0.

### Diagnosis of inner piezo



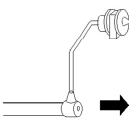
Push the balancing shaft from any direction, the readouts change.

### Diagnosis of outer piezo



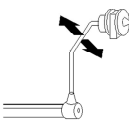
Push the balancing shaft from any direction, the readouts change.

### Diagnosis of distance “A” potentiometer



Pull the gauge index gradually, the readouts change.

### Diagnosis of diameter “D” potentiometer



Rotate the gauge index, the readouts change.

### Diagnosis of diameter “B” potentiometer

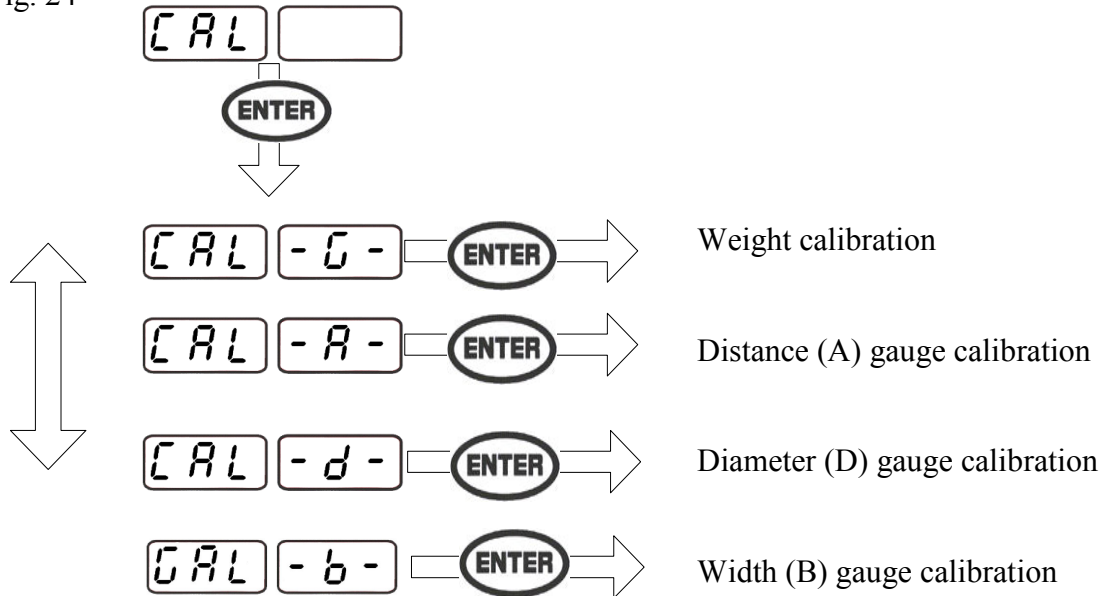
Move the gauge from “0” position to the shaft flange, the readouts change.

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

## 7.2 CALIBRATION

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

Fig. 24





## 7.2.1 WEIGHT CALIBRATION


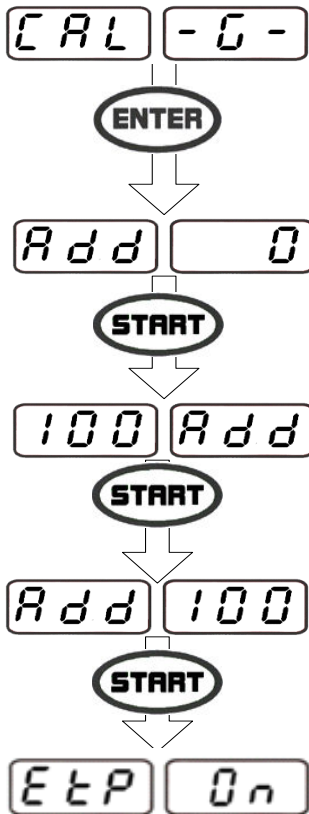
	<p><b>Make sure to enter the exact date of the wheel mounted. Entry of incorrect data would mean that the machine is not correctly calibrated, therefore all subsequent measurements will be incorrect until the new self-calibration is performed with the correct data.</b></p>
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Fig. 25



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

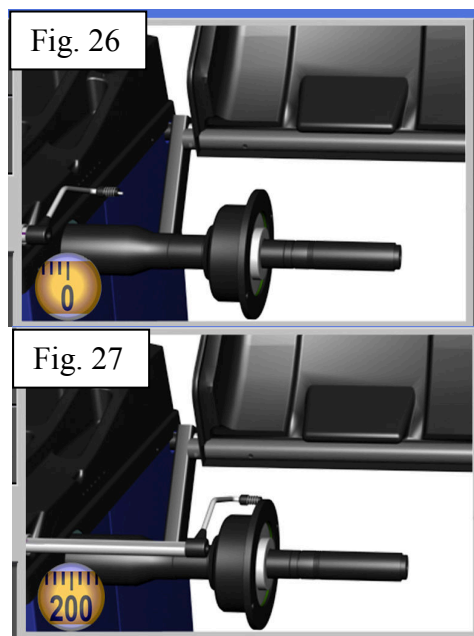
Perform the first spin under normal condition

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

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

Start the third spin.  
After the spin, **EtP 0n** flashes seconds to exit the weight calibration automatically.  
Remove the 100g weight from the wheel.

## 7.2.2 CALIBRATION OF A GAUGE



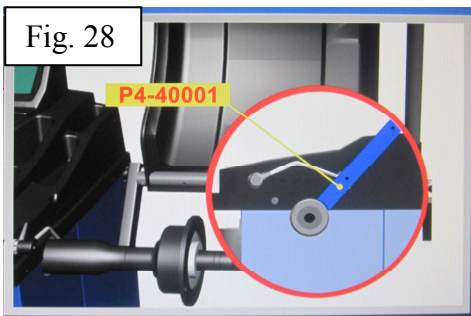
Set the gauge on "0" position..

Press **ENTER** to memorize "0" position".

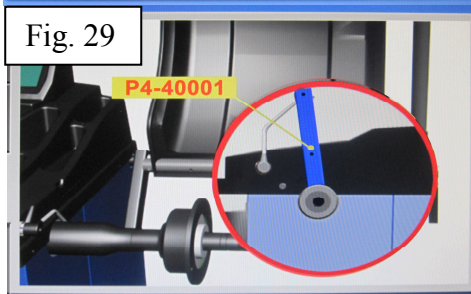
Set the gauge at the distance 200mm.

Press **ENTER** to memorize.

### 7.2.3 CALIBRATION OF D GAUGE



Place the supplied calibration meter on the HIGER PROFILE surface of shaft (“0” position) and then set the gauge tip into the lower hole of the meter.

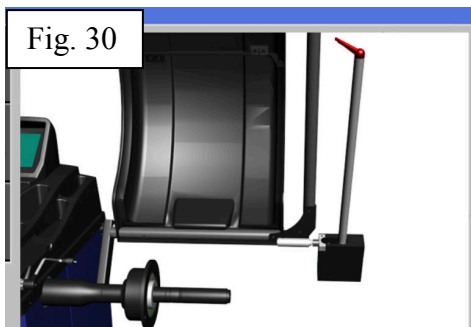


Place the supplied calibration meter on the HIGER PROFILE surface of shaft (“0” position) and then set the gauge tip into the upper hole of the meter (“200” position)

Press **ENTER** to memorize.

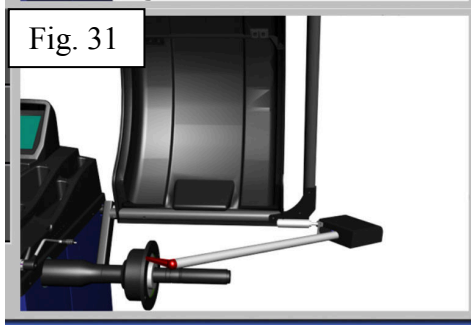
To exist, press **STOP**.

### 7.2.4 CALIBRATION OF B GAUGE – optional



Place the gauge to the “0” position.

Press **ENTER** to memorize.



Set the gauge head to the outer surface of the shaft flange.

Press **ENTER** to memorize.

To exist, press **STOP**.

## 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.

## CHAPTER 9 – ERRORS AND TROUBLE-SHOOTING

### 9.1 ERROR DISPLAY

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

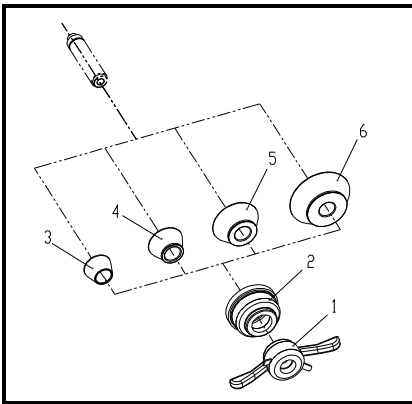
ERRORS:	MEANING:	SOLUTION:
Err -0-	The machine is not preset up by the manufacturer before delivery.	Call for the technical service.
Err -CAL-	Faulty calibration.	Recalibration.
Err -2-	Speed too low during balancing measurement spin.	Check the driven belt Check the bearings Check the motor Check the 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	<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 diameter 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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the gauge.</li> <li>2. Switch off and switch on the machine again</li> </ol>
The machine does not spin when the wheel guard is closing.	<ol style="list-style-type: none"> <li>1. The function “start from the guard closing” 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 if necessary.</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 data 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>

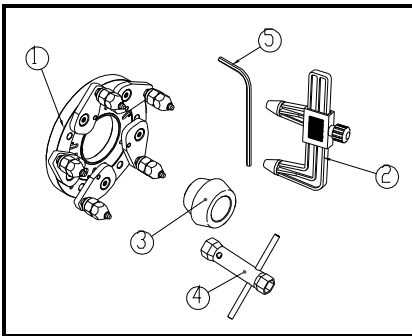
## CHAPTER 10 – ACCESSORES

### 10.1 STANDARD ACCESSORIES



1. TR40X3 Quick locking nut
2. 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

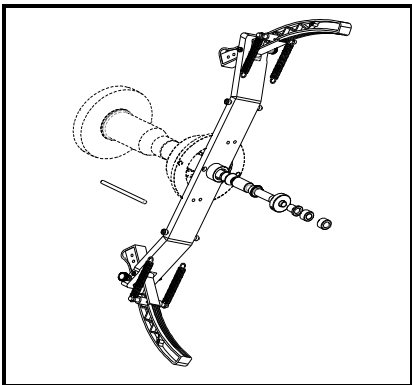
### 10.2 OPTIONAL ACCESSORIES



#### PF-211 Universal flange

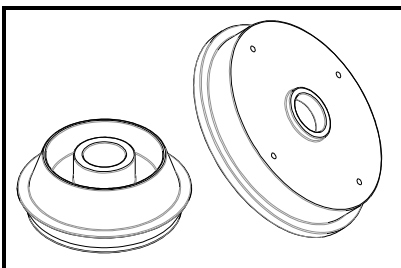
Universal flange for wheels with/without central hole, suitable for any vehicle wheel with 3-4-5 holes.

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



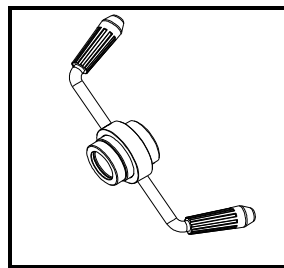
#### PF-810 Motorcycle adaptor.

1. PF-141 Kit of adaptors
2. P08AG Wheel clamp kit
3. PF-100001 Distance extension



#### Light truck adaptor

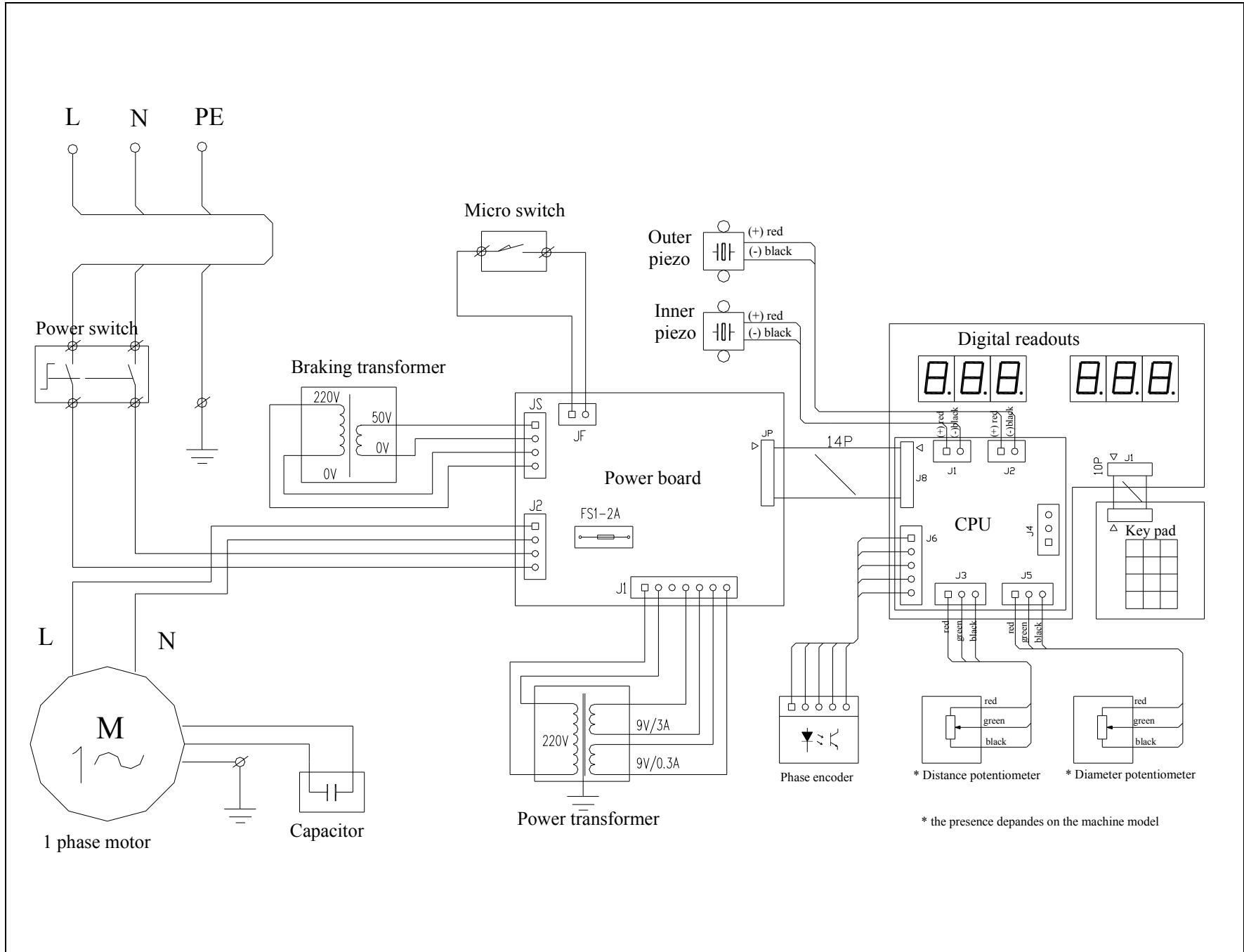
1. PF-221201 Spacer
2. PF-221202 Cone D.111-165

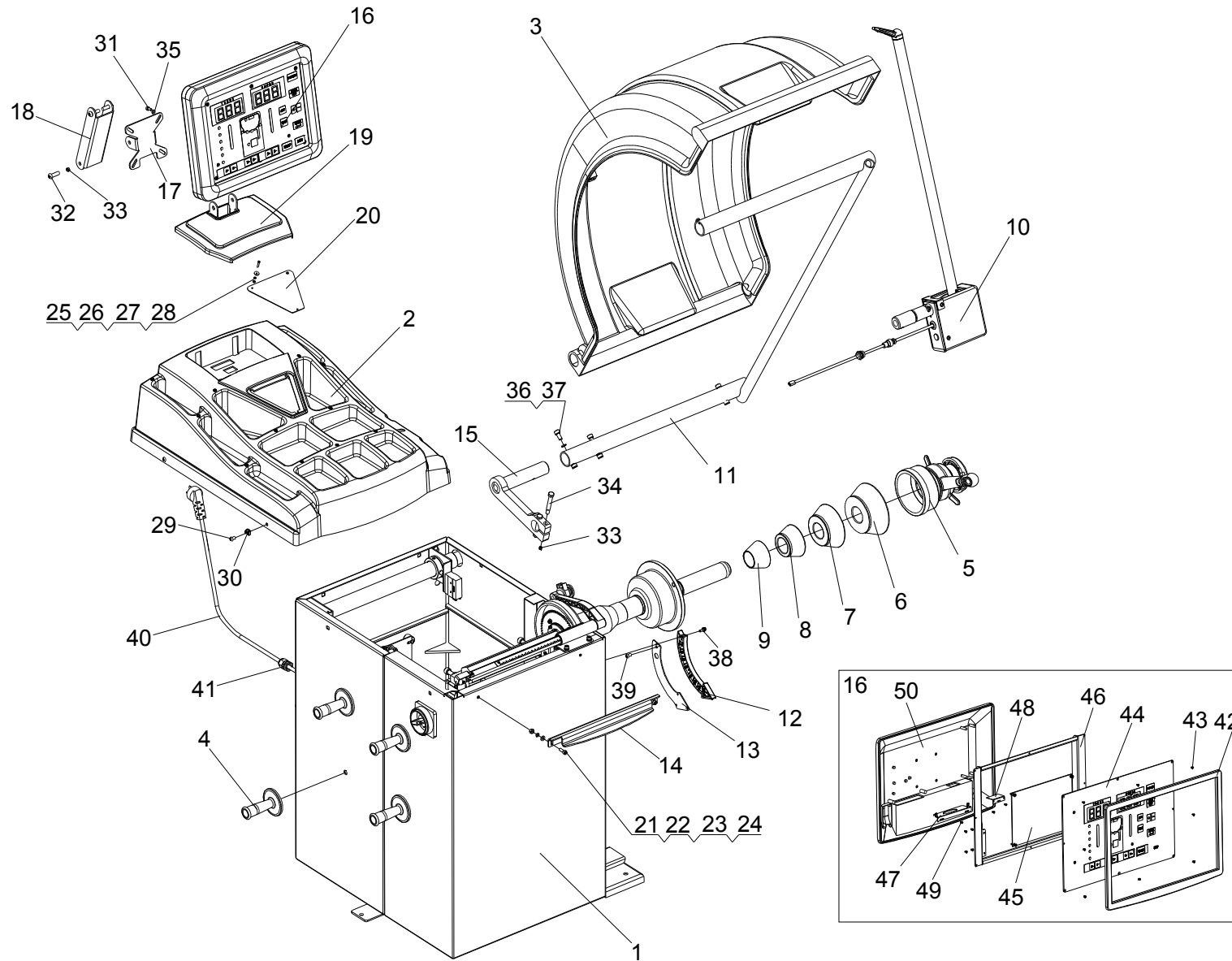


#### P3-61000

#### Heavy locking nut

# CHAPTER 11 – ELECTRIC DIAGRAM





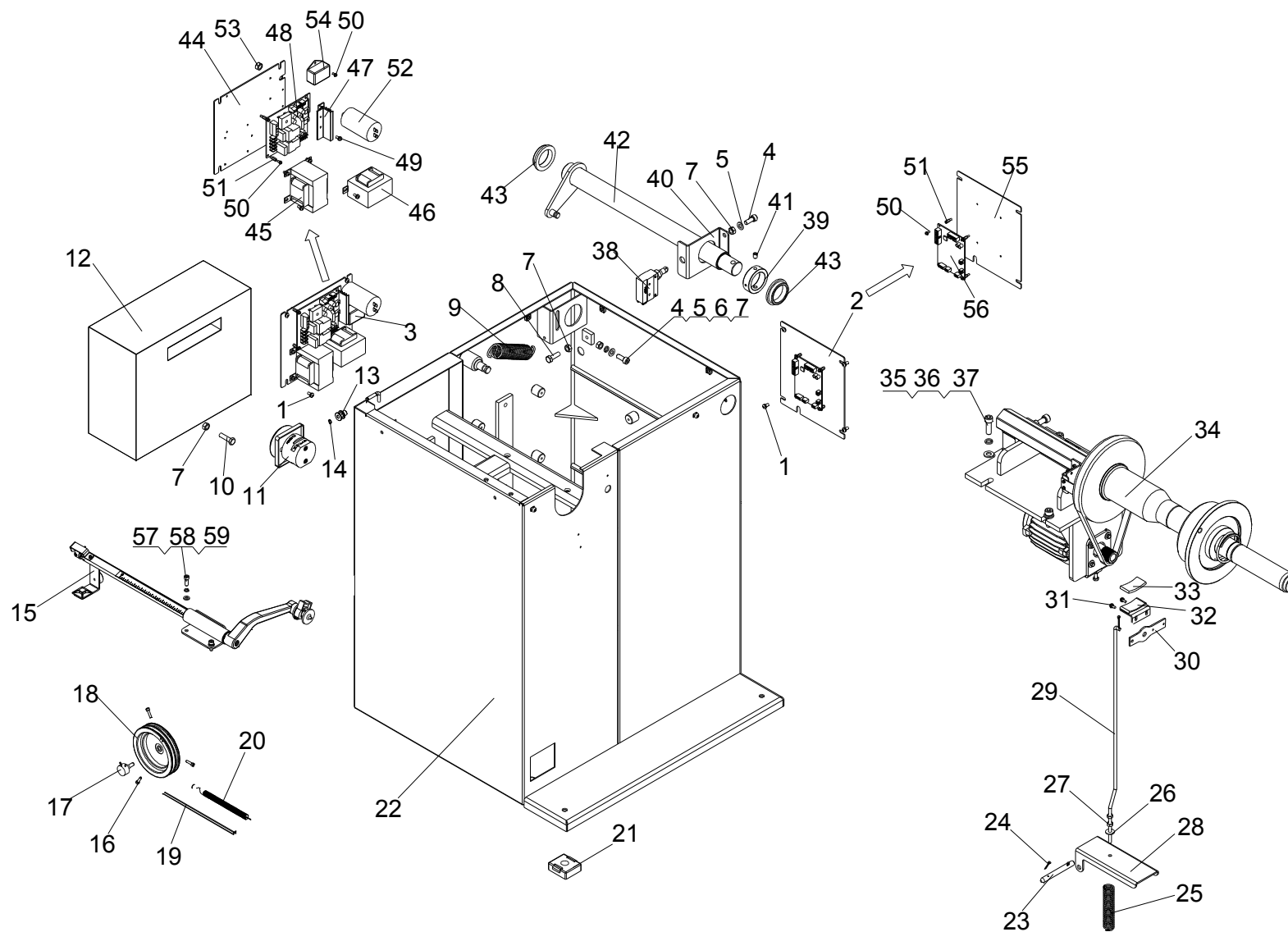


TAV.0	GENERAL BREAKDOWN	ED. 08/18
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ITEM	PART NUMBER	DESCRIPTION	QTY	REMARK
1	P32A100000	Casing	1	
2	P4-00001	Weight tray	1	
3	P4-00005	Wheel guard	1	
4	P1-22001	Cone holder	4	
5	P1-50000	Quick nut kit TR40X3	1	
6	P1-12004W	Cone 95-132	1	
7	P1-12003W	Cone 78-111	1	
8	P1-12002W	Cone 59-82	1	
9	P1-12001W	Cone 44-70	1	
10	P4-61000	Width gauge assembly	1	
11	P4-65000	Wheel guard frame	1	
12	P28B820000	LED light	1	
13	P4-00010P	Base	1	
14	P4-11002AUS	Plate	1	
15	P4-62000	Wheel guard arm	1	
16	P32A200000	Monitor	1	
17	P4A-00003	Support	1	
18	P4A-00002	Arm	1	
19	P4-00002	Base	1	
20	P32A000001	Cover	1	
21	0203005	Nut M6	2	
22	0208005	Spring washer D.6	2	
23	0202032	Screw M6X16	2	
24	0205006	Washer D.6	2	
25	0215076	Plastic washer D.3	3	
26	0205001	Washer D.3 - GB/T97.1	3	
27	0208001	Locking washer D.3 - GB/T93	3	

TAV.0	GENERAL BREAKDOWN		ED. 08/18
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28	0203001	Nut M3 - GB/T52	3	
29	0206050	Screw M6X10 - GB/T70.2	6	
30	0204047	Captive nut M6	6	
31	0206015	Screw M4X16	4	
32	0206064	Screw M8X20 - GB/T70.2	4	
33	0204004	Nut M8	6	
34	0201127	Screw M8X60 - GB/T27	2	
35	0205003	Washer D.4 - GB/T96	4	
36	0202040	Screw M8X16 - GB/T70.1	6	
37	0208006	Locking Washer D.8 - GB/T93	6	
38	0206054	Screw M3X8 - GB/T9074.4	3	
39	0207004	Screw M3X8 - GB/T819.1	2	
40a	0506068	Power cable	1	
40b	0506109	Power cable	1	
40c	0506118	Power cable	1	
40d	0506261	Power cable	1	
41	0508252	Cable relief	1	
42	P32A200002	Front panel	1	
43	0207001	Screw M3X6 - GB/T819.1	8	
44a	0507438	Control panel with the panel support	1	
44b	0507433	Control panel with the panel support	1	For USA/UK
45	0507135	Display board	1	
46	P32A200100	Support	1	
47	P32A200001	Connection board	1	
48	P32A200004	Board	1	
49	0207026	Screw M2.9X9.5 - GB/T845	12	
50	P32A200003	Back panel	1	



TAV.1.0	BODY	ED. 08/18
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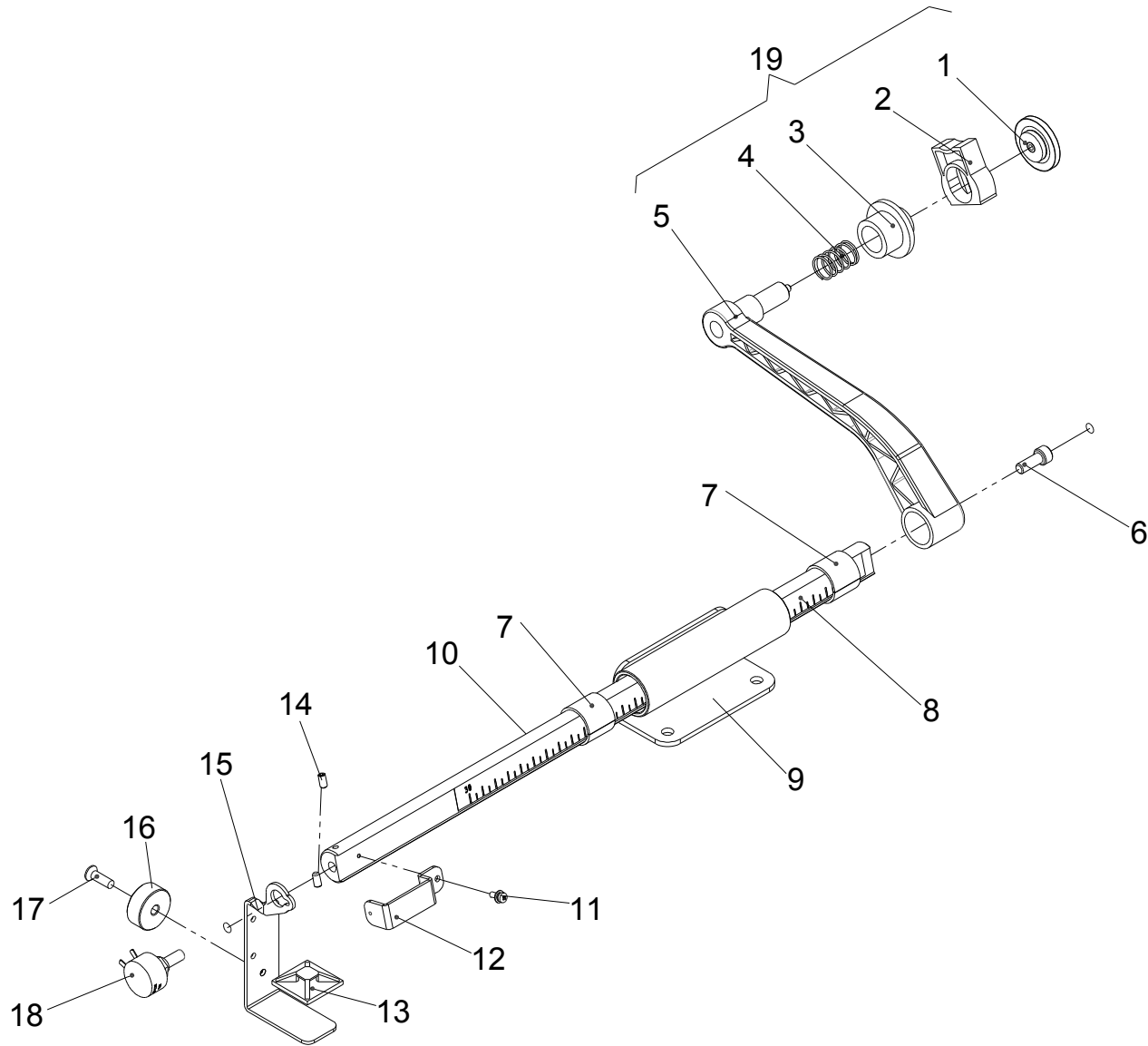
ITEM	PART NUMBER	DESCRIPTION	QTY	REMARK
1	0206058	Screw M5X10 - GB/T9074.4	8	
2	P2-31180UL	CPU board assembly	1	
3	P4-31180	Power board assembly	1	
4	0202045	Screw M8X20 - GB/T70.1	3	
5	0205008	Washer D.8 - GB/T97.1	3	
6	0208006	Locking washer D.8 - GB/T93	3	
7	0203029	Nut M8 - GB/T6170	6	
8	0201038	Screw M8X25 - GB/T5783	1	
9	P1-31232	Wheel guard spring	1	
10	0201031	Screw M8X30 - GB/T5783	2	
11	0505006	Power switch 20A	1	
12	P1-23102	Weights	1	
13	P1-21001	Roller	1	
14	0212012	Seeger D.6	2	
15	P1-41000	Automatic distance gauge assembly	1	
16	0202011	Screw M4X16 - GB/T70.1	3	
17	0508002	Potentiometer 10K	1	
18	P1-21102A	Wire pulley	1	
19	0507091	Wire L=600	2	
20	P1-21103	Spring	1	
21	YC1-3002099	Plastic foot	4	
22	P4-31100AUS	Casing	1	
23	P1-31301	Pin	1	
24	0213044	Split pin 2X20 - GB/T91	4	
25	P1-31306	Spring	1	
26	0205007	Washer D.6 - GB/T96	2	
27	0203035	Nut M6	4	

TAV.1.0	BODY	ED. 08/18
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28	P1-31302	Brake pedal	1
29	P1-31307	Connecting rod	1
30	P1-31303	Lever	1
31	0206060	Screw M4X10 - GB/T9074.4	2
32	P1-31304	Brake	1
33	P1-31305	Braking cloth	1
34	P1B-11000UL	Balancing shaft assembly	1
35	0202062	Screw M10X30 - GB/T70.1	4
36	0208007	Locking washer D.10 - GB/T93	4
37	0205011	Washer D.10 - GB/T97.1	4
38	0505017	Limit switch 7311	1
39	P1-31205	Positioning bush	1
40	P1-31220	Switch support	1
41	0209046	Screw M8X10 - GB/T80	2
42	P4-64000	Wheel guard shaft	1
43	P1-31231	Bush	2
44	P1-31181	Power board support	1
45a	0503034	Braking transformer 220V/40VA	1
45b	0503061	Braking transformer 230V/40VA	1
45c	0503063	Braking transformer 110V/40VA	1
46a	0503046	Power transformer 220V/30VA	1
46b	0503062	Power transformer 230V/30VA	1
46c	0503064	Power transformer 110V/30VA	1
47	P1-31182	Cooling bracket	1
48	0507395	Power board	1
49	0206060	Screw M4X10 - GB/T9074.4	8
50	0206054	Screw M3X8 - GB/T9074.4	8

TAV.1.0	BODY		ED. 08/18
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51	0204053	Isolation pin	4
52a	0508268	Capacitor 50Hz 20VF/450V	1
52b	0508269	Capacitor 60HZ 35V/300V	1
53	0203029	Nut M8 - GB/T6170	1
54	0505068	Power filter	1
55	P2-31181	Board support	1
56	0507396	CPU board	1
57	0202032	Screw M6X16 - GB/T70.1	2
58	0208005	Locking washer D.6 - GB/T93	2
59	0205006	Washer D.6 - GB/T97.1	2



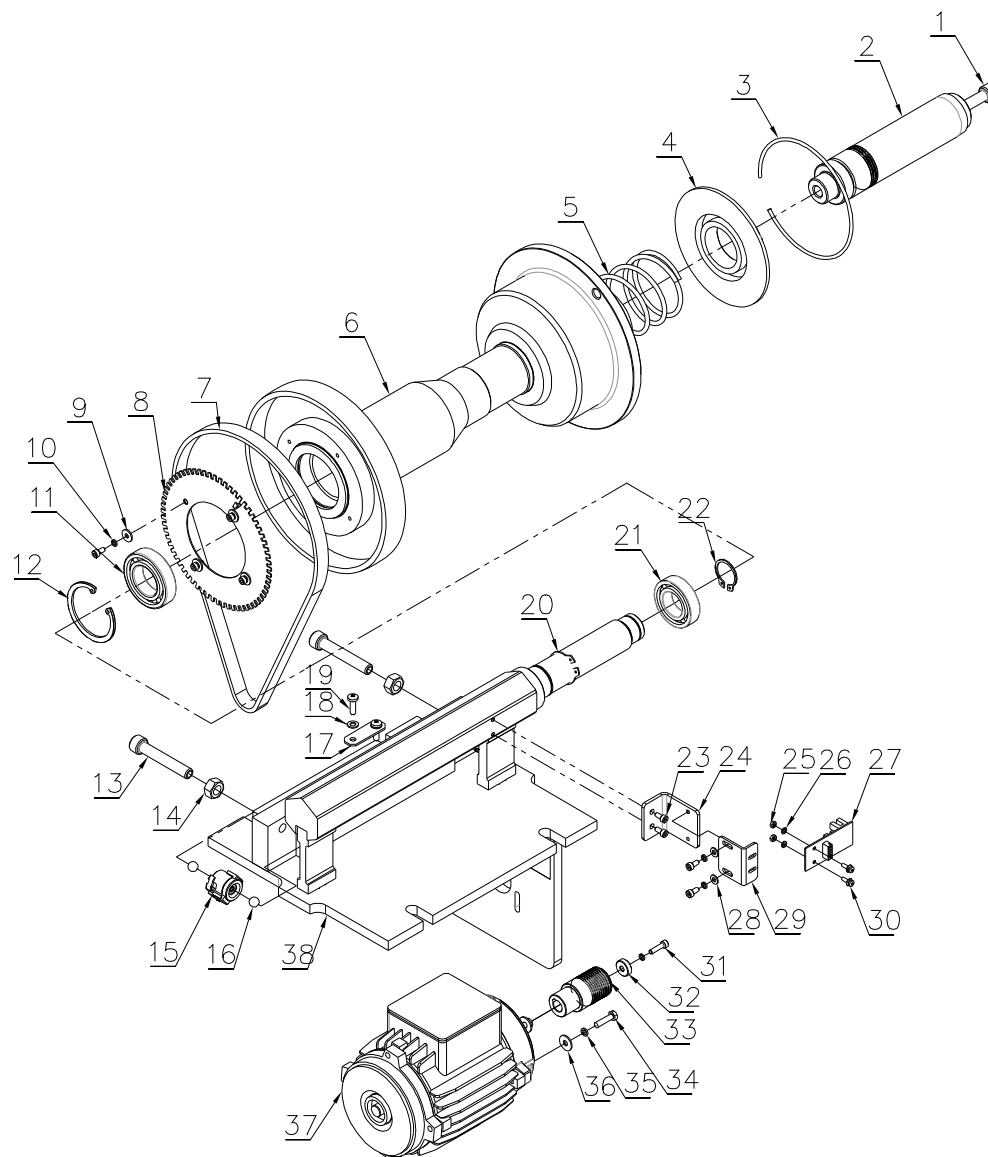
TAV.2.0

## AUTOMATIC DISTANCE GAUGE ASSEMBLY

ED. 08/18

ITEM	PART NUMBER	DESCRIPTION	QTY	REMARK
1	P1-41220	Index tip	1	
2	P1-41205	Weight pusher	1	
3	P1-41204	Pincher	1	
4	P1-21101	Spring	1	
5	P1-41206	Index arm	1	
6	0202032	Screw M6X16	1	
7	0210002	Self-lubricated bush 2020	2	
8	P1-41109	Scale decal	1	
9	P1-41300	Gauge support	1	
10	P1-41101	Gauge rod	1	
11	0206054	Screw M3X8 - GB/T9074.4	1	
12	P1-41104	Potentiometer support	1	
13	0511059	Disc 30X30	1	
14	0209017	Screw M4X8 – GB/T80	2	
15	P1-41105	Potentiometer limiter	1	
16	P1-41108	Counterweight	1	
17	0207006	Screw M5X16 – GB/T819.1	1	
18	0508002	Potentiometer 1W/10K	1	
19	P1-41200A	Gauge index assembly	1	





TAV.3.0

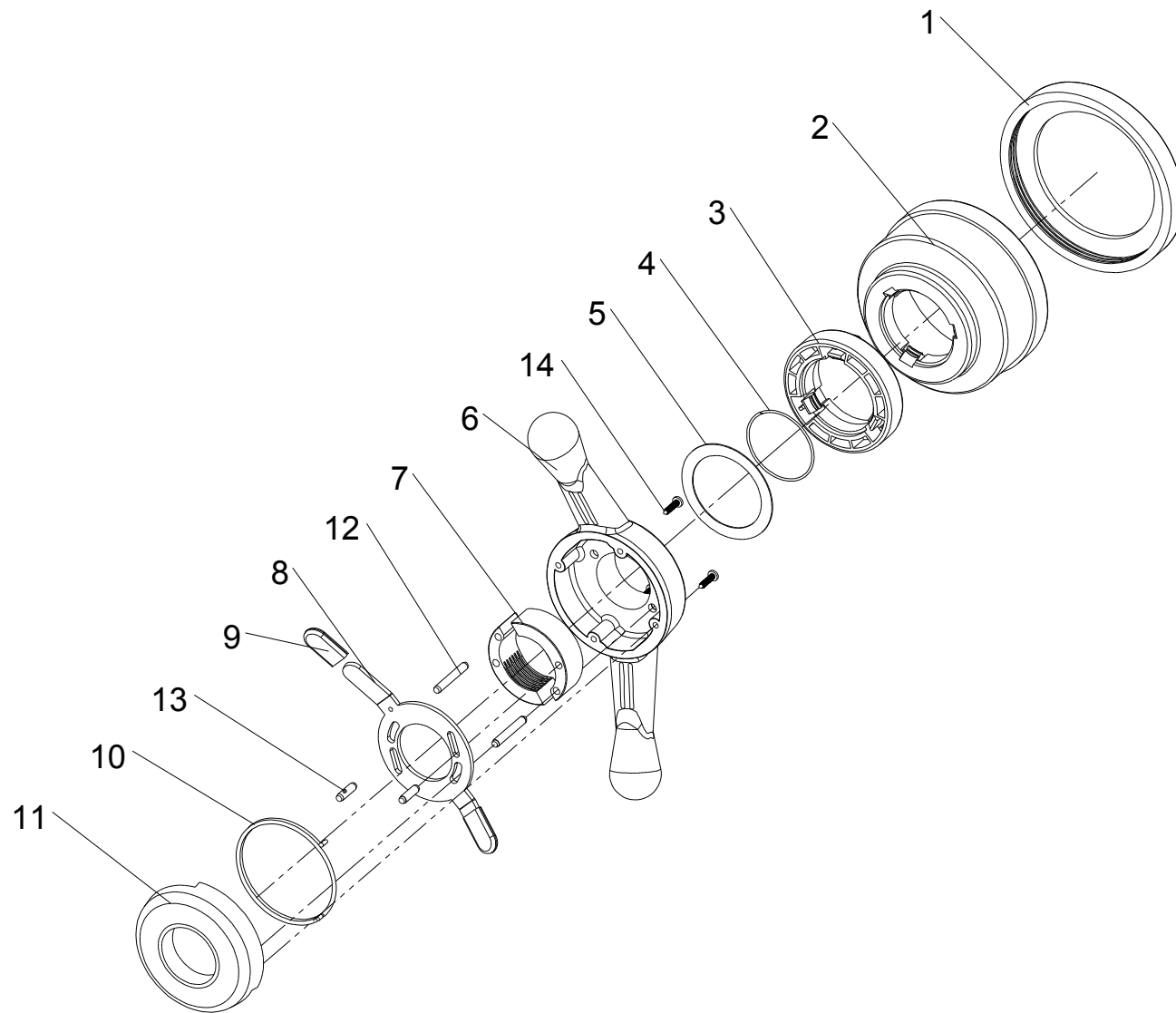
## BALANCING SHAFT ASSEMBLY

ED. 08/18

ITEM	PART NUMBER	DESCRIPTION	QTY	REMARK
1	0202064	Screw M10X160 - GB/T70.1	1	
2	P1-10021	Thread end piece	1	
3	P1-11012	Seeger ring	1	
4	P1-11011	Cover	1	
5	P1-11010	Captured spring	1	
6	P1-10010	Balancing wheel	1	
7	0511049	Drive belt 6-J290	1	
8	P1-11002	Phase disk	1	
9	0205003	Washer D.4 - GB/T96	4	
10	0208002	Locking washer D.4 - GB/T93	7	
11	0214002	Bearing 6006	1	
12	0211006	Seeger D.55	1	
13	P1-11004	Special screw	2	
14	0203011	Nut M10 - GB/T6170	2	
15	0507087	Piezo sensor	2	
16	0215068	Steel ball D.9	4	
17	P1-11013	Fastening plate	1	
18	0205004	Washer D.5 - GB/T97.1	2	
19	0206026	Screw M5X16 - GB/T818	2	
20	0212021	Seeger D.30 - GB/T894.1	1	
21	0214001	Bearing 6005	1	
22	0212004	Seeger D.25 - GB/T894.1	1	
23	0202008	Screw M4X8 - GB/T70.1	8	
24	P10A300001	Support	1	
25	0203001	Nut M3 - GB/T52	2	
26	0205001	Washer D.3 - GB/T97.1	2	
27	0507085	Phase encoder	1	

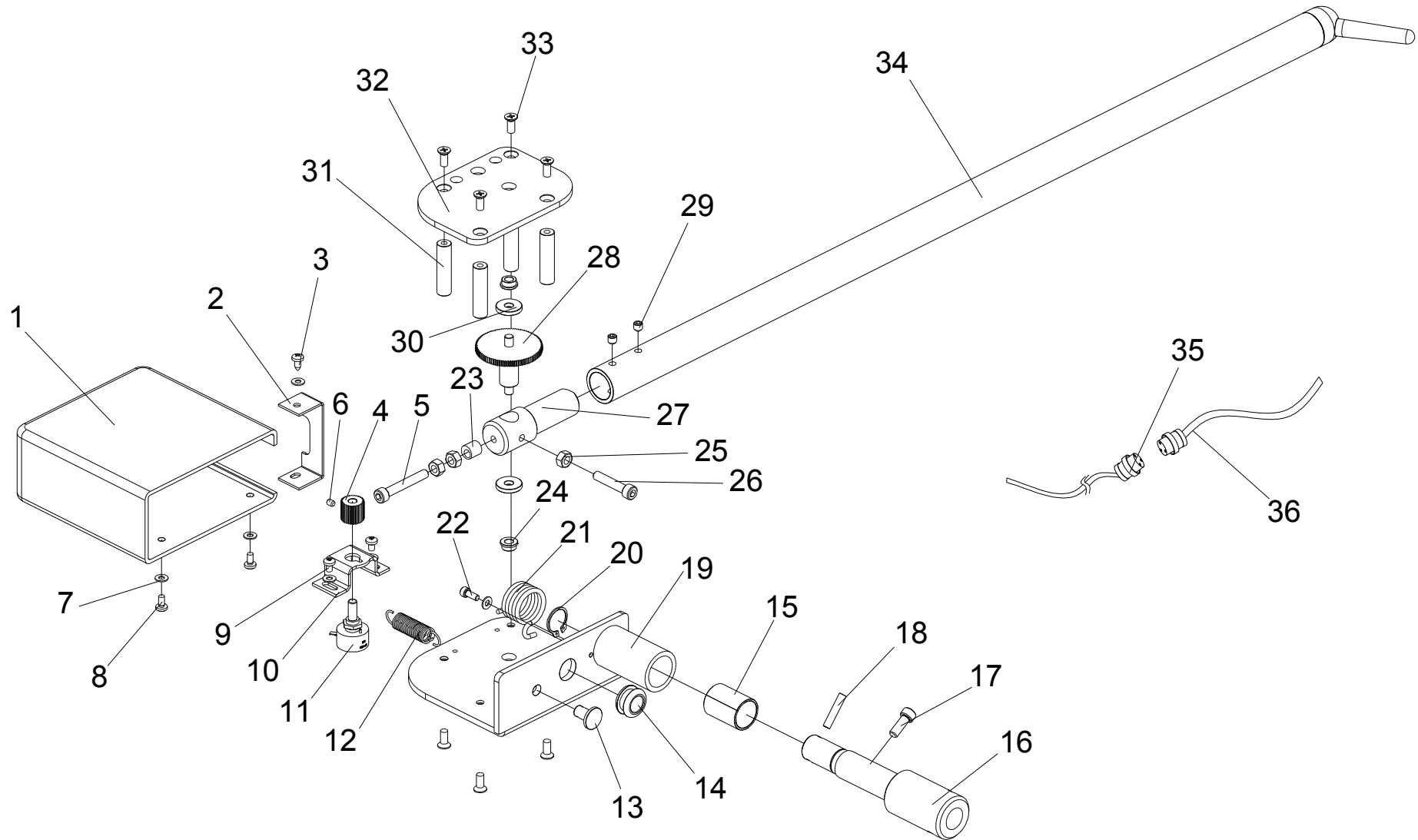
TAV.3.0	BALANCING SHAFT ASSEMBLY		ED. 08/18
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28	0205002	Washer D.4 - GB/T97.1	2
29	P1-11005	Encoder support	1
30	0201136	Screw M3X10 - GB/T9074.4	2
31	0202011	Screw M4X16 - GB/T70.1	1
32	P1-11007Y	Washer	1
33	P1-11003Y	Motor pulley	1
34	0201115	Screw M5X20 - GB/T5781	4
35	0208003	Locking washer D.5 - GB/T93	4
36	0205005	Washer D.5 - GB/T96	4
37a	0509008	Motor 220V/50Hz 0.18KW	1
37b	0509022	Motor 220V/60Hz 0.18KW	1
37c	0509082	Motor 230V/50Hz 0.18KW	1
37d	0509083	Motor 110V/60Hz 0.18KW	1
38	P1B-11100UL	Complete shaft	1



**TAV.4.0****QUICK NUT KIT****ED. 08/18**

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>REMARK</b>
1	P1-50001	Rubber cap	1	
2	P1-50005	Clamping hood	1	
3	P1-50004	Quick nut	1	
4	P1-50008	Spring	1	
5	P1-50009	Washer	1	
6	P1-50002	Handle	1	
7	P1-50012	Clamp	1	
8	P1-50006	Clamping plate	1	
9	P1-50013	Plastic cover	2	
10	P1-50007	Returning spring	1	
11	P1-50003	Nut flange	1	
12	0213074	Elastic pin 5X35	2	
13	0213085	Pin 5X18 - GB/T119.2	2	
14	0207058	Self-tapping screw ST3.5X16	4	



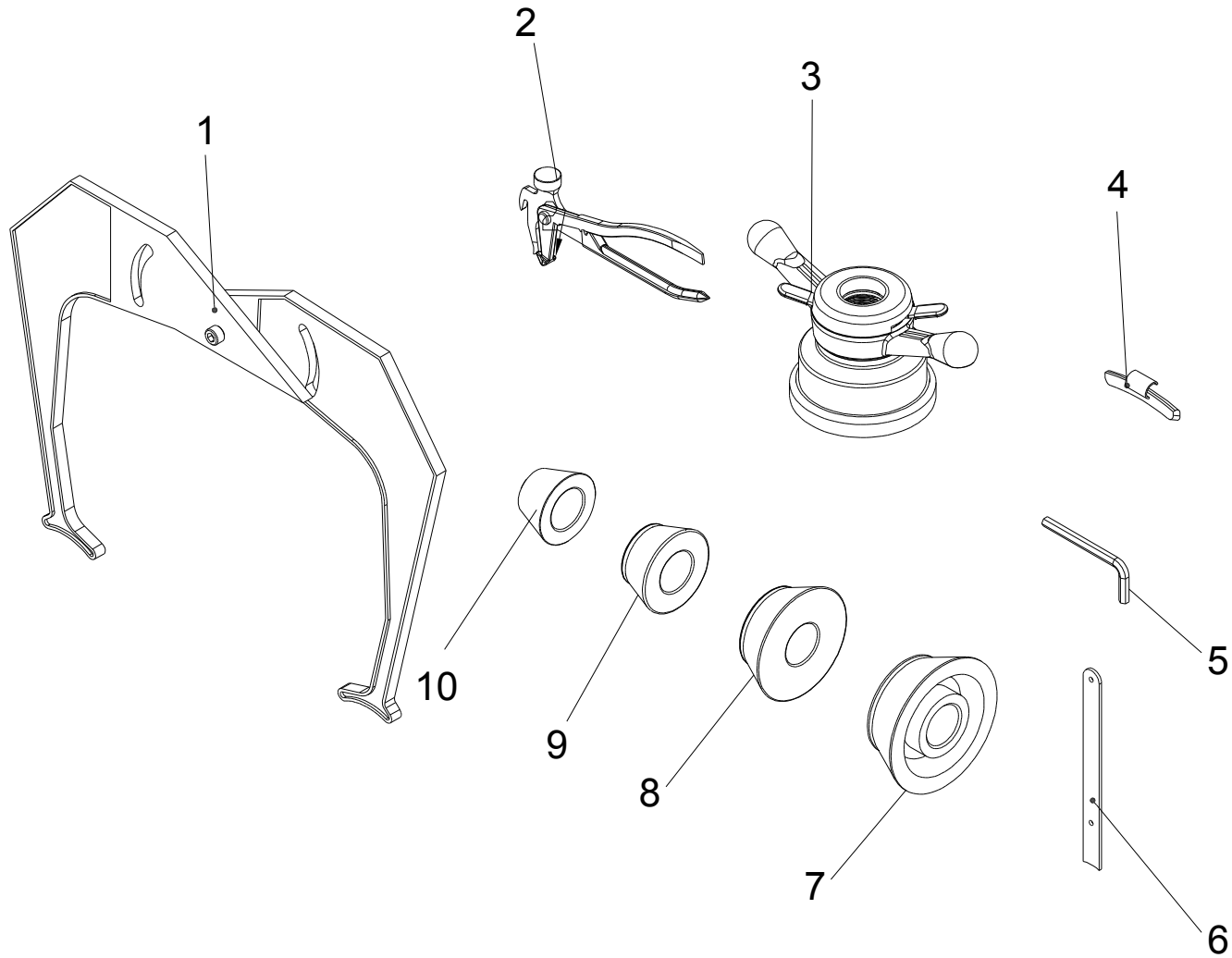
TAV.5.0	WIDTH GAUGE ASSEMBLY	ED. 08/18
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ITEM	PART NUMBER	DESCRIPTION	QTY	REMARK
1	P4-61005	Protection cover	1	
2	P4-61001	L plate	1	
3	0207035	Self-tapping screw ST4.2X12	1	
4	P4-61011	Small gear	1	
5	0202035	Screw M6X40 - GB/T70.1	1	
6	0209053	Screw M4X5 - GB/T80	1	
7	0205002	Washer D.4 - GB/T97.1	6	
8	0206023	Screw M4X8 - GB/T818	2	
9	0206019	Screw M4X6 - GB/T818	2	
10	P4-61006	Support	1	
11	0508002	Potentiometer 1W/10K	1	
12	P4-61013	Spring	1	
13	P4-61007	Spring bolt	1	
14	0206024	Cable holder 16	1	
15	0210004	Self-lubricated bush 2030	1	
16	P4-61003	Pin	1	
17	0202032	Spring M6X16 - GB/T70.1	1	
18	0213004	Elastic pin 5X25	1	
19	P4-61300	Gauge base	1	
20	0212016	Seeger D.18	1	
21	P4-61002	Spring	1	
22	0202022	Screw M4X10 - GB/T70.1	1	
23	P4-61015	Eccentric bush	1	
24	P4-61008	Bush	2	
25	0203004	Nut M6 - GB/T52	3	
26	0202026	Screw M6X30 - GB/T70.1	1	
27	P4-61014	Pin	1	

TAV.5.0	WIDTH GAUGE ASSEMBLY		ED. 08/18
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28	P4-61010	Gear	1
29	0209047	Screw M6X6 - GB/T80	4
30	P4-61009	Spacer	2
31	P4-61004	Spacer	4
32	P4-61012	Cover	1
33	0207009	Screw M5X12 - GB/T819	8
34	P4-61100	Index	1
35	P4-61000-1	Width gauge plug	1
36	P4-61000-2	Connector	1





**TAV.6.0****STANDARD ACCESSORIES****ED. 08/18**

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>REMARK</b>
1	0604059	Wheel Measuring Caliper	1	
2	0511094	Plier	1	
3	P1-50000	Quick nut kit TR40X3	1	
4	0511098	Calibration weight 100g	1	
5	0511093	Allen wrench	1	
6	P4-40001	Ruler for distance gauge calibration	1	
7	P1-12004W	Cone 85-132	1	
8	P1-12003W	Cone 78-111	1	
9	P1-12002W	Cone 59-82	1	
10	P1-12001W	Cone 44-70	1	