Original
Operating instructions

Weber wheel balancer
Model: Precision XL 3D

Version 1.3
Status: June 2023

www.weber-werke.de
Weber GmbH
Sülzbach 1
D-37293 Herleshausen
Tel: +49 (0) 5654 / 343
Fax: +49 (0) 5654 / 794
info@weber-werke.de

Contents

The information contained in these operating instructions has been carefully checked, but errors cannot be completely ruled out. These instructions are intended for users with technical knowledge in the field of vehicle inspection and repair. We reserve the right to make technical and content-related changes.

All images shown may be examples. Colour deviations possible!

1 Security

1.1 Introduction

The installation and operating instructions are an integral part of a wheel balancer.

An expert is someone who has sufficient knowledge in the field of tyre technology based on their professional training and experience and is familiar with the relevant national regulations, accident prevention regulations and generally recognised rules of technology:
z. e.g. BG regulations, DIN standards, VDE regulations, technical regulations of other member states of the European Union.

No liability is accepted for personal injury, damage to the wheel or to the wheel balancer caused by failure to observe these operating instructions.

The following safety instructions warn of dangers and are intended to help prevent personal injury and damage to property. For your own safety, compliance with the safety instructions in this operating manual is absolutely essential. In addition, the applicable national and international safety regulations of the responsible authorities for occupational safety and accident prevention must be observed. Each operator is responsible for compliance with these regulations.

1.2 Safety instructions for commissioning

The Präzison-XL-3D wheel balancer is approved for installation and use in dry rooms. Installation in damp, wet or potentially explosive atmospheres is not permitted.

The operator is responsible for selecting the installation site, the ground conditions, the load-bearing capacity of suspended ceilings, etc. It must be ensured by testing or architect's specifications that the ground conditions meet the requirements or that foundations are laid that fulfil the requirements.

The mains connection on site may only be carried out by authorised electrical contractors. National regulations must be observed.

1.3 Safety regulations for operation

The operating instructions must be accessible and must be observed by every user. The statutory accident prevention regulations must be observed. Statutory provisions and regulations take precedence over the operating instructions.

The wheel balancer may only be operated by authorised and instructed persons who have reached the age of 18. To prevent unauthorised use, the wheel balancer has a lockable main switch.

Please read all safety regulations and technical instructions for this machine before setting up, connecting and operating the machine.

The machine was manufactured in compliance with ISO 9000 regulations. The design takes into account the requirements for outstanding quality and user-friendly utilisation.

The operating instructions contain all relevant information about the machine. Keep the operating instructions in a safe place for future reference.

The wheel balancer must not be set up in extremely hot or cold environments. Avoid setting up the machine too close to radiators, gas and water taps, humidifiers, air conditioning systems or other risky devices.

The wheel balancer should not be permanently exposed to direct sunlight.

Prevent liquids from entering the display. Do not place any liquid containers on the weight compartments or in the immediate vicinity of the display.

The machine should not come into contact with corrosive liquids or other substances that could damage the surface.

The appliance must be installed on a level, load-bearing surface. Ensure that vibrations of the floor caused by other devices or influences are excluded. The machine must be secured to the floor.

Only properly instructed and qualified personnel may be authorised to use this machine.

All modification and conversion work on the machine not authorised by the manufacturer can lead to considerable damage to property and personal injury. The manufacturer / supplier accepts no liability for this.

Notes

This machine may only be used for the purpose for which it was designed by the manufacturer. Any other use is not permitted.

Unauthorised interventions or modifications to the machine are not permitted.

The correct function of the safety devices must be checked regularly. Safety devices must not be put out of operation or their function manipulated in any other way. The wheel balancer must not be used if there are any irregularities in the safety devices.

Weber GmbH accepts no liability for damage caused by improper operation and misuse.

The main switch is also an emergency stop switch and must be switched off in dangerous situations.

1.4 Safety instructions for service work

Maintenance and repair work may only be carried out by authorised service technicians of the contractual partners of Weber GmbH.

Before carrying out maintenance and repair work, the wheel balancer must be disconnected from the power supply (main switch off, fuse off). Suitable measures must be taken to prevent it from being switched on again.

Work on the electrical part of the wheel balancer or on the supply cable may only be carried out by authorised experts or qualified electricians.

1.5 Safety devices on the wheel balancer

Emergency stop: The main switch also fulfils the "EMERGENCY STOP" function. Furthermore, pressing the "STOP" button immediately interrupts the balancing process in an EMERGENCY and the wheel is braked. The "STOP" button may only be pressed during the balancing process in an EMERGENCY.

Wheel guard arch: The wheel protection arch made of impact-resistant plastic prevents stones, balancing weights or other materials from flying off the wheel/tyre. The wheel protection arch must always be folded down for your own safety.

Wheel arch guard switch: A microswitch on the wheel protection arch prevents the balancing machine from starting without the wheel protection arch folded down.

Attention:
All safety instructions must be strictly adhered to before and during commissioning of the machine. Mechanics or other authorised persons must be thoroughly trained before using the machine. The safety instructions must be signed by every authorised person

1.6 Operating instructions

1st area of application	
These operating instructions apply to working with wheel balancers.	
2. hazards for humans and the environment	
	- Risk of injury due to rotating wheel - Risk of crushing due to the protective arch or clamping mechanism - Risk of tearing due to sharp edges on rims or protruding wires on tyres
3. protective measures and rules of behaviour	
	- Independent operation only if the person is at least 18 years old, has been instructed, has proven their qualification and has been authorised by the contractor. - If more than one person is working, a supervisor must be appointed. - Always use proper and appropriate work equipment and tools. - Wear suitable protective clothing or protective equipment (e.g. safety goggles, hearing protection, safety shoes, etc.). - Only use as intended in accordance with the operating instructions. - Always use the protective arch provided and only work on the wheel when it is completely stationary. - Take precautions against traffic hazards (e.g. barriers, safety posts) - Pay attention to all moving parts when operating the tyre balancer. - Do not endanger other persons during any movements of the balancing machine. - Do not stand within the movement range of the balancing machine - Make sure you are far enough away so that you cannot be detected. - Always ensure that the wheel to be balanced is firmly clamped to the machine.
4. behaviour in the event of malfunctions	
	- Stop operation immediately in the event of recognisable hazards. Secure the balancing machine against further use. - Report any defects found to the supervisor. - Only rectify faults when the appliance is at a standstill (de-energised) or call in qualified personnel.
5. behaviour in the event of accidents / first aid	
	- Keep calm - Call in first aiders - Emergency call:____ - Report an accident
6. maintenance	
	- Repairs may only be carried out by authorised specialists or specialist companies

2 Technical manual

2.1 Scope of delivery

The wheel balancer is supplied as standard:

1	Wheel balancer
1	Wheel guard arch
1	TFT monitor
4	Balancing cones
1	Quick-release nut
1	Aluminium rim attachment for quick-release nut
1	Weight tongs
1	Calibration weight 100 g
1	Rim width gauge
1	Balancing shaft Ø 40 mm
1	Fastening screw for balancing shaft
4	Retaining bolt for accessories
3	Fixing anchor
1	Operating instructions

Optionally available

STW110001
Balancing weight tongs Balancing machine

STM100
Balancing machines Starter package

To simplify the operator's work, the wheel balancer can be equipped or used with accessories. Only original accessories from the manufacturer may be used.

2.2 Technical data

Rim width	1.5 - 20 inch
Rim diameter	10 - 26 inch
Wheel diameter	990 mm
Wheel weight max.	65 kg
Balancing speed	150 rpm.
Balancing time	approx. 7 sec.
Engine power	0.25 kW
Electrical connection	230 V / 1 Ph / 50 Hz
Accuracy	± 1 g
Noise level	≤ 75 dB
Working temperature	0 - 50 °C
Dead weight	approx. 180 kg

Note: Specifications are subject to change without notice.

2.3 Wheel balancer dimensions

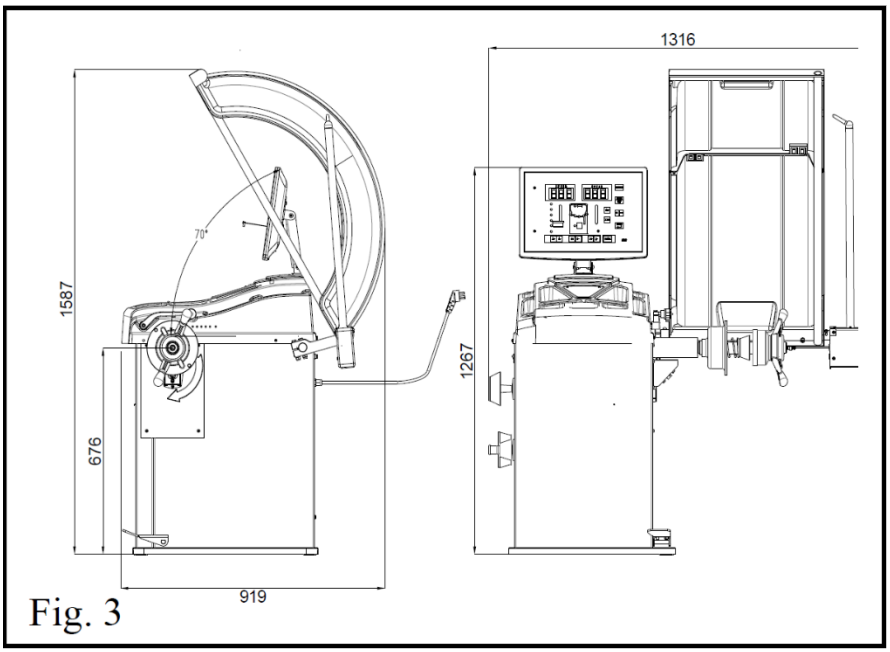


Fig. 3

2.4 Description of the wheel balancer

1	Control unit
2	Wheel guard arch
3	Width" measuring arm
4	Balancing shaft
5	Contact surface for rim
6	Measuring arm "Distance" / "Diameter"
7	Cone holder
8	Main switch
9	Weighted compartments
10	Control panel
11	Brake

2.5 EU Declaration of Conformity

We

Weber GmbH
Sülzbach 1
37293 Herleshausen

hereby declare that the machine designated below complies with the relevant basic safety requirements of the EC Directive due to its design and construction and in the version placed on the market by us. This declaration shall lose its validity if the machine is modified without the agreement of the undersigned.

Designation:	Wheel balancer
Model: **Manufacturer's designation:**	Precision-XL-3D (STD-413)
Serial number:	
Relevant EC Directive:	Machinery Directives 2006/42/EC 2014/30/EU
Applied harmonised standards **In particular:**	EN 60204-1 - EN 61010-1 - EN 61326-1 - EN ISO 11202 - EN ISO 12100 - EN ISO 13850 - EN ISO 13857
Scrapping according to regulations:	2002/96/CE and 2003/108/CE (RAEE)

Herleshausen, October 2019

Place/date

Andreas Weber / Managing Director

3 Preparation of the wheel balancer

3.1 Foreword

The installation instructions must be read and followed exactly before removing from the packaging. Failure to do so will result in exclusion of liability and warranty. Please note that incorrect installation can result in danger to life and limb. Weber GmbH accepts no liability, guarantee or warranty for products and parts thereof destroyed by improper installation or handling. Please refer to the sheet "Initial commissioning by an expert".

3.2 Unpacking

Unpack the appliance using the appropriate tools. Pay particular attention to the sensitive machine parts such as the keyboard, display, cover and balancing shaft.
Lifting the machine by the balancing shaft can damage the sensors. The supplier / manufacturer accepts no liability for any resulting defects.
Carefully unpack the machine and check that it is in perfect condition and that no parts are damaged or missing.

3.3 Set up

When setting up the machine, ensure that the applicable safety regulations are observed. A clearance of 60 cm should be maintained between the machine and neighbouring walls / surfaces. The space required must be adapted to the local conditions after fitting the wheel guard arch and screwing in the balancing shaft.
Avoid moving the machine on the wheel guard arch. This can lead to damage to the bearings of the protective device or the switching mechanism.

3.4 Choice of location

The wheel balancer is approved for installation in closed, dry workshop areas. Use in damp, wet or potentially explosive atmospheres is not permitted.

3.5 Floor condition / installation surface

The wheel balancer must be set up on a sufficiently firm floor that can withstand the force exerted on the floor support surface. The support surface must be level. The operator is responsible for selecting the correct installation location and ensuring the load-bearing capacity of the floor. The concrete quality must be C20/25.

CAUTION: Floors that do not fulfil the requirements can cause serious damage to property and personal injury**.**

Use fixing anchors that fit into the fixing holes provided on the machine to ensure proper anchoring to the floor.

If the unevenness of the floor is more than 0.25%, shims of sufficient size can be used as levelling material.

For proper operation, it is essential to anchor the wheel balancer in the foundation.

4 Mounting the wheel balancer

4.1 Mounting the balancing shaft

Screw the balancing shaft [1] into the flange [3] of the wheel holder using the hexagon socket screw [2]. Now fasten the screw of the balancing shaft to the flange of the wheel holder using a hexagon socket spanner (Fig. 2). Check all screws for tightness and retighten the screws if necessary.

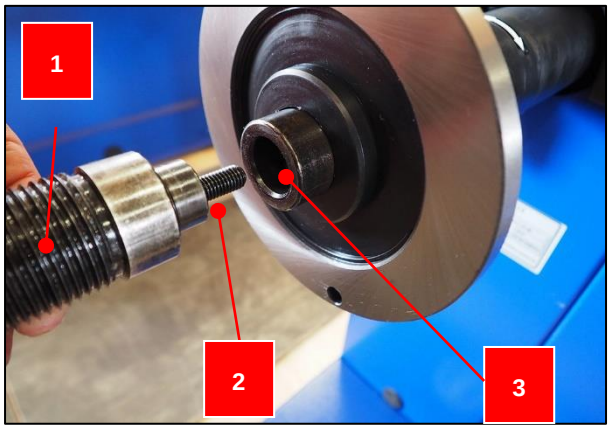


Fig. 1

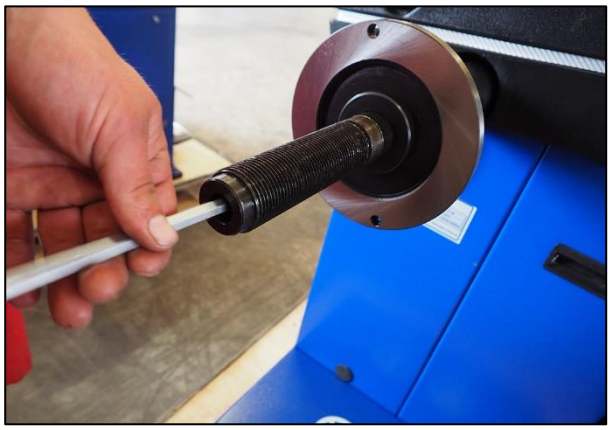


Fig. 2

4.2 Fitting the wheel arch protector

Attach the support arm to the wheel balancer (Fig. 3). The support arm is secured against twisting by the shaft using a screw [2]. The front screw [1] is used for additional clamping on the shaft.

The wheel arch consists of 3 individual components, which you must assemble before you can fit the wheel arch to the wheel balancer. Insert the 2 wheel arches into each other and screw them tight with the 2 screws [4] on the right and left. (Fig. 4) Insert the stiffener into the wheel arch and screw it to the wheel arch. ATTENTION: Make sure that the stiffening tube is guided through the existing hole in the wheel arch on one side! (Fig. 5).

Slide the wheel protection arch [1] onto the pre-assembled clamping sleeve [2] on the operating arm [3]. Tighten the hexagon socket screw [4] on the clamping sleeve to secure the wheel arch protector (Fig. 6).

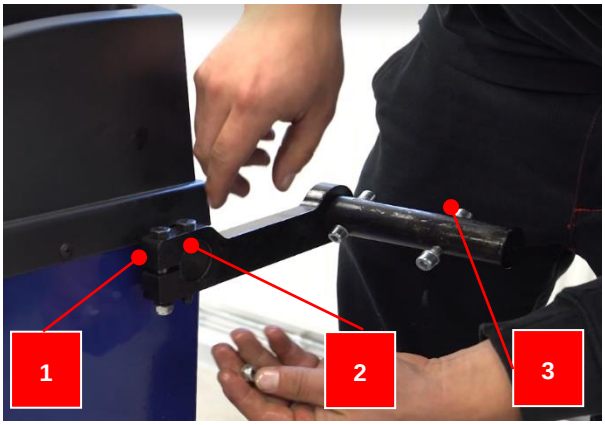


Fig. 3

Fig. 4

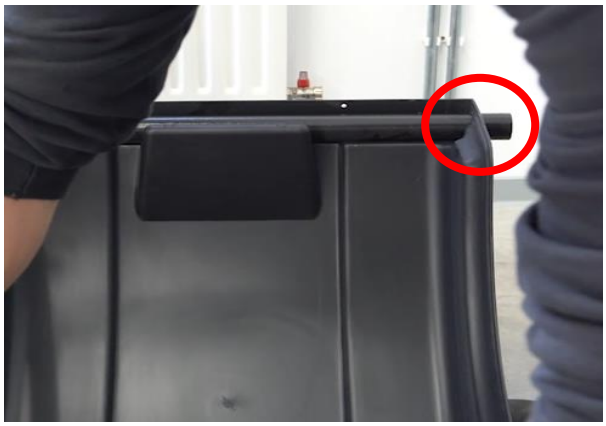


Fig. 5

Fig. 6

4.3 Mounting the control panel

The holder for the control panel on the wheel balancer is already pre-assembled. Connect the cables, which are also pre-assembled, to the control panel. Then screw the control panel to the holder using the four screws (Fig. 8).

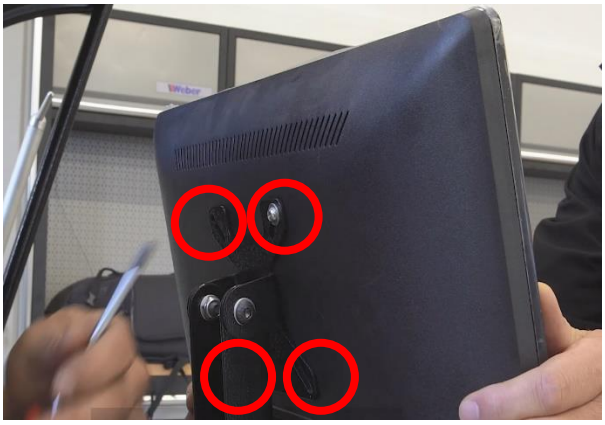


Fig. 8

4.4 Commissioning the "Width" dipstick

Remove the width gauge from the packaging. The width measuring rod is already pre-assembled and only needs to be attached to the shaft of the wheel arch cover. The shaft of the width measuring rod is provided with a hole. Align this hole with the hole in the shaft of the wheel arch cover and screw the wide dipstick to the shaft of the wheel arch cover When screwing it on, hold the dipstick firmly with your other hand so that it does not move to the end stop by itself. (Fig. 9)
The cable for the sensor is also fitted and only needs to be plugged into the corresponding socket on the rear of the wheel balancer. There are 2 holes on the wheel arch cover. You can fasten the cable through these holes using cable ties.

Fig. 9

Caution: The measuring rod for the width must always be calibrated. Otherwise, incorrect wheel parameters will be adopted and the balancing result will be incorrect.

4.5 Commissioning the "Distance / diameter" dipstick

This measuring rod [1] is already pre-assembled (Fig. 10).
Caution: The dipstick for the distance / diameter must always be calibrated. The dipstick must also be calibrated during repair work, replacement of the dipstick or maintenance work. Otherwise, incorrect wheel parameters will be adopted and the balancing result will be incorrect.

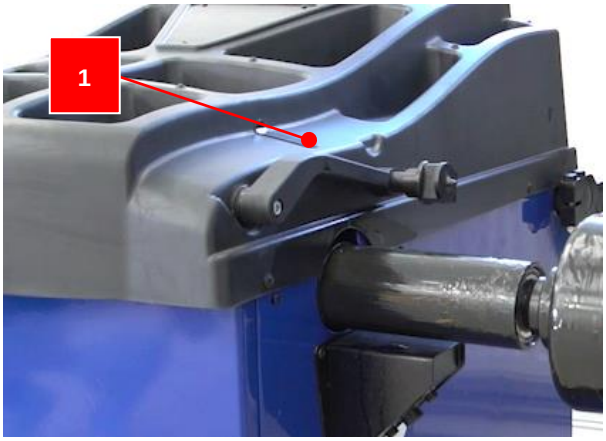


Fig. 10

4.6 Mounting the cone holder

Screw the four cone holders into the threads provided on the left-hand side of the wheel balancer (Fig. 11).

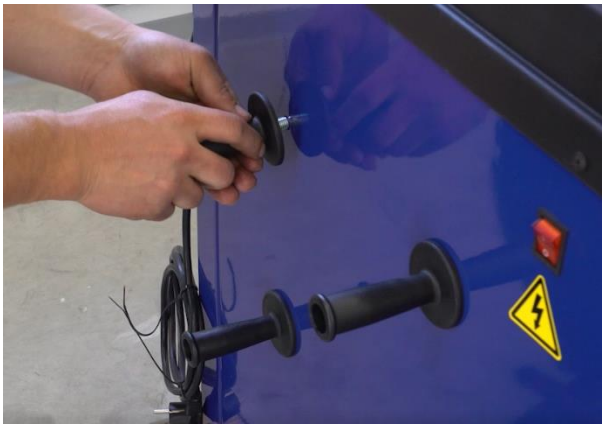


Fig. 11

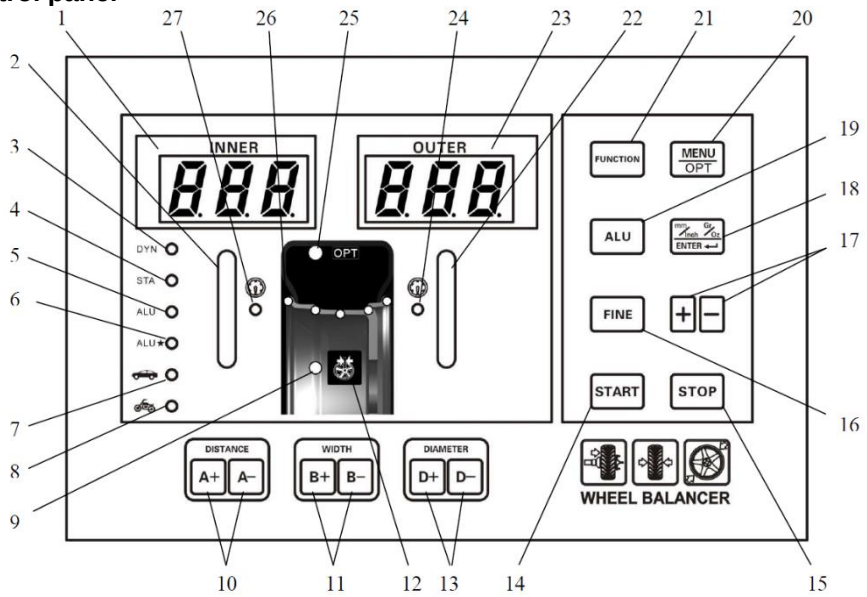
4.7 Electrical connection

The wheel balancer is designed as standard for connection to a 230 V / 50 Hz / 1 Ph socket. The machine is equipped as standard with a CE-certified connection plug. The circuit for the required socket outlet must be fused separately.

Any further electrical connection work may only be carried out by a qualified electrician in accordance with the regulations of the VDE and / or the responsible energy and supply company. All applicable CE or DIN regulations must be complied with.

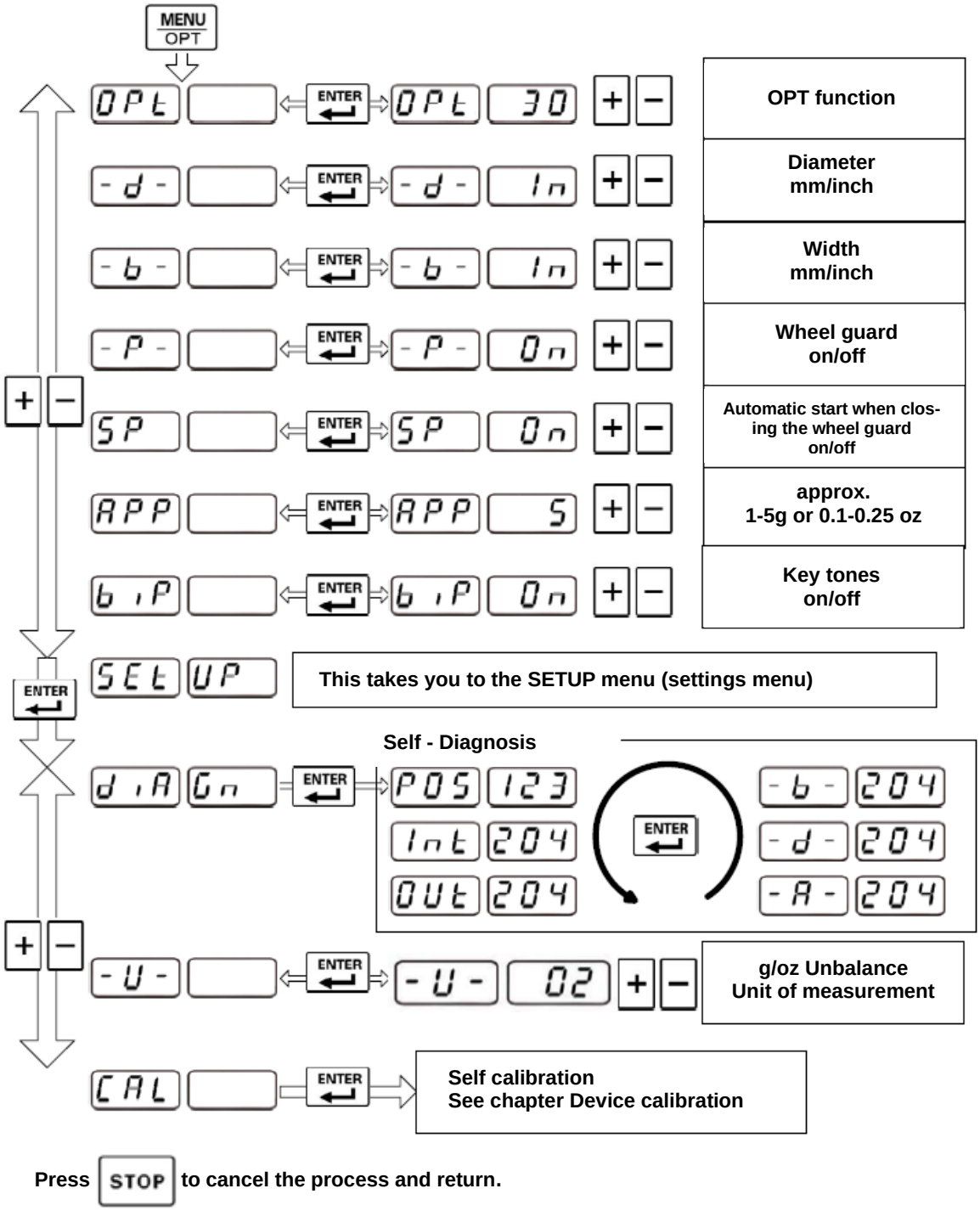
5 Operating the machine

5.1 The control panel



Nummer	Taste	Funktion
1	**Digitalanzeige**	Unwucht auf der Innenseite
2	**LED Anzeige**	Position der Unwucht Innen
3	**Anzeige**	Dynamisches Auswuchtprogramm ausgewählt
4	**Anzeige**	Statisches Auswuchtprogramm ausgewählt
5	**Anzeige**	Alu-Modus ausgewählt
6	**Anzeige**	Alu - Stern Modus ausgewählt
7	**Anzeige**	PKW-Modus ausgewählt
8	**Anzeige**	Motorradmodus ausgewählt
9	**Anzeige**	Split-Funktion ausgewählt
10	**Drucktaste**	Taste zur manuellen Eingabe des Radabstandes (A)-Einstellung
11	**Drucktaste**	Taste zur manuellen Eingabe der Felgenbreite (B)-Einstellung
12	**Drucktaste**	Auswahl Split Funktion
13	**Drucktaste**	Taste zur manuellen Eingabe des Felgendurchmessers (D)-Einstellung
14	**Drucktaste**	Start Taste, startet den Auswuchtvorgang
15	**Drucktaste**	Stop-Taste, NOT-Aus, Zurück zur Startposition
16	**Drucktaste**	Unwuchtzustand <5g (25oz)
17	**Drucktaste**	Funktionsauswahl +/-
18	**Drucktaste**	Enter / Bestätigungstaste
19	**Drucktaste**	Alu / Alu Stern-Modus Auswahl bzw. Wechsel
20	**Drucktaste**	Setup / Menu / Optionen einstellen
21	**Drucktaste**	Auswahl der Betriebsarten Statik / Dynamik / Motorzyklus
22	**LED Anzeige**	Position der Unwucht Aussen
23	**Digitalanzeige**	Unwucht auf der Aussenseite
24	**Anzeige**	Position des äußeren Klebegewichtes bei 6Uhr
25	**Anzeige**	OPT
26	**Anzeige**	Anwendungspostion der Korrekturgewichte
27	**Anzeige**	Position des inneren Klebewichtes bei 6Uhr

5.2 Menu functions



Press STOP to cancel the process and return.

5.3 Device calibration

Programme for the automatic calibration of the balancing machine

After switching on, the machine is in dynamic mode for cars. See picture opposite.

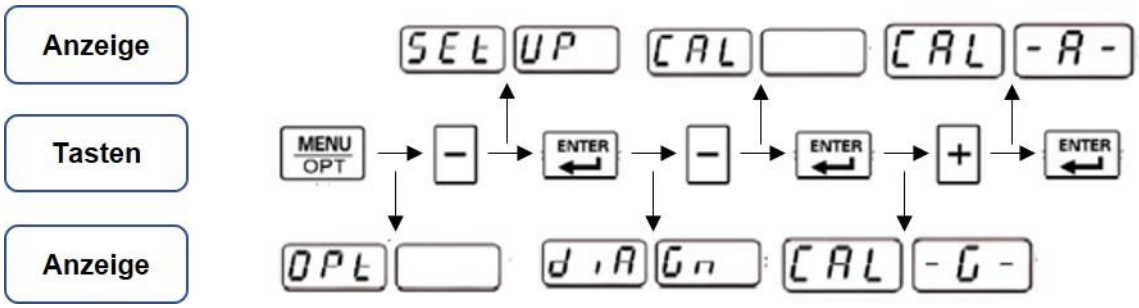
Four calibration options are available for self-calibration.

Attention:

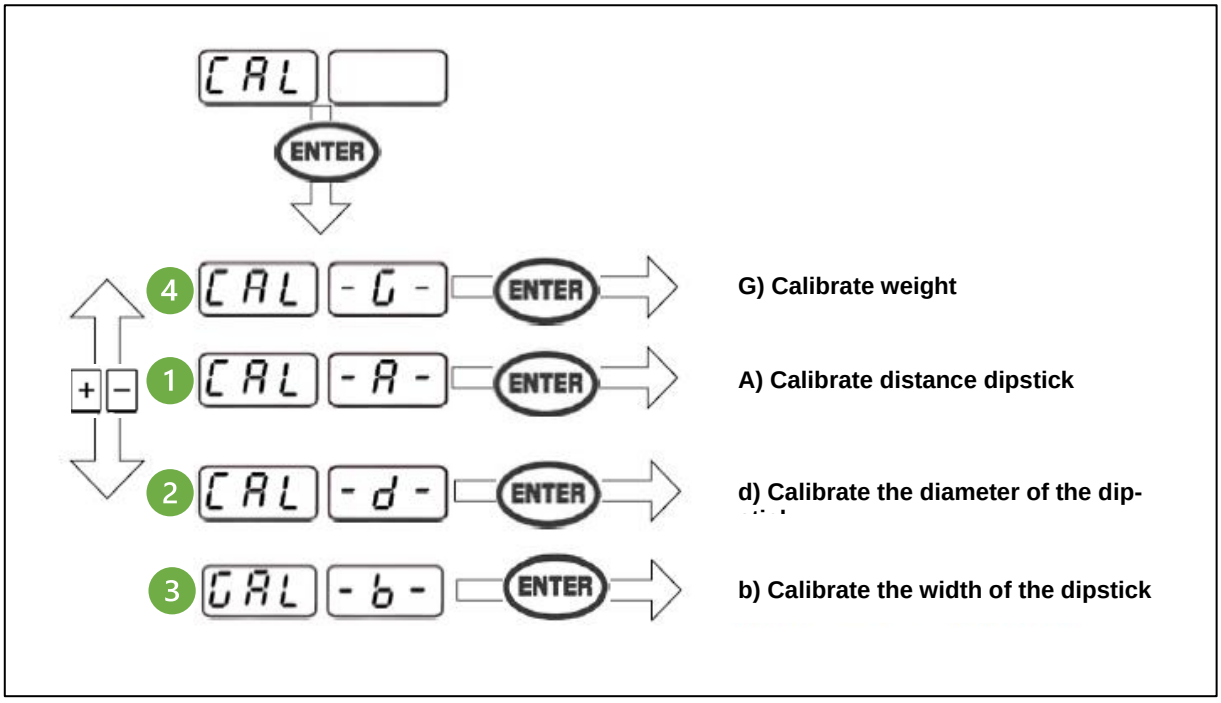
- The automatic calibration programme must be carried out after the first installation or assembly, or if the measurement accuracy is suspected of being incorrect, in order to ensure the measurement accuracy of the balancing.
- The machine must be fixed to the floor, otherwise the measurement results will be incorrect.
- Setting the wrong dimensions prevents the machine from being calibrated correctly and consequently all balancing values are incorrect. In such cases, carry out a self-calibration again with the correct dimensions.
- Ensure that the wheel is correctly mounted. The wheel must not wobble or bounce.

The following steps are necessary for self-calibration of the balancing machine:

Switch on the machine and proceed as follows.



You are now in the calibration menu for the measuring rods. This is structured as shown below.

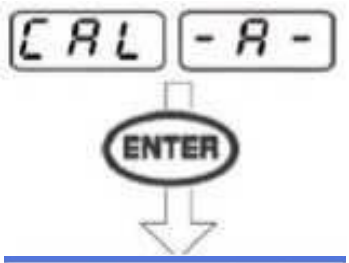


Unfortunately, you cannot go through the calibration menu step by step, as the measuring rods must be calibrated first. The numbers in the image above indicate the calibration sequence. You can navigate through the calibration menu using the buttons  .

The following section describes how to carry out the calibration of the measuring rods and the weight calibration correctly.

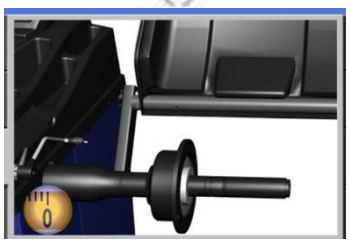
5.3.1 Calibration of the automatic measuring rods

5.3.1.1 Calibration programme for the distance between the rim and the balancing machine.



Select the calibration programme **"A"** in the calibration menu.

Confirm your selection with the **"ENTER"** button.



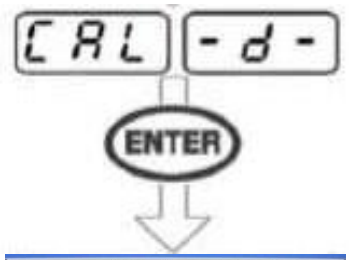
Set the dipstick to the **"0"** position for the distance,

Press the **"ENTER"** button to save the **"0"** position for the distance.

Now pull the dipstick out to exactly 200 mm, as shown in the illustration. Hold the dipstick and confirm the value with the **"ENTER"** button.

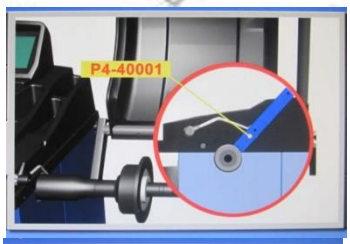
Calibration of the dipstick is complete.

5.3.1.2 Calibration programme for the diameter of the rim



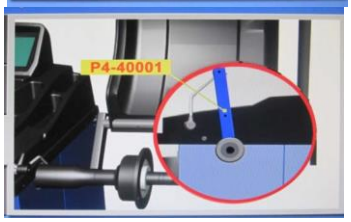
After calibrating the distance from the machine to the rim, you are taken directly to the calibration programme for the diameter of the rim.

Confirm your selection with the **"ENTER"** button.



Set the dipstick to the **"0"** position for the diameter using the measuring gauge, as shown in the illustration.

Press the **"ENTER"** button to save the **"0"** position for the diameter.

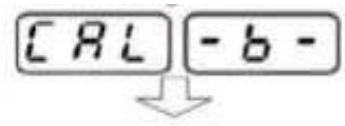


Now set the pick-up tip of the dipstick to a height of exactly 200 mm using the measuring gauge, as shown in the illustration. Hold the dipstick and confirm the value with the **"ENTER"** button.

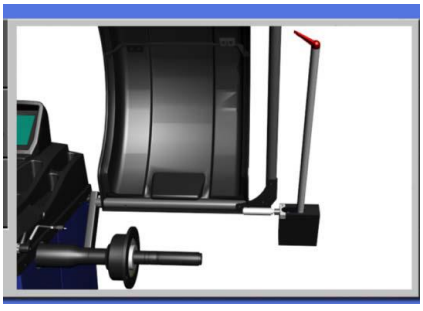
Calibration for automatic rim diameter removal is complete.

5.3.1.3 Calibration programme for the width of the rim

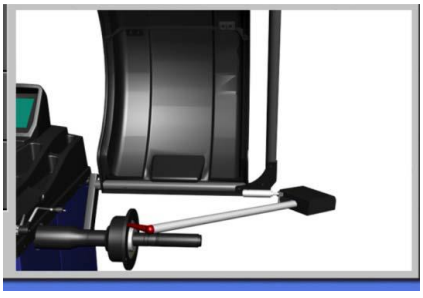
After calibrating the diameter of the rim, you are taken directly to the calibration programme for the width of the rim.



Confirm your selection with the **"ENTER"** button.



Place the measuring arm at the **"0"** position and press the **"Enter"** button



Guide the measuring arm to the outer flange of the shaft as shown in the illustration and press the **"Enter"** button

The display now **shows "EtP - On"**. This signals the successful saving process in the main memory.

The calibration of the measuring rods is now complete! The machine now automatically switches to the dynamic balancing programme. This is followed by the calibration of the weights.

5.3.2 Weight Calibration

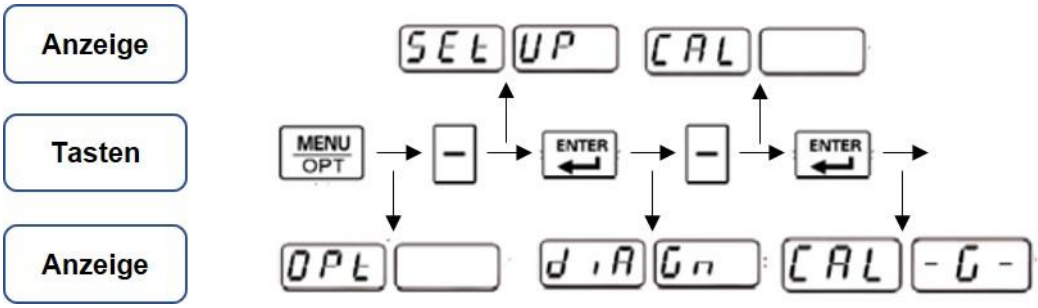
The calibration menu has now been exited automatically

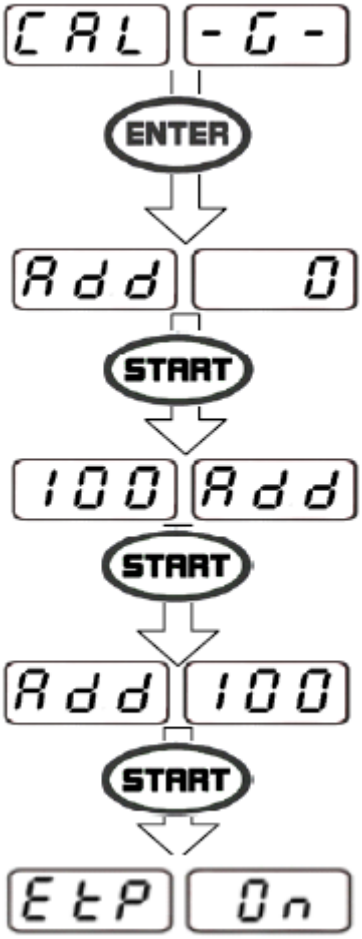
The machine must now be in the standard mode "Dynamic mode".

Fit a wheel (tyre with steel rim) of medium size (15") without balancing weights and foreign objects and with the correct air pressure

Measure the data of the steel rim according to the instructions.

To access the calibration programme, proceed as follows.





Select the ***"G"*** calibration programme in the calibration menu

Confirm your selection with the **"ENTER"** button

"ADD" "0" in the first step, the wheel is read in without balancing weights. Close the wheel guard or press the **"START"** button (only if the wheel guard is deactivated). The wheel starts to turn. Only open the wheel guard when the wheel has been fully braked and has come to a standstill.

"100" "Add" Turn the wheel by hand until all indicators light up and attach a 100g balancing weight to the 12 o'clock position on the inside of the rim. Close the wheel guard or press the **"START"** button (only when the wheel guard is deactivated) to turn the shaft a second time.

"Add" "100" When the shaft stops turning, fold the wheel guard back up and remove the 100g weight from the inside of the rim. Turn the wheel by hand until all indicators light up and attach the 100g weight to the 12 o'clock position on the outside of the rim. Close the wheel guard or press the **"START"** button (only when the wheel guard is deactivated) to turn the shaft a third time.

When the shaft stops rotating, the display shows **"EtP - On"**. This signals the successful saving process in the main memory. Automatic calibration is complete and the data has been saved. Remove the weight from the wheel.

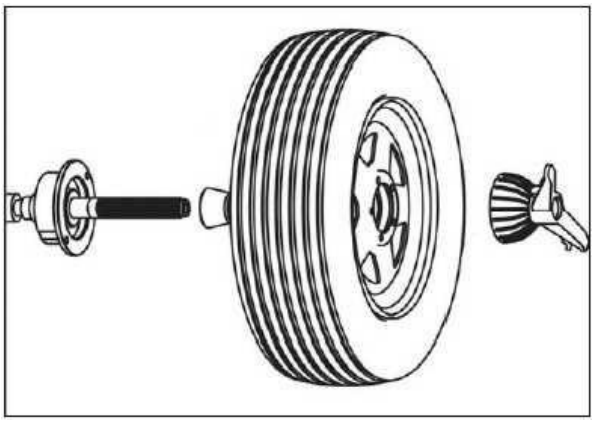
5.4 Wheel assembly

There are two different clamping methods for wheel mounting.

5.4.1 Mounting method 1 - Cone mounting on the back of the rim

Most steel wheels can be fitted correctly using this method. The wheel is centred on the cone from the inside of the hub.

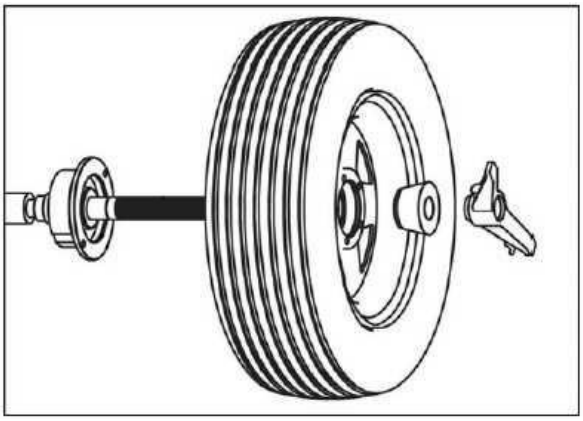
- Clean the surface of the rim before using this method
- Select the most suitable cone for the centre hole of the rim.
- Push the cone with the large surface towards the flange onto the shaft so that it rests against the flange.
- Take a suitable plastic cap (optional) and place it on the clamping nut.
- Lift the wheel onto the shaft and centre the centre hole of the rim with the cone on top.
- Fasten the wheel to the balancing shaft using the quick-release nut. Ensure that it is correctly centred.



5.4.2 Mounting method 2 - Cone mounting on the front of the rim

A wheel should only be centred in this way if the inner surface does not allow the cone to be positioned correctly. The wheel is centred on the cone from the outside of the hub.

- Select the most suitable cone for the centre hole of the rim.
- Lift the wheel towards the flange so that it rests on the balancing shaft on the flange.
- Slide the cone with the large surface towards the outside onto the balancing shaft.
- Centre the centre hole of the rim by pushing on the cone.
- Attach the wheel to the balancing shaft using the quick-release nut (without plastic cap).



5.5 Correct handling of the quick-release nut and the balancing shaft

CAUTION: Improper use of the quick-release nut or incorrect clamping and unclamping of the wheel can damage the quick-release nut and balancing shaft. The manufacturer / importer / seller accepts no liability for damage caused by improper use. This damage is not covered by the guarantee / warranty.

5.5.1 Clamping and unclamping the wheel

- When clamping and unclamping the wheel, the rim must be guided to the centring cone at an even distance without touching the balancing shaft, as shown in Fig. A.
- Guide the quick-release nut up to the rim by actuating the mechanism. Do not operate the mechanism to tighten the quick-release nut.

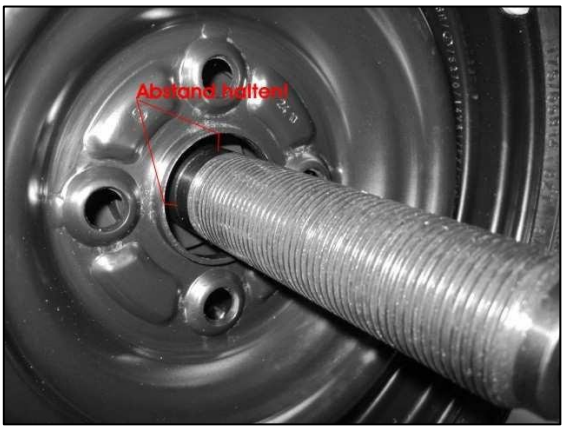


Fig. A

5.5.2 Unclamping the wheel

- Unscrew the quick-release nut until the rim is completely loosened as shown in Fig. B, only then may the quick-release nut mechanism be actuated. Failure to observe this can result in damage to the quick-release nut and balancing shaft.
- When removing the wheel, ensure that you do not damage the thread of the balancing shaft. Proceed as shown in Fig. A.

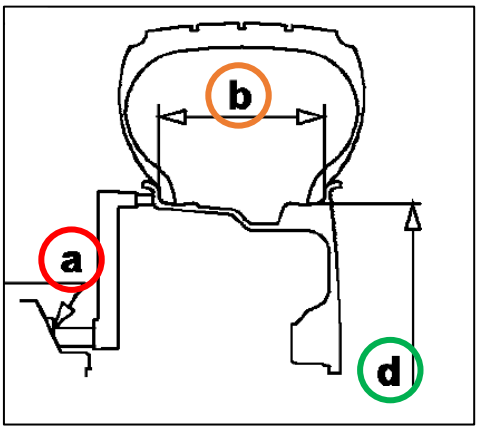
Fig. B

5.6 Entering the rim data

Before you can balance a wheel, you must enter the wheel data into the wheel balancer.

It is important for the user to know how to enter the data, as incorrect data will lead to incorrect measurement results. The data entered is saved until you enter new data.

The sequence must be strictly adhered to, as the automatic dipstick b will not display any results if the data has not previously been taken with the automatic dipstick a / d.



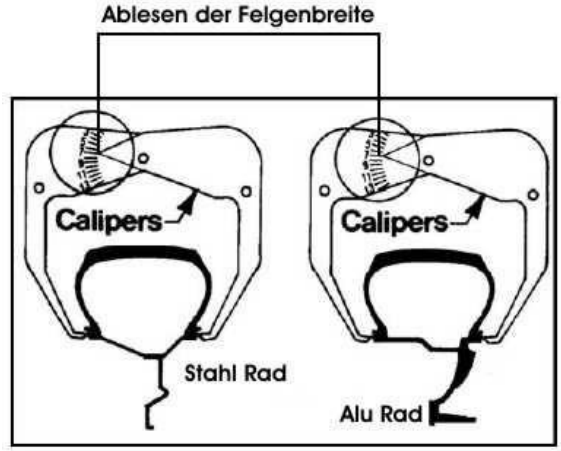
a→ Distance from the balancing machine to the inside of the rim

b→ Rim width

c→ Rim diameter

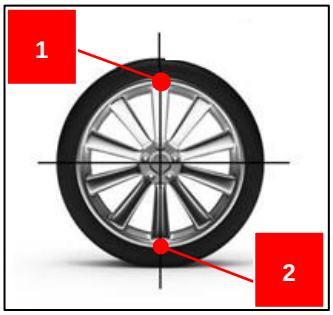
5.7 Acceptance points with the rim width gauge

The rim width gauge is used when the rim width is no longer recognisable or for control purposes. See the diagram below for how to use it.



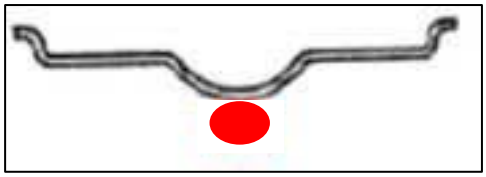
5.8 Attaching balancing weights

These two positions are relevant for attaching the balancing weights on the wheel balancer. The 12 o'clock position [1] is viewed from the inside and outside and the 6 o'clock position [2] is viewed from the inside.



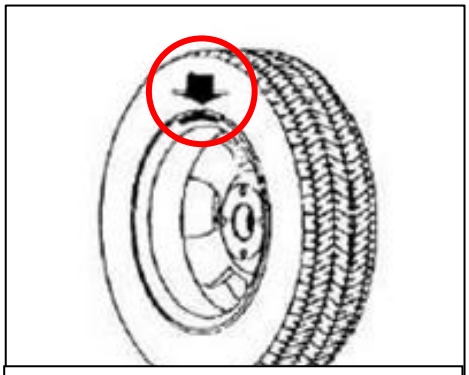
5.8.1 Attaching balancing weights in the static balancing programme

Apply the balancing weight in the static balancing programme by gluing it to the centre of the rim or on the outside.

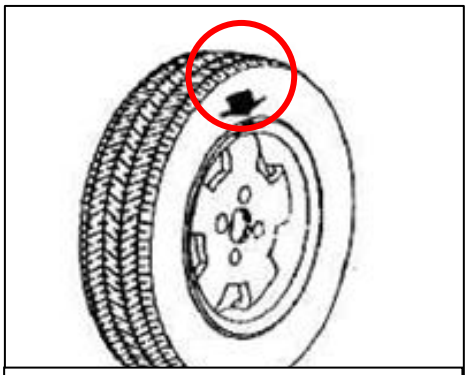


5.8.2 Attaching impact balancing weights

Turn the wheel until the display shows the position of the unbalance on the inside. Once the position is reached, apply the foot brake and the impact weight can be attached at the 12 o'clock position. Repeat these steps for the outside of the wheel. After you have attached the weights on the inside and outside, balance the rim to check it.



Position the balancing weight at the 12 o'clock position of the wheel on the inside.

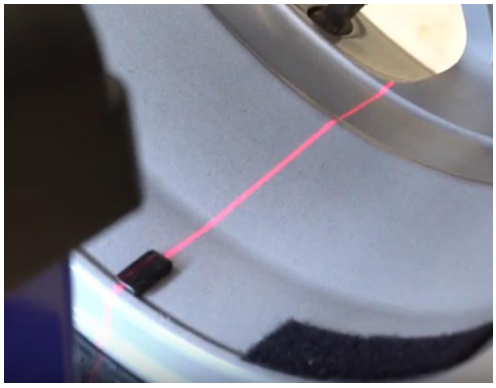


Position the balancing weight at the 12 o'clock position of the wheel on the outside.

5.8.3 Attaching adhesive weights

Turn the wheel until the display shows the position of the unbalance on the inside. The laser then signals the position of the unbalance at the 6 o'clock position. The horizontal laser [1] must always be in the centre of the weight. Remove the protective film from the adhesive surface of the weight and attach it to the centre of the laser. Repeat these steps for the second position of the wheel imbalance. After you have attached the weights, balance the wheel to check it.

The bonding surfaces must always be clean, dry and free of grease.



ATTENTION: The laser that specifies the position of the weights is only active in the ALU1 / ALU2 and ALU3 programmes.

5.9 Automatic and manual input of wheel data

With this wheel balancer, it is possible to automatically read in the wheel data via the two measuring arms and thus have the corresponding balancing programme ready without having to select it manually. This is the most common variant.

However, it is also possible to enter the balancing programme and the wheel data manually via the control panel.

6 Balancing programmes

6.1 General operating information

Do not use the appliance until you have read and understood the entire manual and the warnings.

The wheel guard must not be opened before the wheel stops. The STOP button is used to stop the machine immediately in an emergency.

Do not allow the control panel to get wet!

Chains, bracelets, loose clothing or foreign objects in the vicinity of moving parts can pose a danger to the operator.

IMPORTANT! The initial screen when switching on the wheel balancer is always in "DYN" dynamic mode!

The wheel to be balanced must be absolutely clean. This is the only way to achieve good results.

-After the machine has been switched on, you are in the standard "Dynamic" mode (general programme for steel rims). This function is selected under normal conditions.

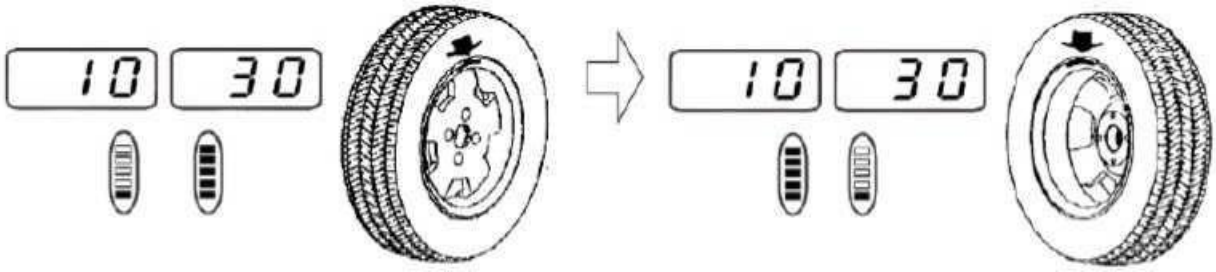
-During static balancing, the rim is treated as if it had only one side face.

-Dynamic balancing checks the unbalance on both sides of the rim.

-The wheel weight is only applied to the outside of the rim in the static programme and to the inside and outside of the rim in the dynamic programme.

6.2 Balancing procedure

1. Mount the wheel on the shaft of the machine. Use the most suitable mounting method. Always remove the weight attached to the wheel.
2. Switch on the machine.
3. Measure and enter the wheel data.
4. Select the most suitable balancing mode. The start screen when switching on is in the setting: **DYNAMIC mode**.
5. Start the machine by closing the wheel guard or by pressing the "START button" **(only when the wheel guard is deactivated)**
6. The wheel starts to rotate and the unbalance value is determined.
7. Only open the wheel guard when the wheel has been fully braked and has come to a standstill.
8. The unbalance values for the inside (left) and outside (right) of the wheel are now shown on the display.
9. Now turn the wheel until either all the indicators on the inside or the outside under the weight display light up. When all indicators on the inside or outside light up, stop and hold the wheel with the foot brake and attach the corresponding balancing weight to the 12 o'clock position.
10. After attaching the weights, close the wheel guard again or **press the "START button" (only when the wheel guard is deactivated)**



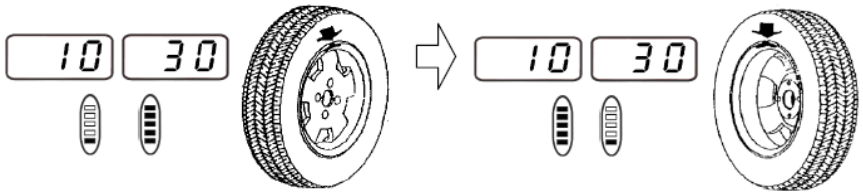
11. The wheel starts to rotate and the unbalance value is determined.
12. Only open the wheel guard when the wheel has been fully braked and has come to a standstill.
13. The residual imbalance value for the inside (left) and outside (right) of the wheel is now shown on the display.
14. These should now be 00 on the left and right if the device has been calibrated correctly. **The balancing process is complete.**

6.3 Dynamic mode

Dynamic mode is used for most wheels on passenger and light commercial vehicles. The usual location for correction weights is used. Impact weights are applied to the inside and outside of the rim.

On the home screen, press 

Correction of the outer side Correction of the inner side



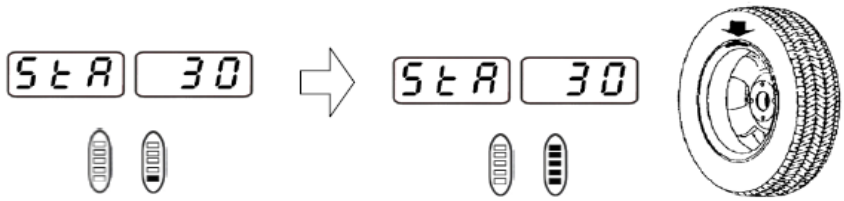
6.4 Static mode

Static mode is used for motorbikes or narrow wheels when it is not possible to place the counterweights on both sides of the rim. Attach a single weight on one side of the rim or in the centre of the wheel according to the diameter of the mounted wheel.

Press the button 

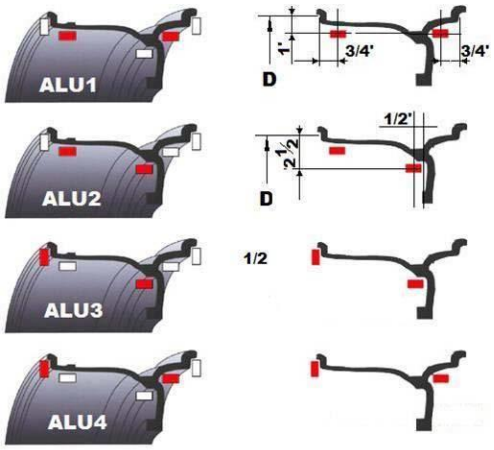
to select "static mode".

When the LED lamp lights up for STA, press 



6.5 Standard aluminium mode

The alloy wheel programme works in dynamic mode. Select the ALU programme that suits you best. The attachment of the weights can be varied here. It is possible to attach adhesive balancing weights and impact balancing weights. The following illustration provides an overview and explanation of the various positions



In "**ALU1**" mode, adhesive balancing weights must be attached to the rim shoulders on the left and right. The distances must be observed. (Laser is active)

In "**ALU2**" mode, the adhesive balancing weights are applied to the left and right behind the spokes on the inside of the rim shoulders. (laser is active)

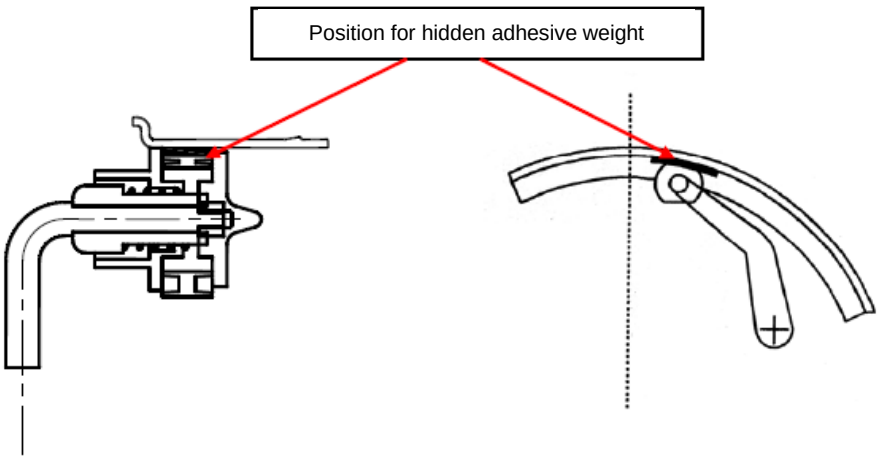
In **"ALU3**" mode, an impact weight is attached to the inside of the rim and an adhesive weight is attached to the inside rim shoulder behind the spokes.
The distance must be maintained as in "ALU2" mode. (Laser is active)

In "**ALU4**" mode, an impact weight is attached to the inside of the rim and an adhesive weight is attached to the outer rim shoulder as in "ALU1" mode. (Laser is not active)

ATTENTION: The laser that specifies the position of the weights is only active in the ALU1 / ALU2 and ALU3 programmes.

ATTENTION: After pressing the ALU button 4 times, the menu automatically switches to ALU☆ mode and does not return to ALU-1 mode. ALU / 1h or ALU / 2h is briefly displayed on the monitor.

ATTENTION: Hidden adhesive weights can be applied with the slider of the measuring arm. see following illustration!



6.6 ALU☆ Mode

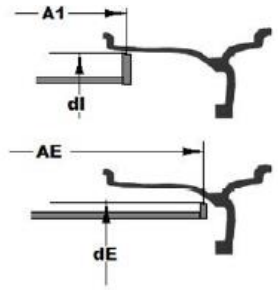
This is a special ALU rim mode for precise and fast application and positioning of adhesive weights on the rim using the automatic measuring arm.

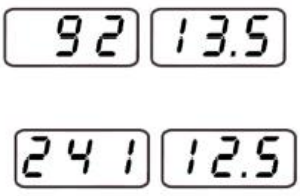
Press the button ALU until the LED for the desired ALU☆ menu lights up.

Select 2 positions on the rim where you want to attach the adhesive weights. Then measure the positions of the adhesive weights as shown in the following illustration.

Make sure that you press the ENTER button to save the A1 measurement. Only then can you carry out the AE measurement. This is saved automatically.

Example measurement





A1 = 92

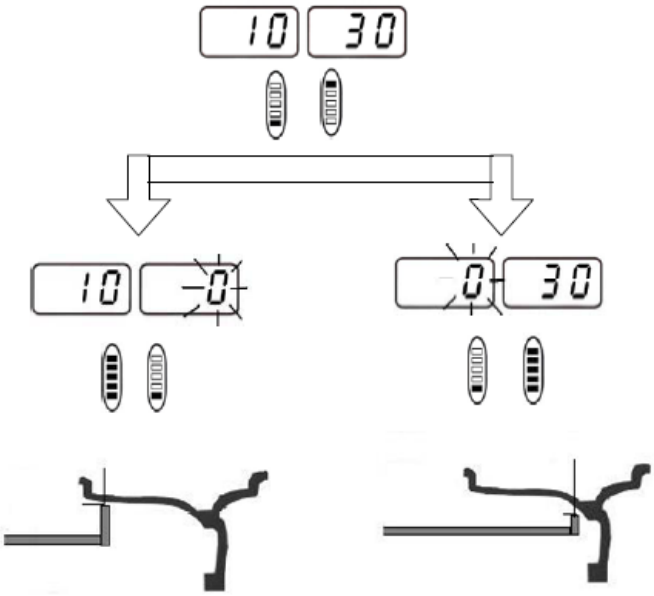
AE = 241

dI = 13.5

dE = 12.5

Now press the button START The display shows 

After you have carried out the balancing process, pull the dipstick separately to the inner and outer positions until "0" is shown on the digital displays. The corresponding adhesive weights are applied there.



A1 = Distance of the weight attached to the left

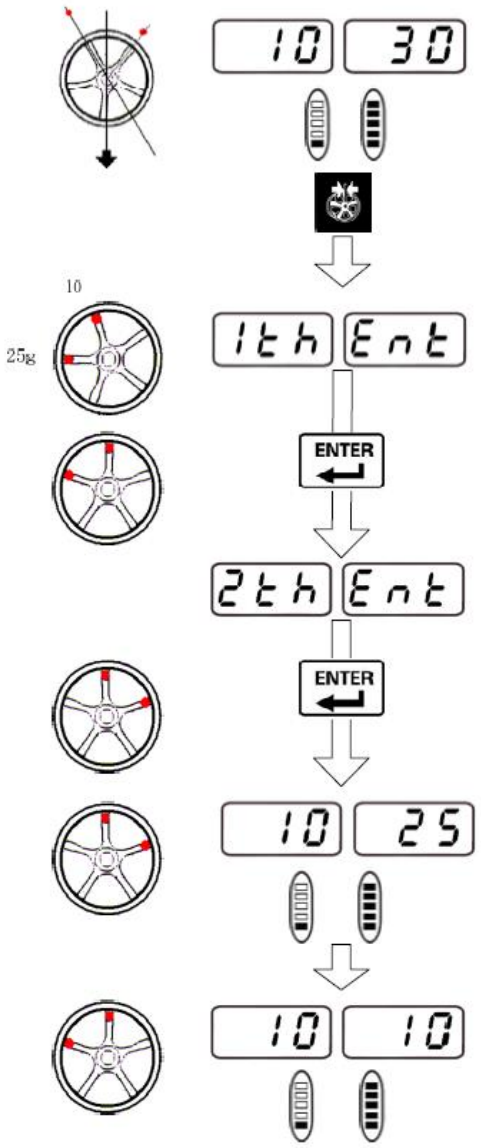
dI = circumferential diameter of the position of the weight attached to the left

AE = distance of the weight attached on the right

dE = circumferential diameter of the position of the weight attached on the right

6.7 Split function

With the split function, the adhesive weight is positioned behind the wheel spoke so that it is no longer visible. It is advisable to only perform this function in the event of a static imbalance or in ALU☆ mode. Enter the wheel data and start the turning process. To start the Split function, please proceed as follows:



In ALU☆ mode, the imbalance of the outer side of the rim base, which is shown on the digital displays, is 30g.

Press the button  .

Select the first spoke of two adjacent spokes. Turn the wheel until the selected spoke is at the 12 o'clock position!

Press the ENTER button to save the position

Now turn the second spoke to the 12 o'clock position.

Press the ENTER button to save the position

Turn the wheel back so that the first spoke is at the 12 o'clock position and press the brake pedal to hold the position. Apply the adhesive weights according to the information on the digital display. (Here in the example 25g)

Now turn the wheel to the position of the second spoke and press the brake pedal. Apply the adhesive weights according to the information on the digital display (10g in this example)

To exit the split function, press the  button and then the STOP button.

7 Optimisation of the unbalance

Use this function if the imbalance on one side is greater than 30g.

This programme is used to determine the best position between rim and tyre in order to combine the imbalance of tyre and fig, to keep the weight to be applied as low as possible and thus ensure lower driving noise. It is suitable for static imbalances over 30g.

Attention:

A high imbalance value can also be caused by incorrect fitting, severely imbalanced tyres or a broken rim (rim with impact). Try to mount the rim correctly or fit a different rim or tyre.

After you have performed the static equalisation, press the MENU OPT

If the unbalance value shown on the digital displays is more than 30g, the digital displays will show **"YES" "OPT**". In this case, start the "OPT" function:

- Mark 2 reference points at the same height on the tyre and the rim with a piece of chalk.
- Now turn the wheel on the previously marked points to the 12 o'clock position.
- Press the "ENT" ENTER button to save the value.
- Remove the wheel from the balancing machine
- Remove the tyre from the rim using a tyre changer.
- Now only clamp the rim onto the balancing machine.
- Now turn the rim to the previously marked point to the 12 o'clock position.
- Press the START START button to activate the turning of the rim.

After turning the rim

- Now turn the rim until all LEDs on the LED display for the outside light up.
- Mark the 12 o'clock position on the edge with chalk.
- Using a tyre changer, mount the tyre and rim so that the marked points are on top of each other.

8 Maintenance

This wheel balancer requires only minor maintenance to ensure the machine's functionality

- Keep the area around the machine clear and clean.
- Keep the display clean and clear.
- Only use a vaporising cleaner.
- Do not use solvents that leave oil or solid residues.
- Keep the adapter, cone, threaded spindle, pressure container and quick-release nut clean.
- Accumulations of grease and dirt lead to inaccurate balancing and premature wear.
- Clean these objects once a day with a vaporising solvent.
- After cleaning, store these items on the storage handles provided.

8.1 Daily maintenance

Clean the following components and parts and carry out a visual inspection.

- Balancing flange
- Cones
- Balancing shaft
- Quick-release nut
- Distance gauge
- Width gauge

8.2 Monthly maintenance

- Thorough cleaning of the wheel balancer
- Checking the electrical connection
- Calibration of the measuring arms
- Self-calibration
- Checking the machine parts for any damage or wear

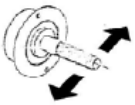
9 Self-diagnosis, error messages and troubleshooting

9.1 Self-diagnosis

Diagnosis of the individual phases

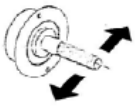
Turn the wheel in the direction of rotation, the displays show from 0 to 255. Turn the wheel in the opposite direction, the displays show from 255 to 0.

Diagnosis of the inner sensor



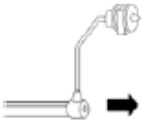
In this programme, the value "0" should be displayed by default. This value is affected by minor vibrations. To check the sensor, press the shaft up and down alternately. The value on the display increases and decreases simultaneously depending on the pressure

Diagnosis of the external sensor



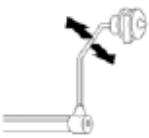
The same description applies in this programme as for the inner sensor.

Diagnostics of the dipstick (distance to the rim)



Pull the dipstick out and back alternately, the value is shown on the digital display.

Diagnosis of the dipstick (diameter of the rim)



Turn the dipstick alternately up and down, the value is shown on the digital display.

Diagnosis of the dipstick (width of the rim)

Move the dipstick from the "0" position to the flange. The value is shown on the digital display.

Press the button STOP to end the self-diagnosis.

9.2 Troubleshooting

Symptom	Cause	Solution
No display when you switch on the device.	1. No energy supply 2. Faulty plug 3. The electrical lines are separated 4. Incorrect voltage 5. Fuses blown.	1. establish power supply 2. replace 3. connect 4. check the correct tension. 5. replace
The automatic measuring rod does not read the rim diameter correctly.	1. The measurement with the measuring rod was is not carried out correctly. 2. The calibration for the measuring rod was not carried out or was inaccurate. 3. Other error according to diagnosis 4. The sensor for the measurement is defective.	1. Carry out another measurement with the measuring rod correctly. 2. Perform calibration for the measuring rod accurately. 3. Perform self-diagnosis according to the operating instructions (page 28) 4. Replace
The measuring rod does not read the distance from the machine to the rim correctly.	1. The measurement with the measuring rod was not performed correctly. 2. The calibration for the measuring rod was not carried out or was inaccurate. 3. The sensor for the measurement is defective. 4. The rope is defective. 5. Other error according to diagnosis	1. Carry out another measurement with the measuring rod correctly. 2. Perform calibration for the measuring rod accurately. 3. Replace 4. Replace 5. Perform self-diagnosis according to the operating instructions (page 28)
The measuring rod does not show the value "00" on the digital display after it has been pulled out and returned to its initial position.	1. Switch the machine off and on again after approx. 1 minute 2. Pull the measuring stick to approx. 200mm and compare the value with the digital display. 3. The calibration for the measuring rod was not carried out or was inaccurate. 4. The sensor for the measurement is defective. 5. The rope is defective. 6. Other error according to diagnosis	2. Carry out calibration if the values are incorrect. 3. Perform calibration for the measuring rod accurately. 4. Replace 5. Replace 6. Perform self-diagnosis according to the operating instructions (page 28)
The measuring stick does not automatically return to the "00" position.	1. The return spring is defective or fully loaded 2. The return spring is chopped out. 3. The measuring rod is deformed. 4. The rope is defective. 5. Other error according to diagnosis	1. Replace 2. Hook in 3. Replace 4. Replace 5. Perform self-diagnosis according to the operating instructions (page 28)

Symptom	Cause	Solution
The balancing machine does not rotate when the wheel arch is closed.	1. The function for automatic balancing when the wheel cover is closed is deactivated. 2. The wheel cover is not closed properly. 3. The electrical lines of the microswitch are separated. 4. The micro switch is not correct adjusted or defective.	1. Activate function for automatic balancing when the wheel cover is closed. 2. Close the wheel cover correctly. 3. Connect 4. Adjust or replace.
Normal function, but with imprecise unbalance values.	1. The machine was pushed. 2. The machine is not fixed properly 3. The wheel is not properly clamped. 4. Wrong data entered. 5. The machine is not calibrated. 6. The tire is not mounted firmly enough. 7. Unstable power supply 8. Drive belt not properly tensioned 9. Other error according to diagnosis	1. Repeat balancing process 2. Fasten. 3. Clamp the wheel correctly. 4. Correct data entered. 5. Recalibrate machine 6. Fasten. 7. Establish stable power supply 8. Tension the drive belt 9. Perform self-diagnosis according to the operating instructions (page 28)
Slow start, poor automatic braking effect and inaccurate unbalance value.	1. the drive belt begins to loosen.	1. replace the belt or adjust the tension of the belt.
Poor or no braking effect of the foot brake.	1. Foot brake defective 2. The brake pads are worn out.	1. Repair 2. Renew
There is an abnormal noise in a moving part.	1. Screw is loose 2. Bearing defective 3. There is another error in Machine.	1. Tighten screws 2. Replace and calibrate 3. Fix the other problem
The motor does not rotate or the torque is not enough.	1. A moving part is stuck 2. Capacitor is damaged 3. Voltage is too low 4. Motor is defective	1. Replace the stuck part 2. Replace capacitor 3. Apply correct tension 4. Replace
The display shows the demo constantly, or does not stop flashing. Possibly no values can be entered.	1. keyboard is defective	1. replace the keyboard
Balancing machine does not brake automatically after the balancing process, wheel continues to rotate until it stops.	1. Position sensor of the shaft defective 2. Defective cable connection 3. Other errors according to diagnosis	1. Replace position sensor 2. Repair or replace cable connection 3. Carry out a self-diagnosis according to the Operating instructions by (page 28)

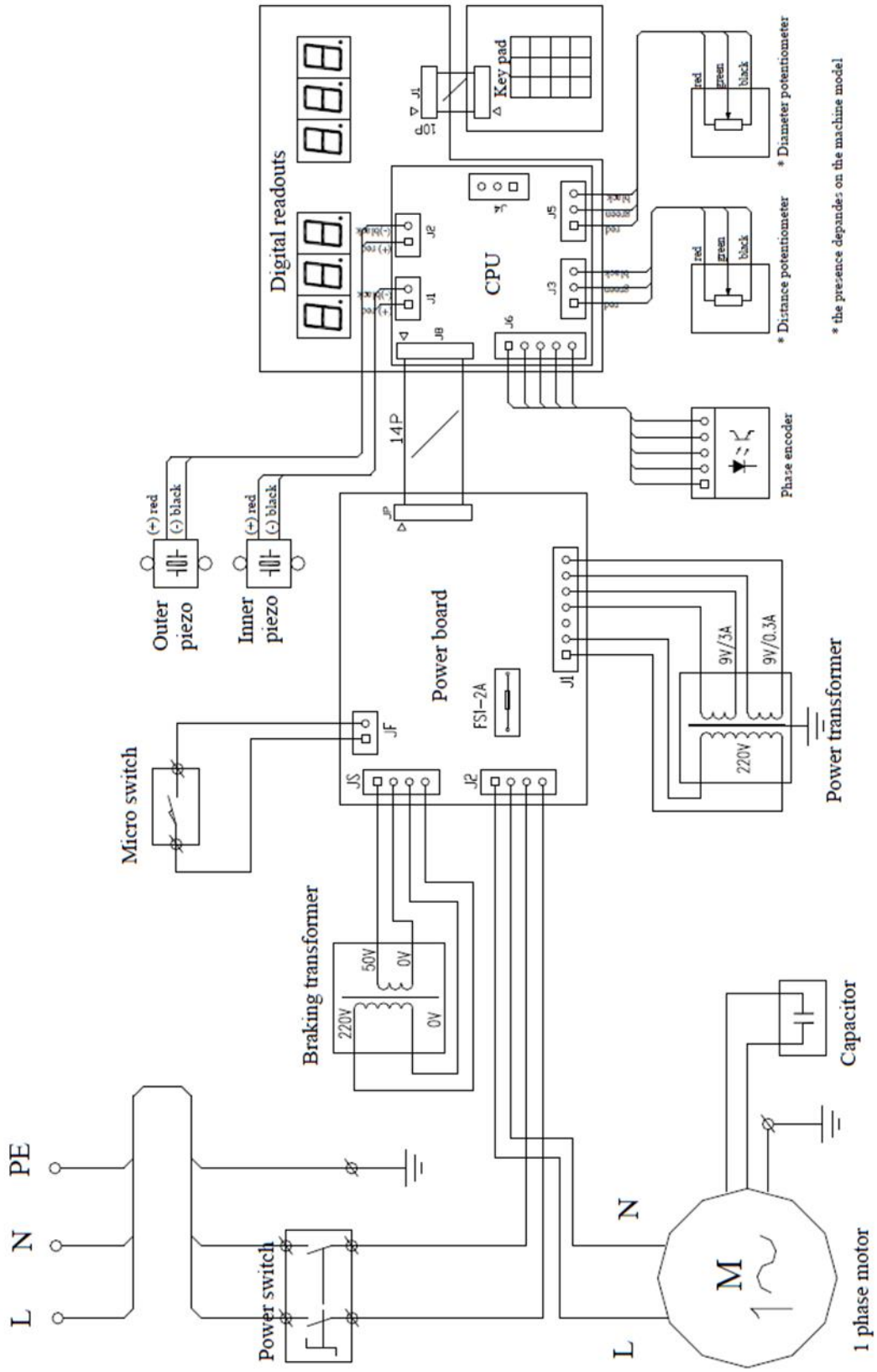
***Attention: A V-belt is not installed in this wheel balancer for power transmission from the motor to the balancing shaft. The balancing shaft is driven directly by the motor.**

9.3 Error messages

Machine errors can be read out with the help of the microprocessor and indicated with an error number on the digital display.

Error number	Description	Solution
Err -0-	**The machine was not set at the factory and must be recalibrated**	**Contact the manufacturer**
Err -CAL-	**Incorrect calibration**	**Recalibrate the machine.**
Err -2-	**The speed for the balancing process is too low**	**Check the drive belt.** **Check the bearings.** **Check the motor.** **Check the quick-release nut.**
Err -5-	**The wheel cover is not folded down.** **The microswitch for the wheel cover is defective or not connected.**	**Fold down the wheel cover before starting the balancing process.** **Check the microswitch** **Check the connections of the microswitch.**
Err -6-	**The balancing process is stopped for no reason**	**Check all cables and connections** **Have all components checked by an electrician and have defective components replaced.**

10 Electrical circuit diagram



11 Initial commissioning

Attention
The fully completed proof of initial commissioning must be returned to the manufacturer in order to maintain the warranty claims

- Wheel balancer professionally unpacked and transported to the installation site.
- Operating instructions read and understood
- Wheel balancer set up and secured on a level floor
- Electrical connection properly established
- Wheel arch guard fitted
- Basic settings checked or changed
- Wheel balancer calibrated

No defects were found, so there are no objections to commissioning.

ATTENTION: Please return the proof of initial commissioning prepared below to the manufacturer so that the WARRANTY CLAIMS are valid.

Detach and send or fax to Weber GmbH, Sülzbach 1, 37293 Herleshausen, Germany, Fax +49 (0) 5654-794

PROOF OF INITIAL COMMISSIONING

Wheel balancer TYPE WEBER Präzision-XL3D, year of manufacture_____,

Serien-Nr._____

Date of purchase: _____ **Dealer address:** _____

_____

_____

Date: _____ **Signature:** _____

Address of the operator

By fax to: +49 (0) 5654-794

Weber GmbH
Sülzbach 1
D-37293 Herleshausen

Construction video
Precision-XL-3D

Homepage Weber-Werke

Youtube channel Weber-Werke