WHEEL BALANCERS
TWF-00
Ø Wheel diameter: 10" (254 mm) - 24" (610 mm)

TWF-00

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Always read these operating instructions carefully before using the wheel balancer. Follow the instructions carefully.

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Further attachment:

- **EU Declaration of Conformity**

Important information:

ASSEMBLY

You can find the assembly video for this machine on YouTube: **https://youtu.be/q31r3E5ENEM** or scan the QR code.

PRODUCT PRESENTATION

You can find the product presentation video for this machine on YouTube: **https://youtu.be/KsR-IA5FKDE** or scan the QR code.

CALIBRATION

You can find the calibration video for this machine on YouTube:
https://youtu.be/3RnXI-9hvME
or scan the QR code.

TIPS & TRICKS

In the "Tips & Tricks" section, we show you simple solutions, in videos to make your TWIN BUSCH® products even more efficient to work. Our technical specialist will explain the exact steps to you.

https://www.twinbusch.co.uk/Tips-Tricks:_:74.html

24/7 Service Center:

Our 24/7 Self-Service Centre is a mobile website for self-diagnosis of problems with your Twin Busch lift, tyre changer or balancer. Here we offer you an extensive collection of videos covering a wide range of topics relevant to your Twin Busch product, from fine adjustment to maintenance and component replacement.

The 24/7 Self-Service Centre is a versatile tool that helps you learn how to maintain and repair your Twin Busch lift, tyre changer or balancer yourself.

To open the page on your mobile device, please visit twinbusch.com/qr or scan the QR code opposite.

For Twin Busch lifts delivered from mid-2020, you will also find the QR code on a sticker on the control box.

1. General information

The semi-automatic TWF-00 tyre balancer with manual measuring programme for precise application of all hidden adhesive weights using a manual feeler arm. The TW F-00 has a 40mm shaft and an extended wheel holder for better balancing of wide tyres, e.g. Porsche, SUV, etc.

Special features of the product:

- Production according to ISO 9001
- Shaft diameter 40mm for more precise balancing
- Wheel mounting 255mm for better balancing of wide tyres
- Easy to operate
- Robust technology
- Digital display
- Automatic measuring process with wheel braking
- Static and dynamic balancing
- Various programmes can be selected: Normal / Static / Alu1, Alu2, Alu3 / Motorbike etc.
- Integrated calibration and self-diagnosis programmes
- Optional: Motorbike adapter, adapter

2. Identification of the operating instructions

Operating instructions for the TWF-00

of Twin Busch GmbH,
Ampérestraße 1,
D-64625 Bensheim

Phone: +49 6251-70585-0
Telefax: +49 6251-70585-29
Internet: www.twinbusch.de
Email: info@twinbusch.de

Twin Busch UK Ltd.
9, Linnell Way
Telford Way Industrial Estate
NN16 8PS, Kettering (Northants)

Phone: +44 (0) 1536 522 960
Internet: www.twinbusch.co.uk
Email: info@twinbusch.co.uk

Status: -00, 09.12.2024

File: TWF-00_Wheel_Balancer_Manual_uk_00_20241209.pdf

3. Technical data

Wheel width	1.5" (38 mm) to 20" (508 mm)
Ø Wheel diameter	10" (254 mm) to 24" (610 mm)
Wheel weight max.	65 kg
Ø Rim center hole	40-135 mm
Measuring tolerance	+/- 1g
Measuring time	4-7 sec.
Power supply	230 V
Protection	16 A (C/sluggish)
Noise level	<70 dB
Weight	122 kg

Drive shaft length	255 mm
Rim clamping	Manual

4. Modification of the product

Improper use, modifications, conversions and attachments of the tyre balancer and all its components that have not been agreed with the manufacturer are not permitted. The manufacturer accepts no liability for improper installation, operation or overloading. Improper use also invalidates the CE certification and the validity of the certificate.
If you require any changes, please contact your dealer or the expert staff at Twin Busch GmbH beforehand.

5. Safety-related information

Read the operating instructions carefully before operating the tyre balancer. Keep the instructions for future reference. Follow the instructions carefully to achieve the best performance from the machine and to avoid damage caused by personal negligence.

Check all connections and components thoroughly for damage.

5.1 Safety instructions

We accept no liability for damage caused by improper installation and operation, overloading or unsuitable ground conditions.

- Read the manual carefully before using the machine. The machine may only be used by trained personnel and only for the purpose described in this manual.
- Check the voltage and frequency specified on the rating plate.
- The wiring may only be carried out by an electrician.
- Do not wear inappropriate clothing, such as loose-fitting garments with loose hanging parts, etc., which could get caught in the moving parts of the machine.
- Do not modify the machine without the manufacturer's consent.
- Do not use a strong jet of compressed air for cleaning.
- Clean the plastic surfaces with plastic cleaner. Make sure that no liquid gets inside the machine to avoid damaging the circuit boards.
- If the machine will not be used for a longer period of time, disconnect it from the power supply.

5.2 Protective devices

- Level, horizontal, solid floor, preferably made of concrete or with tiles.
- Protected from the weather.
- Pollutant-free area.
- The workplace must not be exposed to dangerous movements caused by other machines in operation.
- Explosive, corrosive and/or toxic materials should not be stored in the same place.
- From the control station, the operator must be able to see the entire appliance and the surrounding area. Within the area, you must prevent access to unauthorised persons and objects that could be a source of danger.
- All installation work relating to the connection to the power supply (in particular the power supply) must be carried out by professionally qualified persons.

5.3 Warnings

The warning signs must be kept clean and replaced if they are damaged or missing. Please read the signs carefully and memorise their meaning for future use.

6. Conformity with the product

The TWF-00 tyre balancer is CE-certified and complies with the Machinery Directive 2006/42/EC and fulfils the EN ISO 12100:2010 standard. See also the EU Declaration of Conformity at the end of the operating instructions.

7. Technical specification

7.1 Machine description

8. Structure and installation

8.1 Ground conditions

- The tyre balancer must be set up on firm concrete or a similarly solid surface; a soft or vibrating surface can cause measurement errors.

- There should be a free space of 50 cm around the machine so that it can be operated comfortably. The safety regulations for the work area must also be observed.

- Fasten the anchor bolts through the mounting hole of the tyre balancer in the foundation to ensure safe and accurate operation.

8.2 Assembly instructions

1) Open the packaging and remove the wooden frame with a hammer.
2) Remove the packaging film and remove the small parts.
3) The machine is fixed to the pallet with three screws. Remove these and slide the machine off the pallet. Note: Pay attention to the shaft on the balancing machine when pushing. Do not lift using the balancer shaft.
4) Open the box containing the small parts and put them to one side.
5) Fit the cone brackets.

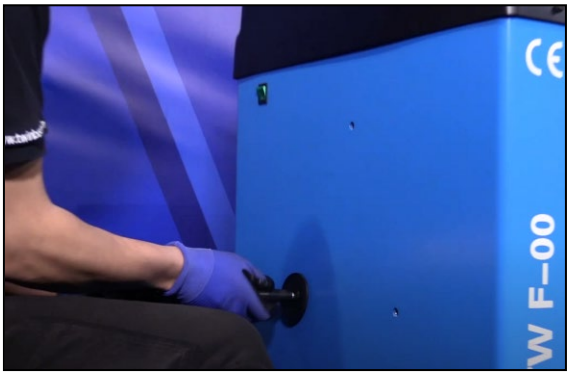


Illustration: Cone mounts

6) Fit the shaft.
   a) Now tighten the Allen screw in the shaft.

Illustration: Shaft

b) You can place the remaining cone on the shaft.

c) Place the clamping pot with tamping rubber on the wing nut. Then place the wing nut on the shaft.

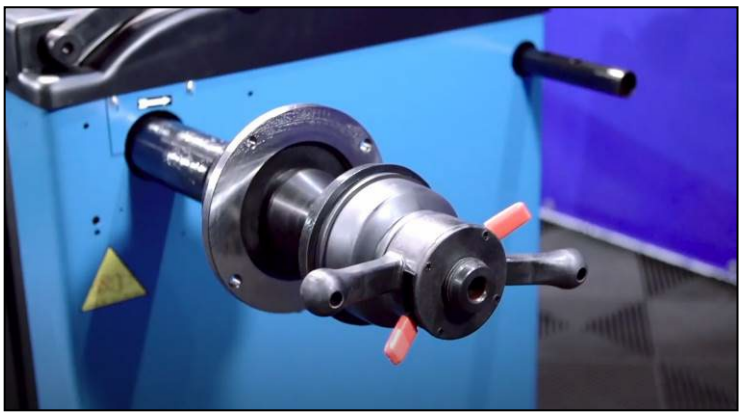


Illustration: Wing nut

7) Fit the protective hood bracket.
From the front, use the left hole.
Note: You will need the right-hand hole if you are using a motorbike adapter for the machine.

8) Place the plug on the end of the protective hood bracket.

9) Screw the two parts of the protective hood together. Use the special spanner supplied to hold the nuts in place.

10) Use the small self-tapping screws to snap the protective cover onto the bracket.

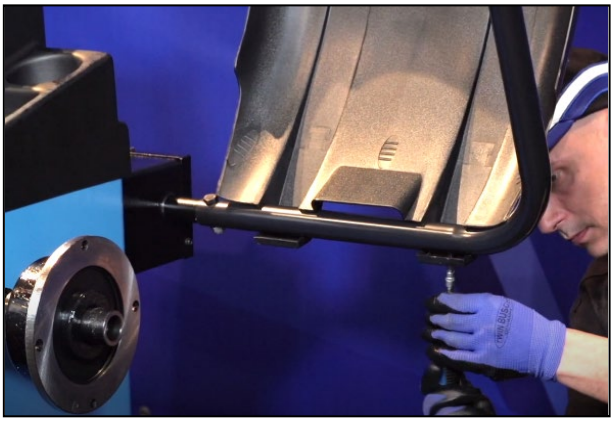


Illustration: Screw connection of the protective

11) Then anchor the machine to the ground to ensure optimum balancing operation.

Caution: After switching on the power, the machine automatically starts the balancing process when the protective cover is closed.

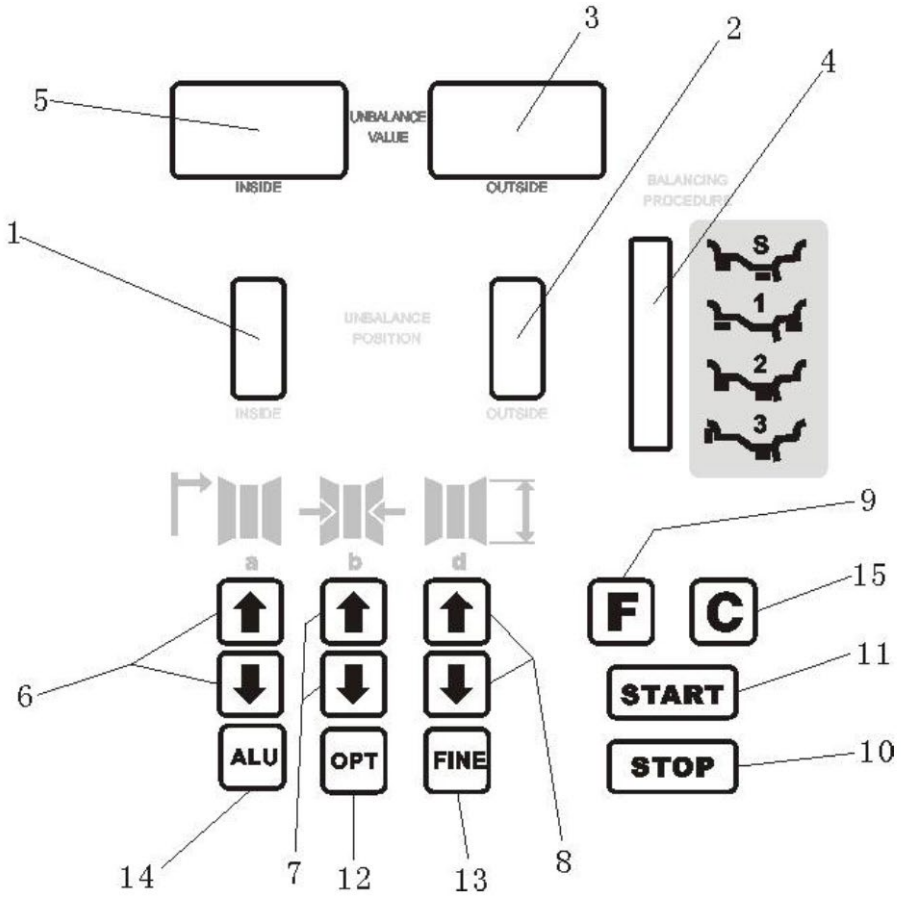
9. Commissioning

9.1 Safety precautions

a) If the safety devices are defective or show abnormalities, the machine must not be put into operation under any circumstances!

b) Check that all connections are tight and functional.

9.2 Description of the keyboard on the monitor



1 Display of the inner imbalance position
2 Display of the external imbalance position
3 Display of the external imbalance value
4 Display for selecting the correction mode
5 Display of the internal imbalance value
6 Push-button distance calibration
7 Push-button width calibration
8 Push-button diameter calibration
9 Change button: DYNAMIC or STATIC
10 EMERGENCY STOP button
11 Start button
12 Opt button
13 Pushbutton for an unbalance value of less than 5g /0.035
14 Pushbutton for selecting the correction mode
15 Recalibration/self-calibration button

9.3 Button function

↑a or ↓a	Distance setting (dimension "a")
↑b or ↓b	Width setting (dimension "b")
↑d or ↓d	Diameter setting (dimension "d")
C	Set new values
FINE	Displays unbalance values below 5 g
F	Static Dynamic
ALU	ALU Dynamic
F + C	Self-calibration
F + STOP	Start with bonnet
F + ↑a + ↓a	Unbalance data (grams or oz)
F + ↑b or F + ↓b	Width (mm or inch)
F + ↑d or F + ↓d	Diameter (mm or inch)
START	Start cycle
STOP	EMERGENCY STOP button

Caution: Only press the press buttons with your fingers. Never use sharp objects.

9.4 Calibration

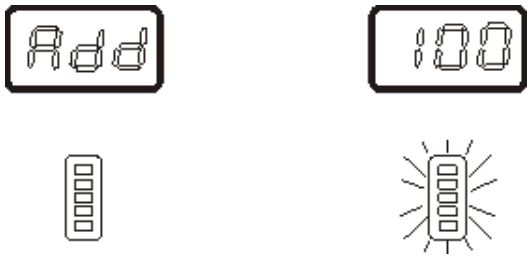
1. Mount any wheel on the shaft, even if it is not balanced, although it is advisable to use a wheel with "average" dimensions.

2. Specify the exact dimensions of the mounted wheel.
   Caution: Any error when setting the dimensions means that the machine is not calibrated correctly. All subsequent measurements will therefore be incorrect until the next time the machine is calibrated with correct dimensions.

3. Press F + C

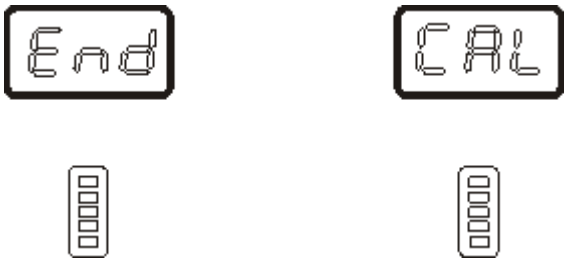
4. Close the hood and press START.

5. Wait until the machine brakes and open the hood.



6. Add a 100 g weight to the outside in any angle position.

7. Press START. ⇨



8. The device is calibrated at the end of the cycle. CAL END" appears on the display.
   Remove the 100 g weight from the wheel, which can now be balanced with another cycle.

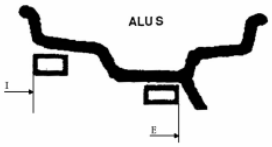
The value measured by the machine during self-calibration is saved permanently and is retained even when the machine is switched off. This ensures correct operation the next time the machine is started. However, the self-calibration can be carried out at any time if there is any doubt that it is working correctly.

10. Wheel balancing programmes

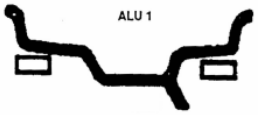
10.1 Balancing programmes

The available balancing programmes show where the correction weights should be placed.

Steel or lightweight aluminium rims by attaching clamping weights on the rim edges.

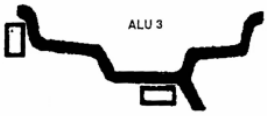


Balancing of rims with unusual shapes.

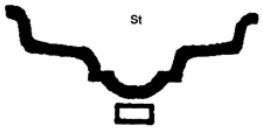


Balancing lightweight aluminium rims by attaching adhesive weights on the rim edge.

Balancing of aluminium rims by concealed attachment of the outer rims Adhesive weights. Attach the outer weight as shown in the illustration.



Combined balancing: Clamping weight on the inside,
Hidden attachment of the adhesive weight on the outside.



Required for motorbike wheels or if the weights cannot be fitted on both sides of the rim.

10.2 Optimisation of the imbalance

This function is used to reduce the amount of weight to be added to the wheel.
Carry out the following steps carefully to achieve the best possible results.

1. Press OPT, "r.S." is displayed, press START. The required rim rotation is displayed.
2. Draw a reference mark on the tyre and rim with chalk so that you can refit them in the same position on the machines.
   Note: Observe the display on the spindle.
3. Rotate the tyre on the rim by 180° using the tyre changer.
4. Refit the rim in its previous position on the flange.

5. Press START.
   Right display: Percentage value of the possible reduction of the imbalance value in relation to the current condition of the wheel.
   Left display: Current static imbalance value in grams. This is the value that can be reduced by rotating the tyre and rim.

6. Turn the wheel until the outer LEDs light up. Mark the top position of the tyre (12 o'clock).

7. Mark the same spot on the rim. Press STOP to end the imbalance optimisation.

10.3 Inconsistent imbalance values

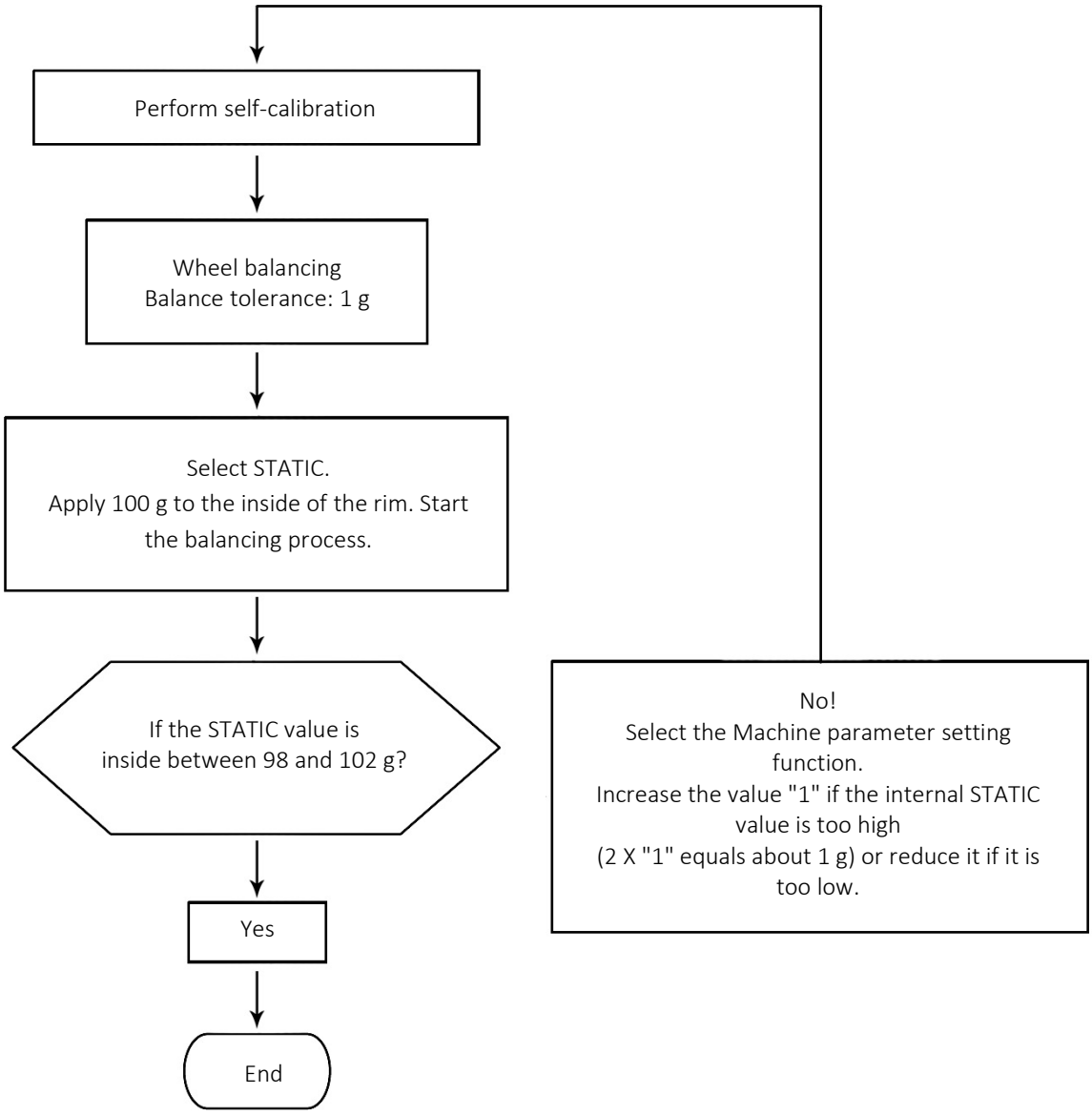
If you remove a balanced wheel from the tyre balancer and then mount it again, the wheel may appear to be unbalanced. This is not due to an incorrect display on the machine, but solely to incorrect mounting of the wheel on the adapter, i.e. the wheel has taken up a different position in relation to the shaft centre line of the tyre balancer during the second mounting.

If the wheel is mounted on the adapter with bolts, the bolts may not have been tightened correctly. The bolts should be tightened one after the other in a criss-cross pattern. It is also possible that the holes in the wheel were drilled with too large a tolerance (this often happens). Small errors of up to 10 grams (4 oz) are considered normal for wheels that are locked with a cone.

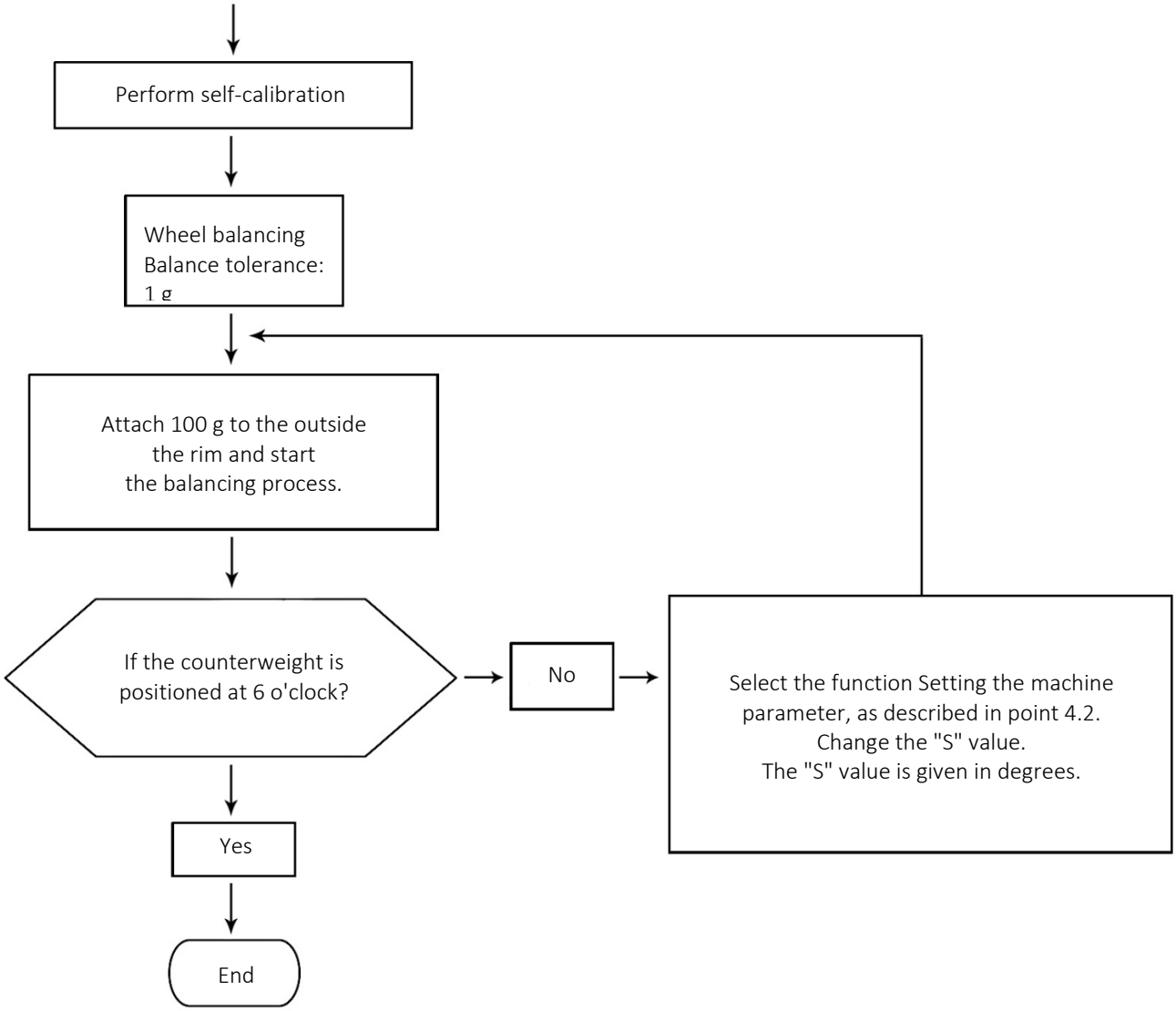
The error is usually greater with wheels that are fastened with screws or bolts. If the wheel is mounted on the vehicle after balancing and is still not correctly balanced, this could be due to the vehicle's brake drum or very often to the rim bolt holes being too large. In such cases, a new adjustment with the wheel mounted on the tyre balancer may be helpful.

11. Adjusting the machine

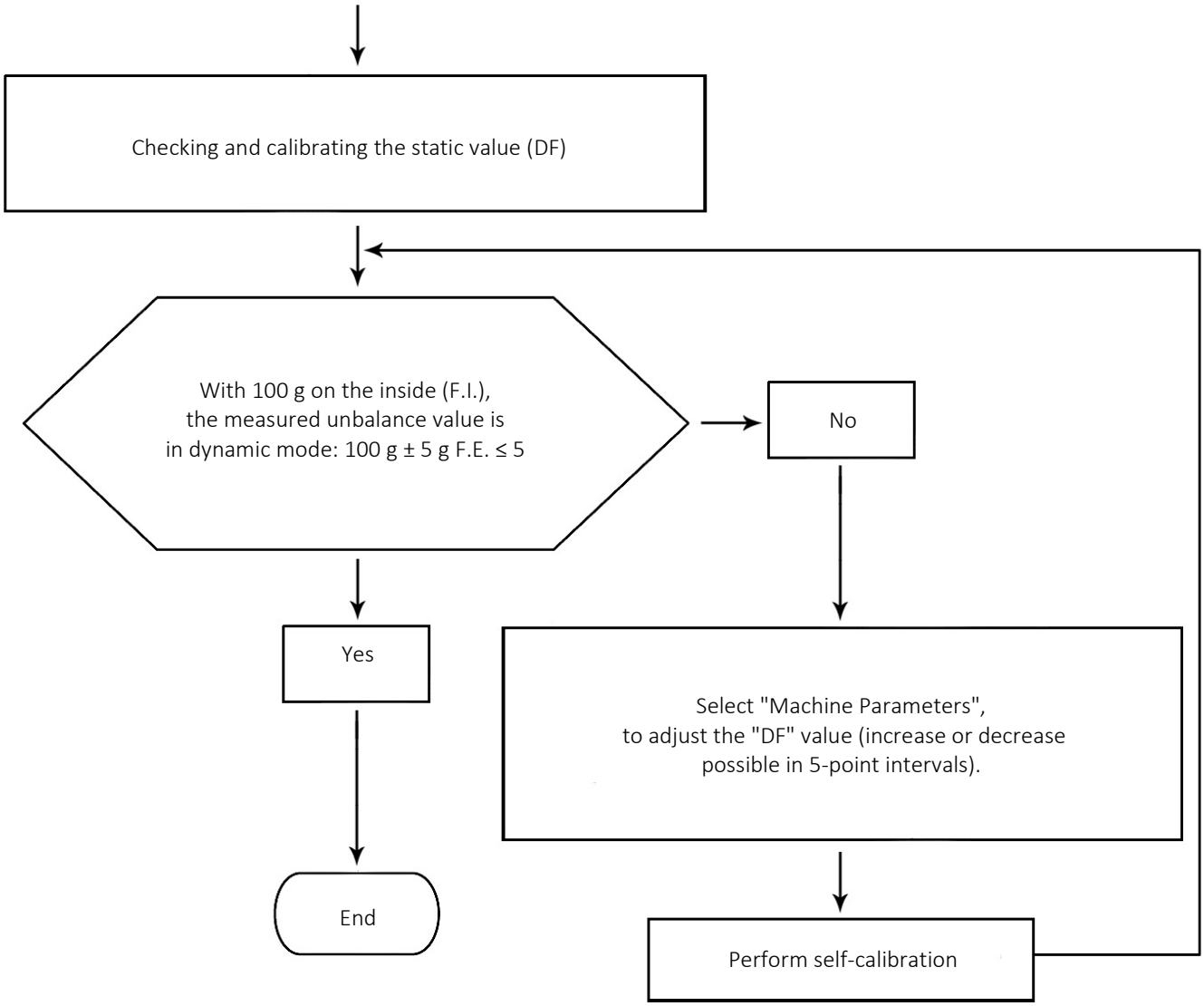
11.1 Checking and setting the STATIC values (STI)



11.2 Checking and adjusting the unbalance position



11.3 Check distance values and calibration (DF)



12. Troubleshooting

Please note: Do not hesitate to contact the expert staff at Twin Busch GmbH if you are unable to rectify a fault yourself. We will be happy to help you solve the problem. In this case, please document the fault and send us pictures and a precise description of the fault so that we can identify and rectify the cause as quickly as possible. The following table lists possible errors, their cause and the associated troubleshooting for quicker identification and self-remedy.

PROBLEM	CAUSE	SOLUTION
No message from the position sensor.	Position sensor defective.	Repair or replace.
	Motor does not run.	Restart the motor.
	Wheel locked.	Remove the blockage.
	Flat belt defective or loose.	Retighten or replace.
The speed is less than 60 rpm.	Unintentional braking of the wheel.	Check the brake mechanism.
	Loose flat belt.	Retighten or replace.
	No tyre fitted.	Fitting tyres.
Miscalculation.	Self-calibration faulty.	Repeat self-calibration.
	Imbalance value too high.	Is the wheel mounted correctly?
	Data memory defective.	Replace data memory.
Motor rotates in the wrong direction.	Cable connection incorrect.	Reverse the connection.
Protective cover open.	Protective cover open.	Close the protective cover.
	Protective cover switch defective.	Replace the protective hood switch.
Memory card faulty.	Self-calibration faulty.	Repeat self-calibration.
	Circuit board defective.	Replace the circuit board.
Self-calibration memory faulty.	100 g weight has not been added.	100 g weight.

13. Maintenance

Disconnect the machine from the power supply before carrying out maintenance work!

13.1 Adjusting the flat belt tension

Slightly loosen the motor fastening screws. Then move the motor this far,
until the flat belt is correctly tensioned. Carefully retighten the motor fastening screws.

Make sure that the belt does not run down to the side during operation.

13.2 Replacing the circuit board

When replacing the circuit board, ensure that the parameters of the new circuit board are communicated:

DF
I
Sd

The values can be found on a silver-coloured sticker on the back or inside the machine.
These three values were determined during production and differ slightly for each machine.
They are an values of the pressure sensors.
Process:

1. Remove the Allen screw on the ruler head
2. Pull off the ruler head
3. Remove the Phillips screws on the front and rear
4. Carefully remove the cover
5. Carefully remove the plug on the circuit board
6. Remove four nuts, remove circuit board
7. Screw on new unit, attach plug
8. Switch on the machine
9. Press the F+C buttons simultaneously, CAL appears, hold until the flashing stops
10. Press button A-down then A-up then F

11 DF now appears on the left-hand display

12. Enter the DF value using the B-down or B-up buttons
13. Press the A-up button
14. I+ now appears in the left-hand display
15. Enter the I+ value using the B-down or B-up buttons
16. Press the A-up button
17. S (looks like a 5) now appears in the left-hand display
18. Enter the S value using the B-down or B-up buttons
19. Now press the A-up button until the left display shows a again
20. Reattach the cover and ruler.
21. Perform 100 gram calibration.

13.3 Correct handling of the quick-release nut and threaded axle

The quick-release nut is a wearing part, as is the threaded axle on which it is tightened.

To ensure a long service life of the quick-release nut, the tension
of the tightened quick-release nut should be removed
as follows before removing it:

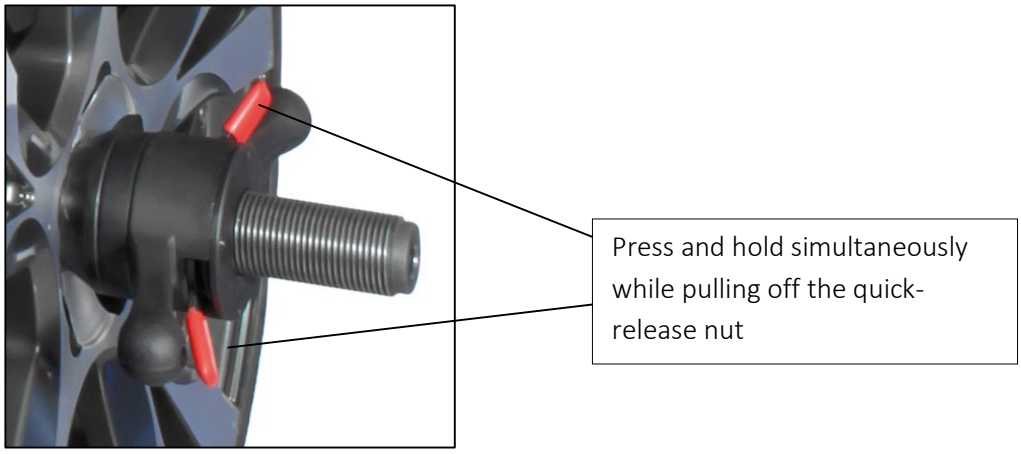
Loosen the quick-release nut by hand (two to three turns).
This loosens the tension, then press and hold the red release levers and pull off the quick-release nut.

Never press the release under tension, as this will permanently destroy the threads!

When mounting and removing the wheel on the threaded axle, there should be as little contact as possible with the wheel centre hole. However, this is unavoidable and does not lead to faster wear of the axle.

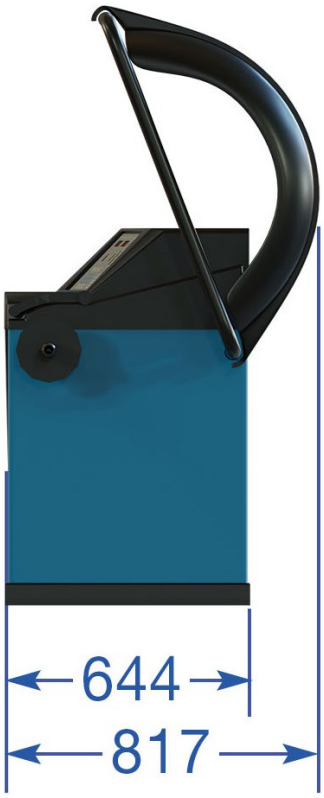
Both parts (quick-release nut and threaded axle) can be ordered from your TWIN BUSCH service centre.

Please let us know the diameter of the thread axis in millimetres.

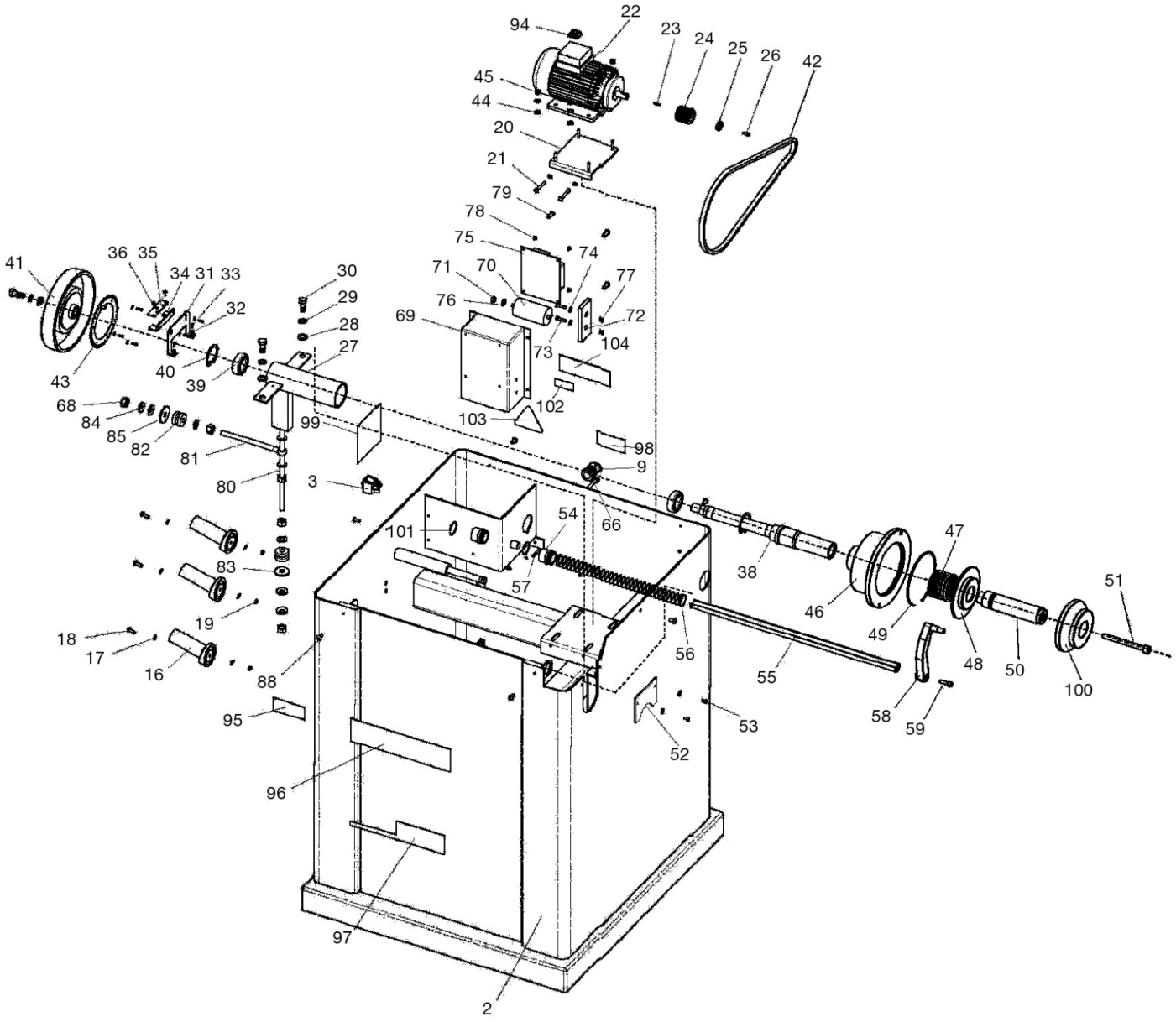


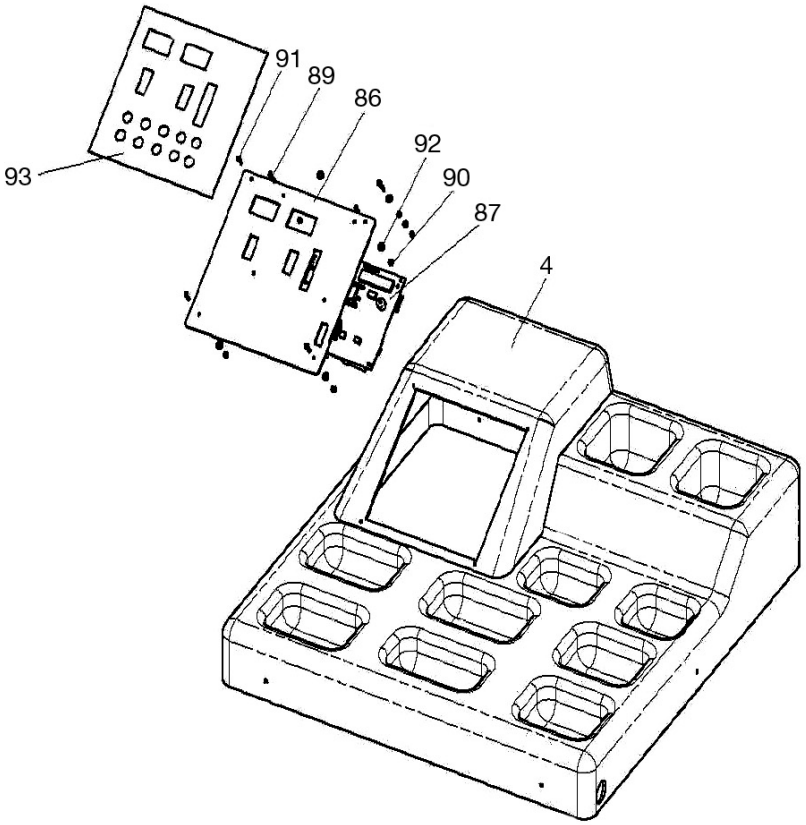
14. Appendix

14.1 Dimensions of the tyre balancer



14.2 Detailed drawing and parts description

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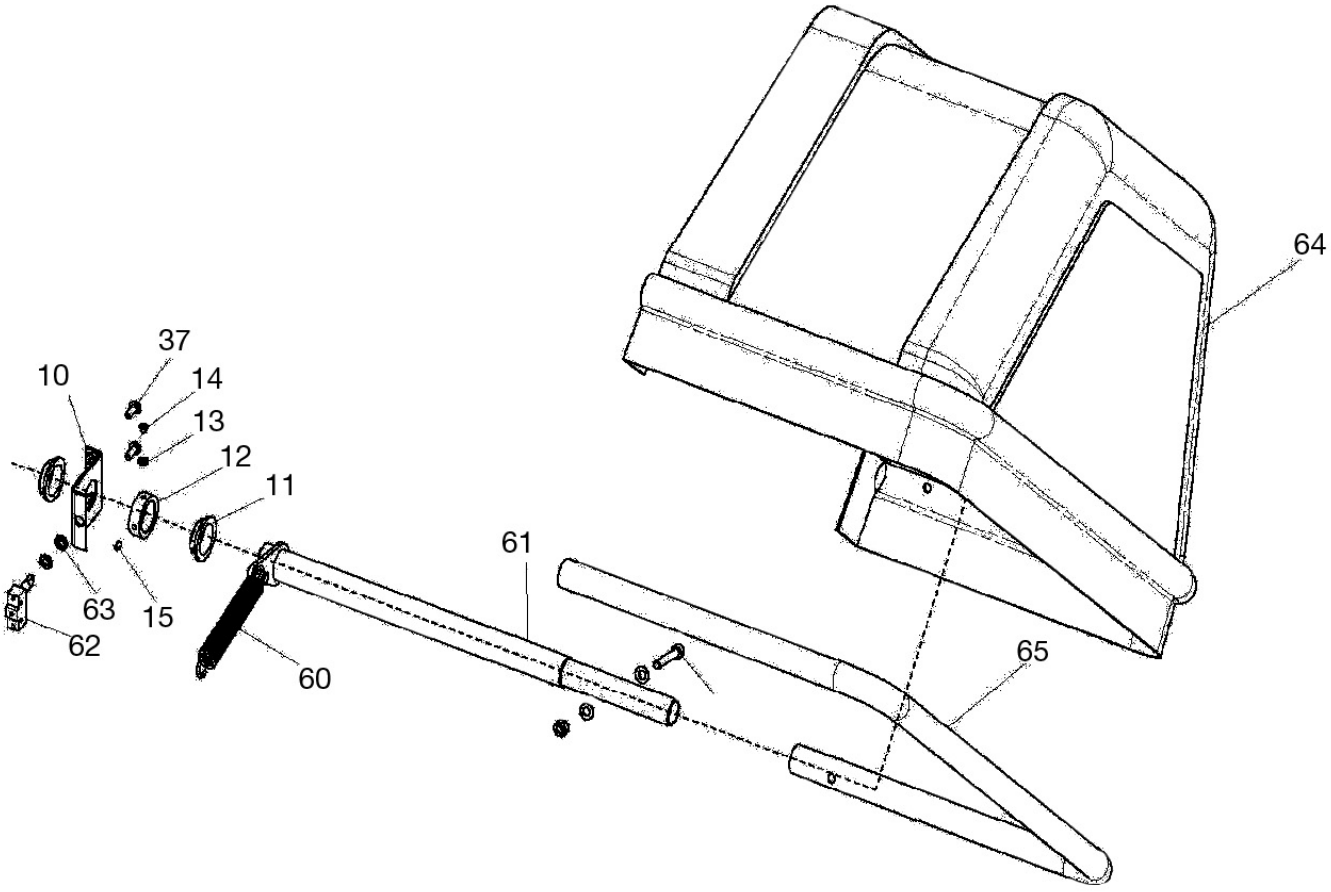
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S/N	Name	Quantity	S/N	Name	Quantity
1	Manual ASM	1	55	Ruler	1
2	Frame 800	1	56	Tension spring for ruler	1
3	Switches	1	57	Snap pin	1
4	Cover	1	58	Ruler handle	1
9	Wire tube	1	59	Base screw M6x20	1
10	Support plate 1 for shielding	1	60	Spring for drive shaft	1
11	Socket for shielding shaft	2	61	Drive shaft	1
12	Locked socket	1	62	Microswitch	1
13	Washer M6	1	63	Nut for microswitch	2
14	Flat head screw M6x12	1	64	Shielding	1
15	Set screw M6	1	65	Support tube	1
16	Cone mounts	3	66	Hexagon head screw M6x35	1
17	Washer for M5	8	67	Cheese head screw M10x58	1
18	Flat head screw M5x15	3	68	Nut M10	6
19	Nut M5	5	69	Switch box cover	1
20	Motor adjustment plate	1	70	Capacity	1
21	Hexagon head screw M5x35	2	71	Nut M8	1
22	Motor	1	72	Resistance	1
23	key	1	73	Flat head screw M5x25	2
24	Pulley for motor	1	74	Washer for M5	2
25	End cap	1	75	Printed circuit board	1
26	Cheese head screw M4x12	1	76	Washer for M8	1
27	Shaft bushing	1	77	Nut M5	2
28	Washer for M10	9	78	Flat head screw M3x7W	4
29	Spring washer-M10	3	79	Truss-head bolt M5x16	4
30	Hexagon head screw M10x25	3	80	Drive screw M10	1
31	Housing for the light barrier	1	81	M10 screw for Pioelektrik switch	1
32	Washer M3	7	82	Pioelectric switch	2
33	Cheese head screw M3x10	7	83	Small washer 11x30x3	1
34	Light barrier 1	1	84	Batterfly disc for M10	4
35	Light barrier circuit board	1	85	Large washer 11x38x3	1
36	Cap nut M3x10W	2	86	Printed circuit board mounted panel	1
37	Truss-head bolt M8	2	87	Main board	1
38	Drive shaft	1	88	Flat round head M5x12	6
39	Warehouse	2	89	Countersunk head screw M3x25	4
40	Spring washer	2	90	Nut M3	16
41	Belt pulley	1	91	Countersunk head screw M3x16	4
42	Strap	1	92	Washer for M4	4
43	Bevel gearbox	1	93	Keyboard	1
44	Toothed disc for M6	8	94	Wire-mounted base	1
45	Nut M6	4	95	Celabel	1
46	Drive flange	1	96	Unitelabel	1
47	Spring for extractor	1	97	Model label	1
48	Pressure cap	1	98	Qclabel	1
49	Spring washer	1	99	Circuitlabel	1
50	Drive screw	1	100	Cone	1
51	Cheese head screw M10x100	1	101	Seegerring	2
52	Boundary plate	1	102	220 V	1
53	Flat head screw M5x7	2	103	Warning	1
54	Standard socket	2	104	Type plate	1

Notes

EC-declaration of conformity

The company

Twin Busch GmbH | Amperestr. 1 | D-64625 Bensheim

hereby declares that the **Wheel Balancer**

TWF-00, TWF-23, TWF-95, TWF-100, TWF-50T, TWF-150

(PL-1800, PL-1823, PL-1895WR, PL-1100, PL-1850, PL-1150)

Serial number:

in this configurations we have placed on the marked complies with the relevant essential health and safety requirements of the following EC-directive(s) in its/their current version(s).

EC-directive(s)

2006/42/EC **machines**

Applied harmonized standards and regulations

EN ISO 12100:2010 **Safety of machinery - General principles for design**

CE Certificate

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Çankaya - Ankara - Turkey
Notified Body Appointment No.: 2218

In the case of improper use, as well as in the case of assembling, modification or changes which are not agreed with us, this declaration will lose ist validity.

Authorized person to compile technical documentation is: Michael Glade (adress as below)

TWIN BUSCH GmbH
Amperestr. 1 · 64625 Bensheim
Tel. 06251 / 70585-0 · Fax: 70585-29

Authorized signatory: Michael Glade
Bensheim, 25.11.2021 Qualitätsmanagement

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Tel.: +44 (0) 1536 522 960
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Web: www.twinbusch.co.uk