

Robotic Weighing System RB 2.5Y.F

USER MANUAL

IMMU-3001-01-08-24-EN



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Congratulations and thank you for selecting RADWAG product. You have purchased a device that has been designed and manufactured to give you years of service. Please read this user manual carefully, this shall guarantee reliable operation.

AUGUST 2024

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1. GENERAL INFORMATION

Before you start and use the device, please remember to read the operating manual for avoidance of operation-related hazards.

Please follow all guidelines showed in the operating manual with regard to installation, operation and maintenance in order to assure long and failure-free operation of the product.

It is forbidden to overload the device – see the rating plate of the device.

The device may operate at the temperature specified in the rating plate.

It is forbidden to use the product in ex zones or areas exposed to harmful acids, vapours, gases, liquids and radiation.

It is strictly forbidden to activate and use the device if it is damaged.

Improper use and maintenance may lead to damage to the device, personal injuries or even death.

Any structural modifications may be made only if the device manufacturer has approved them beforehand.

Any maintenance and servicing works must be performed with utmost care in view of moving elements in the device and hazardous voltage. A failure to follow the warning may lead to serious injuries or death.

Only authorised people who have been trained on operation of the device and OHS regulations are allowed to work with the device.

While using the device, make sure the operating manual can be accessed at all times.

RADWAG shall not be held responsible for any damage, losses or accidents arising from incorrect use, failure to follow safety standards, unauthorised modifications or ignorance of operating guidelines.

Any rights to the material included in this document, copyrights to the utility software and design solutions, belong to RADWAG.

It is forbidden to provide third parties or unauthorised people with an access to technical data and drawings included in the documentation. To obtain additional information, please contact RADWAG.

Keep warning signs in a proper condition and replace missing or damaged ones with new equivalents.

Safety tips provide important safety information, Ignoring them may lead to bodily injuries, damage or malfunctioning of the device.

Signs and symbols showed in the operating manual:



- Hazard warning.



- Hazardous electric voltage warning.



- Palm crushing warning.






- Harmful or irritating substance warning.







- Important notes.

The hazards that may occur while using, operating and maintaining the device.

Pay attention to the following residual hazards:

Type of hazard	Activity	Hazard area	Solution
 Device weight	Transportation	Entire device	Transportation of the device with the use of suitable and authorised cranes by the trained personnel. Follow applicable safety regulations.
 Collapsing hazard	Assembly/installation, cleaning, decommissioning, disassembly.	Entire device	Fix the device permanently using dedicated fixing holes.
 Palm crushing hazard	Assembly.	Entire device Ioniser	Assembly works must be performed only by trained and authorised personnel. It is forbidden to touch the source of ions, otherwise it may lead to bodily injuries (these elements – emitters – are very sharp).

 Hazardous electric voltage warning	All kinds of work	Electronic unit housing, ioniser	The electronic unit housing cover must be closed. It is forbidden to touch the source of ions, otherwise it may lead to electric shock (during operation).
 Harmful or irritating substance warning	Washing with cleansing agents	Entire device	Wear personal protective equipment and follow the cleansing agent manufacturer's guidelines.
 Optical or audible signal warning	All kinds of work	Warning device	Inform the personnel about existing warning devices.
	Before you start cleaning and repairing, unplug the device, deactivate the transporting unit and secure it against undesired activation. Pay attention to foreign voltages existing in the control outputs.		

2. GUARANTEE TERMS

Detailed guarantee terms can be accessed in the guarantee card supplied with the device.

RADWAG undertakes to repair or replace the items that prove defective in terms of manufacture or structure.

It is allowed to specify defects of unclear origin and establish methods of eliminating them only in cooperation with representatives of the manufacturer and operator.

RADWAG shall not be held responsible for damage, losses or accidents arising from unauthorised or incorrect measuring or servicing works.

The guarantee does not cover the following:

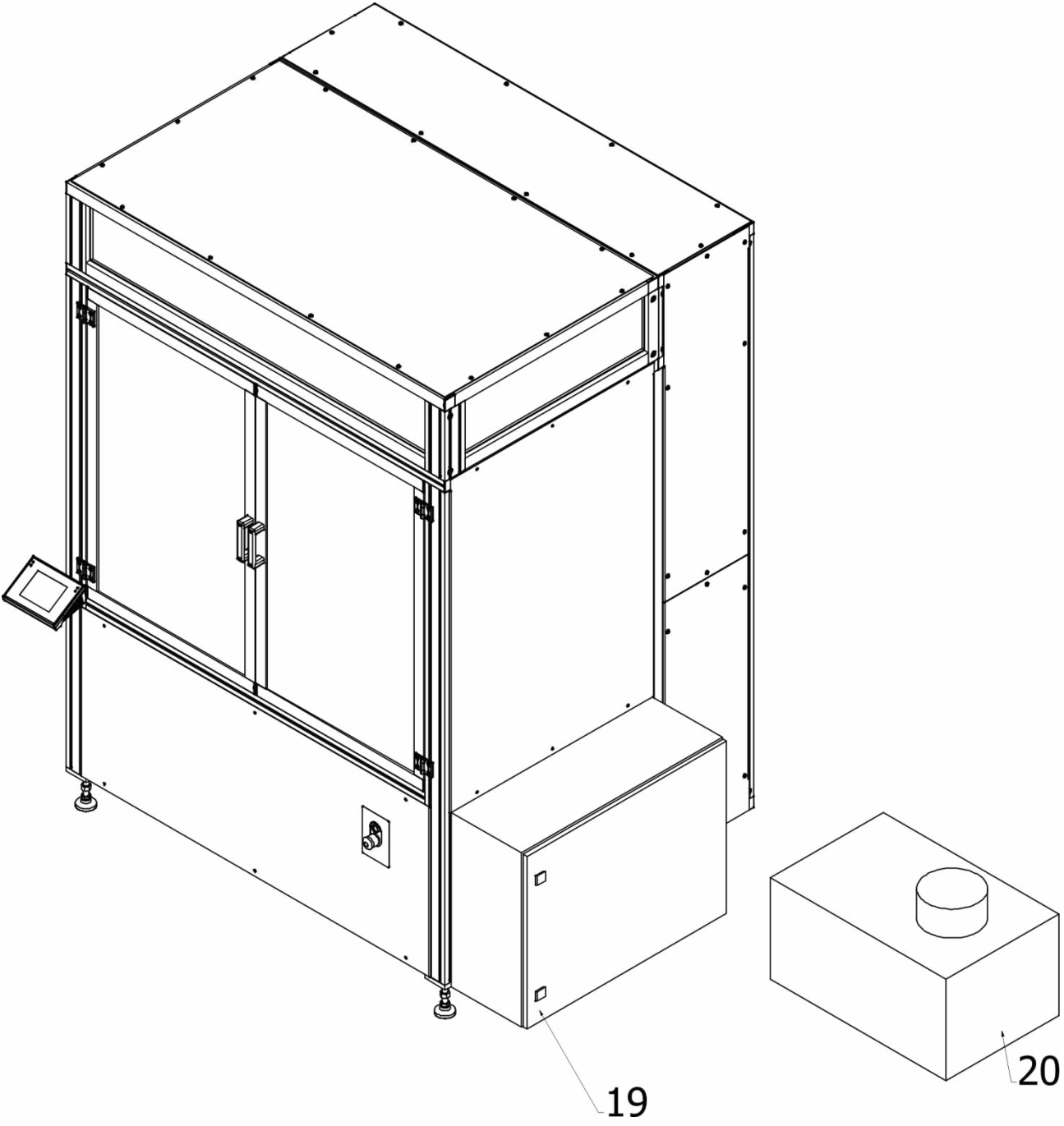
- fuses,
- connecting cables for power supply, control and communication,
- mechanical damage caused by wrong use of the device as well as thermal, chemical damage, and damage caused by atmospheric discharge, electric network overvoltage or other random event,
- maintenance works (cleaning, greasing, adjustment).

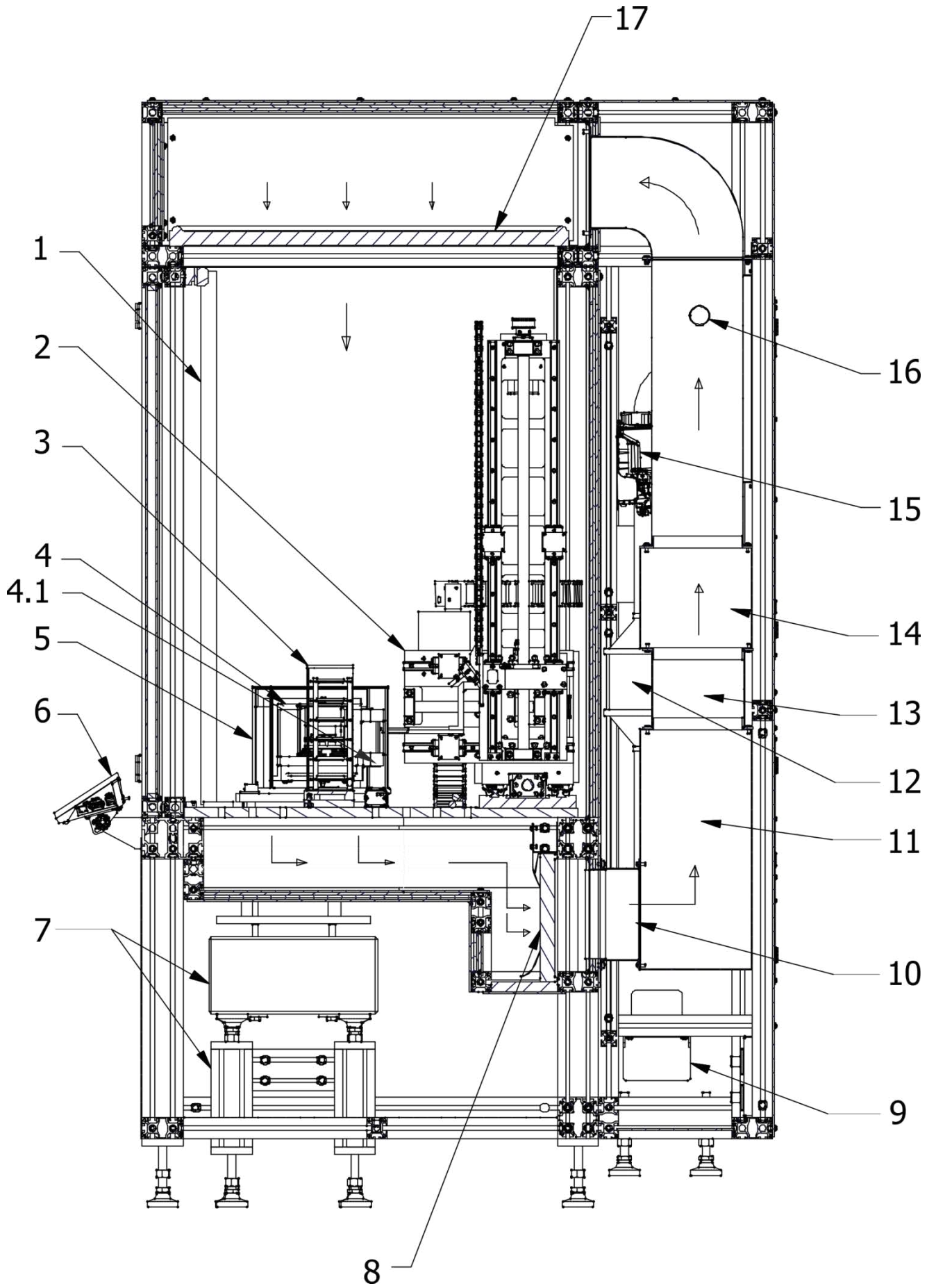
The guarantee cover is lost when:

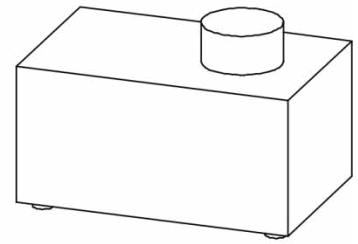
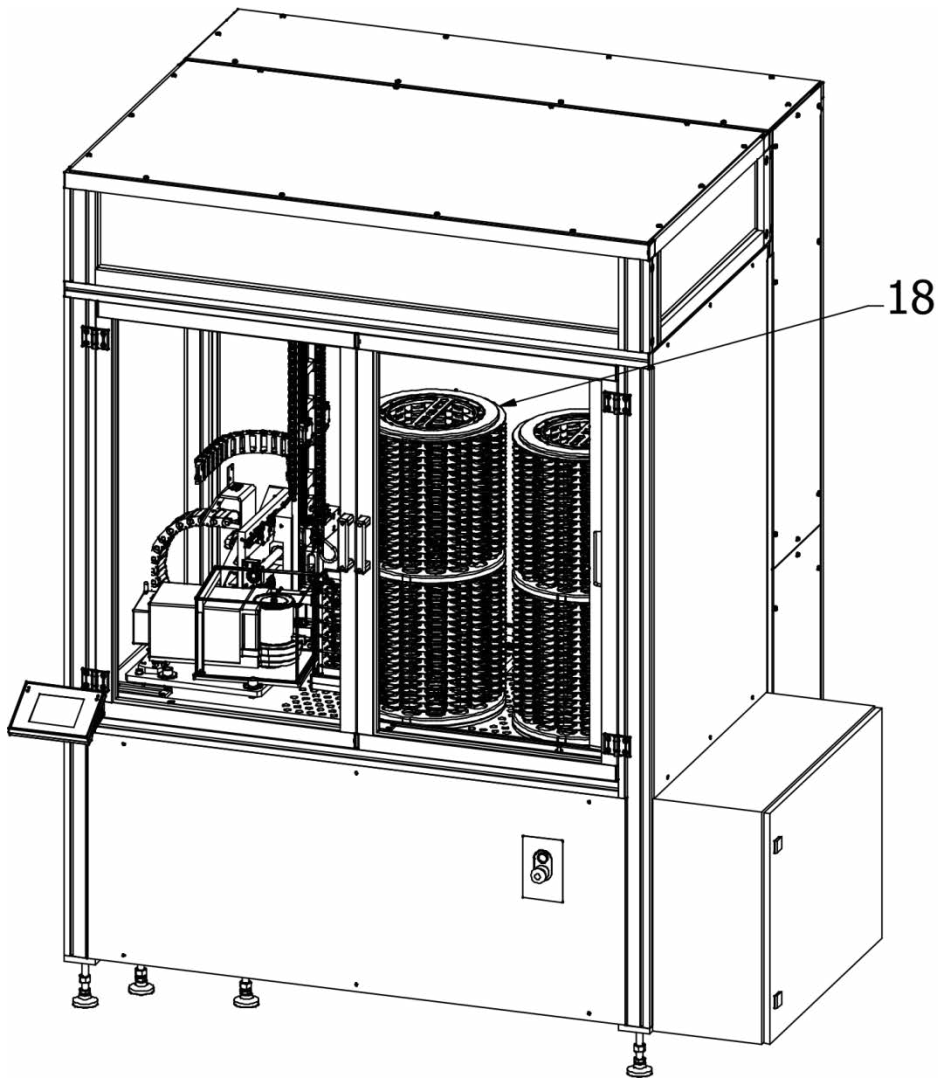
- the repair is performed out of the authorised servicing centre,
- the service technician detects interference into the mechanical or electronic structure of the device,
- structural modifications have been made without the manufacturer's approval and awareness,
- the device is devoid of company securing marks.

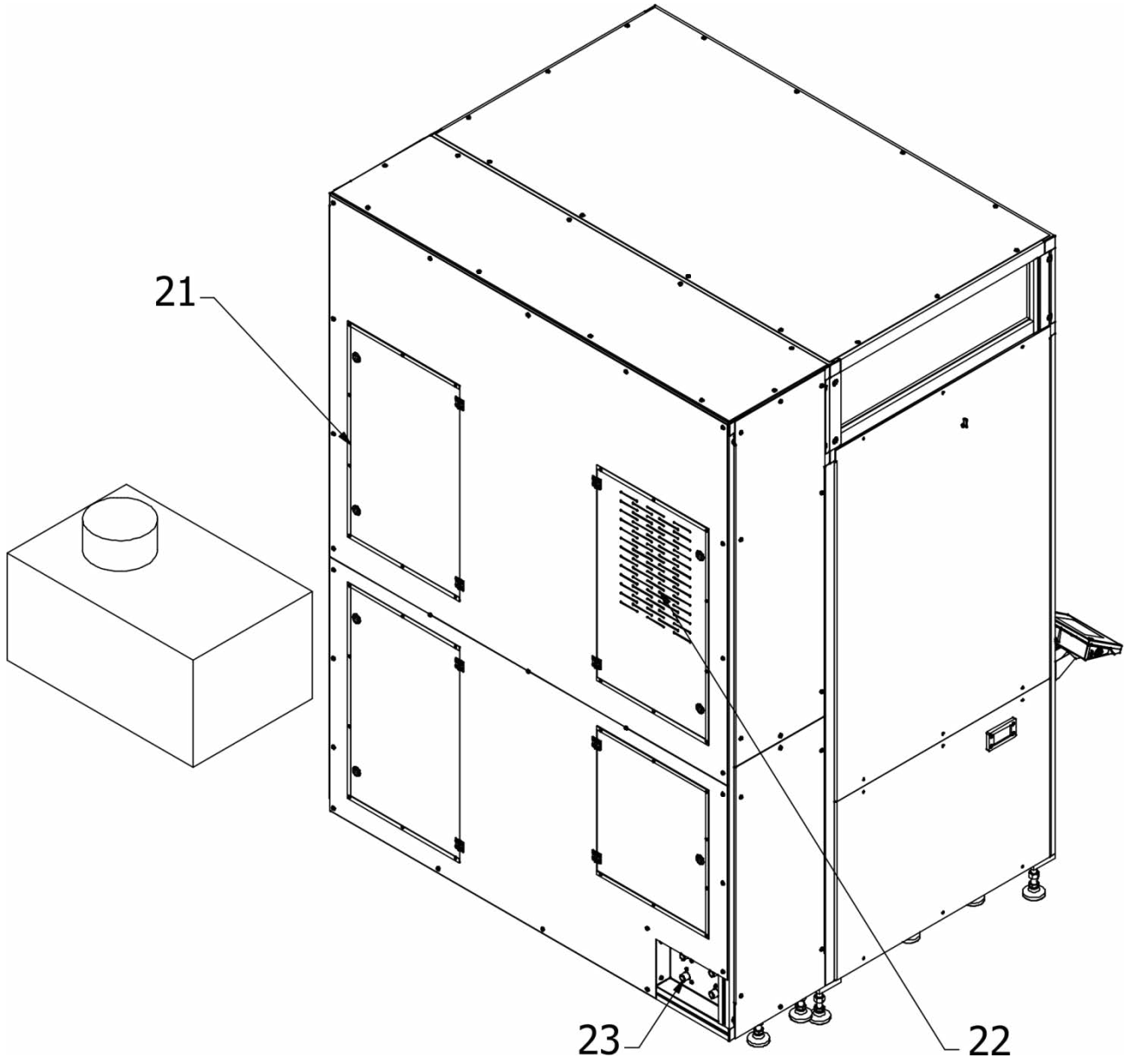
3. DEVICE DESIGN

3.1. General view



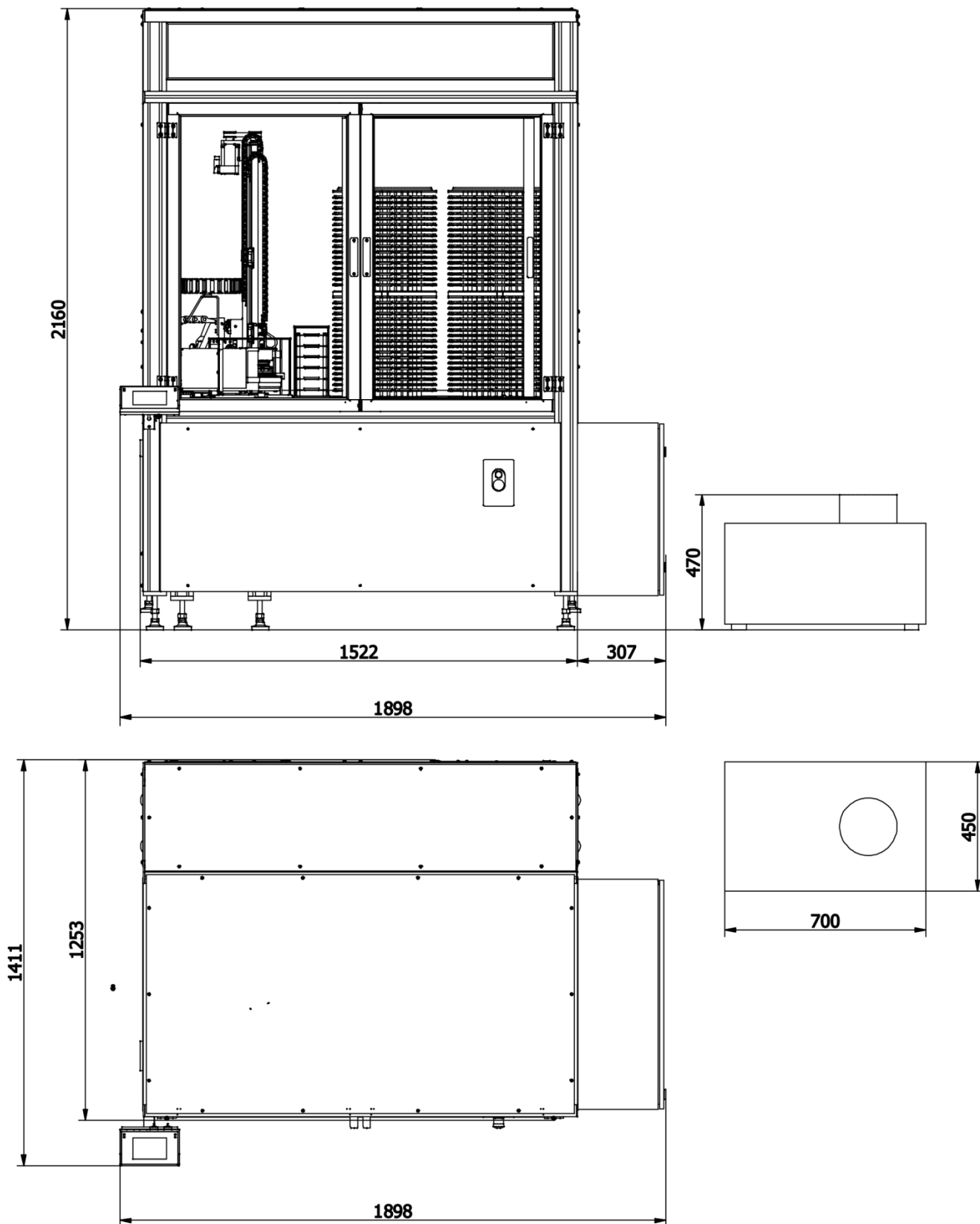




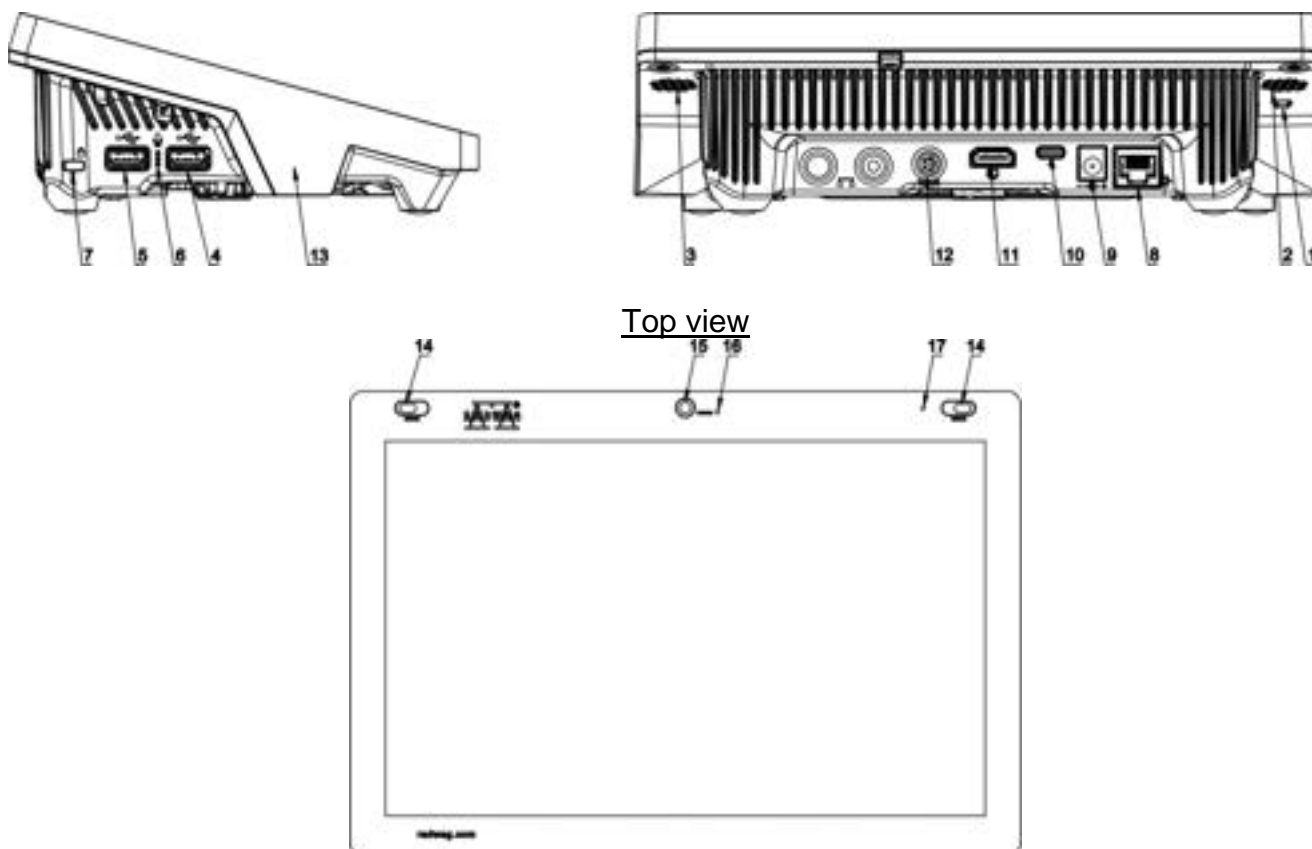


1. Sliding door
2. Robot arm mechanism
3. Calibration magazine (for mass standards)
4. Microscale
- 4.1 Ioniser
5. Microscale cover
6. Microscale reading head
7. Stone table
8. HEPA filter
9. Condensate pump
10. Temperature sensor
11. AC cooler with fan
12. Fan
13. Temperature sensor
14. Heater
15. Moistener
16. Moistener steam lance
17. HEPA filter
18. Filter magazine
19. Robot control cabinet
20. Industrial chiller
21. AC control cabinet
22. Inspection door
23. Water connector

3.2. Dimensions



3.3. Description of ports



1	Button used to hard restart or to switch the balance off/on.	10	Power supply socket – USB type C
2	Left speaker	11	HDMI socket
3	Right speaker	12	Media box socket – RS 232 (COM3)
4	USB type A	13	RFID sensor
5	USB type A	14	Proximity sensors
6	Microphone	15	Camera
7	Kensington Lock	16	Camera diode
8	Ethernet socket	17	Signalling diode
9	Power supply socket		

3.4. Intended use

The RB 2.5Y.F robotic weighing system represents the professional weighing standard and assures full automation of filter mass measurement. It is based on the weighing mechanism of the UYA 5Y ultra microscale that guarantees high repeatability and top precision of readout.

3.5. Safety precautions

- Before you use the device, please read this operating manual carefully and operate the device as per intended use.
- Do not use sharp tools (e.g. knife, screwdriver, etc.) to operate the touch panel.
- Load the weighing pan with products whose gross mass is lower than the maximum lifting capacity of the device.
- Do not leave the weighing pan heavily loaded for a long time.
- In case of a failure, unplug the device immediately.

- The device that is to be decommissioned must be disposed of in accordance with currently applicable rules of law.

3.6. Supervision Over Metrological Parameters

Metrological parameters need to be checked in determined time intervals. Inspection frequency depends on ambient conditions in which the balance is operated, type of carried out processes and adopted quality management system.

4. TRANSPORT AND STORAGE

4.1. Delivery Check

Upon delivery it is necessary to check the package and the device, make sure that your package bears no signs of damage. Otherwise contact the manufacturer's representative.

4.2. Packaging

Keep all package elements should your device be transported in the future. Remember that only original packaging can be used for shipping purposes. Prior packing, uncouple any cables, remove any separable components (weighing pan, shields, inserts). The balance components must be packed into an original packaging, this is to protect them against potential damage during transportation.

5. UNPACKING AND INSTALLATION

5.1. Workstation

- Operate the device in a workroom free of vibrations and shakes, where there are no air drafts nor dust.
- Permissible ambient temperature range: + 10 °C ÷ + 40 °C.
- Make sure that the relative humidity is not higher than 80%.
- Make sure that in the course of balance operation the room temperature changes slowly and gradually.
- Place the balance either on a robust-design table or on a wall bracket which is both distant from heat sources and insusceptible to vibrations.
- Take special precaution while weighing magnetic objects, part of the balance is a strong magnet. Should magnetic loads be weighed, use under-pan weighing option in order to remove the weighed load from an area influenced by the magnet. The hook for under-pan weighing is installed in the balance base. Shall static electricity affect balance indications, it is necessary to ground the base, grounding bolt is placed at the back.
- Ultra-microbalances and other devices installed on-site by RADWAG employees cannot be moved to another location. Only authorized RADWAG employee can move the device to another location.

5.2. Unpacking

Cut the adhesive tape. Take the device out of the packaging. Open the accessory box, take the balance components out of it.

5.3. Device assembly



While installing, it is strictly required to follow safety rules as per applicable OHS regulations.

The supply voltage may be supplied only after installing the device and connecting all wires.

The place of using the device must not be exposed to strong air blows and strong vibrations. There should not be any devices that emit strong electromagnetic waves in the immediate vicinity of the device.

The device must be positioned in the sufficiently spacious place of use for maintenance and operation purposes.



Remain highly careful while positioning the device. There is a palm injury risk.

Device-related guidelines

During the electrical assembly, adopt special safety measures and follow OHS rules in view of existence of hazardous voltages that may result in permanent disability or death.



The supply voltage may only be supplied once the device has been correctly installed, all cables have been connected and are free from damage.

The power port intended for connection of the device must be equipped with a protective earth pin.

The device must be connected to the source of power that is free from interference and retains the constant voltage amplitude value. The voltage fluctuations may cause the device to malfunction or deactivate in view of presence of sensitive measuring equipment.

The residual current device as the only protective device is insufficient and disallowed.

All internal elements of the device have their own inner protection.

It is necessary to equalise potentials of all units that cooperate with the device.

If you supply mains power directly to the terminal strip of the device, use the YLY 3x2.5mm cable.

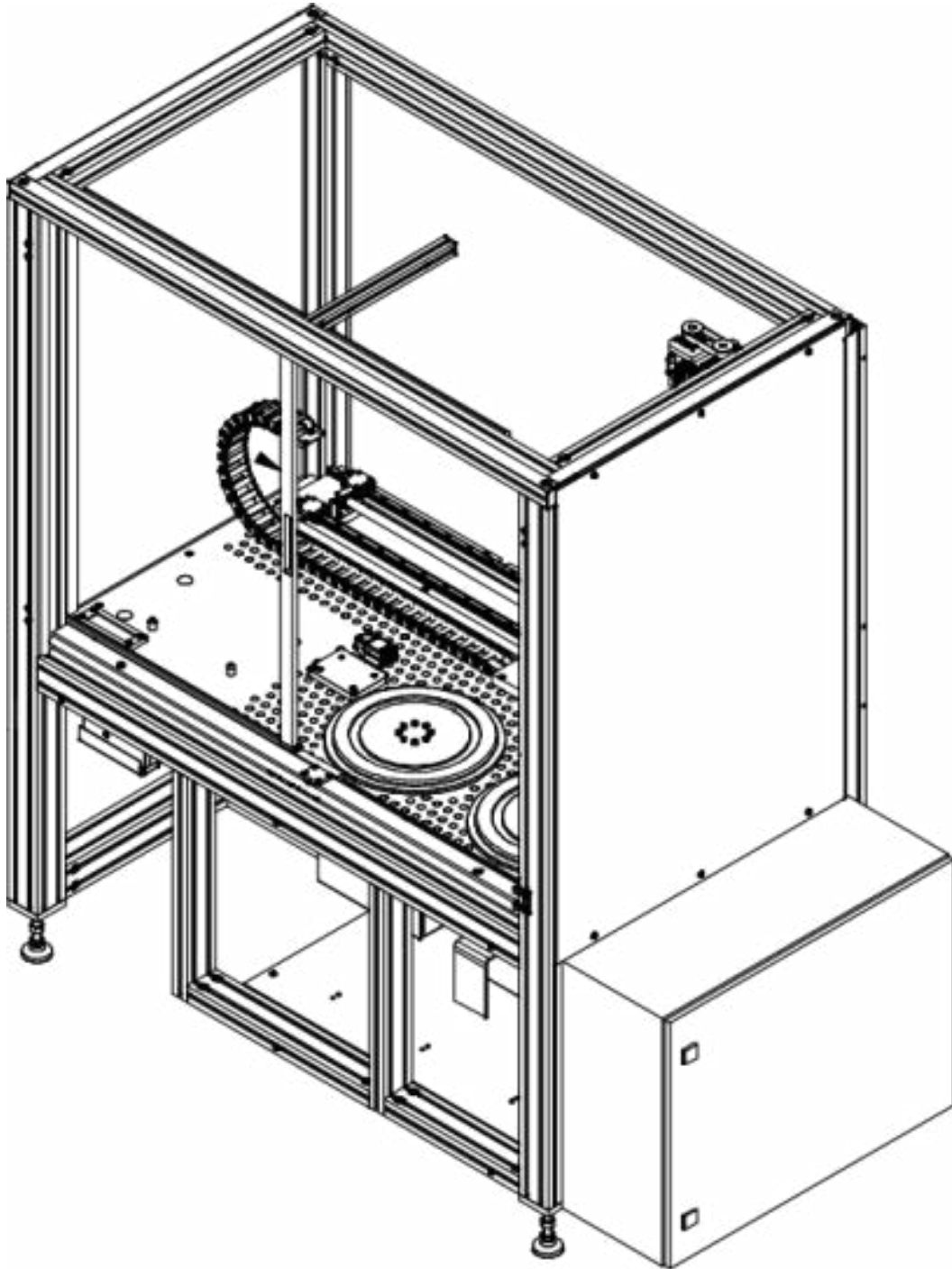
Three potentials may co-exist in the device at the same time:

- 230 VAC – supply voltage
- 24VDC – executive unit control voltage
- 12VDC – digital unit control voltage

After temporary voltage drop, the device initiates the loading procedure. After the system start-up, the weighing program is automatically activated and the device internal test is conducted. If everything is successful, the loading procedure is finished and the home screen is displayed.

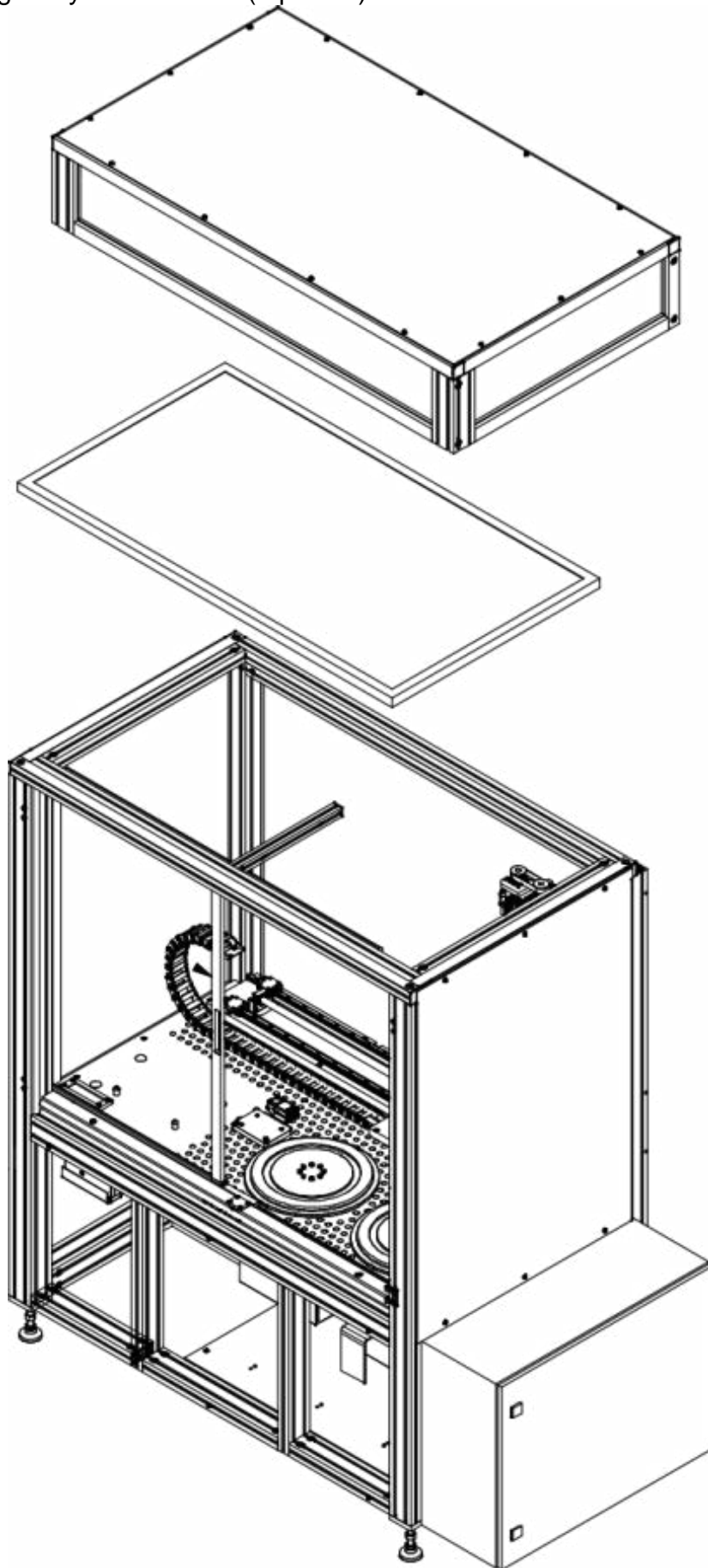
Step 1

Position the main part of the structure on a stable surface in the place of use. Using adjustment legs, position the device so that the top of the structure is levelled (use an external level in this respect), and its surface is at the height of 780mm from the floor. All legs must safely rest on the floor.



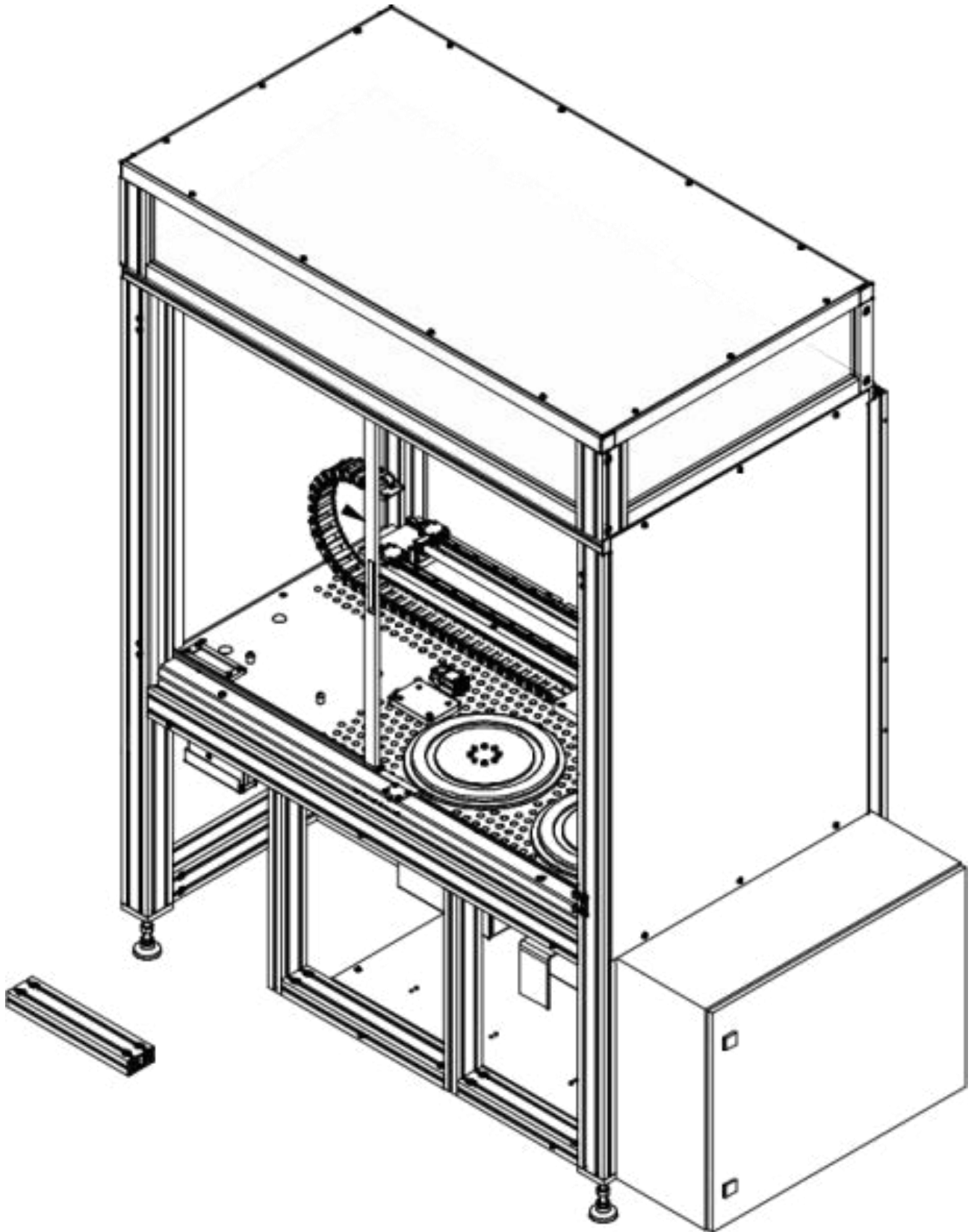
Step 2

Put the HEPA filter and upper part of the structure onto the main part of the structure, and tighten it up using Kanya connectors (4 pieces).



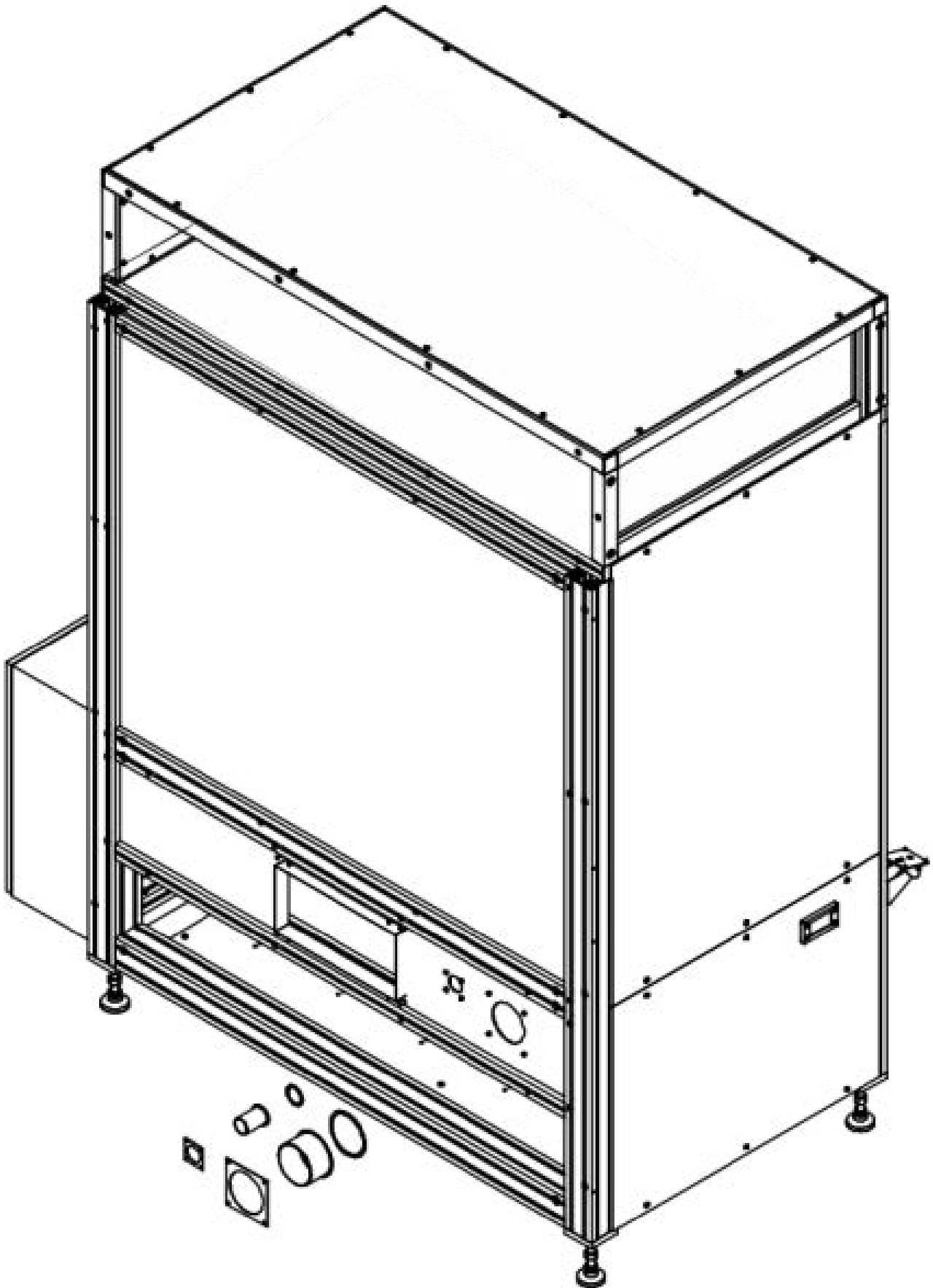
Step 3

Disassemble the lower profile of the structure.



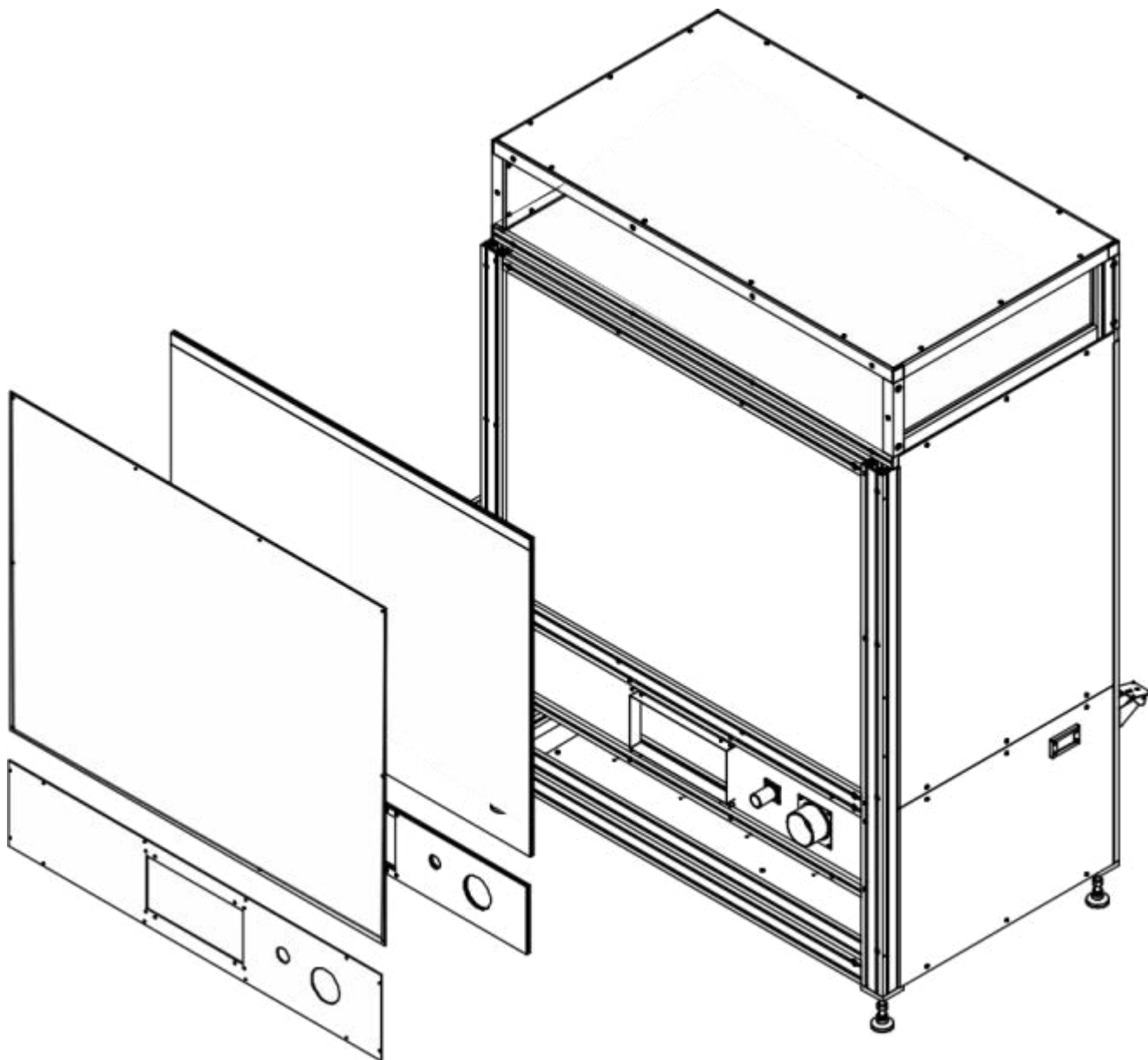
Step 4

Tighten fi 100, fi 40 nozzles up in the following order: seal, nozzle, base board, using M4x10 screws (8 pcs).



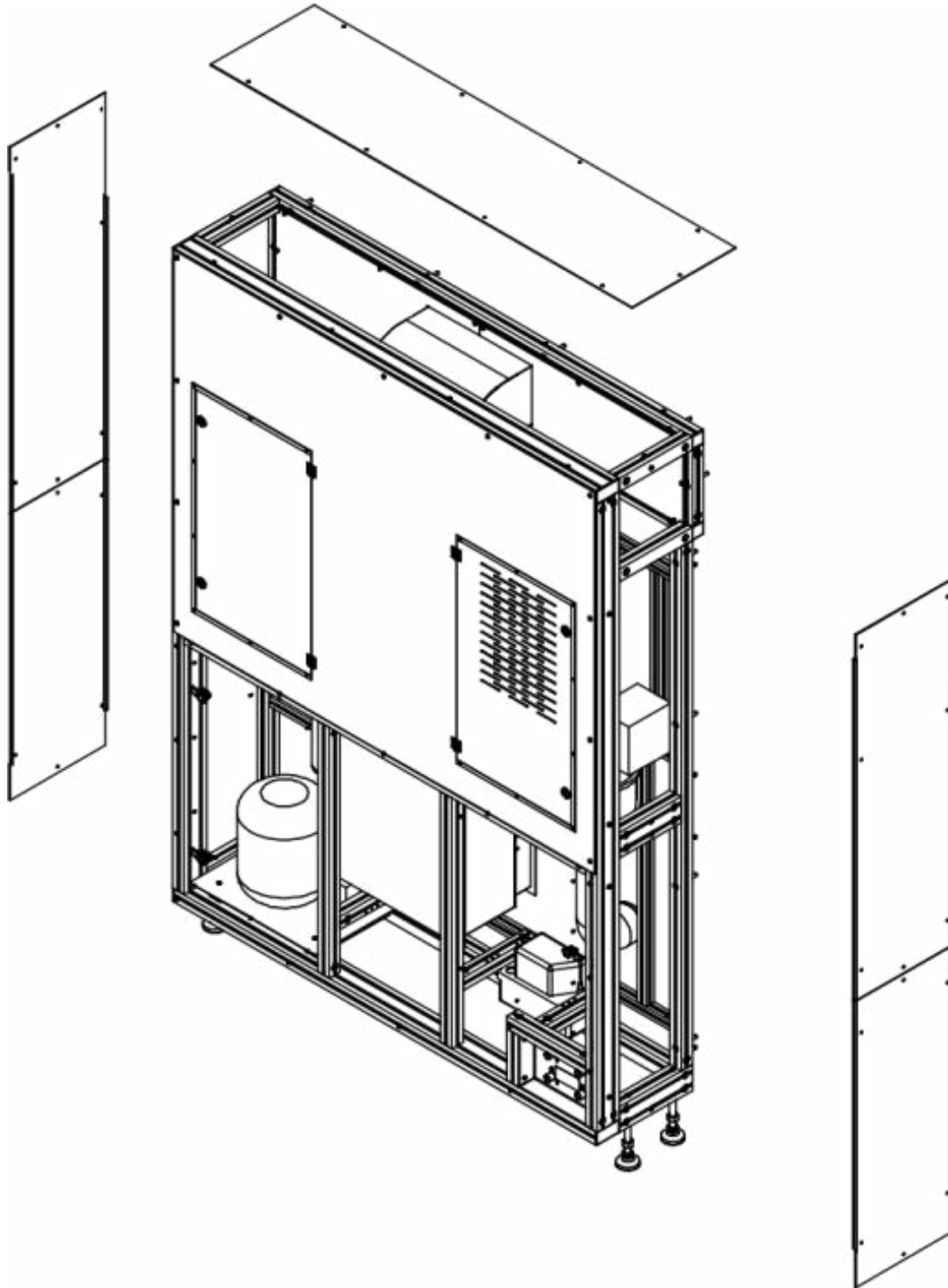
Step 5

Apply insulation and screw the covers in using M5 x 12 screws (22 pcs).



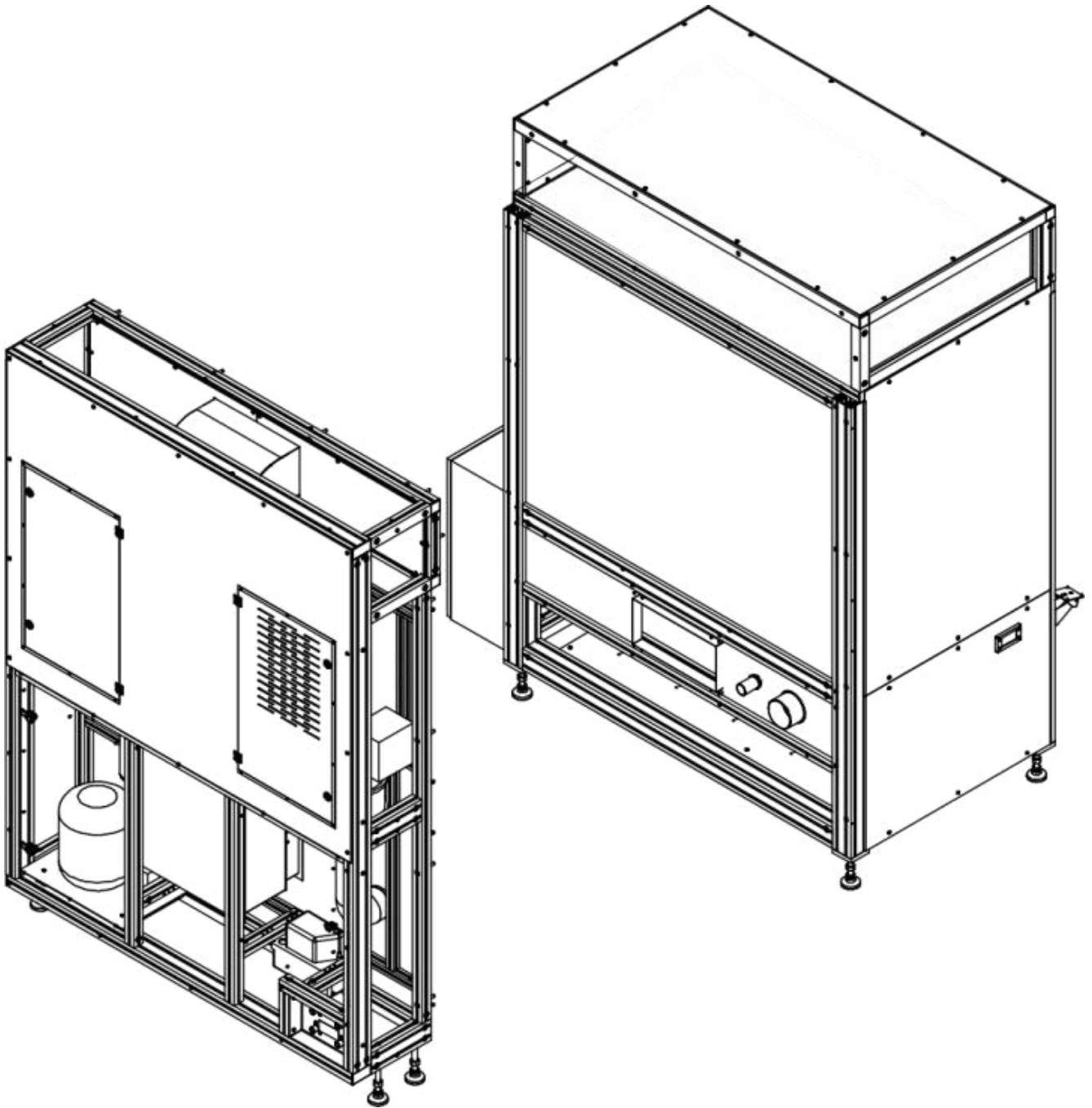
Step 6

To make the structure assembly easier, detach side covers.



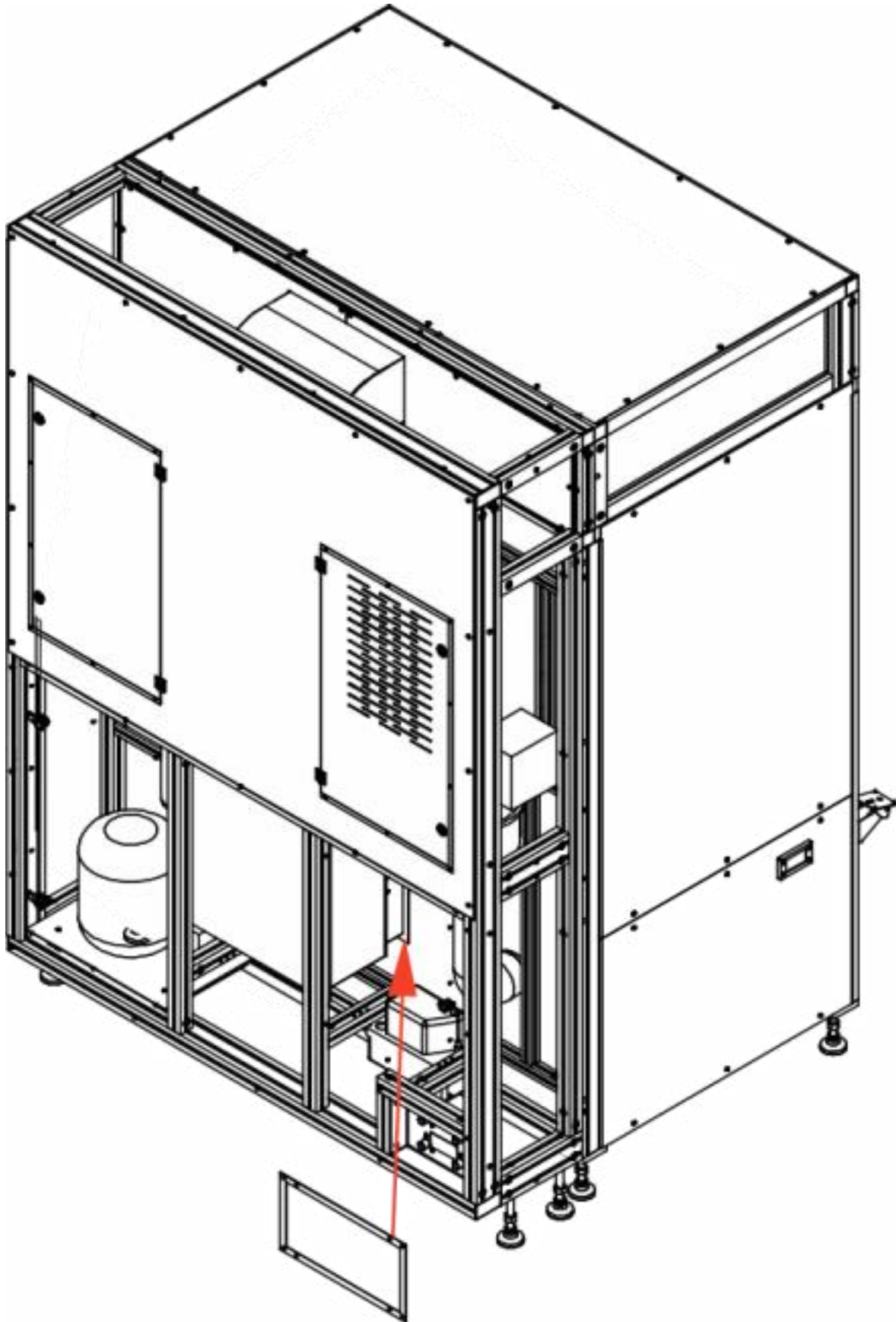
Step 7

Put the rear structure on and tighten it up using M6x65 screws (18 pcs). Adjust the legs so that they all rest safely on the floor.



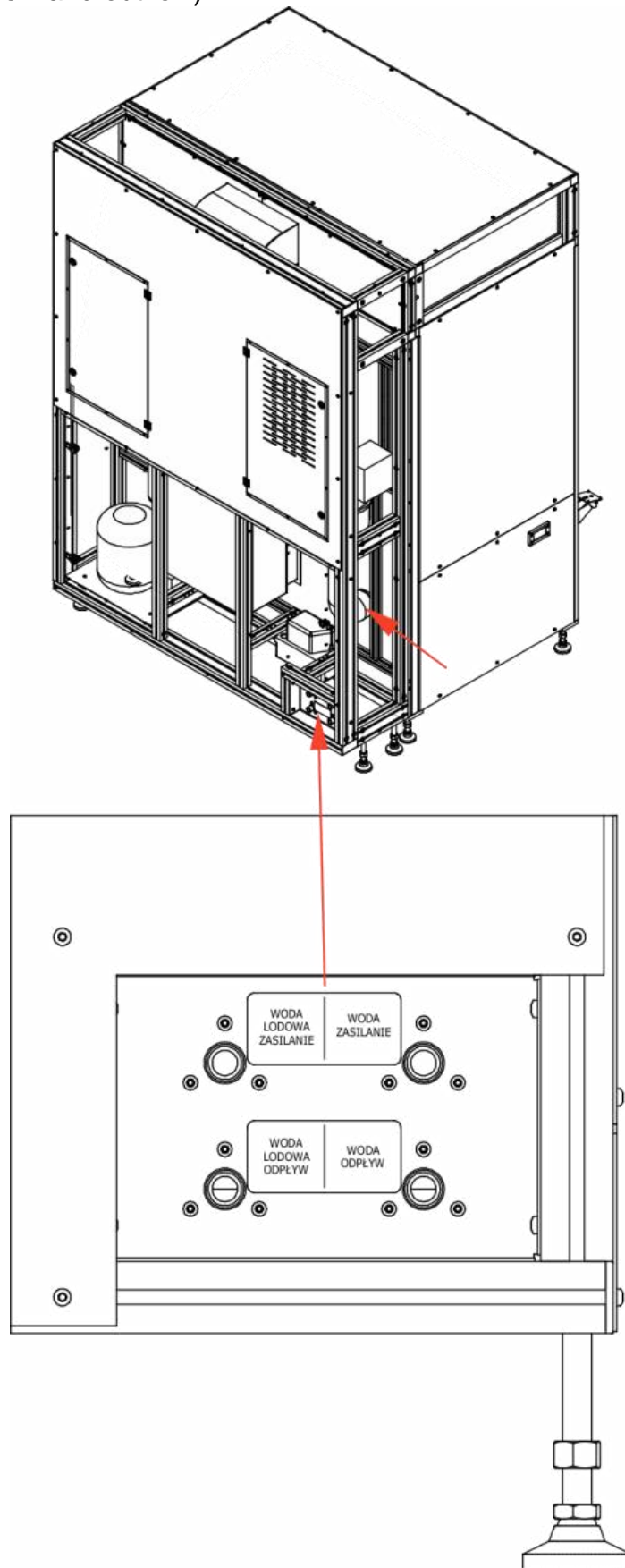
Step 8

Insert the seal between the ventilating duct and partition plate, and then screw the ventilating duct to the partition plate using M5x10 screws (4 pcs).



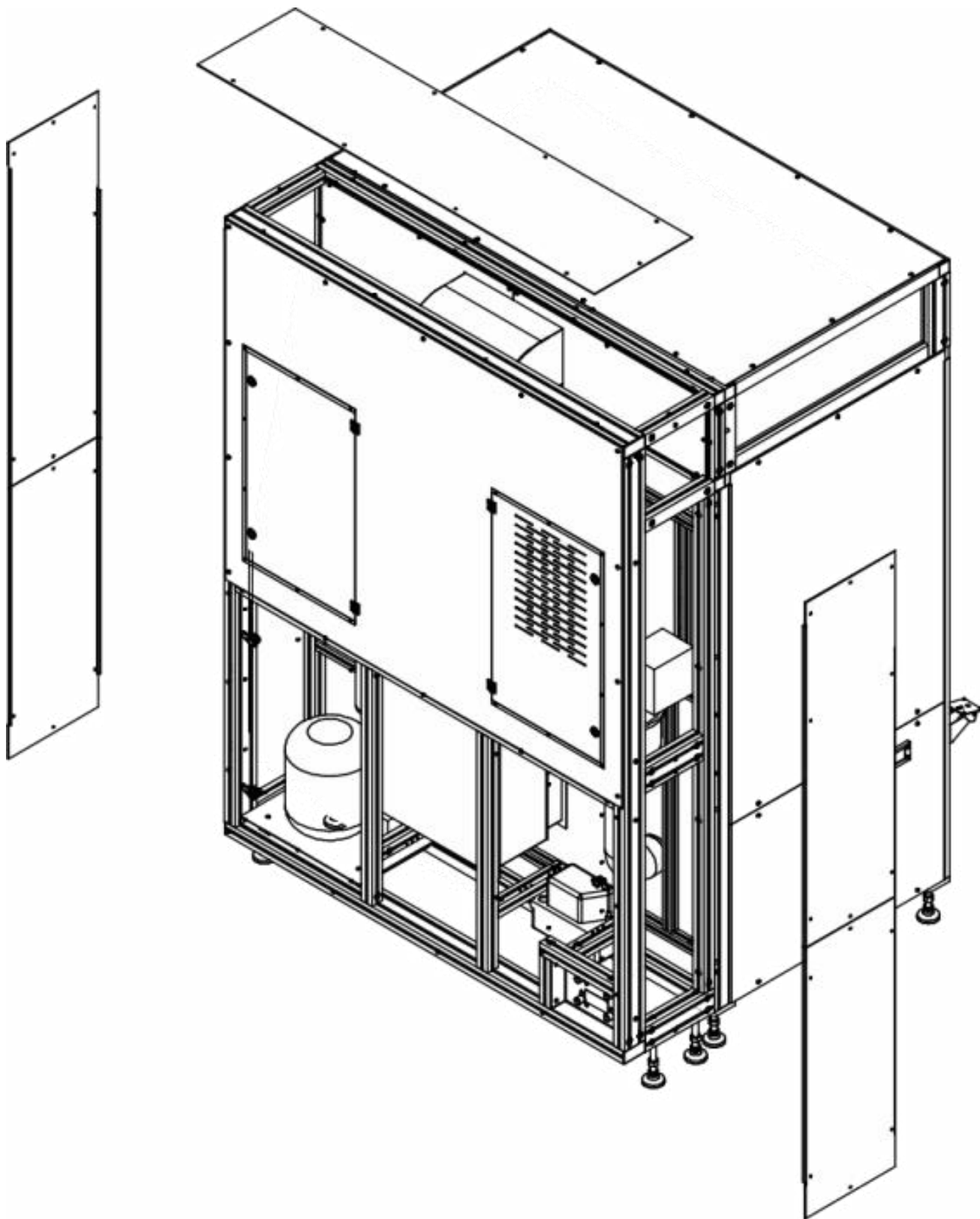
Step 9

Mount „spiro” fi 40 and fi 100 pipes on nozzles and tighten them using jubilee clips. Next install cables between the chiller and ice water connector ports (inflow and outflow), and water cables (inflow and outflow).



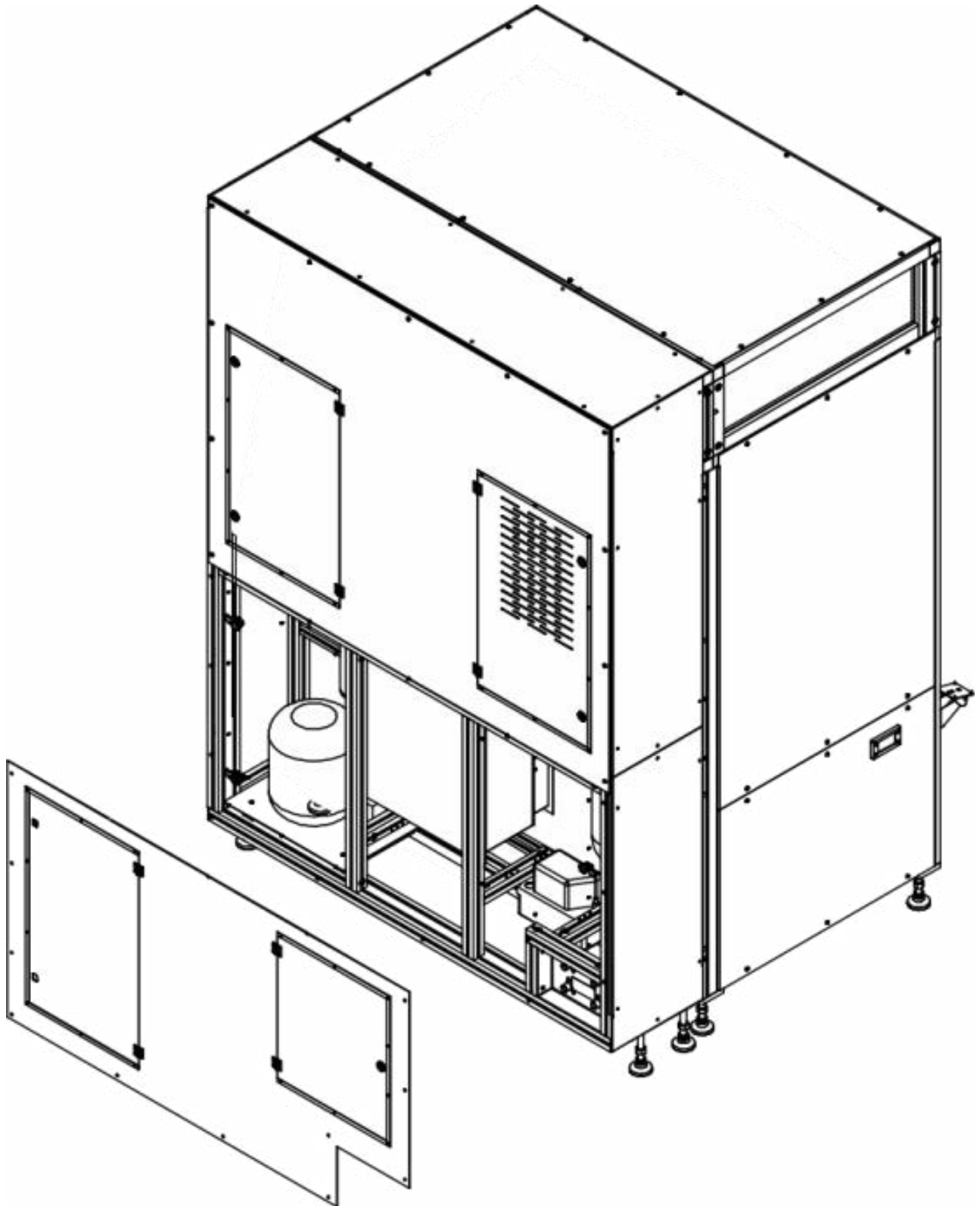
Step 10

Fix side covers using M5x12 screws (38 pcs).



Step 11

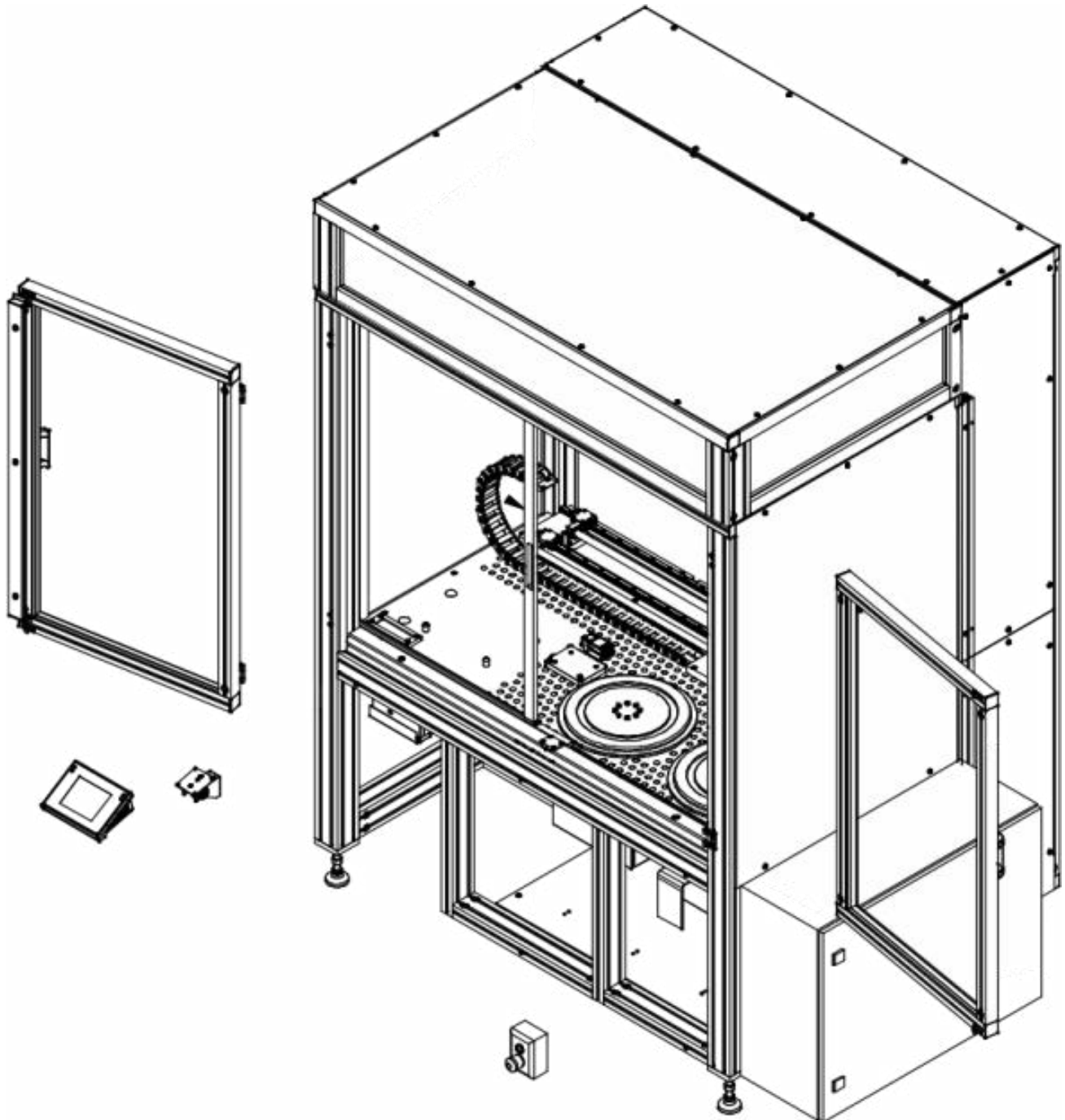
Fix the rear cover using M5 x 12 screws (14 pcs).



Step 12

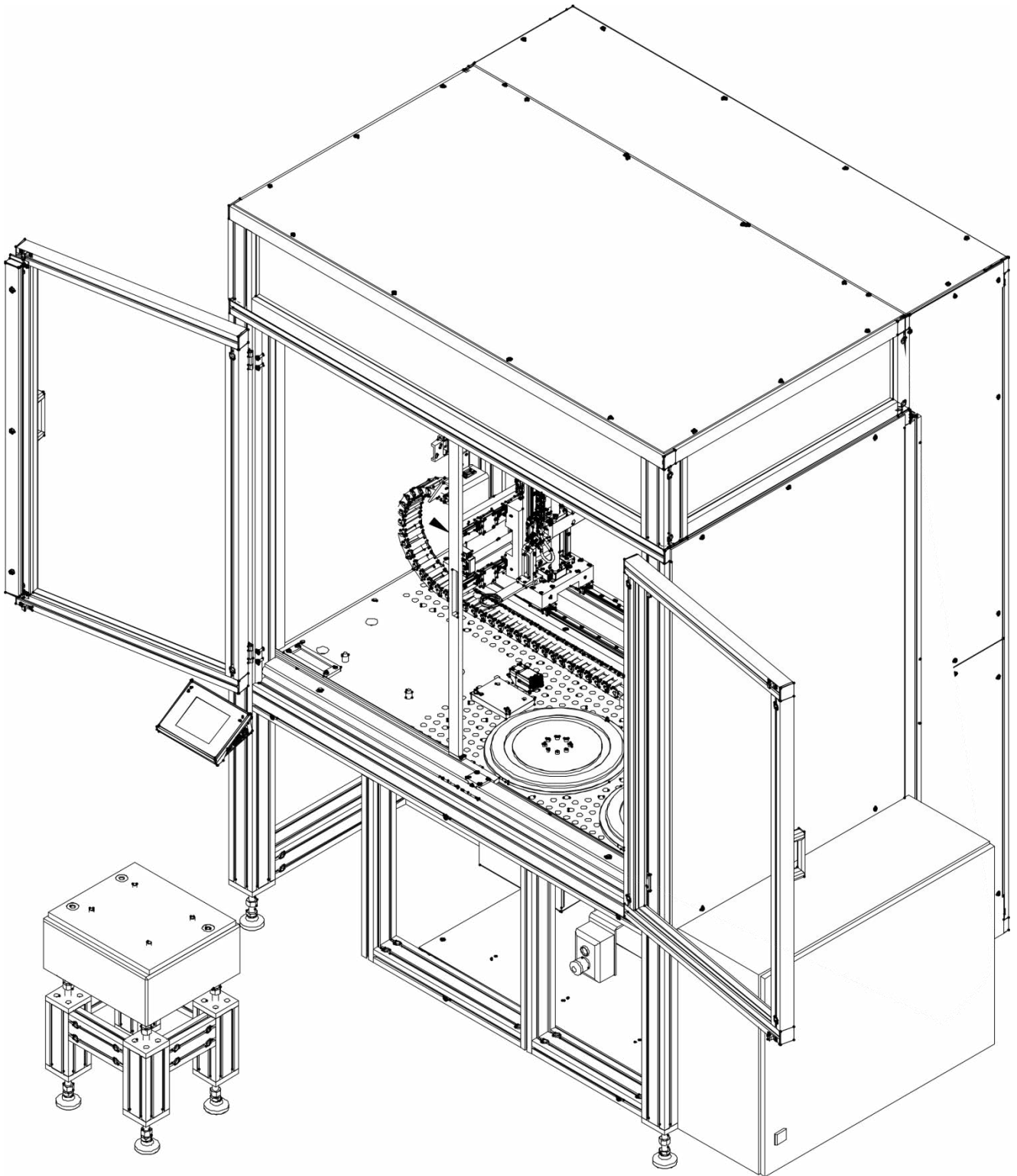
Fix right and left doors. Screw hinges in using M6x14 countersunk head screws (8 pcs). The doors must be positioned symmetrically between the top and bottom profile, leaving 2-3 mm of space.

Next fix the head holder using M5 x 12 screws (2 pcs) and the readout head using 3,5 x 8 plastic screws (4 pcs), and the main switch.



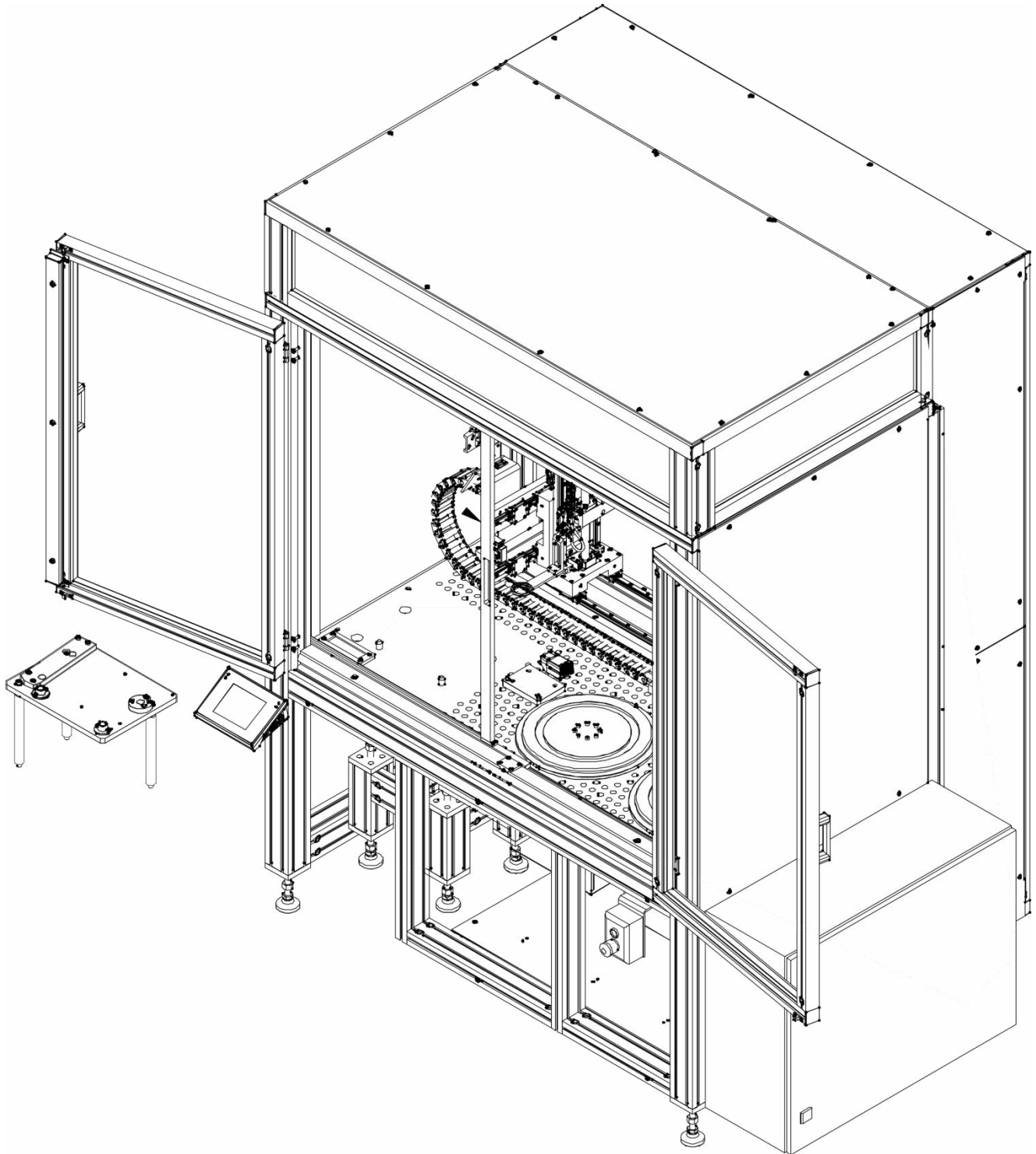
Step 13

Insert the anti-vibration table together with the stone top into the interior of the main structure.



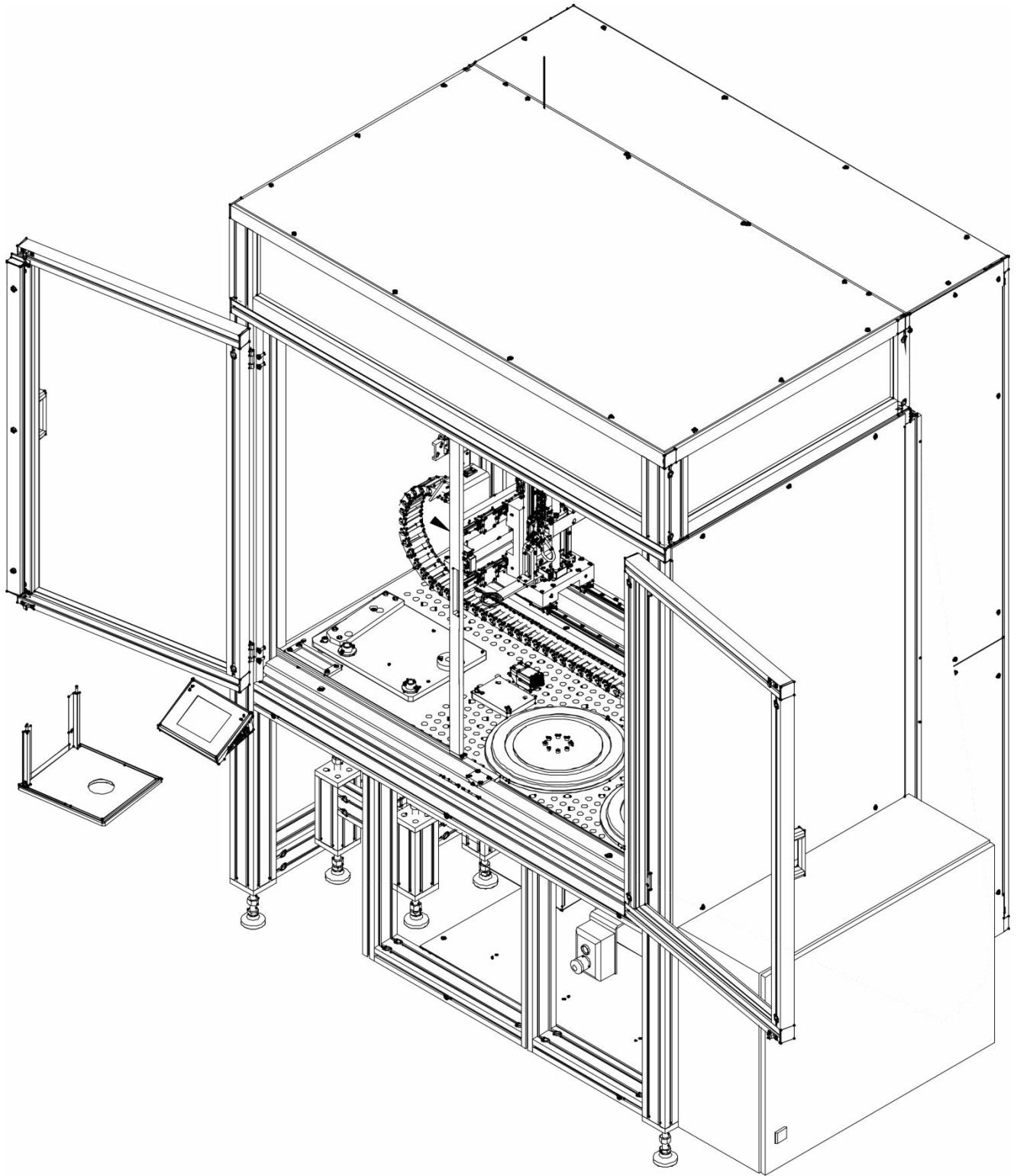
Step 14

Fix the microscale base and screw base posts into the anti-vibration table. Level the microscale base top using legs of the anti-vibration table. Leave a space of about 12mm between the top of the main structure and microscale top.



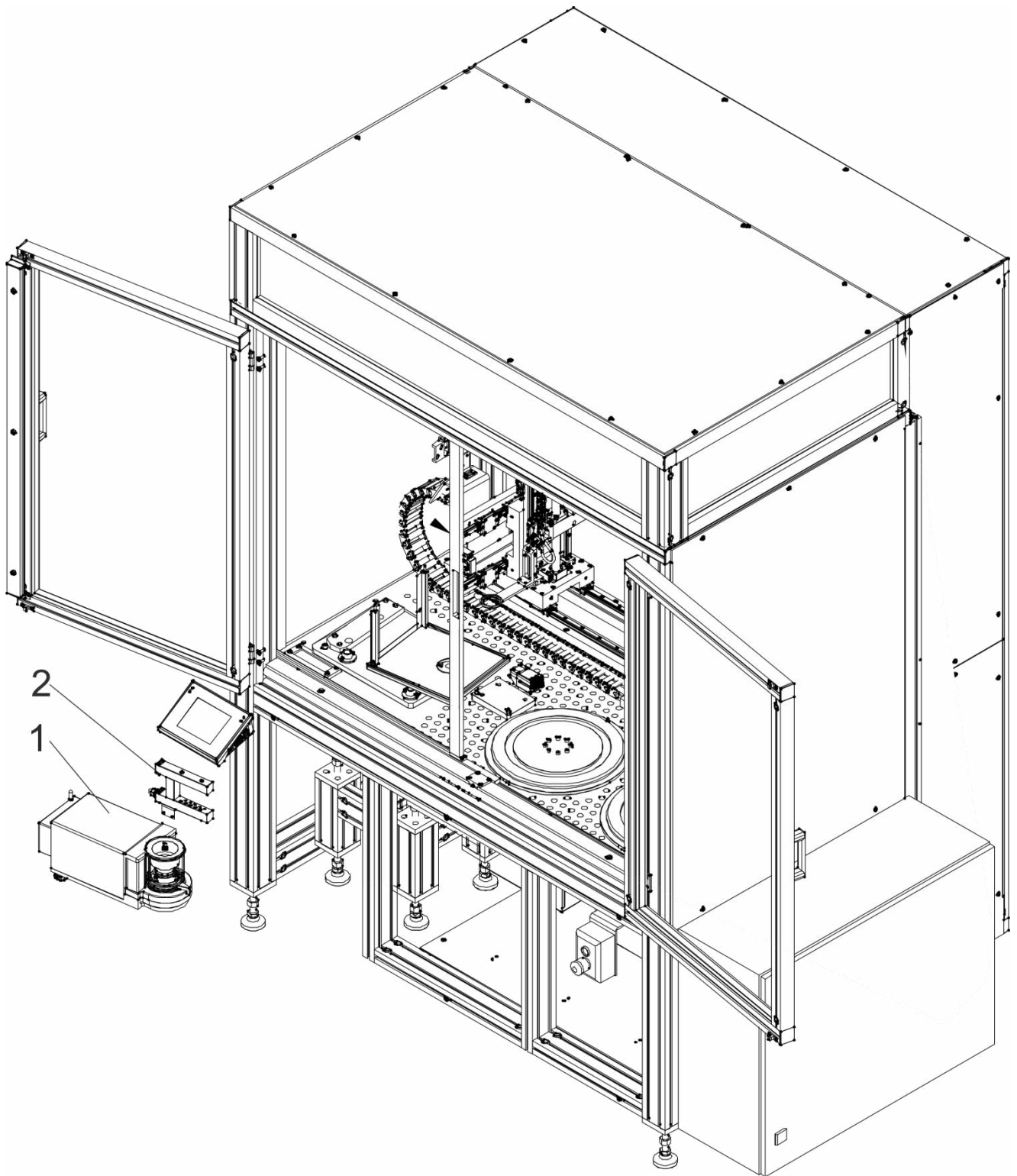
Step 15

Screw the cover base to the microscale base using M4x10 screws (4 pcs).



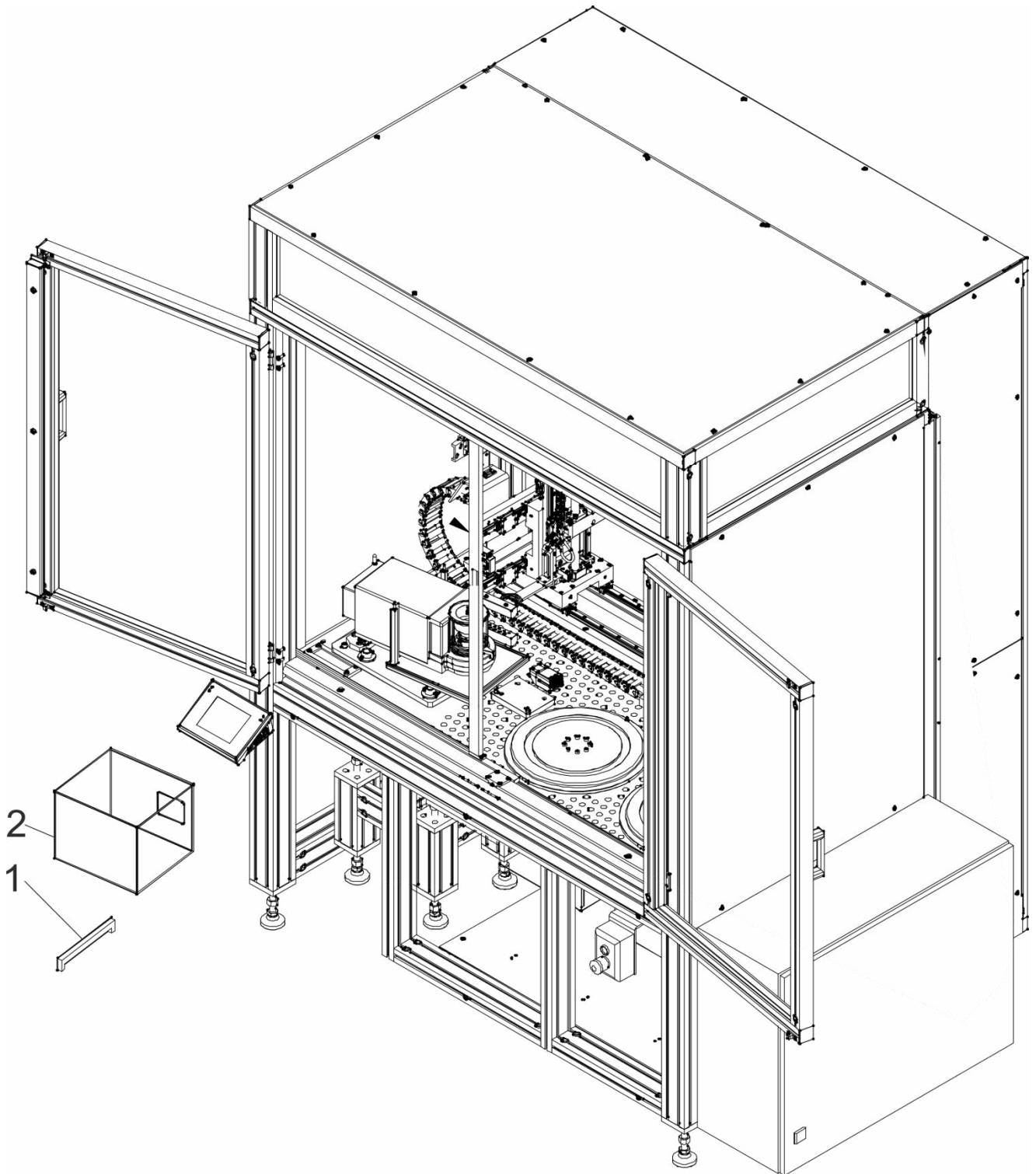
Step 16

Position the microscale (1) on the base and then use M4x8 screws (2 pcs) to screw the ioniser (2) to the microscale body.



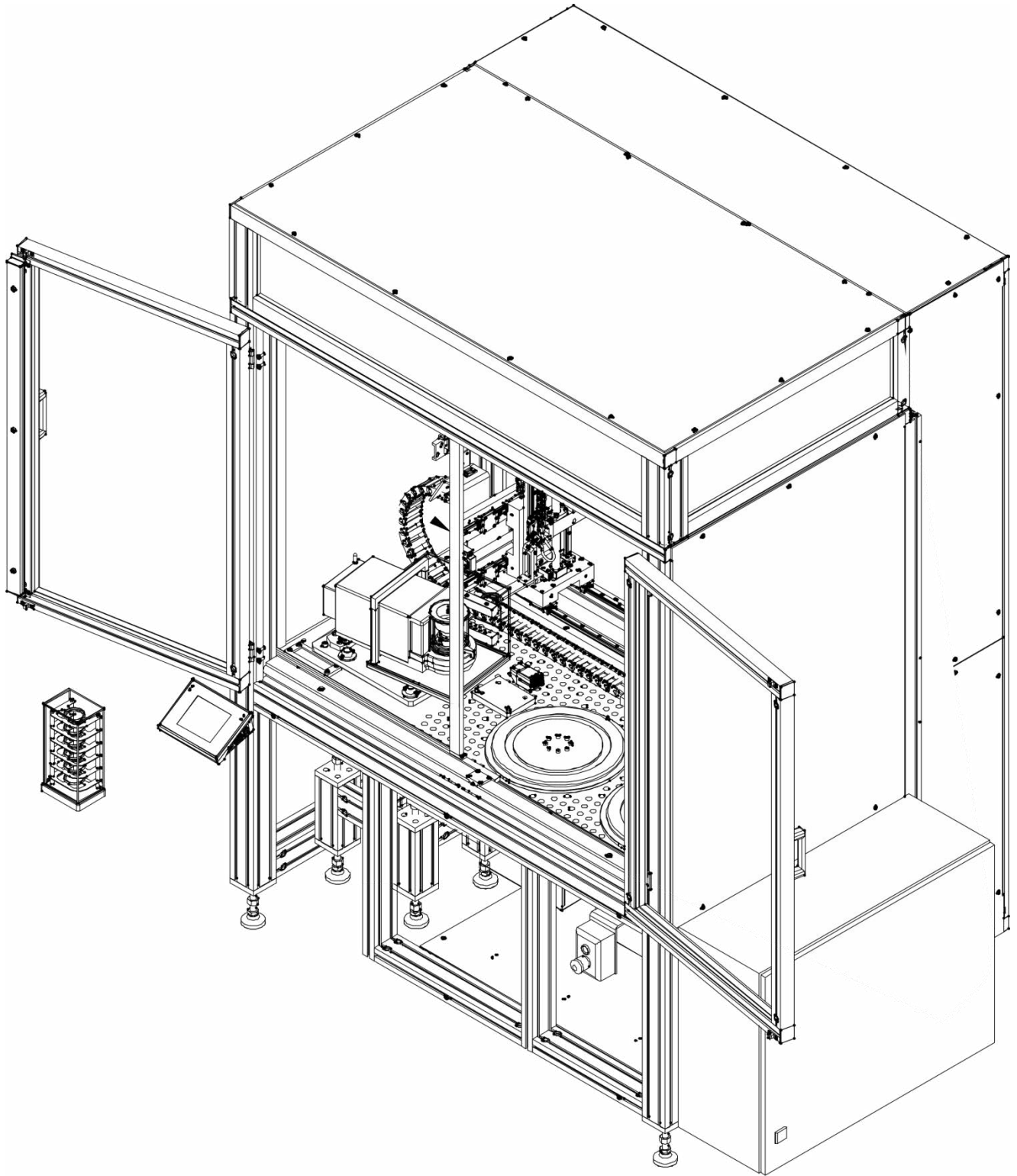
Step 17

Put the sealing profile (1) and glass cover (2) onto the cover base.



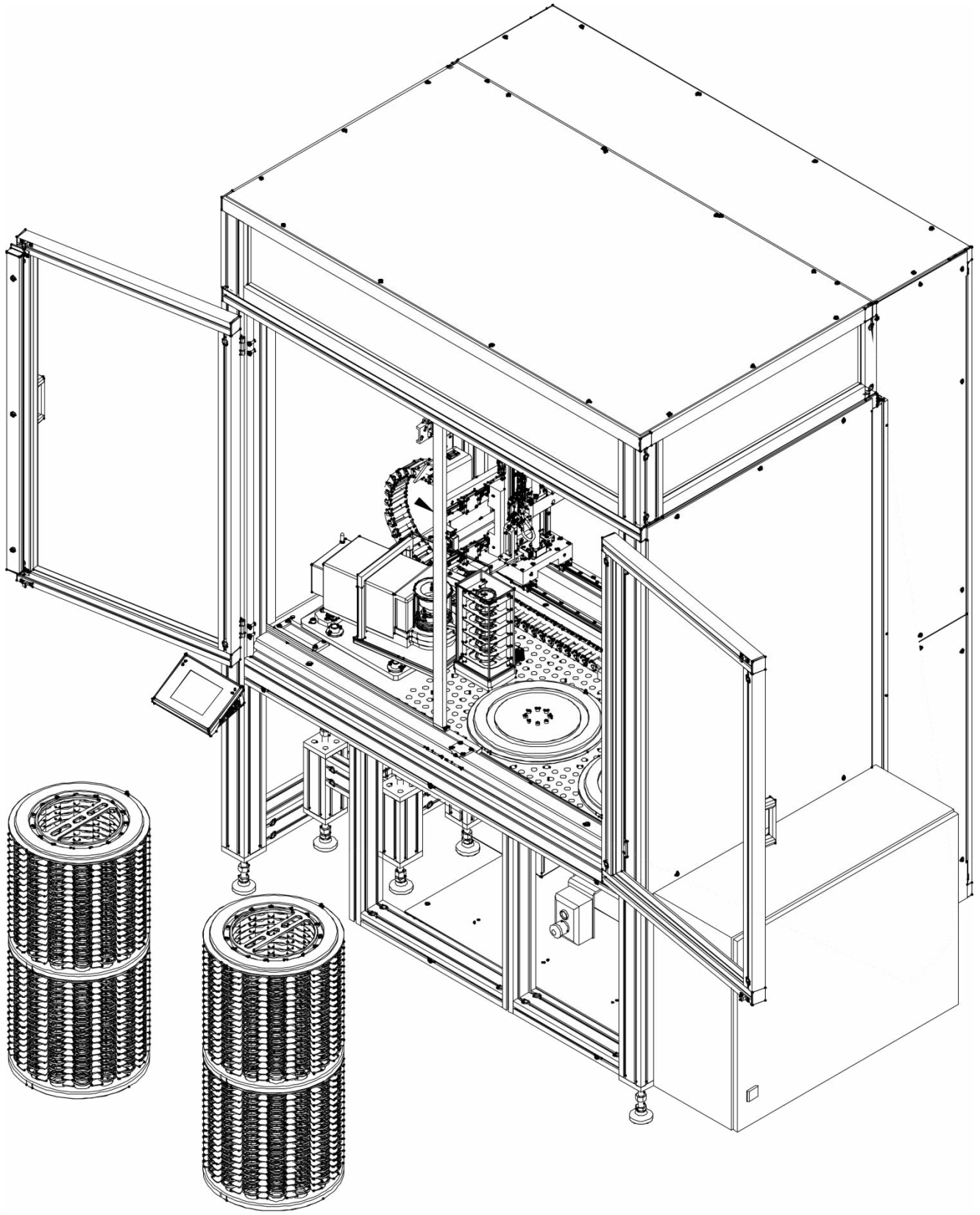
Step 18

Install the standard magazine on the base inside the device.



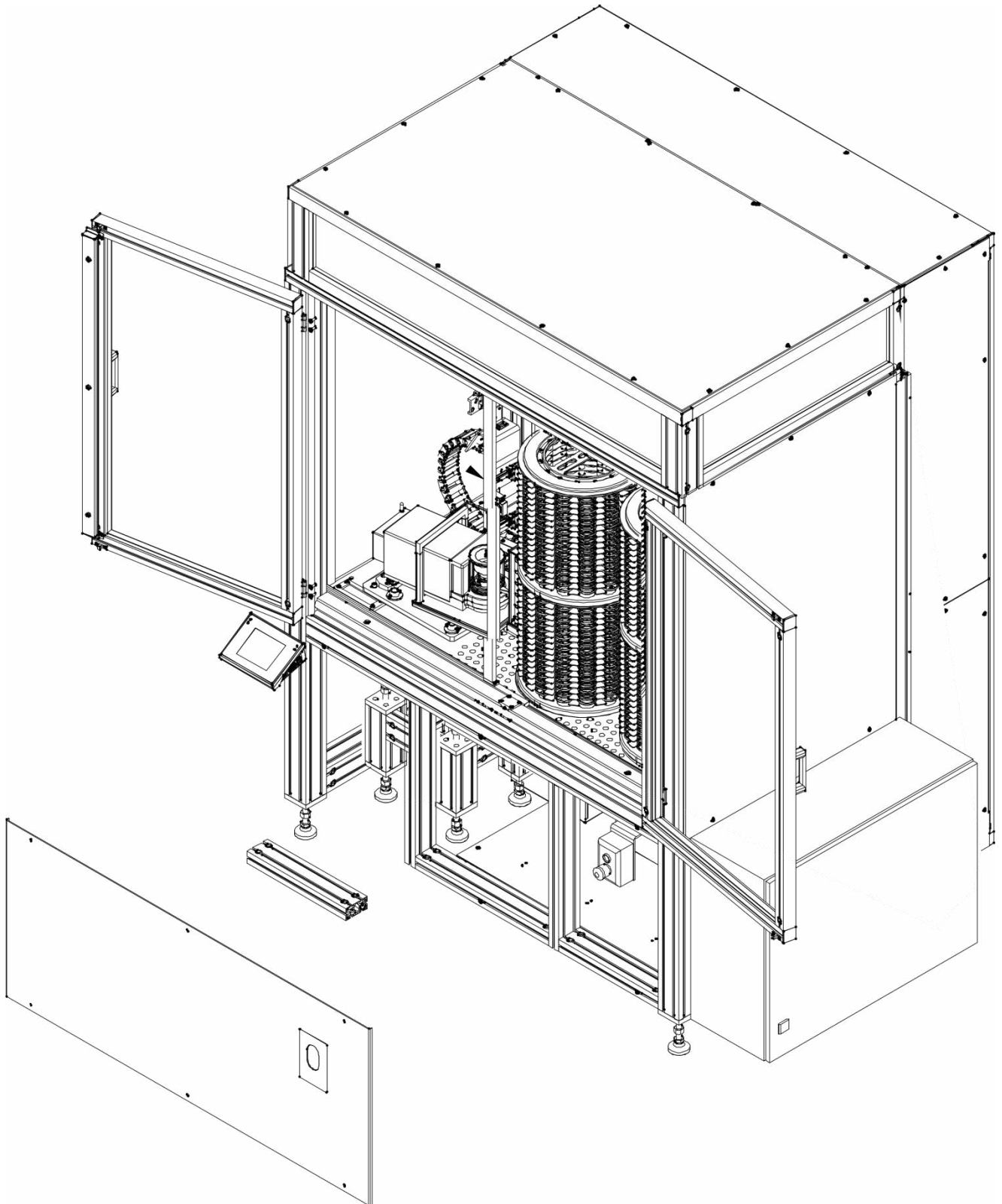
Step 19

Install filter magazines on rotating plates.



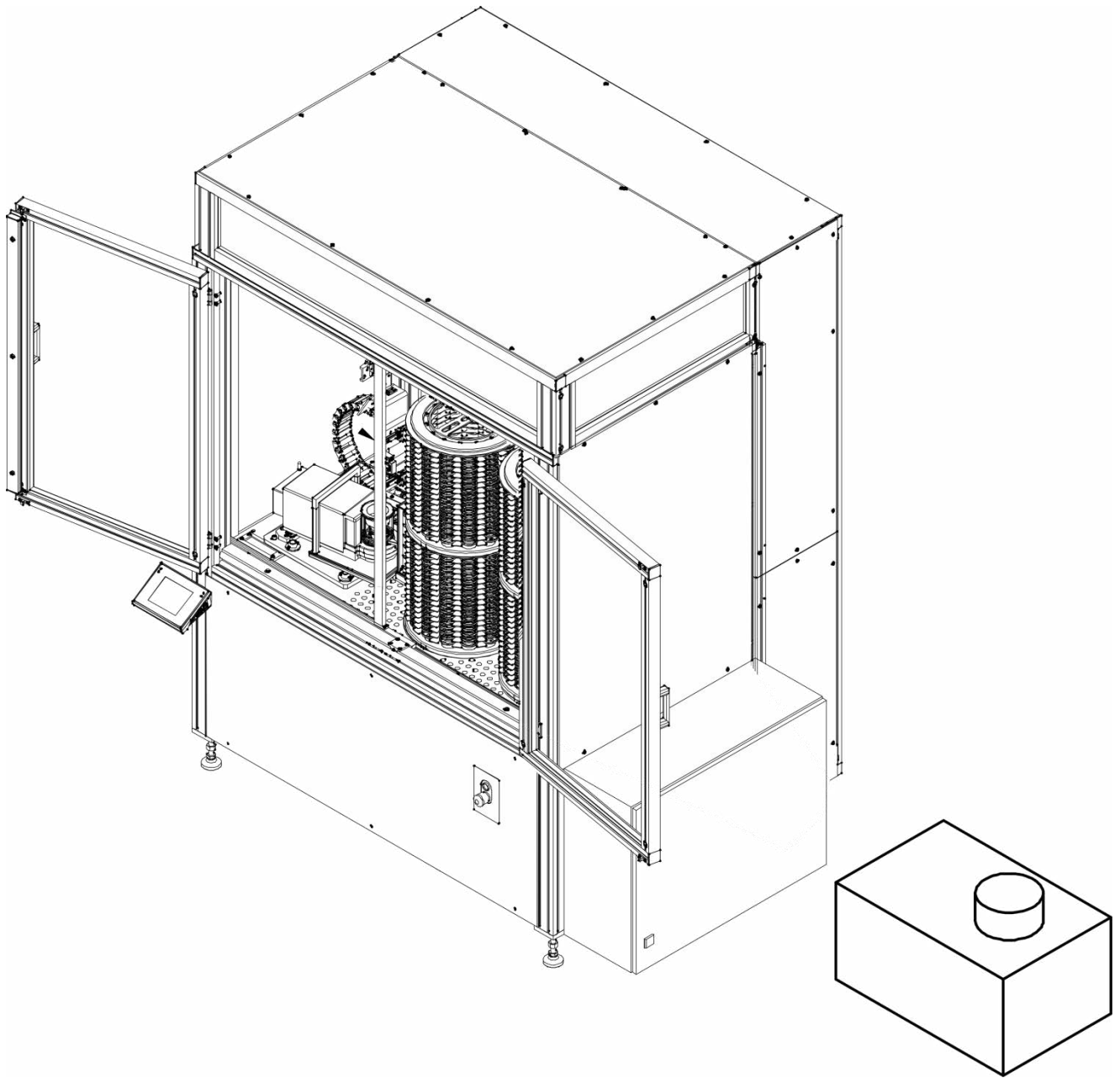
Step 20

Check and, if necessary, correct inclination of the main structure and microscale base (keep 12mm between bases). Once you have adjusted the inclination, check nuts on main structure legs, securing them against potential unscrewing. Attach the profile and frontal cover using M5x12 screws (6 pcs).



Step 21

Position in the suitable place and connect the chiller.



5.5. Connection to network

The device can be connected to the network only with the use of the original supply cable. The rated voltage of the network must comply with the rated voltage of the device power supply, showed in the rating plate.

To supply power to the device, insert the cable into the mains socket.

5.5. Temperature stabilisation time

Before you start measuring, wait for the device to stabilise thermally. With regard to devices that had been stored at a way lower temperature (e.g. in winter) before they were connected to the network, the acclimatisation and heating time is about 12 hours.

While the device is stabilising thermally, the values displayed may change. It is advisable to make sure changes to the ambient temperature in the place of using the device are minor and slow.

5.6. Connection of additional equipment

Only the additional equipment that has been recommended by the manufacturer can be connected.

Before you connect or change the additional equipment (printer, PC, USB-type PC keyboard or additional display unit), unplug the device. After connecting additional devices, reconnect the device to power supply.

5.7. Cleaning and maintenance



Electric shock

The device is equipped with an ioniser. For this reason you need to adopt special safety measures while performing any maintenance works.

1. The device must be unplugged before you initiate any maintenance works.
2. Never open the housing of the device, terminal, ioniser or power adapter as they are free from any internal units that would require cleaning, repairing or replacing.
3. Do not reconnect the device if the cleaned parts are still wet.
4. If you intend to maintain or clean the ioniser or similar units, wait for at least 5 minutes after you disconnect the device from the supply voltage – in the non-voltage condition.
5. The emitter mandrels are sharp so you must not touch them, otherwise it may lead to bodily injuries.

Wipe the ioniser covers with a lint-free cloth saturated with an alcohol-based agent at least once a month.



Note:

Cleaning the weighing pan after it has been installed may lead to damage to the device.

1. Disassemble the weighing pan and other moving parts of the device. Remain very careful while performing these works in order not to damage the mechanism. It is advisable to use tweezers to remove weighing pan in microscopes.
2. As far as possible, suck the dust out of the weighing chamber using a small keyboard cleaner.

CARRIAGE GUIDE GREASING

It is required to grease guide axes every 200-600 man-hours.

The guides with a profile rail must be greased with a grease or oil.

The grease manufacturer's guidelines must be followed in this respect. After installing the rail guide, grease it for the first time. Next it is advisable to regularly grease it as per the table below. The amount of grease required for activation and supplementary greasing is showed in the table below. If the guides with a profile rail are vertical, mounted to the side or with a profile rail to the top, the amount of supplementary grease rises by about 50%.

Instructions of greasing for guides with HIWIN profile rail

Similar to every rolling bearing, the guides with a profile rail require sufficient amount of grease. Basically it is possible to grease them with a grease and oil. The grease is a structural element and must be considered at the machine design stage. Greases lower the wear, secure against dirt, prevent corrosion and prolong life of the device thanks to their properties. Dirt may accumulate on unsecured profile rails. These pollutants must be removed on a regular basis.

Grease application

For grease application, we recommend greases as per DIN 51825:

For regular loads – K2K

For higher loads (C/P < 15) – KP2K with NGLI 2 consistency class as per DIN 51818

Please follow the grease manufacturer's guidelines.

1. Short strokes. With regard to short strokes, the number of greasing as per table below. Double it. Stroke <2 x carriage length: Install greasing connectors on both sides of the carriage and grease. Stroke <0.5 x carriage length: install greasing connectors on both sides of the carriage and grease. Move the carriage two lengths. If it is not possible, contact us.
2. Basic greasing upon start-up. The guides with a HIWIN profile rail are delivered as preserved. The first greasing procedure is performed at three stages: Supply the amount of grease as per table below. Move the carriage a few times, three lengths. Repeat the procedure two more times.
3. Supplementary greasing. The frequency of supplementary greasing widely depends on loads and ambient conditions. The impact of surrounding, such as high loads, vibrations and pollutants, shorten greasing intervals. If the surrounding is clean and loads are minor, greasing intervals can be prolonged. For normal working conditions, see the table below for supplementary greasing dates.

HIWIN recommends the following greases:

BEACON EP1, Fa. ESSO

Microlube GB0, (KP 0 N-20), Staburags NBU8EP, Isoflex Spezial, Fa. KLÜBER
 Optimol Longtime PD0, PD1 or PD2 depending on the application temperature, Fa.
 OPTIMOL
 Paragon EP1, (KP 1 N-30), Fa. DEA
 Multifak EP1, Fa. TEXACO

Supplementary greasing periods for grease application

Nominal value	Supplementary greasing intervals [km] for load of < 0,10 Cdyn
15	1000

Amounts of grease

Nominal value	Amount of grease upon activation (start-up) [g]	Amount of grease for supplementary greasing [g]
15	0,8 - 1,1	0,5

Oil greasing

Nominal value	First and supplementary greasing [cm ³]
15	0,5

Cleaning Draft Shield Panes

Select dissolvent depending on a dirt. Never soak the glass panes in alkaline solutions since they interact with glass and may cause damage. Do not use cleansers containing abrasive substances.

For organic dirt use acetone first, next use water or detergent. For other than organic dirt use diluted acid solutions (soluble salts of hydrochloric or nitric acid) or base solutions (ammonium or sodium base).

To remove ACIDS use protophilic solvent (sodium carbonate), to remove BASE use protogenic solvent (mineral acid of various concentration).

In case of heavy contamination use brush and detergent, nevertheless avoid detergents containing large and hard molecules which could potentially scratch glass panes.

At the end of the cleaning process rinse the pane using distilled water.

Use soft brush with wooden or plastic handle exclusively in order to avoid risk of scratches. Do not use wire brush.

Rinsing is a necessary cleaning process stage allowing to remove remaining soap, detergents and other cleansers from the panes prior their reinstallation.

After preliminary cleaning process stage, rinse the pane using running water first, distilled next.

Avoid drying the panes either using paper towel or forced air circulation since some fibres, grains or contamination of other type could permeate into the panes thus causing weighing errors.

We do not recommend using driers when drying measuring glass tools.

It is a frequent treatment to leave glass components on a rack to dry.

Cleaning Powder-Coated Components

For preliminary cleaning process stage you need running water or wet sponge featuring large holes, this will help you to remove loose, heavy dirt.

Do not use cleansers containing abrasive substances.

Next, using cloth and cleanser-water solution (soap, dishwashing liquid) gently rub the cleaned surface.

Avoid using cleanser without water since it may result with damage of the cleaned surface, please mind that large amount of water mixed with cleanser is a must.

Cleaning Aluminium Components

While cleaning aluminium components use products acid by nature, e.g. spirit vinegar, lemon. Do not use cleansers containing abrasive substances. Avoid using hard brush, this may cause scratches. It is recommended to use microfibre cloth.

While polishing the surface use circular movements. Use clean, dry cloth to make the surface shine.

Cleaning Stainless Steel Components

When cleaning stainless steel components the following table should be followed, which lists the types of contamination and ways of removing it.

Fingerprints	Clean with alcohol or dilutant. Rinse with clean water and wipe dry.
Oils, fats, greases	Wash with organic solvents and then clean with warm water with soap or mild detergent. Rinse with clean water and wipe dry.
Temperature stains and discolorations	Wash with a gentle abrasive cleaner, clean lightly according to the direction of the surface structure. Rinse with clean water and wipe dry.
Strong discoloration	Clean lightly according to the direction of the surface structure. Rinse with clean water and wipe dry.
Traces of rust	Moisten with oxalic acid solution and leave for about 15-20 minutes, then wash with warm water with soap or mild detergent. Rinse with clean water and wipe dry.
Paints	Wash with paint solvent and then rinse with warm water with soap or mild detergent. Rinse with clean water and wipe dry.
Scratches on the surface	Gently polish the surface with a non-woven fabric (iron-free) according to the direction of the surface structure. Wash with a gentle abrasive cleaner. Rinse with clean water and wipe dry.

Cleaning ABS Components

To clean dry surfaces and avoid smudging, use clean non-colouring cloths made of cellulose or cotton. You can use a solution of water and detergent (soap, dishwashing detergent, glass cleaner). Gently rub the cleaned surface and let it dry. Repeat the cleaning process if needed.

In the case of hard to remove contamination, e.g.: residues of adhesive, rubber, resin, polyurethane foam etc., you can use a special cleaning agents based on a mixture of aliphatic hydrocarbons that do not dissolve plastics. Before using the cleanser for all surfaces we recommend carrying out tests. Do not use cleansers containing abrasive substances.

5.9. Preventive and corrective measures

In case of irregular operation of the device, turn the device off and contact RADWAG.

While the device is operating, periodically check (at least once per 7 days) ice water level in the chiller. If the water level drops below the minimum line, add demineralised water.

Periodically vacuum the chiller condenser as the cooling performance is affected if the condenser is clogged.

Periodically check and, if necessary, clean the mesh filter at the chiller water inlet.

6. ACTIVATION:

- After supplying power, the device will be activated instantly.
- Once the start-up procedure is finished, the home screen of the program will be activated instantly.
- The device activates with the unlogged operator (no operator). To start working, log in (the login procedure is described further in the manual).

Note: *Activate the device without any load – with an empty weighing pan.*

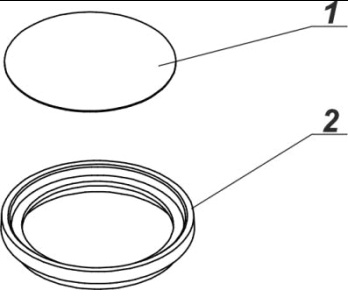
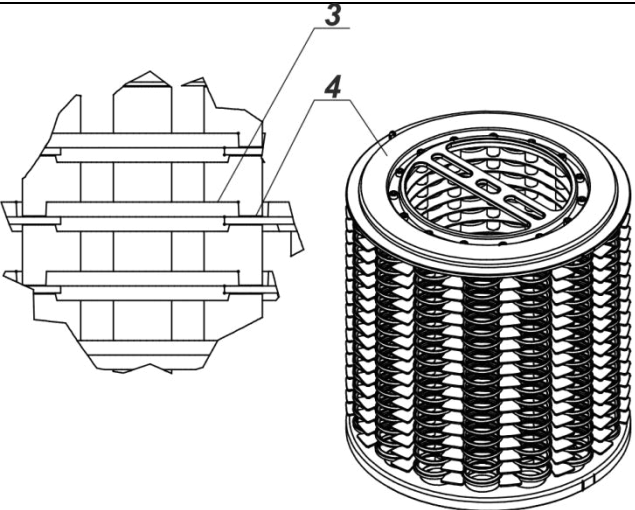
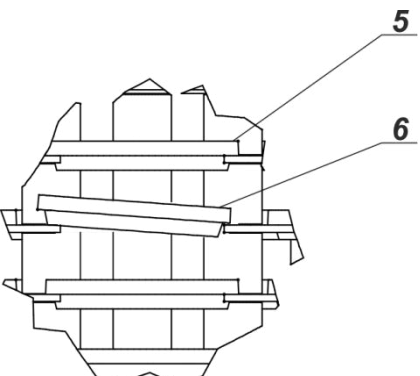
For correct operation of the device, the device must be assigned the following settings:

1. **Automatic calibration - NONE**
2. **In the quick-access keys lower bar, set the following:**
 - **Key 4 – TURN AXIS 1 LEFT**
 - **Key 5 – TURN AXIS 1 RIGHT**
 - **Key 6 – TURN AXIS 2 LEFT**
 - **Key 7 – TURN AXIS 2 RIGHT**
 - **left proximity sensor – NONE**
 - **right proximity sensor - NONE**

The description of key setting can be accessed in the point 16.3

3. **Transmission rate for COM1 port - 57600**
4. **IP address for ETHERNET – 192.168.0.6**
5. **Mask for ETHERNET – 255.255.255.0**

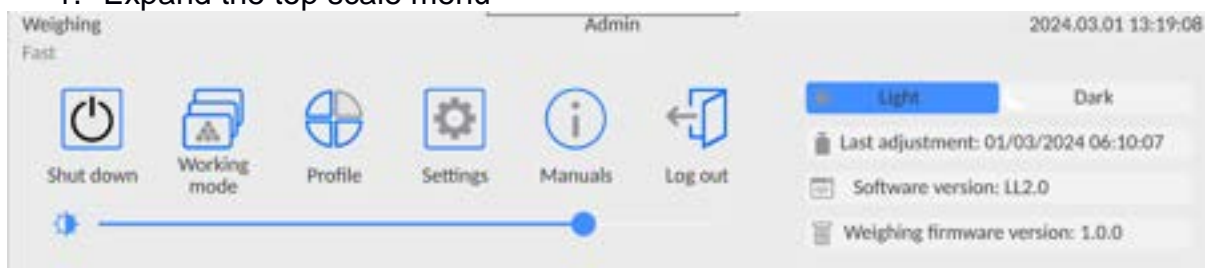
6.1. Placement of filter cassettes in filter magazine

	<p>Place the filter (1) in the ring seat (2) so that it is perfectly fitted and does not stick out of the ring.</p>
	<p>When the ring with the filter (3) is ready, place it in the suitable magazine seat (4).</p>
	<p>NOTE! <i>When putting rings into magazine seats, remain careful and make sure rings are properly inserted.</i></p> <p><i>Position 5 – correct position of the ring.</i></p> <p><i>Position 6 – incorrect position of the ring – may lead to device damage.</i></p>

6.2. How to properly turn off the scale's power supply

Procedure:

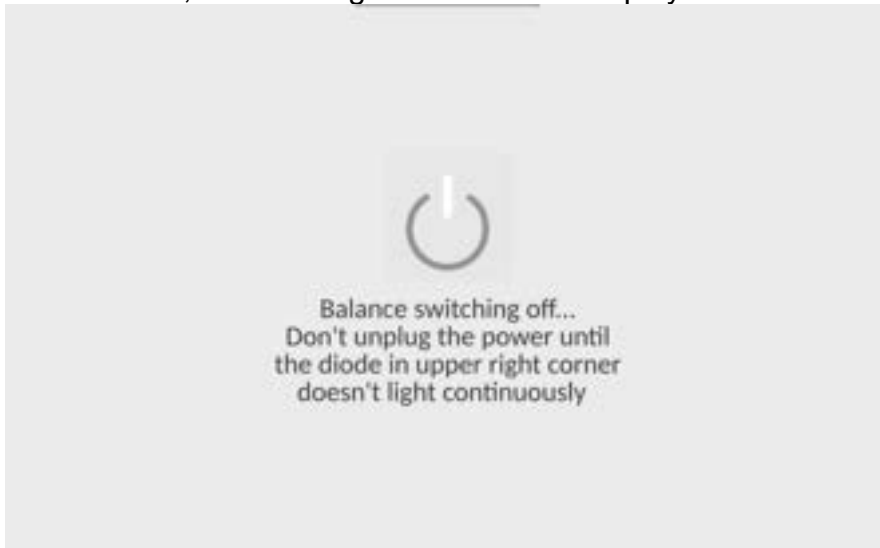
1. Expand the top scale menu



2. Press the <Off> button



Select <Off>, the message below will be displayed.



3. After closing the program, the LED in the upper right corner of the display will light up continuously.
4. Only then can you disconnect the power supply plug from the read head socket.

7. PROGRAM

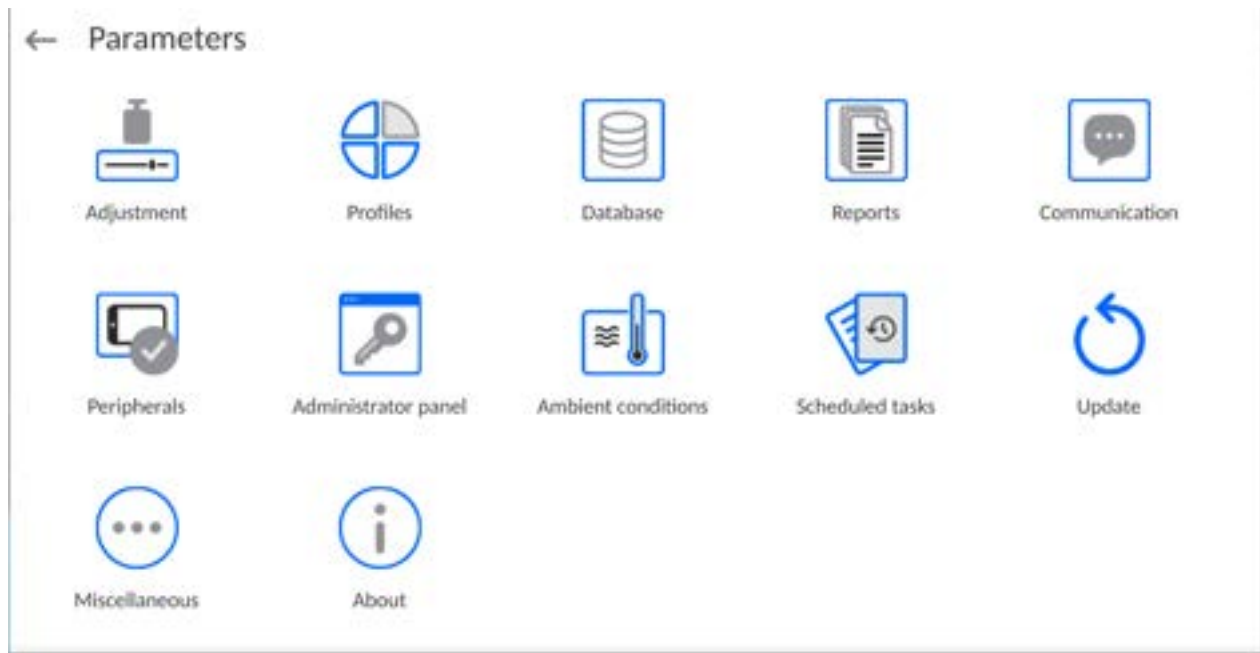
Program menu is divided into function groups. A function group is a group of interrelated parameters. For detailed description of each group, read later sections of this service manual.

Function groups:



The main menu is accessed by pressing  button located in the bottom part of the display.

The menu comprises parameters related to balance settings, functions and profiles.



8. WEIGHING RESULT WINDOW

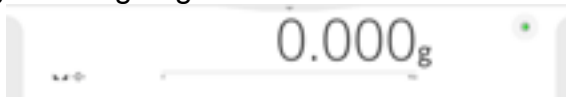


The home screen features 5 sections:

- Top section displaying data on active working mode, logged-in user, date, time, computer connection status.



- Section presenting the weighing result and a current level status.



- Section comprising supplementary information on currently performed operations (grey background).



CAUTION:

Data contained in this workspace is freely configurable. For detailed information, read section 14 of this user manual.

- Section comprising on-screen function buttons:



CAUTION:

The operator can define the on-screen function buttons. For detailed information, read section 14 of this user manual.

- Section comprising on-screen function buttons:



9. LOG IN OPERATION

In order to access operator-related parameters and edit databases, you need to log in as an operator with **<Administrator>** permission level.

To do this, pull down the menu at the top of the display.



First Log in:

- Pull down the top menu, press **<Log in>** field, operators database window is opened featuring **<Admin>** entry.



- The home screen is displayed, **<Not logged in>** sign is replaced by **<Admin>** sign.

CAUTION: After first logging in, enter operators and assign appropriate permission levels and individual access passwords to them (for detailed procedure, read sections 12 and 16.2). While logging in again, select an operator from the list and enter the password, the program initiates operation with permission level set for the selected operator.

Log out operation:

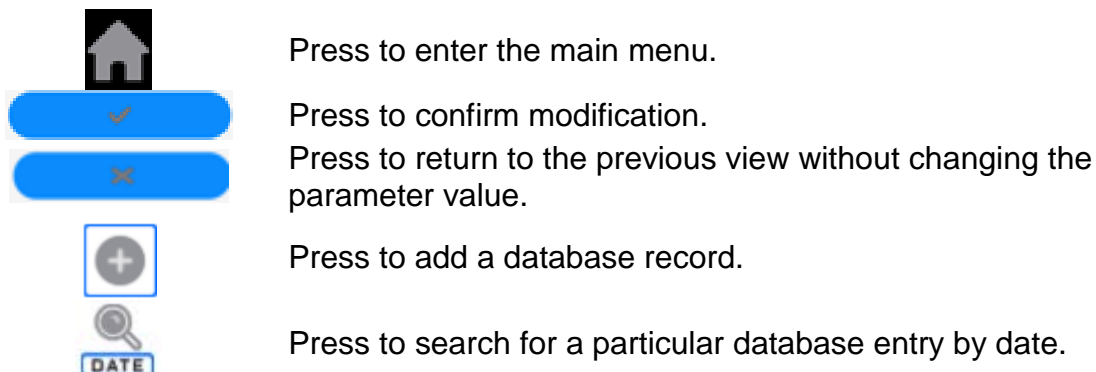
- Pull down the menu at the top of the display.
- Press **<Log out>** field.

The home screen is displayed, logged in operator name is replaced with **<Not logged in>** entry.

10. OPERATING THE MENU

Operation of the program menu is intuitive. The touch panel makes the software operation easy. Pressing a function button or an area on the display initiates an assigned function or a process.

10.1. Operation Panel





Press to search for a particular database entry by name.



Press to search for a particular database entry by code.



Press to print database entries.



Press to select printout template variables from the list.



Press to go back.

10.2. Voice Commands

The balance software allows several operations to be performed using voice commands. These are: tare, zero, print/save measurement. The commands must be spoken in English, in the correct sequence. Below is the structure of the individual commands.

Tare: **ellipsis [please] (tare | tar | terre) [the] device**

Zero: **ellipsis [please] zero [the] device**

Print/Save: **ellipsis [please] save [the] (mass | measurement | mass measurement)**


Open automatic door: **ellipsis open door**

Close automatic door: **ellipsis close door**


How to say the command: black text is mandatory, green - may or may not be spoken, red - one of the texts is mandatory to be spoken
e.g: for Print command: **ellipsis save mass**.

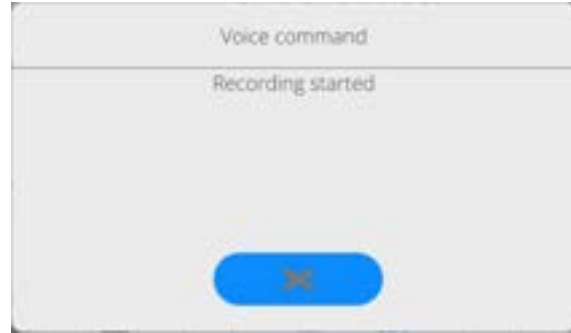
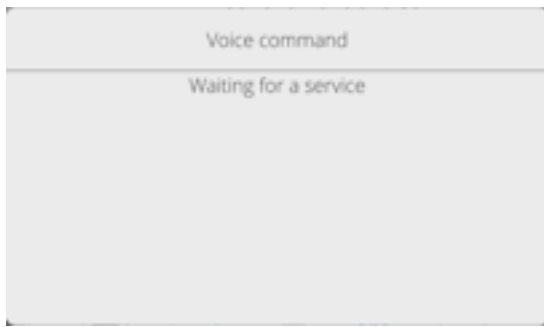
Procedure:



1. Place the <  > button for activating voice commands on the button bar (for how to add buttons, read further down this manual).



2. Press <  >.
3. The voice command recognition procedure is initiated and the user is informed about it through the displayed messages.





4. Say the command as described above.
5. If the command is spoken correctly and the balance program recognizes the command, a message is displayed and the command is automatically executed.



10.3. Return to Weighing

Modifications introduced into balance memory are automatically saved upon return to weighing operation.


Procedure:

- Press  button repeatedly, keep pressing it until you see the home screen.
- Press  button (top bar), the home screen is displayed immediately.

11. ADJUSTMENT

The 5Y series balances feature automatic internal adjustment system which ensures correct measurement accuracy. <ADJUSTMENT> menu contains functions controlling operation of module adjustment process.

11.1. Internal Adjustment

Internal adjustment is carried out by means of an internal adjustment weight.  <Internal adjustment> button, when pressed, automatically triggers adjustment process. Upon adjustment process completion, a respective message, informing about process end and its status, is displayed.

Each time before the internal adjustment, the balance level is checked. When the balance is not levelled, the internal adjustment takes place only upon prior levelling.





Caution: *Balance adjustment procedure requires stable conditions (no air drafts, no vibrations). In the course of adjustment the weighing pan must be unloaded.*

11.2. External Adjustment

External adjustment is carried out using external mass standards of the right accuracy and weight value, which value depends on balance model and capacity. The process is carried out semi-automatically, successive process stages are signalled with prompts.

Caution: *External adjustment is possible for balances that are not subject to the conformity assessment (verification).*

Procedure:

- Enter <Adjustment> submenu, next select <External adjustment> option.
- Message to remove weight is displayed. Unload the weighing pan and press  button. The balance determines start mass, message: **Start mass determination** is displayed.
- Upon completed start mass determination, message ordering you to load the weighing pan is displayed. Load the weighing pan with weight of respective mass value, and press  button.
- For some balance types, the next message is displayed. Load the weighing pan with weight of subsequent mass value, and press  button.
- Upon completed procedure, unload the weighing pan and press  button to confirm. Balance returns to the weighing process.

11.3. Adjustment Test

<Adjustment test> function enables comparing the result of an internal automatic adjustment with the value recorded in balance factory parameters. The comparison is used for determining drift of balance sensitivity over time.

11.4. Automatic Adjustment

Enter this menu to specify conditions initiating an automatic adjustment. Options:

- None – automatic adjustment inactive.

- Time – adjustment takes place in time intervals declared in <Automatic adjustment time> menu
- Temperature – adjustment is triggered by temperature change.
- Both – adjustment is triggered by both, temperature changes and time.

Caution: This parameter's settings can be modified only for balances that are not subject to the conformity assessment (verification).

11.5. Automatic Adjustment Time

<Automatic adjustment time> parameter determines time interval between successive automatic internal adjustments. The time interval is declared in hours and ranges between 1 and 12 hours.

To set time interval for automatic adjustment:

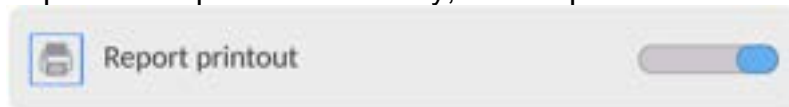
- enter <Automatic adjustment time> parameter,
- using the displayed menu, select the appropriate time interval (given in hours), which is to elapse between the most recent adjustment and activation of the following automatic internal adjustment.

Caution: This parameter's settings can be modified only for balances that are not subject to the conformity assessment (verification).

11.6. Report Printout

<Report printout> parameter determines whether or not an adjustment report is to be automatically printed upon adjustment process completion.

To print the report automatically, set the parameter as active.



11.7. GLP Project

GLP is one of many methods for documenting work in accordance with adopted quality system. Data selected for printing is printed on each release of an adjustment report. Information and signs to be used in a GLP report:

adjustment (adjustment type)	working mode (working mode name)
date	time
balance type	balance S/N
operator	first and last name
level status	nominal mass
current mass	difference
nominal mass 2	current mass 2
difference 2	temperature
dashes	empty line
signature	non-standard printout

11.8. Adjustment History

Adjustment history contains data on all carried out adjustment processes. The record is carried out automatically. Each adjustment record comprises basic data on completed process. This menu enables displaying the list of completed adjustment processes. Each report is printable.

In order to print an adjustment report, enter <Adjustment> submenu, next enter <Adjustment history> parameter, select adjustment to be printed. Record details are displayed, press


< > print button.

Caution: *If the balance memory is full, then the oldest record gets automatically deleted.*


If internal procedures of an organization require maintaining complete documentation concerning all carried out adjustment processes, then the list with adjustment records has to be printed and archived periodically.

Searching for adjustment record

It is possible to search for a specific completed adjustment record. To do that,

press < **DATE** > button and enter date of an adjustment process that is to be found.

Exporting data on completed adjustment process

Connect a USB flash drive to the balance USB port. Press < > button located in the upper right corner of the display. The process is fully automatic and on its completion a file with **.db.** extension is saved to a USB flash drive connected to the USB port.

12. ADMINISTRATOR PANEL

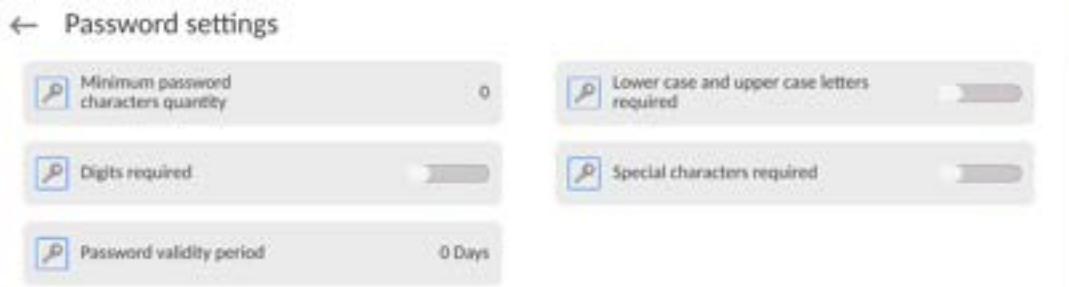
This menu enables to determine: activities to be carried out by an operator with certain permissions, password strength and permissions for unlogged operator.

CAUTION: *Only operator with Administrator permissions can modify permission-related parameters.*



5.5. Password Settings

This submenu is designed to set password sophistication rate.



Minimum password characters quantity	Determining quantity of characters in operator's password. For '0' value set any quantity of characters.
Lower case and upper case letters required	Parameters specifying requirements regarding password characters type and format.
Digits required	
Special characters required	
Password validity period	Determining time interval in days after which the password has to be changed. For '0' entry password change is not required.

12.1. Operator Accounts Settings



Unlogged operator permissions

Administrator can assign an unlogged balance operator (so called anonymous operator) with permissions level.



Procedure:

Enter <Operator accounts settings> submenu, select <Anonymous operator> option, next set respective permissions: Guest, Operator, Advanced operator, Administrator.

Caution: Operator assigned with <Guest> permissions level is not allowed to modify program settings.

Auto logout

With Auto logout function on, the operator is logged out automatically if the balance is not operated within a specified time interval, given in minutes. By default, the function is disabled (<None> entry set).

Procedure:

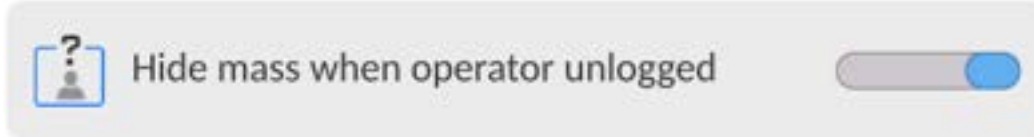
Enter <Operator accounts settings> submenu, select <Auto logout> parameter, next set respective value: none/3/5/15/30/60. Time given in [min].

Hide mass when operator unlogged

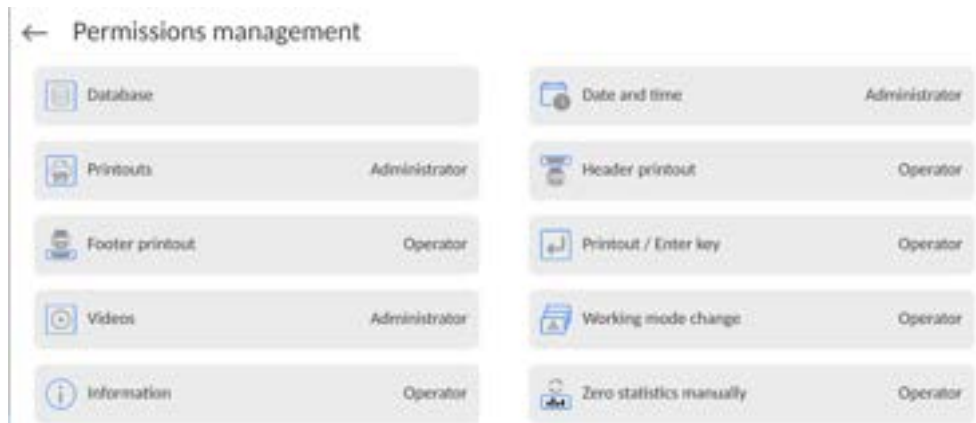
Option to disable the mass result display if the operator is not logged in. By default, the function is disabled.

Procedure:

Enter <Hide mass when operator unlogged> option and set it to active.



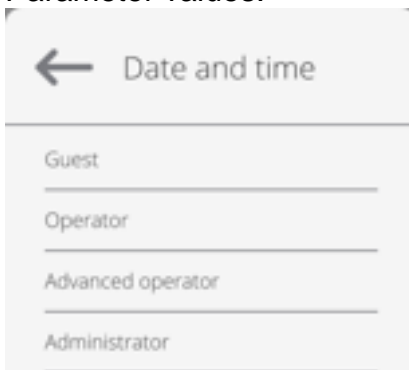
12.2. Permissions Management



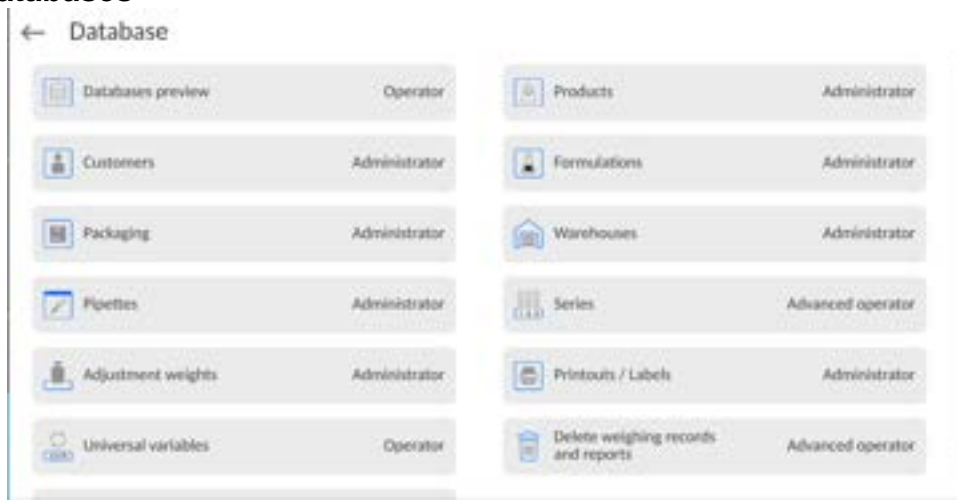
Caution: When the <Guest> option is set for individual parameters, their settings can be freely accessed (there is no need to log in).

Each option can be assigned with a permissions level to edit it.

Parameter values:



Databases



Default balance settings enable an operator who is logged as **Administrator** to modify settings of particular databases. The values can be changed depending on the needs.

The editing permissions for the other options available in this menu can be changed on a similar basis.

12.3. Remote access password



The balance allows you to gain remote access, using connection between the balance and local Internet network that a PC is connected to. The **VNC Viewer** application can be used for this purpose.

A default access password in the program is a sequence of the following characters: **radwag1234**. If the operator does not wish to use the default password, he must enter its own unique access password in the relevant field.

Note: please remember a new password in order not to lose a remote access to the balance.

13. PROFILES

A profile is a data pack that determines:

- particular function operation, e.g. 'Parts counting', 'Percent weighing', etc.,
- data to be displayed during operation,
- function keys to be active,
- measuring units to be accessible,
- criteria determining speed of operation and measurement stability,

Balance software allows you to create numerous profiles, this enables:

- designing an individual working environment by each operator,

- customized balance operation, i.e. activating selected function keys and information (improved operation performance).

For ease of operation, 4 default balance profiles have been designed. The profiles settings provide optimal weighing process for particular requirements and conditions.

Profile types:

- **Fast** – profile set to enable fast measurement of mass of any size regardless of the selected working mode. Fast profile gets activated automatically at the first balance start-up. For Fast profile, the parameters settings enable obtaining the final result as fast as possible.
- **Fast dosing** – profile intended for dosing, it is set to enable fast dispensing of product. For this profile selected, the DOSING mode gets activated automatically,
- **Precision** – profile set to enable precise measurement of mass of any size regardless of the selected working mode. For this profile the weighing process takes a lot of time, but this guarantees the most precise weighing result.
- **User** – basic profile, filters settings provide quite fast and precise measurement. For this profile selected, the WEIGHING mode gets activated automatically.

Caution: As an operator, you can modify all profile settings only for User profile. When it comes to the remaining default profiles (Fast, Fast dosing and Precision), they can only be modified partially. Each additional profile you created can be modified in terms of all settings.

13.1. Creating a Profile

The Administrator can create new profiles by:

- Copying an already existing profile and modifying it,
- Creating a new profile.




Copying an existing profile

Procedure:

- Enter the main menu, to do it press  button.
- Enter  > submenu.
- Press and hold the profile that is to be copied.
- Menu referring to the profile record is displayed. Select <Copy> parameter.
- A new <Name copy> profile is created, new profile settings and base profile settings are identical.
- Modify necessary data: (name, etc.).

Adding a new profile

Procedure:



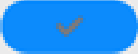
- Enter the main menu, to do it press  button.
- Enter  > submenu.
- Press  button.

- A new profile is added automatically, it is opened in an editing mode.



Deleting a profile

Procedure:

- Enter the main menu, to do it press  button.
- Enter  submenu.
- Press and hold the profile that is to be deleted.
- Menu referring to a profile record is displayed. Select <Delete> parameter.
- Message box: <Delete?> is displayed.
- Press  button to confirm, the profile gets deleted.

Caution: In order to operate profiles, it is necessary to log in as an Administrator.

13.2. Profile Structure

Profile parameters list:

Settings	Enter this menu to set an individual profile name (an order of alphanumeric characters), and to declare a default working mode (the selected mode is activated as default upon selecting the profile).
Working modes	Option to set specific functions for individual working modes. Mode submenus: <ul style="list-style-type: none"> ▪ Mode related settings ▪ Buttons ▪ Information ▪ Printouts
Readout	Readout submenus: <ul style="list-style-type: none"> ▪ Filter ▪ Value release ▪ Autozero ▪ Autozero: Dosing ▪ Last digit ▪ Last digits quantity ▪ Ambient conditions
Units	Enter this menu to declare the start unit, the supplementary unit, 2 custom units, to enter the value of gravitational acceleration force in balance's operation place and to declare availability of individual units.

13.2.1. Settings

Name

Upon entering this parameter, a message box with an on-screen keyboard is displayed.

Enter the name of a profile and press  button to confirm. The name is assigned to the profile.

Default working mode

Upon entering this parameter, you can select a specific working mode that is to be set as default. For <None> value set, upon selecting the profile, the balance activates the most recently used working mode.

13.2.2. Working Modes

Upon entering Working Modes parameter, a window containing all accessible working modes is displayed. Parameters are set for each working mode independently. Particular profile when activated runs with a given set of parameters.

List of parameters common for each working mode:

- **Settings:**
specific parameters relating to a working mode, and universal settings such as: result control, tare mode, automatic footer printout, printout mode, printout.
- **Functions of quick access buttons:**
declaring quick access buttons to be displayed.
- **Information:**
declaring information to be displayed.
- **Printouts:**
declaring type of a printout or defining a non-standard printout.

13.2.3. Readout

You can adjust the balance to ambient conditions (filter level) or to your own needs. <Readout> menu contains the following elements:

FILTER (function disabled for Fast, Fast dosing, Precision profiles)

Each measurement signal, before being displayed, is electronically processed in order to provide correct parameters specific for a stable measurement result (ready to be read).

You can determine signal processing rate, there are five different filters:

Range:

- very fast, fast, average, slow, very slow.

While setting the filter, consider the actual operating conditions. In the case of very good operating conditions, select average or fast filter, in the case of rough conditions, select slow or very slow filter.

CAUTION:

- *For precision balances, it is recommended to select very fast, fast or average filter÷.*
- *For analytical balances and microbalances, it is recommended to select average, slow or very slow filter÷.*

Value release (option disabled for Fast, Fast dosing, Precision profiles)

The parameter has been designed to determine when the stability marker is to be displayed.



There are three different settings:

- fast, fast and reliable, reliable.

Caution: Both parameters, filter and value release, determine how long it takes to obtain stable result.

Autozero function

The function has been designed to enable automatic control and correction of zero indication.

If the function is enabled, the subsequent measurement results are compared to each other in constant time intervals. If the results differ less than declared AUTOZERO range, e.g. 1 division, the balance is automatically zeroed, and the pictograms of stable indication –  and precise zero –  are displayed. Active Autozero function means, that each measurement starts with the precise zero. There are, however, some cases when this function can be a disturbing factor for the measuring process, e.g. very slow placing of a load on the weighing pan (load adding, e.g. pouring, filling). In such case, the system correcting zero indication may also correct the actual indication of a load placed on the weighing pan.

Values: **NO** - autozero function disabled.
 YES - autozero function enabled.

Autozero function: Dosing (option disabled for Fast, Fast dosing, Precision)

The function has been designed to enable/disable autozero function for Dosing.

Options:

NO - autozero function disabled automatically when Dosing mode is run.

YES - autozero function enabled automatically when Dosing mode is run.

Last digit

The function has been designed to enable/disable visibility of the last decimal place of measurement result. Values:

- **Always:** all digits are displayed.
- **Never:** last digit disabled.
- **When stable:** last digit displayed only when the result is stable.

Last digits quantity

This function enables declaring the number of hidden last digits of the result. The function has three settings and works in connection with the <Last digit> option:

- **1:** the last digit of the result.
- **2:** the last two digits of the result.
- **3:** the last three digits of the result.

Ambient conditions

Parameter relating to ambient and environmental conditions of the workstation. For unstable ambient conditions, it is advisable to set the parameter to 'Unstable' value. By default, the parameter is set to 'Stable' value.

'Stable' value results with faster operation, i.e. weighing takes much less time than in the case of 'Unstable' value set.

- **Unstable; Stable.**

13.2.4. Units

For a selected profile, you can declare a start unit, supplementary unit and two custom units.

← Units



Units menu enables you to enter the value of gravitational acceleration force characteristic for a particular place of use. It is obligatory should the balance be used to determine mass in [N].

Custom unit features:

- Formula (*custom unit recalculation formula*): Coefficient * Mass or Coefficient / Mass.
- Coefficient (*coefficient for custom unit recalculation*)
- Name (*unique unit name to be displayed next to the result - max 3 characters*)

← Custom unit 1



Newly designed custom unit name is added to the list of accessible measuring units (refers to non-verified balances exclusively).

14. WORKING MODES – General Information

5Y series balances feature the following working modes:

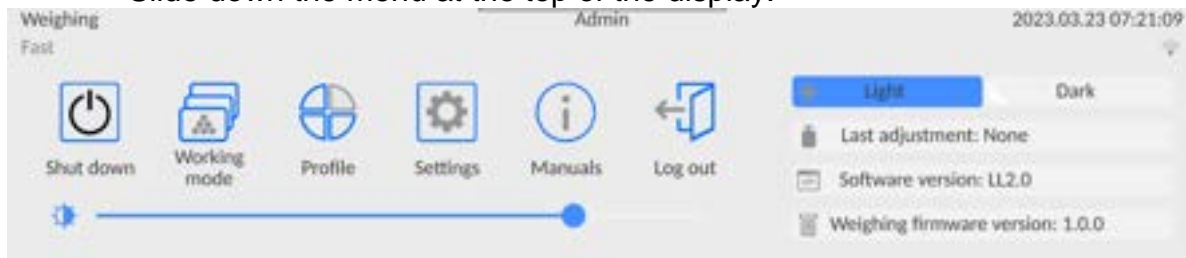
Weighing	Statistics
Means of operation: weight of a load is determined through an indirect measurement. The balance measures gravitational force which attracts the load. The obtained result is processed and displayed on the balance screen in a digital format.	Means of operation: carried out measurements are used to calculate statistical data such as Min, Max, deviation, etc.

Particular working modes feature specific settings. The settings enable adapting mode operation to your individual needs. The specific settings are activated upon selecting a respective profile. For detailed description of specific working mode settings, refer to the given working mode section.

14.1. Running Working Mode

To run working mode other than currently operated one:

- Slide down the menu at the top of the display.



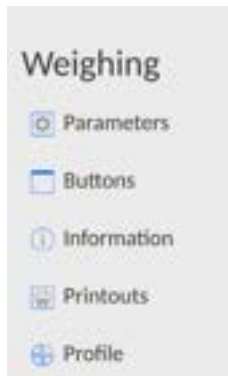
- Press <Working mode> option
- List of all working modes is displayed.
- Select the mode that is to be operated.

14.2. Working Mode Parameters

Each working mode has programmable parameters determining its functioning.

To access particular working mode parameters:

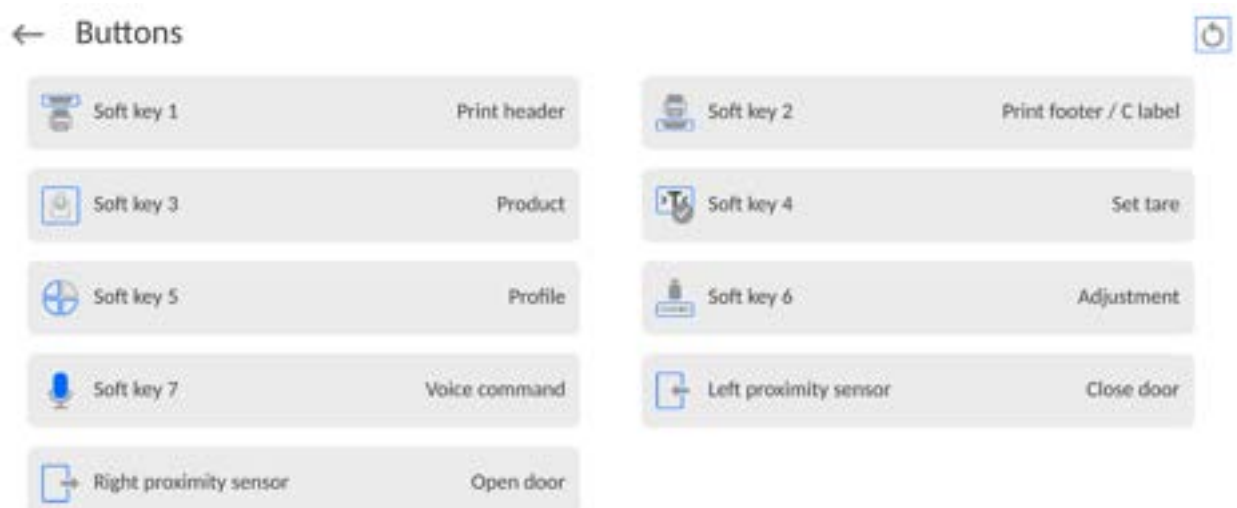
1. Slide out the menu on the left.




2. The following menu is displayed:
 - <Settings> - additional options.
 - <Buttons> - quick access buttons configuration.
 - <Information> - setting data that is to be displayed in the workspace.
 - <Printouts> - setting printout type and content.
 - <Profile> - profile settings
3. Enter particular submenu and select the component that is to be modified.

Description of basic parameters of <Settings> menu is to be found in section 15.6, *Additional Parameters of the Weighing Mode*. For detailed information on all but basic parameters of particular working modes, read given working mode section.

14.3. Quick Access Buttons, Proximity Sensors



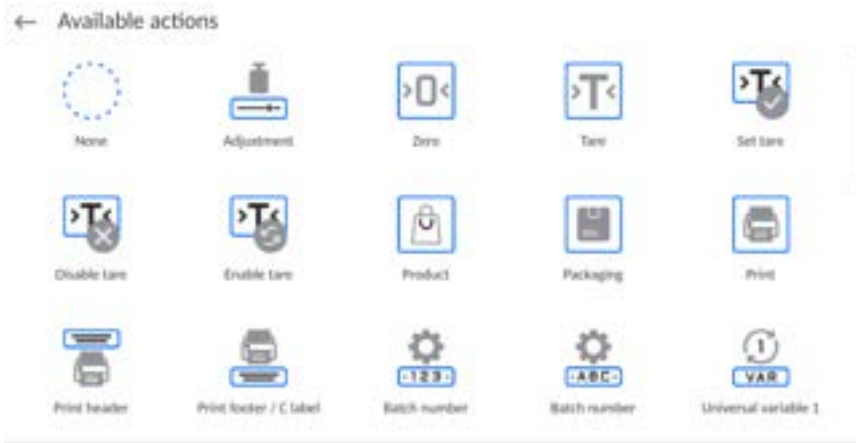
You can quickly restore default key arrangement in the bottom bar of the display, to do it click  button (top right-hand corner).

You can define up to 7 quick access buttons, which are to be displayed in the bottom bar. Upon assigning a function to a button a corresponding pictogram is displayed in the bottom navigation bar of the home screen. Each working mode features customized set of buttons. For complete buttons list, read Annex B. These are so called quick access buttons for triggering the most often performed operations.

Another way to add or change a button is to press and hold a field in the button bar for about 3s.




A window with the available buttons is displayed automatically.



Press the respective button; the software returns to the home screen, and the selected button appears in the place where it was activated.



Caution: You can view the user manual saved to the balance memory. In order to take advantage of this function, add Help  button to the tool bar.

14.3.1. Proximity Sensors

The balance is equipped with two proximity sensors which enable touch free control. The program detects four motions performed around the sensors:

1. Hand in a close vicinity to the <**Left proximity sensor**>.
2. Hand in a close vicinity to the right sensor <**Right proximity sensor**>.

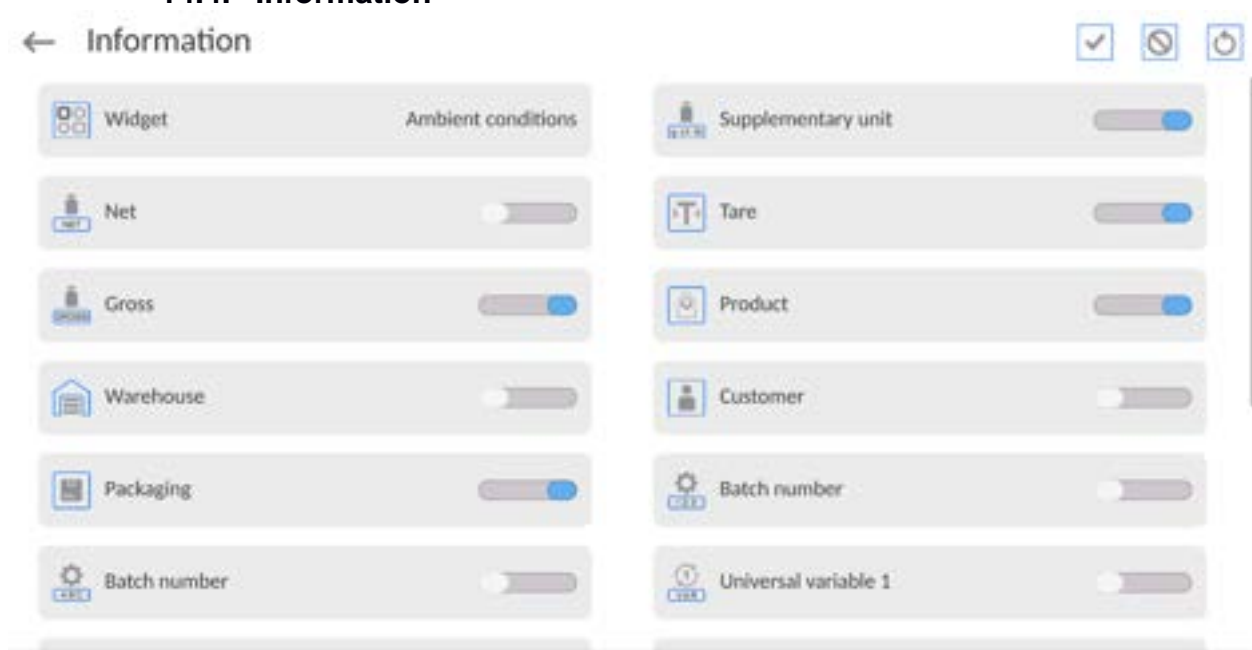
14.3.2. Automatic Door

Settings for devices equipped with automatic door opening and closing mechanism. The settings concern quick access buttons and proximity sensors.




MYA 5Y series balance:

- **Open/close door** – parameter for changing door state; e.g. door closing when the weighing chamber is open, and door opening when the weighing chamber is closed.
- **Left door** – changing position (open/close state) of the door on the left side of the weighing chamber.
- **Right door** – changing position (open/close state) of the door on the right side of the weighing chamber.

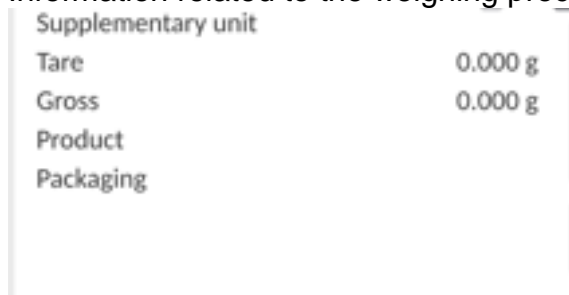
14.4. Information



You can quickly select/deselect info to-be-displayed, to do it use top right-hand corner buttons.

	Press to deselect all marked information.
	Press to select all marked information.
	Press to restore default settings.

Information related to the weighing process is displayed on the left side of the the display.



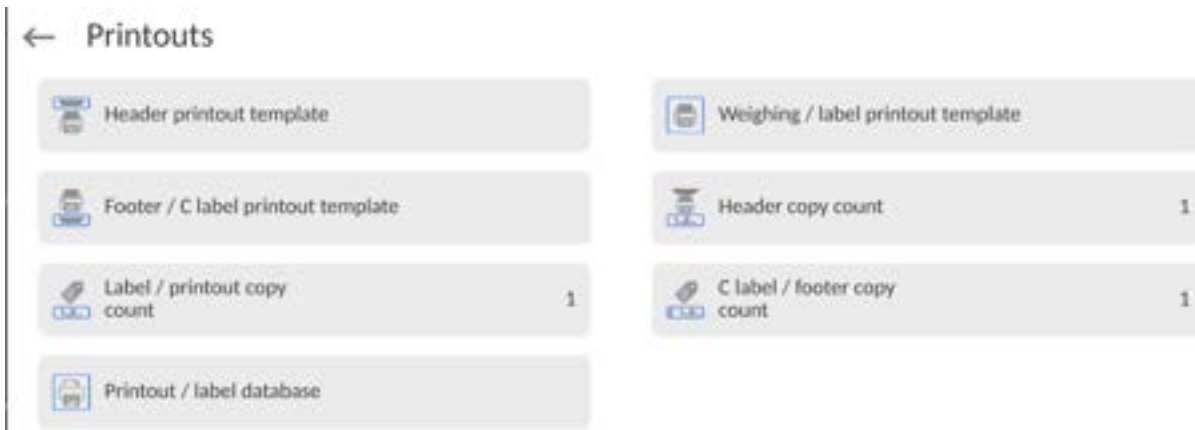
The workspace can contain up to six data. Mind that if you select more, only the first six of them are displayed. Each parameter features two options:



-  – data enabled.
-  – data disabled.




14.5. Printouts

<Printouts> menu comprises three setting sections:

1. Standard printouts: <Header printout template >, <Weighing/label printout template>, <Footer/C label printout template>,
2. Non-standard printouts: <Printout/label database>
3. Parameters enabling to set how many times the header, the weighing section, the footer, is to be printed upon single pressing of the button triggering particular printouts.



Standard printout comprise 3 sections featuring numerous variables. Set  for each variable that is to be enabled on the printout, set  for each variable that is to be excluded from the printout. To quickly change the settings press buttons located in the top right-hand corner.




	Press to deselect all marked variables.
	Press to select all marked variables.
	Press to restore default variables.



Procedure:

1. Press name of a selected template (Header – GLP Printout – Footer) and select variables that are to be printed.
2. If a printout is a non-standard one, create it.

<u>HEADER</u>	<u>GLP PRINTOUT</u>	<u>FOOTER</u>
<ul style="list-style-type: none"> – Non-standard printout – Dashes – Working mode – Date – Time – Balance type – Balance S/N – Operator – First and last name – Level status – Customer – Warehouse – Product – Packaging – Universal variable 1 ... 5 – Empty line – GLP report – Non-standard printout 	<ul style="list-style-type: none"> – Non-standard printout – N (measurement number) – Date – Time – Level status – Customer – Warehouse – Product – Packaging – Universal variable 1 ... 5 – Net – Tare – Gross – Current result – Supplementary unit – Mass – MW-Method – Reference tare – Minimum sample – Minimum sample status – Mass value for a titrator – ID – Non-standard printout 	<ul style="list-style-type: none"> – Non-standard printout – Working mode – Date – Time – Balance type – Balance S/N – Operator – First and last name – Level status – Customer – Warehouse – Product – Packaging – Universal variable 1 ... 5 – Dashes – Empty line – GLP report – Signature – Non-standard printout

HOW TO OPERATE PRINTOUTS

1. In order to print variables of the GLP PRINTOUT section, press  button on the operation panel; only variables with  attribute can be printed (see the above list).
2. Variables with  attribute, present in the HEADER and FOOTER, are printed **ONLY** upon pressing **PRINT HEADER** and **PRINT FOOTER** pictograms. The pictograms have to be added to the bottom bar of the display as quick access buttons. (For detailed instruction on how to add quick access buttons to the bottom bar of the display, go to section 14.3)

	
Print header data	Print footer data

CAUTION:


Measuring units for mass indication:

- Net – the main measuring unit (adjustment unit)
- Tare – the main measuring unit (adjustment unit)
- Gross – the main measuring unit (adjustment unit)
- Current result – currently displayed measuring unit
- Supplementary unit – supplementary measuring unit
- Mass – the main measuring unit (adjustment unit)

Non-standard printout

Non-standard printout may contain: TEXTS and VARIABLES (acquired from the software during printout). Each non-standard printout is a separate project, featuring a specific name by which it is identified and saved to the database of printouts.

Procedure:

1. Press <Non-standard printout> entry.
2. Press <Add>  button, window featuring Name/Code/Project data opens.
3. Set name and code of a printout.
4. Press <Project> button.
5. Printout edit box with an on-screen keyboard is displayed.
6. Use the keyboard to design printout template, the printout may contain texts and variables.


CAUTION:


- It is possible to add a printout by import of configured texts from flash drives connected to balance's USB port.
- Printout's name is **ONLY** a NAME, and it is not part of its content.
- For information on how to design a non-standard printout template, read section 16.8 Printouts.



14.6. Profiles

Profiles function has been described in section 13 Profiles.

15. WEIGHING

Load the weighing pan. Wait for a stable indication (stability marker, ) and read the measurement result.

Record/printout of the measurement result is available upon pressing  PRINT> key:

- for verified balances – only stable measurement result is saved or printed (stability marker  visible on the balance's display),
- for non-verified balances – stable and unstable measurement results are saved or printed (regardless of the stability marker  absence). For unstable measurement result, a question mark <?> is printed next to the mass value.

15.1. Weighing Unit Selection

Change of the weighing unit is carried out by pressing the weighing unit pictogram visible next to the measurement result. Upon pressing the weighing unit, a list of available units is displayed. Select the unit you need, the software automatically recalculates the indicated value.

Options:





unit	symbol	verified balance	unit	symbol	verified balance
gram	[g]	yes	Taele Singapore	[tls]	no
milligram	[mg]	yes*	Taele Taiwan	[tlt]	no
carat	[ct]	yes*	Taele China	[tlc]	no
pound	[lb]	no	Momme	[mom]	no
ounce	[oz]	no	Grain	[gr]	no
ounce Troy	[ozt]	no	Tical	[ti]	no
pennyweight	[dwt]	no	Newton	[N]	no
Taele Hongkong	[tlh]	no	Mesghal	[msg]	no



* - units accessibility is conditioned by the balance type.
For non-verified balances, all non-SI units are available.

15.2. Good Weighing Practice



To assure long-term operation and correct mass measurements, follow the rules presented below:

- Start the balance with no load on the weighing pan (permissible load value on the weighing pan at start is $\pm 5\%$ of the maximum capacity).



YES	NO	YES	NO
			
Load the weighing pan steadily avoiding shocks: Go to Setup/Misc./Vibrations detection parameter and enable control of weighing pan loading (for detailed information, read section 21.8).		Place weighed loads centrally on the weighing pan.	

NO	NO	
		
Avoid side loading, in particular side shocks.		

Prior to weighing or in the case of ambient conditions change, it is necessary to carry out balance adjustment.


- Prior to the measurement, it is recommended to load the weighing pan several times with mass close to the maximum capacity.
- Make sure that the unloaded weighing instrument indicates zero (-0- pictogram) and check whether the measurement is stable (); if not, press  button.



0.0000g

- Select weighing unit: press the unit next to the result  or press  w button at the bottom of the display.



Caution: In accordance with the EN 45501 standard, verified balances cannot display mass value below -20e. If the indication value is below -20e, <Lo mass> information is displayed.

Press  button to zero the balance..

Do not unplug the balance from the mains between measurement series. It is recommended to turn off the display by pressing the button located in the top menu.	
To turn the balance on, press the button on the indicator. Once the start-up procedure is complete, the balance is ready for next weighings.	

15.3. Levelling

Ultra-microbalances and microbalances, and the A- class microbalances and analytical balances are equipped with **Reflex Level System**, which allows monitoring of the balance level and its automatic levelling.

It guarantees:



- ground tilt test,
- fully automatic balance levelling,
- balance level control,
- confirmation of balance levelling printed on adjustment reports and weighing reports.

Upon switching the balance on, the levelling takes place automatically. Each time before the internal adjustment, the level is checked. When the balance is not levelled, the internal adjustment takes place only upon prior levelling.



Procedure of user-performed balance levelling:

Remaining balances are equipped with **Level Sensing System**. This solution enables continuous monitoring of the balance level during operation, which is signalled in the upper right corner of the display. If the level changes, the system signals it by changing the position of the level indicator and/or by triggering an alarm and going to the balance levelling screen.

Procedure:

1. Press level status pictogram, , it is displayed in the upper right corner of the operation panel screen.
2. Control panel of level function is displayed. Along with the level indicator, balance view is presented.
3. Level the balance by turning its feet left/right, follow the blinking pictograms,  – press to make level marker move toward the centre of the circle.
4. When the marker takes central position, its colour turns from red to green – the balance is correctly levelled.



15.4. Balance Zeroing

To zero mass indication, press  key. Zero indication and the following pictograms are displayed: . Zeroing operation means determining a new zero point, recognized by the balance as precise zero. The balance can be zeroed only when the indication is stable.

Caution: Indication can be zeroed only within $\pm 2\%$ range of the maximum capacity. If the zeroed value is above $\pm 2\%$ of the maximum capacity, then the software indicates a respective error message.

15.5. Balance Taring


To determine net weight value, load the weighing pan with a packaging, wait for a stable


indication and press  key. Zero indication and the following pictograms are displayed: **Net** and . Upon weighing pan unloading, the sum of tared masses with minus sign is displayed. You can assign a tare value to a particular product stored in the database. In such a case, the assigned tare value is automatically acquired upon selection of the given product.

Caution: It is impossible to tare negative values. When you try to tare negative values, the weighing instrument responds with an error message. In such a case, zero the indication and repeat taring procedure.

Entering Tare Value Manually

Procedure:


- Press  quick access button. The button is available regardless of the working mode you operate.
- An on-screen numeric keyboard is displayed.

- Enter tare value and press  button.
- The balance returns to weighing mode. Tare value with „-“ sign is displayed.


Deleting Tare

The displayed tare value can be deleted by pressing ZERO key on the operation panel, or by using programmable <Deactivate tare> function button.



Procedure 1 - upon taking the tared load off the weighing pan:

- Press  button,
- the <Net> marker gets deleted, a new zero point is determined.

Procedure 2 - with tared load resting on the weighing pan:

- Press  button,
- the <Net> marker gets deleted, a new zero point is determined.
- when the tare value exceeds 2% of the maximum capacity, -Err- message is displayed in order to inform you about the fact that operation cannot be carried out.

Procedure 3 - when the tared load is on the weighing pan or upon taking the tared load off the weighing pan:

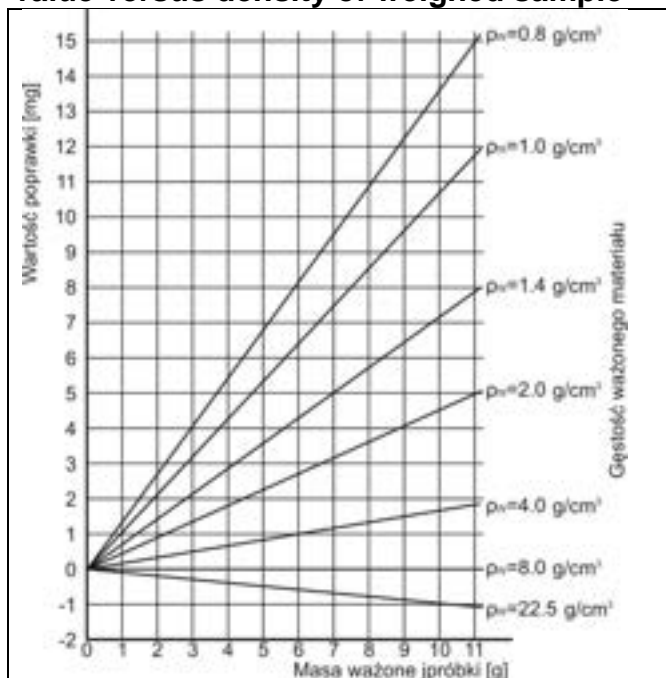
- press  Deactivate tare> programmable button,
- the NET marker is deleted,
- the display indicates tare value,
- to restore the last tare value press  Restore tare> button.

Use of Air Buoyancy Compensation Factor

The application enables correcting mass measurement errors in the course of:

1. weighing loads of density considerably different from the density of a standard that has been used to adjust the balance. Typically, the balance is adjusted with a steel mass standard of $\sim 8.0\text{g/cm}^3$ density or a brass mass standard of $\sim 8.7\text{g/cm}^3$ density. If loads made of other substances are weighed, then ratio indicated on below graph applies;

Error value versus density of weighed sample



The graph presents correction values for mass depending on the density of weighed load, assuming the air density to be a constant value of 1.2 kg/m^3 .

2. testing sample mass change within a few hours long period of time for a case when the sample mass is relatively constant (minor changes); it is assumed that air density changes affect the final result considerably, wherein the density is influenced by changes of pressure, temperature and humidity.

For measurements to be reliable, the density of the air in the laboratory and the density of the material to be weighed must be determined (depending on the ambient conditions, the measurement method and the properties of the material under test).

FUNCTIONING

The air buoyancy compensation procedure is to be used as follows:

1. Method 1:

Enter air density value and the density value of the weighed sample to the balance memory.

Wait, the software automatically calculates the correction factor for weighed mass.

Next, the corrected value of weighed mass is displayed.

To avoid mistakes, the $\langle ! \rangle$ symbol is presented next to the corrected mass value (on a display and a printout).

2. Method 2:

Determine air density value using the balance program (semi-automatic operation) and enter the value of the weighed sample density to the balance memory.

Determination of air density is carried out using a set of two mass standards, one made of stainless steel, and the other one of aluminium. Based on mass indications of the two standards, the program automatically calculates the air density and saves the value in the balance memory on operator's confirmation. Now, enter the density value of the weighed sample to the balance memory.

Wait, the software automatically calculates the correction factor for weighed mass.

Next, the corrected value of weighed mass is displayed.

To avoid mistakes, the $\langle ! \rangle$ symbol is presented next to the corrected mass value (on a display and a printout).


In order to enable/disable the air buoyancy compensation procedure, go to the user menu. The procedure only works in the weighing mode.

AIR BUOYANCY COMPENSATION START-UP

Procedure:

- Enter home screen and slide out the menu on the left.
- Select <Settings> parameter.
- Select <Air buoyancy compensation> parameter.
Parameter values:
 - Air buoyancy compensation – YES/NO.
 - Sample density (enter value of weighed sample density). If you use products from databases, then on product selection its density value is automatically uploaded.
 - Air density – parameter designed to enable you to select the method of entering the air density value.

Parameter values:

VALUE – select to open a window to enter a specified air density value (e.g.: determined by means of other methods). The entered value is used in the course of compensation. It is assigned automatically upon completed air density determination (to complete air density determination, press <  > button).

ONLINE – select to make the balance acquire air density value from a connected THB sensor at a real time, if such is connected to the balance, or from an internal sensor installed in the balance.

If your balance features both types of sensors (THB and internal), then data from the THB supersedes the other. In such a case, go to **Setup/Ambient conditions/Ambient conditions module** parameter and set **SAVE** or **SAVE & ALERTS** value.

If your balance features only one set of sensors recording temperature, humidity and pressure, then correct ONLINE operation requires setting the following parameters:

- internal sensors exclusively – go to **Setup/Ambient conditions/Ambient conditions module** parameter and set NONE value,
- external THB sensor exclusively – go to **Setup/Ambient conditions/Ambient conditions module** parameter and set SAVE or SAVE & ALERTS value.

For correct balance cooperation with the THB sensor, it is necessary to set port's transmission parameters. They must be compatible with those of the THB sensor. The THB sensor's transmission parameters are detailed on its data plate.

On returning to the weighing mode, the display indicates an additional symbol <!>, as indicated in the figure below. From now on, the value of indicated mass is corrected, wherein the air buoyancy compensation factor and sample density are referred to.



For the result to be corrected by the correct value, the correct values of air density and density of the weighed sample must be entered into the balance memory.

Caution: If the <AIR BUOYANCY COMPENSATION> parameter is set to <ONLINE> value, then the <!> pictogram is not displayed. This means that **Setup/Ambient conditions/Ambient conditions module** parameter is set to SAVE or SAVE & ALERTS value, and that there is either no physical balance-module connection, or that balance-module communication parameters are incorrect. In such a case, plug the module to balance ports COM 1 or COM 2 and set appropriate communication parameters, for the parameters refer to the module's data plate.

15.6. Additional Parameters for a Weighing Process

Modification of the weighing functions enables programming balance operation.

Procedure:

- Slide out the menu.
- The following submenus are displayed: Settings, Buttons, Information, Printouts.
- Enter particular submenu and select the component that is to be modified

<Settings> - additional options related to the weighing mode,

<Keys> - defining quick access buttons,

<Information> - supplementary data on the weighing process displayed in an Info field,

<Printouts> - selecting printout type,

<SETTINGS> - weighing-process-related data such as:

– **Tare mode**

Available options:

- **SINGLE**

mass value saved to the balance memory on single pressing of the TARE key.

Subsequent pressing of the TARE key determines a new tare value. Selecting a product or packaging to which a tare value is assigned causes automatic deleting of the previously assigned tare value.

- **CURRENT SUM**

total value of currently entered product and packaging tare values (result of selection of product and packaging from the database) with possibility to add tare value entered manually. When a new tare value for a product or packaging is set again, then the tare value entered manually gets deactivated.

- **TOTAL SUM**

total value of all entered tare values.

- **AUTOTARE**

Means of operation:

Each first stable measurement result is tared. The NET sign is displayed. Now you can determine the net mass of the weighed load. Upon unloading the weighing pan and autozeroing, the tare value is automatically deleted.

- **EACH MEASUREMENT:**

possibility to tare prior to each measurement in the series.

– **Automatic footer printout**

Available options:

MODE – None – manual footer printout,

Sum of measurements – footer is printed when mass value entered in <Threshold> parameter gets exceeded.

Measurements quantity – footer is printed when a pre-defined measurements quantity (a batch) set in parameter <Threshold> is carried out.

THRESHOLD – setting the threshold value determining footer printout.

For <Sum of measurements> parameter, threshold value is determined in measuring unit [g], for <Measurements quantity> parameter the unit is not determined; the provided value specifies carried-out measurements quantity.

– **Printout / Release mode**

- **PRINT/RELEASE BUTTON** (manual operation)

- Never – printout disabled.
- First stable – first stable measurement is recorded.
- Each stable – all stable measurements are recorded.
- Each – printout of all measurements (stable and unstable); for verified balance, only stable measurements are printed out (as in <Each stable> setting).

- **AUTOMATIC MODE**

- Never – printout disabled.
- First stable – first stable measurement is recorded upon loading of the weighing pan with a load; record of the next stable measurement result takes place only if the following conditions are met: weighing pan gets unloaded, measurement value lower than the value of the set threshold is displayed, a new load is placed on the weighing pan.
- Last stable – last stable measurement, registered prior to unloading, is recorded. The record takes place only if the following conditions are met: weighing pan gets unloaded, measurement value lower than the value of the set threshold is displayed.
- With interval – select this value to start automatic printout and record of indications to the WEIGHINGS database, carried out periodically in a specified time intervals. The interval is set in [min] in <INTERVAL> parameter. Interval range is 1 s - 9 h 59 min 59 s.

Caution: Each weighing result is printed and recorded (stable and unstable for a non-verified balance; stable for a verified balance).

Automatic operation with interval starts at the moment of switching the function on. The first stable weighing result of a value greater than the THRESHOLD value is printed and recorded as the first measurement. The following measurements are printed with frequency set in INTERVAL parameter. To stop the automatic operation with interval, switch the option off.

- **THRESHOLD:**
Mass value obligatory for operation of automatic printout, set in grams.
- **INTERVAL**
Record frequency for automatic operation with interval

- **Statistics**

settings for statistical calculation during operation.

Options:

- Global: statistical calculations are performed for all successive measurements, regardless of the selected product.
- Product: statistical calculations are performed for particular products.

- **Air buoyancy compensation**

Parameters allowing you to switch on the compensation and to enter weighed sample density data and air density data.

Caution: Function valid for the weighing mode exclusively. For detailed information regarding the operation and settings, refer to the previous section of this user manual.

– Minimum Sample

Weighing mode settings comprise <Minimum sample> function. In order to use the function, it is necessary to enter data related to minimum sample determination methods, and minimum sample values for a given method. The data must be entered into the <Minimum sample> database. The database is empty in the standard balance version.

Determining minimum sample and adding data to the <Minimum sample> database can be carried out by an authorized “RADWAG” personnel exclusively.

Should you use the minimum sample function, and need data on the minimum sample to be entered to the balance menu, please contact the local representative of RADWAG.

Using reference weights, the authorized RADWAG employee determines the minimum sample for specified tare containers. This operation is carried out at the place of balance use and in accordance with requirements of the applied quality system. The obtained values are entered into the balance software: <Minimum sample> database.

For a particular method of minimum sample determination, it is possible to define few tare values, along with values of minimum sample, expiry dates of the carried out measurements and entered data. The settings are not to be edited by balance operator.

<Minimum sample> function guarantees that the results of weighing operation are comprised within the set tolerance, in accordance with applied quality management system of particular company.

Caution: *Function valid for the weighing mode exclusively.*

Available options:

- METHOD

Option allowing you to designate used quality standard. Press METHOD field to open a window with a list of database-stored methods, by means of which the minimum sample were determined. In order to add a new method, go to <Databases /Minimum sample>.

- MODE

Block – select to display pictograms informing you on status of weighed mass (weighed mass below/above minimum sample) and to disable accepting the measurement result if it is below the minimum sample limit.

Warn – select to enable display of respective pictograms informing you about the measured mass (whether it is lower than the MS value or higher than the MS value).

You can accept a measurement that is lower than the MS value. Mind that on a printout it will be preceded by an asterisk (*).

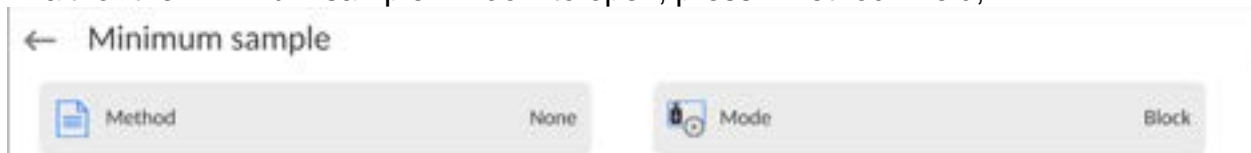
Caution: *For information on how to enter a method for minimum sample, go to section 28.7 <Databases /Minimum sample> of this user manual. New minimum sample values can be entered by an authorized RADWAG personnel exclusively.*

Weighing with use of <MINIMUM SAMPLE> function.

If in the course of weighing you want to find out whether a particular measurement value is higher than the MS value, specified for a given weighing range, then <Minimum sample> function must be on. To turn the function on, go to the weighing mode settings.

Procedure:

1. Slide out the menu on the left.
2. The following submenus are displayed: Settings, Buttons, Information, Printouts, Profile.
3. Select <Settings> menu - additional options for the weighing process.
4. Enter <Minimum sample> field.
5. Wait for the Minimum sample window to open, press <Method> field,



a window with a list of database-stored methods opens.

6. Select respective method.
7. Previous menu is displayed.
8. Press <Mode> parameter.
9. Settings box is displayed, select respective option:
 - Block** – select to display pictograms informing you on the status of weighed mass (weighed mass below/above minimum sample) and to disable accepting the measurement result if it is below the minimum sample value.
 - Warn** – select to enable display of respective pictograms informing about the measured mass (whether it is lower than the MS value or higher than the MSvalue). You can accept the measurement that is lower than the MSvalue. Mind that on a printout it will be preceded by an asterisk (*).
10. Set the parameters and exit the menu.
11. Section presenting the weighing result comprises additional pictogram providing supplementary information. The pictogram changes in the course of weighing, it informs you on the weighed sample mass; the information is referred to the declared minimum sample value.



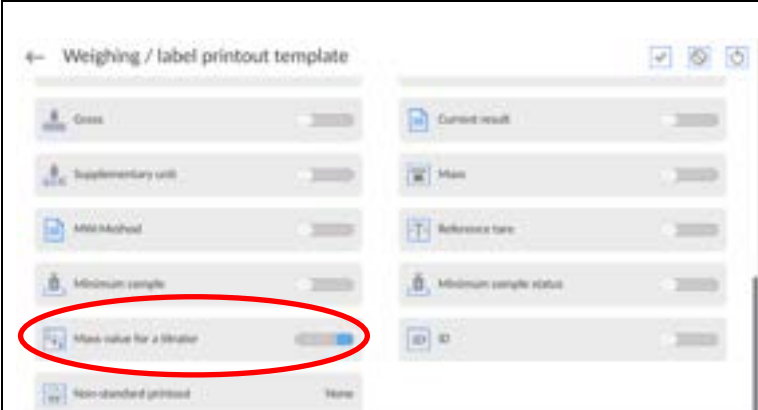
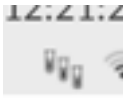
Pictograms providing MS-related information:

	Weight value lower than the specified MS value;
	Weight value higher than or equal to the specified MS value.
	Weight value lower than the specified MS value. A pictogram with a clock informs on expiry of the minimum sample validity period (it is displayed two weeks before the determined expiry date).
	Weight value higher than the specified MS value. A pictogram with a clock informs on expiry of the minimum sample validity period (it is displayed two weeks before the determined expiry date).
	The validity period of the minimum sample has expired. The minimum sample settings need to be modified. The minimum sample settings can be modified by an authorized RADWAG personnel exclusively.

Caution: If more than one reference tare value is programmed (with corresponding minimum sample value) then the indicated value automatically moves to a range corresponding to the weight of the tared container. At the same time, the required minimum mass is changed.

15.7. Cooperation with Titrators

In order to provide correct cooperation with TITRATORS, go to standard printout content settings and set <Mass value for a titrator> parameter to <Yes> value. With this, other variables for the printout are turned off.

	
	<p>The pictogram informs on a special format of mass printout, permissible by TITRATORS.</p>

15.8. Ambient Conditions - Vibrations

Vibrations are a major cause of errors. Since vibrations spread in all directions, vibration analyzers and meters must carry out measurements in three axes concurrently. Ambient conditions module implemented in RADWAG balances of 5Y series features such option. Analytical balances are precise weighing instruments; therefore, even insignificant oscillations influence their operation. Humans are most often unable to sense vibrations. In order to detect them, it is necessary to use special equipment. Vibration sensor, along with a module that analyses the influence of the vibrations onto the measurement, informs the user in real time on the possibility of occurrence of errors caused by high-frequency vibrations. Usually the vibrations are dampened with use of anti-vibration tables. A signalling device, i.e. ambient conditions module equipped with a vibration sensor, is used to support the process of vibrations dampening. Such device comes standard with each 5Y series balance. With use of the said signalling device, it is possible to evaluate workstation conditions and, if necessary, to find more convenient place of use. It is often impossible to find a place where no vibrations occur, however the signalling device allows the operator to determine when and where to expect vibrations of the lowest-frequency.

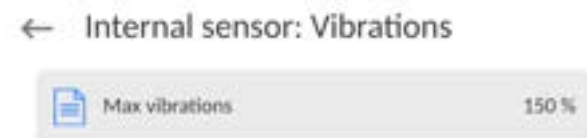
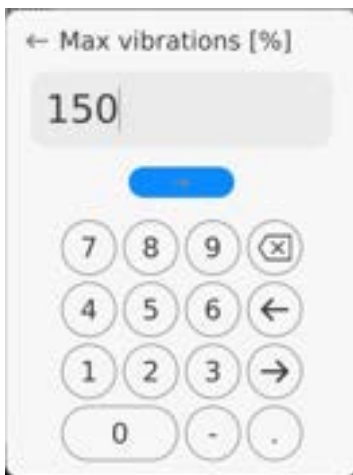
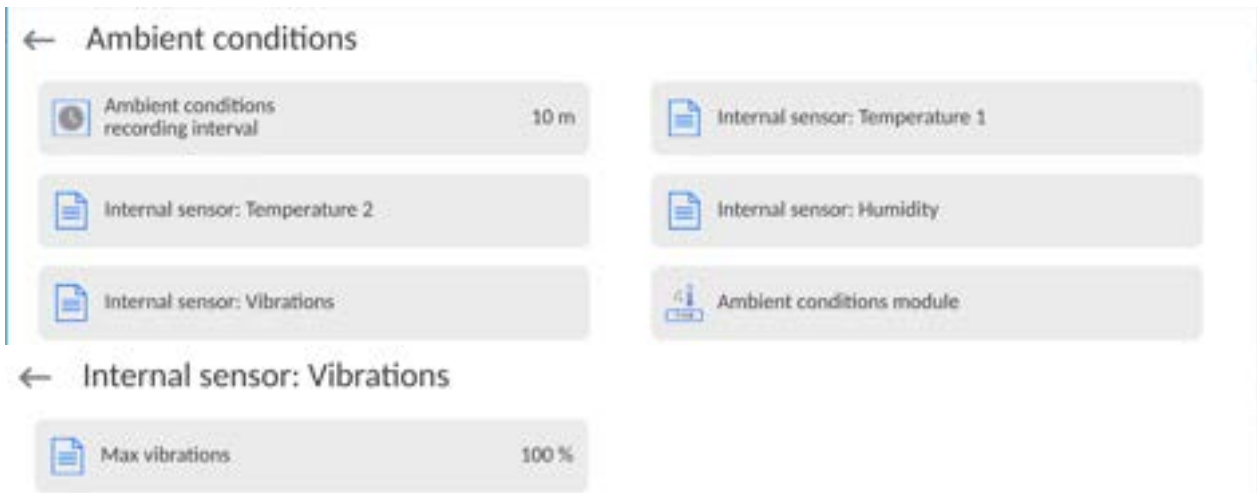
Due to the following 3 factors: specified values of free vibrations, resolution, and permissible weighing instrument errors, the analysis must be carried out with regard to the right effective value (rms value) and bandwidth. Such analysis is performed on each 5Y series balance in real time.

In the case of the module that is an integrated part of the balances manufactured by RADWAG, the filters analyse those frequencies to which the weighing devices are sensitive. In the case of balances, effective value (rms value) measured from 3 axes and for a particular time interval is given, such value provides information on amplitude and history of disturbances.

Radwag has designed an analysis method and selected permissible vibration thresholds respectively to make signalling device operation both effective and convenient (not troublesome). Balance screen displays balance-registered vibration level in percent.

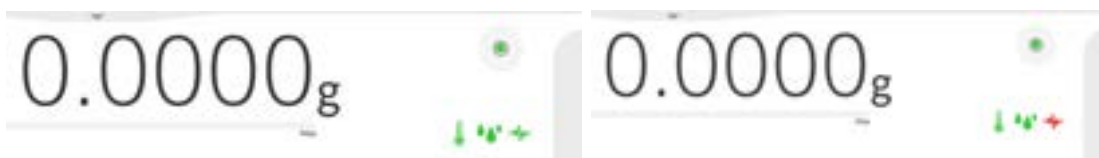
Vibration threshold cannot be changed, however the operator can modify settings in a way ensuring that alerts are displayed in the most convenient way, depending on the needs. By default, the set value is 100%.

Example of settings modification:



For better understanding, analyse the following example (the values used below are exemplary ones, they were not taken from the balance).

1. Assumed vibration threshold set by default on 5Y series balance: 100 mm/s².
2. Max vibrations value: 100% (threshold for alert– pictogram colour change, from green to red). Pictogram colour is green for vibrations within 0 – 100 mm/s² range, for vibrations value of 101 mm/s², the pictogram changes to red.
3. Max vibrations value: 150%. Pictogram colour is green for vibrations within 0 - 150 mm/s² range, for vibrations value of 151 mm/s², the pictogram changes to red.



Vibrations are signalled by a respective pictogram displayed in the weighing result window.

A window with the current sensor values is presented in the middle of the display on the right. Displayed vibration value (Vibrations) is the effective value registered within the most recent 2 seconds. This value is refreshed every 2 seconds. If the screen displays 100%, this means that vibrations have reached the threshold set by RADWAG.

Temperature 23.13 °C	Humidity 34 %
Vibrations 21.8 %	Pressure 987 hPa
	Density 1.155 kg/m ³

Vibrations are recorded in the database, this allows to analyse the history of ambient conditions quality.

← Ambient conditions

2023.03.21 09:26:48	2023.03.21 09:24:52
2023.03.21 09:22:38	2023.03.21 09:20:12
2023.02.27 10:03:21	2023.02.27 09:56:31
2023.02.27 09:52:41	2023.02.27 09:50:27
2023.02.27 09:44:50	2023.02.27 09:42:30
2023.02.27 09:38:53	2023.02.27 09:27:36

← Edit record

Date	2023.03.21 09:27:00	Air density	1.155 kg/m ³
Temperature 1	23.13 °C	Temperature 2	23.57 °C
Humidity	34 %	Pressure	987 hPa
Vibrations	0 %		

The effective value of vibrations registered by the balance over a declared time interval is saved (from the moment of the last record) – Setup/Ambient conditions/Ambient conditions recording interval.

← Ambient conditions

Ambient conditions recording interval	10 m	Internal sensor: Temperature 1
Internal sensor: Temperature 2		Internal sensor: Humidity
Internal sensor: Vibrations		Ambient conditions module

By default, the interval is set to 10 min; this value may range between 1 - 60 min. Record analysis allows the user to select the optimal time of the day for the measurements to be carried out, i.e. the time when the ambient conditions influence the vibrations the least. Mind that there are places where the most convenient working conditions occur after-hours.

Along with each measurement, data on ambient conditions alerts and level of vibration that occurred in the course of the measurement are saved.

← Weighing records

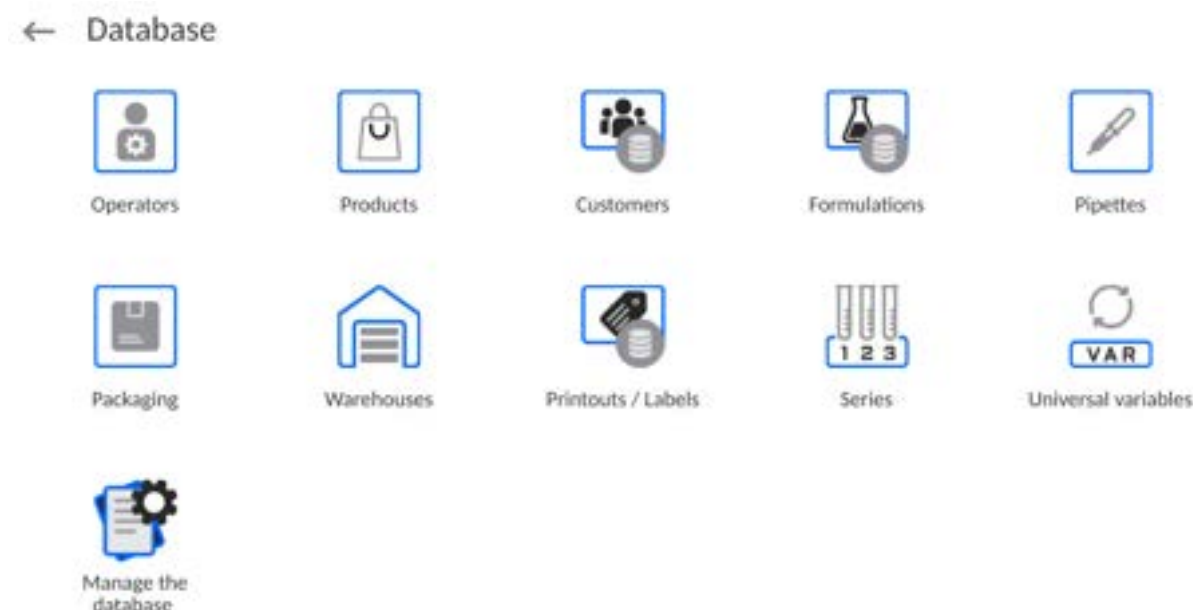
2023.03.21 09:34:49	19.993 g	2023.03.21 09:34:42	10.001 g
2023.03.21 09:34:35	0.806 g	2023.03.21 09:34:30	1.477 g
2023.03.21 09:34:29	1.477 g	2023.03.21 09:34:24	0.671 g
2023.03.21 09:34:24	0.671 g	2023.03.21 09:34:18	1.477 g
2023.03.21 09:34:11	0.806 g	2023.03.21 09:34:04	0.670 g
2023.03.21 09:33:56	10.001 g		

← Edit record

Air buoyancy compensation	No	Product	
Operator	Admin	Customer	
Working mode	Weighing	Warehouse	
Packaging		Result control	
Level status	Yes	Ambient conditions alerts	No
Air density	1.155 kg/m ³	Vibrations	34.3 %
ID	2	Weighing platform	1

16. DATABASES

The balance features the following databases:

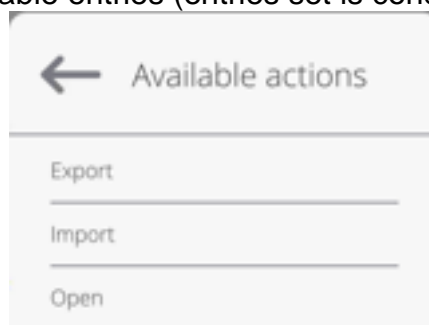


16.1. Database Operations

Databases can be operated only by an authorized personnel.

Procedure:

- Press and hold a respective database pictogram.
- Database menu is displayed.
- Select one of the available entries (entries set is conditioned by a database).



Entries:

- **EXPORT** - select to export data from a selected database to a USB flash drive. Plug the USB flash drive to a USB port; upon its detection, the software automatically starts a copying process. Upon completion of the copying process, a window with both, a file name to which data have been saved and message: <Completed> is displayed. Confirm completion.
- **IMPORT** – select to import data from a USB flash drive. Plug the USB flash drive to a USB port; upon its detection, a window with a list of saved files is displayed. Select file with data to be imported. The copying starts automatically. Upon completion of the process, message: <Completed> is displayed. Confirm completion.
- **OPEN** – select to enter a database (alternative method for database entering: single click on a given database field).

List of typical database operations:

1. Adding entry to a database.
2. Searching for a record in a database by name.
3. Searching for a record in a database by code.
4. Searching for a record in a database by date.
5. Exporting database content to a USB flash drive via USB port.
6. Printing data on a specific record in a database.

The above processes are initiated by dedicated buttons located on the top of the display. Follow the displayed commands.


16.2. Operators

Operators database features list of users permissioned to operate the balance. The following data can be defined for each balance operator:

ID	Name
Code	Password
First and last name	Permissions
Active account	Language
Default profile	Card number
Theme	

CAUTION: Only a user with Administrator status can add new operators or delete operators from the database.

In order to add an operator:

- Enter <Operators> menu, press <  > button.
- Define all necessary data.

Caution: It is possible to search for an operator in a database of operators by code or name.

Log in using a transponder card:

Caution: The RFID reader mounted in the indicator operates at a frequency of 13.56MHz and complies with ISO/IEC 14443 Type A.

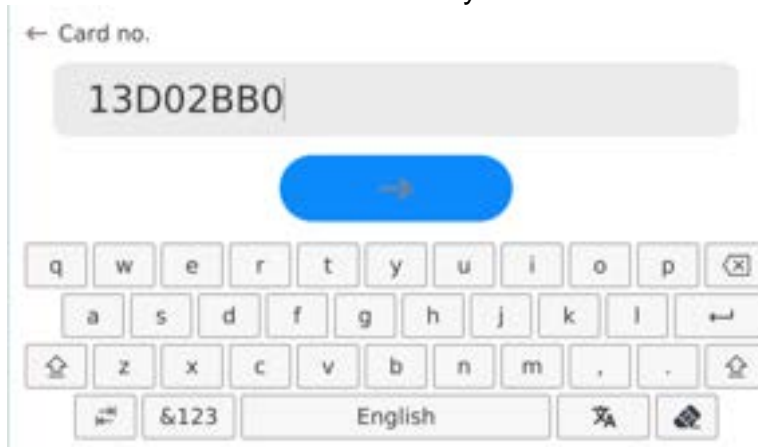
Only cards of this standard will be recognised by the reader.


- Enter Operator settings.

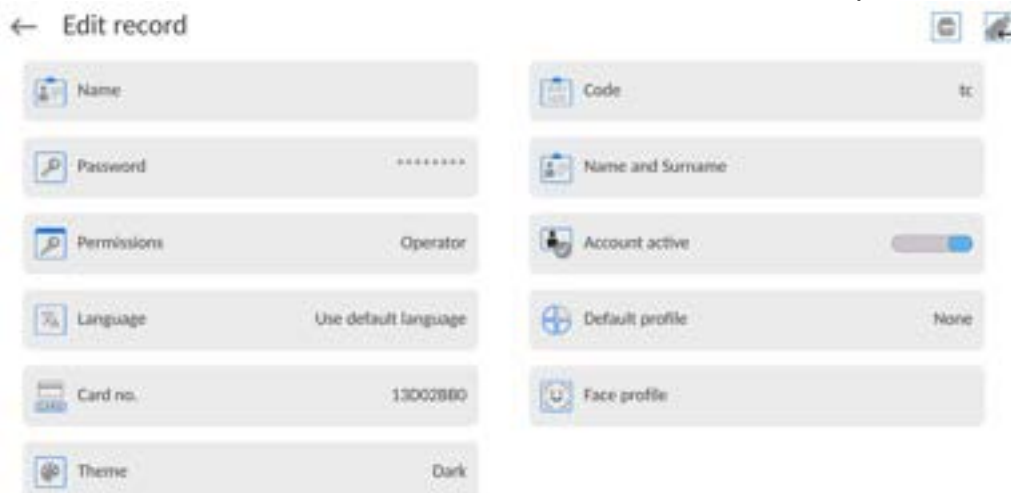
- Select <Card no.>



- Apply the card to the RFID reader.
 - The card number is automatically entered in the editing field.



- Press  button, the card number is added to the operator settings.



- Exit to the home screen. From now on, applying this card to the RFID reader will automatically log the user in.

Log in using a fingerprint:

Caution: Only the fingerprint reader listed as a dedicated accessory for these balances can be connected to the balance. A list of accessories can be found on RADWAG website.

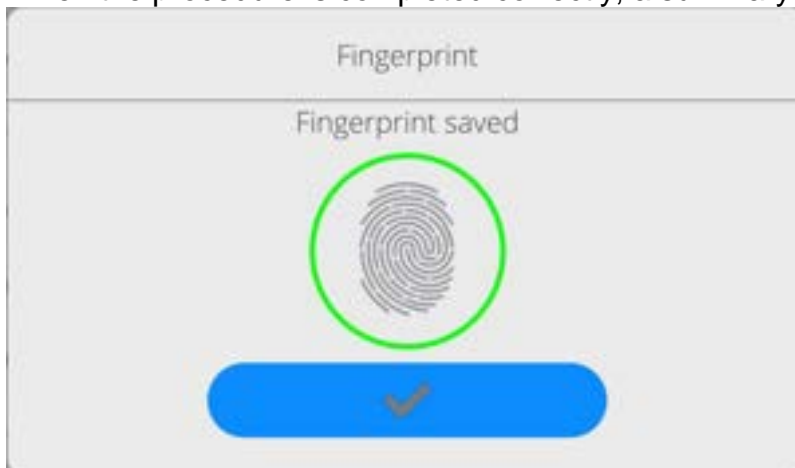
- When the fingerprint reader is connected to the USB type A socket, the <Fingerprint> option appears in the operator settings menu.




- To add a fingerprint for an operator, enter this option.



- Scan the fingerprint and repeat the procedure 7 times (as described in the message box).
- When the procedure is completed correctly, a summary window is displayed.



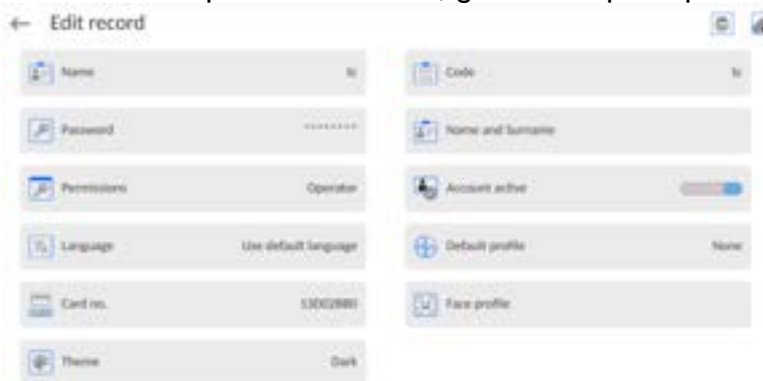
- Confirm the procedure by pressing  button.
- From now on, if a fingerprint reader is connected to the USB port, a pictogram of the active fingerprint login option is displayed in the login window.



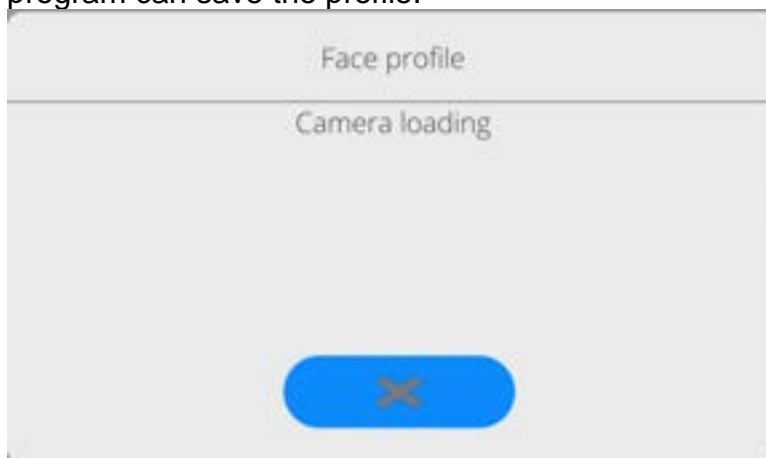
- After placing a finger on the reader and confirming the correctness of the fingerprint with the stored pattern, the pictogram briefly turns green, the user is automatically logged in, and the software switches to the home screen. The name of the logged-in user is displayed in the top bar of the window.
- If the scanned fingerprint does not match the stored pattern, the pictogram briefly turns red, the user is not logged in, and the software displays the login window.

Log in using a face profile:

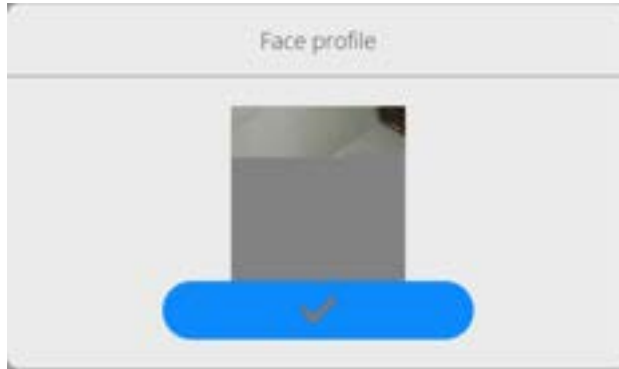
- To add a face profile for a user, go to the option presented below

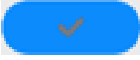


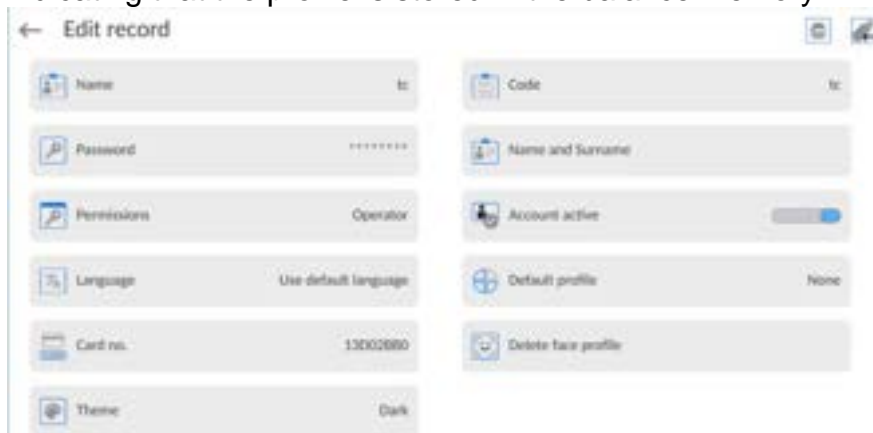
- After starting the option, a message is displayed and the face profile is read; you must position yourself correctly in relation to the camera so that the program can save the profile.



- Once the profile has been saved, a message is displayed along with a picture from the camera.



- Press  button to close the window.
- The option description in the user settings changes to <Delete face profile>, indicating that the profile is stored in the balance memory.



- From now on, if the user for whom the face profile was added logs in, after entering the logging window, the program will automatically read the profile, which will be signalled by the pictogram on the left side of the window



- The program automatically reads a photo of the user's face profile, and after the photo is read, the camera turns on (which is indicated by the lighting of a diode next to the camera) and compares the saved photo with the profile read by the camera. If these images match, the main program window will open and the name of the logged-in user is displayed in the top bar of the window.

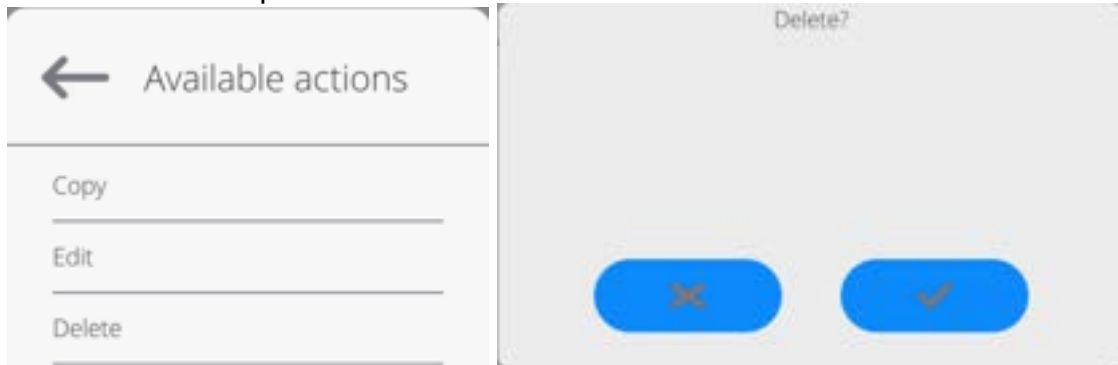
Editing data on an operator:

- Press field with operator name.
- Data on a specific operator is displayed.

- Select and change necessary data.

To delete an operator:

- Press and hold operator name.
- Database menu is displayed.
- Select <Delete> parameter and confirm.




16.3. Products

<Products> database contains names of all products that are weighed, counted or controlled.

Procedure:

- Enter <Databases> submenu, press < Products> entry.



- Press  < Add> button to add a new product to the database, or
- Select the already existing product.

List of parameters defined for a product:

- | | |
|-----------------|---|
| 1. ID | [Unique product number] |
| 2. Name | [Product name] |
| 3. Description | [Product description] |
| 4. Code | [Product code] |
| 5. EAN code | [Product EAN code] |
| 6. Mass | [Unit mass of a product] |
| 7. Dosing speed | [Option available for the <Mass control> mode; determines feeder dosing speed in [%] (0% - 100%).The value of dosing speed is conditioned by the size, shape and mass of dispensed parts (pills); it has to be determined by tests] |
| 8. Min | [Minimum mass for weighing the product using result control thresholds – LO. Value of <T1-> error for <Mass control> mode determined as percent of the nominal mass] |
| 9. Max | [Maximum mass for weighing the product using result control thresholds – HI. Value of <T1+> error in the <Mass control> working mode determined as percent of the nominal mass] |

10.	Tolerance	[% value calculated versus mass (5), denoting measuring area in which the measurement is recognized as correct.]
11.	Tare	[Product's tare value, set automatically on selecting a product from the database]
12.	Price	[Unit price of a product]
13.	PGC mode	[Control mode: Non-destructive average tare, Non-destructive empty – full, Destructive full – empty, Destructive empty –full.)]
14.	Batch portion	[Measuring batch for control: Non-destructive empty - full, Destructive full – empty, Destructive empty –full.]
15.	SQC: Unit	[Product measuring unit]
16.	Batch quantity	[Option available only for the <PGC> mode; specifies the quantity of controlled product batch]
17.	Interval of average tare determination	[Option available only for the <PGC> mode; specifies the minimum time interval needed for estimation of a packaging average tare; given in [h]; if the software detects that pre-set time interval has passed, it displays a message: <Estimate average tare> . The message has an informative character and you can decide whether to carry out the process or not.]
18.	Packages quantity	[Option available only for the <PGC> mode; specifies the number of packagings needed for estimation of the average tare]
19.	Internal control	[Option available only for the <PGC> mode; allows for specification of internal control criteria accordant with company standards for a given product]
20.	SQC	[Option available only for the <SQC> and <Mass control> modes; allows for specification of internal control criteria accordant with company standards for a given product]
21.	Density	[Product density, used as a sample density for compensating air buoyancy] - [g/cm ³]
22.	Shelf-life time in days	
23.	Date	[Product date (constant)]
24.	VAT	[VAT value related to a product]
25.	Ingredients	[Field for inserting names of product's ingredients or for additional description regarding product's features, application, etc.]
26.	Printout	[Template assigned to a product]

CAUTION: Remember to assign products to corresponding functions, as some of the data values are attributed according to their modes, e.g. thresholds in <Checkweighing> mode are set in [g], while thresholds in <Parts counting> mode are set in [pcs]. The values are selected automatically depending on which mode is enabled while entering a database.

16.4. Customers

Customers database contains name of Customers for whom the measurements are carried out.

Procedure:

- Enter <Databases> submenu and press <Customers> entry.
- Press <Add> button.
- Select the already existing customer.

List of parameters defined for a customer:

1. Customer name
2. Customer code [internal code identifying a customer]
3. TIN
4. Address
5. Postal code
6. City
7. Discount
8. Printout [type of printout, customer-related label]

16.5. Minimum Sample

Minimum sample database contains data concerning declared methods and minimum samples.

Caution: *Only authorized RADWAG personnel can add new minimum sample records or make changes in those stored in the database.*

Procedure:

- Enter <Databases> submenu and press <Minimum sample> entry.
- Press <Add> button to add a new minimum sample, or
- Select the already existing weight.

List of parameters defined for a minimum sample:

1. Name - name of a method used to determine minimum sample.
2. Code - method code.
3. Description - method overview.
4. Subsequent control - a field for entering expiry date of the minimum sample. Two weeks before the expiry date, a pictogram of a clock is displayed next to the status pictogram. The clock pictogram informs on elapsing validity date. Contact RADWAG representative to carry out necessary changes in minimum sample settings.
5. Thresholds – parameter for entering minimum sample data and range of packaging mass (tare) with applicable criteria:
Tare – maximum tare value, for which the minimum sample is obligatory. You can enter three characteristic quantities: 0.000g, optional mass value from weighing instrument's measuring range, and maximum capacity (see: examples below).
Minimum mass – value of the minimum sample determined for a particular weighing device on site using respective methods.

Example no. 1 XA 220.5Y balance with $d=0.0001$ g.

List of MS values determined for the following packaging values:

No.	Tare value	Minimum sample	Overview
1	0.0000 g	0.1000 g	Minimum sample refers to all net weight values when weighing is carried out without use of a tare container (<TARE> button NOT used).
2	10.0000 g	1.0000 g	Minimum sample refers to all net weight values when weighing is carried out using a tare container of mass ranging from 0.0001 g to 10.0000 g inclusive (<TARE> button used).
3	50.0000 g	2.5000 g	Minimum sample refers to all net weight values when weighing is carried out using a tare container of mass ranging from 10.0001 g to 50.0000 g inclusive (<TARE> button used).
4	200.0000 g	4.0000 g	Minimum sample refers to all net weight values when weighing is carried out using a tare container of mass ranging from 50.0001 g to 200.0000 g inclusive (<TARE> button used).

Example no. 2 XA 220.5Y balance:

No.	Tare value	Minimum sample	Overview
1	220.0000 g	0.5000 g	Minimum sample refers to all net weight values when weighing is carried out using a tare container of mass value comprised within the whole weighing range (<TARE> button used), and to all net weights that are weighed without a packaging (the <TARE> button not used).

Example no. 3 XA 220.5Y balance:

No.	Tare value	Minimum weight	Overview
1	0.0000 g	0.2500 g	Minimum sample refers to all net weight values when weighing is carried out without use of a tare container (<TARE> button NOT used). In case of such settings, the minimum sample is valid only when you weigh samples without use of tare containers. If taring function is used, then pictogram informing on use of minimum sample goes blank and the software carries out weighing with tare (no determined minimum sample).

You can preview the entered data, but you are not allowed to edit it.

16.6. Packaging

<Packaging> database contains a list of packages for which a name, code and mass value are specified. The tare value is automatically applied when a name of a packaging is selected from the database during weighing process. The tare value is displayed with minus sign.

Procedure:

- Enter <Databases> submenu and press <Packaging> entry.
- Press <Add> button to add a new packaging, or
- Select the already existing one, and insert data on the packaging.

Caution: It is possible to use 'search record' option; you can search by name or by code.

16.7. Warehouses

Depending on the organization of work, the warehouses database contains a list of places used for picking up a sample for weighing or a list of places to which a weighed sample was delivered. Each warehouse has to have its name, code and description specified. During the weighing process, and upon selecting the name of a warehouse, it is automatically assigned to the measurement result.

Procedure:

- Enter <Databases> submenu and press <Warehouses> entry.
- Press <Add> button to add a new warehouse, or
- Select the already existing warehouse.

Caution: It is possible to use 'search record' option, you can search by name or by code.

16.8. Printouts

Printouts database contains all NON-STANDARD printouts. Each printout features a name, code and a template.

Procedure:

- Enter <Databases> submenu and press <Printouts> entry.
- Press <Add> button to add a new printout, or
- Select the already existing record.

Caution: It is possible to use 'search record' option; you can search by name or by code.

Designing new printout template

Procedure:

- Enter <Databases> submenu and press <Printouts> entry.
- Press <Add> button to create a new printout, or edit the already existing one.



- Edit box opens, press <Project> entry.
- Respective box with an on-screen keyboard is displayed.
- To design a printout, you can use an external USB keyboard connected to the head or a touch keypad that has the same functions as a typical PC keyboard.



The touch keypad does not have some characters, such as a colon or diacritical letters typical of a specific menu language (menu language is signalled with description on 'SPACE' key). To use such characters or letters in the designed printout, press and hold the specific letter on the keyboard. It will cause additional keys with assigned characters to display. Click them to add to text. After entering the character, press 'X' to disable displayed characters. The example of available characters for Polish keyboard.

Letter on the keyboard	Additional characters	Letter on the keyboard	Additional characters	Letter on the keyboard	Additional characters
„t”	ć x	„u”	u x	„a”	~ x
„x”	’ x	„c”	ł x	„v”	{ x
„b”	ł } x	„”	: < = x	„”	: > x

- Save the designed printout.

Example of Printout no. 1 – large edit box



Project

Balance no. 400015
 Balance parameters:
 Max = 220 g
 d= 0.001 g
 Product name:
 Date: 2011.10.24
 Time: 11:48:06

 Working mode: Weighing


 Net weight: 94.147
 Carried out by: Admin





Printout template

Example of Printout no. 2 – printout from a file

All printout templates can be designed in a form of external files, that are imported to a balance; file extension: *.txt or *.lb. External file shall contain all constant and variable data. Upon importing, the content of a printout template can be modified.

Procedure:

- Design a *.txt or *.lb file in an optional editor.
- Copy the file to a USB flash drive.
- Connect the USB flash drive to the balance USB port.
- Press [4] <  Download a printout from a file> button,
- Balance display shows data stored on the USB flash drive connected to the USB port.
- Select file with a printout template and press its name.
- The printout template is automatically copied to an editing field.

	<i>The user may add printouts from external memory via import of already configured texts, using USB port.</i>
	<i>Printout name is not the content of a printout.</i>
	<i>List of variables intended for printouts is to be found in 'ANNEX 03'.</i>
	<i>Example of how to create and send label template to the balance memory is to be found in 'ANNEX 03'.</i>

16.9. Universal Variables

Universal Variables are alphanumeric data which can be combined with printouts, products or other comparison-related information. Each variable has to have its name, code and value specified.

Procedure:

- Enter <Databases> submenu and press <Universal variables> entry.
- Press <Add> button to add new variable, or
- Select already existing universal variable, and modify the following fields: code, name, value.

Caution: *It is possible to use 'search record' option; you can search by name or by code.*

16.10. Databases Management

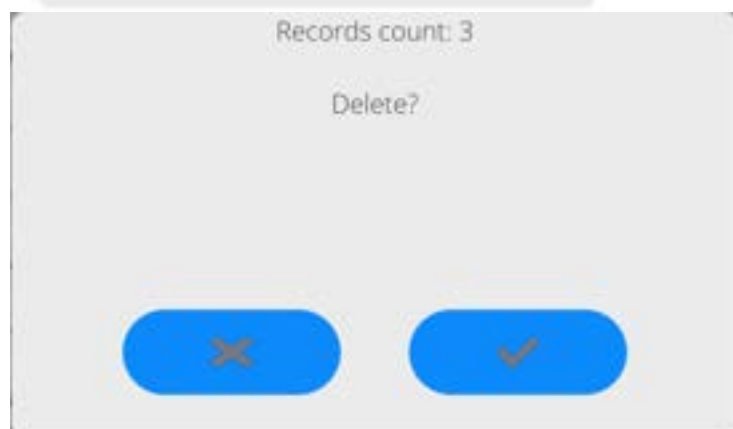
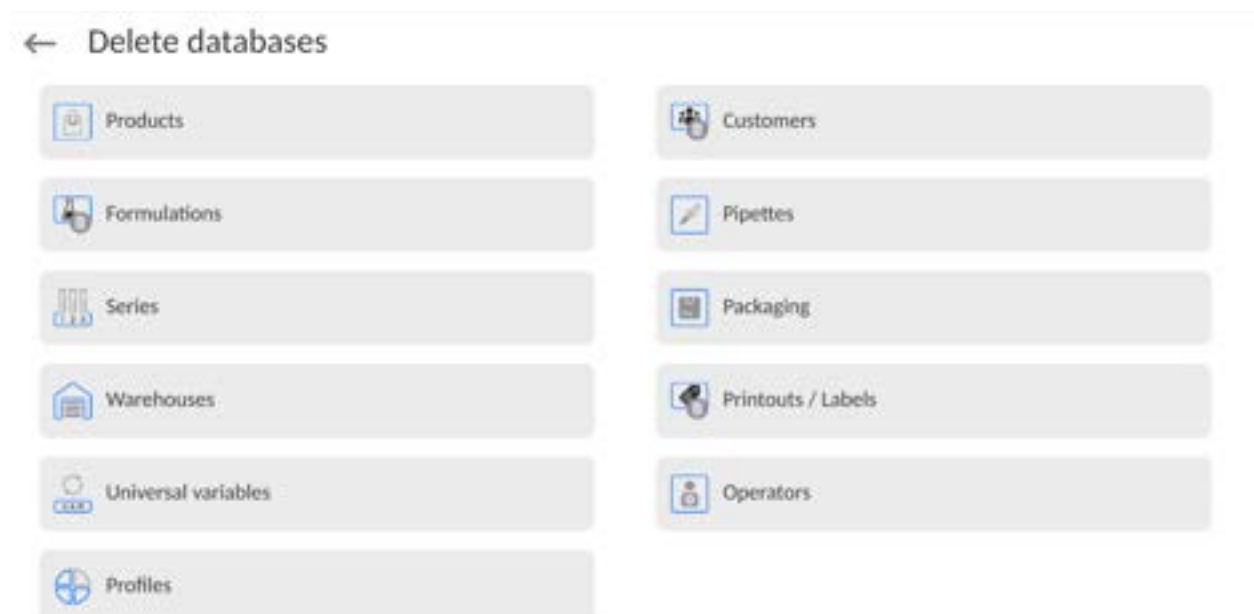
Function allowing to manage databases data. It comprises three options: Export weighing database, Delete databases and Delete weighings and reports.

← Manage the database

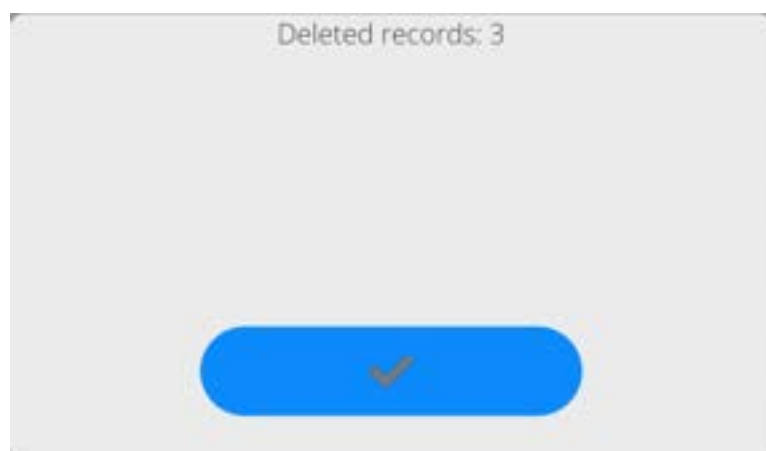
 Delete databases

16.10.1. Delete Databases

Function allowing to delete data of selected database. Procedure
Activate <Delete database> function; a window with database list is displayed.
Select a database, delete respective data.



Confirm, data is deleted, the following message is displayed:



Confirm, a previous window is displayed; you may continue weighing or proceed to other operations.

17. REPORTS

The balance features the following reports:

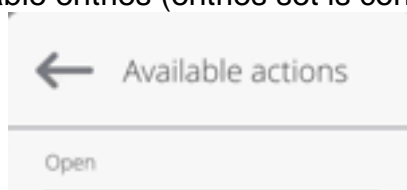


17.1. Reports Operations

Reports can be operated only by an authorized personnel.

Procedure:

- Press and hold a respective database pictogram.
- Database menu is displayed.
- Select one of the available entries (entries set is conditioned by a database).



Entries:

- OPEN – select to enter a database (alternative method for database entering: single click on a given database field).

List of typical reports operations:

1. Searching for a record in a database by name.
2. Searching for a record in a database by code.
3. Searching for a record in a database by date.
4. Exporting database content to a USB flash drive via USB port.
5. Printing data on a specific record in a database.

The above processes are initiated by dedicated buttons located on the top of the display. Follow the displayed commands.

17.2. Weighings

Each weighing result sent from the weighing device to a printer is saved to the weighings database (read section *Result control*).

You can preview data of particular weighing records.

Procedure:

- Enter < **Reports** > submenu.
- Enter < **Weighings/Alibii** > database and select desired record.

List of parameters defined for a weighing record:

1. Measurement date.
2. Measurement result.
3. Tare value.
4. Stable/unstable measurement marking.
5. Air buoyancy control on/off marking.
6. Product name.
7. Operator.
8. Customer, customer name.
9. Working mode name.
10. Warehouse, source warehouse name.
11. Packaging, name of tare applied during product weighing.
12. Result control, information regarding range within which the weighed product is placed:
MIN – below LOW threshold (possible only if <Result control> is set to <NO> value),
OK – between the LOW and HIGH thresholds,
MAX – above HIGH threshold (possible only if <Result control> is set to <NO> value).
13. Weighing platform no., field with number of a weighing instrument by means of which a measurement was carried out.
14. Level status, information on level status maintained during the measurement .
15. Ambient conditions alerts, information regarding stability of temperature and humidity during the measurement.

17.3. Ambient Conditions

<Ambient conditions> database contains parameters related to ambient conditions. Depending on the balance type, the ambient conditions report can provide values of temperature, humidity, atmospheric pressure. If the given balance is connected to a THB sensor, then its indications are recorded to the database too.

Procedure:

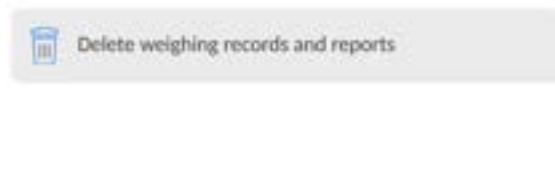
- Enter < Reports > submenu and press <Ambient conditions> entry.
- Select report, if not visible, scroll using navigation buttons.
- Report is named by date and time.

Caution: *It is possible to use 'search report' option.*

17.4. Reports Management

Function allowing to manage databases data. It comprises three options: Export weighing database, Delete databases and Delete weighings and reports.

← Manage reports

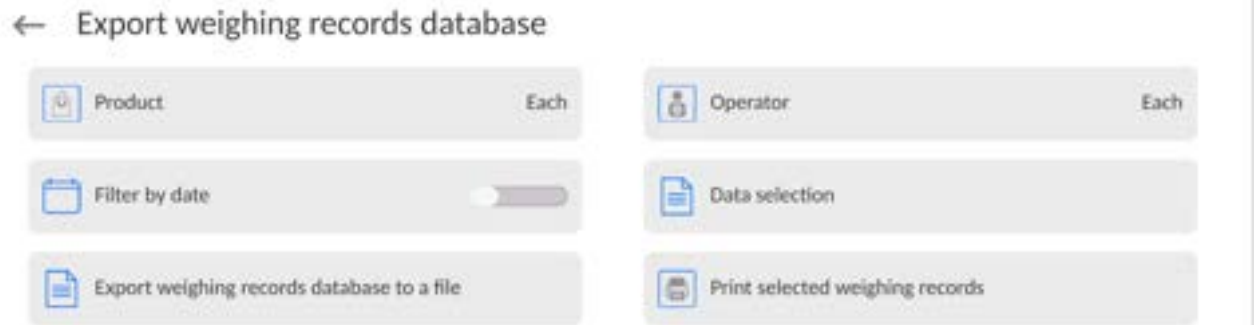


17.4.1. Export Weighing Database to a File

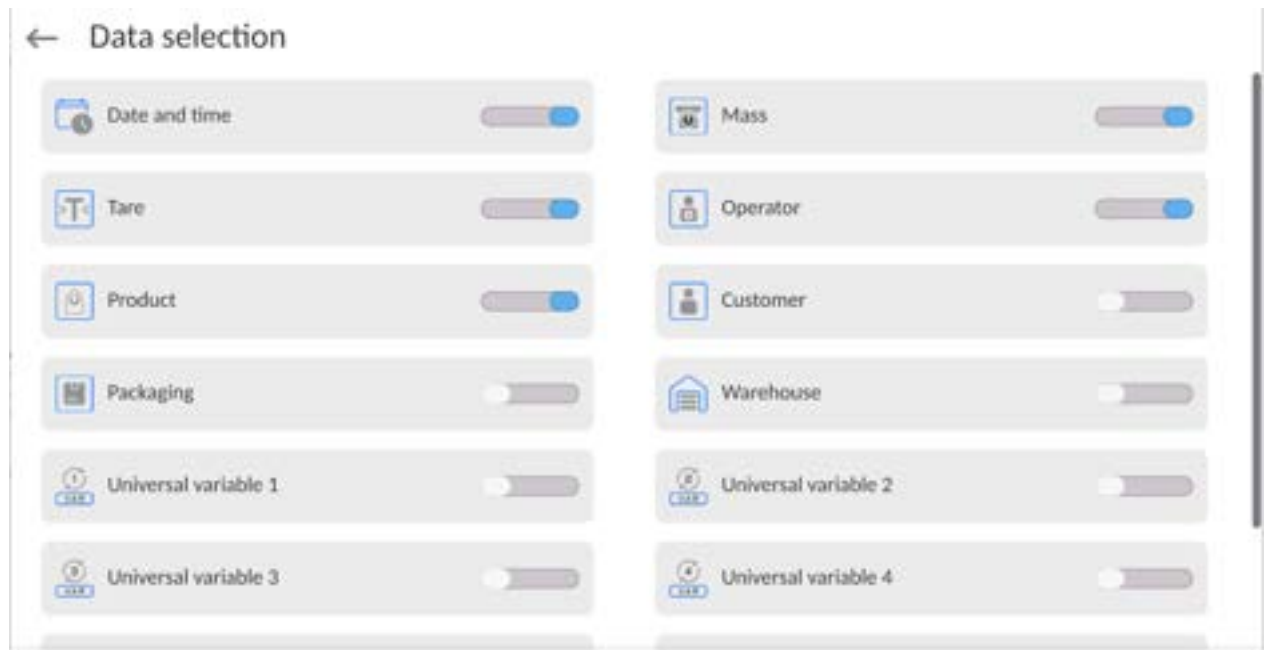
All measurements are saved to the <Weighing records> database and can be exported to a file using a USB flash drive.

Procedure:

- Connect the USB flash drive to the USB port.
- Press <Export weighing records database to a file> entry; a window for setting export options is opened.

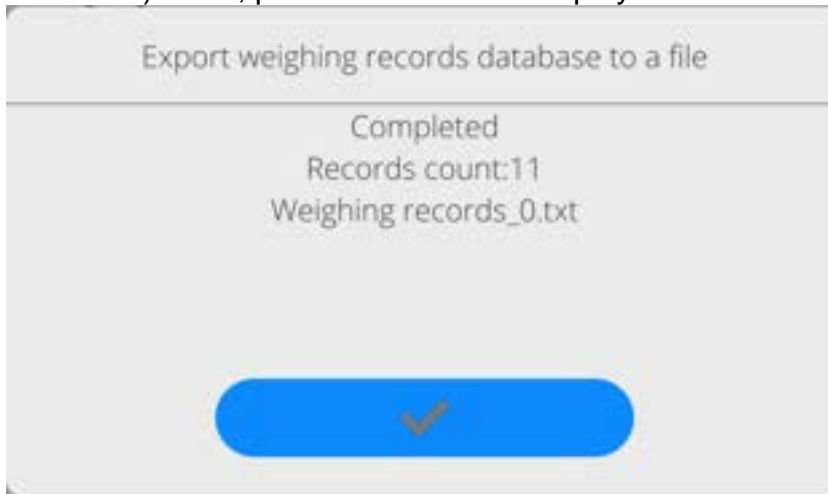


<Data selection> parameter allows you to specify which measurement-related data are to be exported.



- Set respective data and press <Export weighing records database to a file> entry; weighing database is automatically exported.
- Upon export completion, the message <Completed> is displayed along with information on the number of exported data and with the file name (*.txt)

extension). Next, previous window is displayed.



- You may return to the weighing procedure or proceed to other settings.

Caution: If balance software cannot identify the USB flash drive, then upon pressing <Export weighings database to a file> entry, <Operation failed> message is displayed.

- A name of created file consists of database name and balance serial number, e.g. <Weighing data_364080.txt>.
- Unplug the USB flash drive from the USB port.

Template of a created file:

The file is created in the form of a table, columns of which are separated by <Tab>. This allows for direct export of the file to <Excel> spreadsheet document. The table contains the following data: date and time, mass and mass unit, tare and tare unit, serial number, operator name, customer name, packaging name, source warehouse name, target warehouse name, control result name.

17.4.2. Delete Weighings and Reports

Function allowing to delete weighings and reports of a given database.

Procedure:

Activate <Delete weighing records and reports> parameter; a window with a numeric keyboard is displayed.

Enter a date specifying which data is to be removed. Date is given in the following form: year-month-day.

← Delete older than

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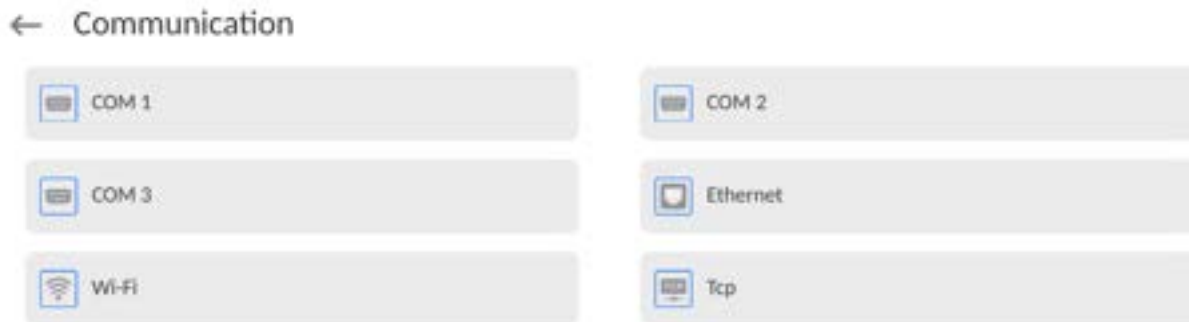
marzec 2023						
pon.	wt.	śr.	czw.	pt.	sob.	niedz.
27	28	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9



Confirm the date, all weighings and reports older than those specified by the date are removed. Quantity of deleted weighings and reports is displayed.

18. COMMUNICATION

Communication menu is located in the Parameters menu. To access Parameters menu, press Setup key or <Setup> quick access button. Communication between the balance and the peripheral devices is established via the following ports:



The parameters of each port can be configured depending on the needs.

It is possible to expand the range of interfaces with the use of the IM02 communication module that is connected to the scale via COM3 interface. In its standard design, the IM02 communication module is supplied with the following interfaces: RS 232 IM02, Virtual COM, 4WE/4WY.

18.1. RS232 Ports Settings

CAUTION: To ensure correct interaction with external devices via RS 232 ports, use a USB to RS232 converter.

<p>The diagram shows the top of the scale with several ports labeled. Port 4 is a USB type A port, port 5 is another USB type A port, port 6 is a circular port, port 7 is a circular port, and port 13 is a rectangular port.</p>	<p>4 – USB type A port, which after connecting the converter is seen by the software as RS 232 - COM1</p> <p>5 – USB type A port, which after connecting the converter is seen by the software as RS 232 - COM2</p>
<p>The diagram shows the bottom of the scale with several ports labeled. Port 1 is a circular port, port 2 is a circular port, port 3 is a circular port, port 8 is a circular port, port 9 is a circular port, port 10 is a circular port, port 11 is a circular port, and port 12 is a rectangular port.</p>	<p>12 - COM 3 port – RS 232 port.</p>

Procedure:

- Select communication port: <COM1>, <COM2> or <COM3>.
- Set respective parameters.

Transmission parameters for RS 232 ports:

- Baud rate: 4800, 9600, 19200, 38400, 57600, 115200 bit/s, 921600 bit/s*
- Data bits: 5, 6, 7, 8
- Stop bits: None, 1, 1.5, 2
- Parity: None, Odd, Even, Marker, Space


*) – Speed value available only to the COM3 port for cooperation with IM02 communication module.

18.2. ETHERNET Port Settings

Procedure:

- Select <Ethernet> port. Set respective parameters:
- DHCP: Yes – No
- IP Address: 192.168.0.2
- Subnet mask: 255.255.255.0
- Default gate: 192.168.0.1

Caution: The above presented values serve informative purposes only. Set the transmission parameters in accordance with your local network.

Press  button, the message <Restart balance to implement changes> is displayed.

Return to the weighing procedure and restart the balance.

18.3. Wi-Fi Settings


A balance equipped with Wi-Fi displays a respective pictogram:



Procedure:

- Select <Wi-Fi> communication interface. Set respective parameters:
- DHCP: Yes – No
- IP Address: 10.10.9.155
- Subnet mask: 255.255.255.0
- Default gate: 10.10.8.244

Caution: The above presented values serve informative purposes only. Set the transmission parameters in accordance with your local network.

Press  button, the message <Restart balance to implement changes> is displayed.

Return to the weighing procedure and restart the balance.

You may use <Available networks> parameter to view the list of networks detected by the balance:



A pictogram with a padlock means that the password is required. Press <Refresh> to search for available networks.

Press <Network status> to check selected network parameters.



The selected network and connection parameters are saved to the balance memory. The program connects to the network in accordance with the memory-saved parameters each time the balance is switched on. To change this, select <Forget network> option. The previously selected network gets disconnected.

18.3.1. Hot Spot - General Information

Hot Spot - an open access point allowing wireless connection with the balance by another device - laptop, tablet or phone, using a wireless network based on Wi-Fi standard.

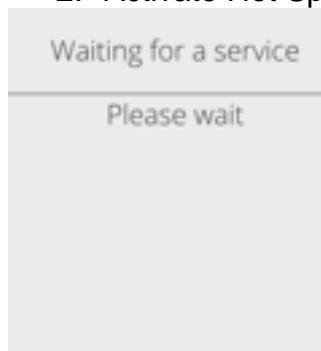
The owner of the Hot Spot decides for himself how, to whom and under what conditions he is going to make his link available by logging in, which requires having an individual user name and password (these data are given while starting the service and are stored in the memory of the balance).

18.3.2. Hot Spot Activation

1. Enter Wi-Fi option



2. Activate Hot Spot, the balance will switch to the service settings after a moment.





3. Enter an individual name and password for access (password must be at least 8 characters long).

← Name

ELIPSIS1234



Waiting for a service

Please wait

← New password



← Repeat the new password



Waiting for a service

Please wait

← Wi-Fi

Hot Spot [toggle]

Password *****

IP address 192.168.4.1

Default gateway 0.0.0.0

MAC address E4-5F-01-E5-41-E9

Name ELP551234

Link by QR code

Subnet mask 255.255.255.0

DNS server 127.0.0.1


Screen Link

4. From now on, the Hot Spot service will be active and the created subnetwork will be visible by other smartphone devices under the name assigned above and you will be able to connect to it using the assigned password.

18.4. TCP Settings

TCP (*Transmission Control Protocol*) is a stream protocol, operating in customer-server mode, enabling communication between two computers. TCP operates in client – server mode. You can establish a connection on the specified server port.

Procedure:

- Enter <Communication> parameters.
- Select <TCP / Port>; a <Port> window with an on-screen keyboard is opened.
- Insert required port number and press  button to confirm.

18.5. Virtual COM Settings

Applicable in the case of an active IM02 communication module

Virtual COM is intended for connecting the scale to a computer.

Steps:

1. Enter <**Peripherals / Computer / Port**> submenu and set **Virtual COM** option.
2. Run a PC software to read measurements made with the scale.
3. Set communication parameters in the PC software, i.e.: COM port, transmission parameters.
4. Start connection.

19. PERIPHERALS

<Peripherals> menu is located in the <Parameters> menu. To access Peripherals menu, press Setup key or < Setup> quick access button. Peripherals menu provides a list of devices that can cooperate with the balance.

19.1. Computer

Active balance – computer connection is signalled by  pictogram (top bar of the home screen). Carry out configuration using <Computer> submenu.

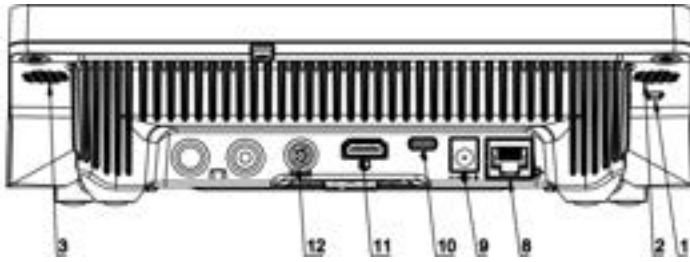
Procedure:

- Press Setup and select <Peripherals/ Computer>.
- Set balance-computer operation parameters:
 - Computer port
Available options: none, COM 1, COM 2, COM3, TCP, USB Free Link, RS 232 IM02**, Virtual COM**.

*) - for port description, read section COMMUNICATION of the manual.

***) - Communication ports of the scale-connected IM02 communication module.

USB FREE LINK - USB type C port (socket no. 10 on the back of the indicator), to which the computer is connected using a USB type A/type C cable.



Tool for entering data, it functions as a keyboard. Upon proper modification of the standard or non-standard printout and sending a proper command from the computer, or upon pressing ENTER key located on the operation panel, the data from the non-standard printout are entered directly to computer programs, e.g. Excel, Word, Notepad etc. To ensure proper operation with Excel-type program, the non-standard printout must be properly configured by inserting the print formatting characters, such as Tab, Enter and language-specific diacritics, into the designed printout. Also remember to set the correct decimal separator (full stop or comma) that the Excel-type program will accept. It can be set in: *Setup/Misc./Decimal point*.

Below is an example of a printout template and the resulting printout in Excel:




- 1 – fixed text
- 2 – tab key (skip to the next column)
- 3 – variable {6}, net weight in an adjustment unit
- 4 – tab key (skip to the next column)
- 5 – variable {10}, mass unit

	A	B	C	D	E	F	G
1							
2							
3				NETTO:	1,1235 g		
4				NETTO:	1,1455 g		
5				NETTO:	1,1258 g		
6				NETTO:	1,1325 g		

19.1.1. Computer address

Setting a balance address which computer is connected to.


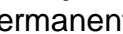
Procedure:

- Enter **<Devices / Computer / Address>** submenu and you will see **<Address>** box with on-screen keyboard.
- Enter address and press  to confirm changes.

19.1.2. Permanent transmission

Activation of balance-computer permanent transmission. After enabling **<Permanent transmission>** parameter, the content of **<Weighing Printout Template>** is continuously sent to the PC.


Procedure:

- Enter **<Devices / Computer / Permanent transmission>** submenu and set relevant value ( - Permanent transmission disabled;  - Permanent transmission enabled).

19.1.3. Interval

Setting frequency of **<Weighing Printout Template>** printout for permanent transmission. Printing frequency can be set in seconds, with an accuracy of 0.1sec. and the range from 0.1 to 1000 seconds.


Procedure:

- Enter **<Devices / Computer / Interval>** submenu and you will see **<Interval>** edition window.
- Enter desired value and confirm by pressing .

19.1.4. Weighing printout template


A unique template for printing from balance to PC.

Procedure:

- Enter **<Devices / Computer / Weighing Printout Template>** submenu. You will see **<Weighing Printout Template>** window with an on-screen keyboard.
- Modify the template and confirm changes by pressing .




19.1.5. Cooperation with E2R System



Activation of cooperation between the balance and **E2R System**. **E2R System** software is a modular system that comprehensively supports production processes related to weighing at various stages.

	Only <Administrator> is allowed to activate <E2R> parameter. In case of cooperating with the <E2R System> software, database edition in the balance is blocked.
---	--

Access path:  / **<Devices / Computer / E2R System>**.

List of options in **<E2R System>** submenu:

Active system	Activation of connection to E2R System :  - connection disabled,  - connection enabled. If the connection is enabled, the  icon in the top bar of the home screen will
----------------------	---

	be visible.
Block product selection	Activation of product selection lock for balance operator:  - lock disabled,  - lock enabled.
Databases	Submenu with configuration of databases that cooperate with E2R System.
Info	List of database events that occur during active connection to E2R System.

19.2. Printer

<Printer> submenu allows you to:

- set port for establishing communication with a printer: COM 1, COM 2, COM3, USB, Tcp Client, USB Free Link*, RS 232 IM02**;
 - define printer's code page (default: 1250),
 - define control codes for PCL printer or receipt printer.
- Caution: Codes must be entered in a hexadecimal form!**
- define printout templates.

*) - for port description, read section COMMUNICATION of the manual.

***) - Communication ports of the scale-connected IM02 communication module.



To ensure correct balance – printer operation (correct printout of diacritical signs of a given language), respective baud rate, obligatory for a given printer, must be chosen (see the printer settings). Additionally, the code page of a sent printout must be accordant with the code page of a printer.

There are two methods for obtaining code page accordance:

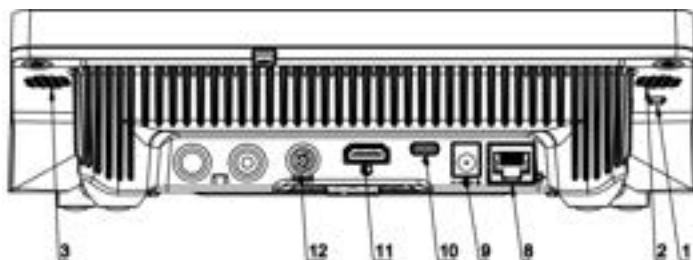
- by setting the right code page in printer settings (read the printer manual) – respective to the printout code page set in the balance;

Code page	Language
1250	Polish, Czech, Hungarian.
1252	English, German, Spanish, French, Italian.
1254	Turkish.

- by sending a control code from the balance to the printer, which automatically sets the right code page (respective to the code page set in the balance) before the data printout – it is possible only for printers equipped with this option.

	Default value of printer code page is 1250 – central European code page.
	Detailed description of communication between the balance and the labeller is to be found in 'ANNEX 03'.

USB FREE LINK - USB type C port (socket no. 10 on the back of the indicator), to which the computer is connected using a USB type A/type C cable.



Tool for entering data, it functions as a keyboard. Upon proper modification of the standard or non-standard printout and sending a proper command from the computer, or upon pressing ENTER key located on the operation panel, the data from the non-standard printout are entered directly to computer programs, e.g. Excel, Word, Notepad etc. To ensure proper operation with Excel-type program, the non-standard printout must be properly configured by inserting the print formatting characters, such as Tab, Enter and language-specific diacritics, into the designed printout. Also remember to set the correct decimal separator (full stop or comma) that the Excel-type program will accept. It can be set in: *Setup/Misc./Decimal point*.

Below is an example of a printout template and the resulting printout in Excel:



- 1 – fixed text
- 2 – tab key (skip to the next column)
- 3 – variable {6}, net weight in an adjustment unit
- 4 – tab key (skip to the next column)
- 5 – variable {10}, mass unit

	A	B	C	D	E	F	G
1							
2							
3				NETTO:	1,1235 g		
4				NETTO:	1,1455 g		
5				NETTO:	1,1258 g		
6				NETTO:	1,1325 g		

If data with a high information content, such as the SQC report, is to be printed using Free Link, it is imperative that the parameter <Receipt printer speed [character/second]> is set to 15.

← Printer

Port COM 1

Control codes

Printouts

Code page 1250

Receipt printer speed [character/second] 0

A printout template describes how to print information from databases.

The template can be modified. In order to check the format of a printout template, print the data related to e.g. product parameters. To do it, go to <Products/Edit product> submenu and press printer pictogram.

Default values for particular templates:

Product printout template	{50}
	{51}
Operator printout template	{75}
	{76}
Customer printout template	{85}
	{86}
Warehouse printout template	{130}
	{131}
Package printout template	{80}
	{81}
	{82}
Ambient conditions printout template	
	----- AMBIENT CONDITIONS-----
	{275}
	IS T1: {278} °C
	IS T2: {279} °C
	THB T: {276} °C
	THB H: {277} %

19.3. Barcode Scanner

The balance enables operation with a barcode scanner. The barcode scanner is used to facilitate quick search for database records:

- Products,
- Operators,
- Customers,
- Packages,
- Warehouses,
- Formulations,
- Pipettes,
- Series in a differential weighing,
- Universal variables.



In <Communication> submenu it is necessary to set baud rate value to a value accordant with bar code scanner (by default 9600b/s). Detailed description of communication between the balance and the bar code scanner is to be found in 'ANNEX 03'.

To configure the barcode scanner, enter:
„**Setup / Peripherals/ Barcode scanner**”.

Caution: Enter **<Communication>** submenu and set baud rate for the barcode scanner (by default 9600b/s). For detailed description of the balance - barcode scanner communication, read **ANNEX E** of this user manual.

19.3.1. Barcode Scanner Port

Procedure:

- Enter **<Peripherals>** parameter and go to „**Barcode scanner / Port**” parameter. Select respective option.

Ports for balance - scanner communication:



- RS 232 (COM1),
- RS 232 (COM2),
- USB

19.3.2. Prefix/Suffix

You can edit **<Prefix>** and **<Suffix>** to synchronize the balance program with the barcode scanner.

Caution: In RADWAG-adopted standard, the prefix is 01 sign (byte) hexadecimal format, the suffix is 0D sign (byte) hexadecimal format. For detailed description of the balance - barcode scanner communication, read **ANNEX E** of this user manual.

Procedure:

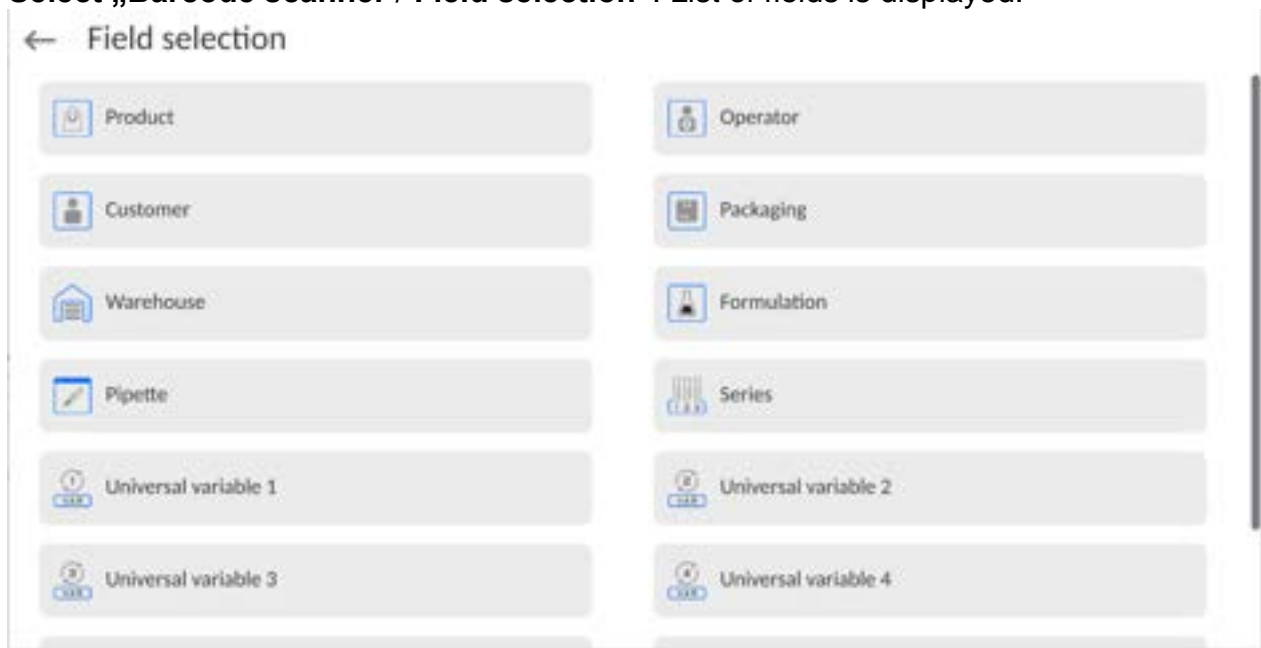
- Enter **<Barcode scanner>** submenu,
- Select **<Prefix>** parameter and enter hexadecimal value using the on-screen keyboard. Press  button to confirm.
- Select **<Suffix>** parameter and enter hexadecimal value using the on-screen keyboard. Press  button to confirm.

19.3.3. Field Selection

Parameter for specifying for which field the search is to be carried out in particular databases.

Procedure:

- Enter **< Peripherals>** submenu,
- **Select „Barcode scanner / Field selection”**. List of fields is displayed:



- Select one item from the list. The following parameters may be edited:

Filtering	Parameter allowing you to declare search criteria (see table below)
Offset	Parameter allowing you to set the first significant code's character; characters preceding the first significant character are skipped during comparison search.
Code length	Parameter allowing you to set the number of code's characters to be taken into account during search procedure.
Start marker	Parameter allowing you to declare the starting point of scanned code, taken into account during the search.
End marker	Parameter allowing you to declare the ending point of scanned code, taken into account during the search.
Ignore marker	Parameter allowing you to determine whether start and end markers are to be referred to or skipped during comparison of a scanned code with the code saved to the balance.

Filtering criteria conditioned by field type:

Field selection	Filtering
Product	None, Name, Code, EAN code
Operator	None, Name, Code,
Customer	None, Name, Code,
Packaging	None, Name, Code,
Warehouse	None, Name, Code,
Formulation	None, Name, Code,
Pipette	None, Name, Code,
Series	None, Name, Code,
Universal variables	None, Active

19.3.4.Test

<Test> parameter allowing you to verify if operation of a barcode scanner connected to a balance is correct.

Procedure:

- Enter **<Barcode scanner>** submenu,
- Select **<Test>** parameter; **<Test>** edit box is displayed, it features ASCII and HEX fields.
- The code is scanned and entered to the ASCII and HEX fields; next, the test result is displayed in the bottom part.

When:

- <Prefix>** and **<Suffix>** declared in the balance settings comply with **<Prefix>** and **<Suffix>** of the scanned code, the test result is **<Positive>**,
- <Prefix>** and **<Suffix>** declared in the balance settings do not comply with **<Prefix>** and **<Suffix>** of the scanned code, the test result is **<Negative>**,

19.4. Ambient Conditions Module

Ambient conditions module (THB) can be connected to the balance via COM 1, COM 2, UDP or USB ports. In order to provide correct cooperation, enter the module address and baud rate for the port (port settings) to which the ambient conditions module is connected (the address and baud rate are to be found on the module's data plate).

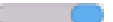

19.5. IM02 communication module

The IM02 communication module allows the scale to cooperate with such accessories as printers, control keys, stack lights, buzzers, PLC controllers, as well as other control-signalling devices and PCs.



The procedure of connecting the IM02 communication module to the supply network and scale has been described in detail in the 'IM02 communication module' manual.

19.5.1. Activation of IM02-to-scale connection

- Plug in the **IOIOI** connector of the IM02 communication module to **COM3 (IOIOI)** port of the scale by using a dedicated **PT0454** cable.
- Enter **<Peripherals / IM02 communication module / Active>** submenu and enable IM02 communication module ( - module active,  - module inactive).
- Once the IM02 communication module has connected to the scale, the following information will be automatically displayed:

Status	Active connection status, the status takes the following values: Connected, Not connected.
Software rev.	Software version of the IM02 communication module.
Manufacture variant	IM02 communication module manufacture version: IM02.1* - standard (RS232, 4IN/4OUT, Virtual COM); IM02.2** - standard + Analogue output 4-20mA.

*) - Simultaneously the scale menu is extended to include **<Inputs / Outputs>** submenu and list of available communication ports in the **<Communication>** submenu.

) - Simultaneously the scale menu is extended to include **<Inputs / Outputs> submenu, list of available communication ports in the **<Communication>** submenu and **<Current loop>** submenu in the **<Peripherals / IM02 communication module>** menu.

19.5.2. Current Loop

Applicable in the case of an active IM02.2 communication module

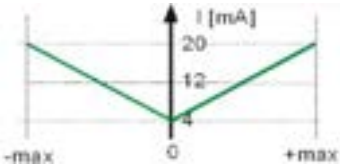
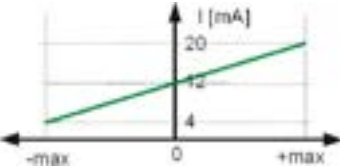
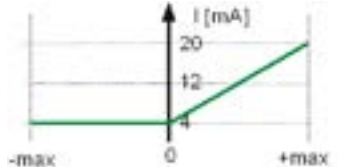
In order to configure the current loop module go to **<Peripherals / IM02 communication module / Current loop>**.

Submenu structure **<Current loop>**:

Mode	The choice of operating mode that determines current behavior of the current loop.
Adjustment	Current loop module adjustment process.
Min threshold	The determined calibration factor, corresponding to the 4mA reading of the milliammeter connected to the measuring system.
Max threshold	The determined calibration factor, corresponding to the 20mA reading of the milliammeter connected to the measuring system.



19.5.2.1. Operating mode

The choice of operating mode that determines current behavior of the current loop:



<p>Absolute value of mass (default mode)</p>	<p>Working characteristics:</p>  <p>The 4mA indication corresponds to a mass value equal [0]. The 20mA indication corresponds simultaneously to the mass value [-max] and [+max].</p>
<p>With negative range</p>	<p>Working characteristics:</p>  <p>Value 4mA is related to [-max] mass value. Value 12mA is related to [0] mass value. Value 20mA is related to [+max] mass value.</p>
<p>Only positive values</p>	<p>Working characteristics:</p>  <p>Value 4mA is related to [-max] ÷ [0] mass values. Value 20mA is related to [+max] mass value.</p>

19.5.2.2. Adjustment analogue output


The scale program enables determination of transient linear characteristics of 4-20mA module installed in IM02 communication module.

	<i>To determine the transient characteristics, connect the current loop module according to the diagrams in the "IM02 communication module" user manual.</i>
	<i>For readout of current values use milliammeter with min. range of 20 mA and resolution of 0.01 mA (20 mA – full range of current output module).</i>

Procedure:

- Enter **<Peripherals / IM02 communication module / Current loop / Adjustment>** submenu, **<Metered value [mA]>** edit box and keyboard are displayed.
- Enter the reading value of the milliammeter connected to the measuring system.
- Press  key to confirm changes, **<Metered value [mA]>** edit box and keyboard are displayed again.
- Repeat the above steps until **<Complete>** appears.
- Press  button to confirm.
- At the same time, the **<Min Threshold>** and **<Max Threshold>** values will be determined, corresponding to the 4mA and 20mA readings of the milliammeter connected to the measuring system.
- Go to the home screen.

19.6. Modbus TCP

	<i>For detailed information regarding Modbus protocol read „MODBUS TCP - Communication Protocol of PUE CY10”.</i>
---	---

Modbus TCP protocol can be used via the Ethernet communication interface. Configuration of Modbus TCP protocol settings can be found herein the **<Devices / Modbus TCP>** submenu.

Submenu structure **<Modbus TCP>**:

Active	Activation/deactivation of the Modbus TCP transmission protocol.
Port	Number of port for transmission protocol (by default 502).

20. INPUTS / OUTPUTS

Applicable in the case of an active IM02 communication module

The PUE CY10 meter can support **4 inputs / 4 outputs** via connection to the IM02 communication module.

Access path: < / **Inputs/Outputs**>.

20.1. Input Setup

- Enter <**Inputs/Outputs**> submenu.
- Select <**Inputs**> parameter, list of available inputs is displayed.
- Edit selected input, list of functions to be assigned is displayed. Input functions list is identical like key functions list, read section 20.2.
- Select the function you want to assign to the input, next go back to the home screen.



By default all functions are assigned with <None> value.

20.2. Output Setup

Output gets activated at the moment of assigning it with a given function. Unassigned outputs remain inactive.

Procedure:

- Enter <**Inputs/Outputs**> submenu.
- Select <**Outputs**> parameter, list of available outputs is displayed.
- Edit selected output, list of functions to be assigned is displayed.

None	Output inactive.
Stable	Stable weighing result over LO threshold value.
MIN stable	Stable weighing result below the MIN threshold.
MIN unstable	Unstable weighing result below the MIN threshold.
OK stable	Stable weighing result between MIN and MAX thresholds.
OK unstable	Unstable weighing result between MIN and MAX thresholds.
MAX stable	Stable weighing result over the MAX threshold.
MAX unstable	Unstable weighing result over the MAX threshold.
! OK stable	Stable weighing result out of OK threshold.
! OK unstable	Unstable weighing result out of OK threshold.
MIN	MIN threshold signalling.
OK	OK threshold signalling.
MAX	MAX threshold signalling.
! OK	Signalling of weighing result out of OK threshold.
Zero	Zero weighing result („zero” marker).

- Select the function you want to assign to the output, next go back to the home screen.



By default all functions are assigned with <None> value.

21. MISCELLANEOUS PARAMETERS

This menu contains parameters facilitating balance operation language, date – time, beep sound, display adjustment, level control. To enter <Misc.> submenu, press Setup and next press <Misc.> button.

21.1. Interface Language

Procedure:

Enter <Misc.> submenu.

Select <Language> parameter and set language.

Available languages: Polish, English, German, French, Spanish, Korean, Turkish, Chinese, Italian, Czech, Romanian, Hungarian, Russian, Serbian.

21.2. Date and Time

You can set date, time and their formats.

There are two ways to edit date and time settings:

- Press <Date and time> entry (home screen's top bar).
- Go to <Setup / Misc./ Date and time>.

Enter the date and time settings; an on-screen keyboard is displayed. Set date and time: year, month, day, hour, minute; confirm the changes.



Additional functions of <Setup / Misc./ Date and time> submenu:

Name	Value	Description
Time zone	Europe, Warsaw	Parameter value: name of time zone/country. Particular name contains information regarding summer/winter time change.
Date and time	2016.04.04 08:00:00	Enter this parameter to set an internal clock and date.

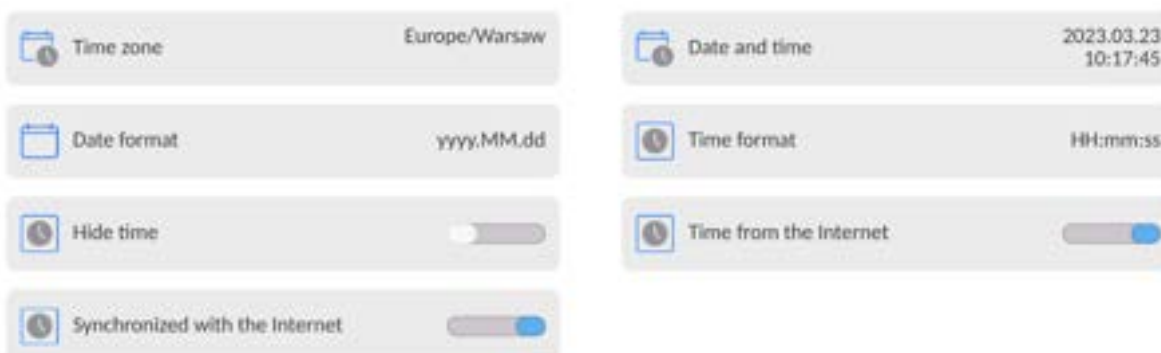
Date format	yyyy.MM.dd *	Enter this parameter to select date format. Options: d.M.yy, d/M/yy, d.M.yyyy, dd.MM.yy, dd/MM/yy, dd-MM-yy, dd.MM.yyyy, dd/MM/yyyy, dd-MMM-yy, dd.MMM.yyyy, M/d/yy, M/d/yyyy, MM/dd/yy, MM/dd/yyyy, yy-M-dd, yy/MM/dd, yy-MM-dd, yyyy-M-dd, yyyy.MM.dd, yyyy-MM-dd.
Time format	HH:mm:ss **	Enter this parameter to select time format. Options: H.mm.ss, H:mm:ss, H-mm-ss, HH.mm.ss, HH:mm:ss, HH-mm-ss, H.mm.ss tt, H:mm:ss tt, H-mm-ss tt, HH.mm.ss tt, HH:mm:ss tt, HH-mm-ss tt, h.mm.ss tt, h:mm:ss tt, h-mm-ss tt, hh.mm.ss tt, hh:mm:ss tt, hh-mm-ss tt
Hide time	No	Enabling/disabling date and time preview on the home screen.
Time from the Internet	Yes	Enter this parameter to update time and date of a network-connected balance with the network time and date.
Synchronized with the Internet	Yes	Parameter informing whether time and date values have been synchronized with the network data.

*) - For date format: y – year, M – month, d – day

**) - For time format: H – hour, m – minute, s – second

<Date and time> parameter enables preview of declared date and time formats.

← Date and time



Caution: <Date and time> parameter can be accessed only by an operator with appropriate permissions. Permissions level can be modified by the administrator in <Permissions> menu.

21.3. Extension Module

Extension module allows to:

- activate compliance with FDA 21 CFR procedures,
- run communication protocol extension, and
- disable standard licence (demo balance mode).

In order to run the mode, a license number is required for a particular option release. You must contact the manufacturer if you want to get the number.

Procedure:

Enter <Misc.> submenu, select <Extension modules> parameter and follow the prompts.


21.4. Sound

Procedure:

Enter <Misc.> submenu, select <Sound> parameter and set appropriate option:

Printout confirmation sound	– Yes/No
Touch panel sound	– Yes/No
Sensors	– Yes/No
Button	– Yes/No
Volume	– range 0 - 100%

21.5. Visual printout confirmation

The option that allows you to visually confirm the measurement and record it in the weighing record base. After entering  value, every saved measurement will be communicated to the operator through temporary illumination of the mass display in blue.



21.6. Sleep Mode

You can turn on display sleep mode.

Procedure:

Press Setup key, next press: < Misc./Display sleep mode> submenu.

Select one of the following options: [None; 1; 2; 3; 5; 10; 15]. Digits stand for minutes. The software returns to the previous menu.

CAUTION:

The display turns to sleep mode only when the balance is not operated (the indication on the screen remains the same). Upon mass change, or pressing any key on the panel, the balance returns to weighing.

21.7. Display Brightness

Display brightness influences the duration of operation of battery-powered balance. The brighter the screen, the shorter the operation time. To make the balance work longer, reduce screen brightness.

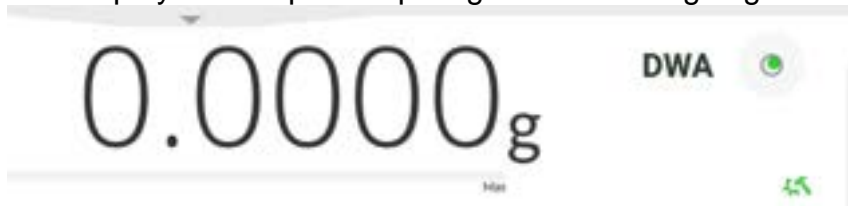
Procedure:


Press Setup, next press: <Misc./Display brightness> submenu.

Enter desired value: [0% - 100%]. Display brightness changes automatically, the previous menu is displayed.

21.8. Vibration Detection

The program detects incorrect loading of the weighing pan with the sample. Incorrect loading can lead to increased indication errors. Activation of 'Vibration detection' function is signalled with display of a respective pictogram in the weighing result window.



If incorrectly carried out loading is detected, the pictogram turns to red . The measurement result may be affected by a greater error.

Procedure:

- Enter <Misc.> submenu.
- Select <Vibrations detection> parameter.
- Select one of available options:
 - Yes – function on / No – function off

21.9. Level Control

The balance is equipped with Automatic Level Control mechanism.

You can define its operation for non-verified devices.

In the case of verified instruments, the settings are hidden and the balance operates in accordance with factory settings, i.e. <Active with lock>. The weighing process is possible only if the balance is properly levelled.

Procedure:

- Enter <Misc.> submenu.
- Select <Level control> parameter, an edit box is displayed.
- Select one of available options:
 - None – level indicator not displayed, the balance does not control level status,
 - Active – level indicator displayed, level status is signalled by colour (green→ level status OK, red→ levelling required).
 - Active with lock – level indicator displayed, level status is signalled by colour (green→ level status OK, red → levelling required). For red level indicator 'no Level' alert is displayed - weighing function is blocked.

Caution: For detailed information on levelling, read section 13.3 of this user manual.

21.10. Decimal Point

Parameter allowing to set punctuation mark for a printout.

Procedure:

- Enter <Misc.> submenu.
- Select <Decimal point> parameter, an edit box is displayed.
- Select one of available options:
 - Dot
 - Coma

Submenu screen is displayed.

21.11. Proximity Sensors Sensitivity

Parameter allowing you to change sensitivity of the proximity sensors; the values range between 0 - 9.

By default, it is 5 - 7.

Procedure:

- Enter <Misc.> submenu.
- Select <Proximity sensors sensitivity> parameter, an edit box is displayed.
- Select one of available options. Menu screen is displayed.

21.12. Doorway Degree

Parameter for setting how wide the door is to be opened in the case of an automatic operation.

Default value: <100 %> - maximally wide open door.

Procedure:

- Enter <Misc.> submenu.
- Select <Doorway degree> parameter, an edit box is displayed.
- Set <75%> value.
- Confirm. Menu is displayed.

21.13. Automatic Ionization

Parameter for switching the ionization on and setting the ionization state.

Options: None/Low/High.

Procedure:

- Enter <Misc.> submenu.
- Select <Automatic ionization> parameter, settings window is displayed.
- Set <Low> value.
- Confirm. Menu is displayed.

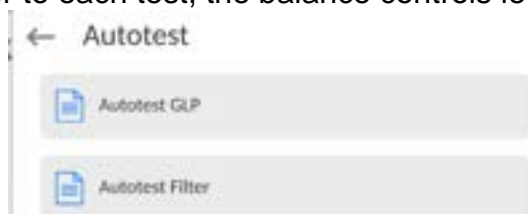
21.14. Autotest

<AUTOTEST> function has been designed to help you assess balance operation and to diagnose the cause of weighing errors (exceeding the maximum permissible values). AUTOTEST facilitates systematic optimisation of balance settings, which is necessary to maintain the best possible repeatability and weighing time at the workstation. The function allows you to monitor the parameters at an optional moment and save records from carried out tests.

There are two modules:

AUTOTEST FILTER; AUTOTEST GLP.

Prior to each test, the balance controls level status, temperature and humidity.



AUTOTEST FILTER

Procedure consisting in loading and unloading of the internal weight for all possible 'Filter' and 'Value release' settings; the test requires 10 repetitions. It controls 2 parameters: 'Repeatability' and 'Stabilization time'.

The test takes approximately 1 hour. Upon completion, information regarding results is obtained.

Optimal settings for particular ambient conditions are provided.

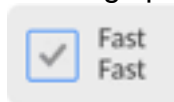
Autotest Filter enables:

- to obtain the highest measurement repeatability and the shortest measurement time with acceptable value of repeatability;
- test results are stored in the balance memory until it is turned off,
- test results printout,
 - direct and fast selection of optimal parameters.

Upon completed autotest, a summary with the results is displayed.

Information regarding filter settings is provided automatically via respective pictograms:

- settings providing the fastest measurement (the shortest measurement time).
- settings providing the most accurate measurement (the lowest possible value of deviation for 10 measurements).
- settings providing optimal measurement (the lowest value of time and deviation product).

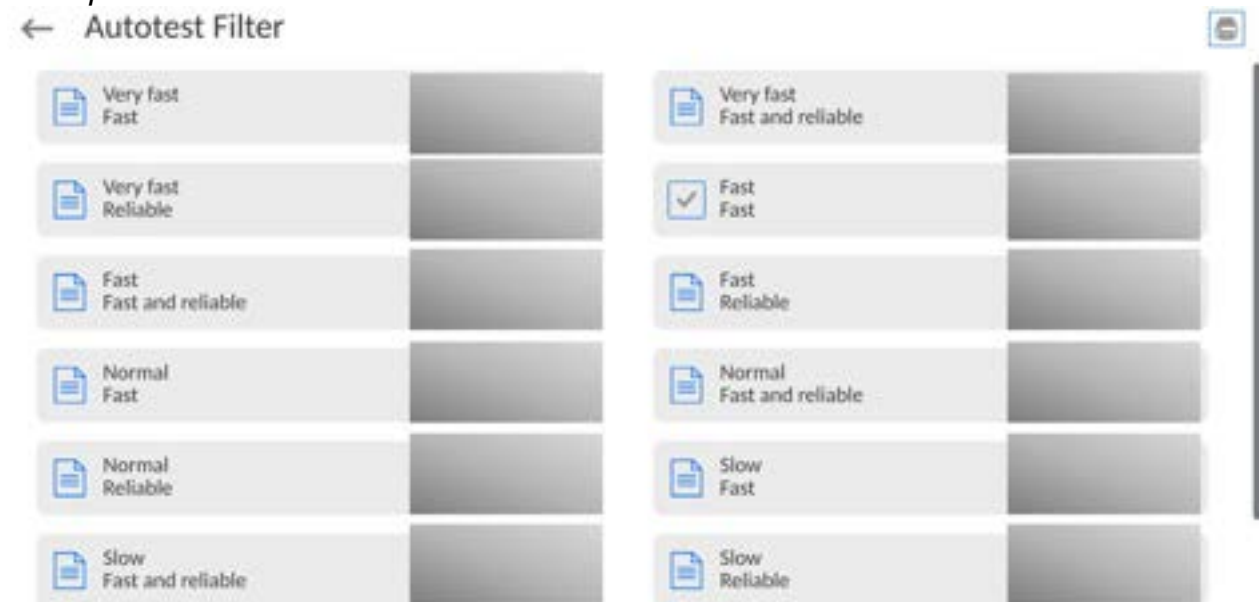


- current settings for filters.

Measurement results:

- *Filter type.
- *<Value release> parameter value.
- *Repeatability of indications expressed as standard deviation.
- *Average time of measurement stabilization.

Example:



Report example:

```
----- Autotest Filter: Report -----  
Balance type           XA 5Y  
Balance S/N           442566  
Operator               Hubert  
Software ver.         NL1.6.5 S  
Date                  2015.05.07  
Time                  09:34:48  
-----  
Reading unit           0.0001/0.0001 g  
Internal weight mass   148.9390 g  
Temperature: Start    25.26 °C  
Temperature: Stop     25.66 °C  
-----  
Filter                 Very fast  
Value release          Fast  
Repeatability          0.0042 g  
Stabilization time    4.505 s  
.  
Filter                 Very slow  
Value release          Reliable  
Repeatability          0.0207 g  
Stabilization time    5.015 s  
  
Signature  
.....
```

Procedure:

Upon 'Autotest Filter' function activation, the process starts automatically. A progress bar is displayed. Upon process completion, a summary is displayed and the current filter settings are provided. The report can be printed.



You can abort the process at any moment. To do that, press <  > button.

AUTOTEST GLP

Autotest GLP is a test of repeatability of internal weight loading and determination of indication error, which error is referred to the balance maximum capacity.

Procedure:

- load the internal weight twice, next load the internal weight ten times,

- adjust the balance,
- calculate and record the value of standard deviation.
- for a balance with automatic door, the door opening and closing test is carried out.

Autotest GLP function enables:

Report display and printout,

Record of a report containing basic data, ambient condition values and test results.

Test results:

*Deviation for maximum capacity.

*Value of repeatability expressed as standard deviation.

*Door test result (positive / negative).

Report example:

```

.....
----- Autotest GLP: Report -----
Balance type      XA 5Y
Balance S/N      400010
Operator         Admin
Software ver.    NLx.x S
Date             2012.01.16
Time             09:17:16
-----
Measurements quantity  10
Reading unit          0.0001 g
Internal weight mass  140.094 g
Filter                Average
Value release         Fast and precise
-----
Deviation for Max.    -0.0118 g
Repeatability         0.00088 g
Signature
.....

```

Procedure:

Press entry with the test name, a message box is displayed.

Do one of the following:

- Start subsequent AUTOTEST GLP process,
- Preview results of completed autotests, and export all saved test results as a *.csv file,
- Delete all saved test results.

You can abort the process at any moment by pressing <X> button.

Results of carried out autotests are displayed in a table (each line features date and time of autotest procedure and its result).

To preview particular autotest data, press a respective table line.

In order to print a result of a single autotest, enter its details (see above) and generate a printout by pressing <Print> key located on the top of the display.

Autotest results can be exported by pressing <Export> entry in the window with all saved reports. Data is sent to a USB flash drive, connected to the balance USB port, as a *.csv file.

21.15. Start-Up Logo

(option enabled only for authorized operators)

The parameter enables you to change the logo that is displayed at the moment of balance start-up.

21.16. Export of System Events

(option enabled only for authorized operators)

The parameter enables you to generate a special type of file that is automatically saved to a USB flash drive, plugged to the USB port. The file helps RADWAG service to diagnose the cause of problems occurring during balance operation.

Procedure:

- Plug a USB flash drive to the balance USB port.
- Enter <Misc.> submenu.
- Select <Export system events> parameter.
- The software generates a file and automatically saves it on the USB flash drive.
- The generated file has to be sent to RADWAG.

21.17. Text-to-speech conversion

Parameter for enabling the processing of group names and menu parameters into speech emitted from the indicator speakers. The emitted voice is only in English.

22. SCHEDULED TASKS

This parameter provides settings for planning a cyclic performance of particular operations, e.g. balance adjustment or display of prompts.

22.1. Adjustment

← Edit record


Name	Code
Planned operation: Automatic adjustment	Active: <input checked="" type="checkbox"/>
First operation date and time: 2023.03.23 12:08:46	Interval: 24 h
Message	

<Scheduled adjustments> parameter allows you to precisely specify the time for adjustment performance and the interval between successive adjustments. The parameter is not connected with automatic adjustment and its criteria (time, temperature). You can schedule when internal and external adjustments are to be performed. In order to design a schedule for external adjustment, it is necessary to record mass standards for adjustment performance into the balance memory.

Procedure:

Enter data of mass standards intended for external adjustment performance; to do it: Enter operator menu, select <Adjustment> submenu and find <Adjustment weights> parameter.






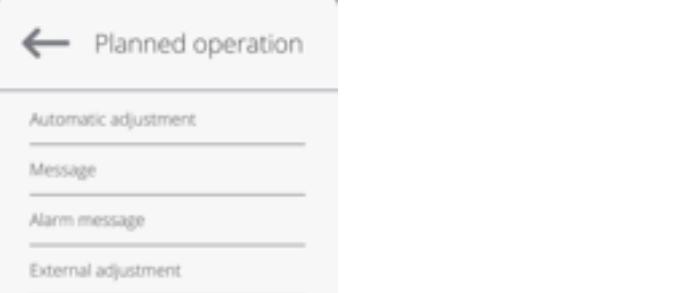





	<p>Enter operator menu, select <Scheduled tasks> parameter. A window opens in which an authorised user (Administrator) can add entries with scheduled adjustments.</p>
	<p>In order to add a new entry, press  button, wait for a window with data on the scheduled adjustment to open.</p>
	<p>Select task: automatic adjustment (internal or external).</p>
	<p>For automatic adjustment option, enter data on the adjustment and its schedule.</p>
	<p>For external adjustment option, enter data on the adjustment, mass standard used for the adjustment performance and its schedule.</p>
	<p>When all necessary data has been introduced, return to the previous window. The window features newly added entry.</p>



Upon entering all data, exit the menu.

Now all the adjustments are carried out automatically as scheduled and with specified time intervals.

22.2. Message

This parameter enables to declare precise time and time interval for display of a special prompt informing the user on the necessity to take up a particular action.

	<p>Enter user menu, next enter <Scheduled tasks> submenu. In order to add an operation, press <> button placed in a toolbar.</p>
	<p><Edit record> box is displayed, press <Scheduled tasks> field. <Scheduled tasks> box is displayed.</p>
	<p>Select <Message> option.</p>
	<p>Message settings box is displayed. Set message display frequency (first display, time interval), select <Message> parameter and enter message text.</p>
	<p>Press <> button to confirm.</p>
	<p>A previous window is displayed.</p>
	<p>In <Scheduled tasks> box, a newly added operation is displayed. Go to the home screen.</p>

	<p>When message display criterion is met (time), message box is displayed automatically.</p> <p>Press <  > button, the message box gets closed, perform the operation.</p>
---	--



23. UPDATE

Update function enables update of:

- User-related area: APPLICATION.
- Main board (administrator exclusively).

Update takes place automatically by loading data from a USB flash drive connected to the balance USB port.

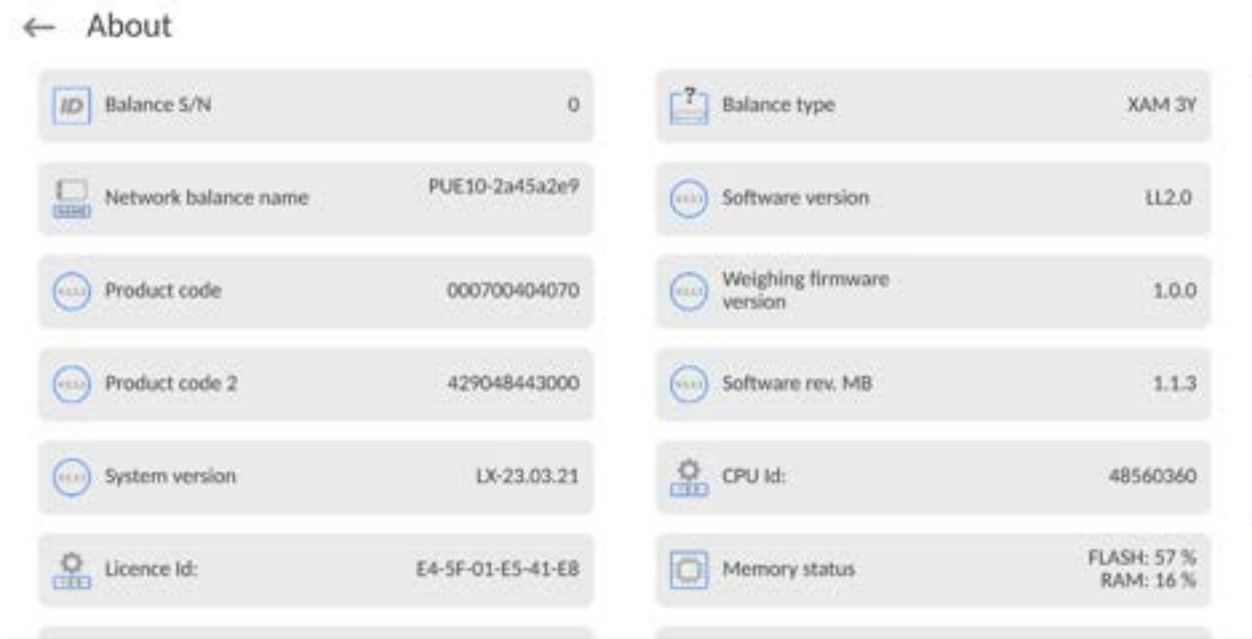
Procedure:

- Prepare a USB flash drive with the update file. Required file extension: **.lab4*.
- Connect the USB flash drive to the USB port of the indicator.
- Log in as the Administrator.
- Press  button to enter the balance menu.
- Select <Update>  option.
- Select <Application> field.
- The display previews the content of the USB flash drive; search for the update file and press its name.
- The balance is automatically restarted, and the balance application is automatically updated.
- If the balance does not restart, force it to restart by turning it off and on again.

Update of the main board file is analogous; required file extensions are: **.cm4mbu* – main board.

24. ABOUT (system info)

'About' menu provides information on the balance and balance program. Most parameters in this menu are for the information purpose only.



<Ambient conditions> parameter enables preview of current ambient conditions: temperature, humidity, pressure (if the balance features ambient conditions sensors).
<Print settings> parameter enables you to send all parameters to a printer port.

25. COMMUNICATION PROTOCOL

	<i>Detailed description of protocol of communication between the balance and the computer is to be found in 'CBCP-07' manual.</i>
--	--

25.1. Manual Printout / Automatic Printout

It is possible to generate printouts either manually or automatically.

- Manual printout: wait for a stable indication and press button.
- Automatic printout is generated automatically in accordance with the parameters set for the automatic printout (read section 12.5).

The content of a printout depends on the settings of <Standard printout> parameter - <Weighing printout template> (read section 12.5).

Mass printout format:

1	2	3	4 -12	13	14	15	16	17	18
stability marker	space	character	mass	space	unit			CR	LF

Stability marker

[space] if stable
[?] if unstable

[!] if air buoyancy compensation function is on

[^] if high limit is out of range

[v] if low limit is out of range

Character [space] for positive values

[-] for negative values

Mass 9 characters with decimal point, right justification

Unit 3 characters, left justification

Example:

____ 1 8 3 2 . 0 _ g _ _ CR LF - a printout generated,
with reference to <Weighing printout template> settings, from a balance upon pressing



key:

N (measurements quantity)	NO	Universal variable 1 ... 5	NO
Date	NO	Net	NO
Time	NO	Tare	NO
Level status	NO	Gross	NO
Customer	NO	Current result	NO
Warehouse	NO	Supplementary unit	NO
Product	NO	Mass	Yes
Packaging	NO	Non-standard printout	NO

26. PERIPHERAL DEVICES

The 5Y series balance can operate with the following peripheral devices:

- computer,
- receipt printer,
- PCL6 printer, (*Printer Command Language*),,
- barcode scanner,
- fingerprint reader,
- peripheral device operating in ASCII communication protocol.

Caution: Only accessories listed on the RADWAG website can be connected to the balance.

27. ERROR MESSAGES

Max weighing threshold exceeded
Unload the weighing pan

Min weighing threshold exceeded
Install weighing pan

Zeroing out of range
Press tarring button or restart the balance

Display capacity out of range
Unload the weighing pan

Tarring out of range
Press zeroing button or restart the balance

Start mass out of range
Install weighing pan

Zeroing/tarring time out of range
Weighing indication unstable

-no level- Balance not levelled

-Err 100- Weighing module restart

In process An ongoing process in the course of which the indication may be unstable
(automatic feeder – the process of feeding a pill, or mass comparator – the process of load change)


















28. ADDITIONAL EQUIPMENT





























Type	Name
RTP-UEW80 lub RTP-RU80	Dot printer
	PCL6 Printer
LS2208	Barcode scanner
SAL	Anti-vibration table for XA series balances
	PC keyboard










PC software:

- „LABEL EDITOR”

29. ANNEX B – Programmable Buttons List

Pictogram	Name
	None
	Profile selection
	Adjustment
	Working mode
	Products
	Packaging selection
	Customers
	Operator
	Warehouses
	Zero
	Tare
	Tare setting
	Disable tare
	Enable tare
	Print
	Header printout
	Footer printout / C label

	Print CC label
	Lot no.
	Batch no.
	Edit universal variable 1
	Edit universal variable 2
	Edit universal variable 3
	Edit universal variable 4
	Edit universal variable 5
	Statistics
	Add to statistics
	Zero statistics
	Zero CC statistics
	Zero all statistics
	Print and zero statistics
	Print and zero CC statistics
	Label count
	C label count
	CC label count
	Logout
	Parameters
	Working mode
	Units
	Help
	Create screen shot
	Voice message
	E-sign
	Left door
	Right door

	Open/close door
	Stop ionization
	Start ionization
	Start/stop ionization
	Disable last digit display
	Disable display of last two digits
	Disable display of last three digits
	Accept
	Abort



RADWAG BALANCES AND SCALES
ADVANCED WEIGHING TECHNOLOGIES

