

C315

Medical scales:

Personal scales

Bed scales

Chair scales

Baby scales

USER MANUAL









ITKU-111-06-08-22-EN



RADWAG® RADWAG BALANCES AND SCALES
ADVANCED WEIGHING TECHNOLOGIES

ŚRODKI OSTROŻNOŚCI

Przed przystąpieniem do instalacji, użytkowania lub konserwacji urządzenia konieczne jest zapoznanie się z niniejszą Instrukcją obsługi i postępowanie zgodnie z jej zaleceniami.

	Prior to the first use, carefully read this user manual. Use the weighing device only as intended.
	Wagę należy obciążać masą brutto mniejszą niż maksymalny udźwig wagi.
	Protect the indicator against considerable temperature variation, solar and UV radiation, substances causing chemical reactions.
	The weighing device must not be operated in hazardous areas endangered with explosion of gases, and in dusty environments.
	In case of damage, immediately unplug the device from the mains.
	Scales to be decommissioned must be decommissioned in accordance with valid legal regulations.
	Do not let battery discharge in case of prolonged storage of the device in low temperature.
	Accumulators do not belong to regular household waste. The European legislation requires discharged accumulators to be collected and disposed separately from other communal waste with the aim of being recycled. Symbols on batteries identify harmful compounds: Pb = lead, Cd = cadmium, Hg = mercury. Dear user, you are obliged to dispose of the worn out batteries as regulated.

AUGUST 2022

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1. INTENDED USE

Medical scales are intended to measure patients' body weight. In case of a personal scale the patient is weighed standing, in case of chair scales the patient is weighed sitting, in case of a bed scale the patient is weighed lying. The scales feature a plastic housing and a backlit LCD, and are equipped with an internal battery which allows their operation in places where there is no access to the mains.



Under the MDR regulation, scales are not medical devices.

2. WARRANTY CONDITIONS

- A. RADWAG feels obliged to repair or exchange all elements that appear to be faulty by production or by construction.
- B. Defining defects of unclear origin and means of their elimination can only be realized with the assistance of the manufacturer and the user representatives.
- C. RADWAG does not bear any responsibility for damage or losses resulting from unauthorized or inadequate performing of production or service processes.
- D. The warranty does not cover:
 - mechanical damage caused by product exploitation other than intended, damage of thermal and chemical origin, damage caused by lightning, overvoltage in the power network or other random event,
 - inappropriate cleaning habits.
- E. Loss of warranty takes place if:
 - a repair is carried out outside RADWAG authorized service point,
 - service claims intrusion into mechanical or electronic construction by unauthorized people,
 - the scale does not bear security seal stickers.
- F. Warranty conditions outline the warranty period for rechargeable batteries attached to the device for 12 months.
- G. For detailed warranty conditions read the warranty certificate.
- H. Contact with the central authorized service: +48 (48) 386 64 16.

3. MAINTENANCE ACTIVITIES



The indicators cannot get in touch with running water (cleaning is to be done using dry or slightly wet cloth).

3.1. Personal Scales

Clean the weighing platform and the construction using sanitizers and cleansers intended for medical products.

3.2. Chair Scales

It is necessary to periodically sanitize the seat and arms. Clean the chair using sanitizers and cleansers intended for medical products. Mind not to turn the device upside down during the maintenance activities, this might result with damage.

3.3. Bed Scales

Clean the measuring stands and beams (depending on the scale) using sanitizers and cleansers intended for medical products.

3.4. Baby Scales

Cleaning in this case requires periodical sterilization of the weighing pan. Clean the pan using sanitizers and cleansers intended for medical products. Mind to be gentle, i.e. do not use force while pan cleaning, this may cause damage of the device.

4. SERVICE AND REPAIR



In case of any sign of damage, it is necessary to disconnect the device from the mains immediately. The damaged component must be replaced or repaired by RADWAG service directly.

In case of any problems with correct operation of the scale, contact the closest manufacturer's service point.

In case of defects, deliver the faulty product to the manufacturer's service point. If the product cannot be delivered to the manufacturer's service point, call the service and report the defect. Repair scope and method will be set up.



The user is NOT ALLOWED to carry out any kind of repair of the device himself/herself. Any attempt of scale modification, repair etc., by unauthorized persons, will result with loss of validity of manufacturer-issued certificates, declarations and warranty.

5. RECYCLING

C315 scales must be recycled, they are not to be treated as a regular household waste. Scales to be decommissioned must be decommissioned in accordance with valid legal regulations.

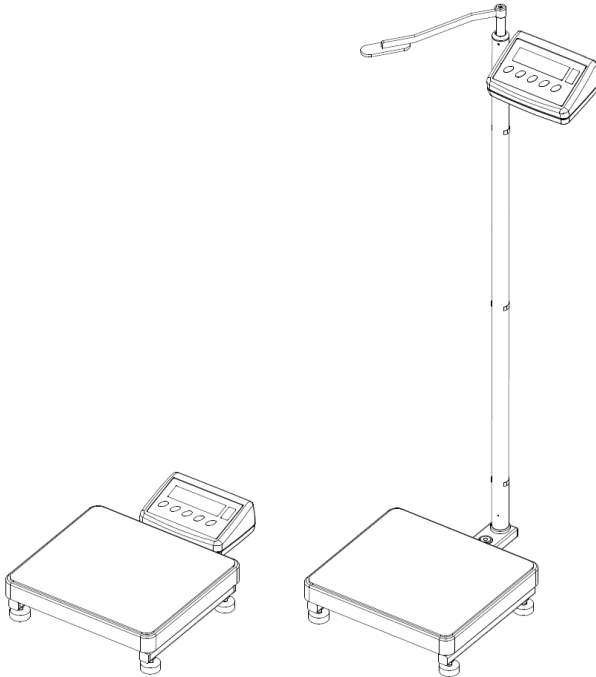


6. MECHANICAL DESIGN

6.1. Personal Scales

Personal scale models:

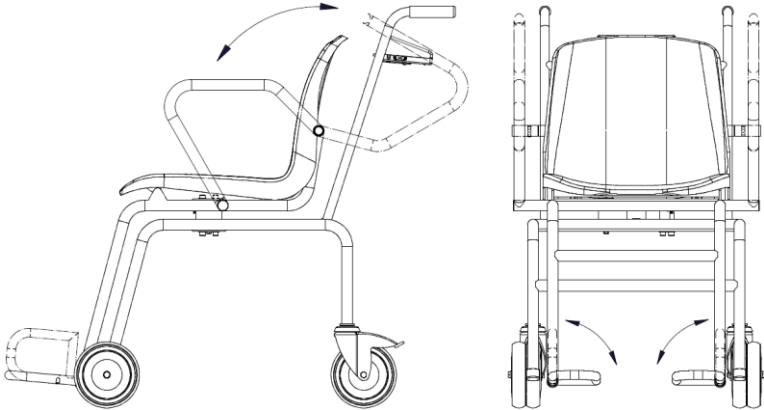
- C315.OW with the height meter, indicator installed on a post.
- C315.OR, indicator coupled to the weighing platform directly.
- C315.OK, indicator coupled to the weighing platform via cable.



Personal scale

6.2. Chair Scales

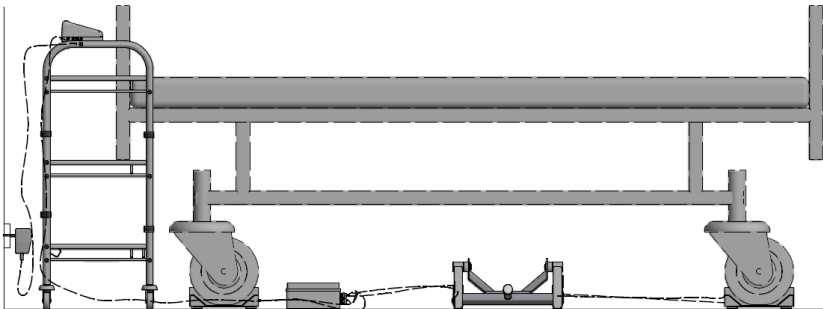
C315.K chair scale has been equipped with casters facilitating its transport. Back casters feature a brake that allows keeping the scale still.

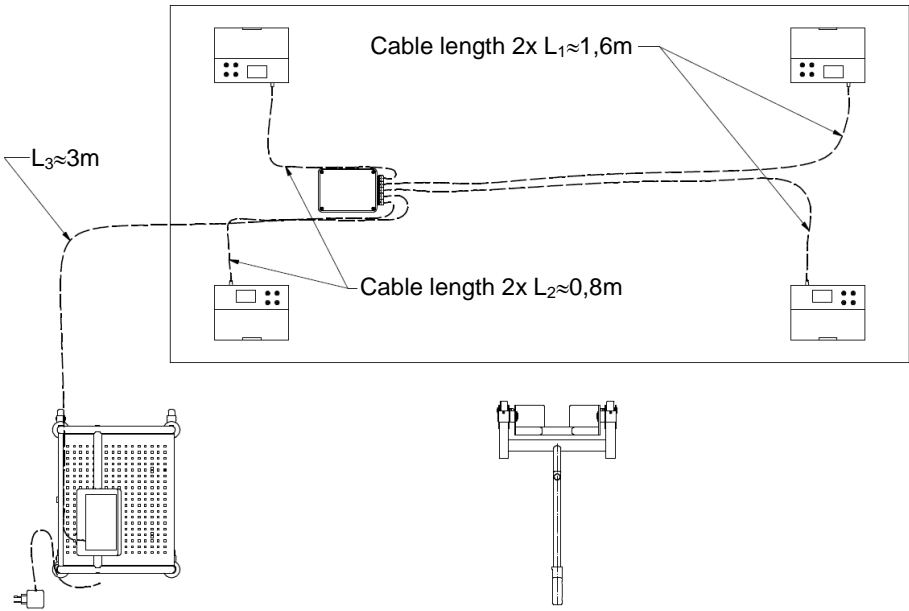


Chair scale

6.3. Bed Scales

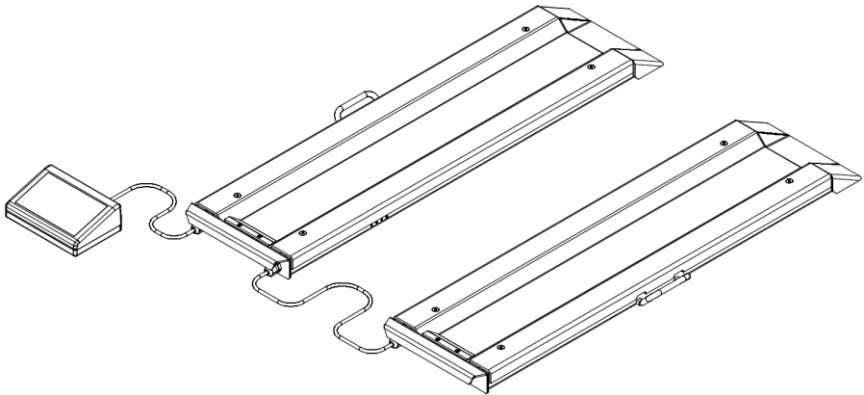
C315.4B bed scale comprises 4 measuring stands in which bed casters are placed using a special lift. The scale, due to its design, fits any bed regardless of a given bed type (bed with casters ranging between $\phi 100 - \phi 200$) and used bracket system.





Bed scale of C315.4B series

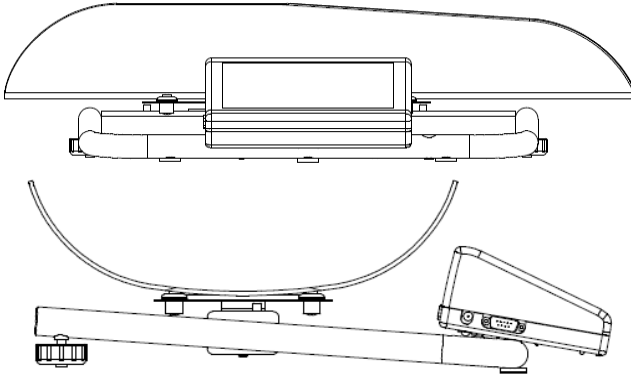
Bed scale of C315.8B series comprises 2 weighing beams that can be spaced up to 2.5 m. Thanks to a slight tilt, any bed can easily slide the beam. The bed is weighed upon result stabilisation. The C315.8B scale, due to its design, fits any bed regardless of a given bed type and used bracket systems.



Bed scale of C315.8B series

6.4. Baby Scales

C315.D series scales are precise electronic instruments of accuracy class III. They are intended for weighing babies, wherein the weighing can be realized using 'Peak hold' function, which means that upon display of the stable measurement, the final result is frozen on the display. With this, the result can be read regardless of the baby moves.



Baby scale

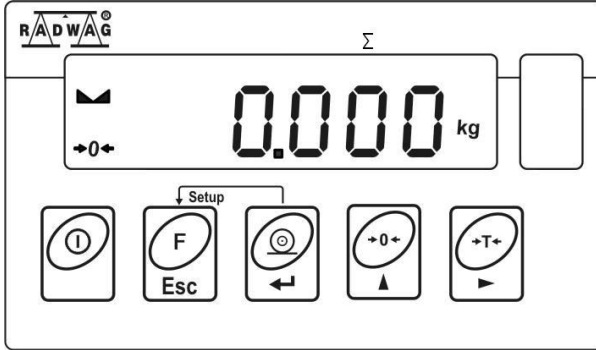
6.5. Connectors Arrangement

<p>1 – power supply socket 2 – RS232 connector</p>	<p>3 – weighing platform cable inlet</p>

6.6. Connectors Arrangement

	<p>Pin2 – RxD Pin3 – TxD Pin4 – 5VDC Pin5 – GND</p>	<p>RS232 connector DB9/M (male)</p>
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6.7. Operation panel



Keys:

	Press to switch the weighing device on/off, keep the key pressed for about 1 second.
	Function key, press to change the working mode.
	Press to send the weighing result to a printer or a computer.
	Press to zero the scale.
	Press to tare the scale.

	Upon pressing  +  key combination, functions of given keys change. Detailed information concerning use of the above key combination is to be found further down this manual.
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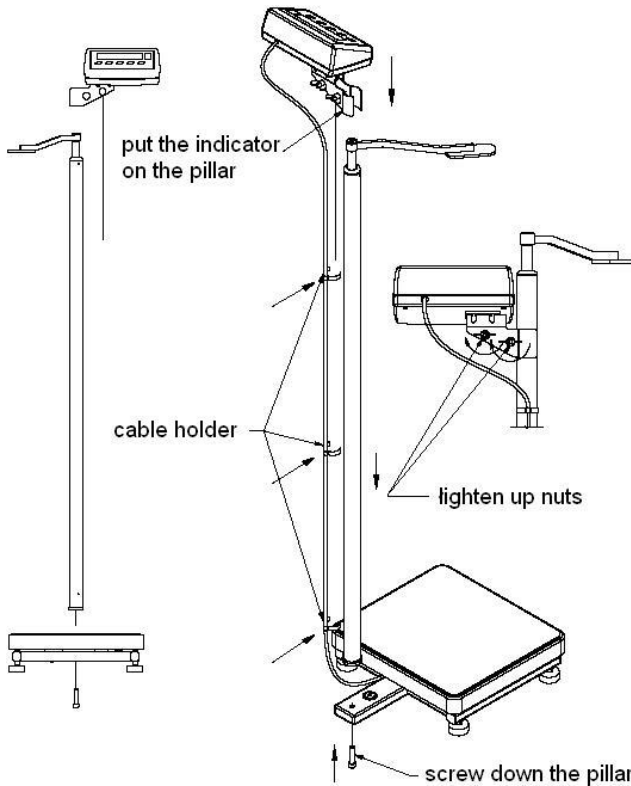
7. INSTALLATION

7.1. Unpacking and installation

7.1.1. Personal scales

- A. Take the device out of the packaging.
- B. In order to ensure correct indications the scale must be set on an even and stable ground away from any heat sources.

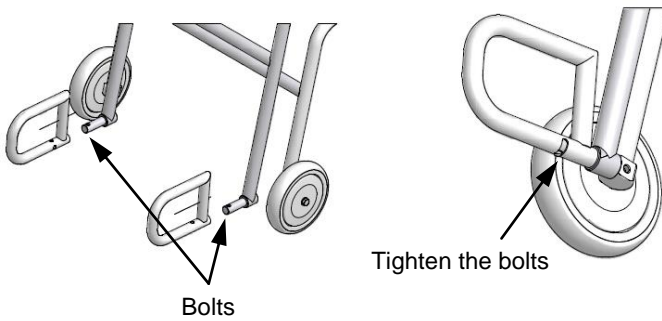
- C. In case of personal scales equipped with a height meter it is necessary to fix the said meter to a balance base (do it using an Allen wrench that comes standard with the scale).



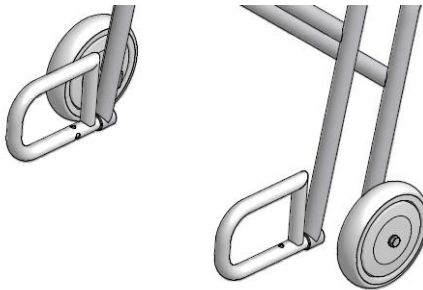
Assembly of a personal scale equipped with a height meter

7.1.2. Chair Scales

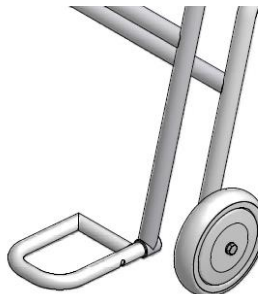
- A. Take the device out of the packaging.
- B. Install footrests:
- Make sure that the pin for coupling of the footrest fits the opening entirely (keep pushing the pin until it resists).
 - Couple the footrest to the pin.
 - Screw the bolt fixing the footrest, make sure it sticks out.



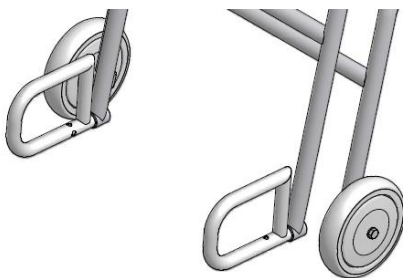
- C. Position the footrests vertically prior to weighing, this is to make way for the patient who is to sit on the chair.



- D. During weighing, the footrests must take horizontal position to serve as a support for the weighed person legs.



- E. During weighing, the footrests must take horizontal position to serve as a support for the weighed person legs.



7.1.3. Bed Scales of C315.4B Series

A. Take the device out of the packaging.



General view

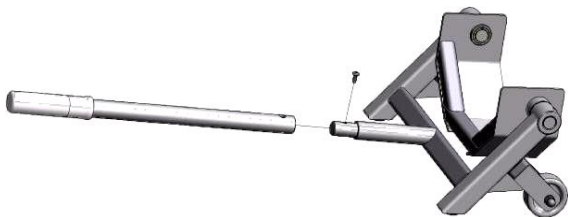
B. Assembly the device:

- Fix the indicator.
- Push the casters in.

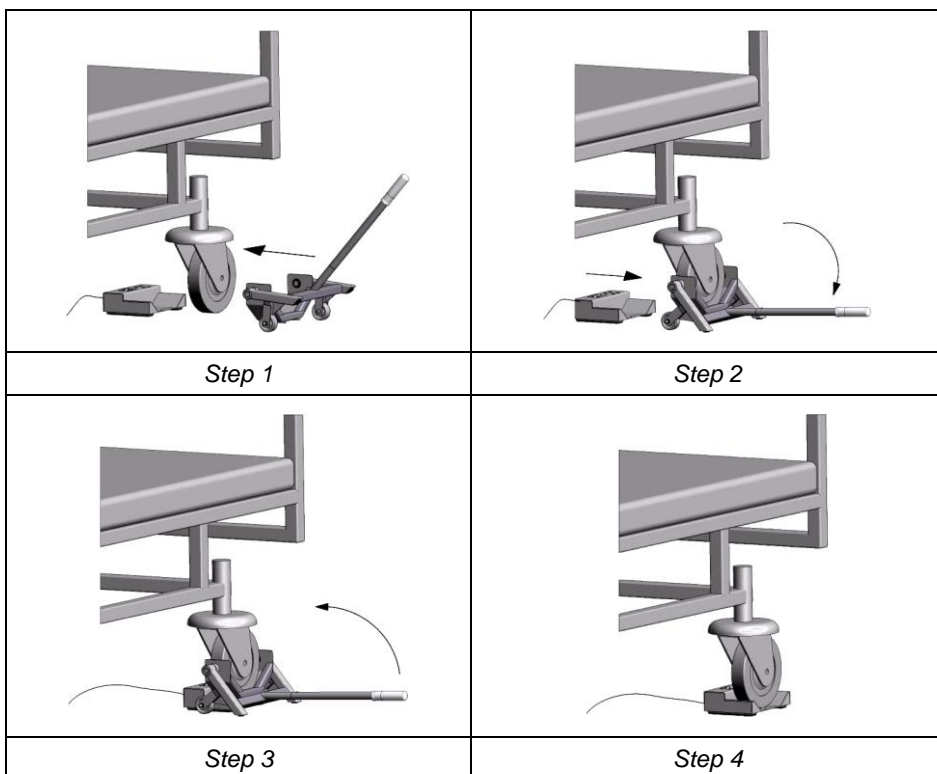
C. Move the device to the measurement spot, place it next to the bed.

D. Put the brakes on.

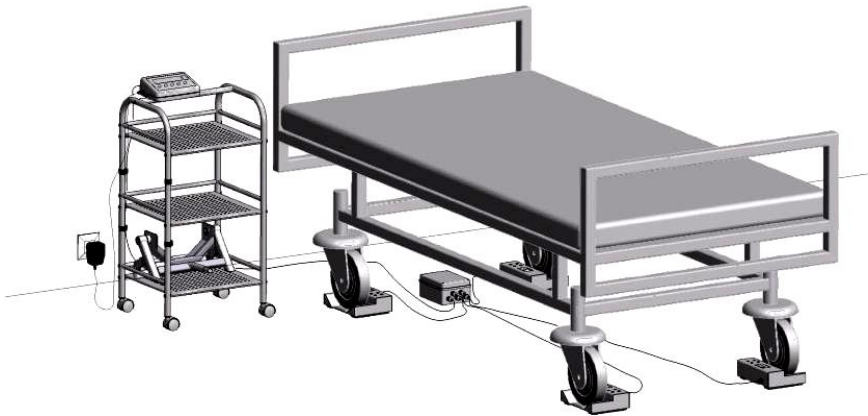
- E. Lock the bed casters.
- F. Move one measuring stand next to one bed caster.
- G. Assembly the lift.



H. Using the lift fit the caster into the measuring stand, see the below pictures:



- I. Fit in the remaining casters into the remaining measuring stands likewise, see the below picture:



The floor under the measuring stands must be horizontal. Make sure that the connection cable does not go under any measuring stand, it could falsify the measurement.

7.2. Levelling

It is necessary to level the scale, do it by turning its feet. Keep turning the feet until the air bubble takes central position:



level - OK



level incorrect


7.3. Start-Up

The weighing device can be connected to the mains only with a power supply that comes standard with the particular model. Nominal voltage of the power supply (specified on the power supply data plate) has to be compatible with the mains nominal voltage.

Procedure:

- Connect the power supply to the mains. Plug it to the power supply socket (back side of the scale housing).




- Press  key. The key is used to switch the scale on/off.
- Display test proceeds (all symbols are backlit for a moment), program name and number is displayed first, ZERO indication with a reading unit next (the displayed reading unit is conditioned by a scale type).


- In case the weighing result is not zero after indication stabilisation, press





button.

7.4. Battery Status

The scale of standard design is equipped with an internal battery. The battery state is signalled by  pictogram, displayed in the top bar of the display.

 pictogram display mode	Meaning
No pictogram	Battery charged. Regular scale operation.
Pictogram displayed continuously	Too low battery charge (the scale is about to shut down). Charge the battery immediately.
Blinking pictogram, blink frequency: ca. 1 s	Battery charge in progress. The device is connected to the power supply charging the battery.
Blinking pictogram, blink frequency: ca. 0.5 s	Battery error. Battery damaged.

7.5. Battery Charge Status Check

- Press  and  keys combination.
- Depending on the battery state, a respective status is displayed on the screen for 2s:

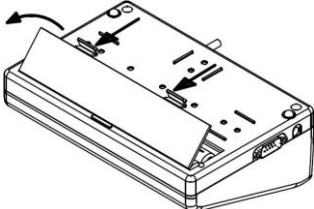
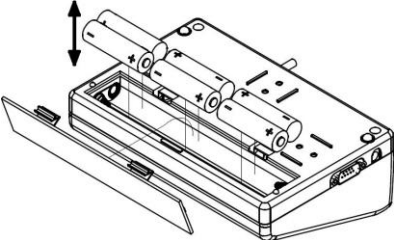
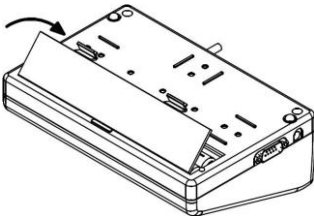
80%	Battery power supply. Battery power given in %.
CHARGE	Battery charge in progress. The device is connected to the power supply charging the battery.
-Err5-	Battery error. Battery is damaged.

- Next, the home screen is displayed automatically.

7.6. Worn out Batteries Replacement

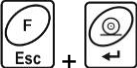
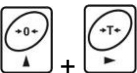
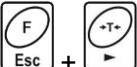
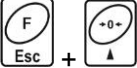

C315 series scales are devices intended to be supplied by **NiMH** battery (*nickel metal hydride*) of **1800- 2800 mAh** capacity.




Battery replacement:

<p>Open battery container lid. The lid is to be found in the housing base.</p>	
<p>Take the worn out batteries out of the container, insert new accumulators, pay attention to +/- polarization.</p>	
<p>Close the lid:</p>	


8. OPERATING THE MENU

In order to navigate the menu use the operation panel.




	<p>Press to enter the main menu.</p>
	<p>Press to enter tare manually Press to enter tare from tare database. Press to change value by 1 digit up. Press to scroll the menu up.</p>
	<p>Press to check battery/accumulator state.</p>
	<p>Press to view date/time.</p>
	<p>Press to scroll the menu down. Press to change current parameter value.</p>

	Press to enter given submenu. Press to modify given parameter.
	Press to exit, function remains unmodified. Press to move one menu level up.
	Press to confirm modification.

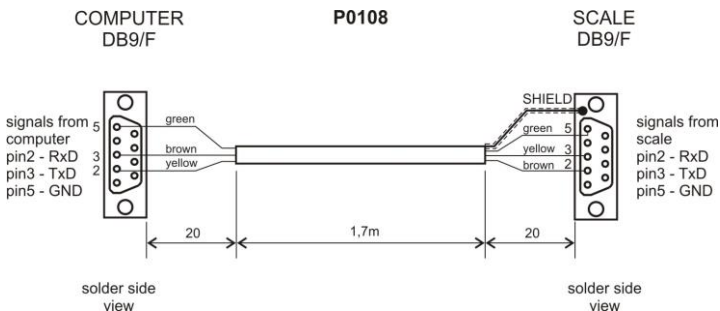
8.1. Return to Weighing

Introduced modifications are automatically recorded upon return to the home screen. To return to the home screen press  key repeatedly.

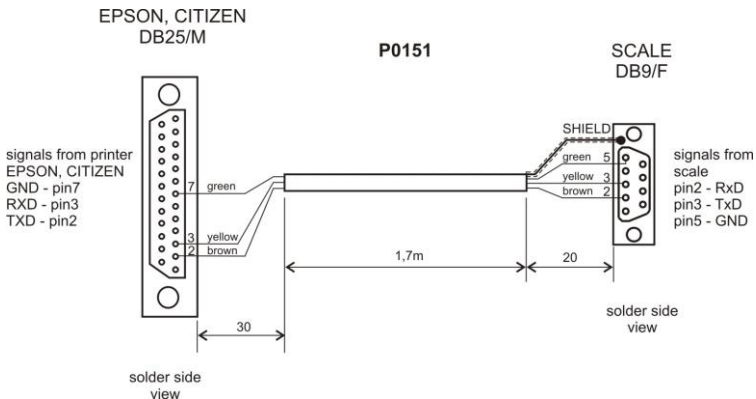
9. WEIGHING

	<i>Set high filter rate for those patients who can't stay motionless (refer to „Medical Scales Software Manual”). With this the weighing will take longer, but the result will be more reliable.</i>
	<i>Baby scale is intended for measurement of baby mass, the baby is weighed lying. Shall the baby be weighed sitting, make sure that it sits in the centre of the weighing pan. Otherwise the pan may rest on bumpers protecting against overload, which might make the measurement unreliable.</i>
	<i>Shall the baby be weighed sitting make sure it keeps the balance otherwise the baby could fall of the pan.</i>

10. DIAGRAMS OF CONNECTION CABLES



Scale - computer cable



Scale - printer cable (EPSON)

11. TECHNICAL SPECIFICATIONS

For technical specifications of respective scales go to RADWAG website www.radwag.pl.

12. TROUBLESHOOTING

Problem	Cause	Solution
Scale start-up fail.	Power supply disconnected.	Connect the power supply to the scale.
	Battery discharged.	Connect the power supply to the mains, charge the battery.
	No battery (not installed or installed incorrectly).	Check if the battery is installed correctly (polarization).
The scale switches off automatically.	<7.4.t1> parameter set to value enforcing scale shut-down after particular time interval.	Go to <P7.Othr> menu, set <7.4.t1> parameter to 'nonE' value.
During the start-up, message 'LH' is displayed.	Weighing pan loaded during the start-up.	Unload the weighing pan. Zero indication is displayed.
Communication with the computer not established.	Incorrect computer port set in parameter <5.1.1.Prt>.	Enter < P5.ducE / 5.1.PC> submenu and set correct <5.1.1.Prt> parameter value.
	Incorrect transmission parameters for the selected computer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected computer port.
	Incorrect printout frequency for continuous transmission.	Enter < P5.ducE / 5.1.PC> submenu and set correct <5.1.3.Int> parameter value.

No printout on a scale-connected printer.	Incorrect printer port set in <5.2.1.Prt> parameter.	Enter < P5.ducE / 5.2.Prtr> submenu and set correct <5.2.1.Prt> parameter value.
	Incorrect transmission parameters for the selected printer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected printer port.
	No variable declared in weighing printout project.	Enter <P6.Prnt / 6.2.GLP> submenu and declare variables that are to be printed.
Communication with the additional display not established..	Incorrect additional display port set in <5.3.1.Prt> parameter.	Enter < P5.ducE / 5.3.AdSP> submenu and set correct <5.3.1.Prt> parameter value.
	Incorrect transmission parameters for the selected computer port.	Enter <P4.Conn> menu and set correct transmission parameters for the selected additional display port.
Displayed mass unit does not comply with the scale data plate.	Changed scale start unit in <9.1.UnSt> parameter.	Enter <P9.Unit / 9.1.UnSt> submenu and set unit complying with the scale data plate.
	Changed custom unit in <9.2.Unin> parameter.	Enter <P9.Unit / 9.2.Unin> submenu and set unit complying with the scale data plate.

13. ERROR MESSAGES

- E r r 2 -	Value beyond zero range.
- E r r 3 -	Value beyond tare range.
- E r r 4 -	Adjustment weight or start mass out of range ($\pm 1\%$ for adjustment weight, ± 10 for start mass).
- E r r 5 -	Battery error. Battery is damaged.
- E r r 8 -	Time of the following operations exceeded: taring, zeroing, start mass determining, adjustment process.
- n u l l -	Zero value from converter.
- F U L L -	Weighing range exceeded.
- L H -	Start mass error, indication out of range ($\pm 10\%$ of start mass).
- H i -	Display range of total mass on scale display exceeded in 'Totalizing' mode.
- u l o -	Too low battery charge. The scale is about to shut down.



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