

# User manual

## Automatic feeder PA-02/H

User manual no:  
ITKU-70-04-02-13-A



### **BALANCES AND SCALES**

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# **1. BASIC INFORMATION**

## **1.1. Intended use**

Automatic feeder PA-02/H series is intended to automatic dosing (feeding) of parts and objects having small dimensions, in particular pills and capsules, and also small mechanical components. The PA-02/H if connected to a balance ensures even feeding of the dosed objects onto a weighing pan of the balance.

A system comprising an automatic feeder and a RADWAG balance 3Y series enables fast and precise carrying out of statistical control of samples in accordance with strict pharmaceutical requirements.

## **1.2. Precautionary measures**

- A. Before first use of the automatic feeder, it is highly recommended to carefully read the attached User Manual, and operate the device as intended;
- B. Before putting in use remember to level the automatic feeder;
- C. After leveling lock the adjustable feet of the PA-02/H to prevent its displacement;
- D. A system including an automatic feeder and a balance should be placed on an anti-vibration table;
- E. Fill the automatic feeder by pouring the parts centrally (in the center of the automatic feeder's opening);
- F. In case of defect immediately unplug the device from mains;
- G. Devices to be decommissioned, should be decommissioned in accordance to valid legal regulations;
- H. Do not use the automatic feeder in areas endangered with explosion. The automatic feeder PA-02/H series is not designed to operate in EX zones.

### **1.3. Warranty conditions**

- A. RADWAG feels obliged to repair or exchange all elements that appear to be faulty by production or their construction,
- B. Defining defects of unclear origin defects and means of their elimination can only be realized with assistance of manufacturer and user representatives,
- C. RADWAG does not bear any responsibility for defects, losses or accidents resulting from unauthorized or inadequate performing of production or service processes,
- D. Warranty does not cover:
  - Mechanical defects caused by product exploitation other than intended, defects of thermal and chemical origin, defects caused by lightning, overvoltage in the power network or other random event,
  - Automatic feeder defects if it is utilized contrary to its intended use,
  - Mechanical defects or defects caused by media, water, liquids and natural wear,
  - Automatic feeder defects caused by inappropriate setting of a defect of electric power network,
  - Maintenance activities (cleaning).
- E. Loss of warranty takes place if:
  - A repair is carried out outside RADWAG sales office or authorized service point,
  - Service claims intrusion into mechanical or electronic construction by unauthorized people,
  - The device is connected contrary to its intended use.
- F. Detailed warranty conditions are listed on a service card.

### **1.4. The manual's significance**

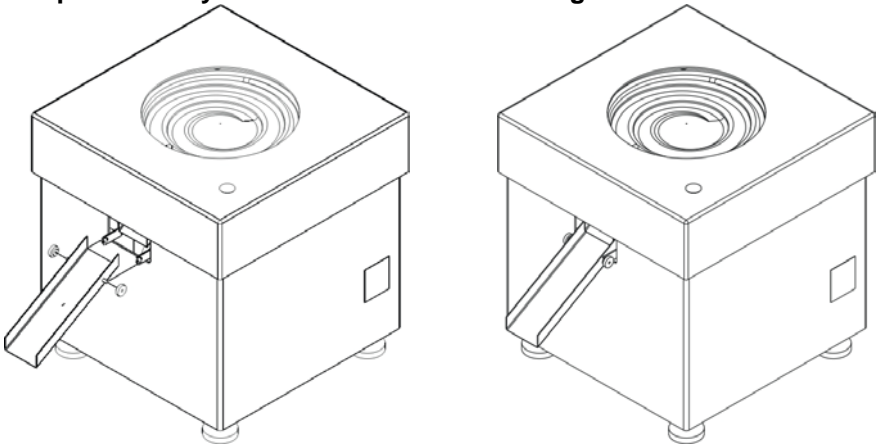
It is very important to read the user manual carefully before switching on and starting up the automatic feeder operation even if the user is experienced and has worked with the this type of devices.

## 2. UNPACKING AND INSTALLATION

### 2.1. Unpacking and leveling of the PA-02/H

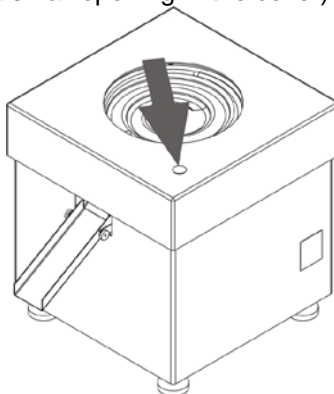
On unpacking the automatic feeder PA-02/H series and removing the transport protections, place the automatic feeder on a stable foundation (possibly an anti-vibration table). Then screw the chute trough using two nuts, as indicated on below figure.

**CAUTION: while removing the automatic feeder from the box and its relocating always hold the device by its bottom part, as the top section is not permanently fixed to the feeder's housing.**



When the automatic feeder is fully assembled, connect all cables supplied with the device: the power and signal cables.

On connecting all cables level the feeder by screwing the adjustable feet and monitoring the status of level indicator located under the feeder's top cover (level is visible through a small opening in the cover).



## 2.2. Cleaning

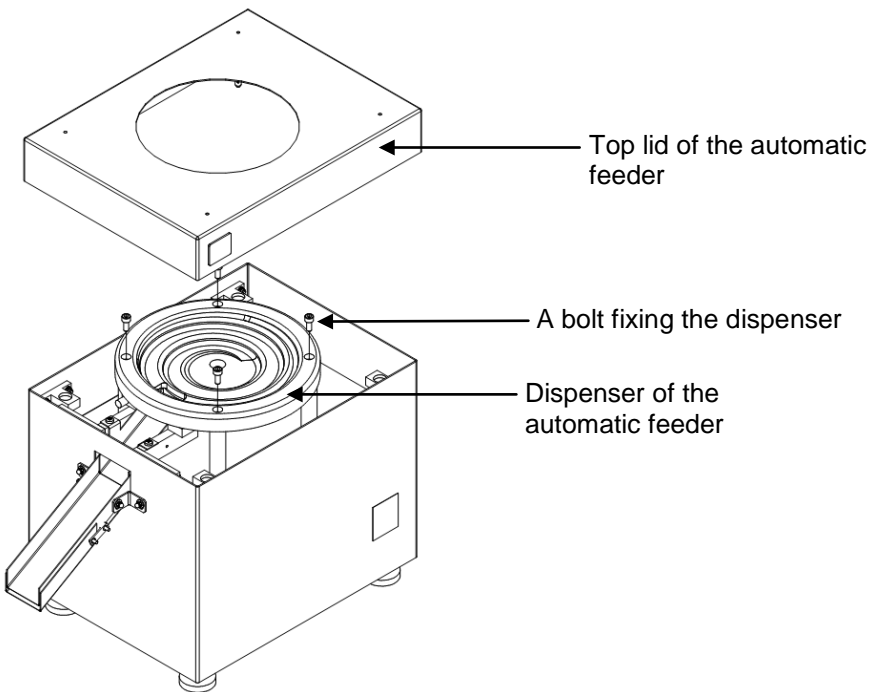
The cleaning procedure refers to cleaning the dispenser and its troughs.

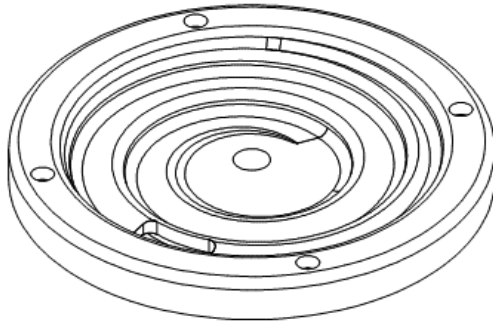
### **CAUTION:**

*Cleaning the tray of the automatic feeder if assembled may cause its damaging.*

Follow below procedure to correctly clean to automatic feeder's dispenser:

- Remove the top lid of the automatic feeder;
- Unscrew 4 bolts fixing the dispenser to the automatic feeder (hexagon bolts);
- Disassemble the automatic feeder's dispenser;
- Clean (disinfect) the dispenser;
- After cleaning assembly the dispenser in the automatic feeder;
- When assembled fix the dispenser using the 4 hexagon bolts;
- Assembly the top lid of the automatic feeder.





A dispenser disassembling from the automatic feeder

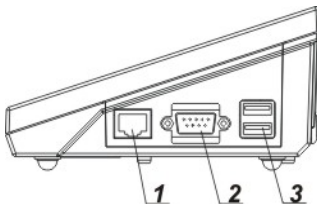
### 2.3. Plugging to mains

The automatic feeder PA-02/H series is powered from mains 230V AC with use of a power cable supplied with the feeder.  
Plug power cable to mains, plug the power adapter's plug to feeder's socket located at the back of the housing and switch on the feeder using the main power switch.

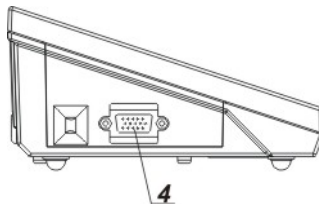
### 2.4. Connecting automatic feeder to a balance

Connect the automatic feeder to a balance using a supplied cable. Connect the cable to balance's COM2 port (*socket no. 4, see figure below*).

Description of slots and interfaces of a balance terminal:



- 1 – Ethernet slot RJ45
- 2 – RS232 interface (COM1)
- 3 – USB port






- 4 – IN/OUT slot, RS232 (COM2)



### Parameter settings for communicating the automatic feeder with a balance:

Enter group of parameters <Devices> and set the parameters for connecting the automatic feeder:






Pictogram		Description	Value
		Tablet feeder	-
		Port	COM2
		Address	255

**CAUTION:**

The data on address and baud rate are specified on feeder's data plate located at the feeder's housing.

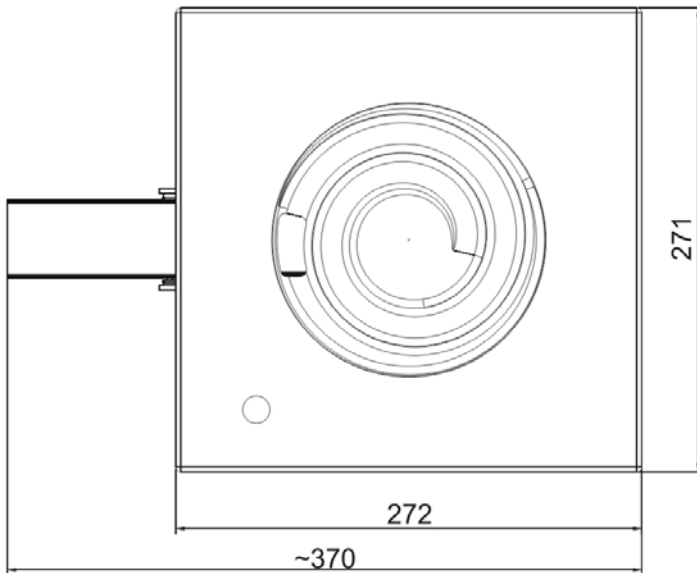
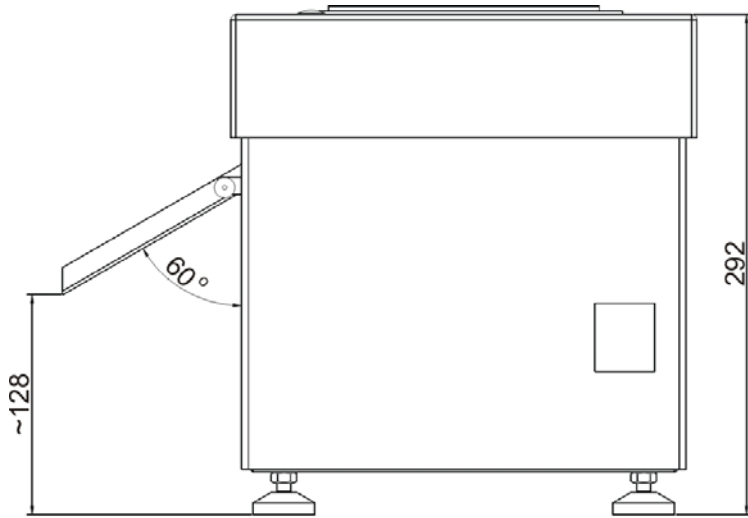
### COM 2 port settings in a balance:

Enter group of parameters <Communication> and set the transmission parameters for port COM 2:

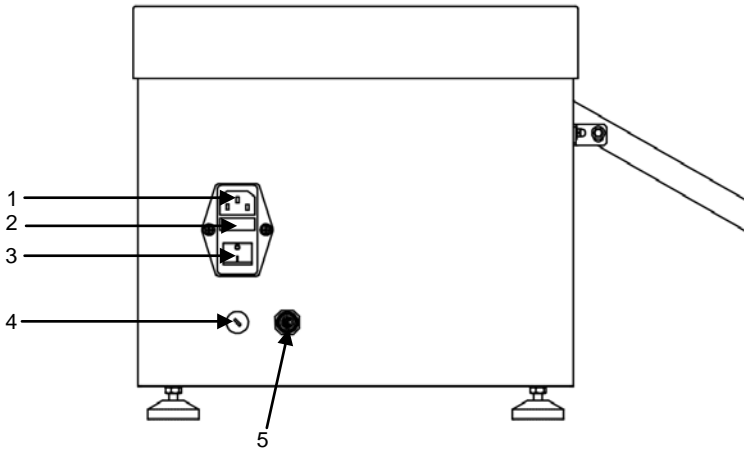
Pictogram		Description	Value
		COM2	-
		Baud rate	57600
		Data bits	8
		Stop bits	1
		Parity	No

### 3. AUTOMATIC FEEDER STRUCTURE

#### 3.1. Dimensions





### 3.2. PA-02/H sockets and switches



- 1- Power supply socket
- 2- Fuse
- 3- Power switch
- 4- Voltage setting switch 115 / 230 V AC
- 5- Signal slot (for connecting with a balance)

### 4. START UP

- On plugging the balance to mains, instrument's diode ON/LOAD  ON / LOAD located on terminal's housing is lit up.
- Press powering key  located on the upper left section of terminal's overlay. Within a few seconds, the OS Windows CE and RADWAG software start loading, which is signaled by flickering red diode ON/LOAD.
- On completing the startup procedure, the instrument's displays main window of the balance software in working mode: Mass control.
- Next, switch on the power on the automatic feeder using the dedicated power switch.

If the system is connected properly, then it is ready for operation.




An example of a workstation for controlling mass with connected label printer.

## 5. AUTOMATIC FEEDER CONTROLS

Button	Description
	Diode confirming powering the automatic feeder
	Diode indicating an error of the automatic feeder





## 6. MASS CONTROL MODE

<  **Mass control**> mode enables controlling mass of objects automatically dispensed by the automatic feeder PA-02/H onto a pan of a connected balance. The mode allows for automatic checking a complete product batch on determining its quantity.

### 6.1. Working mode activating procedure

#### Procedure:


- Select <  **Mass control**> mode, the software automatically returns to the main window and displays  pictogram in the upper bar,
- Automatically an on-screen button is available in the bottom bar of the display:









Start mass control process



### 6.2. Mass control global settings

Entering the mode settings is carried out by pressing the grey coloured













workspace and selecting an group of parameters named "Settings" <  >, which contains the following:


	<b>Request batch number</b>	The function orders requesting a batch number before starting mass control process
	<b>Batch quantity</b>	Determines quantity of a batch, i.e. number of product units to be controlled.
	<b>Low limit</b>	A value exceeding which causes accepting a measurement record by a balance
	<b>High limit</b>	A value exceeding which causes omitting a measurement in the summary, e.g. if two parts (pills) are simultaneously dispensed on balance's weighing pan
	<b>Print report</b>	A parameter enabling for switching on/off automatic printout of a report on completing mass control process
	<b>Printout</b>	A parameter enabling selecting whether on completing the control process the balance should trigger a standard or a non-standard printout


### 6.3. Databases – Mass control records

In the working mode <  **Mass control**> and in its databases there is a new database item added: <  **Mass control**> which contains reports from completed mass control processes.

A report from mass control contains the following information:












 00285	Batch number	Number of a batch under control
	Start date	Date of control start
	End date	Date of control end
	User	A user carrying out the control
	Product	A controlled product
	Average	Average mass determined from carried out control process
	Standard deviation	Standard deviation from carried out control process
 00285	Error – T2	Control error T2
 00285	Error – T1	Control error T1
 00285	Error + T1	Control error T1
 00285	Error + T2	Control error T2
 1 2 3	Batch quantity	Quantity of a controlled batch determined in a report

Each report can be printed on selecting its entry and displaying its details. The upper bar contains a pictogram <  **Print**> which pressing causes printing the report on a printer connected to balance's terminal.


Additionally, the complete database can be exported to an external file by pressing a button <  **Export to file**> located in the upper bar.


## 6.4. Mass control process


Before starting the mass control process carry out the following steps:

- Set batch quantity for a carried out mass control process – touch grey coloured workspace on balance's display to open a window and select group  **Settings**>. Next select option  **Batch quantity**> for entering quantity of controlled units in a current automatic mass control process. Accept entered value by pressing  key.
- Set  **Low limit**> below the value of the smallest (lightest) controlled part. Set the limit value so that it protects against saving in a final report mass of a value below the lightest item of the controlled batch, e.g. a half of a pill.
- Set  **High limit**> value. Set the limit value so that it protects against saving in a final report mass of a value exceeding the heaviest item of a controlled batch, e.g. if two pills are simultaneously dispensed onto a weighing pan. In such case, the software skips the measurements and continues mass controlling process.
- Set  **Dosing power**> parameter defined in [%] and ranging from 0% to 100 %. The dosing power is a parameter determined separately for each controlled product. Setting  **Dosing power**> parameter is carried out by pressing SETUP button, entering  **Databases**>, and the database of  **Products**>. Then select a product entry in the database and set required **Dosing power** for the product to be dispensed.
- Select a product to be controlled from the database of products  >. The product entry must have the following parameters determined: nominal mass (Mass), limits for errors: negative - **<T1->** (Min) and positive - **<T1+>** (Max). The error values are determined in % of nominal mass value. The errors **<T2->** and **<T2+>** are not to be determined by a user. The software sets their values as doubled value of errors **<T1->** and **<T1+>**.
- Select a product to be controlled from the database of products  >.

## Course of a Mass Control process:

- On selecting all applicable settings press  key to start automatic mass control process.
- The mass control process is started automatically, the balance is automatically tarred, and the feeder starts dispensing the first element onto balance's weighing pan.
- On dispensing the first element onto balance's weighing pan, the feeder is stopped and the dispensed item is weighed. The first stable measurement result is saved.
- On saving a measurement result the mass indication on balance's display is zeroed and the automatic feeder is restarted to dispense the following product onto balance's weighing pan. As the following product is dispensed onto the weighing pan the weighing process starts. The procedure is repeated the same way as in case of the first dosed element.
- The cycle is repeated until checking (weighing) all of declared pieces in a process.
- During control process, balance's display shows on an ongoing basis basic parameters on the carried out control, i.e.:
  - set standard quantity;
  - Product;
  - Average;
  - Standard deviation;
  - Number of errors T1-;
  - Number of errors T1+.

All reports from completed mass control processes are stored in the database:  **Mass controls**.

**Each control process can be aborted at an optional moment by pressing  key on balance's display. On pressing the process is stopped and the control is cancelled (no report is generated for an aborted control).**



## 7. DATABASES

Balance's software features the following databases:



Products



Weighing records



Clients



Mass controls



Ambient conditions



Packages






Warehouses



Printouts



Universal variables

In order to enter the  **Database**> menu, when in the main window of the terminal press  key and select option  **Databases**> from the available menu.

**Operation on databases and balance operation is described in details in a user manual of a balance connectable to the automatic feeder PA-02/H series.**

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OF ELECTRONIC WEIGHING INSTRUMENTS



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