AIR JET SIEVING MACHINE AS 200 JET

For sieving specialists: With the AS 200 jet pro and the GMP-conform AS 200 jet pharma, laboratory teams get a space-saving and user-friendly all-in-one sieving machine.

Sieve, weigh, and evaluate with a single device: Combining state-of-the-art air jet sieving with a built-in balance ensures precise and reliable sieve analysis in the shortest amount of time. The integrated AS 200 jet pro software via touch display ensures smart processes with maximum ease of use.

Click to view video

BENEFITS

- **All-in-One** combining sieving, weighing, and evaluation in one device
- **Enhanced Process Reliability via checks and clever assistants**
- **Flexible & Precise Sieving** of fine powders 10 µm – ~4 mm
- **GMP conform & Regulatory Readiness**

AT A GLANCE: VERSATILITY AND AUTONOMY IN A TABLETOP DEVICE FORMAT

- User and audit trail management (optional in the pharma version)
- Easy access to all operating parameters
- Space saving device with a small footprint (460 x 288 x 305 mm)
- Internal balance
- Onboard computer
- LAN and USB interface
- Touch display: intuitive system control and result evaluation
- Clear 10-inch user interface

All you need to use the AS 200 jet pro / pharma is an external industrial vacuum cleaner. You can find suitable vacuum cleaners here:

REALLY ROBUST AND SUPER SENSITIVE: THE INTERNAL BALANCE

The balance, which has been integrated into the machine design for the first time, is extremely robust – and patented in this setting! You can even use a rubber hammer to loosen any material that sticks to the lid during sieving without affecting the accuracy of the balance.

The integration of the balance not only saves additional space in your laboratory but also reduces errors. There is no need to transfer material between the sieving machine and an external balance, which effectively prevents material loss. Thanks to a high weighing readability of 0.01 g, all necessary data are recorded precisely during sieving, and the respective particle size is evaluated using the integrated software.

MODERN AIR JET SIEVING TECHNOLOGY THAT PROTECTS YOUR SAMPLE

The air jet sieving process:

✔ eliminates the need for additional mechanical sieving aids
✔ protects the sample material through individual selection of pressure, speed and height of the used sieve
✔ enables short sieving times (typically 2-3 minutes per process)

COMPLY WITH QUALITY ASSURANCE STANDARDS SUCH AS ISO 9000 FF

As part of test equipment monitoring, you can calibrate the sieving machine (clock, speed & pressure sensor) and internal balance. As part of the RETSCH maintenance service, we are happy to take care of all calibration processes for you.

"Even when using the new AS 200 jet pharma for the first time, you immediately notice how well thought-out and user-friendly it is. I am particularly impressed by the guided sieving: the clear step-by-step instructions practically eliminate errors caused by omitted steps.

The integrated, robust balance is a real plus—it makes handling noticeably easier and saves valuable space in the laboratory, as an external balance is no longer necessary. Additional safety features such as the Weighing-Assistant, Backweigh-Tolerance, and trend analysis ensure even greater process reliability in our everyday laboratory work."

Dr. Michael Ostendorf, Senior Expert Particle Technology/ Science Fellow, Bayer AG

NATIVE SOFTWARE INTEGRATION – YOUR DIGITAL ASSISTANT IN THE LABORATORY

Thanks to native software integration, you always have control over the entire process chain via an intuitive touch display:

- ✔ Sieve Management
- ✔ Parameter Setup
- ✔ Method Setup
- ✔ Sieve Analysis
- ✔ Weighing
- ✔ Data Evaluation & Reporting via USB or LAN connection
- ✔ Optional User Management (in the pharma version)

OUR PATENT, YOUR ADVANTAGE: COMBINED SIEVING AND WEIGHING

The patented combination of sieving and weighing in the AS 200 jet pro offers you real added value.

The principle behind this: for sieving, the sieving chamber is connected airtight to the vacuum cleaner. For a precise weighing process, the airtight sieving chamber is mechanically decoupled.

Your advantage in everyday laboratory work: error-free, time-saving weighing and subsequent evaluation in a single process, without the hassle of transferring the sieve between the machine and the balance.

VARIOUS TEST SIEVES FOR YOUR REQUIREMENTS – THE CHOICE IS YOURS

Not only existing customers benefit from our modular and sustainable development design. The AS 200 jet pro allows the use of all RETSCH test sieves with a diameter of 203 mm (8") and 200 mm (with adapter) and a height of 25 and 50 mm (1" and 2").

STEP BY STEP TO THE DESIRED RESULT

With the integrated software, you can easily perform both simple routine sieving and complex distribution analyses: and display all results immediately afterwards in both graphical and tabular form.

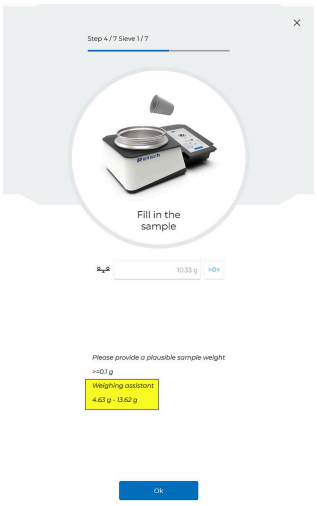
IMPROVED PROCESS RELIABILITY

SIEVE-CHECK – THE DIRECT ROUTE TO THE RIGHT SIEVE VIA BARCODE

Ensure that the test sieve corresponds to the selected method and identify your samples by simply scanning the corresponding barcode! With a standard USB barcode scanner and the Sieve-Check option, you can check the compatibility of the selected method and the required test sieve. This reduces the potential for errors in the long term.

IMPROVED PROCESS RELIABILITY

THE DIGITAL WEIGHING-ASSISTANT



Determining adequate sample quantities is a real time-consuming task, especially when dealing with different sample materials in series.

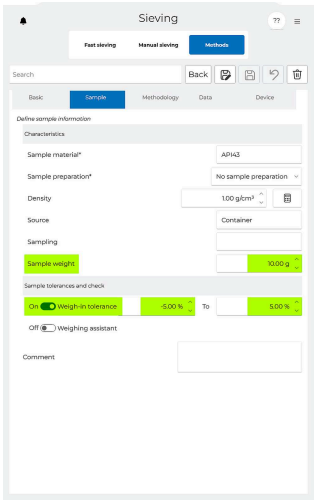
- Overloading the sieve leads to non-reproducible sieving results, as the sample cannot be sieved (quickly enough).
- Insufficient sample quantities lead to incorrect results, as their representativeness cannot be guaranteed.

Thanks to the new Weighing-Assistant in the AS 200 jet pro, this problem is now a thing of the past. After entering the respective sample bulk density, the system recommends a sieve-specific weighing range. This allows you to meet the specifications for the maximum permissible sieve load and the required minimum quantity in equal measure – and avoid incorrect sieving!

IMPROVED PROCESS RELIABILITY

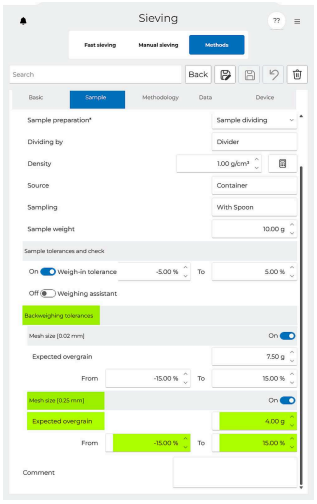
WEIGH-IN-TOLERANCE

This function allows you to set your own parameters for your individual weighing processes. First, specify the sample quantity to be weighed. Then you can define define deviation tolerances as upper and/or lower limit in percent. Compared to the Weighing-Assistant (which refers to general standards), a narrower process-related loading range can be specified—tailored precisely to your needs.



IMPROVED PROCESS RELIABILITY

BACKWEIGH-TOLERANCE



Does your sample comply with the preset quality limits? With the Backweigh-Tolerance, you can ensure that the particle size and particle size distribution of the sample meet your requirements.

- First, use the Weigh-In-Tolerance to weigh the sample accurately.
- With the Backweigh-Tolerance, you can also define the expected backweigh (as oversize or undersize) in grams.
- You can define a deviation in percent to adjust the permitted tolerance range.

Deviations from the specifications appear immediately as a message on the display, giving you even greater process reliability!

IMPROVED PROCESS RELIABILITY

TREND ANALYSIS: TEST EQUIPMENT AND PROCESS MONITORING - PROACTIVELY AVOID INCORRECT SIEVING

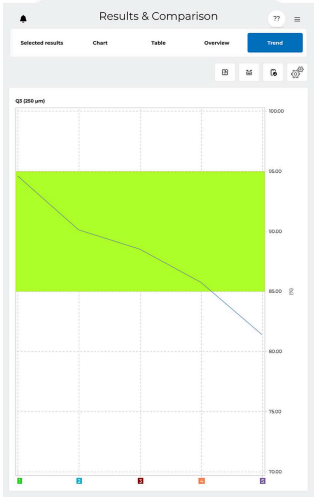
Trend analysis can be used to compare several sieving processes based on freely selectable parameters. This allows you to benefit from simple and reliable monitoring of various quality criteria.

TEST EQUIPMENT MONITORING

Detect early on when your sieves are no longer functioning in accordance with standards and need to be replaced.

- Blinding refers to a wear process in which the sieve mesh becomes clogged with particles.
- Aging processes and wear-promoting handling in the often-hectic everyday laboratory routine lead to a decrease in sieve tension or an expansion of the sieve meshes on the material side.

Replace the often purely subjective assessments with objective measurement data that realistically reflects the current condition of your sieve. Trend analysis allows changes in sieve quality to be detected and faulty sieves to be replaced at an early stage. For certified sieve testing we offer the Retsch calibration service.



Trend Analysis with downward outliers of 5 consecutive sieve analyses (blinding)

PROCESS MONITORING

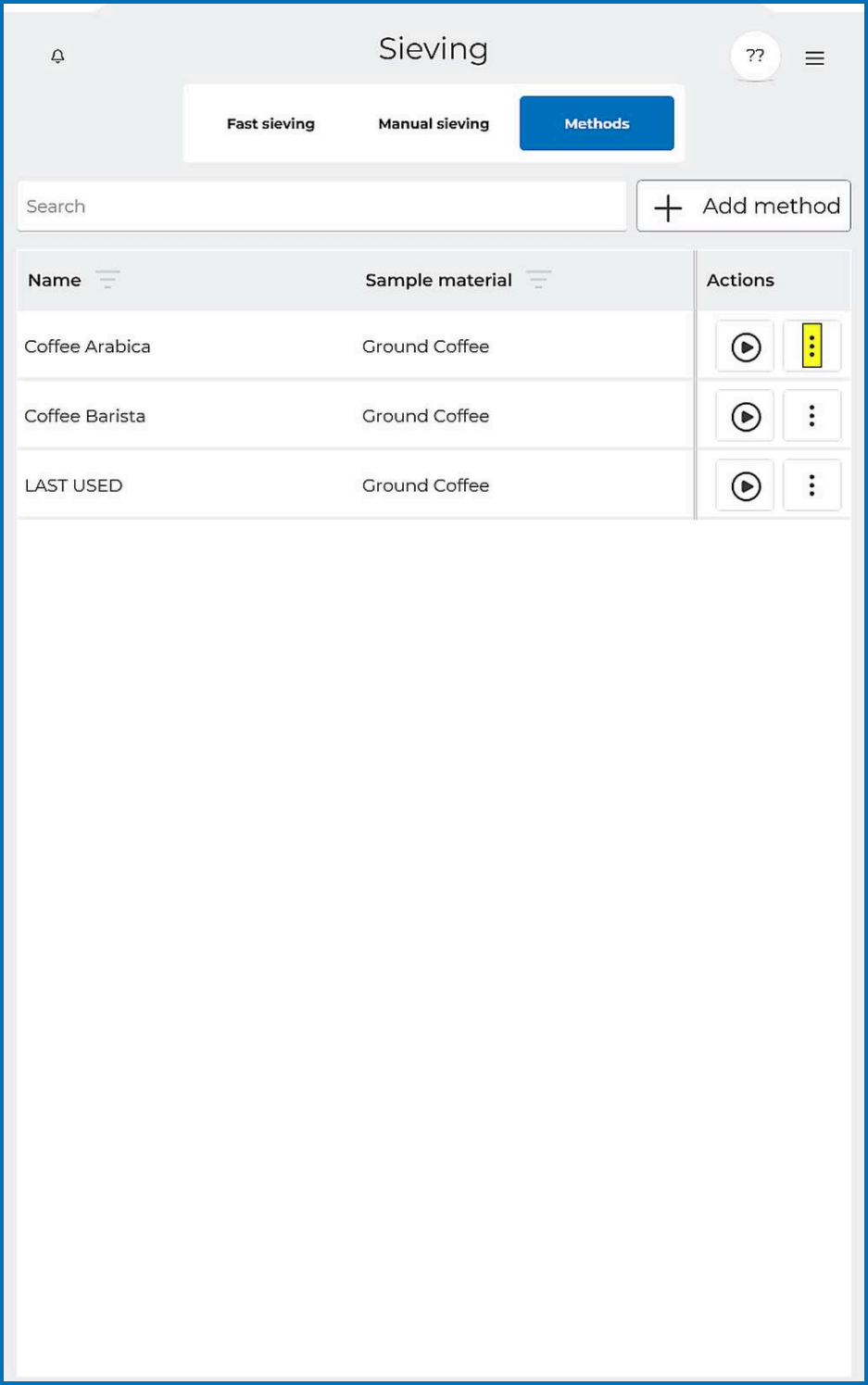
Monitor production processes change by continuously comparing multiple sieving processes. This allows you to identify potential changes in ongoing processes at an early stage and make immediate adjustments.

RETSCH'S GUIDED SIEVING AND WEIGHING ASSISTANT ENSURES ACCURATE RESULTS.

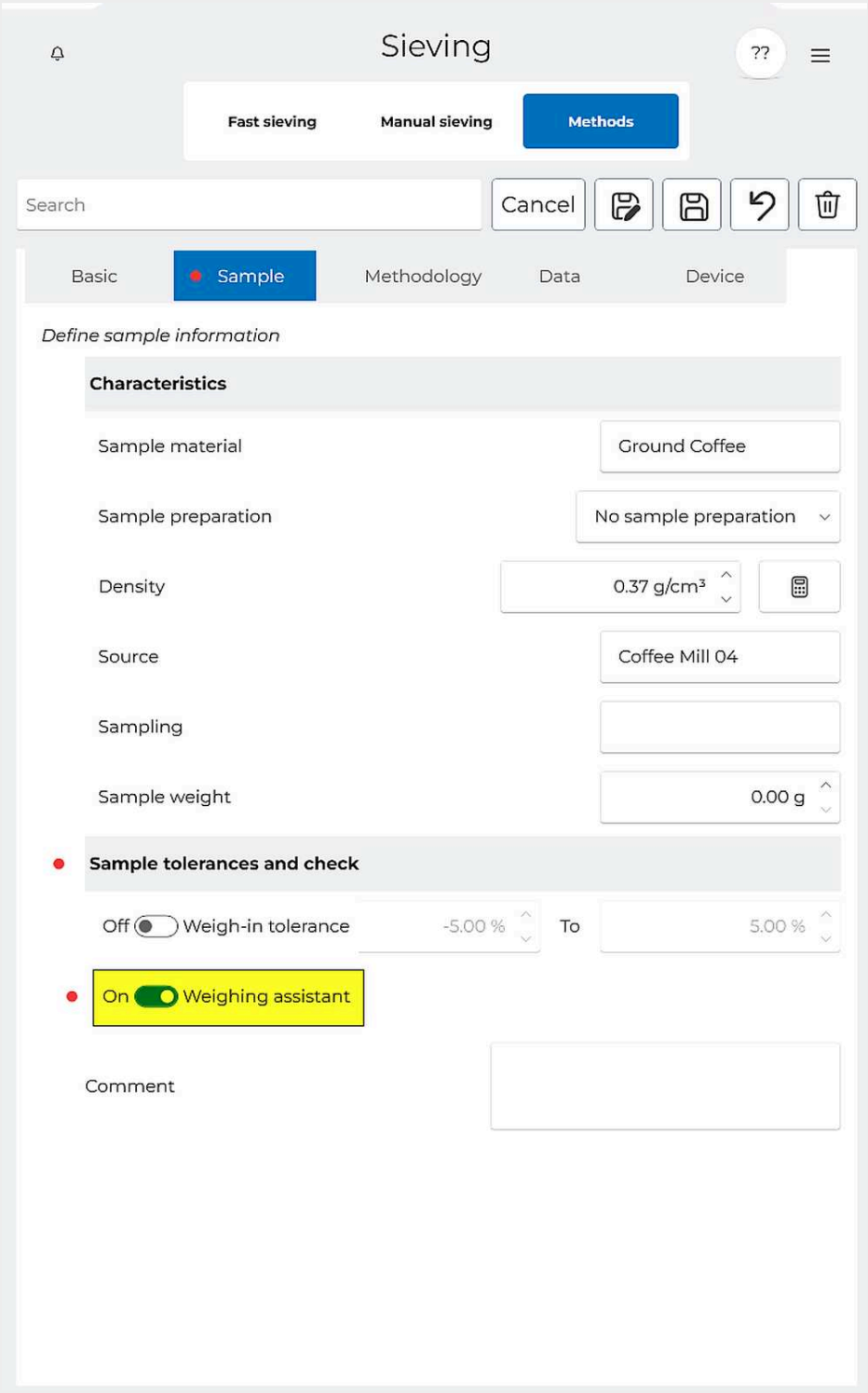
The internal wizard guides the user step by step through the entire process. Every process step is clearly explained and ensures reliable sieve processes. Human errors are reduced to a minimum.

The optional “Weighing Assistant” recommends a suitable sample amount which avoids errors based on overcharging the sieve but still keeping a minimum amount for a reliable sieve analysis by considering the sample’s representativeness.

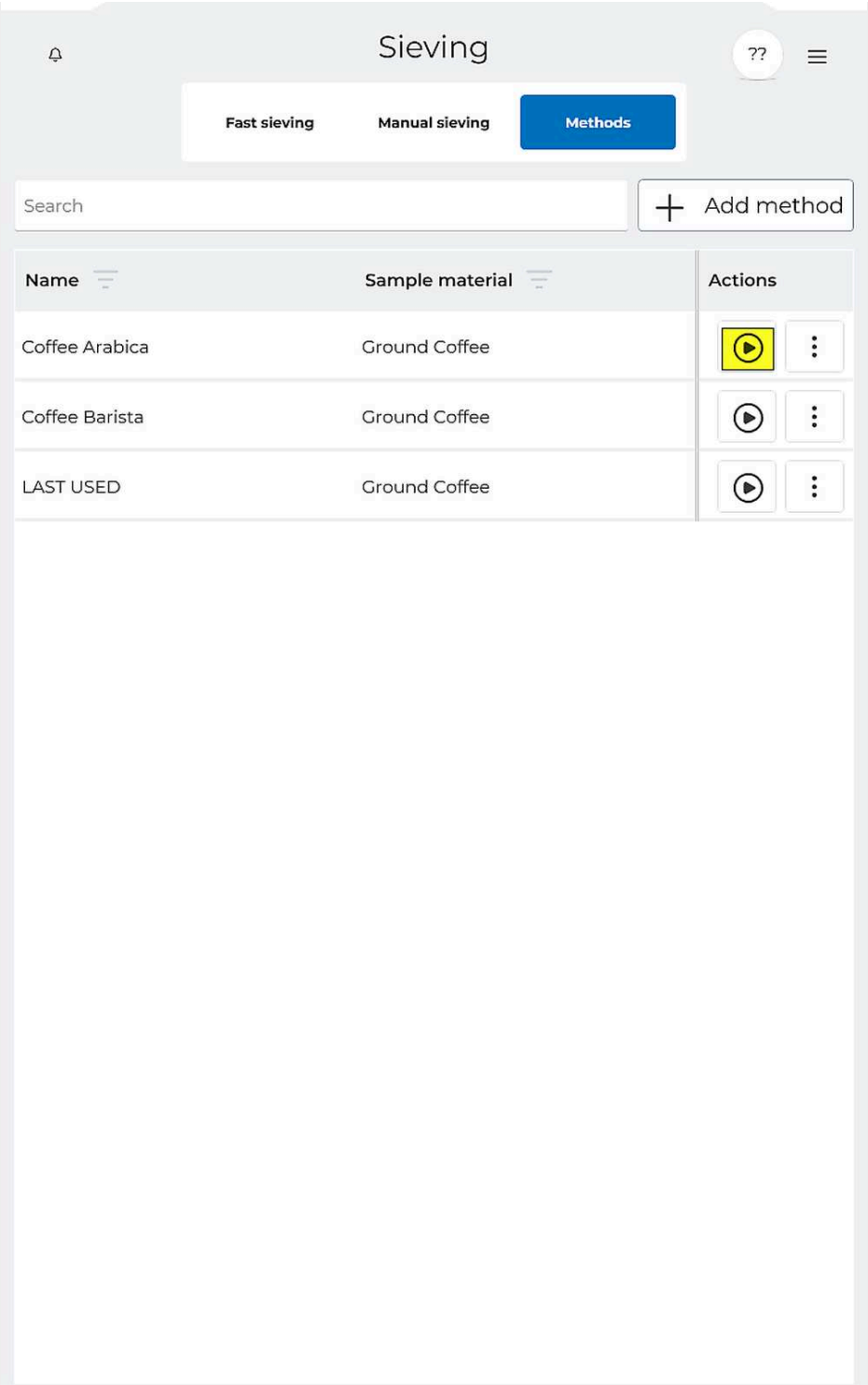
The “Weighing Assistant” exclusively can be used with RETSCH test sieves and can easily be activated/ deactivated in the method.



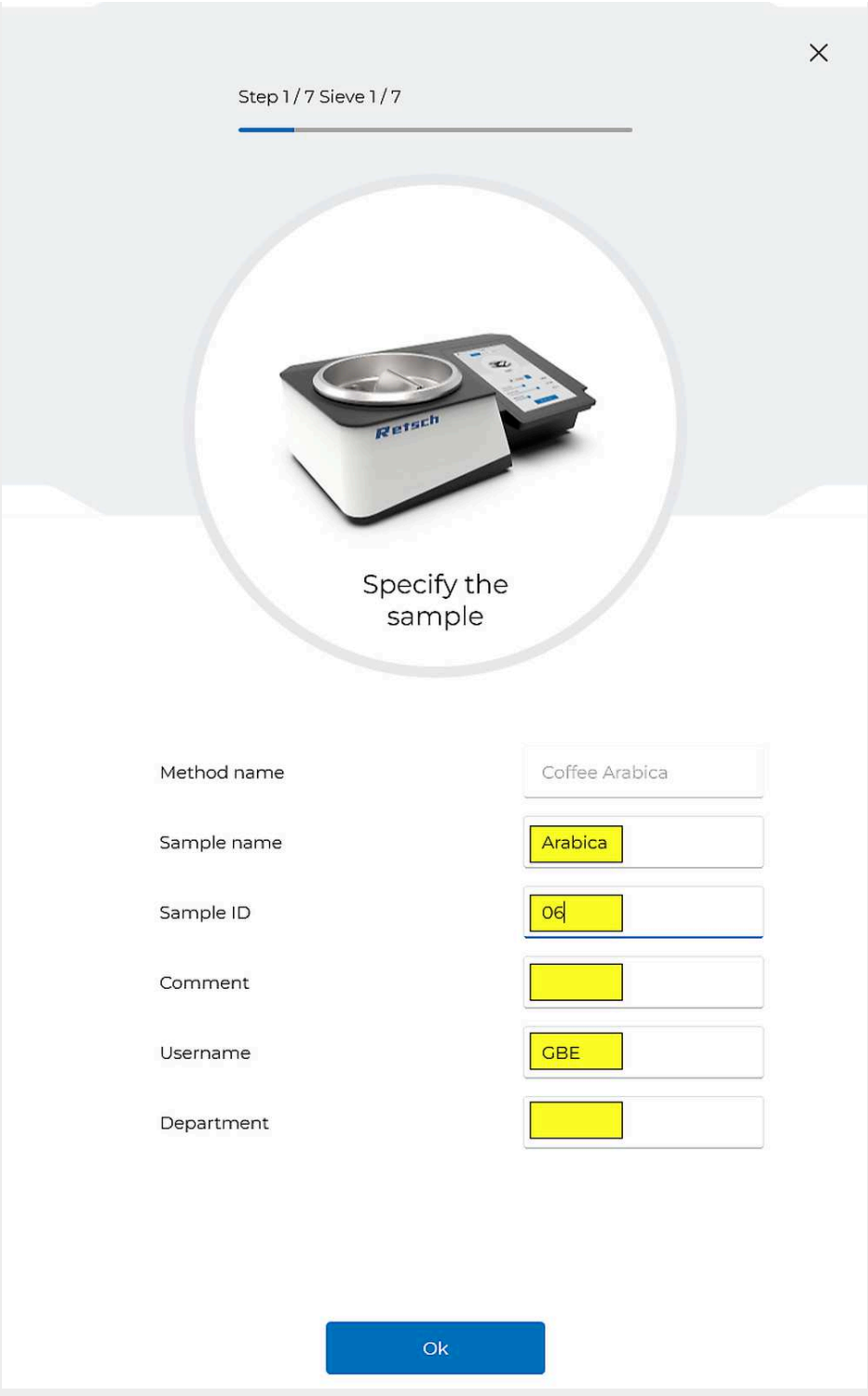
1/11 OPTIONAL SETUP
CHOOSE A METHOD FOR EDITING



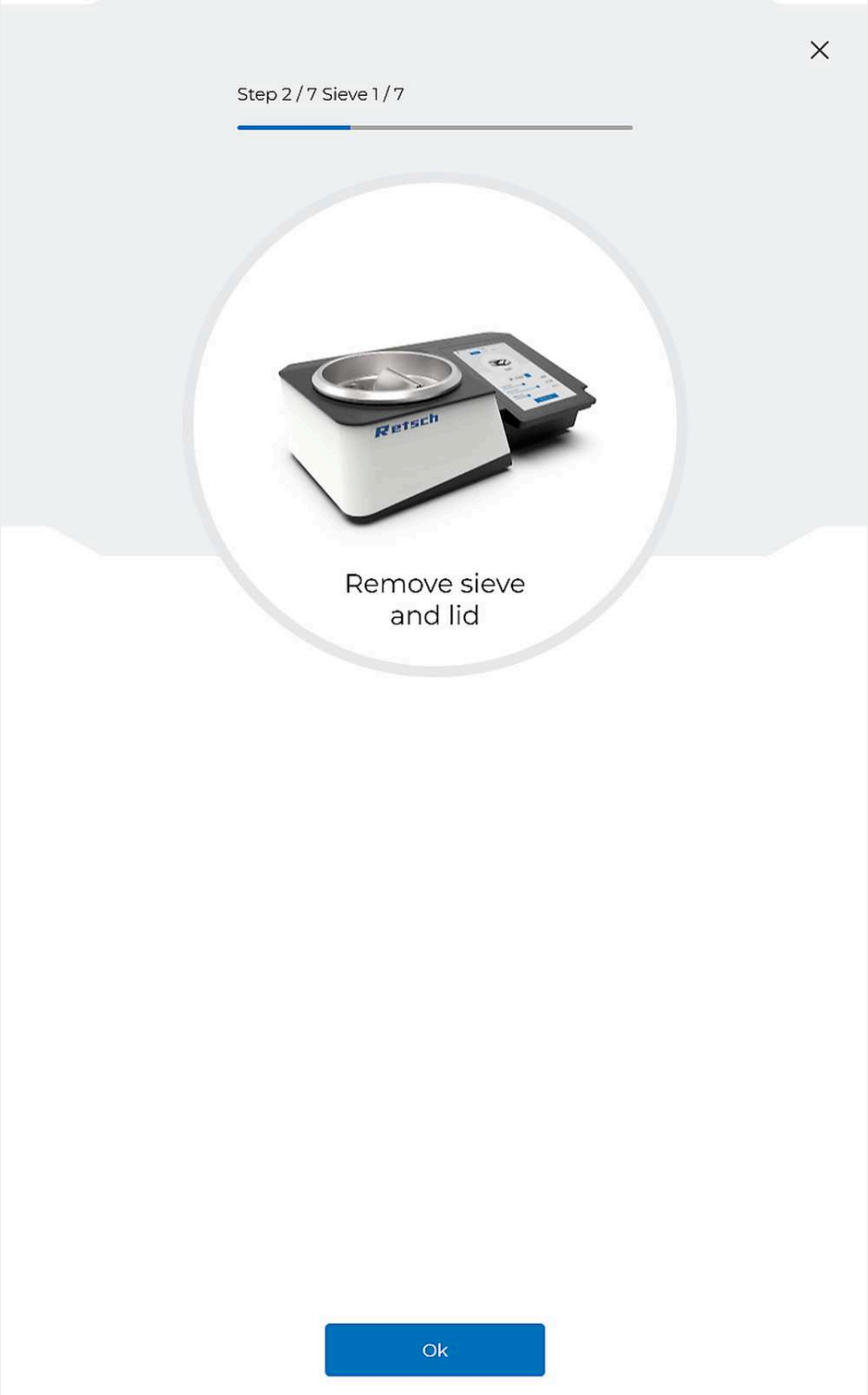
2/11 OPTIONAL SETUP
ACTIVATION OF THE WEIGHING ASSISTANT



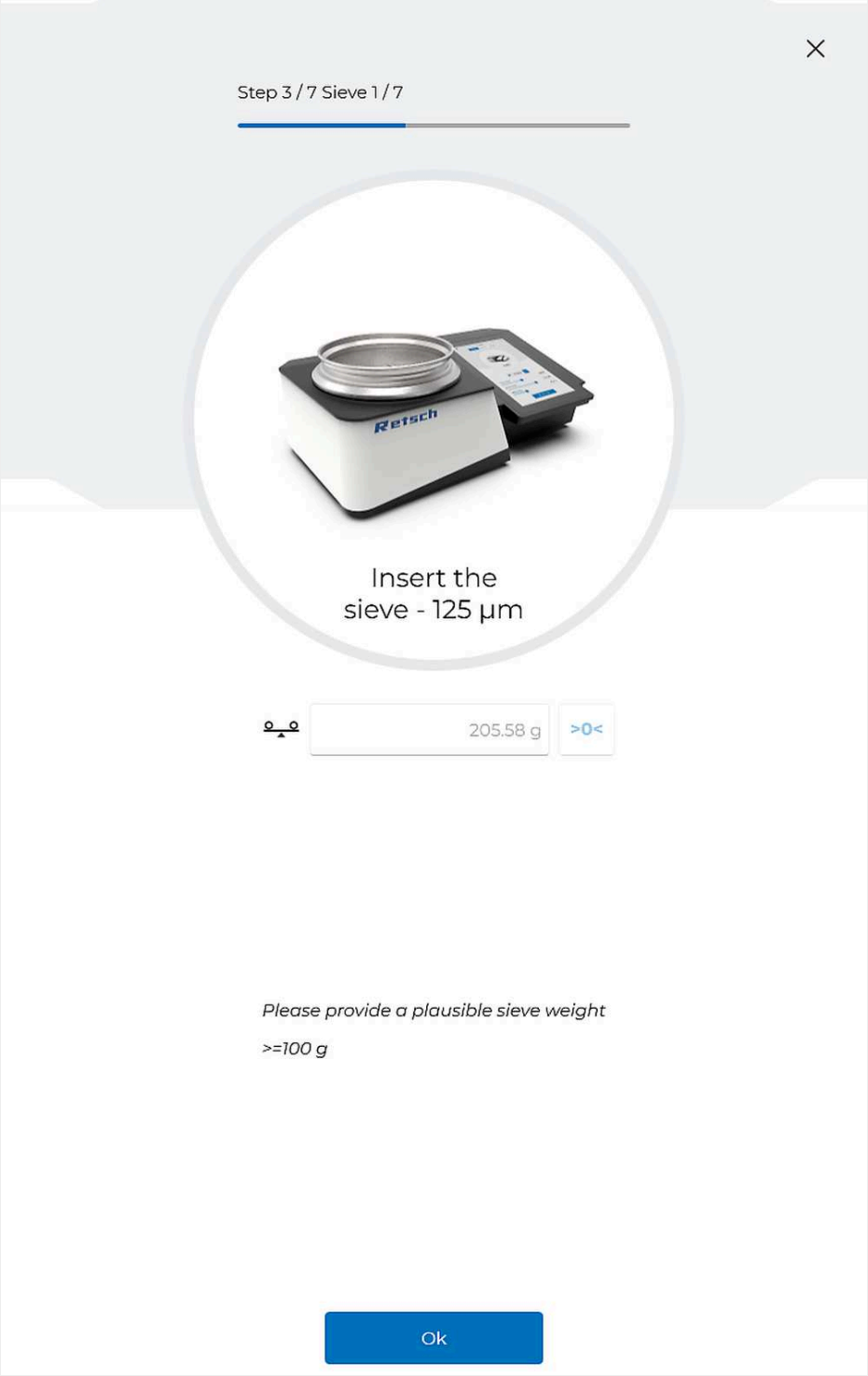
3/11 STARTING THE METHOD



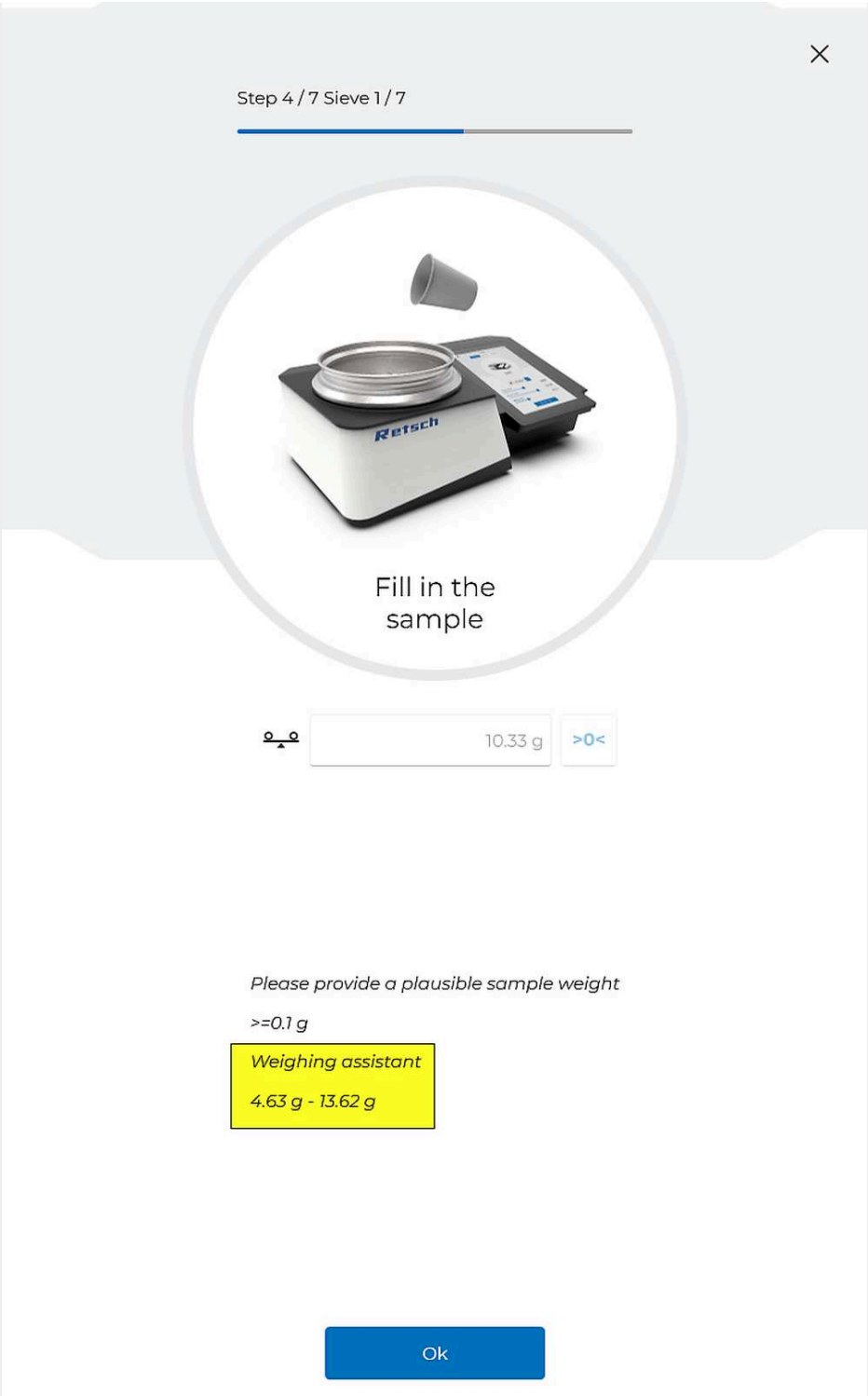
4/11 GUIDED SIEVING
STEP 1: SAMPLE IDENTIFICATION



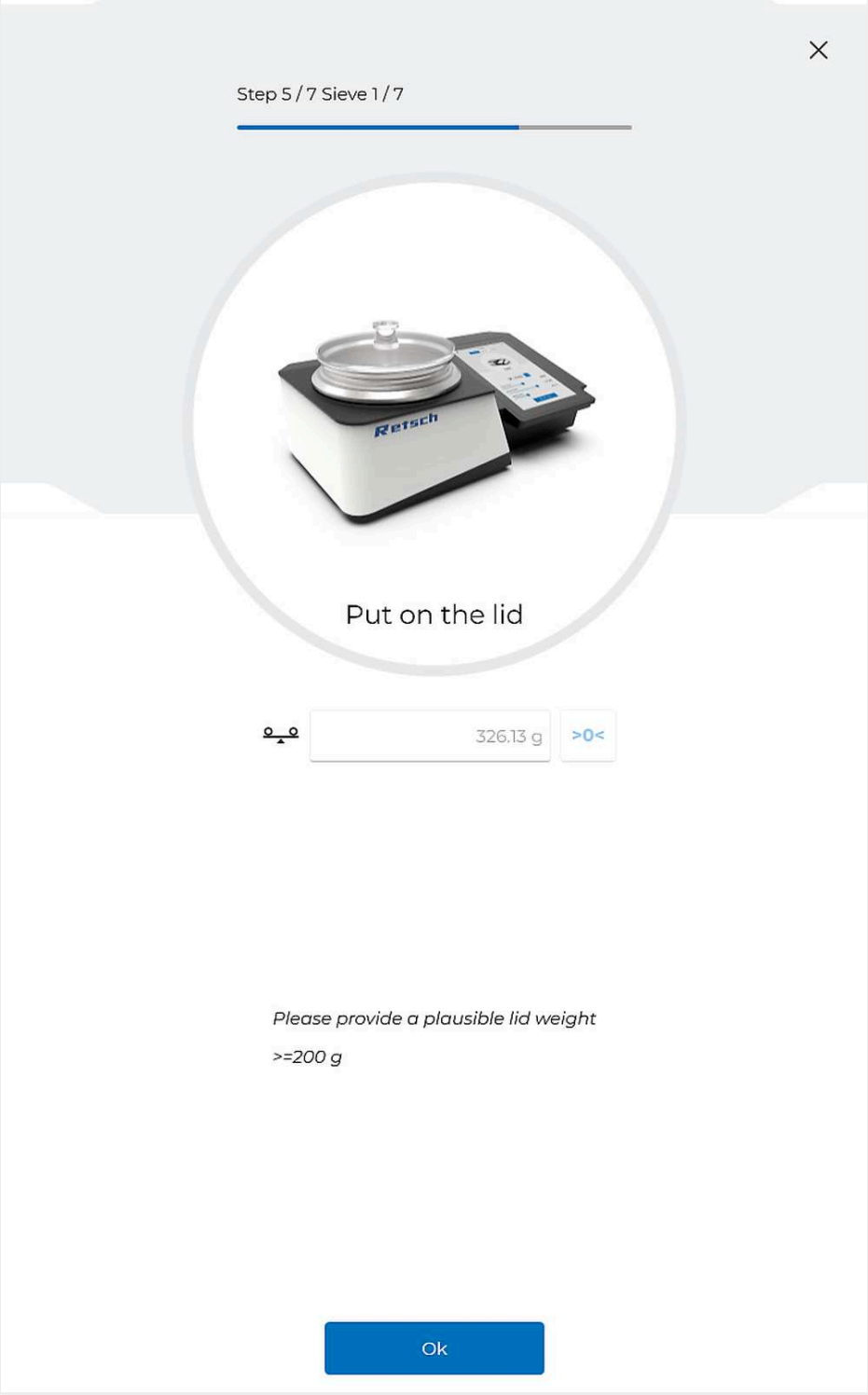
5/11 GUIDED SIEVING
STEP 2: PREPARATION OF BALANCE



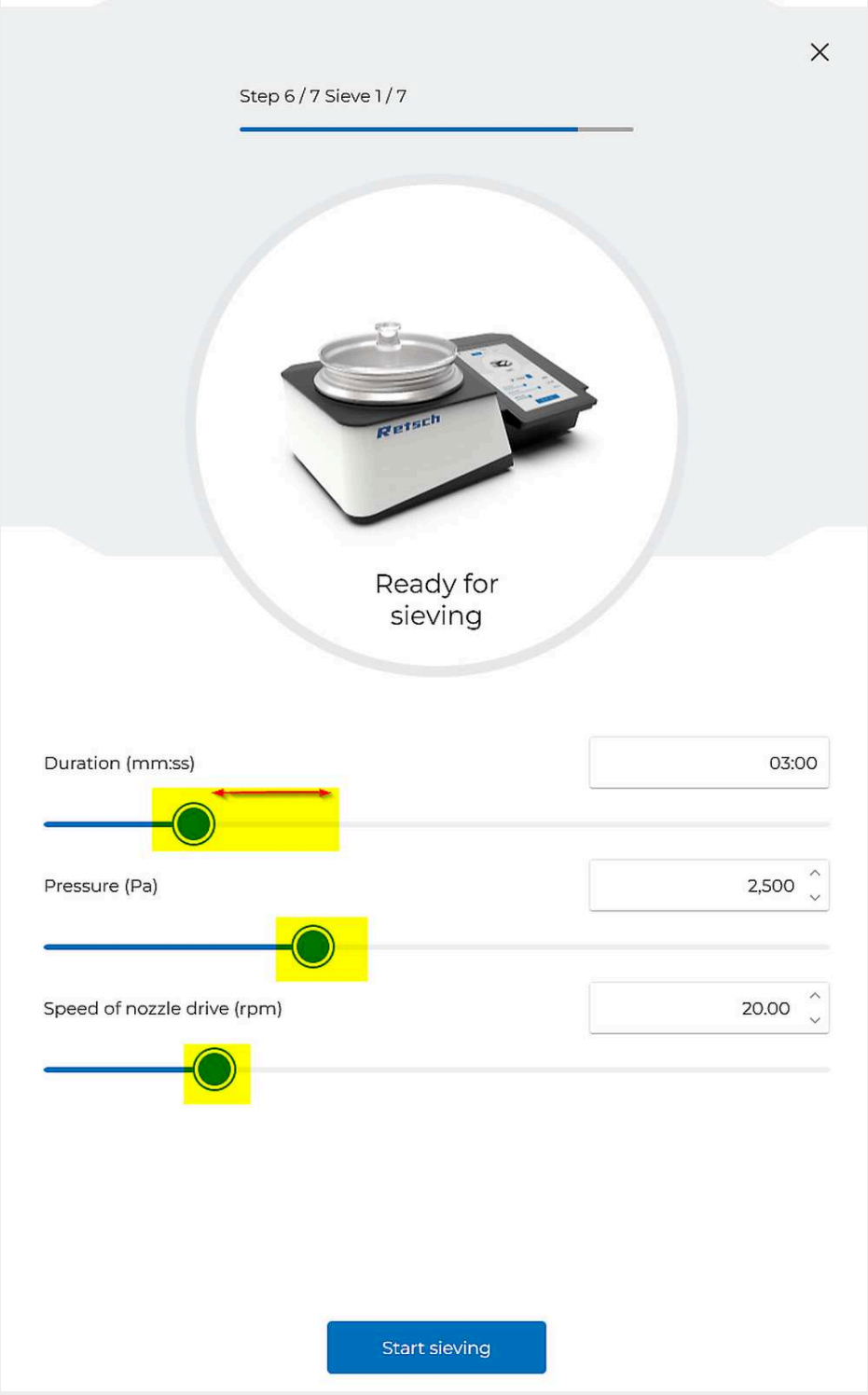
6/11 GUIDED SIEVING
STEP 3: WEIGHING THE REQUESTED SIEVE



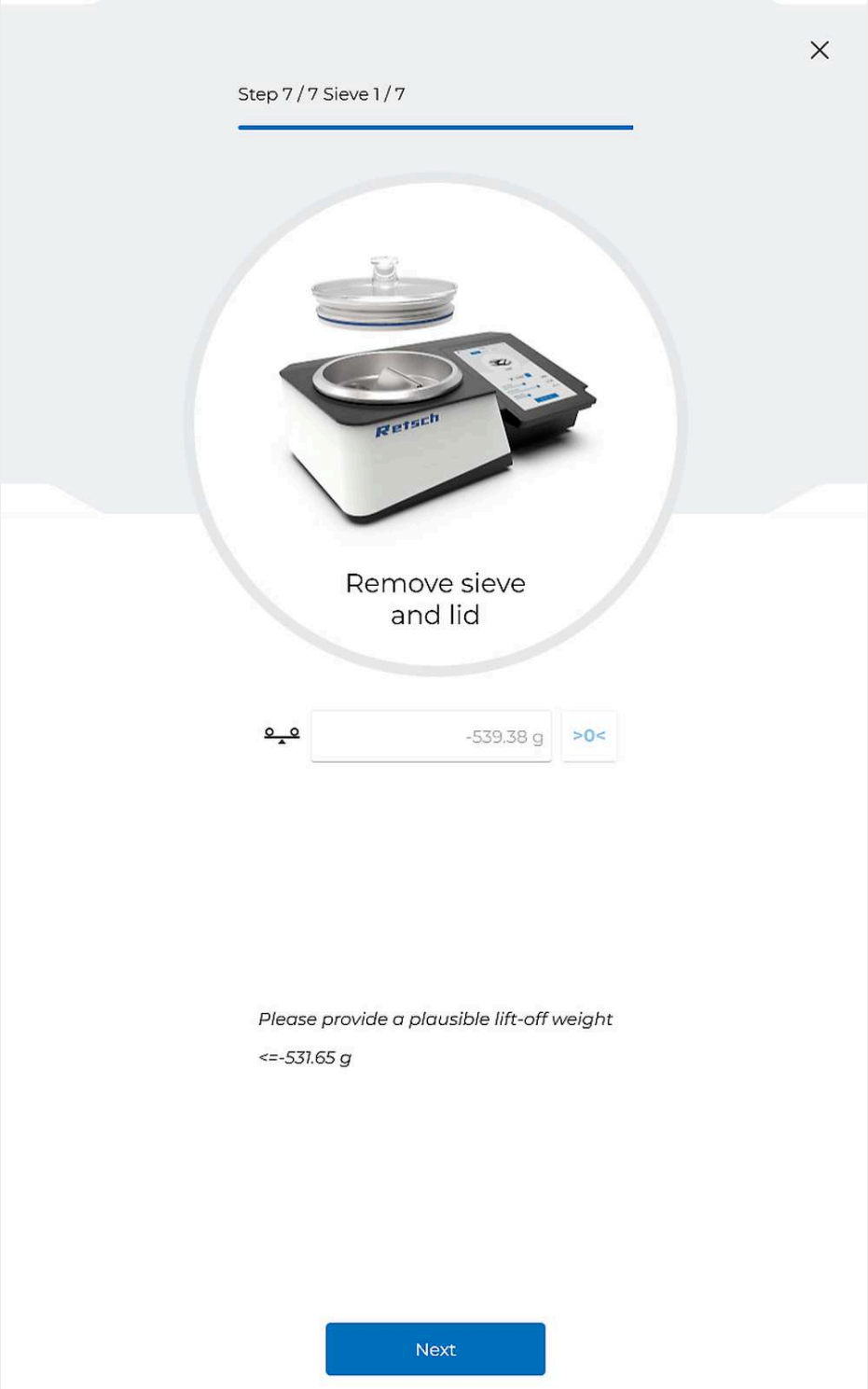
7/11 GUIDED SIEVING
STEP 4: WEIGHING THE SAMPLE. THE WEIGHING ASSISTANT RECOMMENDS A SUITABLE SAMPLE AMOUNT



8/11 GUIDED SIEVING
STEP 5: WEIGHING THE LID



9/11 GUIDED SIEVING
STEP 6: OPTIONAL ADJUSTMENT OF THE SIEVING PARAMETERS AND START



10/11 GUIDED SIEVING
STEP 7: BACKWEIGHING THE RESIDUAL MASS

Preliminary results

125 µm

Sieving completed successfully

Results	
Oversize	7.73 g
Sample information	
Sample amount	10.32 g
Undersize	2.59 g
Device parameters	
Duration	01:30 mm:ss
Speed of nozzle drive	20 rpm
Pressure	3,000 Pa
Average pressure	2,784 Pa
Pressure std. dev. sigma	877 Pa
Pressure variance	768,927 Pa^2

Next

11/11 DISPLAY OF RESULTS

EXCLUSIVE FEATURES OF THE AS 200 JET PHARMA MODEL

The AS 200 jet pharma is a separate model adapted to the needs of the pharmaceutical industry and other regulated environments. It offers all the functions of the AS 200 jet pro and has several additional features.

YOUR PARTNER FOR GOOD MANUFACTURING PRACTICE (GMP)

The AS 200 jet pharma variant offers you all the functions you need to meet the requirements of modern particle size analysis in accordance with GMP guidelines.

The system meets the software validation requirements according to

✔ ISPE GAMP 5

✔ FDA 21 CFR Part 11

✔ EC GMP Annex 11

for fulfilling with the highest standards in quality assurance.

The user management ensures complete transparency and security through the optional assignment of hierarchical access rights and passwords, as well as the setup of legally compliant e-signatures.

USEFUL TOOLS FOR YOUR QUALIFICATION DOCUMENTATION

To make it even easier to meet internal or GMP requirements, a comprehensive documentation package is available as an option.

This includes

✔ Qualification Master Plan (QMP)

✔ Risk Analysis (FMEA)

✔ Installation Qualification (IQ)

✔ Operational Qualification (OQ)

The documents are customized for your company and make initial setup easier for you.

"TRACK'N TRACE" FOR YOUR SIEVE ANALYSIS

An integrated audit trail records all process steps and activities and assigns them to the respective users. This guarantees genuine track and trace: all user activities and events can be traced back seamlessly.

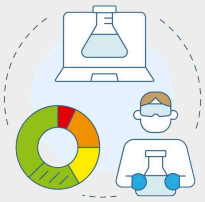
ADDITIONAL FEATURES

ACCESSORIES AND ADDITIONAL FEATURES

With the optional high-performance cyclone, even extremely fine particles can be recovered without significant pressure loss during the sieving process. In addition, the use of a cyclone helps to extend the service life of the vacuum cleaner filter.

USE YOUR EXISTING EXTERNAL BALANCE

Optionally, you can easily connect your existing, qualified balance as an external device via USB. The internal software already offers factory-installed connection options for the most common balances.



ADVANCED DATA TRANSFER VIA LIMS

Data can be transferred from the AS 200 jet pro / pharma to your Laboratory Information Management System (LIMS) via a network connection. Possible export formats are .xls, .xlsx, .xps, .csv, .pdf, .png, .jpg, .txt, .rtf, html, .mht

LEARN EVERYTHING YOU NEED TO KNOW ABOUT MODERN AIR JET SIEVING

Air jet sieving is the optimal method for dry sieving of samples with a high proportion of fine particles. Compared to traditional sieving methods, this process saves time and reduces your costs in the long term.

✔ As an alternative to vibration screening, this method offers a significantly higher process speed for fine particle sizes.

✔ Unlike other methods, air jet sieving uses only one sieve per sieving process.

THE RULE OF THUMB FOR CHOOSING THE BEST PARAMETERS:

1. Sensitive samples should be sieved with low vacuum pressure to protect the material. The vacuum pressure can be adjusted variably via the touch display. In addition, the sieve height can be varied to adjust the impact effect.
2. Higher vacuum pressure and/or a low test sieve are suitable for agglomerated samples. The increased impact intensity allows even strong agglomerates to be broken up in a short time.

GUIDED SIEVING

After selecting the desired sieving method, the software guides you step by step through the sieving process. You can precisely control all relevant parameters via the control panel of the AS 200 jet pro. In addition, Guided sieving improves safety, as each step is clearly described, thereby reducing human error.

- The speed of the nozzle influences the frequency of impact of the sample during the sieving process.
- The vacuum has a significant influence on the sieving process and can be controlled by automatic vacuum cleaner control.
- The sieving time can be set to the nearest second.

COMPREHENSIVE DISPLAY OF RESULTS

The following evaluation data is available as standard. A complete list, functions, and the underlying formulas can be found in our knowledge

base:

- Various percentiles
- quantiles
- Uneven grain size
- Span value
- RRSB
- AFS fineness number
- Specific surface area

and much more.

In addition, further comparisons, limit value monitoring, and trend analyses can be generated.

AIR JET SIEVING MACHINES AS 200 JET PRO / AS 200 JET PHARMA

TYPICAL SAMPLE MATERIALS

RETSCH's Air Jet Sieving Machines AS 200 jet pro / pharma are ideally suited for separation, fractioning and particle size determination of cement, pharmaceutical materials, ceramics, chemical products, cosmetics, food, minerals, pigments, plastics, powder coating, rubber, toner particles and washing powder.

pharmaceuticals

coal

plastics

sugar

cement & minerals

To find the best solution for your sample preparation task, visit our application database.

FUNCTIONAL PRINCIPLE

The AS 200 jet pro / pharma is equipped with a

rotating slot nozzle, over which the sieve and cover are placed. A vacuum generates a strong air jet that swirls the sample particles on the sieve and distributes them. Sample material that is smaller than the mesh size of the sieve is transported by the reverse air flow to the cyclone or vacuum cleaner. The air jet also ensures continuous resolution of agglomerated particles (deagglomeration) and cleaning of the sieve mesh.

Click to view video

AS 200 JET PRO / AS 200 PHARMA

TECHNICAL DATA

Applications	separation, fractioning, particle size determination
Field of application	chemistry / plastics, construction materials, environment / recycling, food, geology / metallurgy, glass / ceramics, medicine / pharmaceuticals, ...
Feed material	powders
Measuring range*	10 µm - ~ 4 mm
Sieving motion	dispersion by air jet
Typical. batch / feed capacity	0.3 - 100 g
Max. number of fractions	1 (by using a cyclone: 2)
Touch screen	Yes with 10.1“ display
Speed	digital, 5 – 80 min-1 (nozzle)
Time display	digital, 00:30 – 15:00 min
Integrated balance	Yes, with reading accuracy 0.01 g and calibration accuracy 0.1 g
Vacuum	500-6,500 Pa / 5-65 mbar / 0.07-0.95 psi
Digital parameter setting	Yes, software included, pro or pharma version
Storable SOPs	More than 40, depends only on storage capacity
Connectivity	Yes, 2 x USB, Ethernet
Interval operation	no

SOFTWARE FEATURES

Graphical User Interface, guided sieving	Yes
Mode of operation	Fast sieving, manual sieving and methods
Languages	German and English
Parameter units changeable	Size: mm/µm/mesh/inch Mass: g/kg Time: s/min Pressure: mbar/Pa/psi Volume: ml/cl/l/cm3
SOPs	Yes, integrated in methods, more than 40
Individual sample labelling	Yes, for each sample, reference to method during data choice and in overview
Parameter setting per test sieve	Yes
LIMS ready	Yes
Possible export formats	.xls, .xlsx, .xps, .csv, .pdf, .png, .jpg, .txt, .rtf, html, .mht
Teamviewer online support	Yes
Screenshot function	Yes
Back-up function	Yes
Automatic storage of results	Yes, in machine, auto report function, PDF document or to printer

www.retsch.com/AS200jet-pro-pharma

ORDER DATA

AIR JET SIEVING MACHINES AS 200 JET PRO / JET PHARMA

Air Jet Sieving Machines for test sieves 203 mm (8”) Ø, with automatic vacuum regulation and internal balance, incl. lids for test sieves 1” and 2” height and rubber mallet - please order test sieve and MANDATORY vacuum cleaner (Item No. 22.748.0020 or Item No. 22.748.0021) separately!

30.034.0001		AS 200 jet pro	100–240 V, 50/60 Hz	incl. test report acc. to EN 10204 2.2 evaluation software installed (no EasySieve required)
30.034.0002		AS 200 jet pharma (no EasySieve required)	100–240 V, 50/60 Hz	incl. test report acc. to EN 10204 2.2 evaluation software installed incl. AuditTrail & User Management

VACUUM CLEANER AS 200 JET PRO / JET PHARMA

22.748.0020	Industrial vacuum cleaner ATTIX 33 230V 50/60Hz (other electrical versions available) MANDATORY vacuum cleaner for 30.034.0001 & 30.034.0002 NOT SUITABLE for 32.935.0008
32.524.0017	HEPA filter for ATTIX 33
32.524.0018	Cover for HEPA filter ATTIX 33
32.524.0019	Replacement filter bags for ATTIX 33, 5 pcs.

CYCLONE AS 200 JET PRO / JET PHARMA

22.935.0042	High-performance cyclone including holder, collecting receptacle (250 ml and 500 ml sample bottle) and 1.5 m FDA certified hose with clamps (industrial vacuum cleaner 22.748.0020 or 22.748.0021 recommended)
05.707.0208	FDA certified hose, 1.5 m
02.183.0151	Connector for cyclone

ACCESSORIES AS 200 JET / JET PRO / JET PHARMA

02.025.0070		Adapter and lids for test sieves 200 mm Ø x 50 mm and 200 mm Ø x 25 mm

03.107.0487		Spare lid for test sieves 203 mm (8”) Ø x 1”
03.107.0448		Spare lid for test sieves 203 mm (8”) Ø x 2”
22.523.0001		Sample bottles, 250 ml, 10 pieces
22.523.0002		Sample bottles, 500 ml, 10 pieces

TEST SIEVES WITH ELECTROFORMED SHEET

60.142.000010	Test sieve with electroformed sheet (ISO 3310-3), 203 mm Ø, 25 mm height, 10 µm
60.142.000016	Test sieve with electroformed sheet (ISO 3310-3), 203 mm Ø, 25 mm height, 16 µm

ADDITIONAL ITEMS AIR JET SIEVING MACHINES

99.200.0047	IQ/OQ Documentation for AS 200 jet pro
99.200.0046	IQ/OQ Documentation for AS 200 jet pharma

RECALIBRATION AIR JET SIEVING MACHINES

The Retsch Air Jet Sieving Machines can be calibrated at Retsch/Germany or at selected subsidiaries/agents

SER-97.001.0021	Calibration of sieving machines AS 200 jet pro & AS 200 jet pharma at Retsch/Germany, incl. test report acc. to EN 10204 2.2