

Innovative Technology Sets Standards Worldwide

RETSCH analytical vibratory sieve shakers are used in research & development, quality control of raw materials, semi finished and finished products as well as in production monitoring. The AS 200 series provides a suitable instrument for every requirement and budget. While the AS 300 control is designed for large feed quantities up to 6 kg, the AS 450 control is the ideal sieve shaker for big loads up to 25 kg.

All shakers are suitable for dry and wet sieving. Their patented electromagnetic drive produces a 3-D throwing motion which ensures optimum use of the open sieve area and lets the sample move equally over the whole sieving surface. All electromagnetic sieve shakers feature individual amplitude setting which allows adaptation to the sample characteristics and therefore sharp fractionizing even after very short sieving times. The "control" models can be used as measuring instruments according to DIN EN ISO 9000 ff.

AS 200 basic –The Budget-Priced Basic Model

The economical alternative of the series with familiar RETSCH quality and reliability. With digital adjustment of power and sieving time.

AS 200 digit cA – The All-Purpose Standard Model

The AS 200 digit cA is recommended whenever digital time display, interval operation and adjustment along the vibration height are required.



AS 200 digit cA with clamping device "standard" and sieve stack

AS 200 basic with clamping device "economy" and sieve stack

Vibratory Sieve Shaker Technology:

All sieve shakers of the series AS 200, AS 300 and AS 450 work with an electromagnetic drive that is patented by RETSCH (EP 0642844). This drive produces a three-dimensional throwing motion that moves the sample equally over the whole sieving surface. The advantages are high load capacity, extremely smooth operation and short sieving times with high separation efficiency. The drive runs without wear and does not require maintenance.

AS 200 control – Meeting the Highest Standards for Quality Control

The microprocessor-controlled measuring and control unit of this model ensures a constant vibration height, allowing for 100% reproducibility of results even among different AS 200 control shakers. One particular characteristic makes this RETSCH product stand out from others: Instead of the vibration height, it is possible to set the sieve acceleration which is independent of the power frequency. Together with the possibility of calibration, this ensures comparable and reproducible sieving results worldwide. Thus, all requirements for the test materials monitoring according to DIN EN ISO 9000 ff are met.

All sieving parameters – vibration height, time, and interval – are set, displayed and monitored digitally which makes operation of the AS 200 control very convenient and quick. Up to 99 standard operating procedures (SOPs) may be stored for routine analyses. Through the integrated interface the instrument can be connected to a PC and controlled with the evaluation software EasySieve®. This program enables the user to carry out the whole sieving process and its subsequent documentation with convenience, accuracy and conforming to standards.

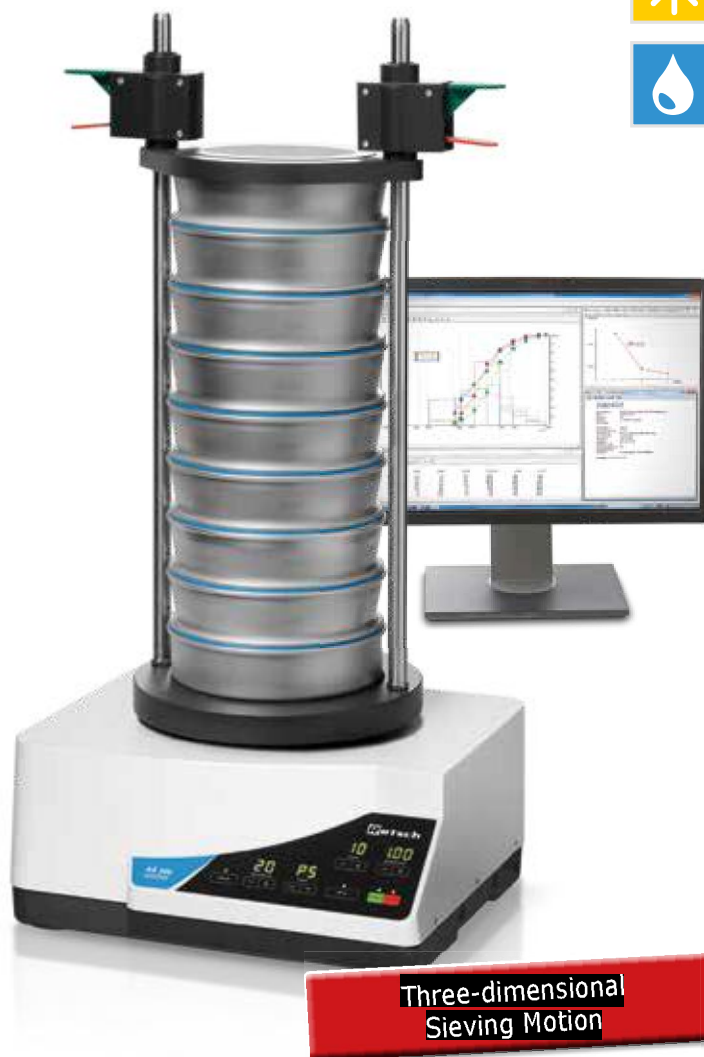
Benefits

- Sieving with 3-D effect
- For sieves up to 203 mm (8") Ø
- Suitable for dry and wet sieving
- Measuring range 20 µm to 25 mm
- Memory for 99 Standard Operating Procedures (SOPs)
- Digital setting and control of sieving parameters
- Sieve acceleration independent of power frequency
- Reproducible and globally comparable sieving results
- Integrated USB interface
- Patented electromagnetic drive (EP 0642844)
- Low noise, maintenance-free
- Test materials monitoring according to DIN EN ISO 9000 ff

Video on www.retsch.com/as200

25 mm
20 µm

NEW



Three-dimensional
Sieving Motion

AS 200 control with clamping device "comfort" and sieve stack

AS 300 control – Designed for Test Sieves up to 315 mm Ø

The AS 300 model has all the benefits of the AS 200 control but is designed for test sieves with a diameter up to 315 mm, providing a sieve surface which is approximately 2.5 times larger. Therefore, the AS 300 is able to separate up to 6 kg of material in one working run. Repetitive operations are greatly simplified with the possibility to store up to 99 standard operating procedures (SOP). For perfectly reproducible sieving results, the AS 300 control can be programmed with sieve acceleration independent of the power frequency instead of vibration height.

The microprocessor-controlled measuring device monitors and automatically readjusts the vibration height. All sieving parameters are set, displayed and monitored digitally. The AS 300 control can be calibrated, and is thus suitable for test materials monitoring. Like all instruments of the "control" series, the AS 300 has an integrated interface for using the evaluation software EasySieve[®] to control, set and visualize all parameters, including complete documentation of the sieving process.

Benefits

- Sieving with 3-D effect
- For sieves up to 315 mm Ø
- Suitable for dry and wet sieving
- Measuring range 20 µm to 40 mm
- Memory for 99 Standard Operating Procedures (SOPs)
- Digital setting and control of sieving parameters
- Sieve acceleration independent of power frequency
- Reproducible and globally comparable sieving results
- Short sieving times due to large sieve surface and effective movement
- Low noise, maintenance-free
- Test materials monitoring according to DIN EN ISO 9000 ff

Video on www.retsch.com/as300

40 mm
20 µm

NEW



AS 300 control with clamping device "comfort" and sieve stack

The sieve shakers of the AS 450 series are robust floor models with a remote operation panel designed for use with 400/450 mm test sieves. They are suitable for sieving products such as minerals, construction materials, coal or soil.

AS 450 basic – The Budget-Priced Alternative

This sieve shaker covers a size range from 25 µm to 125 mm and accepts loads of up to 15 kg. Time and amplitude are digitally set which ensures reproducibility of the sieving process.

The AS 450 basic is suitable for dry and wet sieving. It is the economic solution for users who need to sieve larger quantities of dry material with reliable results.

AS 450 control – The High-Performance Model with CET Technology

With the Vibratory Sieve Shaker AS 450 control RETSCH have designed their first 3-D shaker for 400 mm and 450 mm sieves. It can be used for dry and wet sieving of sample amounts of up to 25 kg. The AS 450 control combines the benefits of electromagnetic sieving – controlled amplitude with highest reproducibility – with the powerful drive based on CET technology (Continuous Energy Transfer).

Even with high loads a constant vibration height of 2.2 mm and, as a result, high separation efficiency are achieved thanks to the continuous controlled energy input. Manual re-sieving is no longer required.

When it comes to operating comfort, the AS 450 control meets all the requirements of a modern laboratory. All parameters such as amplitude, time and interval are digitally set, displayed and controlled via a remote operation panel. It is possible to store up to 9 standard operating procedures for routine tasks. Like all instruments of the "control" series, the AS 450 comes with a calibration certificate and can be controlled with the evaluation software EasySieve®.



AS 450 control with clamping device "standard" and sieve stack

Benefits

- Sieving with 3-D effect
- Excellent separation efficiency without manual re-sieving
- High sieve loads (up to 25 kg)
- Suitable for dry and wet sieving
- Measuring range 25 µm to 125 mm
- Sieve stack up to 963 mm, for sieves up to 450 mm Ø
- Memory for 9 Standard Operating Procedures (SOPs)
- With remote operation panel
- Sieve acceleration independent of power frequency
- Test materials monitoring according to DIN EN ISO 9000 ff

Video on www.retsch.com/as450

Accessories and Options

A wide selection of accessories and options for sieve shakers completes RETSCH's portfolio for optimum sieve analysis results.

- **Clamping devices**

With the RETSCH clamping devices the sieves are clamped safely, quickly and conveniently on the sieve shaker. The clamping devices "comfort" are particularly user-friendly and time-efficient. Special versions are available for sieving wet materials. The picture below shows clamping devices of the AS 200 which can also be used with models AS 300 and AS 400.



clamping device
„comfort“



clamping device
„standard“



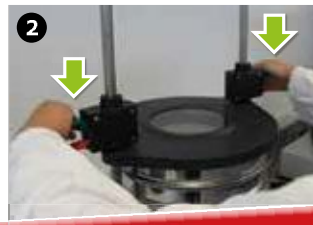
clamping device
„economy“



universal wet sieve
clamping device "comfort"



universal sieve clamping
device "standard"



Quick & Easy

Clamping device „comfort“

A sieve analysis starts as early as loading the sieve shaker and clamping the lid on the sieve stack. Especially when many samples need to be sieved each day, easy and quick handling of the clamping device is a great benefit. RETSCH's clamping device "comfort" was developed with this in mind. Loading the sieves or changing the height of the sieve stack is done easily without the need to loosen screws or take off the clamp. The "comfort" clamping devices are available for all vibratory and horizontal sieve shakers.

- **Test sieves**

Standard-compliant and manufactured on the basis of the latest production technology. Standard sieve stacks available.

- **Accessories for test sieves**

Collecting pans, intermediate pans, intermediate rings and sieve lids.

- **Accessories for wet sieving**

Clamping lid with nozzles, collecting pans with outlet, venting rings.

- **Software EasySieve® and EasySieve® CFR**

For control, evaluation and documentation of sieve analyses according to relevant standards.

- **Sieving aids**

Chain rings, brushes, cubes, balls (e.g. for reducing agglomerations when sieving particles <100 µm and keeping the mesh free).

- **IQ/OQ Documents**

We provide IQ/OQ documentation for the „control“ sieve shakers to support IQ/OQ certification by our customers.

- **Sample dividers**

Meaningful results can only be obtained if the sample represents the original material. Sample dividers produce representative part samples, thus ensuring reproducibility of the analysis.

- **Ultrasonic baths and dryers**

Suitable for thorough cleaning of test sieves and for quick, gentle drying of samples and sieves.



Vibratory Sieve Shakers at a Glance

Vibratory Sieve Shakers						
						
Model	AS 200 basic	AS 200 digit cA	AS 200 control	AS 300 control	AS 450 basic	AS 450 control

Applications	separation, fractioning, particle size determination
Feed material	powders, bulk materials, suspensions

Performance data

Measuring range*	20 µm–25 mm	20 µm–25 mm	20 µm–25 mm	20 µm–40 mm	25 µm–125 mm	25 µm–125 mm
Max. batch / feed capacity*	3 kg	3 kg	3 kg	6 kg	15 kg	25 kg
Max. number of fractions**	9/17	9/17	11/23	9/17	12/8	13/9 (min. 3)
Max. mass of sieve stack	4 kg	4 kg	6 kg	10 kg	50 kg	50 kg
Adjustment of sieving parameters						
Amplitude	digital 1–100 % (~3 mm)	digital 0.2–3 mm	digital 0.2–3 mm	digital 0.2–>2.2 mm	digital 0–>2 mm	digital 0.2–>2.2 mm
Sieve acceleration***	–	–	1.0–>15.1 g	1.0–>10.0 g	–	1.0–>11.0 g
Time	digital 1–99 min	digital 1–99 min	digital 1–99 min	digital 1–99 min	digital 1–99.9 min	digital 1–99 min
Interval operation	–	10 s (fixed)	1–99 s	1–99 s	10 s (fixed)	10–99 s
Storable Standard Operating Procedures (SOPs)	–	–	99	99	1	9
Sieving motion	throwing motion with angular momentum					
Suitable for wet sieving	✓	✓	✓	✓	✓	✓
Serial interface	–	–	✓	✓	–	✓
Including test certificate / calibration possible	–	–	✓	✓	–	✓

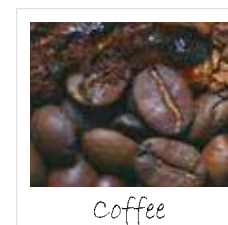
Technical data

Suitable sieve diameters	100 mm–203 mm		100 mm–315 mm	400 mm–450 mm	
Height of sieve stack	up to 510 mm	up to 620 mm	up to 510 mm	up to 830 mm	up to 963 mm
W x H x D	417 x 212 x 384 mm		417 x 222 x 384 mm	680 x 280 x 680 mm	714 x 435 x 658 mm
Net weight	approx. 35 kg		approx. 42 kg	approx. 140 kg	approx. 200 kg
More information on	www.retsch.com/as200	www.retsch.com/as200	www.retsch.com/as200	www.retsch.com/as300	www.retsch.com/as450

*depending on feed material and used sieve set **depending on sieve height and clamping unit ***($1\text{ g} = 9.81\text{ m/s}^2$)

Typical Sample Materials

Vibratory sieve shakers are used for particle size analysis of products such as construction and filling materials, soil, chemicals, sand, coffee, coal, fertilizers, flour, metal powders, minerals, seeds, washing powder, cement clinker and many more.



AS 400 control – Sieving on One Level

The RETSCH AS 400 control is used for sieving dry goods with test sieves up to 400 mm in diameter. The uniform, horizontal circular sieving motion produces a sharp separation of the sample fractions. Fine and coarse-grained goods from areas such as milling, brewing, chemical industry, quarries, soil testing, woodworking and plastics industry, can be exactly separated with the AS 400 control. This particular sieving motion is preferably used for long or fibrous, needle-shaped or flat materials due to their horizontal orientation. For the testing of plastics (grainy molding materials), the standard DIN 53 477 stipulates exactly this circular sieving motion.

The AS 400 control can be used as test instrument for the quality control according to DIN EN ISO 9000 ff. Due to the controlled drive which is independent of the power frequency the AS 400 control yields reproducible results worldwide. The speed and sieving time are set, displayed and monitored digitally. The instrument is supplied with a test certificate and can be recalibrated.



AS 400 control with clamping device "comfort" and sieve stack



Benefits

- Circular sieving motion according to DIN 53477
- For sieves up to 400 mm Ø
- Measuring range 45 µm to 63 mm
- Easy operation, ergonomic design
- Low noise and maintenance-free
- Free digital selection of process parameters (time, speed, interval)
- Memory for 9 Standard Operating Procedures (SOPs)
- Test materials monitoring according to DIN EN ISO 9000 ff

Video on www.retsch.com/as400

AS 400 Technology:

The base plate performs horizontal circular motions with a radius of 15 mm (according to DIN 53477). The speed of 50 to 300 rpm is electronically controlled and is continuously adjustable. The actual value of the number of revolutions is digitally displayed. The base plate is driven by a robust, maintenance-free drive motor with a power of 125 Watt which is transmitted via an eccentric.

If desired, the rotation direction can be set to alternate in the interval. A memory for 9 sieving programs facilitates routine analyses. The AS 400 control has an integrated interface for controlling all sieving parameters via the EasySieve® software.

The AS 400 control is a robust device, which meets highest requirements due to its superior technology. The base plate can take very high loads due to 4 eccentric guides. With the option to install clamping devices for sieves with diameters from 100 mm to 400 mm (4" to 16") the AS 400 is suitable for a wide range of applications. With the proven clamping device "comfort" the sieve stack can be fastened conveniently with two simple steps. For occasional sieving processes we recommend the inexpensive clamp "standard".

The clamping devices of AS 200 and AS 300 can be used with the AS 400 for clamping sieve stacks with diameters of 100 mm, 150 mm, 200/203 mm and 305/315 mm.

Accessories and Options

- Clamping devices
- Test sieves
- Sieving aids
- IQ/OQ documentation
- Software EasySieve®
- Sample dividers
- Ultrasonic baths and dryers

AS 400 at a Glance

Horizontal Sieve Shaker



Model AS 400 control

Applications	fractioning, particle size determination
Feed material	powders, bulk materials

Performance data

Measuring range*	45 µm–63 mm
Max. batch / feed capacity	5 kg
Max. number of fractions**	7/9/17
Max. mass of sieve stack	15 kg
Adjustment of sieving parameters	
Speed	digital, 50–300 min ⁻¹
Time	digital, 1–99 min
Interval operation	1–10 min
Storable Standard Operating Procedures (SOPs)	9
Sieving motion	horizontal circular motion
Suitable for wet sieving	–
Serial interface	✓
Including test certificate / can be calibrated	✓

Technical data

Suitable sieve diameters	100 mm–400 mm
Height of sieve stack	up to 450 mm
W x H x D	540 x 260 x 507 mm
Net weight	approx. 70 kg
More information on	www.retsch.com/as400

* depending on feed material and used sieve set

** depending on the used sieve heights

Typical Sample Material

The horizontal circular sieving motion of the AS 400 control is perfectly suitable for the separation of materials such as construction materials, wood chips, compost, flour, milled grain, grainy molding materials, seeds and many more.



Wood chips



Flour