

# Sample Divider PT 100

Highest division accuracy



PT 100

## Simply representative division results

RETSCH sample dividers are rotating dividers. They divide all pourable solids up to 10 mm so accurately that the characteristic composition of each fraction of the sample corresponds exactly to that of the original bulk sample. This very high degree of dividing accuracy and reproducibility is achieved with both fine and coarse materials. The material feed and dividing processes take place automatically, without interruption and without loss of material. The feed amount can range from a few grams up to 5000 ml depending on the sample vessels used. It is possible to produce an individual number of identical fractions for various applications by the repeated division or combination of fractions.

## Benefits at a glance

- Representative and reproducible division for accurate analysis results
- Modular design
- Digital time setting
- Automatic material feed via synchronized feeder
- Simple and rapid handling due to a convenient quick-release clamping system for sample vessels
- Speed is monitored and kept constant
- Compact, maintenance-free and easy to clean
- Low-noise drive

## The easy way of sample division

Working with the RETSCH Sample Divider PT 100 is easy and uncomplicated. For example, material feed with the Feeder DR 100 is automatic and synchronized: this means representative sample division right from the start, as the DR 100 only starts feeding the material when the sample divider has reached its proper running speed.

For cleaning and exchanging, the dividing head, feed chute and hopper can be easily removed without any tools.

The sample vessels are also extremely easy to attach and release with the quick-release clamps. This

new type of clamping system no longer involves tiresome mounting of the vessels.



### Performance data

### PT 100

[www.retsch.com/pt100](http://www.retsch.com/pt100)

Applications	sample division, sample reduction
Feed material	bulk materials
Number of divisions	6, 8 or 10
Time setting	digital, 1, 3, 5, 10 - 60 min / continuous operation

### Technical data

Feed size	≤ 10 mm
Feed capacity	max. 5000 ml
Vessel volume	30, 100, 250 or 500 ml
W x H x D	580 x 910 x 420 mm (incl. DR 100)
Net weight	approx. 33.5 kg (incl. DR 100)

### Noise values (Noise measurement according to DIN 45635-31-01-KL3)

Measuring conditions: Dividing material: silica sand; particle size < 3 mm

Emission value with regard to workplace  $L_{pAeq}$  41 dB(A)

## Versatile, flexible, adaptable – sample dividing with the RETSCH PT 100

The Sample Divider PT 100 has a modular design and can be put together to suit individual requirements. It offers an extremely flexible range of possible applications. A feeder, various dividing heads, sample receptacle vessels and further useful accessories are available in addition to the drive unit.

The number of part samples is determined by the choice of the dividing head which is available with 6, 8 or 10 outlets. The dividing heads are made from coated aluminum or plastic. The former are particularly wear-resistant and, in addition, the sticking of dust particles is avoided to a large extent.

Sample vessels are available in different sizes for various applications. Wide-mouth glass bottles fit the dividing heads as standard. Special dividing heads are available for use with Duran laboratory bottles (100, 250 and 500 ml). These dividing heads can also be equipped with inserts for 30 ml plastic bottles.

For fractions with a low density or with a high fineness we recommend

the use of a protective cap for the dividing head hopper. The dust cap minimizes both material losses and dust formation.

For uniform material feed the Vibratory Feeder DR 100 should be used. PT 100 and DR 100 are connected via an interface and therefore perfectly matched. In addition, the special swivel back stand assures a fixed position of the feeder over the center of the dividing head inlet thus ensuring increased accuracy. Further information about the Feeder DR 100 can be found in this brochure on page 9.

RETSCH offers a complete unit which includes an 8-outlet aluminum dividing head with the convenient quick-release system. The set is supplied with 10 wide-mouth 250 ml sample bottles.

**Order data on page 8**



1. Dividing head with quick-release system for sample bottles
2. Dividing head with quick-release system for particle sizes <5 mm, for use with Duran bottles and for
3. Insert for 30 ml plastic beakers

### PT 100 technology

The material to be divided first flows through a decentrally located feed hopper directly into the openings in the dividing head. Even with coarse material, this achieves a very low level of deviations between the materials in the sample vessels. The dividing process itself runs automatically and without manipulation. The dividing head rotates – with speed monitoring – at a constant 110 revolutions per minute, independently of the load and the

mains frequency. That means that with a dividing head with ten outlets, the feed flow is divided into 1100 individual samples each minute. The highest degree of dividing accuracy is thus guaranteed. The dividing heads divide the material evenly among the sample vessels. Depending on the quantity and further application, amongst others wide-mouth bottles and Duran bottles as well as plastic beakers can be used.



# Rotating Tube Divider PT 200



## Benefits at a glance

- Exact dividing, also of larger quantities
- Representative and reproducible division for accurate analysis results
- Modular design
- Digital time setting
- Adjustable dividing ratio
- Extraction of 1-3 samples
- Convenient quick-release clamping system for sample vessels
- Dividing process according to DIN 51701/Pt 4
- Batch and continuous operation possible

## Easily divides large quantities

The RETSCH rotating tube divider is the prerequisite for representative dust-free division and volume reduction of larger bulk samples. It is suitable for powdered or granular bulk materials with particle sizes up to 10 mm. The rotating tube divider can be provided with bottom cones for 1, 2 or 3 samples. The slot width adjusts the ratio of the fractions and therefore the amount of sample.

The sample fractions can be collected in laboratory bottles with a capacity of up to 0.5 liters. The reject collector has a capacity of 30 liters. All parts coming into contact with the sample material are made from stainless steel or glass.

Material feed with the DR 100, which is connected via an interface with the PT 200, is automatic and synchronized.

The dividers are also suitable for inclusion in continuously working laboratory and pilot-plant installations.

The PT 200 is available as a convenience set including 10 x 500 ml sample bottles, a 30 l reject collector, bottom cone with dividing ratio 1:5 and vibratory feeder. It is also possible to select the components individually according to your particular requirements.

## Performance data

## PT 200

[www.retsch.com/pt200](http://www.retsch.com/pt200)

Applications	sampling and sample dividing/ sample reduction
Feed material	bulk materials
Number of divided samples	1 - 3
Time setting	digital, 1, 3, 5, 10 - 60 min / continuous operation

## Technical data

Available bottom cones	with 1	with 2	with 3
	sample outlet	sample outlets	sample outlets
Slot width, continuously adjustable	0 - 159 mm	0 - 110 mm	0 - 53 mm
Max. dividing ratio	1 x 1:5	2 x 1:7.2	3 x 1:15
Min. dividing ratio*	1 x 1:26	2 x 1:26	3 x 1:26
Feed size	≤10 mm	≤10 mm	≤10 mm
Volume of reject collector	30 liters		
W x H x D	572 x 1307 x 551 mm (incl. DR 100)		
Net weight	approx. 46 kg (incl. DR 100)		

\* for a maximum particle size of 10 mm.  
for smaller maximum particle sizes the division ratio increases accordingly

## Noise values (Noise measurement according to DIN 45635-31-01-KL3)

Measuring conditions: Dividing material: silica sand; partide size <3 mm	
Emission value with regard to workplace	$L_{pAeq}$ 63 dB(A)

## PT 200 technology

The material to be divided passes through the feed hopper into the rotating tube divider. The tube rotating in the upper cone distributes the total material stream, at a constant speed of  $50 \text{ min}^{-1}$ , evenly over the pitch circumference of the lower cone. The interchangeable lower cones have one, two or three continuously adjustable sample slots.

In the course of each rotation a separated quantity corresponding to the width of the slot is deposited in the sample bottle. The rest passes into the reject collector.



### Calculating the slot width for the PT 200

The maximum dividing ratio depends on the maximum slot width which can be set on the bottom cone. This differs between the three bottom cones which are available (see table). The smallest dividing ratio depends upon the maximum particle size of the sample since the slot width should be at least 3 times wider than the maximum particle size. This means that smaller fractions can be taken from smaller particle sizes.

The slot width "X" to be set can be calculated from the ratio of the required fractional amount "QT" to the initial sample amount "QA" multiplied by the fixed pitch circumfer-

ence "U" of the bottom cone (U = 795 mm for all bottom cones).

$$X = \frac{QT}{QA} * U$$

Example: A representative sample of 250 ml is to be taken from an initial sample amount of 5000 ml. This means that the slot width must be set to 40 mm.

The minimum feed amount should not be less than 100 ml in order to ensure maximum accuracy.

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## Sample Splitters RT 6.5 - RT 75

### Accurate manual dividing

RETSCH sample splitters are used for the simple dividing and reduction of bulk materials of all kinds. Sample



splitters are ideal for the on-site reduction of sample material. They are easy to use, easy to clean and do not need an electrical power supply. Depending on the particle size, material and particle size distribution, the opening width of the passage should be 2.5 - 3 times greater than the diameter of the largest particle (particle size factor). Each sample splitter consists of one dividing head, one stand and three receptacles.

Order data on page 8

### Benefits at a glance

- For use in the laboratory and on-site
- High-precision manual dividing process
- Easy and quick to clean
- Dividing process according to DIN 51701, Part 4
- Inexpensive
- Available in 6 sizes

Technical data	RT 6.5	RT 12.5	RT 25	RT 37.5	RT 50	RT 75
	<a href="http://www.retsch.com/rt">www.retsch.com/rt</a>					
Slot size	6.3 mm	12.5 mm	25 mm	37.5 mm	50 mm	75 mm
Number of slots	12	18	16	12	8	6
Max. feed size*	approx. 4 mm	approx. 8 mm	approx. 16 mm	approx. 25 mm	approx. 33 mm	approx. 50 mm
Max. feed charge	3 liters			16 liters		
Material of dividing head	stainless steel			sheet steel, hot-dip galvanized		
Material of stand	sheet steel, painted			sheet steel, hot-dip galvanized		
Material of receptacles	tin plate			sheet steel, hot-dip galvanized		
W x H x D	300 x 270 x 250 mm			620 x 420 x 260 mm		
Net weight	approx. 3.5 kg			approx. 21.5 kg		

\* with a 5-10% fraction of the maximum particle size

### Sample Splitters technology

With sample splitters, the sample material is evenly distributed in one of the receptacles and then emptied over the dividing head. The material runs through the alternately arranged passages in opposite directions into the two collecting receptacles under the dividing head outlets. With every

operation the feed sample is split in halves. This can be repeated as many times as necessary until the required dividing quantity has been obtained. Of all manual methods, sample splitters provide the most accurate results.

