

Operating Instructions

Sample Divider

Vario 1G / 2H / 4-8



Pfeuffer GmbH
Flugplatzstraße 70
97318 Kitzingen
GERMANY
Phone: +49 9321 9369-0
info@pfeuffer.com
www.pfeuffer.com

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Translation of the original operating instructions



These Operating Instructions are a constituent part of the **Vario** sample divider and must be available to all operating personnel at all times. They are intended for the operating company of the system, the operating personnel and the specialists who are responsible for the transport, assembly, installation, operation, maintenance, cleaning, disassembly and disposal.

The Pfeuffer GmbH has prepared and reviewed these Operating Instructions with the greatest care. However, no guarantee is made for its completeness or accuracy.

Subject to technical modifications.

Translation

If the system is being supplied or subsequently sold to countries of the EEA, the Operating Instructions must be translated into the language of the country of use accordingly. If there are any discrepancies with the translated text, then use the original Operating Instructions (German version) or contact the manufacturer.

Operating Instructions in electronic format

PDFs of the original Operating Instructions (German version) and translations of the original Operating Instructions can be requested by e-mail: doku@pfeuffer.com. Ensure the correct type designation and serial number is stated!

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(DIN ISO 16016)

1	Introduction.....	5
1.1	Intended use.....	5
1.2	EC/EU declaration of conformity.....	6
1.3	Design characteristics of hazard warnings.....	7
1.4	Pictograms in the Operating Instructions	8
1.5	Designation.....	8
2	Safety	9
2.1	Installed safety systems	9
2.1.1	Supply isolating device (plug/socket combination).....	9
2.1.2	System control.....	9
2.1.3	Protective caps	10
2.2	Interfaces at sample divider	10
2.3	Operating and hazard areas associated with the machine	10
2.4	Operating and maintenance personnel	11
2.5	Safety measures (to be implemented by the operating company)	11
2.6	General safety instructions	12
2.7	Safety tests	13
2.8	Residual hazards associated with the Vario sample divider	13
2.9	Switch-off procedure.....	13
3	Technical data.....	14
3.1	Dimensions and weight	14
3.2	Power supply	14
3.3	Agitator (option).....	14
3.4	General information.....	14
4	Delivery, transport and storage	15
4.1	Scope of delivery	15
4.2	Transport and packaging	15
4.3	Temporary storage	15
4.4	Transport to installation location (of customer).....	16
5	Function	17
5.1	Components of Vario sample divider.....	17
5.2	Functional sequence	18
6	Installation and commissioning	19

7	Operation	20
7.1	Control elements	20
7.1.1	ON/OFF operating switch	20
7.1.2	Adjustment lever division ratio	20
7.2	Settings	20
7.2.1	Dividing time	20
7.2.2	Circumferential velocity	21
7.2.3	Scale	21
7.3	Division ratio Vario sample divider 1G	22
7.4	Division ratio Vario sample divider 2H	22
7.5	Division ratio Vario sample divider 4-8	23
7.6	Division of samples	23
7.6.1	Scheme Vario sample divider 1G/8 (minimal) – scale 4	24
7.6.2	Scheme Vario sample divider 1G/8 – scale 22	25
7.6.3	Scheme Vario sample divider 2H (minimal) – scale 4	26
7.6.4	Scheme Vario sample divider 2H – scale 22	27
7.6.5	Scheme Vario sample divider 4-8 (4 collecting pans) – scale 4	28
7.6.6	Scheme Vario sample divider 4-8 (4 collecting pans) – scale 11	29
8	Maintenance and cleaning	30
8.1	Cleaning	30
8.2	Inspection interval and function test	30
8.3	General maintenance instructions	31
8.4	Check	31
9	Malfunctions – causes and rectification	32
10	Spare and wearing parts	32
11	Supplements and accessories	33
12	Emergency	34
13	Dismantling and disposal	34

1 Introduction

1.1 Intended use

The **Vario** sample divider is used for dividing up samples of grain-like crops (agricultural seed) into sub-samples. The division procedure is used for achieving representative sub-samples.

The **Vario** sample divider is designed as a portable machine with a power plug.

Private use of the machine is prohibited.

NOTE

The **Vario** sample divider was designed solely for the aforementioned purpose.

Using it for any other purpose or modifying it without the written consent of the Pfeuffer GmbH is not considered to be in compliance with the intended use.

The Pfeuffer GmbH shall not be liable for the resulting damage. Damage caused by such an unintended use is at the sole risk of the operator.

The sample divider is not suitable for the division of

- **flour, dust and grit**
- **liquid, sticky and oily products**
- **objects made of metal, stone, concrete, plastic or other foreign components.**

The **Vario** sample divider is allowed to be operated only if it is ensured that all the safety devices are functional and the system in which this machine is installed complies with the EU directives.

The samples to be used for the correct operation of the **Vario** sample divider are provided by the operator.

The operator bears sole responsibility for the proper handling of these materials and the associated dangers.

Hazard notes and instructions for disposal must be provided by the operator.

Intended use includes also the compliance with the Instruction Manual and User's Guide as well as the maintenance and servicing conditions, as specified in these Operating Instructions.

These Operating Instructions do not relieve the operating company of the obligation to develop and to apply independent health and/or safety regulations or safe working processes which are aimed at the requirements of the overall machine, as well as the obligation to monitor their compliance.

1.2 EC/EU declaration of conformity

EC/EU declaration of conformity

in terms of the directives
machinery 2006/42/EC and electromagnetic compatibility 2014/30/EU

Manufacturer: **Pfeuffer GmbH**
Flugplatzstraße 70
97318 Kitzingen
GERMANY

Person authorized to compile technical documents: Lothar Pfeuffer, General Manager

Product: **Vario** sample divider

Type: ☐ **1G** ☐ **2H** ☐ **4-8**

Serial number: _____

The product mentioned above fulfils the requirements of the following applicable directives and standards:

Directive / Standard	Title
2006/42/EC	EC-directive: machine
DIN EN ISO 12100: 2010	Machine safety – General principles for design – Risk assessment and risk reduction
DIN EN 60204-1: 2006	Machine safety; electrical equipment of machines; part 1: General requirements
2014/30/EU	EU-directive: electromagnetic compatibility
DIN EN 61000-6-2:2006	Electromagnetic compatibility – Part 6-2: Generic standards – Immision for industrial environments
DIN EN 61000-6-4:2011	Electromagnetic compatibility – Part 6-4: Generic standards – Emission standard for industrial environments

This declaration shall become null and void should any alterations be made to the machine without our approval.






Kitzingen, _____

Lothar Pfeuffer, General Manager











1.3 Design characteristics of hazard warnings

The Pfeuffer GmbH Operating Instructions contain information which must be observed for the sake of your personal safety and to avoid damage to property. Information concerning your personal safety is shown by means of a triangle.

Note the following categories of hazard warnings and explanation of symbols:

<p>Pictogram</p> 	<p> SIGNAL WORD</p> <p>Type of hazard and its source. Possible result of its disregard. ⇒ Measure to ward off the hazard.</p>
	<p> DANGER</p> <p>warns against a very dangerous situation that results in death or serious injuries.</p>
	<p> WARNING</p> <p>warns against a dangerous situation that can potentially result in death or serious injuries.</p>
	<p> CAUTION</p> <p>warns against a potentially dangerous situation that results in minor or moderate injuries.</p>
<p>NOTE</p>	<p>warns against situations that are dangerous for the product and/or the environment.</p>

1.4 Pictograms in the Operating Instructions

	Remarks of special importance and/or additional information		Warning
	Follow the Operating Instructions		Warning – Electrical Voltage
	Pull the mains plug		Warning – Hand injuries
	Earth conductor		Warning – Automatic start
	Recycling marking – Supply refuse for recycling		Warning – Tipping and Crushing


1.5 Designation

The information provided in these Operating Instructions applies only for the machine whose type designation is specified on the title page.

The identification plate with the type designation is located on the machine housing (front).

Correct information of type designation, serial number and year of manufacture is important for all queries. This ensures fast processing.

Example of a Pfeuffer GmbH identification plate:

Pfeuffer GmbH Flugplatzstraße 70 97318 Kitzingen		Tel. +49 9321 969-0 Fax +49 9321 969-50 www.pfeuffer.com		PFEUFFER	
<h2>Sample divider 2H</h2>					
S/N	00000000	 Made in Germany			
Baujahr/YOM	0000				
Spannung/Voltage	0000				
Leistung/Power	0000				

2 Safety

NOTE It is strictly forbidden to disable the safety devices or to change their mode of operation.

2.1 Installed safety systems

The installed safety systems must be checked with corresponding test methods at regular testing intervals; refer to the following table:

Test intervals	Test methods
d = daily	VI = visual inspection
w = weekly	FT = functional test
m = monthly	M = measurement
$\frac{1}{4}$ y = quarterly	
$\frac{1}{2}$ y = half-yearly	
y = yearly	

2.1.1 Supply isolating device (plug/socket combination)

The plug/socket combination simultaneously functions as an EMERGENCY STOP device.



- ⇒ In case of an emergency, disconnect the sample divider from the electrical power supply.
- ⇒ Secure the plug suitably against unauthorized re-plugging by placing it where it can remain under constant supervision.



Set the plug/socket combination in such a way that it can be easily seen and is quickly accessible in case of an emergency.

Test	
Interval	Method
y	FT

2.1.2 System control

The system is controlled internally with a supply system, a phase and an earth connection (with green/yellow covering for the wires).

Test	
Interval	Method
y	VI, FT, M

2.1.3 Protective caps

Test	
Interval	Method
m	VI

During the operation, sample divider is protected against interference affecting the machine using protective caps.

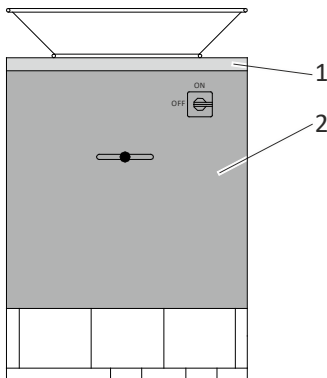


Figure 1: Overview - Protective caps model 2H

Pos.	Name
1	Removable lid
2	Solid screwed case

2.2 Interfaces at sample divider

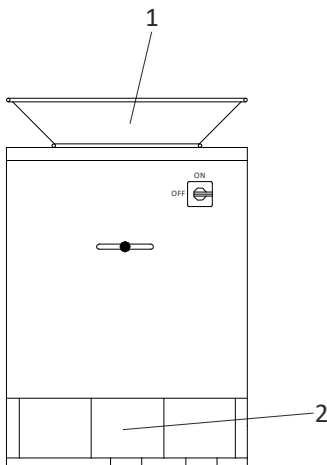


Figure 2: Interfaces model 2H

Pos.	Name
1	Sample fill in
2	Sample outlet

2.3 Operating and hazard areas associated with the machine

Operating area

Ensure a sufficient working height (depending on the body size of the operating personnel) of approximately 60-65 cm. For this, a suitable base frame is necessary so that the operating personnel can access the collecting pans ergonomically.

Hazard area

The entire area of one meter around the machine is dangerous during adjustment, maintenance and repair work.

⇒ Do not keep any objects around the machine.

2.4 Operating and maintenance personnel

Operating and maintenance personnel are responsible for transport, assembly, installation, operation and cleaning of the Vario sample divider as well as for fault rectification.

1. The sample divider is allowed to be operated by authorized personnel and instructed persons only.
2. The responsibilities associated with operating the machine must be clearly defined and adhered to so that there are no unclear competencies concerning safety.
3. The deactivation procedures specified in these Operating Instructions must be adhered to for all tasks (operation, maintenance, repairs etc.) refer to **chapter 2.9**.
4. The operator must forbid all the methods of operation that compromise the safety levels associated with the sample divider.
5. The operator must also ensure that only authorized persons work on the sample divider.
6. The operator is obliged to immediately inform the operating company about changes in the sample divider that compromise safety.
7. The operator must provide the operating personnel with the appropriate protective equipment in accordance with the legal obligations and the material to be processed.
8. The operator must regularly demand that the personal safety equipment is used. The operator must also monitor the usage of this equipment.

2.5 Safety measures (to be implemented by the operating company)

It is noted that the operating company

- ⇒ trains the operating and maintenance personnel with regard to the safety devices of the sample divider.
- ⇒ and monitors their compliance with the safety measures.

The frequency of functional tests described in **chapter 8.3** must be adhered to.

The tasks described in these Operating Instructions are listed in such a way that they are

- ⇒ understood by the operating personnel (with regard to the Function and Operation chapters).
- ⇒ understood by skilled personnel (with regard to the chapters Delivery, transport and storage, installation and commissioning, maintenance and cleaning, disruptions – causes and their rectification and Dismantling and disposal).

The chapters Delivery, transport and storage, installation and commissioning, maintenance and cleaning, disruptions – causes and their rectification and Dismantling and disposal are only intended for skilled personnel. Tasks that are described in these chapters must be carried out by skilled personnel only.

Instructed person

A person who has been instructed and, if necessary, trained by a skilled worker about the assigned tasks and possible dangers in case of improper behavior, and how has been instructed about the necessary safety devices and safety measures.

Skilled worker

An individual who is proficient in identifying risks and avoiding hazards that can occur when using the product, on account of their relevant professional training, education and/or experience.

(Definition as per DIN EN 82079-1:2013-06)

Obligations of the operator



In the European Economic Area (EEA), the national implementation of framework directive 89/391/EEC and the relevant specific directives (especially directive 2009/104/EC "about the minimum requirements for safety and health protection in case of the use of equipment by workers") must be considered and adhered to, with regard to the version that is currently valid.

In addition, the local legal provisions for the following must be adhered to:

- the safety of the personnel (accident prevention regulations)
- the accident prevention regulation DGUV Directive 3 (formerly BGV A 3) "electrical systems and means of production" (DGUV = German Statutory Accident Insurance Association)
- the safety of work equipment (protective equipment and maintenance)
- the permitted noise load (depending on the site and time of day)
- the disposal of the product (waste disposal act)
- the disposal of the material (waste disposal act)
- cleaning (cleaning agent and disposal)
- the hazardous materials (in Germany, the Technical Rule for Hazardous Materials – TRGS 555 applies)
- the environmental protection requirements

Electrical connections



The sample divider may only be connected to a correctly-earthed socket with an earth conductor.

Illumination intensity



The operator must ensure sufficient and proper intensity of illumination in all the areas of the machine.

At least 300 lux is expected (maintenance value).

ASR A3.4 is applicable in Germany (Technical rules for workplaces – Lighting).

2.6 General safety instructions



The safety equipment and safety instructions described in these Operating Instructions must be borne in mind.



1. Disconnect the sample divider from the mains in case of malfunctioning.
2. Disconnect the sample divider from mains before starting with the cleaning operation.
3. Do not let the sample divider get wet during transport, storage, cleaning and operation.
4. Make sure that you only use the sample divider when it is in a defect-free condition.
5. Never touch the mains cable with wet hands.
6. Always use original spare parts and accessories (refer to **chapter 10** and **11**).

2.7 Safety tests

The following safety tests have been conducted by Pfeuffer GmbH at the plant:

Test and inspection as per standard DIN EN 60204-1:

- Inspection to verify that the electrical equipment complies with the technical documentation.
- Continuous connection of protective conductor system
- Insulation resistance tests
- Voltage tests
- Functional tests

The functions of the electric equipment, especially those that relate to safety and safety measures, have been tested.

2.8 Residual hazards associated with the Vario sample divider

- ⇒ Pay attention to electrical hazards in case of all tasks that are to be carried out vis-a-vis electrically-operated components.
- ⇒ Be mindful of crushing hazards when setting up, servicing, repairing and operating the machine.
- ⇒ Make sure that the sample divider starts automatically when the mains plug is plugged in and the power supply is periodic.

2.9 Switch-off procedure



DANGER

Touching live parts can be fatal!

The following deactivation procedure must be carried out before cleaning, maintaining or repairing the machine (only by skilled personnel):

- ⇒ Deplete the sample divider.



- ⇒ Disconnect the plug/socket combination from the power supply.

- ⇒ It must be possible to ensure that the plug remains under the direct supervision of the person in the hazardous area.
- ⇒ Make sure that water, vapor or dust cannot enter the electronic area when cleaning.

3 Technical data

Sample divider	Division of all grain crops
Sample quantity	ca. 1-8 kg
Material/transported material	Grains, peas, rape seed, maize and similar granular bulk goods

3.1 Dimensions and weight

	Model 1G	Model 2H	Model 4-8
Height	800 mm	840 mm	840 mm
Width	465 mm	485 mm	550 mm
Length	492 mm	492 mm	492 mm
Weight	65 kg	60 kg	72 kg

3.2 Power supply

Supply voltage/Frequency	230 V _{AC} + 6 % - 10 %, 50 Hz (115 V _{AC} , 60 Hz on demand)
Power	100 VA
Power consumption	60 W
Number of phases	1 Ph / PE
Earth conductor	PE (yellow/green) in mains cable
Frequency	±1 %
Installation instructions	Executed as per VDE

3.3 Agitator (option)

Supply voltage/Frequency	230 V _{AC} , 50 Hz
Power	6 VA
Protection level according to DIN EN 60529	IP10
Installation instructions	Executed as per VDE

3.4 General information

Ambient temperature Storage and transport	-10 °C to +60 °C
Ambient temperature during operation	+5 °C to +40 °C
Humidity	20 % to 80 % non-condensing
Acoustic level	L _{PA} = 60 dB _(A) as per measurement report
Protection level according to DIN EN 60529	IP 10 (Housing), IP 54 (Motor)

4 Delivery, transport and storage



The chapter Delivery, transport and storage is intended for **skilled personnel** only.

4.1 Scope of delivery

The scope of delivery to the operator includes:

Vario sample divider 1G with standard funnel

Article no. 1745 0057

(Capacity ca. 3 kg) Ø 48 mm / 12 kg/min

- 1 PVC collecting pan
- 1 Sample pan for flow
- Operating Instructions

Vario sample divider 2H with standard funnel

Article no. 1745 0050

(Capacity ca. 3 kg) Ø 48 mm / 12 kg/min

- Extension funnel capacity up to 8 kg
- 2 PVC collecting pans
- 1 Sample pan for flow
- Operating Instructions

Vario sample divider 4-8 with standard funnel

Article no. 1745 0053

(Capacity ca. 3 kg) Ø 48 mm / 12 kg/min

- Accessories according to delivery order
- Operating Instructions

4.2 Transport and packaging

Systems and machines of Pfeuffer GmbH are carefully checked and packaged before dispatching. However, damages during the transport cannot be excluded.

Intake control

Run a completeness check using the delivery note.

In case of damages

Check the delivery for damages (visual inspection).

In case of complaints

If the delivery has been damaged during transport:

- ⇒ Retain the packaging (for the dispatcher to inspect or for return delivery).
- ⇒ Immediately inform the suppliers or Pfeuffer GmbH.

4.3 Temporary storage

Freight packaging of the Vario sample divider and exchange parts and accessories is intended for a storage duration of six months upon delivery.

Storage conditions

Closed and dry room with a room temperature from minimum -10 °C to maximum +60 °C.

4.4 Transport to installation location (of customer)



The machine must be transported by skilled personnel only and in accordance with the local conditions and, if applicable, the information on the packaging material.

Sample divider is supplied to the installation location of the customer on a transportation pallet.

CAUTION



The sample divider can tip over during transport!

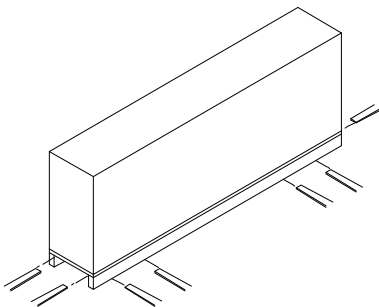
No-one is allowed in the danger area!

- ⇒ Pay attention to the center of gravity and the weight.
- ⇒ Secure the sample divider with appropriate slings before transport.
- ⇒ Keep an adequate safe distance.

Transport with forklift truck

Packing items that are packaged on pallets or in boxes can be transported by a crane under the following conditions:

- The crane and lifting equipment must be designed for the weight of the packing items.
- The operator must be authorized to use the crane.



Lashing:

- ⇒ Drive so the tines of the forklift truck pass between or underneath the spars of the pallet/crate.
The tines must protrude on the opposite side!

Figure 3: Diagram of transport by forklift

Unpacking:

In order to avoid damages to the casing and other components,

- ⇒ Open the packaging by cutting the tension bands.
- ⇒ Remove the fibreboard cover and remove the styrofoam packaging elements.
- ⇒ Lift the sample divider with at least two people from the transport pallet.
- ⇒ Pay attention to the specific weight, see **chapter 3**.
- ⇒ Drive the sample divider with a sack barrow to the installation location.

Packaging for return delivery

- ⇒ If possible, use the original packaging and the original packaging material. If neither is available any longer, request new packaging from Pfeuffer GmbH.

5 Function

5.1 Components of Vario sample divider

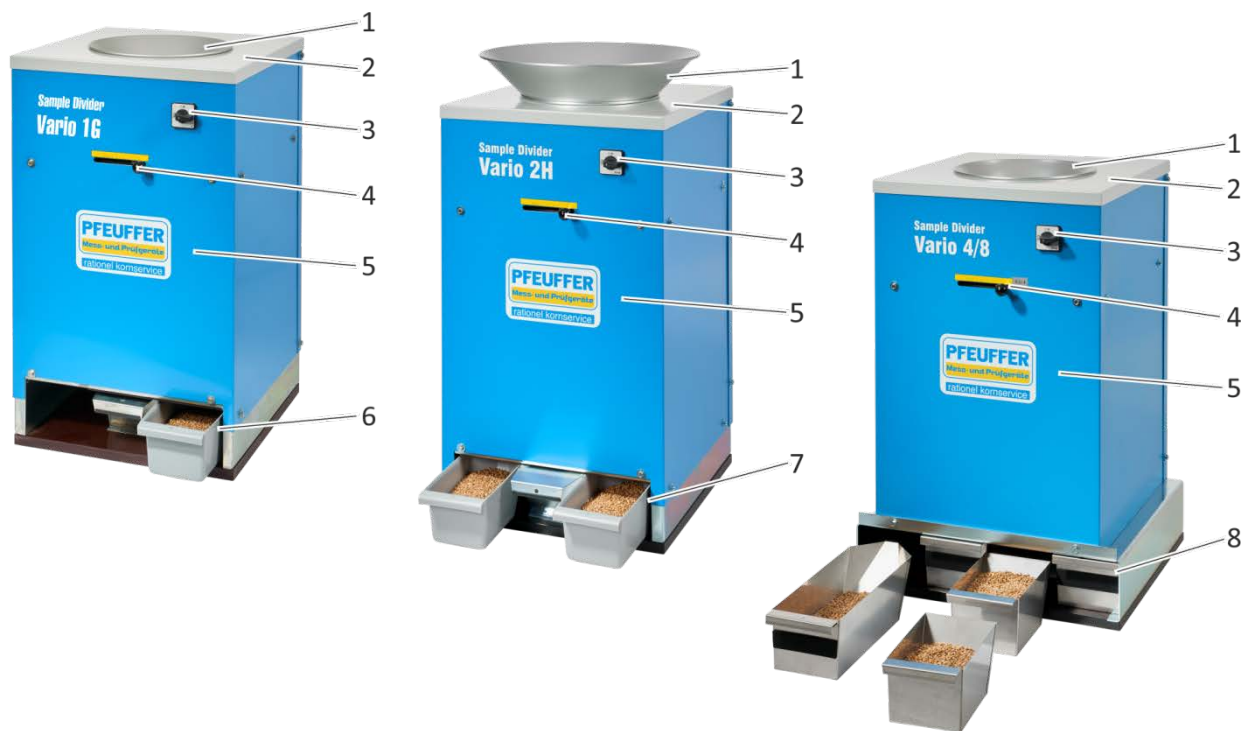


Figure 4: Overview – Model 1G, 2H, 4-8

Pos.	Designation
1	Filling funnel Figure of sample divider Vario 2H including extension funnel capacity up to 8 kg (option)
2	Machine cover
3	Operating switch
4	Adjustment lever for division ratio
5	Housing of the rotary distributor with motor, timing belt and distributor arm
6	Housing with two insertion chambers for collecting pan or sample pan for flow
7	Housing with three insertion chambers for collecting pan or sample pan for flow
8	Housing with four insertion chambers for up to 8 collecting pans or sample pans for flow



Article numbers for supplements and accessories can be found in **chapter 11**.

5.2 Functional sequence

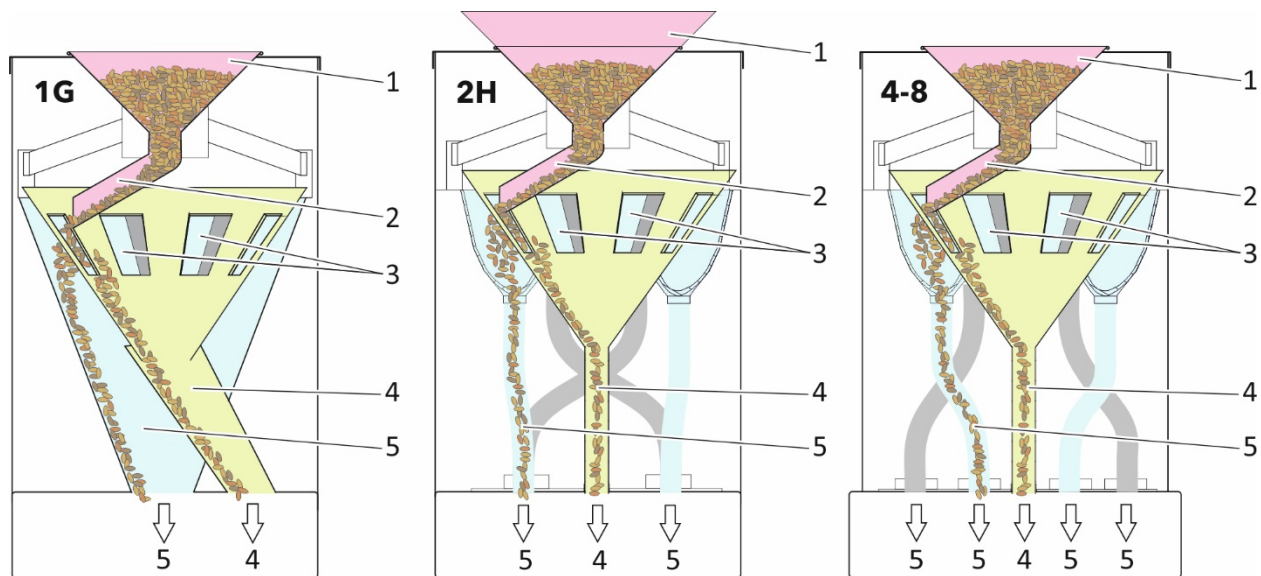


Figure 5: Functional sequence Vario sample divider 1G, 2H and 4-8

Pos.	Designation
1	Fill in the sample
2	Rotating distributor arm
3	Adjustable sample chambers
4	Surplus sample material
5	Sample outlet: 1G = 1 sample 2H = 2 samples 4-8 = 4 or 8 samples (depending on the used collecting pan)

The **Vario** sample dividers **1G**, **2H**, **4-8** are used for evenly dividing all grain-like crops.

Set the division ratio on the adjustment lever and fill the sample into the filling funnel.

The machine starts up when you set the operating switch to **ON**. The rotating distributor arm turns and passes the eight variably adjustable sample chambers. The partial samples reach the collecting pans alternately via a system of pipes (In the **Vario 1G** through a funnel).

The surplus sample material flows through the middle and can be collected in a large collecting pan.

6 Installation and commissioning



The chapter Installation and commissioning is intended for **skilled personnel** only.

Positioning of sample divider

- ⇒ Unpack the sample divider carefully (refer to **chapter 4.4**) and place it horizontally.
- ⇒ Ensure a working height of approximately 60-65 cm, depending on the size of the operating personnel.



A correct horizontal positioning of the machine guarantees an even division of the grains.

- ⇒ Check if all the components are firmly secured.
- ⇒ Re-tighten all the screws and clamps.

CAUTION



Unexpected automatic start of the sample divider!

If the operating switch is activated (**ON** position) and there is a periodic power supply, the sample divider starts up automatically.

- ⇒ Keep the operating switch in the **OFF** position, before connecting the sample divider to the electrical power supply.



- ⇒ Insert the mains plug into a correctly-earthed socket with an earth conductor.

- ⇒ Activate the sample divider keeping in mind all the specifications given in **chapter 7**.

7 Operation



Sample divider is allowed to be operated by qualified and trained persons only.

7.1 Control elements

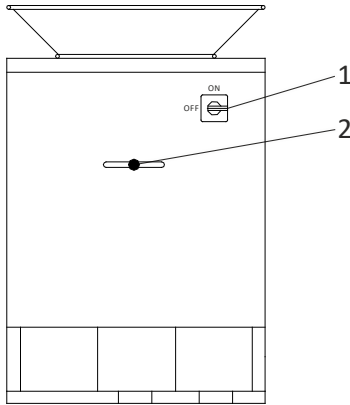


Figure 6: Control elements – Model 2H

Pos.	Designation
1	ON/OFF operating switch
2	Adjustment lever division ratio

7.1.1 ON/OFF operating switch

The **ON/OFF** operating switch starts and ends the dividing process.

7.1.2 Adjustment lever division ratio

With this lever, the division ratio is adjusted based on the yellow scale.

7.2 Settings

The **Vario** sample dividers have 8 outlets and one surplus outlet. 8, 4 or 2 outlets are grouped together for the sample depending on the model:

Model 1G8	8 outlets for a sample
Model 2H	4 outlets per sample
Model 4-8	2 or 1 outlet(s) per sample

7.2.1 Dividing time

The distributor arm of the sample divider turns at a speed of 40 rpm (revolutions per minute) in the dividing process. This means one rotation takes about 1.5 seconds (s). In each rotation, the eight outlets are passed over/loaded once.

In order to obtain a representative partial sample, it should consist of at least 40 individual samples. This means the following minimum dividing time must be observed for the various models:

Model 1G8	40 individual samples =	8 x 5 rotations → 5 x 1.5 s = 7.5 s
Model 2H	40 individual samples =	4 x 10 rotations → 10 x 1.5 s = 15 s
Model 4-8	40 individual samples =	2 x 20 rotations (4 samples) → 30 s 1 x 40 rotations (8 samples) → 60 s



The Pfeuffer GmbH recommends a dividing time of at least 20 seconds.

The time taken for each product to pass through can be influenced by the funnel outlet. The following accessories are available for this:

	Pass-through time depending on the product
Standard funnel Ø 48 mm	approx. 12 kg/min
Funnel Ø 30 mm:	approx. 8 kg/min
Insert for funnel passage Ø 25 mm	approx. 4 kg/min
Insert for funnel passage Ø 20 mm	approx. 2 kg/min



For the article numbers of the inserts to reduce the outlets on the funnel with Ø 30 mm, refer to **chapter 11**.

7.2.2 Circumferential velocity

The distributor arm turns at a speed of 40 rpm in the dividing process.
There is no provision for adjusting the speed.

7.2.3 Scale

The division ratio can be set using the adjustment lever and the scale on the front of the device. The specified number stands for the division ratio. Number 4 means a division ratio of 1:4. If you fill a 4 kg sample (in the **Vario 2H**) you will get two samples of 1 kg each and 2 kg surplus amount. The left side of the square profile on the adjustment lever must be against the line on the scale.

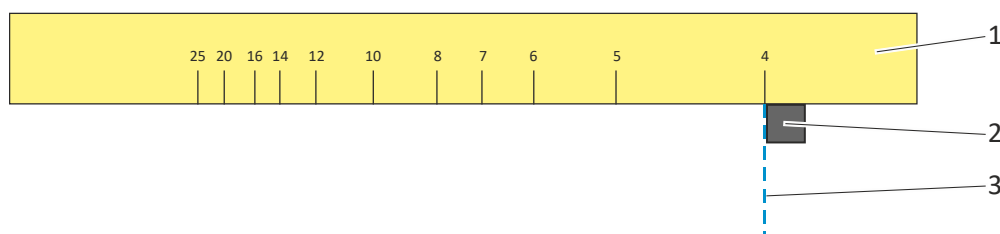


Figure 7: Scale

Pos.	Designation
1	Yellow scale
2	Adjustment lever
3	Setting 1:4



In addition, and in particular for the **Vario 1G** and **Vario 2H** sample dividers, stainless steel cover plates can be supplied by means of which the division ratio can be further reduced. Separate installation instructions are supplied, for the article number refer to **chapter 11**.

7.3 Division ratio Vario sample divider 1G

Sample number	1			
Sample divider	1G8	1G4	1G2	1G1
Sample chambers	8	8 / 4 covered	8 / 6 covered	8 / 7 covered
Product	Division ratio	Division ratio	Division ratio	Division ratio
Rape	1:2 to 1:15	1:4 to 1:30	1:8 to 1:60	1:16 to 1:120
Grain	1:2 to 1:11	1:4 to 1:22	1:8 to 1:44	1:16 to 1:88
Peas	1:2 to 1:6	1:4 to 1:12	1:8 to 1:24	1:16 to 1:48

On the **Vario 1G**, if the maximum division ratio is

1:11 (1G8), this can be increased by covering four sample chambers, to give

1:22 (1G8), this can be increased by covering six sample chambers, to give

1:44 (1G8), this can be increased by covering seven sample chambers, to give

1:88 (1G1).

Setting the division ration on sample divider 1G:

1G/8	Divide the display scale with 2
1G/4	Display of the scale
1G/2	Multiply the display scale with 2
1G/1	Multiply the display scale with 4

Example:

- ⇒ Set the scale to 8 (division ratio when using a 1G/8 = 1:4).
- ⇒ Fill a sample with a total weight of 6 kg into the sample divider.
- ⇒ After the division into the collecting pan, you obtain a 1.5 kg sample.
- ⇒ The surplus sample material amounts to 4.5 kg.

Further examples see schemes in **chapter 7.6.1** and **7.6.2**.

7.4 Division ratio Vario sample divider 2H

Sample number	2
Product	Division ratio
Rape	1:4 to 1:30
Grain	1:4 to 1:22
Peas	1:4 to 1:12

On the **Vario** sample divider **2H**, if the maximum division ratio is 1:22 this can be increased by covering four outlets, to give 1:44, or can be increased by covering six outlets, to give 1:88.

Example:

- ⇒ Set the scale to 8 (division ratio 1:8).
- ⇒ Fill a sample with a total weight of 6 kg into the sample divider.
- ⇒ After the division into each collecting pan (2x), you obtain a 750 g sample.
- ⇒ The surplus sample material amounts to 4.5 kg.

Further examples see schemes in **chapter 7.6.3** and **7.6.4**.

7.5 Division ratio Vario sample divider 4-8

Sample numbers	4 or 8
Product	Division ratio
Rape	1:8 to 1:120
Grain	1:8 to 1:88
Peas	1:8 to 1:48

Setting the division ration on sample divider 4-8:

4 collecting pans = 4 samples	Multiply the display scale with 2
8 collecting pans = 8 samples	Multiply the display scale with 4

Example:

- ⇒ If using 8 collecting pans, set the scale to 4 (division ratio 1:16).
- ⇒ Fill a sample with a total weight of 8 kg into the sample divider.
- ⇒ After the division into each collecting pan, you obtain a 500 g sample.
- ⇒ The surplus sample material amounts to 4 kg.

Further examples see schemes in **chapter 7.6.5** and **7.6.6**.

7.6 Division of samples

- ⇒ Place one collecting pan under each of the outlets at the intended points.
- ⇒ Set the division ratio using the adjustment lever and the scale.
- ⇒ Switch on the sample divider using the ON operating switch.
- ⇒ Pour the sample into the infeed funnel in one movement.
- ⇒ Once the entire sample has run through, set the operating switch to OFF.
- ⇒ Empty the collecting pans.
- ⇒ Repeat the process with a new sample.

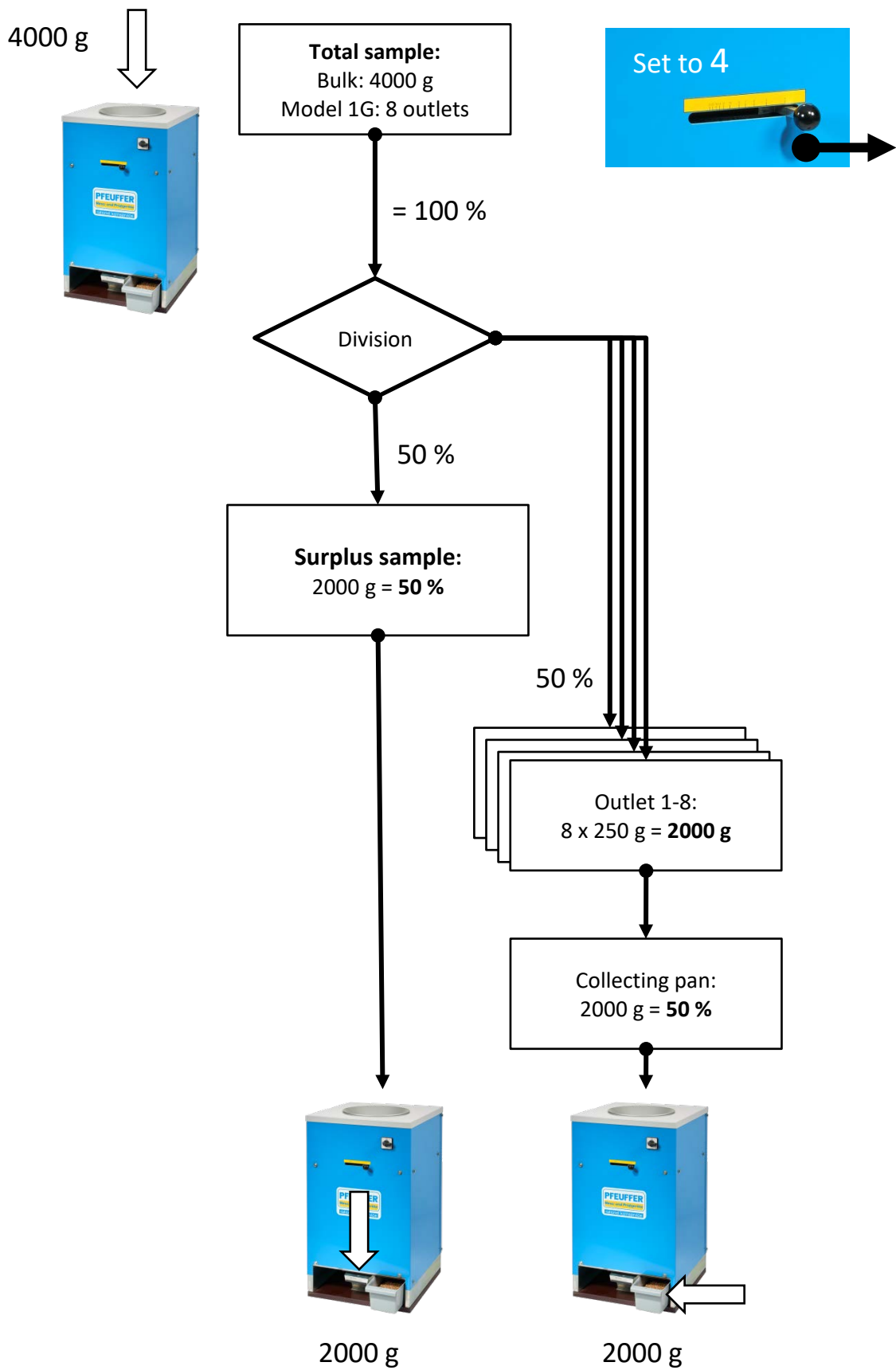


When dividing maize, it will be necessary to use an agitator. You can obtain this from Pfeuffer GmbH, see **chapter 11**.

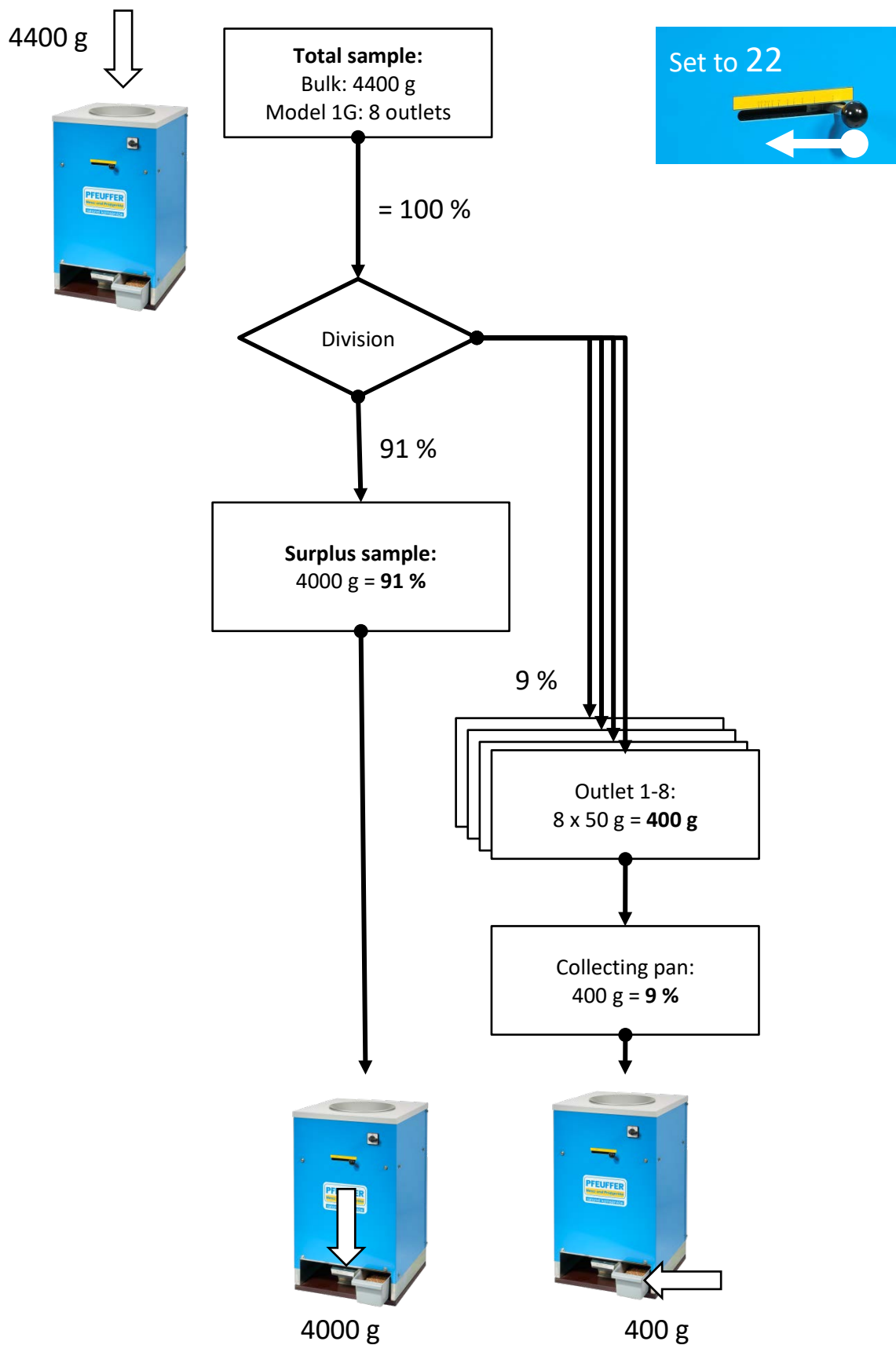
NOTE

Make sure that no objects drop into the infeed funnel!
These could damage the sample divider when the dividing process starts.

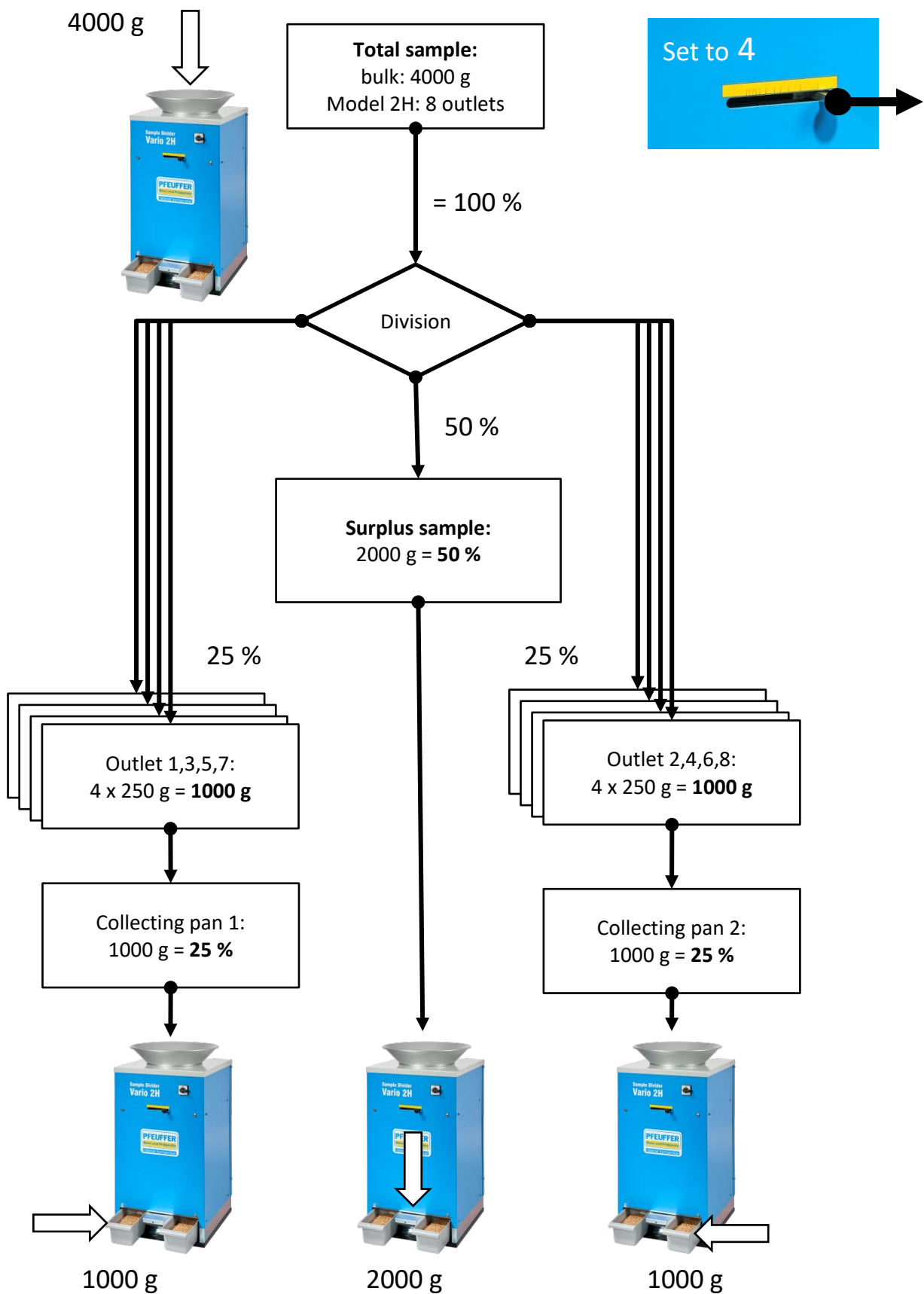
7.6.1 Scheme Vario sample divider 1G/8 (minimal) – scale 4



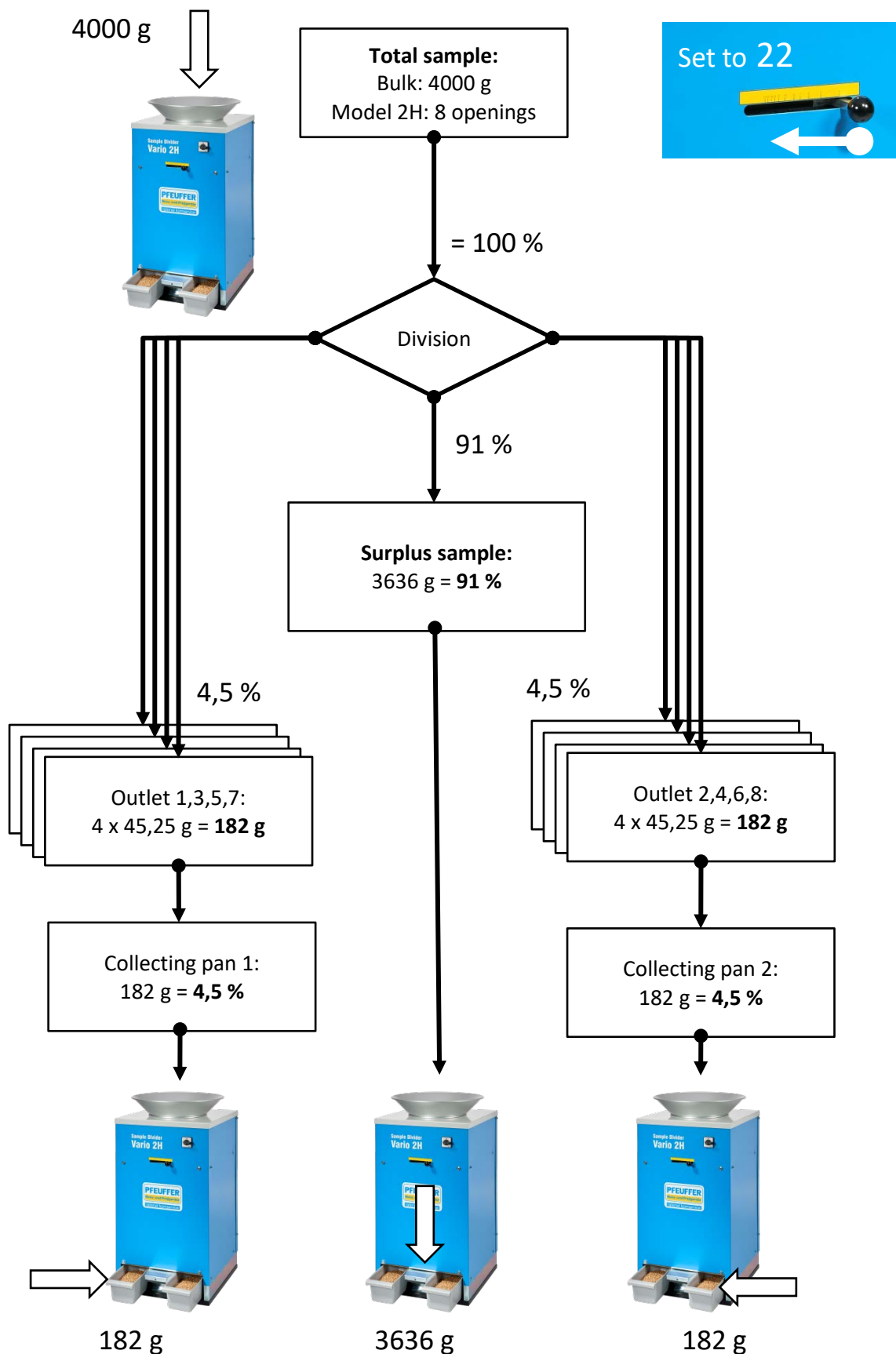
7.6.2 Scheme Vario sample divider 1G/8 – scale 22



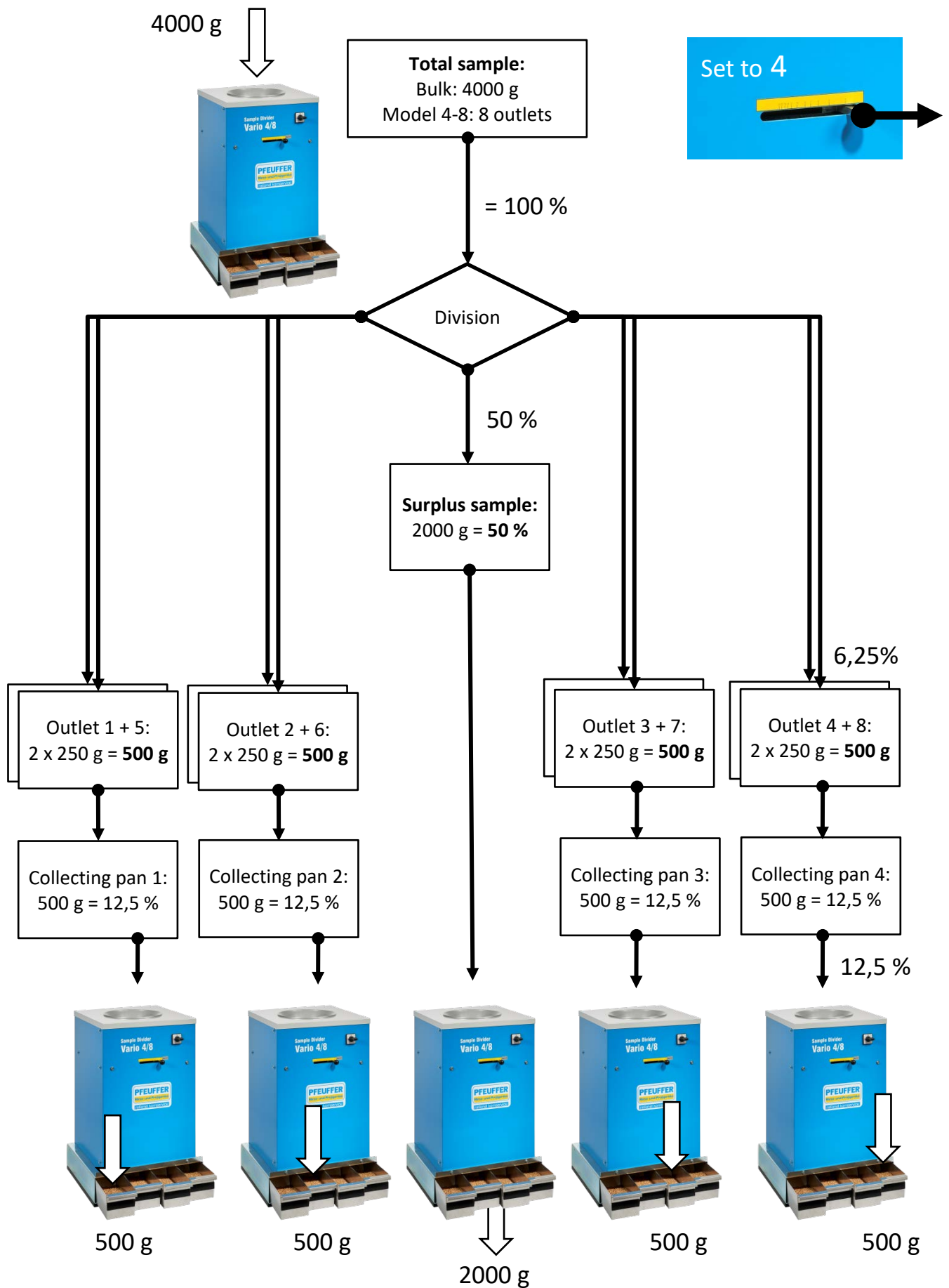
7.6.3 Scheme Vario sample divider 2H (minimal) – scale 4



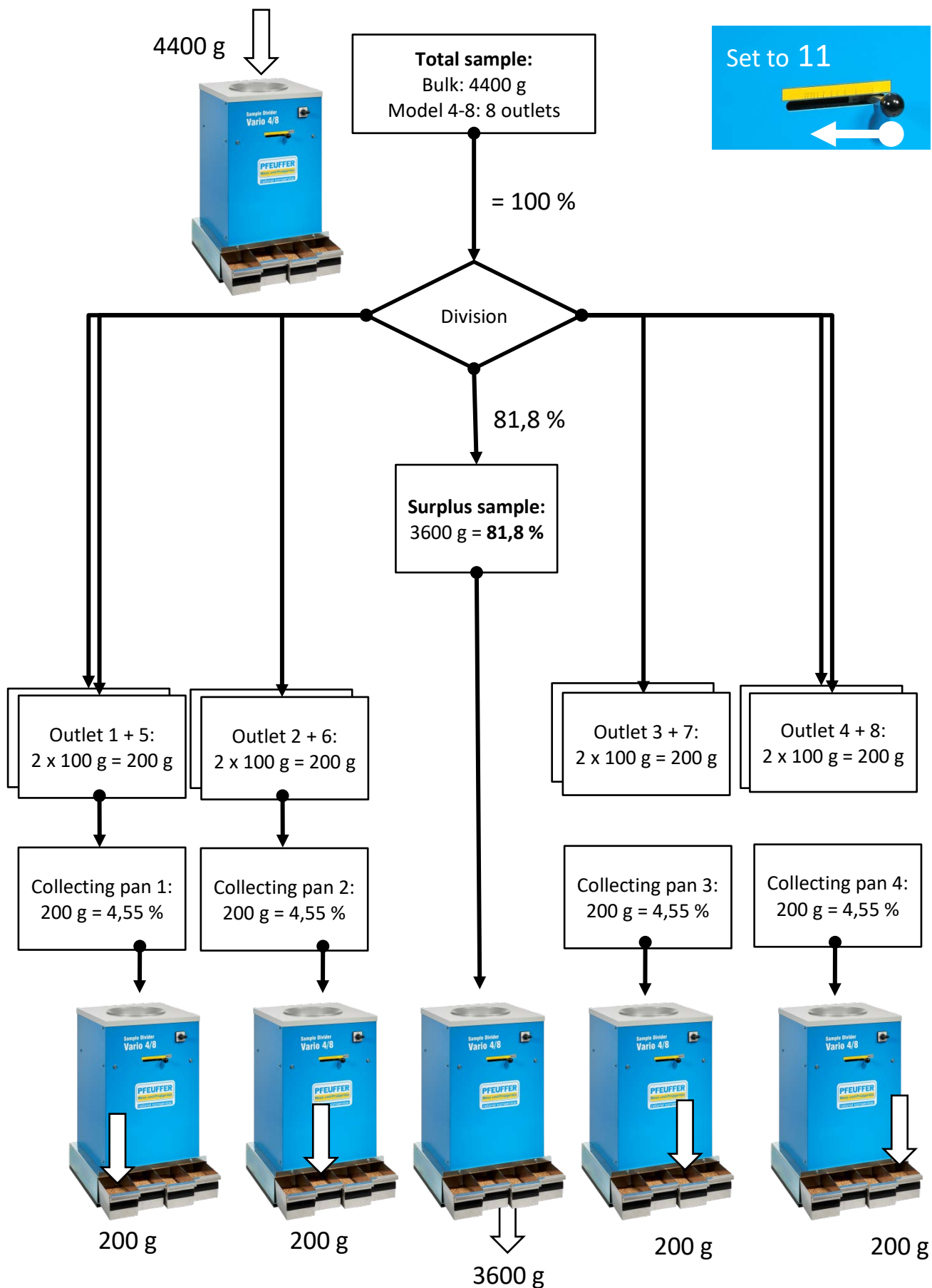
7.6.4 Scheme Vario sample divider 2H – scale 22



7.6.5 Scheme Vario sample divider 4-8 (4 collecting pans) – scale 4



7.6.6 Scheme Vario sample divider 4-8 (4 collecting pans) – scale 11



8 Maintenance and cleaning



The chapter Maintenance and cleaning is intended for **skilled personnel** only.

In order to guarantee a failure-free operation of the sample divider, it is absolutely necessary that the machine is regularly cleaned and maintained.



DANGER

Touching live parts can be fatal!

It is essential to comply with the switch-off procedure before cleaning, maintenance or repair work! (see **chapter 2.9**).



The times for carrying out cleaning and maintenance work are based on one-shift working (8 hour/day, 22 days/month, 12 months/year).

d	=	Daily	$\frac{1}{4}$ y	=	Every three months
w	=	Weekly	$\frac{1}{2}$ y	=	Every six months
m	=	Monthly	y	=	Every year

8.1 Cleaning

NOTE

Do not use any sharp objects or tools for cleaning. Only use objects that are expressly intended for this purpose.

During all work that is required, wear personal protective equipment according to the company health and safety regulations

During cleaning, make sure that no water, steam or dust can penetrate the electronics area.

Motor

Excessive dust deposit on the motor can lead to overheating and failure.

⇒ Clean the motor with a dry cloth and / or compressed air.

8.2 Inspection interval and function test

Sub-assembly	Interval in one-shift working				
	w	m	$\frac{1}{4}$ y	$\frac{1}{2}$ y	y
Normal function tests:					
Buttons and switches		X			
Mains isolator (plug/socket combination)					X
Markings and warnings present and legible (via visual inspection)					X
Check if wires are tight					X

Sub-assembly	Interval in one-shift working				
	w	m	¼ y	½ y	y
Normal function tests:					
Setting values at the circuit breaker					X
Check whether all the plug, screw and clamped connections are tight and if necessary, re-tighten them					X
Check the belt tension and inspect for damages					X
Functional test of the drive motors				X	
Electrical test as per VDE	See DGUV regulation 3				

8.3 General maintenance instructions

Check	Interval
Correct and secure position of the gear motor and the torque transfer elements	½ y
Wear and tear of the gear motor and the torque transfer elements	½ y
Correct and secure position of protective cladding	m

8.4 Check

After the work has finished, check:

- ⇒ The completeness of the work carried out.
- ⇒ That there are no tools in the machine.
- ⇒ The wiring in the switch box for breaks, chafe marks or burns.
- ⇒ The covers or insulations for damages.
- ⇒ Close the cover of the switch box.
- ⇒ A function of all assemblies in setting or manual mode.
- ⇒ The safety equipment for proper functioning.
- ⇒ If all the functions are error-free, the machine is handed over to the operator.

NOTE

After cleaning, maintaining or replacing the worn-out parts, check whether the safety equipment is functioning.

9 Malfunctions – causes and rectification



The information provided in this chapter about possible malfunctions is structured to be understood by specialists in electrical, electronic or mechanical maintenance.

Appropriate tools and test instruments must be provided to these personnel.

If the specified measures do not prove successful, contact Pfeuffer GmbH.



⇒ Pull the mains plug before carrying out the cleaning and maintenance work.

Problem	Cause	Rectification
Machine does not show any function.	System voltage not available.	Get the system voltage checked and activated by an electrically skilled person .
	Operating switch ON/OFF remains at OFF.	Switch the operating switch ON.
	Internal fuse defective.	Checking and replacement by an electrically skilled person .

10 Spare and wearing parts

NOTE

We wish to point out expressly that replacement and accessory parts not supplied by us will not have been tested and approved by us either. Installing and/or using such products can thus result in the design properties of the **Vario** sample divider being negatively impaired. Pfeuffer GmbH cannot be held liable for damage attributable to the use of non-genuine parts and non-genuine accessories.

Standard parts can be obtained from the dealer.

Spare part	Article number
Gear motor	3251 1760
Capacitor gear motor	3222 4670
Timing	3122 1750

NOTE

Replacement works on the motor, V-belt gear and switch box should be carried out by a skilled person only; refer to **chapter 2.4**.

In case of questions, please contact Pfeuffer GmbH.

11 Supplements and accessories

Product	Article number
Standard funnel Ø 48 mm	3331 0500
Extension funnel capacity up to 8 kg	3331 0510
Funnel Ø 30 mm (9 kg/min)	3331 0520
Insert for funnel passage Ø 25 mm	3332 0503
Insert for funnel passage Ø 20 mm	3332 0506
Insert for funnel passage Ø 16 mm	3332 0509
Insert for funnel passage Ø 12 mm	3332 0512
Hook-in plates (stainless steel) amending the division ratio	3331 0530
Collecting pan (PVC) 2 liter	Dimensions with handle: 275x133x108 mm
Collecting pan (stainless steel) 2 liter	Dimensions with handle: 275x133x108 mm
Collecting pan (stainless steel) 3,5 liter	Dimensions with handle: 385x133x108 mm
Sample pan for flow (stainless steel)	Dimensions with handle: 345x137x108 mm
Side funnel for model Vario 2H	3321 4020
Agitator for non-free-flowing products	1745 0065
Only for sample divider 4-8:	
Collecting pan (stainless steel) 2 liter	Dimensions with handle: 211x133x108 mm
	3331 9010

The agitator for non-free-flowing products (e.g. moist maize) consists of an electric motor, a shaft for power transmission and a wire that rotates within the funnel. Rotation allows the agitator to effectively prevent the filling funnel from blocking. (Article no. 1745 0065)



Figure 8: Agitator and fixing the holder to the cover

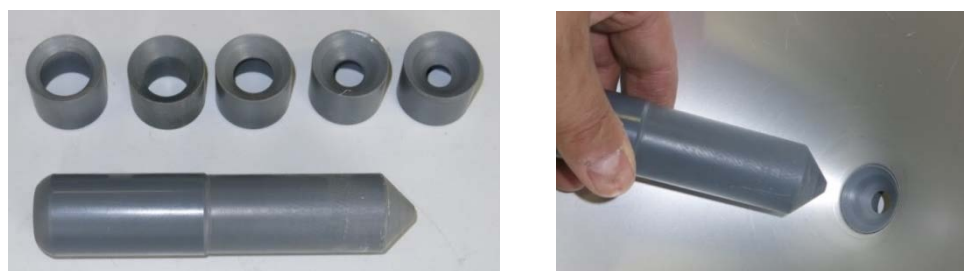


Figure 9: Inserts and installation of the inserts



Collecting pan (stainless steel) 3,5 liter
(Article no. 3331 9015)

Collecting pan (stainless steel) 2,0 liter, only for
Vario 4-8 (Article no. 3331 9010)

Figure 10: Collecting pan (stainless steel)

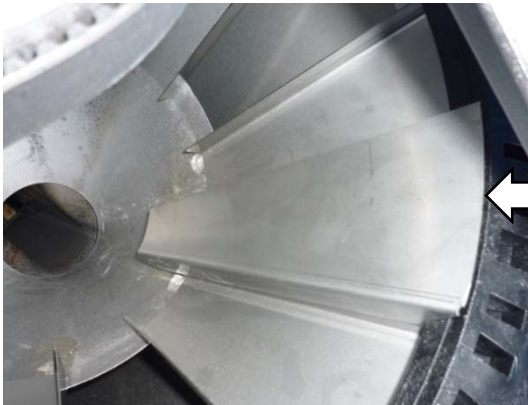


Figure 11: Hook-in plates, attached



Figure 12: Hook-in plates amending the division ratio
(Article no. 3331 0530)

12 Emergency



⇒ In case of an emergency, disconnect the sample divider from the electrical power supply.

13 Dismantling and disposal



Disassembly is only allowed to be performed by **specialist personnel**.



⇒ Pull the mains plug before dismantling the machine.



The sample divider must be disposed of in accordance with the applicable local environmental regulations (Directive for electrical and electronic equipment waste 2012/19/EU).



Special waste

Oil, cleaning agents, contaminated cleaning tools (brush, rags, etc.) must be disposed of according to the local regulations and in accordance with the notes in the manufacturers' safety data sheets.