SMOKjet®

Schröter
LEADING QUALITY

SMOKE GENERATION

Based on the current state of technology, smoke can be generated in a variety of different ways. The method of smoke generation can be selected based on a number of different factors. Besides the well-known glow smoke technique to generate smoke from wood chips and sawdust, systems are also used which generate smoke through friction and condensation, and there are also systems which use liquid smoke. Deciding on which smoke generation method to select is always a question of taste and intensity, but ultimately also linked to the selection of an appropriate and effective exhaust air cleaning system.

When using a friction-based smoke generator or a liquid smoke system, the smoking process can be carried out in a closed cycle since the residual substances which end up in the atmosphere are far below the maximum values permitted for pollutant emissions.

METHODS OF SMOKE GENERATION:

> Glow Smoke Generators
> Friction Smoke Generators
> Steam Smoke Generators
> Liquid Smoke Systems

GLOW SMOKE GENERATOR **SMOK*jet*®** RH

R 90 (SMALL SYSTEMS)
R 91 (MEDIUM TO LARGE SYSTEMS)
TYPE OF WOOD: WOOD CHIPS (5 TO 10 MM) OR SAW CHIPS

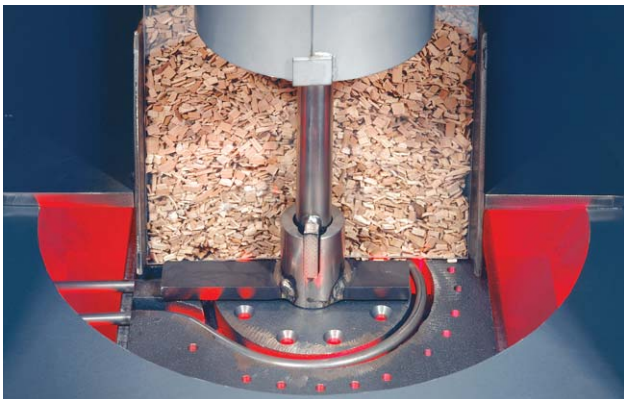
These smoke generators come closest to the traditional method of generating smoke from smoldering wood chips. There are two different types of smoke generators in this category: those that use wood chips and those use saw chips. Those that use saw chips generate milder smoke which contains less tar.

The smoke is generated by allowing the wood chips to glowing on a heated fixture. This fixture is heated using an electrical heating element which provides the energy necessary to begin the process. Glowing occurs under a lack of combustion air at temperatures between 400 and 700°C. Different settings allow the desired smoke mixture to be varied to a certain extent.

The beech wood chips are loaded into the hopper, and then a motor which activates at set intervals adds them to the burning plate through a leader using a mixing arm. The leader can be adjusted to different heights, which allows the intake of wood chips to be set to the optimum level needed to acheive the desired smoke quality. When the mixing arm is activated, the wood chips which have finished glowing simultaneously fall through holes in the burning plate into an ash reservoir. The electric heating element used to ignite the wood chips is integrated into a slot in the burning plate.

A fan blows air through an air distributor into the smoke generator. The wood chips are exposed to the combustion air under the burning plate, the conveying air is fed into the system above the plate. The 1:20 ratio of these two airflows is fixed using a baffle plate, meaning that the system complies with the requirements of BGR 138, the German safety guidelines for food smoking equipment.

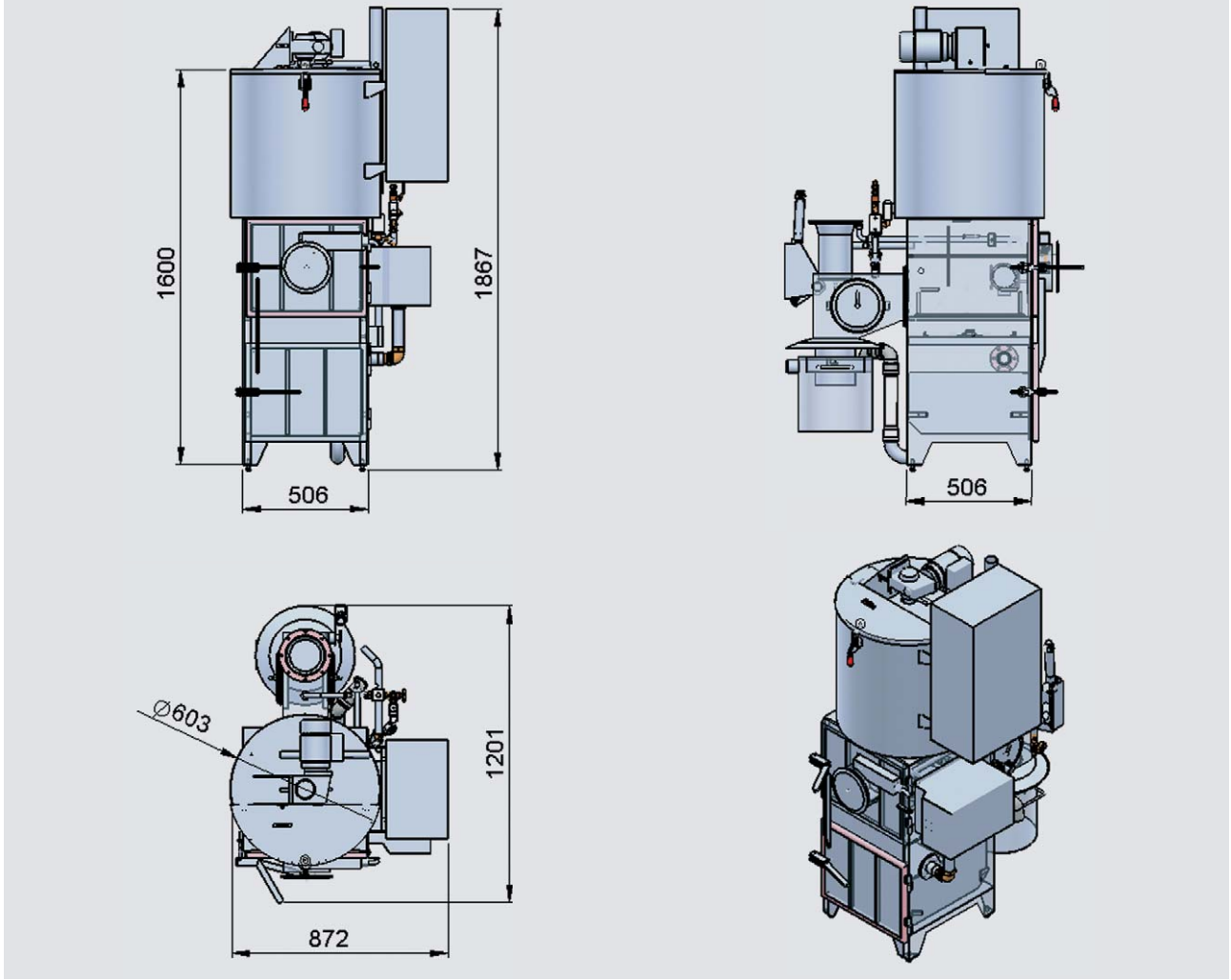
The smoke and conveying air mix together and are fed into the system through the smoke outlet and smoke pipe. The smoke outlet has a temperature probe which automatically activates the fire extinguishing device if it measures a maximum temperature above approx. 80°C.



GLOW SMOKE GENERATOR **SMOK***jet*® RH

TECHNICAL DETAILS

DIMENSIONAL SKETCH



SMOK*jet* RH/RH04 (GLOW SMOKE GENERATOR)	
MACHINE DATA	
Electricity	230/400 V, 50 Hz | 5 x 2.5 mm², 16 A | 1.5 kW
Extinguisher	Cold water | DN 10 | 3 bar
Cleaning	Cold water | DN 25
Controller	Compressed air | DN 10 | 6 bar | 5 l/min
Ambient air	required from the room 300 m³/h

GLOW SMOKE GENERATOR **SMOK*jet*®** RH04

TYPE OF WOOD: WOOD CHIPS (5 TO 10 MM) OR SAWCHIPS

A PERFECT COMPANION TO THE CONTI*jet**

Schröter can look back on almost twenty years of successful partnership with the Japanese company Kanematsu KGK. Over this time, the two companies completed many successful projects and above all saw Schröter's high-quality equipment systems become a mainstay on the Japanese market. The new SMOK*jet* RH04 smoke generator is one chapter in this success story, and resulted from suggestions from Kanematsu and the Japanese market.

The SMOK*jet* represents an advancement to the RH91. In the RH 91 wood chip smoke generator, wood chips which were finished glowing fell into an ash reservoir which needed to be manually emptied on a regular basis. To do so, the smoke generator had to be turned off while being emptied. In order to now provide continous systems like the CONTI*jet** with an uninterrupted supply of smoke, the SMOK*jet* RH04 offers the option of coming equipped with an automatic system to empty the ash. This means you no longer need to empty an ash reservoir. Used saw chips are is simply rinsed out of the smoke generator with water at regular intervals using an automatic rinsing device. The ash is then collected outside the smoke generator in a container for further disposal.

LONG OPERATING LIFE AND MINIMIZED MAINTENANCE

Thanks to the automatic ash-emptying system, the length of time between cleanings can be significantly increased. The smoke generator is now on the same cycle as the CONTI*jet**, being also maintained every 12 hours.

IMPROVED SMOKE PERFORMANCE

The smoke generator's performance has also been improved thanks to a few interesting new features. Through the use of a more powerful fan, the system generates a constant amount of intensive smoke. At the same time, the consumption of wood chips required has been reduced. And a spark trap prevents glowing particles from getting into the smoke pipe.

SMOK*jet* RH04 with sidewise wood-chip disposal

* **CONTI*jet***: Continuous process system to manufacture e.g. hot dogs or wieners.

GLOW SMOKE GENERATOR **SMOK***jet*® RH09

A number of important changes were made for the newly-developed SMOK*jet* RH 09, which represents an advancement to the SMOK*jet* RH 04:

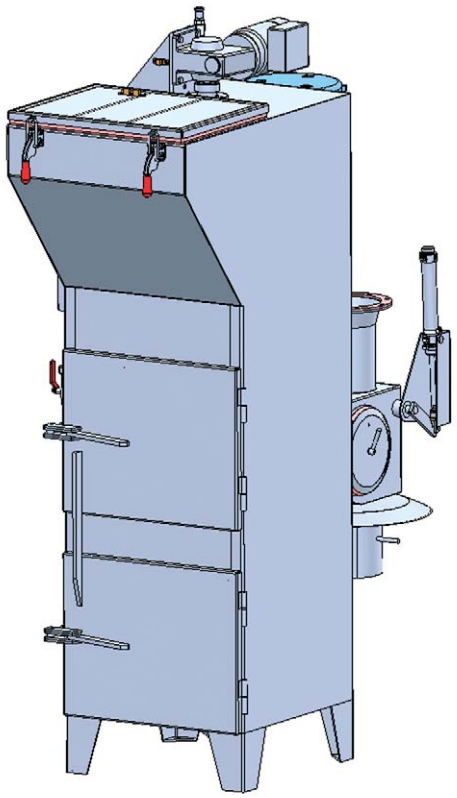
The main focus was on improving the system's production through the use of standard parts, which also means the system is less expensive to manufacture.

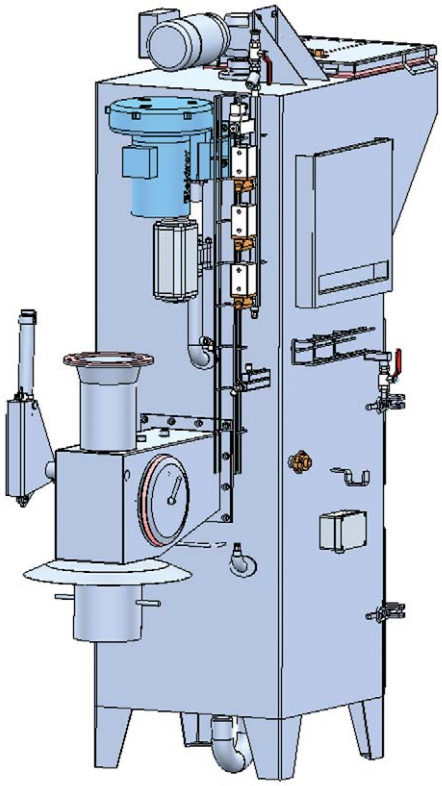
In addition, the RH 09 stands out because it can be cleaned easily, simply, and thoroughly, and because the burning plate can be easily exchanged.

Since the system no longer uses half-sized inserts (they were heavy and hard to insert), the entire smoke generation process is now highly uniform, requires less wood chips, and has improved start-up behavior.

In addition, thanks to the integrated ash reservoir extinguishing device, the entire smoke generator does not heat up as much as the previous model.

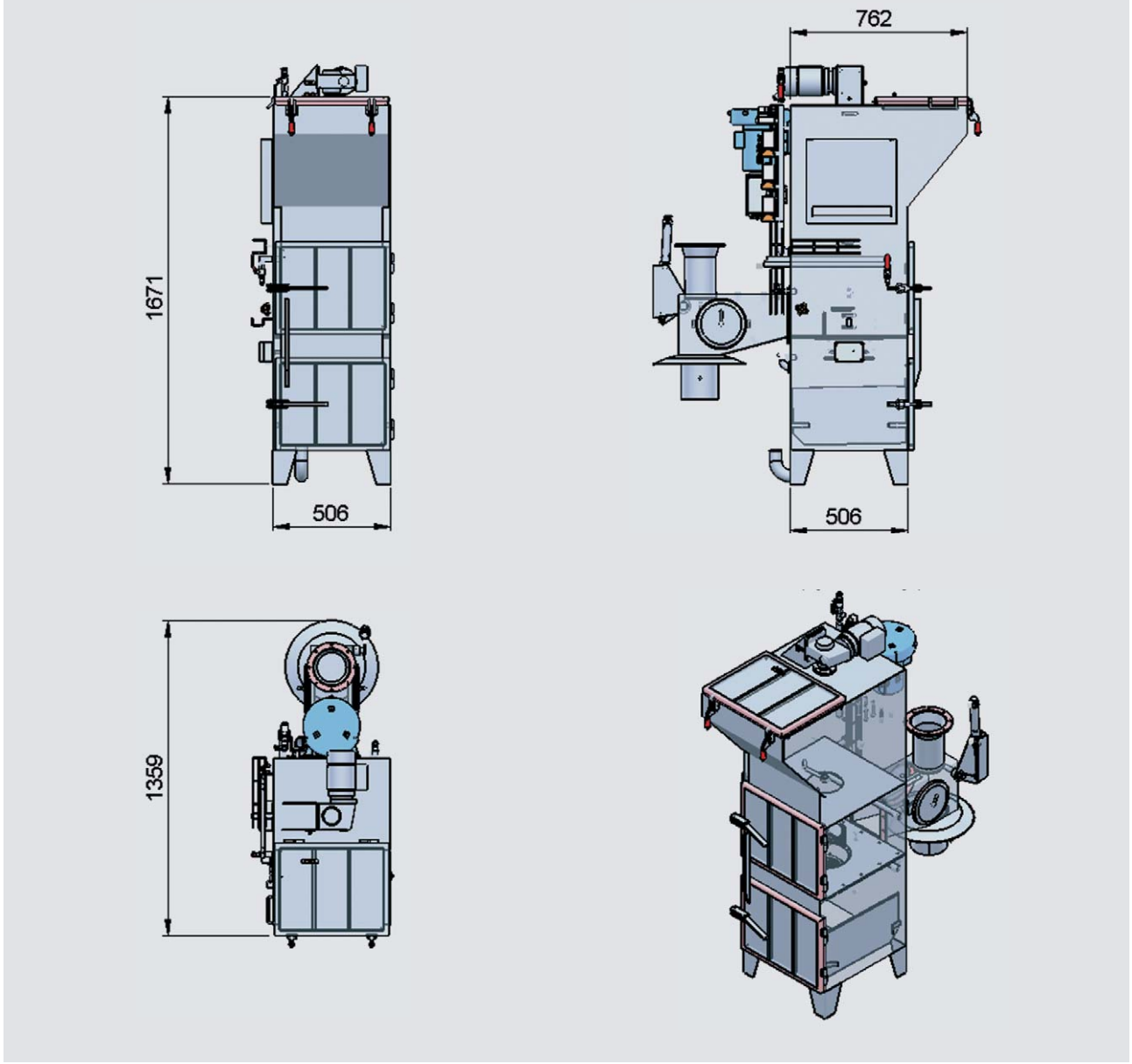
The entire maintenance procedure is now much easier thanks to parts which are more easily accessible.





TECHNICAL DETAILS

DIMENSIONAL SKETCH



SMOK*jet* RH/RH04 (GLOW SMOKE GENERATOR)	
MACHINE DATA	
Electricity	230/400 V, 50 Hz | 5 x 2.5 mm², 16 A | 1.5 kW
Extinguisher	Cold water | DN 10 | 3 bar
Cleaning	Cold water | DN 25
Controller	Compressed air | DN 10 | 6 bar | 5 l/min
Ambient air	required from the room 300 m³/h

FRICTION SMOKE GENERATOR **SMOK***jet*® RF

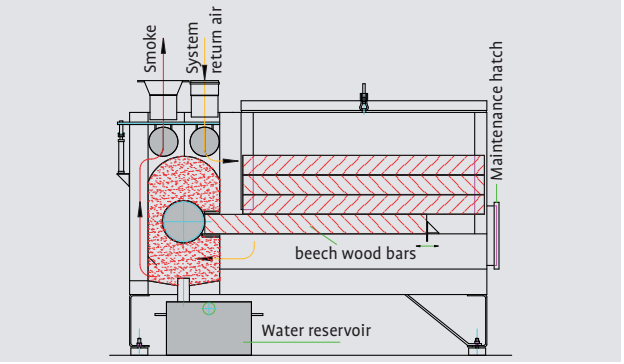
TYPE OF WOOD: BARS 100 X 100 X 1000 MM

In the friction smoke generator, a wooden bar is heated and worn down through the rotating motion of a friction wheel. A drive chain presses the wooden bar against the wheel pneumatically, whereby the pressure applied equals about 3–5 bar.

The machine has a magazine with space for five wooden bars that are automatically processed one after the other.

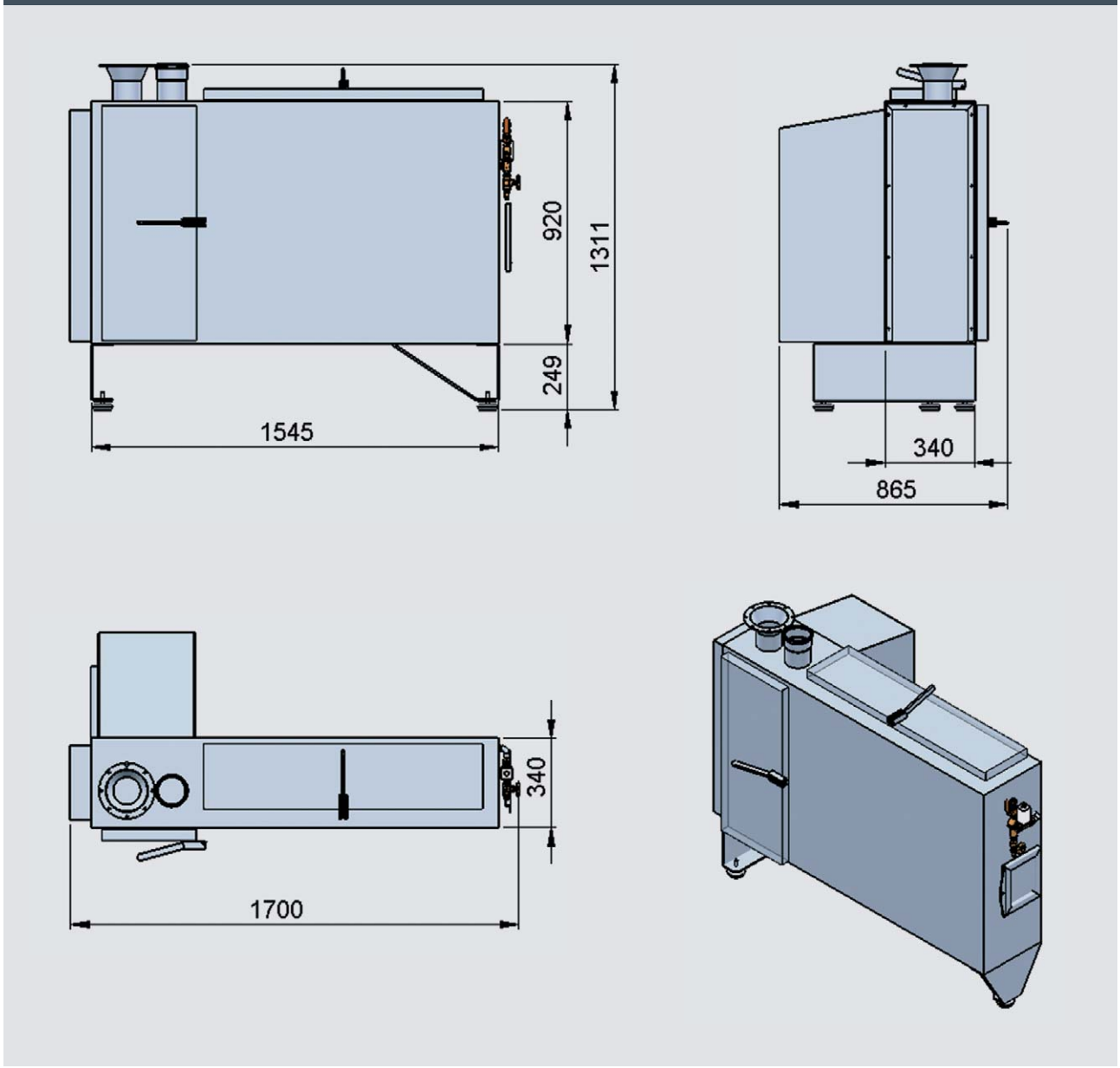
The smoke has a moderately strong taste. An exhaust air cleaning system is not required, since a flap covering the exhaust air outlet keeps the system closed during smoking. The remaining smoke is released from the system once the process is complete. The friction smoke generator does not require a supply of fresh air to generate smoke.

DIAGRAM OF FUNCTIONS



TECHNICAL DETAILS

DIMENSIONAL SKETCH



SMOK*jet* RF (FRICTION SMOKE GENERATOR)	
MACHINE DATA	
Electricity	230/400 V, 50 Hz | 5 x 6 mm², 35 A | 9.5 kW
Extinguisher	Cold water | DN 10 | 3 bar
Cleaning	Cold water | DN 10
Controller	Compressed air | DN 10 | 6 bar | 15 l/min

STEAM SMOKE GENERATOR **SMOK*jet*®** RD

TYPE OF WOOD: WOOD CHIPS 5 TO 10 MM

In the steam smoke generator, the substances in the wood chips are extracted using superheated steam. The process is carried out at lower temperatures of 400° to 450 °C. The smoke's taste is medium to strong. The amount of tar in the smoke is comparable to smoke from the glow smoke generator. The smoke contains a significant amount of moisture.

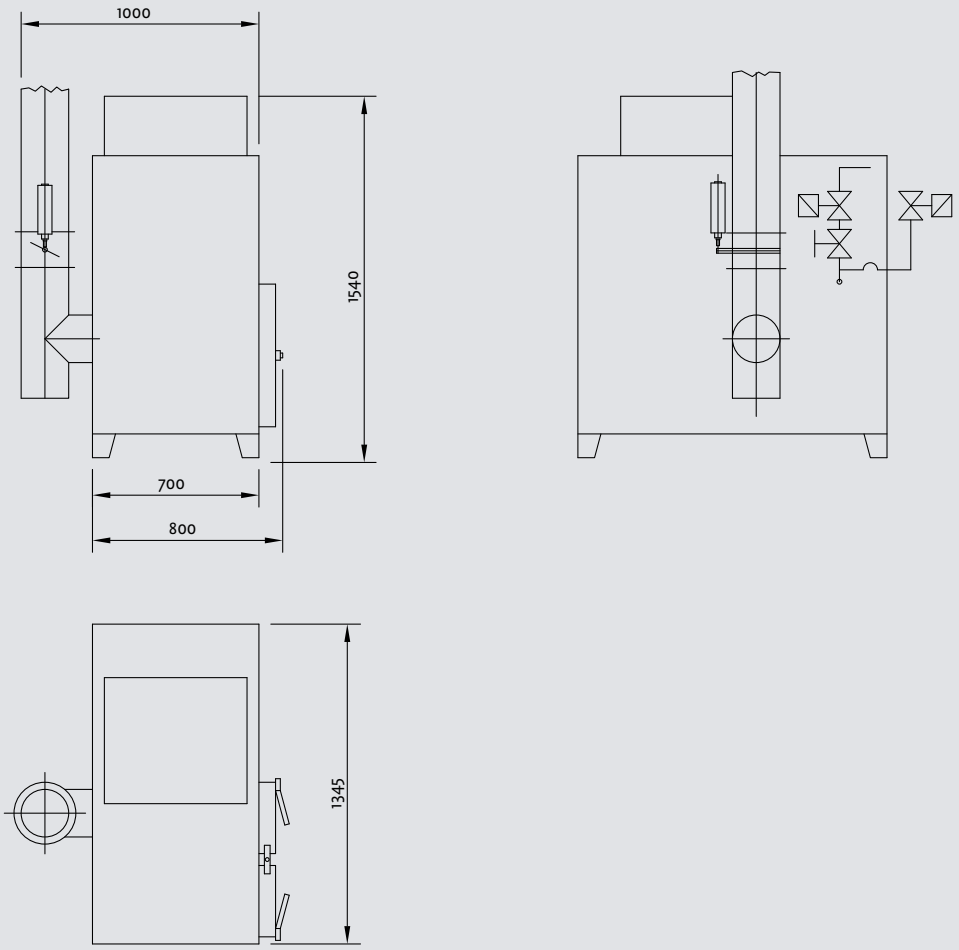
Steam and air at a pressure of approx. 0.3 bar and 1 bar, respectively, are both fed into the superheater enclosure. This mixture of steam and air is heated to a temperature between 360–450 °C, preferably 400 °C, and then pressed through continuously-conveyed wood chips. In this process the wood chips undergo thermal decomposition, whereby the smoke-forming substances are largely extracted from the wood in the form of steam.

This steam smoke has a number of important technological benefits:

> the intensity always remains constant,
> it is transfered through condensation,
> and reduces the products' weight loss.

TECHNICAL DETAILS

DIMENSIONAL SKETCH



SMOK*jet* RD (STEAM SMOKE GENERATOR)	
MACHINE DATA	
Electricity	230/400 V, 50 Hz | 5 x 4 mm², 25 A | 11 kW
Heating	Elec. 230/400 V, 50 Hz | (9 kW) see above
Steam	LP Steam | DN 25 | 0.3 – 05 bar | 30 kg/h
Condensate	Discharge to atmosphere
Cleaning	Cold water | DN 25
Controller	Compressed air | DN 10 | 6 bar | 5 l/min

LIQUID SMOKE SYSTEMS
SMOK*jet*® RL

LIQUID SMOKE: CONCENTRATION DEPENDS ON THE RECIPE

In addition to wood-chip, friction, and condensation-based smoke systems, Schröter's extensive range of products for smoke generation also includes liquid smoke systems. Schröter has provided these systems since 1992. Since the 2009 Anuga, Schröter's SMOK*jet* RL liquid smoke systems have made a real comeback – brought forth in part by the use of process measuring and control technology from Siemens.

The powerful Siemens Simatic S7 control system offers significant potential savings. It can also be easily integrated into existing equipment control systems from other liquid smoke system manufacturers. Additional control systems are no longer needed. The liquid smoke pressure tanks made from stainless steel are available in all normal sizes up to 225 liters. In addition to the conventional atomizing systems, in which liquid smoke is converted into gas by adding compressed air, drenching systems are also available. Schröter's liquid smoke systems are suitable for use with all of the world's most popular brands of liquid smoke.

In our liquid smoke systems, the liquid smoke concentrate is sprayed into the processing chamber mixed with compressed air. Schröter offers both single or double units. The smoke's taste is medium to strong, depending on the recipe. The level of tar is extremely low, since a large part of these substances can be removed during the manufacturing process.

An exhaust air cleaning system is not required, since a flap covering the exhaust air outlet keeps the system closed during smoking. The remaining smoke is released from the system once the process is complete.

SMOK*jet* RL (LIQUID SMOKE SYSTEM)	
MACHINE DATA	
Electricity	230 V, 50 Hz | 3 x 1.5 mm², 10 A | 0.2 kW
Spraying	Compressed air DN 10 | 6 bar | 150 l/min

Schröter
LEADING QUALITY

SCHRÖTER TECHNOLOGIE GMBH & CO. KG | BAHNHOFSTRASSE 86 | D-33829 BORGHOLZHAUSEN | GERMANY

GLC CERTIFIED ISO 9001

BKR

PG

Tel. +49 (0) 54 25.95 00
Fax +49 (0) 54 25.18 28

info@schroeter-technologie.de
www.schroeter-technologie.de