

...high-tech from Germany

**Industrial
Bowl Cutters**

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KILIA Cutter

With tradition and modernity to be simply the best from Germany

Founded in 1932, the company KILIA Fleischerei- und Spezial-Maschinen-Fabrik GmbH has over 75 years of experience in building high quality machinery.

Proud of the past and with conservation of the tradition, company KILIA is best prepared to master the challenges of the future with creativity and engagement.

In the past decades, numerous, remarkable innovations have set new technical standards and substantiate the claim, to be simply the best from Germany.

Examples are the patented knife shaft system, the unique fully automatic cleaning system, the unequalled noise reduction system, the on-line analysis for Bowl Cutters or the most modern software for complete batch traceability.

The new series of industrial Bowl Cutters 5000 Express (200 to 750 Liter) with their serial, most modern drive technology, unique maintenance modules as well as their leading special equipment constitutes a further step into the future and emphasises the outstanding position of company KILIA. ●

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**Bowl Cutter,
Vacuum- and
Vacuum-
Cooking Bowl
Cutter**
200-750 litres



Design

KILIA has further developed proven technology to increase both the quality and ease of use of the Bowl Cutter. The result is intelligent technology in a circular design:

KILIA Bowl Cutter, Vacuum- and Vacuum-Cooking-Bowl Cutter 5000 Express

200-250-325-500-750 litres

Model Manufacturing Methods

The highest quality is expressed even in the machine body itself. Extreme stability, guaranteed by the machines round construction, gives the machine vibration-free operation.

The special construction of the knife lid ensures effective heat isolation and at the same time reduces the noise emission level. With the additional aid of the noise

reduction lid, unprecedented low d. B. (A) – levels are achieved.

With a newly developed mode of fabrication, the precision in manufacturing the knife shaft has been raised significantly. Adjustable bearing flanges, which are fixed with pusher type air-screws, allow an exact adjustment of the seat of the bearings (tolerance 1/100mm). Therefore, the knife shaft is in true alignment and a twisting of knife shaft and bearing is avoided. Thus, the durability of the system is significantly prolonged.

The rotary shaft seal, a part of the knife shaft system, is running on a coated lining. This construction has been developed to reduce the frictional heat, and results in a significantly longer period of elasticity of the seal.



The round design corresponds to the highest hygiene standards

Ergonomically designed operation panel with key pad and joysticks

Perfect Design

Not only is the design visually appealing, but the circular, compact shape of the machine offers many advantages. The design corresponds to the highest hygiene standards and reduces cleaning requirements to a minimum. While the reduction in the machine's outer dimensions increases stability, the KILIA Bowl Cutter also needs a minimum space.

Superior Operation

The resulting product is the ultimate test, and the KILIA Bowl Cutter 5000 Express proves its high technological competence with the superior operation. Without time-consuming modifications the machine is ready for operation at a high level of performance for any product. The interplay of several components leads to

extraordinary results. The round lid shape combined with the deepest bowl on the market forms a circle, allowing a 360-degree cutting range, where the blades are cutting also inside the knife lid area. The time needed for the cutting process, thus, is shortened and the result is a convincing product with optimal binding. Whether dry and granulated raw sausage material or rough-cut pieces of meat and gristle, the clear surfaces of cut always keep the pores open. Thus, the sausage can breathe throughout the entire maturation process. Even the emulsification of raw, pre-treated pork rind is no problem due to the high cutting capacity.

Easy to Use

Working with the KILIA Bowl Cutter 5000 Express is as simple as it is convenient. The operation desk is equipped with a

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Modern Equipment

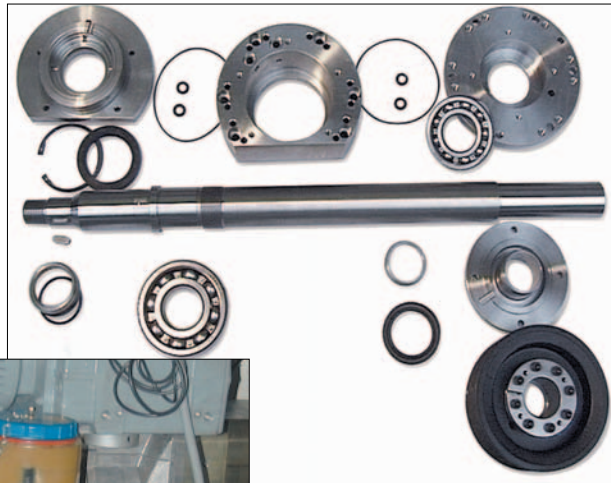
clearly arranged key pad and joysticks for easy and comfortable machine operation. Knife shaft and bowl speed as well as temperature can be read and controlled easily. All hydraulic functions as well as the selection of speeds programmed by the operator is operated with joysticks. Besides the high degree of operational comfort, the key pad has a very smooth surface, which offers an excellent hygiene standard. The cover protects the key pad during cleaning.

Modern Equipment

The new KILIA Bowl Cutters 5000 Express are equipped as standard with a frequency converter controlled AC-drive for the knife shaft. This most modern drive avoids harmful mechanical and electrical peak loads, thus preserving the machine and reducing electricity costs. The 6 fixed

programmed speeds are optimally suitable for a large product range. Optionally, the machine can also be steered completely variable. Together with the leading KILIA high speed package a cutting speed of up to over 156 m/sec can be reached. The most modern electrical brake system as standard is another advantage of the KILIA drive concept. This system has hardly any wear and tear and a longer life. The bowl drive is controlled fully variable (7-20 rpm). Up to 6 speeds can be programmed by the operator and recalled with the joy sticks. The most modern AC-drive with frequency converter preserves the bearing of the bowl and allows to select the right bowl speed for each product.

The Automatic Central Lubrication System ADS 100 increases the operational safety, as every single lubri-



Maintenance-free knife shaft system with automatic central lubrication ADS 100 (time controlled)



ADS 200 is electronically steered and sends grease to all lubrication points depending on their degree of strain



The maintenance and inspection module monitors the machine and will betimes remind of necessary inspections. Maintenance work can be organised without disturbance of the production.

ation point is regularly supplied with sufficient grease. ADS 100 also protects the seals of all bearings, so that neither water nor product can enter. The high capacity knife shaft system of the KILIA Bowl Cutter 5000 Express thus becomes a maintenance-free unit.

The electrical switch combinations are completely integrated into the **separate switch cabinet** made from stainless steel (wall mounted as standard, standing model available as option) and thus protected against dirt, while allowing easy access. Special heating elements protect the switch combination from humidity.

By integrating a newly developed computer steering into the machines, these have been adapted to the most modern electrical level. A special advantage is

the **remote diagnosis via VPN** (virtual private network, broadband internet access required). This enables the KILIA service engineers to diagnose in real time any errors occurring, independent of their whereabouts. The machines can send relevant errors via SMS to the KILIA service engineers (optional). Through standard interfaces a connection with several IT-solutions is possible, e.g. with the KILIA installation concept or with the **KILIA Process Visualization (KPV)**.

The **maintenance and inspection module monitors** all machine components and will betimes remind of necessary inspections, so that maintenance work can be organised without disturbance of the production.

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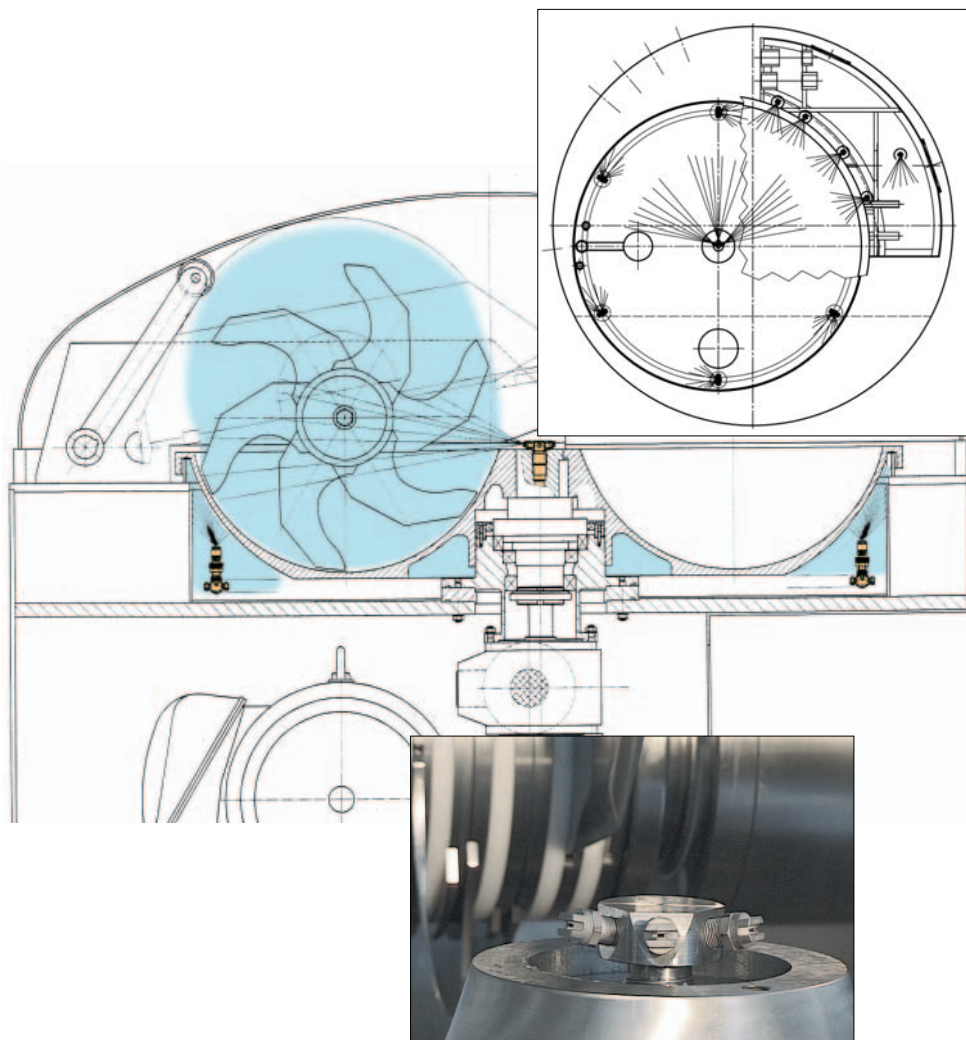


**Standard
Equipment
and
High Quality
Options**

Extensive Standard Equipment

Even the basic features of the **KILIA Bowl Cutter 5000 Express** 200 to 750 Litres are extensive:

- knife shaft with 6 fixed programmed speeds, 4 forward, 2 reverse (frequency converter controlled AC drive)
- variable bowl speed (separate frequency converter controlled AC drive)
- maintenance-free knife shaft system with ADS 100 and 2 years guarantee
- maintenance and inspection module
- remote diagnosis via encoded internet connection (broadband access required)
- operation desk with key pad (incl. protection cover) and joysticks, electrical thermometer and electrical revolution counter
- hydraulic noise reduction lid
- hydraulic knife lid
- hydraulic unloader
- knife head, 8 parts
- knife shaft brake
- cleaning key
- separate switch cabinet (wall mounted)



The automatic cleaning system fulfills highest hygiene requirements.

Central nozzles of the automatic cleaning system

High Quality Options

A number of additional features can optionally be added, to make operation even easier and to create new possibilities:

The 200-750 litres Bowl Cutter 5000 Express is available also as **Vacuum-Bowl Cutter** and as **Vacuum-Cooking-Bowl Cutter**. While cutting under vacuum, air is removed from the product, which leads to a cost saving production. As protein molecules puff up, showing a bigger surface, when the air pressure is removed, they can be cut much finer. Especially for fine emulsions, this is a great advantage, as the capacity to bind water is enhanced even when the protein content is comparatively low. Another advantage is the strongly reduced oxidation, which leads to a better

taste, a better reddening, which stays longer and to a longer shelf life. Finally, the dome shaped vacuum lid covers the whole machine, which further markedly reduces the already low noise level.

With the **Cooking system** it is possible to produce cooked sausages without time-consuming pre-scalding. Thus, losses of weight and taste are avoided. The bowl is heated with steam from below. The mechanical knife lock system is specially designed for high temperatures.

The **Variable Knife Shaft Drive** with integrated reverse drive for mixing allows to use the optimum cutting and mixing speed for each product individually, which leads to better product results. As electricity peaks are avoided and only the necessary amount of elec-

Bowl Cutter, Vacuum- and Vacuum- Cooking Bowl Cutter

200-750 litres



Powerful

tricity is used in every moment, cost reduction is an interesting side effect. Up to 11 speeds can be freely selected and programmed by the operator. They can then be recalled with the joysticks on the operating panel.

With the unique **KILIA high speed package** the knife speed can be regulated up to over 156 m/sec (measured at the point of a knife). A knife set, especially designed for high speed is used in this package.

Working with water under low pressure, the **program controlled Automatic Cleaning System** allows to clean essential working areas of the machine (bowl, knife-shaft lid, pillow block, etc.) automatically by pushing a button only. The advantages are obvious: the program-controlled nozzle- and cleaning-system

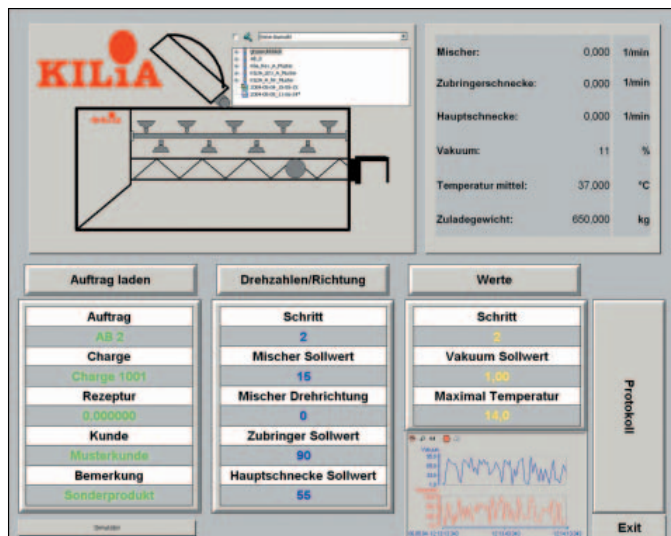
reduces water consumption to the required minimum; adding different cleaning and disinfection substances is possible; the required manpower as well as cleaning time is reduced, thus increasing the potential machine running time. The cleaning process can be documented (PC-interface). Together with the likewise newly developed, unique **Automatic Bowl Outlet**, the complete cleaning process is carried out program controlled.

The **KILIA - Program - Control (KPS)** is equipped with a simple to operate key pad, showing clearly arranged, logical symbols, thus reducing training time to an absolute minimum. The program output provides continuously information on temperature, cutting time and the number of bowl revolutions. The integrated recipe manager allows to store up to 99 recipes, which can be started



Automatic bowl outlet valve

The automatic cleaning system for high hygiene efficiency



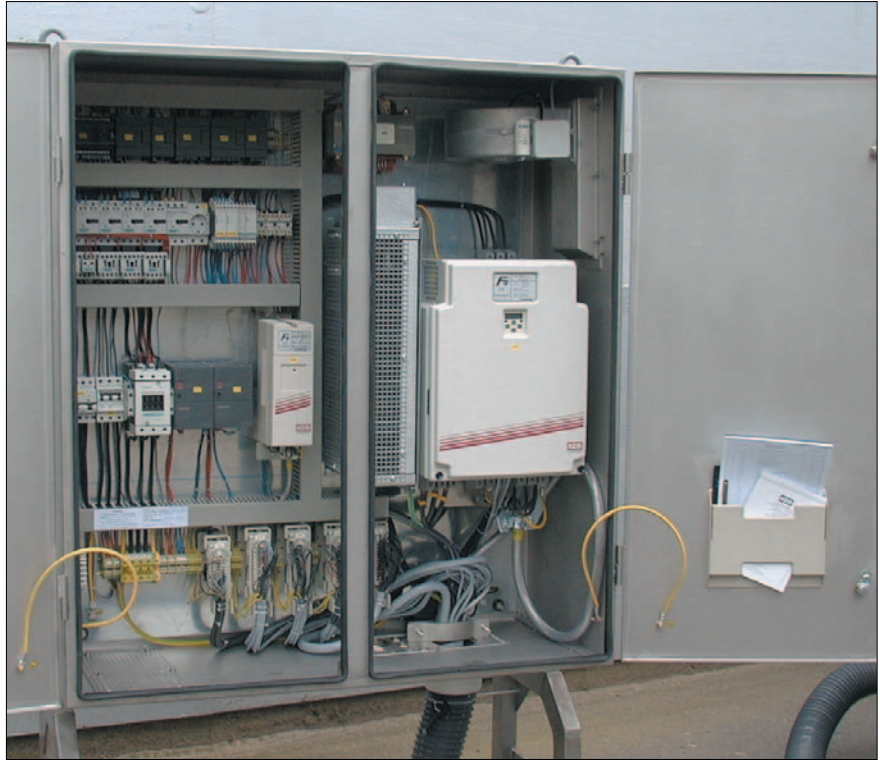
KPV - the KILIA Process Visualisation allows documenting production processes relating to batch and operator.

afterwards by pressing the function key only, thus leading to precise production with steady quality results. Also integrated is the new Automatic Central Lubrication System ADS 200, the more extensive version of ADS 100, in which lubrication is electronically steered and works according to the load of each lubrication point individually. The amount of grease at each lubrication point, the grease pressure as well as the level of grease reserves are constantly measured by sensors. Through standard interfaces a connection with several IT-solutions is possible, e.g. with the KILIA installation concept or with the **KILIA Process Visualization (KPV)**.

A **modem** can easily be connected (telephone connection required), thus allowing not only remote diagnosis, which avoids cost-intensive travel, but also simple and speedy maintenance by KILIA service personnel in Germany, no matter where the machine is located.

The **KILIA Process Visualisation (KPV)** allows the operator to document the production process batch- and individual-related, to send the data to an office PC and to analyse them (KPV Light). In the version KPV Basic a recipe manager (short texts) as well as the possibility to program the machine from an office PC via a preset mask (Excel format) are additional functions. The KPV Executive version includes a clear text recipe manager for storing detailed recipe information, a comprehensive maintenance module with deposition of tech-

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High efficiency

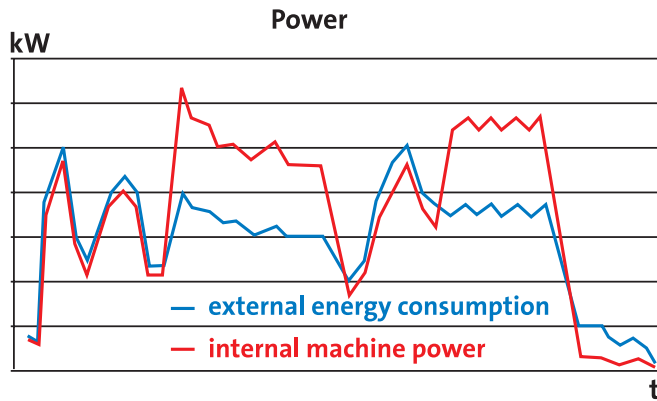
nical advices and the possibility to cross-link visualisation / documentation of other processing machines (special programming for each individual case required).

The newly developed **KILIA On-line Analysis System** is a unique way to reach quality security, product standardisation and cost efficiency at the same time. A special software, developed for optimising emulsions, allows a quick reaction to changes in the raw material, which does lead not only to a steady batch quality but also reduces the costs for raw material by approximately 15%. Another advantage of the system, developed by KILIA, is the possibility to add several measuring units to the spectrometer of the bowl cutter, for other machines, in which product optimisation is

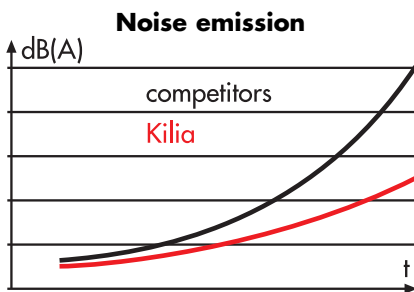
whished for. Thus investment for the customer is markedly reduced.

The special **noise reduction package** which has been developed in cooperation with universities, allows a further reduction of the already proven low noise level. The **KILIA Silent Cutter** meets all demands for modern work conditions and offers a uniquely low noise emission, also compared with the competition.

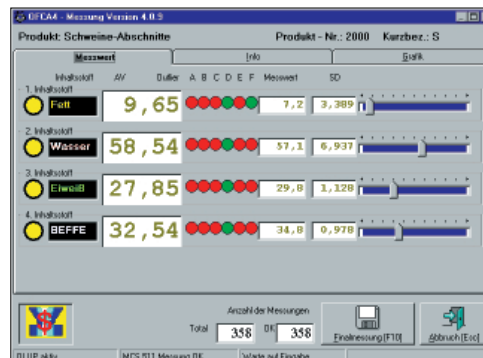
Adding Nitrogen and Water shortens the production process, while at the same time storage and transport of flake ice is no longer necessary. The cooling effect is reached without opening the lid. Liquid as well as gaseous nitrogen is fed into the bowl through a special nozzle. At the same time, the amount of water required can be added through a sepa-



Most modern drive concept for high traction and low energy consumption.



The Silent Cutter reaches a uniquely low noise emission.



The Kilia On-line analysis for quality control

rate feeding tube, steered either manually or by computer. Authorized special companies can complete the nitrogen preparation including the required exhaust directly at the customers.

The **Hydraulic Loader** is convincing due to its compact construction as well as its hygienic and efficient operation. It allows a comfortable automatic machine loading.

The **Preset Thermometer** operates with sensors, which measure the product temperature with a precision of 0,1° C. When the selected value is reached, the bowl cutter stops automatically.

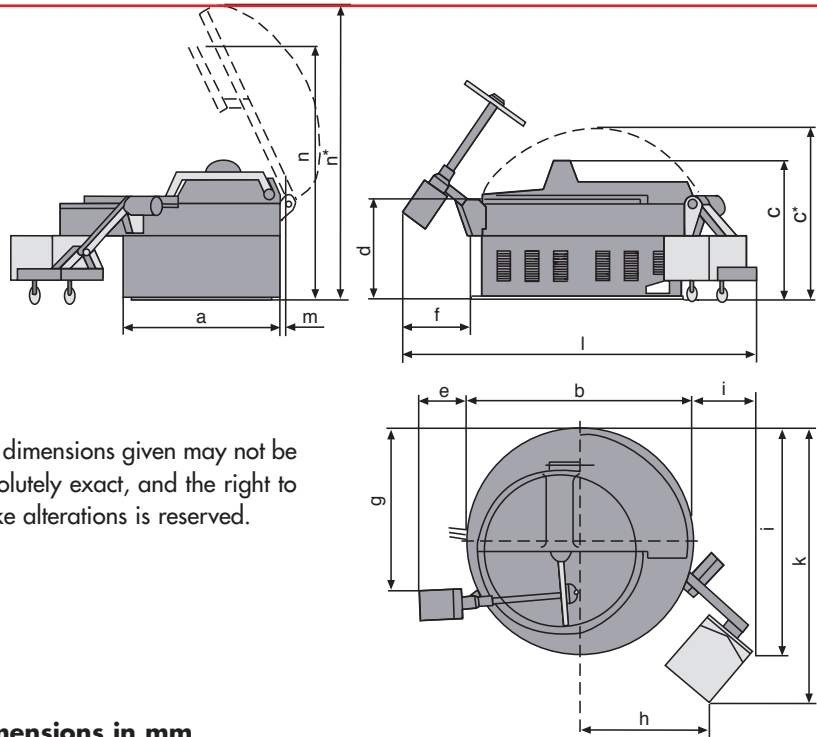
The **Preset Revolution Counter** supports the production of homogeneously granulated raw sausages. When the

selected value is reached, the bowl cutter stops automatically.

The **Hydraulic Lock Nut** facilitates mounting the knives with simple tools and guarantees sufficient pressure for fixing the knives.

The **Knife Balance System** facilitates the installation of knives in an exact way, thus preserve the knife shaft life.

Dimensions



The dimensions given may not be absolutely exact, and the right to make alterations is reserved.

Dimensions in mm

Type / l	a	b=ø	c	c*	d	e	f	g	h	i	j	k	l	m	n	n*
200	1450	1900	1340	1550	1130	545	845	1250	1055	655	2130	2660	3455	45	2400	2700
250/325	1520	2070	1380	1600	1130	590	760	1480	1095	615	2295	2815	3445	55	2500	2900
500	1710	2400	1430	1700	1150	560	780	1750	1375	600	2395	3000	3780	75	2700	3200
750	2000	2800	1500	1850	1200	600	850	2100	1700	650	2500	3300	4100	100	2950	3600

Technical details

KILIA 5000 Express		200	250	325	500	750
Bowl capacity	Litres	200	250	325	500	750
Knife shaft speeds cutting	UpM variable high speed	2000/4000 500-4500 500-5000	2000/4000 500-4400 500-4800	2000/4000 500-4400 500-4800	1800/3600 500-4000 500-4400	1500/3000 500-3500 500-4000
Knife shaft speeds mixing forward an reverse	UpM variable	50/100 50-500	50/100 50-500	50/100 50-500	50/100 50-500	50/100 50-500
Bowl speed	UPM variable	10/20 7-22	10/20 7-22	10/20 7-22	10/20 7-22	10/20 7-22
Knife shaft drive capacity Standard (high speed)	KW	60 (75)	75 (90)	90 (110)	160 (160)	200 (200)
Bowl drive capacity	KW	4	4	4	4	5,5
Fuse rating for 400 Volt	Amp. Tr.	200	200	250	350	500
Vacuum pump	m ³ /h	160	160	160	160	250
Heating element	low pressure steam 0,5 bar					
Accessories: 1 knife-head 8 parts, 1 allen key						

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