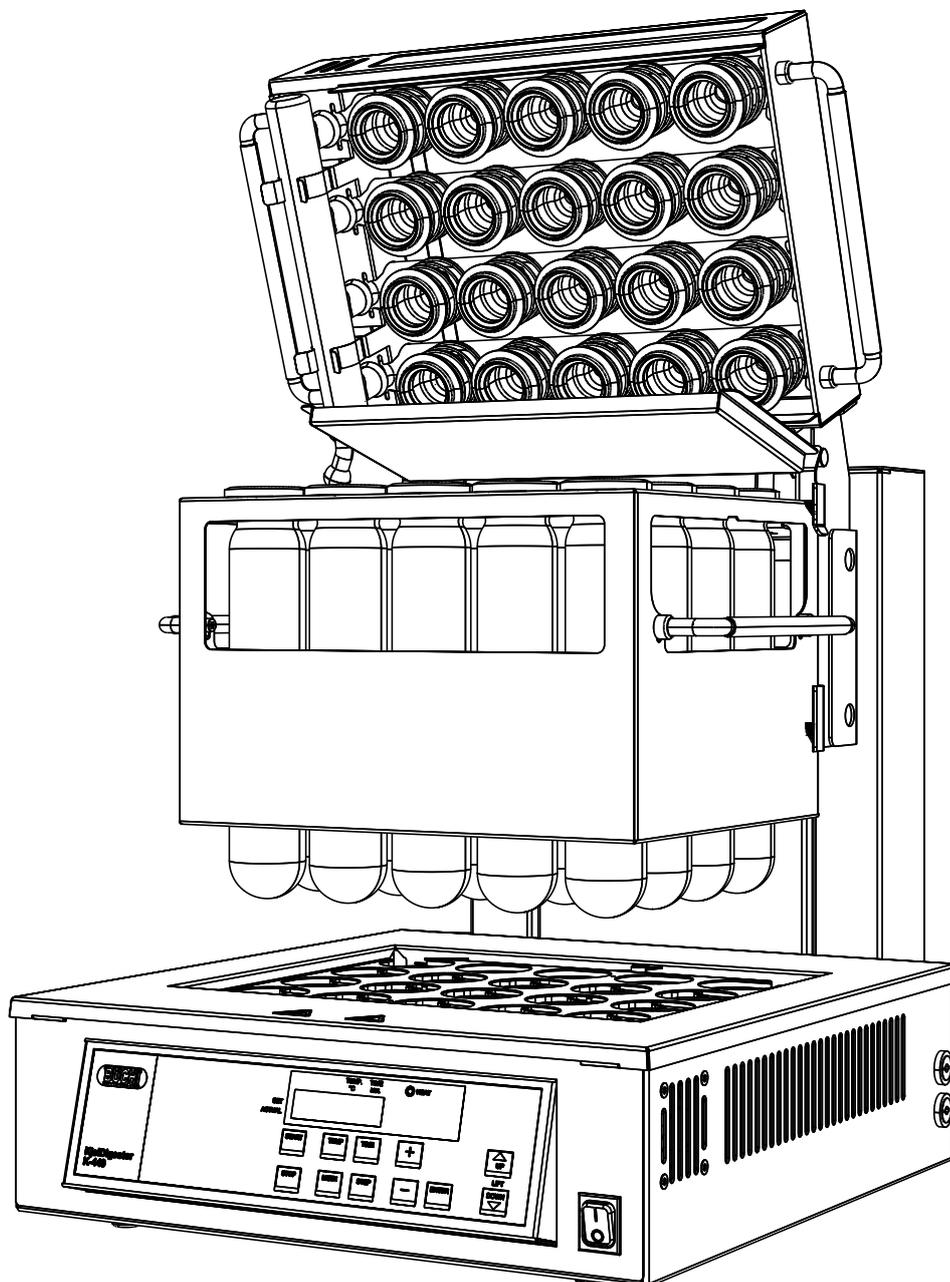




KjelDigester K-446 / K-449

Technical data sheet

The KjelDigester offers fast and safe digestion of up to 20 samples simultaneously. The fully automated model K-449 offers a convenient automatic lift for raising and lowering the sample tube rack and a programming mode so that all digestion methods can be saved. The manual K-446 is an entry level block digester with effortless manual control and manual rack handling. The sample tube rack of both digesters can be placed directly into the KjelSampler K-376 and K-377 for fully automated, high throughput nitrogen and protein determination according to Kjeldahl.



Scope of delivery

The Kjeldigester models are delivered ready to use with the standard package comprising of:

Components	Qty
Sample tubes 300 mL	20
Rack 20 position	1
Suction module *	1
Hose to Scrubber 1.5 m	1
Hose connector S19 (ball joint)	1
Clamp for hose connector S19	1
Drip tray	1
Drip tray holder	1

* standard or with condensate trap

Order code

Choose the configuration according to your needs:

1 1 5 4 4 **0 0 0**

Kjeldigester model

6 K-446 (manual)

9 K-449 (fully automated)

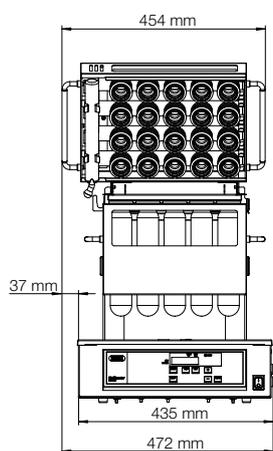
Suction module

1 Suction module standard

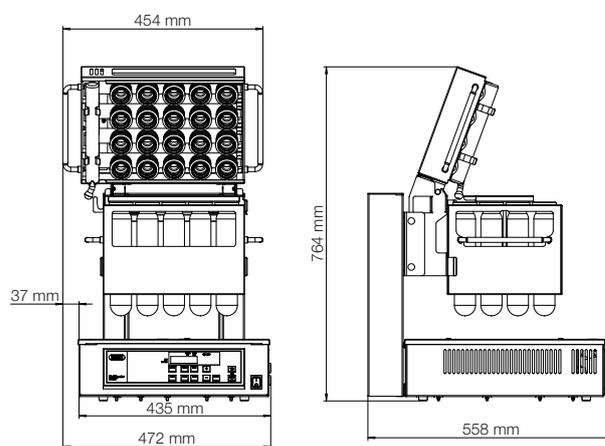
2 Suction module with condensate trap

Dimensions and weight

	K-446	K-449
Dimensions (W×H×D)	472 × 764 × 524 mm	472 × 764 × 558 mm
Weight (without accessories)	18.5 kg	25.8 kg
Total weight (incl. all accessories)	30.3 kg	37.3 kg



Kjeldigester K-446



Kjeldigester K-449

Technical data

Operating voltage	220 – 240 V ±10 %
Frequency	50/60 Hz
Power consumption	max. 2300 W
Display	LCD (2 lines)
Temperature control range	30 – 450 °C
Resolution temperature display	±1 °C
Average temperature stability	±1 °C
Temperature accuracy absolute	±7 °C at 420 °C
Approval	UL/CSA, CE

Accessories

General accessories	Qty	Order number	Picture
Suction tube standard Suitable for most applications	1	11058651	
Suction tube with condensate trap For aqueous samples, prevents backflow of condensate into the sample tube	1	11058827	
Fume collection tube with ball joint Collects the digestion fumes from the four suction modules	1	11058825	
Sample tubes 300 mL For sample volumes up to 200 mL in volume or 5 g in weight	4	037377	
Sample tubes 300 mL	20	11059690	
Glass caps For occupying empty sample positions, to close the suction circuit	4	040049	
Rack For holding up to 20 sample tubes in position	1	11059831	
Stand for rack Protects the sample tubes from smashing, as well as other damage	1	11058659	
Retaining plate Holds the tubes firmly in the rack when it is placed into the dishwasher for cleaning	1	038559	
Air supply for internal fan Supplies clean air to the display, as well as the built-in fan	1	040079	
Brush for cleaning troughs in the block Is used in conjunction with an electric drill to remove heavy soiling's, it exactly matches the throughs in the block	1	043929	

Application related accessories	Qty	Order number	Picture
Digestion rods To prevent boiling delays	10	043087	
User protection shield (for H ₂ O ₂ and TKN applications) Protects the user from any possible splashes, which may occur from H ₂ O ₂ usage or boiling delays	1	11057889	
Heat shield for rack Provides heat insulation for sample tubes during digestion	1	040052	

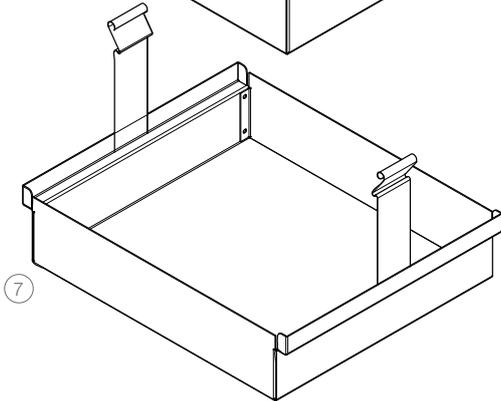
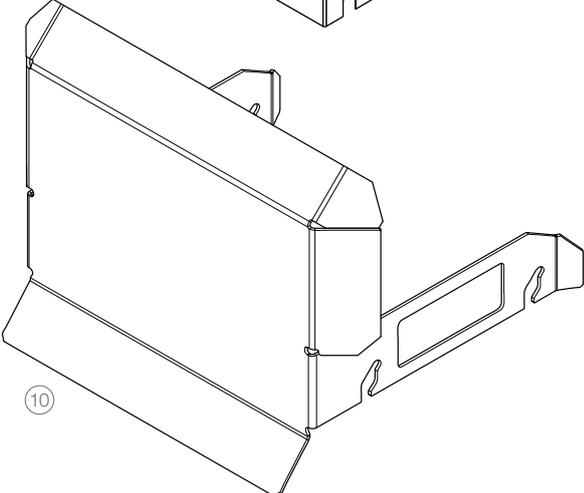
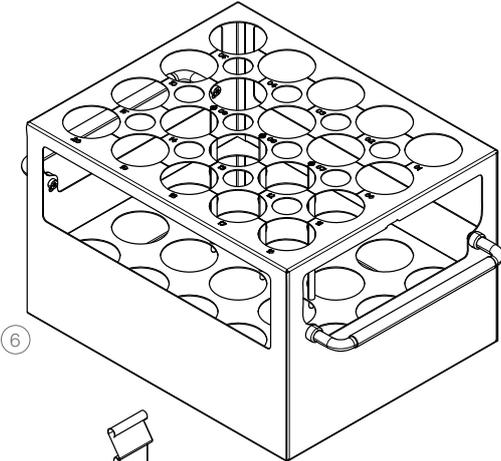
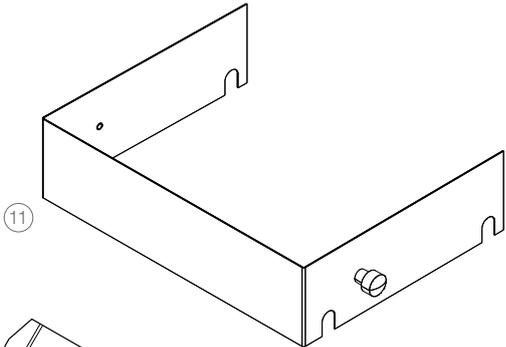
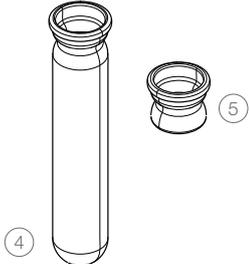
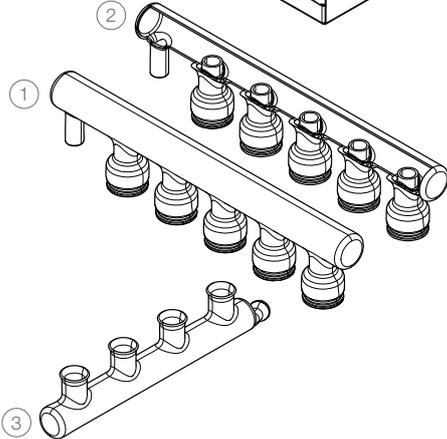
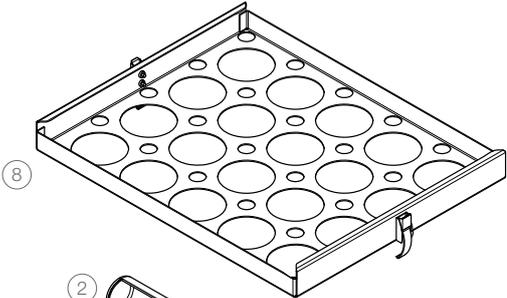
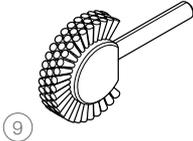
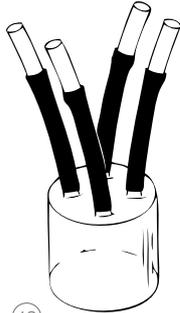
Documentation	Qty	Order number
Kjeldahl Guide (EN) Comprehensive guide covering all aspects of the theoretical and practical know-how	1	11055033
Kjeldahl Practice Guide (EN) Provides theoretical background information, useful hints and calculation tables for daily routine work	1	11592548
Kjeldahl Practice Guide (DE)	1	11592547
Kjeldahl Practice Guide (CN)	1	11592549
IQ/OQ set (EN) Complete set for Installation and Operational Qualification of the instrument	1	11059762
Repeating OQ (EN)	1	11059763

Fume removal	Qty	Order number	Picture
Condensate bottle Is used between the Scrubber and the digester to precondense fumes	1	025100	
Connection cable to Scrubber The Scrubber is controlled by the digester by the cable connection (already incl. at Scrubber ^{ECO} models)	1	030973	
Scrubber K-415 (TripleScrub ^{ECO}) Ideal Scrubber model for Kjeldahl digestions at maximum automation	1	114152331	

Kjeldahl Tablets*			Order number
Titanium	3.71 g	(3.500 g K ₂ SO ₄ , 0.105 g CuSO ₄ • 5 H ₂ O, 0.105 g TiO ₂)	11057980
Missouri	5.00 g	(4.980 g K ₂ SO ₄ , 0.020 g CuSO ₄ • 5 H ₂ O)	11057982
ECO	4.00 g	(3.998 g K ₂ SO ₄ , 0.002 g CuSO ₄ • 5 H ₂ O)	11057983
Titanium Micro	1.59 g	(1.500 g K ₂ SO ₄ , 0.045 g CuSO ₄ • 5 H ₂ O, 0.045 g TiO ₂)	11057981
Copper Micro	1.65 g	(1.500 g K ₂ SO ₄ , 0.150 g CuSO ₄ • 5 H ₂ O)	11057985
Antifoam	1.00 g	(0.970 g Na ₂ SO ₄ , 0.030 g Silicone Antifoam)	11057984

* Box of 1000 tablets

Accessories pictures



Functional principle

The Kjeldigester is used to convert organic bound nitrogen (e.g. in proteins) in a sample into ammonium sulfate. During the digestion process, acid fumes and reaction gases may emerge and are handled by the Scrubber K-415. The K-415 is connected to digester system for neutralizing acid fumes and adsorbing unpleasant odors.

- The aluminum block ① generates high temperatures in the samples ②
- The sample is digested in constantly boiling sulfuric acid
- Hot acid fumes rise into the condensation zone ③, and condense and rinse back down to the sample creating a constant reflux
- Residual fumes ④ which escape the condensation zone are highly corrosive and must be withdrawn and efficiently neutralized (e.g. with the Scrubber K-415)

