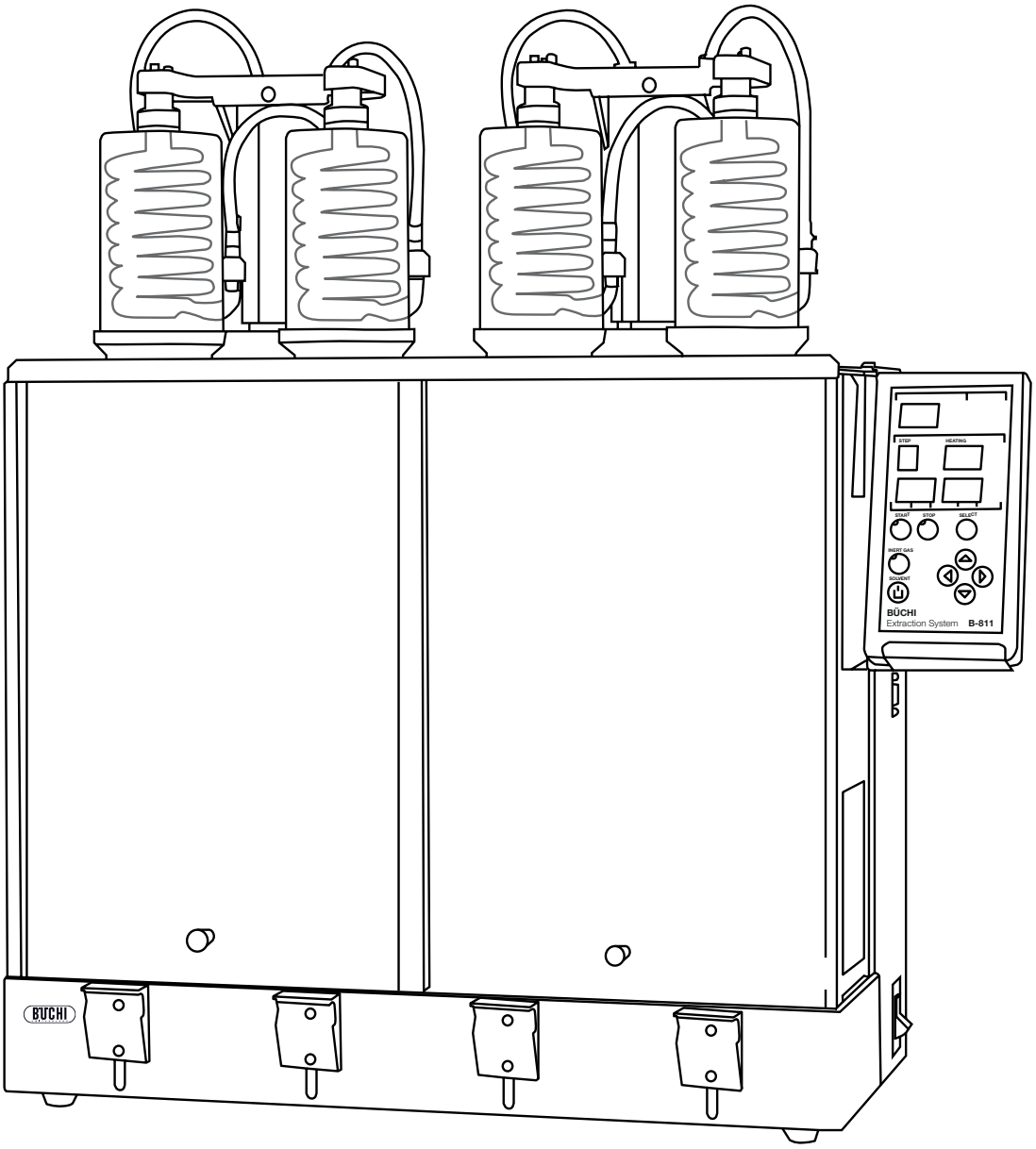
Extraction Systems B-811 / B-811 LSV
Technical data sheet

The Extraction System B-811 sets a new standard for the most flexible solid-liquid extraction procedures and is ideal for demanding applications. It features four distinctive extraction modes which are directly accessible without any modifications to the glass setup. The B-811 is available in two different or mixed size configurations. The LSV configuration is designed for large sample volumes, allowing the lowest analyte detection levels.



Scope of delivery

All models are delivered ready to use and are packaged with:

Components	B-811	B-811 LSV	B-811 mixed Standard/LSV
Solvent beaker Standard	4		4
Solvent beaker LSV		4	4
Glass sample tube	4		4
Glass sample tube LSV		4	4
Extraction chamber Standard	4		2
Extraction chamber LSV		4	2
Seal for extraction chamber	8	8	8
Holder ring for extraction chamber	8	8	8
Paper thimbles 33 x 94 mm	6		6
Paper thimbles 43 x 118 mm		4	4
Holder basket for thimbles, LSV			2
Condensation tube Standard	4		2
Condensation tube LSV		4	2
Sample holder	4		2
Sample holder LSV		4	2
Thimble holder 33 x 94 mm	4		2
Cooling water hose, 1.5 m	1	1	1

Order code

Choose the configuration according to your needs:

0 3 6 6 8 [ ]

Standard
- 0 Extraction System B-811, 230 V
- 1 Extraction System B-811, 115 V

0 3 7 9 0 [ ]

Large Sample Volume (LSV)
- 0 Extraction System B-811 LSV, 230 V
- 1 Extraction System B-811 LSV, 115 V

0 4 0 5 _ _

Extraction system, 100 V
5 0 Extraction System B-811
4 9 Extraction System B-811 LSV

1 1 0 5 6 6 2 1 Extraction System B-811 „mixed“ Standard/LSV, 230V

Dimensions and weight

	Dimensions (WxHxD)	Weight
B-811	600 x 980 x 290 mm	32.0 kg
B-811 LSV	600 x 980 x 290 mm	32.5 kg
B-811 mixed	600 x 980 x 290 mm	32.5 kg

Technical data

	B-811	B-811 LSV
Beaker volume	150 mL	250 mL
Volume of glass sample tube	130 mL	240 mL
Volume of extraction chamber	250 mL	340 mL
Diameter of extraction chamber	52 mm	60 mm
Length of condenser tube	312 mm	291 mm
Diameter of sample holder	39 mm	49 mm
Paper thimbles (Cellulose)	22 x 80 mm; 25 x 100 mm; 33 x 94 mm; 43 x 118 mm	
Solvents	water, organic solvents	
Connection voltage	100 - 120 V / 230 V, 50/60 Hz	
Power consumption	1250W	
Max. cooling water consumption	60 l/h	
Max. water pressure	6 bar	
Interface	RS 232	
Overvoltage category	II	
Pollution degree	2	

Ambient conditions

For indoor use only, 5-40°C, up to 2000 m above sea level, maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

Accessories

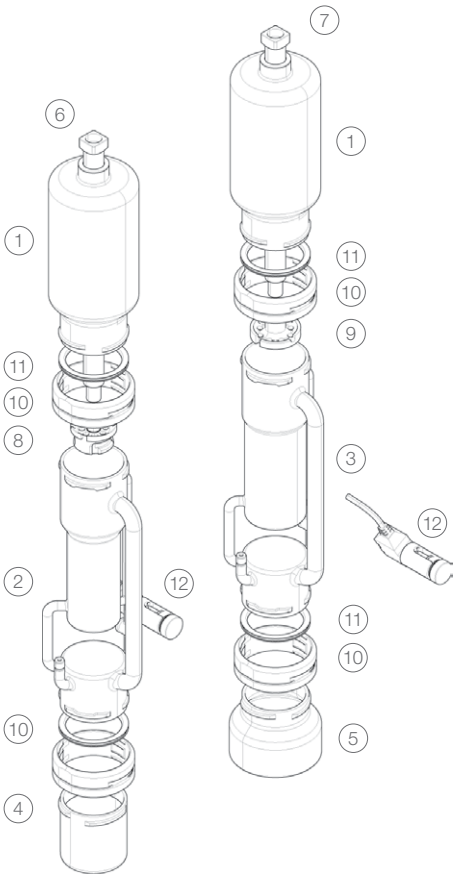
Glass parts	Qty	Order number	Picture
Condenser B-811 Standard and LSV	1	036711	1
Extraction chamber Standard	1	036710	2
Extraction chamber LSV	1	037902	3
Solvent beaker Standard	4	037276	4
Solvent beaker LSV	4	038597	5
Condensation tube Standard, length 312 mm	1	037482	6
Condensation tube LSV, length 291 mm	1	037903	7
Glass sample tube with frit, Standard	4	037281	
Glass sample tube with frit, LSV	4	037563	
Thimble holder 43 x 123 mm	4	037280	
Thimble holder 33 x 94 mm	4	037279	
Thimble holder 22 x 80 mm	4	037278	
Thimble holder 25 x 100 mm	4	037277	

Additional parts	Qty	Order number	Picture
Sample holder Standard, PTFE	1	036559	8
Sample holder LSV, PTFE	1	037904	9
Holder ring for extraction chamber	1	036709	10
Seal for extraction chamber, PTFE	4	037388	11
Seal for extraction chamber, Viton	4	042654	11
Magnetic valve for B-811	1	036687	12
Membrane with anchor for valve unit	1	037534	12
Holder basket for thimbles, LSV Length 120 mm, to be used with holder 0379040	1	037905	
Pack of paper thimbles 25 x 100 mm	25	018105	
Pack of paper thimbles 33 x 94 mm	25	11058983	
Pack of paper thimbles 43 x 118 mm	25	018106	
Pack of paper thimbles 22 x 80 mm	25	11058984	

Additional parts	Qty	Order number	Picture
Chiller connection kit B-811 For connecting a F-108 or F-114 Chiller connection kit B-811	1	11055670	
Distribution adapter for operating two extraction units with chiller	1	037742	
LSV upgrade kit, complete For the conversion of the Extraction System B-811 into the B-811 LSVLSV upgrade kit, complete	1	037910	
Quartz sand, 2.5kg Special sand to be used for extraction and hydrolysis, fat free, fire dried, 0.3 - 0.9mm Quartz sand, 2.5kg	1	037689	

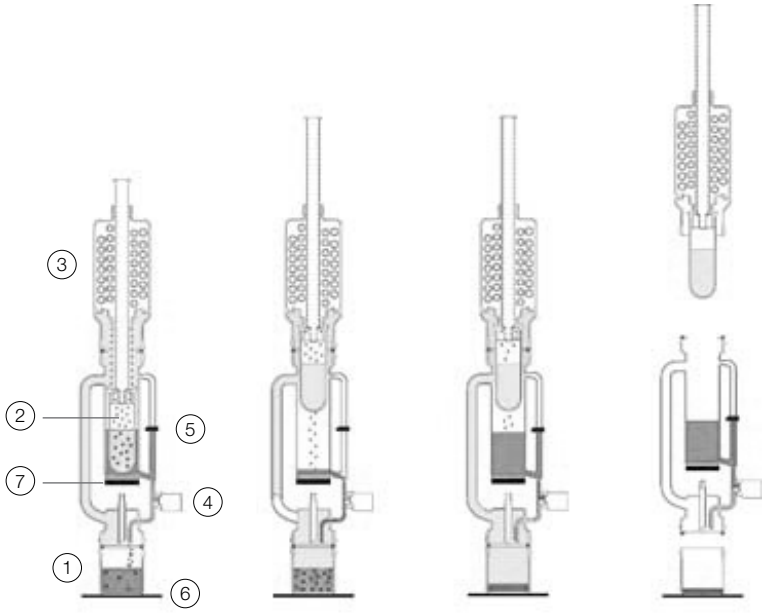
Documentation	Qty	Order number
IQ/OQ package for B-811	1	11055029
Repeating OQ for B-811	1	11055031
IQ/OQ package for B-811 LSV	1	11055030
Repeating OQ for B-811 LSV	1	11055032

Accessories pictures



Functional principle

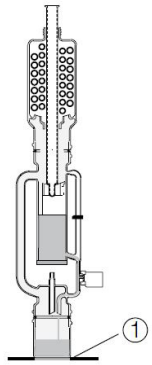
The entire extraction process consists of three individual steps - extraction, rinsing and drying.



① Solvent beaker
② Paper thimble or glass sample tube
③ Condenser
④ Glass valve
⑤ Optical sensor
⑥ Lower heating level
⑦ Upper heating level

The extraction procedure depends on the selected extraction method. One of the four possible extraction methods can be applied:

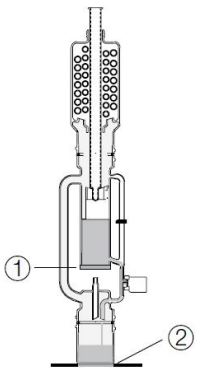
Soxhlet Standard



Soxhlet Standard follows the same Soxhlet extraction method as used with manual glass apparatus.

- The solvent is evaporated using the lower heating element ①, whilst the upper heating element is deactivated. The vapor rises up into the condenser and the condensed solvent is collected in the extraction chamber while the glass valve is closed. The sample is extracted.
- Each time the solvent level reaches the optical sensor and covers the sample, the solvent containing the extracted compounds is released into the beaker by opening the valve.
- The valve remains open, until the extraction chamber is completely empty. The number of cycles and/or time defines the length of the extraction step.

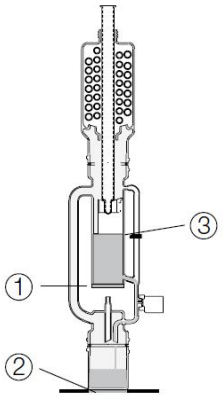
Soxhlet Warm



Soxhlet Warm is similar to the Soxhlet Standard the only difference being that the condensed solvent is heated. Soxhlet Warm combines the benefits of the extraction with fresh solvent and the enhanced extraction with hot solvent known as Randall Extraction.

- The solvent is evaporated using the lower heating element ②. The vapor rises up into the condenser and the condensed solvent is collected in the extraction chamber while the valve is closed.
- Each time the solvent level reaches the optical sensor, solvent containing the extracted compounds is released into the beaker by opening the magnetic valve. The valve remains open, until the extraction chamber is empty. The number of cycles and/or time defines the length of the extraction process.
- Once the solvent level is detected by the optical sensor, the upper heating ① element is activated to heat the solvent in the extraction chamber.

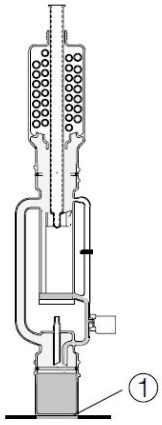
Hot Extraction



The sample is placed in the boiling solvent and extracted. The main difference to Soxhlet Warm is that the sample is continuously surrounded by hot solvent. This method is also known as a Randall or Goldfisch extraction.

- The solvent is evaporated using the lower heating element ②. The vapor rises up into the condenser and the condensed solvent is collected in the extraction chamber while the glass valve is closed.
- The hot extraction process is carried out once the solvent level is detected by the optical sensor ③ and the upper heating element ① is activated.
- Each time the solvent level reaches the optical sensor, the glass valves opens for a short time and hot solvent containing the extracted compounds is drained into the beaker. Note: In contrast to Soxhlet Warm the chamber is not completely emptied. The extraction efficiency is improved in comparison with the classical Randall extraction due to the constant exchange of fresh and used solvent.
- During the extraction process the solvent level remains close to the detection level of the optical sensor.

Continuous Flow



The sample is continuously washed with freshly condensed solvent.

- The solvent is evaporated using the lower heating element ①.
- The vapor rises up into the condenser. The condensed solvent washes down the condensation tube through the sample into the beaker. During the entire extraction process the glass valve is kept open and the optical sensor is deactivated.