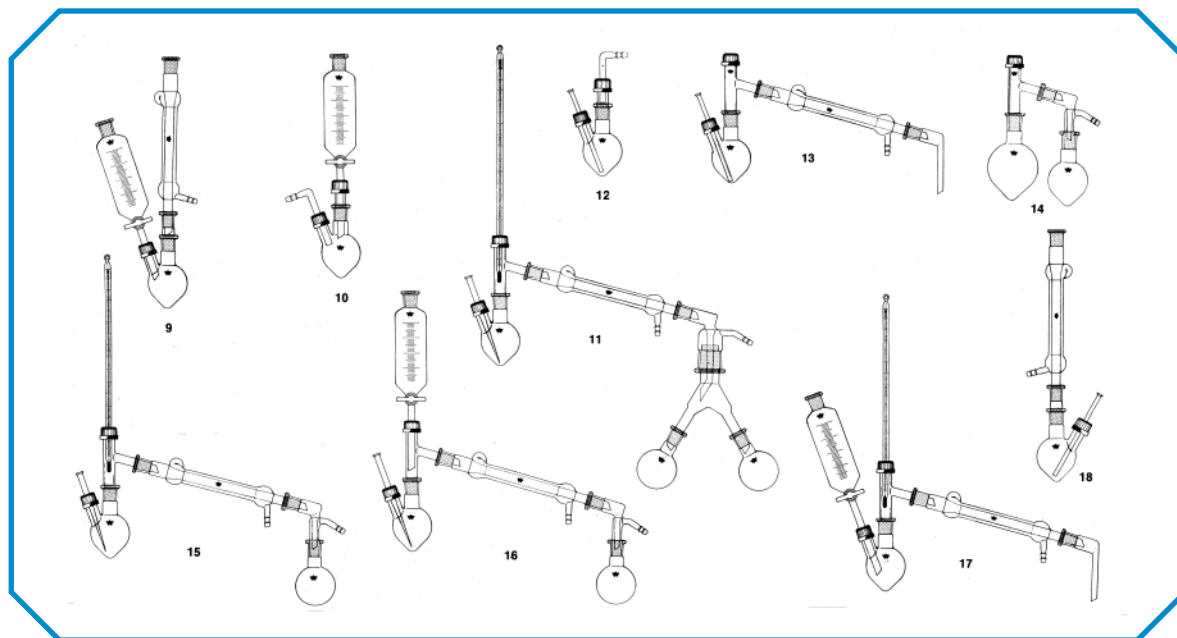
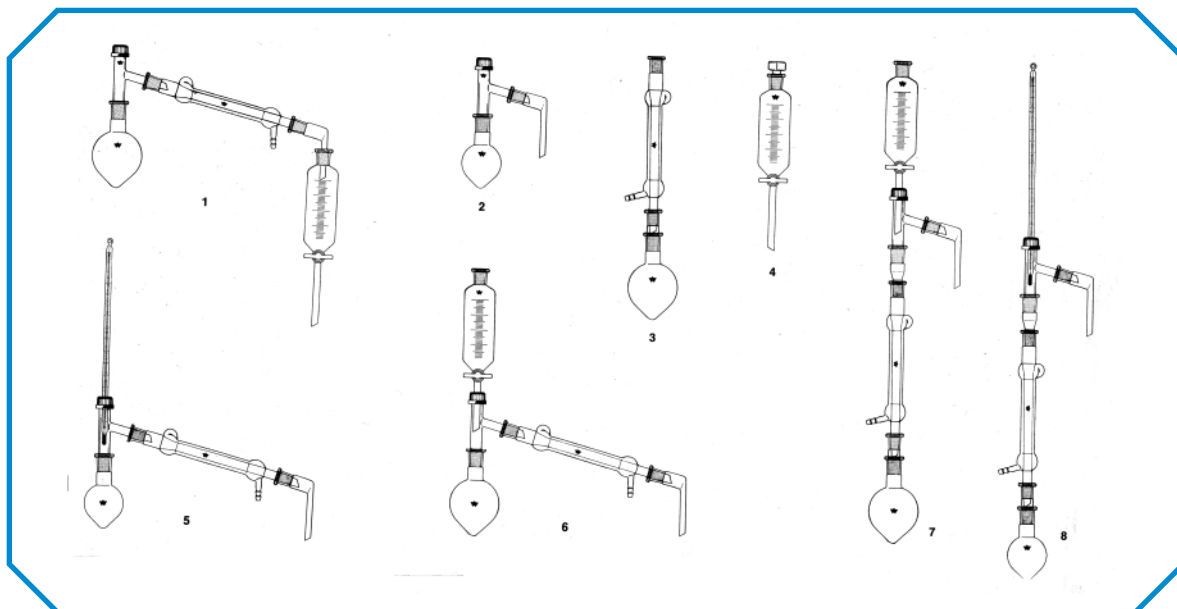




For illustrating the possibilities of use you can find some examples of combinations on the following pages which can give you only a small insight into the variety of combinations. The conception of the ST-combi-boxes is based on the fact that they complement one another. If you are in possession of the complete range of combi-boxes you can execute all experimental constructions possible.

Our SVS-support-system and its complete support sets will be of great use to you and will facilitate you to assemble your experimental equipment. No.: 8.000.000 and no. 8.002.000 you find after the ST-combi-boxes.

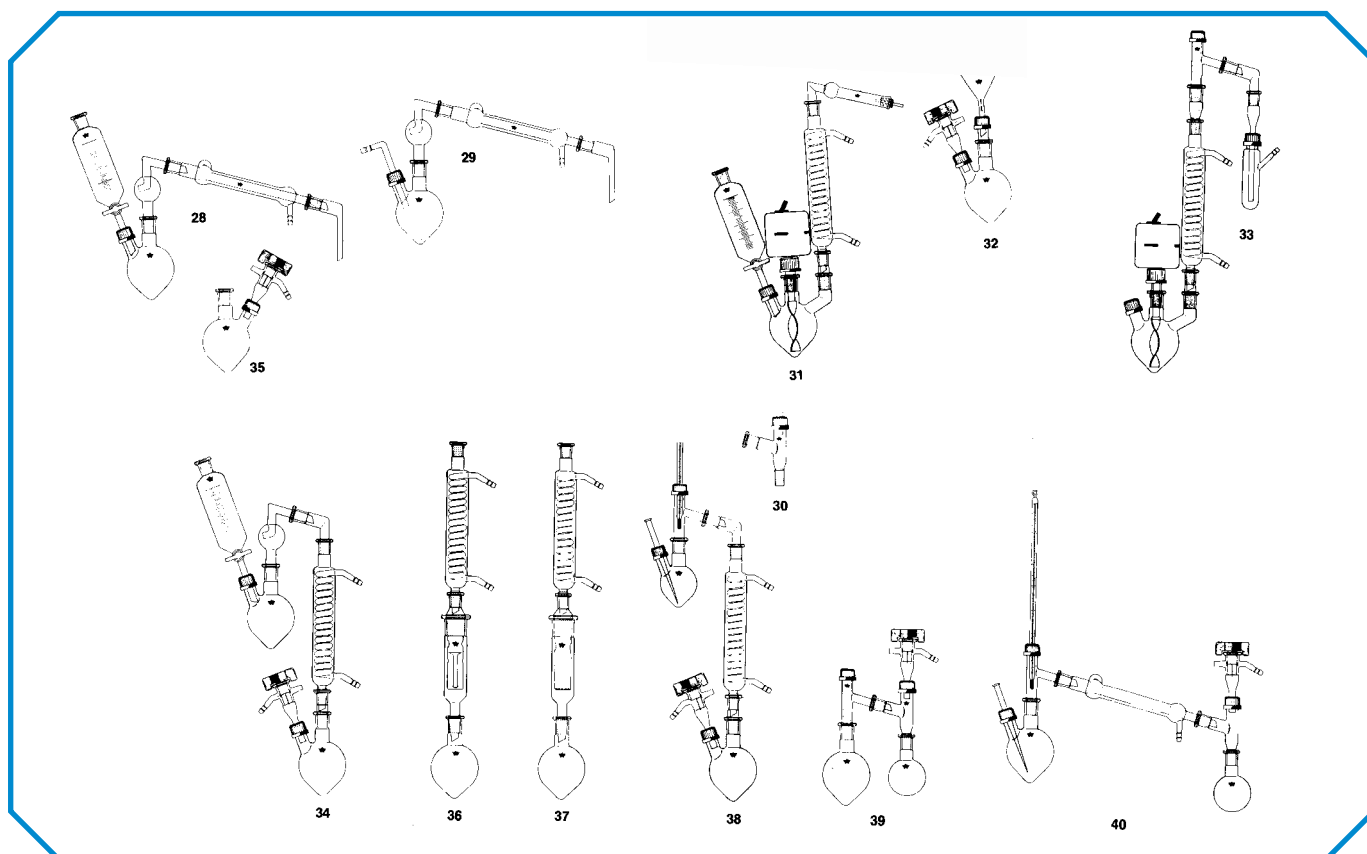
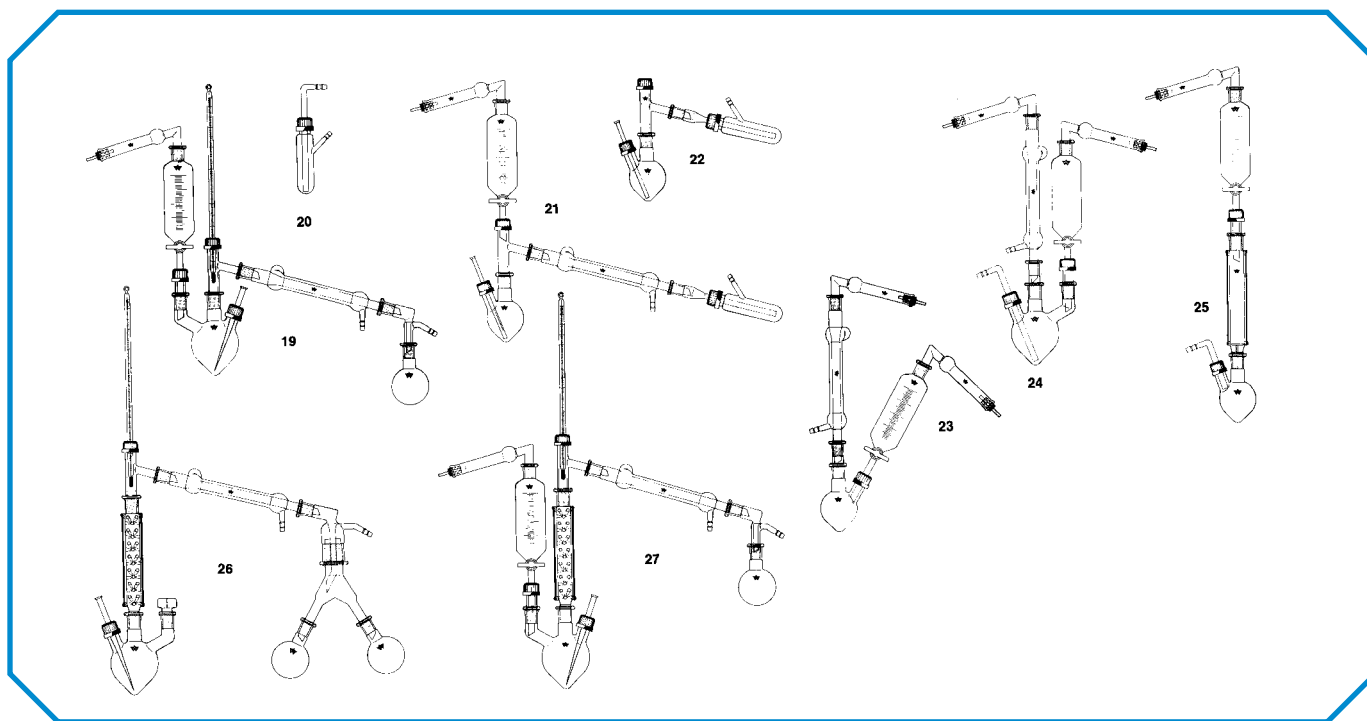


ST-Combi-Box no. 11.000.

- 1 Distillation
- 2 Reaction with gas production
- 3 Heating on the reflux
- 4 Separating funnel
- 5 Distillation
- 6 Recovery of solvents
- 7 Heating on the reflux and addition of material
- 8 Fractionated distillation

ST-Combi-Box no. 11.000 and no. 12.000.

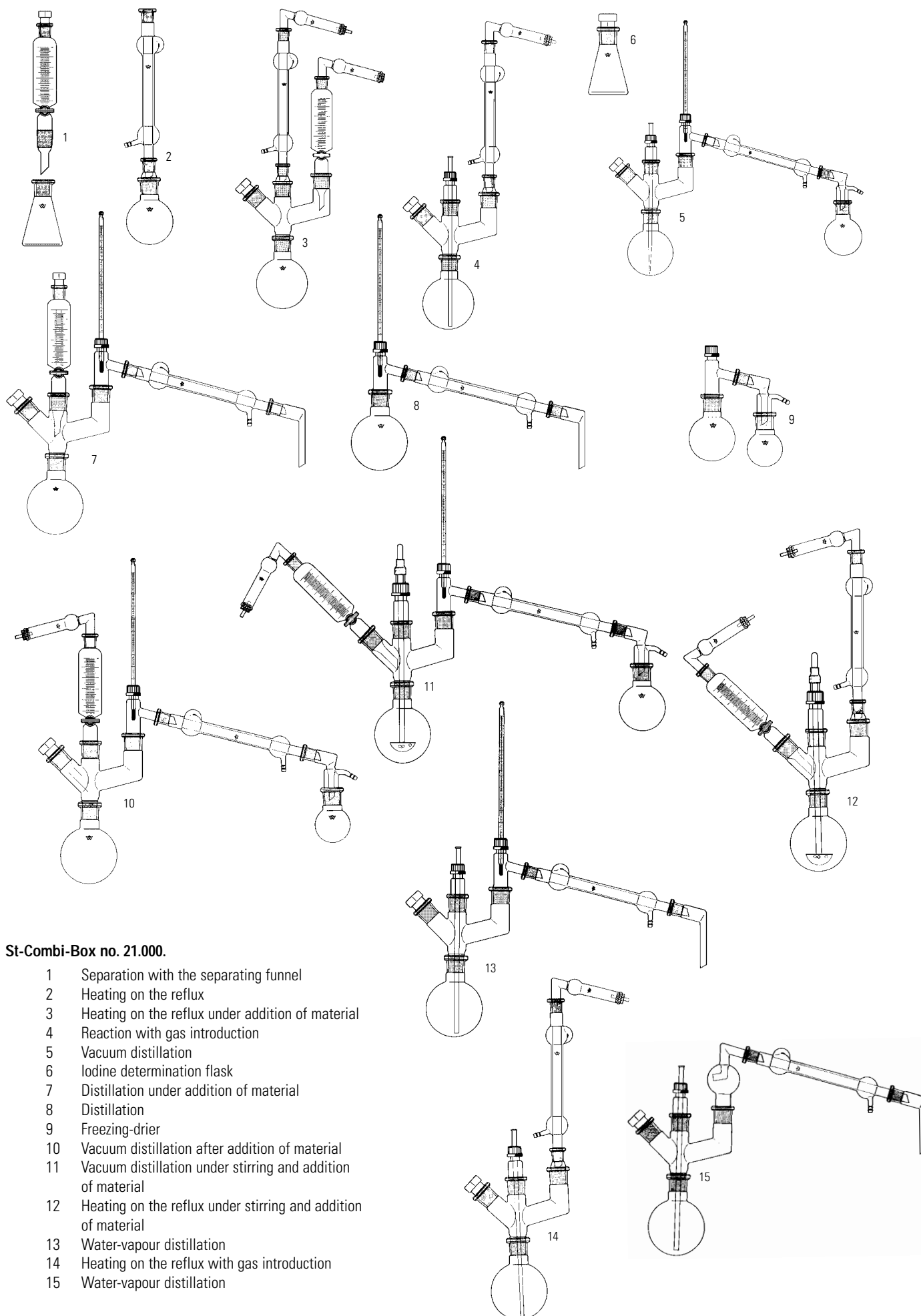
- 9 Heating on the reflux under addition of material
- 10 Gas production
- 11 Fractionated vacuum distillation
- 12 Gas washing
- 13 Water-vapour distillation
- 14 Freezing-drier
- 15 Vacuum distillation
- 16 Distillation in vacuum after addition of material
- 17 Distillation under addition of material
- 18 Reaction with gas introduction


ST-Combi-Boxes no. 11.000, 12.000, 13.000.

- 19 Distillation in vacuum after addition of material
- 20 Gas washing
- 21 Nitrogen determination acc. to Kjeldahl
- 22 Gas flow reaction
- 23 Heating on the reflux under addition of material
- 24 Heating on the reflux under inert gas atmosphere and addition of material
- 25 Chromatography columns
- 26 Fractionated rectification
- 27 Rectification in vacuum

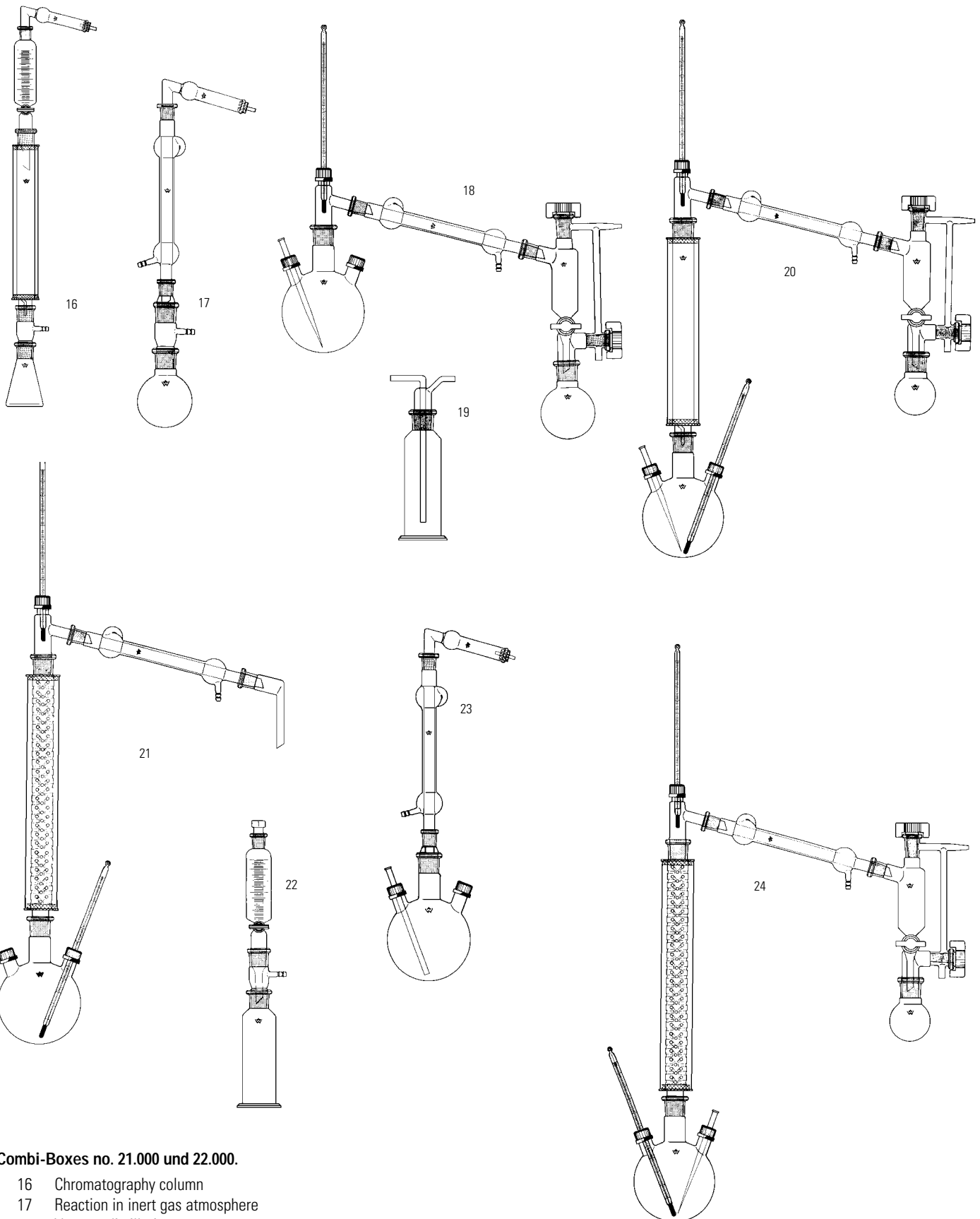
ST-Combi-Boxes no. 11., 12., 13., 14., 15.000.

- 28 Nitrogen determination acc. to Kjeldahl
- 29 Water-vapour distillation
- 30 Receiver adapter, with vacuum connection
- 31 Heating on the reflux under stirring and addition of material
- 32 Filtration
- 33 Stirring on the reflux with gas absorption
- 34 Vacuum distillation
- 35 Intermediate receiver adapter with vacuum connection
- 36 Extraction of liquids
- 37 Extraction of solid material
- 38 Vacuum distillation
- 39 Freezing-drier
- 40 Vacuum distillation

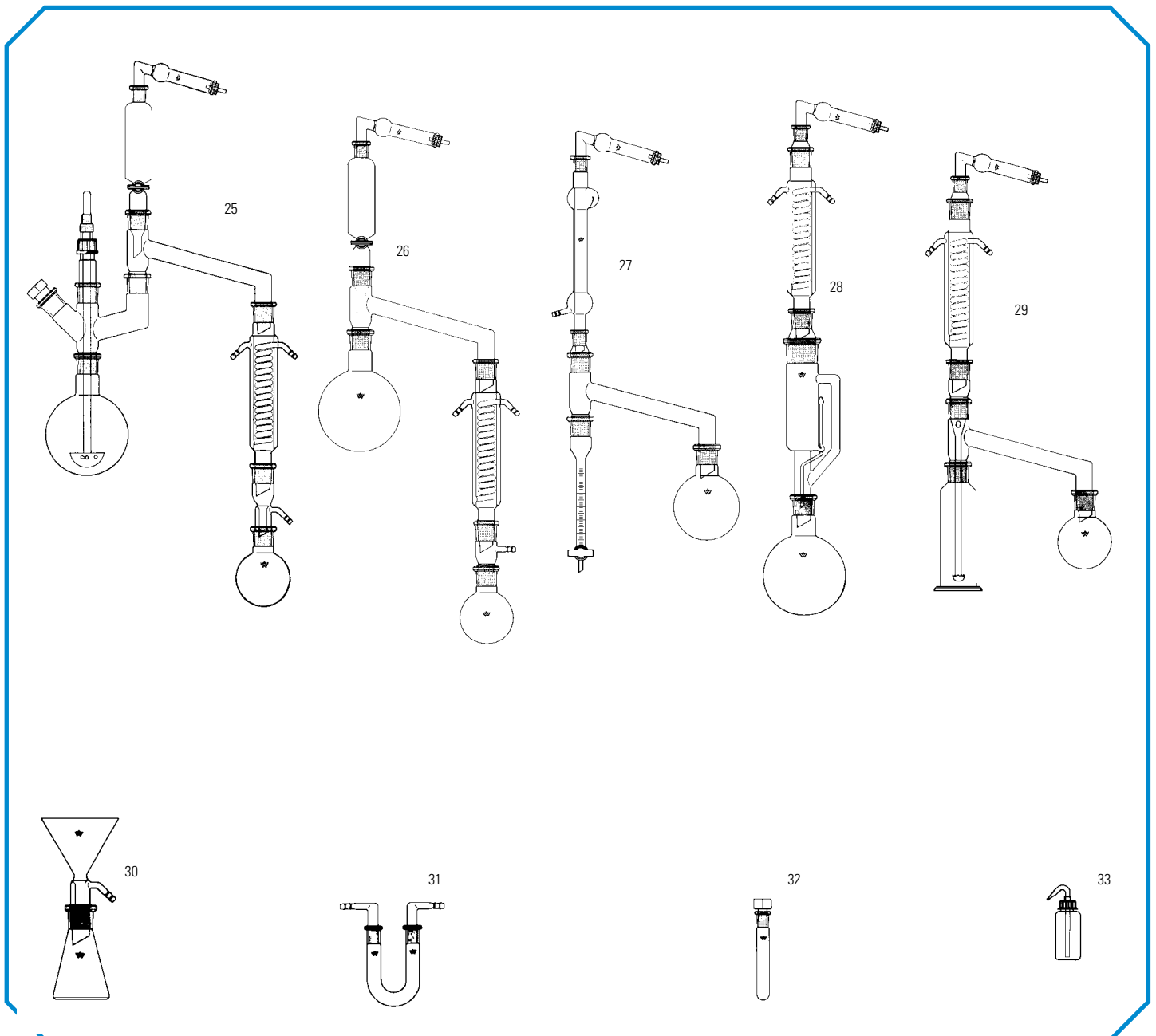


St-Combi-Box no. 21.000.

- 1 Separation with the separating funnel
- 2 Heating on the reflux
- 3 Heating on the reflux under addition of material
- 4 Reaction with gas introduction
- 5 Vacuum distillation
- 6 Iodine determination flask
- 7 Distillation under addition of material
- 8 Distillation
- 9 Freezing-drier
- 10 Vacuum distillation after addition of material
- 11 Vacuum distillation under stirring and addition of material
- 12 Heating on the reflux under stirring and addition of material
- 13 Water-vapour distillation
- 14 Heating on the reflux with gas introduction
- 15 Water-vapour distillation


ST-Combi-Boxes no. 21.000 und 22.000.

- 16 Chromatography column
- 17 Reaction in inert gas atmosphere
- 18 Vacuum distillation
- 19 Gas washing bottle
- 20 Fractionated vacuum distillation
- 21 Fractionated distillation
- 22 Gas generator
- 23 Reaction with gas introduction
- 24 Fractionated vacuum distillation

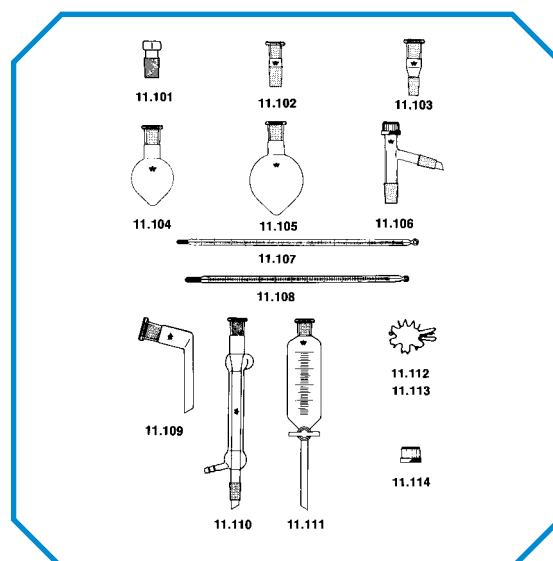


ST-Combi-Boxes no. 21., 22., 23., 24.000.

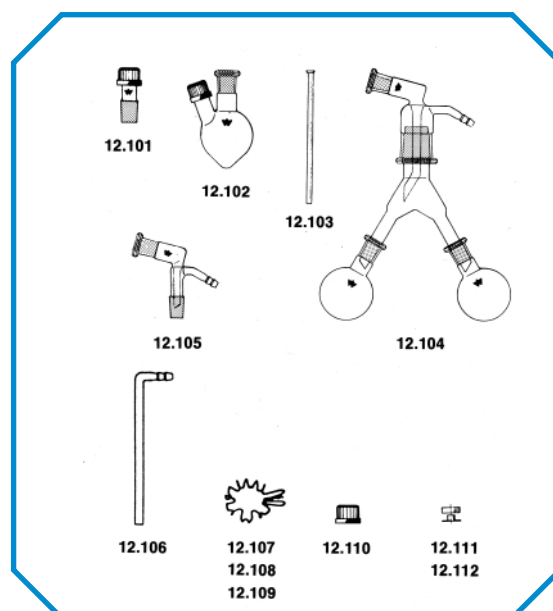
- 25 Vacuum distillation under stirring after addition of material
- 26 Vacuum distillation after addition of material
- 27 Water determination
- 28 Extraction according to Soxhlet
- 29 Extraction of liquids
- 30 Filtration
- 31 Absorption tube
- 32 Test tube
- 33 Wash bottles

ST-Combi-Box "Semi-Mikro" 11, packed in foam stuff bed and cardboard-box.

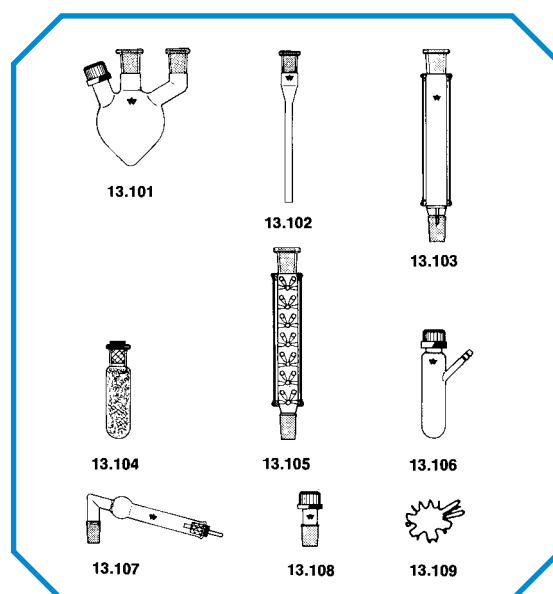
Type	
Complete	11.000
Spare parts:	
1 Hollow-stopper ST 14/23	11.101
1 Reduction adapter ST 19/26-ST 14/23	11.102
1 Expansions adapter ST 14/23-ST 19/26	11.103
1 Flask, pear shaped, 25 ml, ST 19/26	11.104
1 Flask, pear shaped, 50 ml, ST 19/26	11.105
1 Recovery head, ST 19/26-GL 18/6-ST 14/23	11.106
1 Thermometer, solid stem, -10 +250 °C: 1 °C	11.107
1 Thermometer, solid stem, -10 +360 °C: 1 °C	11.108
1 Delivery adapter, ST 14/23	11.109
1 Condenser, Liebig, 160 mm, with 2 ST 14/23	11.110
1 Dropping funnel, cylindrical, graduated 50 ml, ST 14/23	11.111
5 Clips for joints, ST 14/23	11.112
3 Clips for joints, ST 19/26	11.113
1 Screw cap GL 18, top closed	11.114


ST-Combi-Box "Semi-Mikro" 12, packed in foam stuff bed and cardboard-box.

Type	
Complete	12.000
Spare parts:	
1 Screw-thread, with cone ST 19/26-GL 18/8	12.101
1 Flask, pear shaped, 50 ml, center neck ST 19/26, side neck angled with screw-thread GL 18/8	12.102
2 Air leak tubes, O. D. 8 mm	12.103
1 Distilling receiver, Bredt, complete with adapter ST 14/23-ST 29/32, distributor ST 29/32-4 ST 14/23,	12.104
4 flasks, round bottom 25 ml-ST 14/23	
1 Receiver adapter, bent, with vacuum connection and drip tip, 2 ST 14/23	12.105
2 Inlet tubes at 90 °, with serrated hose connector, O. D. 8 mm	12.106
4 Clips for joints, ST 14/23	12.107
2 Clips for joints, ST 19/26	12.108
2 Clips for joints, ST 29/32	12.109
1 Screw cap GL 18, top closed	12.110
10 Gaskets, Silicone rubber, with PTFE washers 16 x 6 for GL 18	12.111
10 Gaskets, Silicone rubber, with PTFE washers 16 x 8 for GL 18	12.112

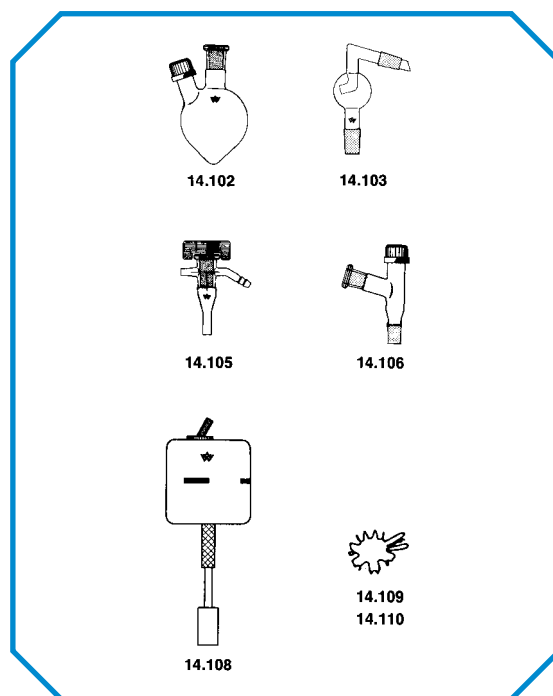

ST-Combi-Box "Semi-Mikro" 13, packed in foam stuff bed and cardboard-box.

Type	
Complete	13.000
Spare parts:	
1 Flask, pear shaped, 100 ml, center neck ST 19/26, side neck angled with screw-thread GL 18/8, side neck parallel ST 14/23	13.101
1 Inlet tube ST 14/23, O. D. 8 mm	13.102
1 Fractionating columns, Hempel, 200 mm, 2 ST 19/26 (usable also as chromatographic columns)	13.103
1 Test tube, with glass rings, Raschig 4 x 4 mm	13.104
1 Fractionating columns, Vigreux, 300 mm, 2 ST 19/26	13.105
1 Receiver tubes with serrated hose connector and screw-thread GL 18/8	13.106
2 Drying tube ST 14/23	13.107
1 Screw-threads, with cone ST 19/26-GL 18/8	13.108
5 Clips for joints, ST 14/23	13.109
3 Clips for joints, ST 19/26	13.110

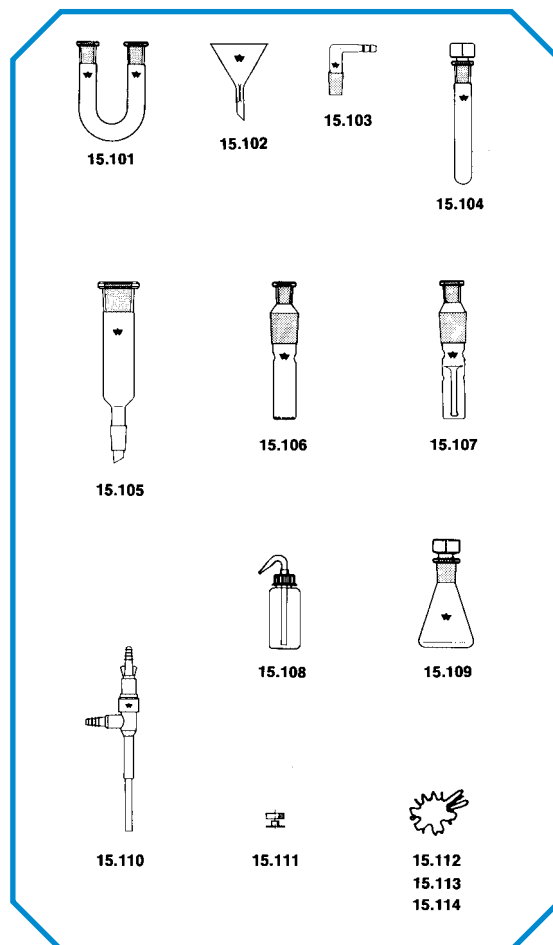



ST-Combi-Box "Semi-Mikro" 14, packed in foam stuff bed and cardboard-box.

Type	
Complete	14.000
Spare parts:	
1 Flask, pear shaped 100 ml, ST 19/26	14.101
1 Flask, pear shaped 100 ml, center neck ST 19/26, side neck angled with screw-thread GL 18/8	14.102
1 Splash head, bent, with ST 19/26-ST 14/23	14.103
1 Bend 105°, 2 ST 14/23	14.104
1 Vacuum-stopcock, bore of plug 4 mm, tube O. D. 8 mm	14.105
1 Delivery adapter, 2 ST 14/23-GL 18/8	14.106
1 Condenser, Graham, 160 mm, 2 ST 14/23	14.107
1 Stirrer motor with cable and plug, 220 V, complete with rod and stirrer paddle	14.108
4 Clips for joints, ST 14/23	14.109
4 Clips for joints, ST 19/26	14.110

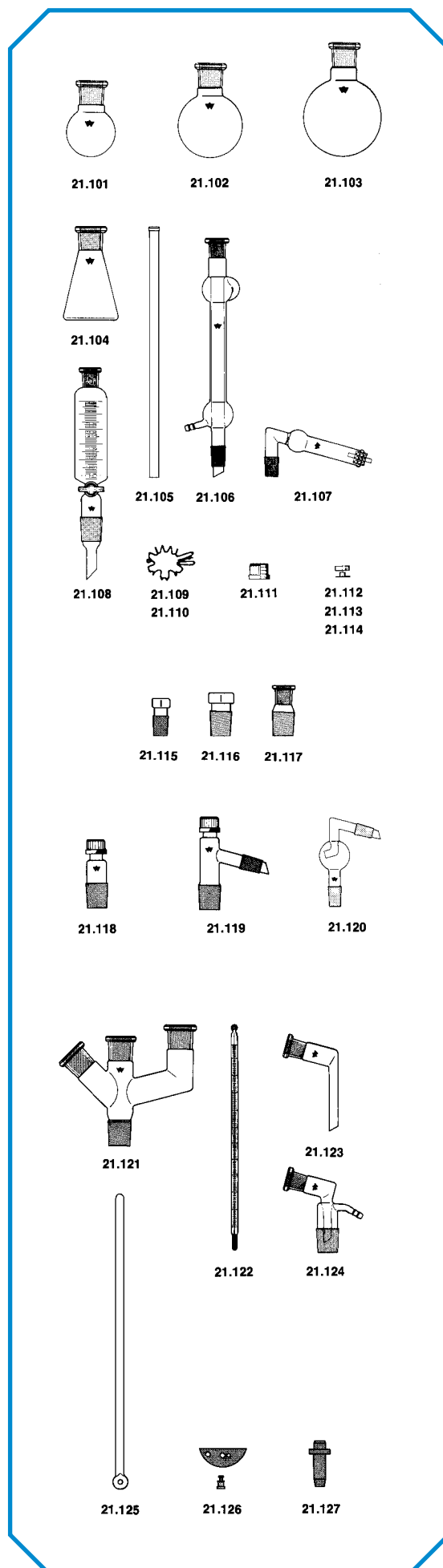

ST-Combi-Box "Semi-Mikro" 15, packed in foam stuff bed and cardboard-box.

Type	
Complete	15.000
Spare parts:	
1 U-tube, 2 ST 14/23	15.101
1 Funnel O. D. 50 mm, made of polyethylene	15.102
2 Suction tube, bent ST 14/23	15.103
2 Test tubes 17 x 130 mm, with hollow stoppers ST 14/23	15.104
1 Extractor acc. to Antlinger, ST 19/26-ST 29/32	15.105
1 Extractor insert for solid materials, ST 29/32-ST 14/23	15.106
1 Extractor, using lighter solvents, ST 29/32-ST 14/23	15.107
1 Wash bottle 100 ml, made of polyethylene	15.108
1 Erlenmeyer, flask 100 ml, with hollow stopper ST 19/26	15.109
1 Filter pump with built-in safety valve made of polypropylene	15.110
2 Gaskets, Silicone rubber, with PTFE washers 16/6 für GL 18	15.111
4 Clips for joints, ST 14/23	15.112
4 Clips for joints, ST 19/26	15.113
2 Clips for joints, ST 29/32	15.114



ST-Combi-Box "Makro" 21, packed in 2 foam stuff beds with cardboard-box.

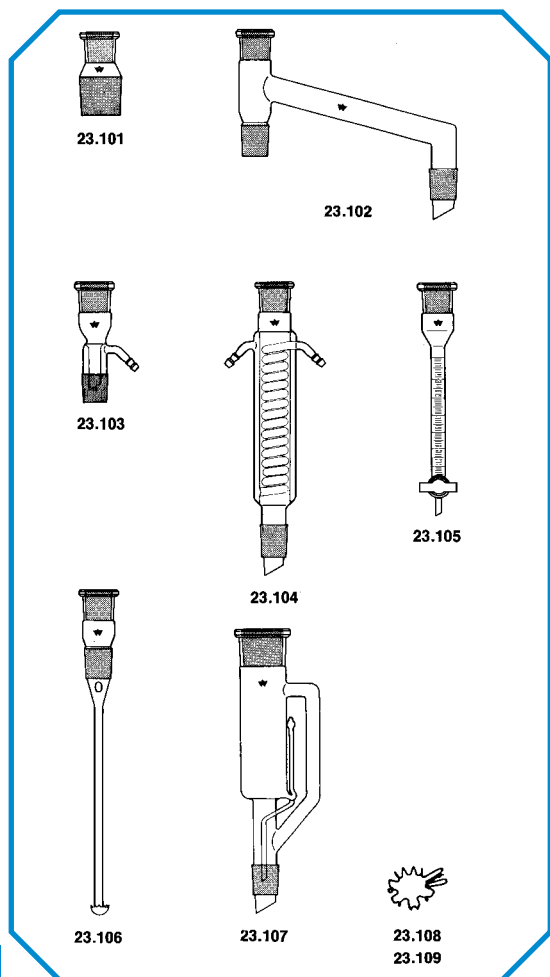
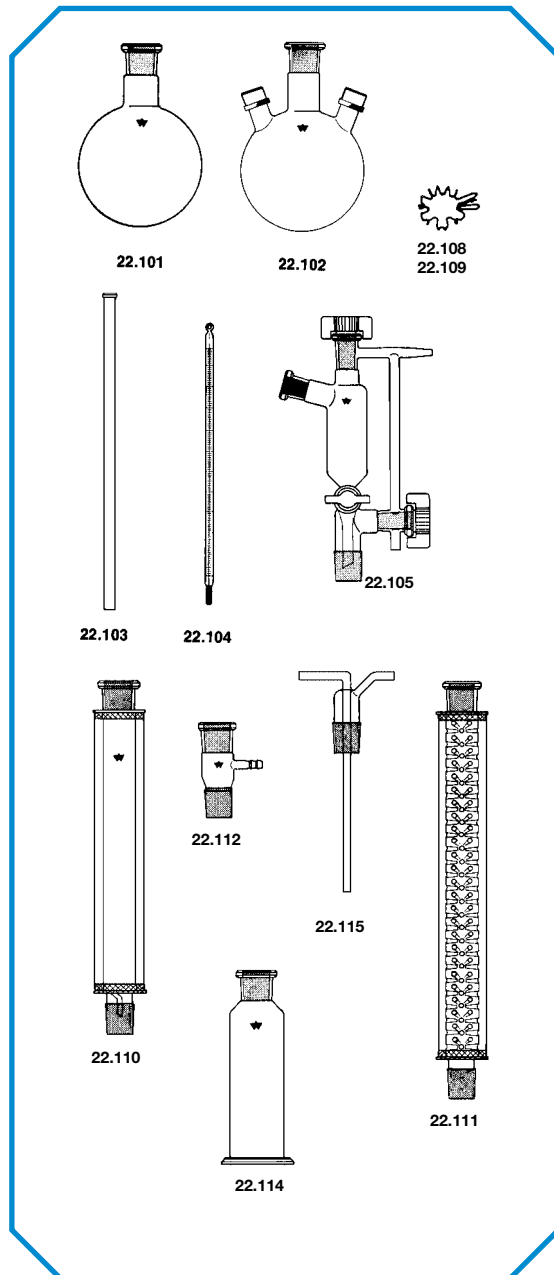
Type	
Complete	21.000
Spare parts:	
1 Flask, round bottom, 100 ml, ST 29/32	21.101
1 Flask, round bottom, 250 ml, ST 29/32	21.102
1 Flask, round bottom, 500 ml, ST 29/32	21.103
1 Erlenmeyer flask, 200 ml, ST 29/32	21.104
2 Air leak tube, O. D. 8 mm	21.105
1 Condenser, Liebig, 200 mm, with 2 ST 19/26	21.106
1 Drying tube ST 19/26	21.107
1 Dropping funnel, cylindrical, graduated, 100 ml, ST 29/32-ST 19/26	21.108
6 Clips for joints, ST 19/26	21.109
10 Clips for joints, ST 29/32	21.110
1 Screw cap GL 18, top closed	21.111
10 Gaskets, Silicone rubber, with PTFE washers 16/6 für GL 18	21.112
10 Gaskets, Silicone rubber, with PTFE washers 16/8 für GL 25	21.113
10 Gaskets, Silicone rubber, with PTFE washers 22/8 für GL 25	21.114
1 Hollow-stoppers ST 19/26	21.115
1 Hollow-stoppers ST 29/32	21.116
1 Reduction adapter ST 29/32-ST 19/26	21.117
1 Screw-thread with cone ST 29/32-GL 25/8	21.118
1 Delivery adapter ST 29/32-GL 18/6-ST 19/26	21.119
1 Splash head, bent, ST 29/32-ST 19/26	21.120
1 Multiple adapter, 3 necks, 4 ST 29/32	21.121
1 Thermometer, solid stem, -10 +250°C: 1°C	21.122
1 Delivery adapter, bent, ST 19/26	21.123
1 Receiver adapter, bent with vacuum connection and drip tip, ST 19/26-ST 29/32	21.124
1 Stirrer shaft, 7-8 mm O. D., suitable for use PTFE-stirring blade, with PTFE-toggle	21.125
1 PTFE-stirrer blade, 50 x 24 mm	21.126
1 Insert, made of polypropylene 8 mm i. D., for stirrer shaft, with rubber tubing and gasket, silicone rubber, with PTFE washers 22/12 - GL 25	21.127





ST-Combi-Box "Makro" 22, packed in 2 foam stuff beds with cardboard-box.

Type	
Complete	22.000
Spare parts:	
1 Flask, round bottom, 1000 ml, ST 29/32	22.101
1 Flask, with 2 side necks, 1000 ml, center neck ST 29/32, 2 side necks angled with screw-thread GL 18/6-GL 18/8	22.102
2 Air leak tubes, O. D. 8 mm	22.103
1 Thermometer, solid stem, -10 +250 °C: 1 °C	22.104
1 Intermediate receivers, Anschütz-Thiele, oblique adapter, ungraduated ST 19/26-ST 29/32	22.105
2 Clips for joints, ST 19/32	22.108
2 Clips for joints, ST 29/32	22.109
1 Fractionating columns, Hempel, 300 mm, 2 ST 29/32	22.110
1 Fractionating columns, Vigreux 400 mm, 2 ST 29/32	22.111
1 Delivery adapter, straight with suction tube, 2 ST 29/32	22.112
1 Bottle, 250 ml, ST 29/32	22.114
1 Gas washing head, ST 29/32	22.115

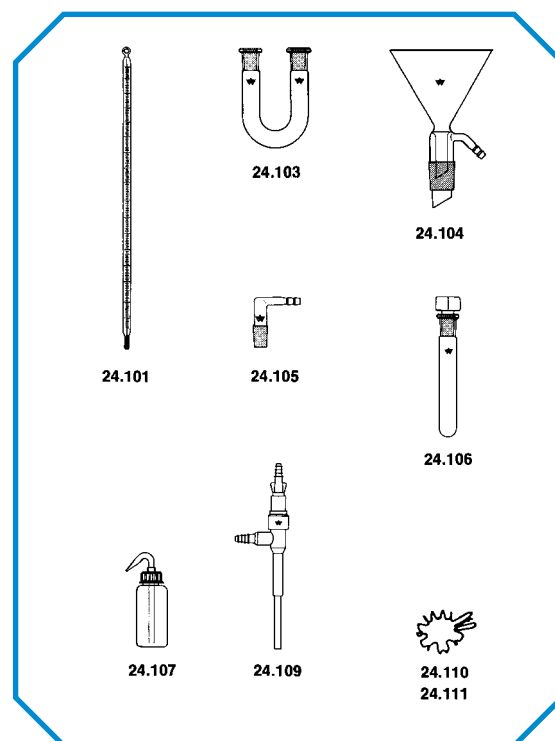


ST-Combi-Box "Makro" 23, packed in 2 foam stuff beds with cardboard-box.

Type	
Complete	23.000
Spare parts:	
1 Reduction adapter, ST 45/40-ST 29/32	23.101
1 Distilling links, 2 ST 29/32	23.102
1 Receiver adapter, straight, with vacuum connection and drip-tip, 2 ST 29/32	23.103
1 Jacketed coil condenser, 250 mm, 2 ST 29/32	23.104
1 Measuring tube with ST-stopcock, graduated, 10 ml: 0,1, ST 29/32	23.105
1 Distributing tube, 2 ST 29/32	23.106
1 Extractor acc. to Soxhlet, ST 29/32-ST 45/40 (for extraction thimbles 94 x 33 mm)	23.107
4 Clips for joints, ST 29/32	23.108
1 Clips for joints, ST 45/40	23.109

ST-Combi-Box "Makro" 24, packed in foam stuff bed with cardboard-box.

Type	
Complete	24.000
Spare parts:	
1 Thermometer, solid stem, -10 +360 °C: 1 °C	24.101
1 U-tube, 2 ST 14/23	24.103
1 Funnel with ST 29/32, 60 mm O. D., with vacuum connection and drip tip	24.104
2 Suction tube, bent, ST 14/23	24.105
2 Test tubes 17 x 130 mm, with hollow stopper ST 14/23	24.106
1 Wash bottle 100 ml, made of polyethylene	24.107
1 Filter pump with built-in valve, made of polyethylene	24.109
3 Clips for joints, ST 14/23	24.110
2 Clips for joints, ST 29/32	24.111



SVS-Boxes

SVS-Combi-Box.

The increasing importance of chemistry for the everyday-life has resulted in a considerable expansion of the chemistry lessons in all types of schools (secondary levels I+II) during the last 20 years. Thus the subject-matter has increased, so that it can only be mastered by means of well co-ordinated systems of instruction.

We believe that, with our SVS-combi-box, we have found an optimal solution for the instruction in chemistry and, according to the sales experience of the last years and the positiv echo of the teachers, we feel confirmed in our opinion. For the display of the apparatuses a handbook in form of a ring-book is available for the experimental instruction in chemistry.

Experimental book contains on the one hand the didactic treatment of an experiment, as well as indications for the methodical execution and of the industrial safety directions, and on the other hand it gives information about the theoretical basis of the reaction.

The didactic instructions in the experiment card index for the teachers are completed by sound aims of learning and are replaced by corresponding questions on the work sheet of the pupil.

The teacher is offered a card index of experiments which is combined with corresponding work sheets for the pupils and which, without exception, meets the demands of the Ministries of Education for more practice of the pupils.



The present omnibus volume which contains approximately 120 experiments was created by practical men for the practice. The following points are characteristic to this volume:

- Didactically selected and exhaustively described experiments for the teachers.
- With didactic remarks.
- With formulated aims of learning.
- Indication of the results of the tasks in the text for the teachers only.
- Closely coupled with own experiments for the pupil.
- With observation and transfer tasks for the pupil.

Textbook for the experimental chemistry instruction – complete card index of experiments, as well as corresponding work sheet for pupils per experiment.

Experiment with the SVS-combi-box, by Prof. Dr. E. Höfling, Prof. Dr. H. Menrad, Stud.-Dir. W. Obermeyer.

Type	8.100.000
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