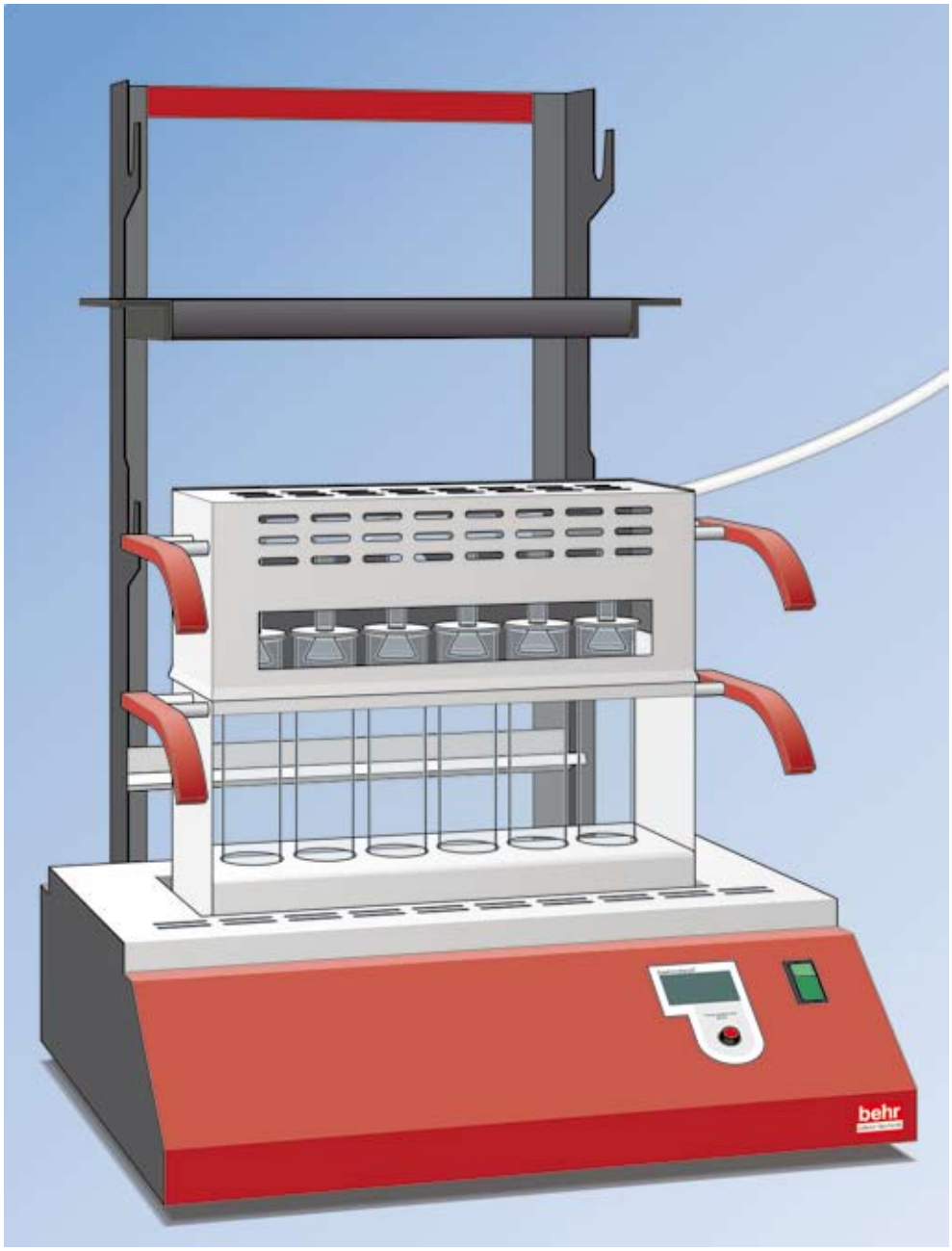
InKjel P
Digestion Unit



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User‘s Manual

behr
Labor-Technik

Please read this operating manual carefully before starting use of your new InKjel P digestion unit!

The manual introduces you to the use of the apparatus with clear and simple guidance.

For reasons of safety in use of the system, please follow all safety warnings carefully. These are designated in the text by a warning symbol ⚠.

Additional information, which is useful and important for an understanding of the manner of operation of the apparatus, is denoted by a stripe in the margin.

We wish you success in the use of the

behr InKjel P digestion unit

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Safety Advice

Danger of burns! The digestion tubes and the heating slot get hot!
Never touch the hot glasses, the sample rack, the heating slot or the exhaust tubes with the bare hands.

Danger of electric shock!
Always install all cables in such a way that they cannot come into contact with the hot zone of the heating cavity; they could otherwise smoulder through! Always ensure that no liquids can come into contact with cable connections or the interior of device! Always withdraw the mains plug before opening the unit! Repairs on electrical, electronic and mechanical modules of this appliance may be performed only by authorized specialist staff.

Danger: glass can break and cause injury! In working with glass components, observe all appropriate safety precautions.

Be careful in working with corrosive substances! Follow the safety guidance in the pertinent Safety Data Sheets.

Hazard from toxic gases!
During the Kjeldahl digestion, vapours of sulfuric acid (and other toxic gases) are set free. They could harm your health and damage the apparatus and your lab equipment.
When performing digesting operations that can set free toxic or corrosive vapours, always use a scrubber system! Place the digester and the scrubber in a fume cupboard.

Never operate the digestion unit in wet, humid or explosion-endangered areas!
Maximum air humidity = 80%
Maximum temperature = 40° C

Contents

Scope of supply

Please check the contents of the pack for completeness and freedom from damage immediately upon receipt.

Claims resulting from damage during transportation which is externally apparent must be lodged immediately with the carrier (i.e., the post/mail service, the railway administration, the freight organization, etc.) - see the label on the packaging.

In case of damage which is not apparent from outside („concealed transportation damage“), please contact the behr after-sales service immediately upon discovery of the damage. The same applies in the case of any other complaints.
Address:

behr Labor-Technik GmbH
Spangerstrasse 8
D-40599 Düsseldorf, Germany
Telephone: (+49 211) 7 48 47 17
Telefax: (+49 211) 7 48 47 48
e-mail: info@behr-labor.com

Parts List

- InKjel base unit
- Mounting rack
- 4 knurled screws and 4 washers
- Sample rack
- Exhaust collector with suction hose
- Drip pan
- Sample vessels, version-dependent:
  6 x 250 ml,
  12 x 250 ml,
  4 x 500 ml or
  4 x 750 ml

Option:

- behrosog® acid-fume extractor

Correct use of the InKjel P

The behr InKjel P digestion unit is used for heating samples in the appropriate digestion tubes. It is used, in particular, for quantitation of total nitrogen using the Kjeldahl digestion method. Only use the appropriate type of digestion tubes.

Please under all circumstances note and adhere to the following items, in order to ensure the greatest possible operating safety and reliability and the longest possible service-life for your digestion unit:

- **Always operate the appliance in accordance with the instructions and data contained in this operating manual!**
- **Modifications to the appliance will result in forfeit of any guarantee claims and can result in serious deficiencies in the unit‘s operating safety and reliability.**
- **During the Kjeldahl digestion, sulfuric acid vapours (and other aggressive gases) are set free. Always operate the appliance with a scrubber system (e. g. behrosog) and place the appliance and the scrubber in a fume cupboard.**
- **Never expose the digestion unit to aggressive vapours, such as fumes from acids, alkalis or solvents!**

Always operate the behr InKjel P digestion unit under normal laboratory conditions.

Warranty Conditions

We warrant that all our items are free from defects in material and workmanship and that they will function well under the condition that they are handled according to the art of the trade. The period of warranty is one (1) year after the date of delivery. This warranty does not extend to the breaking of glass parts and any surface defects which may occur when items are being used. Our liability under this warranty is limited to the repair or replacement, at our expense, of any defective item or part if the damage is due to our fault. Any further claims, especially for consequential damages, are excluded. The respective item should be returned to our factory freight prepaid.

Moreover we refer to our general terms of sale and delivery resp. to the general terms of delivery and capacity of the electrical manufacturing industry.

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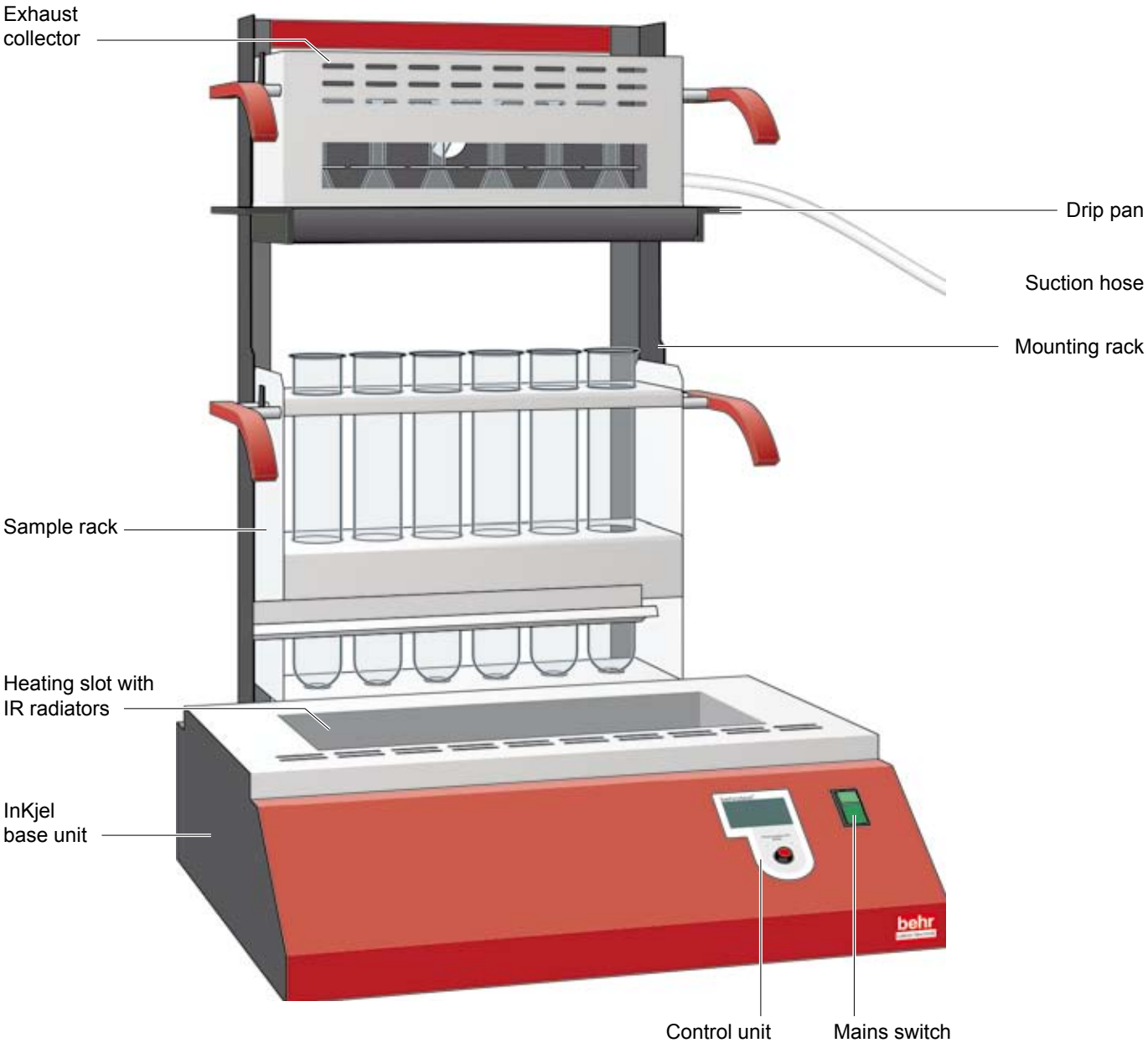
Overview of the behr InKjel P



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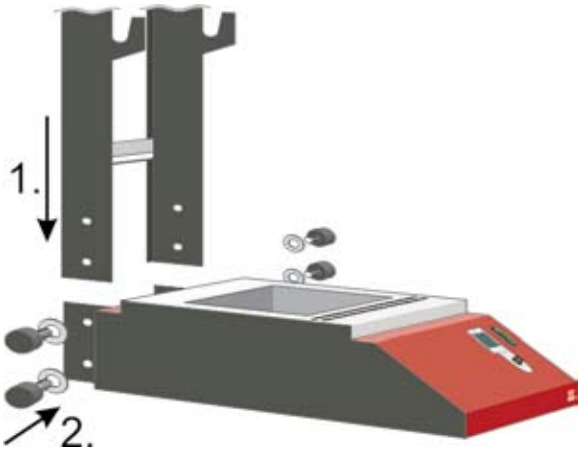
Setting Up the InKjel P

Danger of electric shock!
Always install all cables in such a way that they cannot come into contact with the hot zone of the heating cavity; they could otherwise smoulder through! Always ensure that no liquids can come into contact with cable connections or the interior of device! Always withdraw the mains plug before opening the unit! Repairs on electrical, electronic and mechanical modules of this appliance may be performed only by authorized specialist staff.

Fixing the mounting rack

- Place the base unit on a level horizontal surface in such a way tha the mounting brackets point to the rear.
- Insert the mounting rack between the mounting brackets from above. Do not push them down to the bottom but align the lower edges of the rails with the lower edges of the mounting brackets.
- Place a washer on each of the knurled screws, and screw the mounting rack to the mounting brackets with the knurled screws.



Inserting the Equipment

- Hang the sample rack into the lower hooks of the mounting rack.

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- Insert the drip pan into the slots in the mounting rack from the front side. Push the drip pan rearwards as far as it will go.

- Connect the suction hose to the nozzle on the back of the exhaust collector.
- Connect the other end of the suction hose to an appropriate scrubbe device (e.g. a behrosog scrubber). See also the instruction manual of the scrubber.
- Hang the exhaust collector into the upper hooks of the mounting rack.

Connecting to Mains Power

- Make sure that your local mains voltage corresponds to the voltage specified on the instrument label of your InKjel P.
- Make sure the mains switch on the front of the device is in 0 position.
- Plug the InKjel P power cable into a grounded mains socket.

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Switching the Device On

Switch the mains switch on the front of the appliance to the „I“ position.

The mains switch of the behr InKjel P performs two functions. It is used, on the one hand, to switch the unit on and off. There is, in addition, a fuse integrated into the switch.

This fuse functions similarly to a miniature circuit-breaker (m.c.b.) familiar from your household wiring system. It interrupts the electrical circuit if an overcurrent occurs.

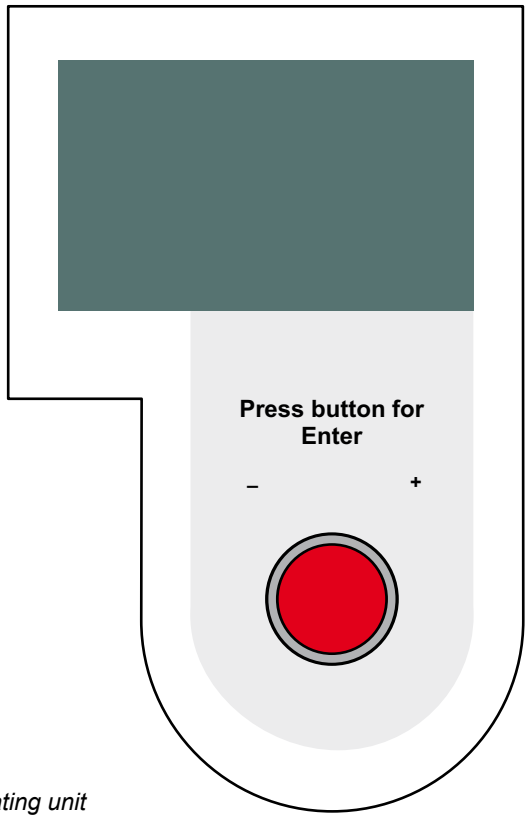
Since it is necessary to pretension a spring for this safety function, the mains switch on the digestor requires greater force for switching on than a conventional mains switch.

An initialization message will appear briefly on the displayl when the unit is switched on. The start menu appears once the initialization routine has been completed:

The device is now ready for operation.

Don‘t wonder if the start menu appears in German. This is the factory setting; you‘ll soon see how to change it (see pp. 10 / 11).

Using the InKjel P



Operating unit

The operating unit

You can program and operate your behr InKjel P quite simply using a single button. The principle is the same in all cases:

The principle remains in all cases the same:

Turning the knob enables you to choose an option. The currently addressable option is recognized by being highlighted with light text on a dark background.

The knob may be turned in both directions. In doing this, you will pass all possible options in the display shown and will always again find the desired option on continued turning. Try this for yourself.

The desired option is implemented by pressing on the knob.

The complete procedure of choosing by turning and implementing by pressing will henceforth simply be called “selecting”.

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The Start menu

1 If no program is running, but a starting time has been selected, the starting time is displayed here. This box is otherwise blank.
2 ***Start*** menu item: The temperature program most recently selected starts if this menu item is selected. What program this is is1 indicated at bottom left.
3 ***Preheat ON/OFF*** menu item: if this item is selected, the InKjel P will preheat with the heating power that corresponds to the heating power of the first step of the heating program currently selected. The menu item will then change to ***OFF***. Select ***OFF*** in order to switch the heating function off again.
4 The program currently selected, and the program step reached, are indicated here.
5 ***Continue*** menu item: select this menu item to access other possible settings. You can
- select another program
- write a new program
- configure the unit to your needs

Configuring the InKjel P to meet your needs

You can, in fact, use your InKjel P for analyses right now. You should, however, take a couple of minutes to perform one or two settings.

These settings can, of course, also be made or modified at a later time.

This screen will appear when the unit is switched on:

▶ Turn the operating button until the ==>> menu item is indicated and then press the button. The following menu will appear:

▶ Select the ***Geraet (Device)*** menu item.
You will then move to a menu consisting of two pages.

Select the required entry by turning the operating button if you wish to change a setting. Press the button to select the entry and set the required value by turning the button. Store the value by pressing the operating button again.

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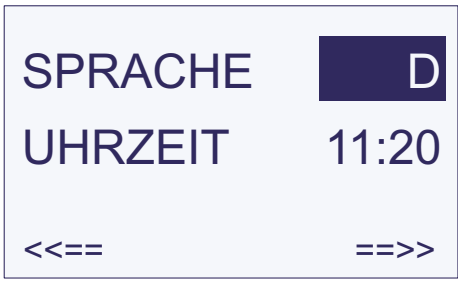
First page: Language and time

Selecting the language



Three languages are permanently programmed in the InKjel P : D (German), GB (English), F (French). A fourth language can be added as an option.

German is the default (ex-works) language. A different language can be selected using this menu.

- Select the ***Sprache (Language)*** menu item. The entry for the language will now appear on a dark background. Turn the operating button until the required language appears, and then press the button.

From this point on, all menus and messages will appear in the language you have selected.

Setting the time

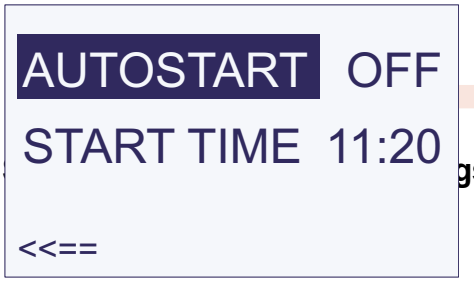
You should also set the time while you are on this page. The time is required to permit use of the InKjel P's Autostart function.

- Select the ***Time*** menu item. The first digit of the hours will then appear marked.

You can now enter the digits for the time one after the other. Turn the operating button until the correct digit appears, and then press it.

If an illogical value is entered, such as "26" for the hours or "61" for minutes, for example, the unit will reject the value and instead jump back to the first digit of the setting.

Use **==>>** to move to the next page of this menu.



The Autostart settings can be selected on this page. You can, for example, set the unit to preheat at a specified time or to start a temperature program at a specified time.

Autostart	The following possibilities can be selected here: ***Off*** - the InKjel P will only start to heat when a program is started or ***On*** is selected in the Start menu. ***On*** - as soon as it is switched on, the InKjel P will preheat with the heating power specified in the first step of the most recently selected program. ***Prg*** - the InKjel P will start the most recently selected temperature program at the ***Start time***. ***Tme*** - at the ***Start time***, the InKjel P will preheat with the heating power specified in the first step of the most recently selected program.
Start time	Starting time for ***Prg*** and ***Tme***. The value can be set digit-by-digit, as described before.
<<==	back.

Selecting **<<==** repeatedly returns the unit to the Start menu.

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Write a heating program

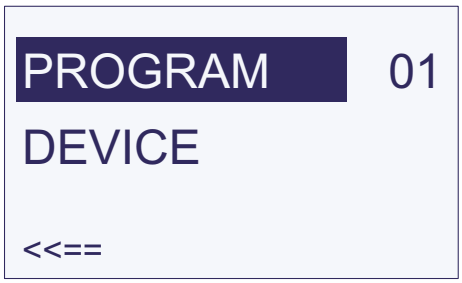
The InKjel P can be used to write up to 25 different heating programs.

A program can have up to 20 program steps. For each step you need to enter two values:

- the heating power and
- the time for which this heating power is to be maintained.

When writing a program, always note its purpose and the settings selected.

- Select **==>>** in the Start menu
- and select ***Program*** in the menu which then appears.

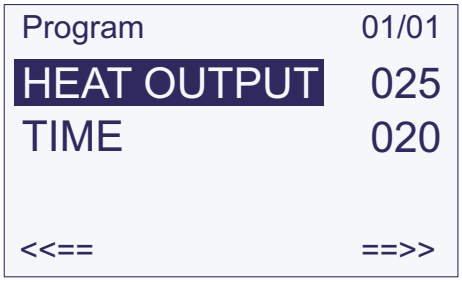


You are now on the first page of the Program menu.

- Select the entry box for the Program No.
- Select the required Program No. You should select 01 if you have not yet written any other program.

- Then select **==>>.**

You will now see for every program step a page, on which you can enter the settings for this step.



The Program No. and the Program Step No. which you are currently editing are shown in the top line. Program 07/05, for example, means the fifth step in Program No. 07.

In the lines below, specify the values for this program step:

- the ***Heat output*** in % of total output (ranging from 1 to 100),
- and the ***Time*** in minutes.

The unit will then heat at the specified percentage of total heat output for the time specified.

You can enter the values digit by digit. If you make an invalid entry (e. g. 150%), the device won't accept this entry but jump back to the first digit of this field.

When you have finished entering the data for this program step, select **==>>** to proceed to the next step.

If you want to check the previous program step again, select **<<==**. In the top line you can always see which program step you are editing.

In this way you can make up a program with up to 20 program steps. Maybe you don't want that many steps for this program. In this case, just make sure that in the steps you are not using the heat output and the time are set to zero.

When everything is finished, select **<<==** several times to go back to the start menu.

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Which program for which kind of samples?

When digesting solid samples, you want to get the samples boiling soon. When this is achieved, they should not boil too heavily, or part of the nitrogen might get lost.

So enter a high value for heat output for the first step. The time you need to enter for this step will depend on the kind of sample vessels (250-ml or 500-ml vessels), on the nature and quantity of your samples and the catalyst employed.

For the second step, use a heat output value that is just sufficient to keep the samples boiling for the rest of the time.

When digesting water or liquid samples, the water must be evaporated before the sulfuric acid will get boiling and the digestion itself starts.

So for the first program step, enter a high heat output value and a time sufficient to evaporate the water and then to get the sulfuric acid boiling.

Again, in the second step, continue heating at a lower heat output for the rest of the time.

When digesting samples that will release large quantities of gas, it may be necessary to have the sample react with the sulfuric acid in the cold at first, or to heat up slowly and cautiously.

For many kinds of sample materials we have prepared application sheets we can send you.

Processing samples

- Switch the InKjel P on (mains switch on the rear panel of the unit).

If you have selected ***Prg*** or ***Tme*** for the Autostart functions, the starting time will be shown at the top left; the target temperature will be shown in this position if the unit is preheating.

Select program

The most recently selected program is displayed in the bottom line of the Start menu. Select a different program if this is not the program you require now:

- Select ***continue*** **==>>**

- Select ***Program***
- and on the next page ***Program No.***
- Select the required ***Program No.***
- Return to the Start menu by selecting **<<==** repeatedly.

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Preheat digester

Danger of burns! The sample vessels and the heating cavity get hot! Never touch the hot glasses, the sample rack or the body of the heating cavity or the exhaust collector with the bare hands.

If necessary, preheat the digester.

- Select the ***ON*** menu item in the Start menu.

The device will now start to preheat with the heat output specified in the first step of the program selected. The ***ON*** menu item changes to ***OFF***.

Select ***OFF*** if you wish to abort preheating.

Inserting the samples,starting the program

Danger of burns! The sample vessels and the heating cavity get hot! Never touch the hot glasses, the sample rack or the body of the heating cavity or the exhaust collector with the bare hands. Use the handles to insert and remove the sample rack and the exhaust collector.

If you do not insert the complete set of sample vessels, the scrubber will just draw lab air since that's where it meets the least resistance. Also, condensate may drip out in the empty places, producing caustic fumes and damaging the device. Always insert the complete set of sample vessels to make sure scrubbing will work correctly.

- Place the sample rack bearing the samples in the heating cavity.
- Put the exhaust collector on top of the sample rack and switch the exhauster system on.
- Select the ***Start*** menu item in the Start menu.

The InKjel P will now process the heating program step by step.

With each step, the display will show the heat output, the time for this program step and total remaining time.

The number of the program step which is currently being run is shown at the bottom.

> The InKjel P does not react to any operation of the operating button while a program is running. The program cannot be interrupted by actuating the operating button. This is intended to prevent any inadvertent interruption or manipulation of a program while it is running.
>
> Please use the mains switch on the right of the front side if you should need to abort a digestion.

A signal is heard, and the heating system switches off, when the program has been completed.

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Finishing digestion and removal of samples

Danger of burns! The inner zone of the heating block and the sample vessels get hot!
Never touch the hot glasses or the area of the heating block around the mounting holes with the bare hands. Always remove the samples from the heating block using the sample rack and allow them to cool as described here.

Caution: there are acid condensates in the exhaust collector. They can burn you and stain the metal parts of your device.
Wash your hands with water after contact with the condensate. Insert the drip tray after inserting the exhaust collector in the mounting rack.

- Grasp the sample rack using the two red handles.
- Lift the rack carefully, together with the exhaust collector, and hang it on the lower hooks of the mounting rack.
- Leave the exhaust collector on the sample rack until the samples have cooled down.
- Once the samples have cooled, switch the exhauster system off.
- Remove the exhaust collector from the sample rack and suspend it in the upper hooks of the mounting rack.
- Insert the drip tray into the mounting rack, into the slots below the exhaust collector.

The sample rack can now be removed for further processing of the samples.

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Maintenance

Danger of electric shock!
Always ensure that no liquids can come into contact with cable connections or the interior of the unit.
Never attempt to open the unit! Repairs to electrical equipment may be performed only by specialist electricians.

Danger: glass can break and cause injury!
In working with glass components, observe all appropriate safety precautions.

Caution: there are acid condensates in the exhaust collector. They can burn you and stain the metal parts of your device.
Wash your hands with water after contact with the condensate. Insert the drip tray after inserting the exhaust collector in the mounting rack.

The housing surface of the InKjel P is low-care and largely insensitive to acids. Never use abrasive cleaning agents for cleaning of the front or rear panels.

In the drip pan rests of sulfuric acid will collect that have condensed in the exhaust collector. Clean the drip pan in regular intervals.

Cleaning the Exhaust Collector

Danger of injury in case of breakage of glass! Always adhere to your professional association's regulations when handling glass elements!

Caution: there may be sulphuric acid in the exhaust collector! It might burn you. Adhere to the current Hazardous Substances Ordinance!

If, during a digestion, the exhaust collector has been contaminated by sample components, you can easily clean it.

- Cautiously lay the exhaust collector upside down, with the nozzles pointing upwards.
- Rinse the nozzles with distilled water.
- If need be, gently apply a small bottle brush or a pipe-cleaner to clean the nozzles.

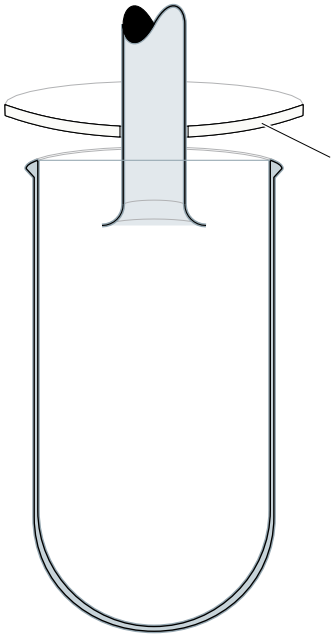
If necessary, you can dismantle the PTFE plates from the nozzles for cleaning.

- Grasp the plate at the sides and bend it until you can pull it off the nozzle.

  Grasp the plates from the middle of the exhaust collector; there‘s more room there for your hands than alongside the housing panel.

After cleaning the plates, put them on the nozzles again, and bend them back into the proper shape.
The PTFE plates are slightly convex. **The convex side must point downwards**, towards the digestion vessel.

Bend the PTFE plates in order to take them out (and bend them back in form afterwards!)



Convex side of the PTFE plate must point downwards, to the sample vessel

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Changing the Exhaust Collector Tube

The exhaust collector of the InKjel P consists of a glass collector tube that conducts the exhaust gas from the sample vessels to the suction hose, and the steel housing. If the glassware part should get broken you need not replace the exchaust collector as a whole but just insert a new collector tube.

Danger of injury in case of breakage of glass! Always adhere to your professional association's regulations when handling glass elements! The new collector tube comes ready with the PTFE plates mounted already, so do not try to remove the PTFE plates from the broken tube.

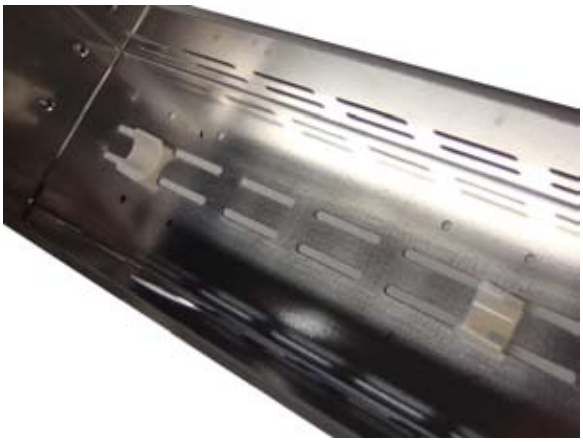
Caution: there may be sulphuric acid in the exhaust collector! It might burn you. Adhere to the current Hazardous Substances Ordinance!

- If it has not yet been done, rinse the exhaust collector with water to remove any residues of acid.
- Pull the suction hose off the nozzle of the exhaust collector.
- Lay the exhaust collector to the edge of the desk so one of the red handles comes to lie beneath the desk, but make sure the exhaust collector won‘t slide off the desk.

The glass collector tube is mounted to the roof of the housing with two pipe clips. Two pieces of silicone hose are inserted each between the glass tube and the housing and between the glass tube and the pipe clips, as buffers. On unscrewing the four screws holding the pipe clips, the collector tube gets free.

- Unscrew the four screws on the roof of the exhaust collector.
- Take the pipe clips and the silicone buffers off the collector tube.

- Carefully take the collector tube out of the housing. You need to tilt the collector tube to get the suction nozzle out of the gap of the housing.
- Lay two new silicone buffers out in the housing, on the places where the collector tube is to be held by the pipe clips. Depending on the size of the collector tube this may be between the outer or the other two screwholes.
- Insert the new collector tube into the housing in such a way as for the suction nozzle to go through the gap of the housing, and lay it on the silicone buffers.



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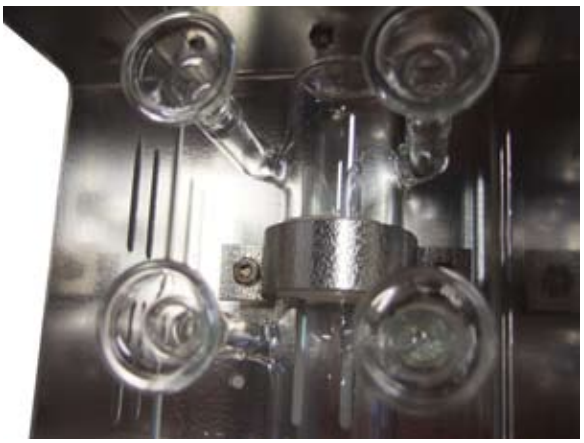
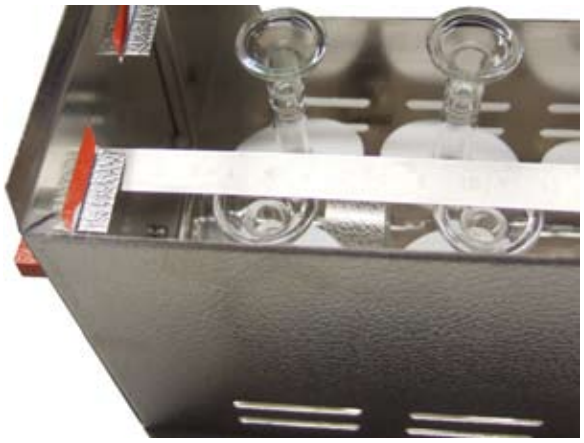
- Lay the other two silicone buffers on top of the collector tube, in the places where the pipe clips are to be screwed on.



- Insert the pipe clips on top of the new collector tube in such a way as for the screwholes to fit on the screwholes of the housing.

- Screw the pipe clips to the housing again but do not yet tighten them; first you need to align the new collector tube properly.



- Shift the new collector tube in such a way that the exhaust nozzles have the same distance from the housing on both sides.
- Now screw the pipe clips tight.

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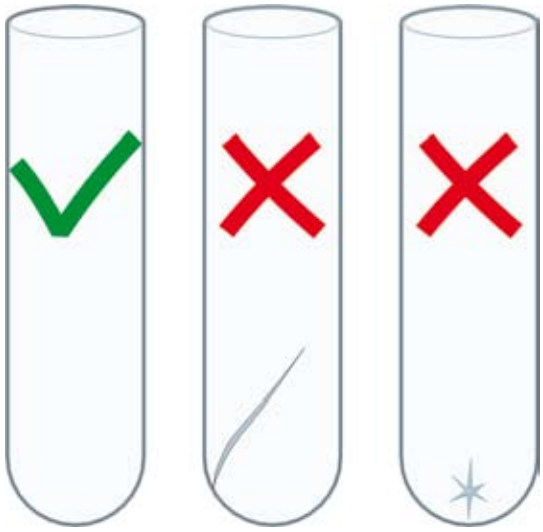
Keep your Device Working Reliably as Long as Possible

The Kjeldahl digestion produces a highly aggressive mixture of sulfuric acid vapour, sulfur dioxide and organic vapours. This gas mixture will, with time, corrode even stainless steel surfaces and make them look shabby.

Do Not Use Damaged Vessels!

Before preparing the samples, check the sample vessels. Do not use vessels that have a fissure; they might burst when heated.

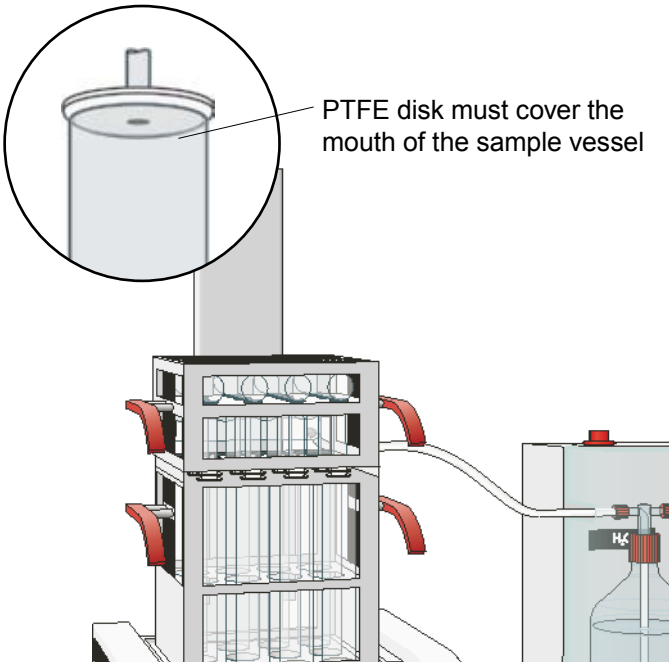


Never use vessels that have fissures

Always Use a Scrubber!

The exhaust gases coming out of a Kjeldahl digestion are corrosive; moreover they are poisonous, and they will also damage your lab equipment. So always use a scrubber system, as e. g. the behrosog 3. Fill the gas washing flasks according to the user's manual (the first one with water, the second one with diluted NaOH). Connect the suction hose to the outlet nozzle in the rear of the exhaust collector.

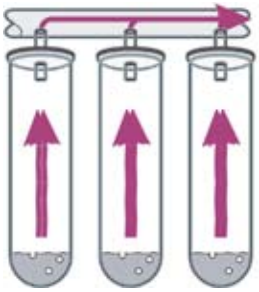
Make sure to insert the exhaust collector properly on the sample vessels. The suction nozzles must reach into the vessels; the uppermost disk on the nozzles will rest on the rim of the vessel. Adjust the suction flow rate in such a way that the white fumes are sucked off but no vacuum will arise.



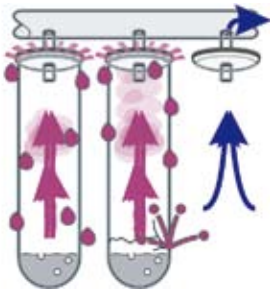
Don‘t Leave Any Places Empty!

The suction air current will always go the way of least resistance. So if you leave some sample places empty, if there is no sample vessel under the suction nozzle, the scrubber will aspirate most of its air from there. The caustic vapours coming out of the samples are not removed; instead, they will creep over the rim of the vessel. Caustic condensate may drip down from there, damaging the heating block and the sample rack. If worst comes to worst, drops may come into the gap between the vessel and the boring in the heating block, evaporating explosively and cracking the vessel. So always insert samples on all sample places; at least, insert empty sample vessels.

Samples in all places: Waste gas will be removed smoothly



Some places left free: Scrubber will draw air, gas will accumulate and come out sideways



Condensate can drip down and corrode your device

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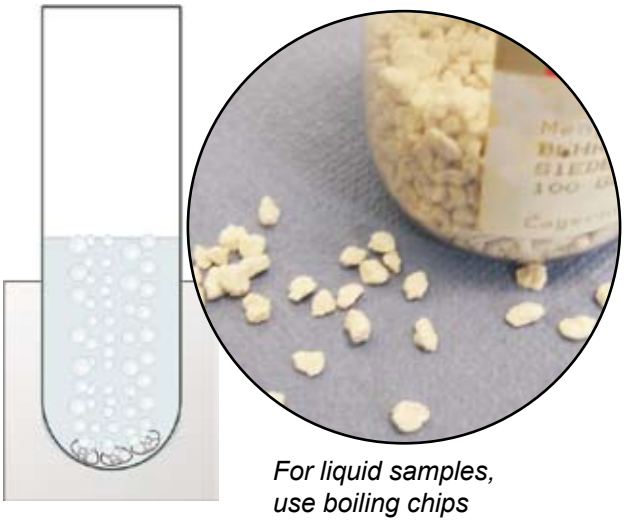
Avoid bumping!

With liquid samples, bumping may occur so that liquid will splash out of the sample. With liquid samples, add some boiling chips. Boiling chips do not contain nitrogen. Nevertheless, treat the blank in the same way as the samples.

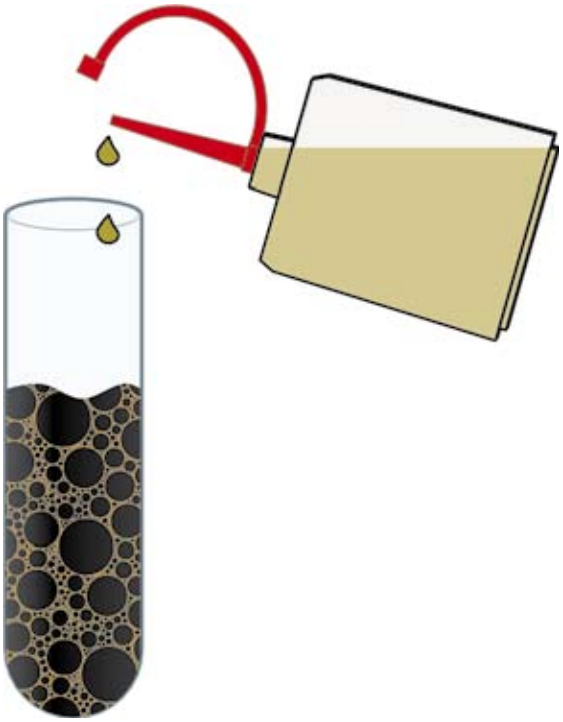
When digesting liquids like water or milk, the water contained in them must be evaporated before digesxtion really starts. During this time, heating must be adjusted in such a way that the sample is boiling steadily but does not boil over.



For liquid samples, use boiling chips

Foaming

Some kinds of samples will develop a foam when reacting with concentrated sulfuric acid, which will rise up in the vessels, creep over the rims or even rise into the suction nozzles. Textbooks have various advices what to do against foam – but it will depend on the kind of sample which technique will work.



- Heating slowly so the foam won't rise so fast, maybe even preparing the sample in the evening and letting it rest overnight before starting the digestion. That will sometimes work, but it won't always work. Some sample materials will start reacting with the sulfuric acid in the cold, and the longer it takes the sample to reach digestion temperature, the higher the foam will rise.
- In these cases it is better to have the sample come to digestion temperature as quick as possible so the foam will collapse soon. Which means: preheat the block and prepare the sample immediately before starting the digestion.
- An anti-foam agent can neutralize the foaming components of the sample. Add some drops of paraffine oil or silicone oil to the sample. Make sure to treat the blank in the same way as the samples.

If you have an infrared digestion device (e. g. behr InKjel) too, the easiest way to digest high-protein samples will be the infrared digestion. In an infrared digestion, the samples reach digestion temperature very quickly so the foam will collapse soon.

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Spare Parts

Description	Art.-Nr.
Round-bottom digestion vessel 250 ml, for sample rack EG 12	B 0021 7959
Round-bottom digestion vessel 500 ml, for sample racks EG 6, EG 4/500	B 0021 8195
Round-bottom digestion vessel 750 ml, for sample rack EG 4/750	B 0021 8218
Glass collector tube for exhaust collector AE 12 (for 12 vessels of 250 ml)	B 0023 1828
Glass collector tube for exhaust collector AE 6 (for 6 vessels of 500 ml)	B 0023 1825
Glass collector tube for exhaust collectors AE 4 (for 4 vessels)	B 0023 1826
Silicone hose 25 mm inner ø, 33 mm outer ø, for the silicone buffers	B 0022 4998
PTFE watch-glass disk 50 mm ø with 13 mm boring (for the suction nozzles)	B 0022 5947
Sample rack for 12 digestion vessels of 250 ml	B 0021 8087
Sample rack for 6 digestion vessels of 500 ml	B 0021 8086
Sample rack for 4 digestion vessels of 500 ml	B 0021 8085
Sample rack for 4 digestion vessels of 750 ml	B 0021 8080
Exhaust collector for 12 digestion vessels	B 0021 8090
Exhaust collector for 6 digestion vessels	B 0021 8089
Exhaust collector for 4 digestion vessels	B 0021 8088
Suction hose, Viton, 2 m	B 0022 4985
Hose clip for the suction hose	B 0023 3672
KjelTabs KT 1 Catalyst Tabs (5 g K_2SO_4 + 0.5 g $CuSO_4$), 1000 Tabs	B 0021 7934
KjelTabs KT 2 Catalyst Tabs (5 g K_2SO_4, 0.15 g $CuSO_4$, 0.15 g TiO_2), 1000 Tabs	B 0021 7938
KjelTabs KT 3 Catalyst Tabs (3.5 g K_2SO_4 + 0.4 g $CuSO_4$), 1000 Tabs	B 0021 7937
KjelTabs KT 4 Catalyst Tabs, containing selenium (3.5 g K_2SO_4 + 3.5 g Se), 1000 Tabs	B 0049 0920
Boiling chips, 100 g	B 0021 7914

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Technical Data

Nominal voltage	230 V~, 50 Hz
Power	1 500 W
Dimensions (W x H x D) approx.	540 x 750 x 440 mm
Weight approx.	20 kg
Time range	0 ... 199 minutes, in 1-min steps
Heat output range	0 ... 100 %, in 1-% steps
Programs	max. 25
Display	LCD

Customer Service

behr Labor-Technik GmbH
Spangerstraße 8
D-40599 Düsseldorf
Phone
Customer service: (+49 211) 7 48 47 17
Telefax: (+49 211) 7 48 47 48
E-mail: info@behr-labor.com

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