OPERATION PANEL OP 17
LABMASTER 130, MB 20G, MB 30G

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1. Occupancy of function-keys

K1  
Circulation with Purifier

K2  
Regeneration of Purifier

K3  
Autom./Evacuate oven

K4  
Analyzer on/off

K5  
Light on/off

K9  

K10  

K11  

K12  

K13  

K14  

K15  

K16  
Vacuum pump VPG (purifier) on/off

The LED of the keys:

= off

= on

= locked
2. Operation notices

Notice level of machine

Always visible. Actual parameters of the box are indicated.

Two notices at the same time can be displayed. If more than 2 notices are activated notices in display change every 3 seconds.
3. Panel menues

3.1 selection menue

Pushing the button takes You to the selection menue.

Starting mode menue panel

Selection menue II

F1  F8
Pushing takes You to the single menues. With You select the next

selection menue and with the preceding menue.

F8

By pushing You leave the menue level and the operation notices are displayed.
3.2 Operating time of purifier

Mode: operating time

Regen.: Operating time purifier since last regeneration = 12 h
total: total purifying time 1 = 300 h operating time

The mode "operating time" You reach via the selection menue 1 and
(operating hours)

Choice: 1. menue  2. (Operating time)
3.3 Status of purifier

Mode: status

regeneration purifier:
shows the remaining regeneration time.

Step 4: VRE on:
shows the current step of regeneration the purifier is executing
(including the display of the selected valves and heaters).

The mode "Status" You reach via selection menu 1 and (status)

Choice:

1. Menu

2. (Status)
3.4 Parameter indication

The mode "parameter indicate" You reach via selection menu I and (parameter indicate)

Mode: parameter indicate

operation pressure*: display of box pressure (actual value) in mbar (kpa)

moisture level*: concentration of H2O (actual value) in vpm (a value lower than 1 vpm is displayed as < 1 vpm, a value higher than 350 vpm is displayed as > 350 vpm)

oxygen level*: concentration of oxygen (actual value) in vpm (a value lower than 1 vpm is displayed as < 1 vpm, a value higher than 990 vpm is displayed as > 990 vpm; the oxygen analyzer ist turned on at a concentration of oxygen lower than 300 vpm to protect the oxygen sensor)

freezer*: freezer temperature (actual value) in degrees Centigrade (°C).

* If the system is equipped with moisture and oxygen sensors the read outs for moisture and oxygen values appear. If not the corresponding functions in the display are deactivated.
3.5 Info

The mode "Info" You reach via selecting menue 1 and Choice:

1. Menue 2.

Mode Info

In the "Info" - mode the address and the phone number of M. Braun are memorized. If You have any questions about the system please always inform us about the project number and the type of the system.

By pushing You get back to the notice level.

(Return)
3.6 Modes of operation

The mode "modes of operation" You reach via selection menu 1 and (set modes)

Mode:
modes of operation

Regener. Purifier 1:
You can choose between "automatic" and "manual" operation. By pushing and then ▲ or ◄ You can change the operation mode.

The change of the operation mode is password-protected.

"automatic" mode:
The regeneration cycle runs automatically after choosing the regeneration function.

"Manual" mode:
The regeneration-cycle will be run manually step by step. This method of operation can only be executed by specially trained M. Braun service personnel.

Please note: Do not forget to complete the whole manual regeneration cycle! Otherwise the system can be damaged.

The mode "operation mode antechamber" You reach by pushing if Your system is equipped with one or more automatic antechamber controllers.

Choice:  1. Menu  2.  3. (Set modes)

Mode:
modes of operation
**Operation mode antechamber:**
There are three methods of operation, "automatic", "manual" and "evac/refill".

By pushing and afterwards or You can change the operation mode.

"**evac/refill** operation:
The mode "evacuate/refill" You can operate the antechamber manually.
By pushing and You can evacuate or refill the antechamber. manually.

(Evacuate antecham.) (refill antecham.)

"**automatic** operation:
The antechamber-cycle will be run automatically by pushing

(evacuate antecham.)

"**manual** operation:
The automatic cycle will be run step by step.
This method of operation can only be executed by specially trained M. Braun service personnel."
3.7 Setting of parameters

The mode "parameter set" You reach via selection menue I and (parameter set)

Mode: parameter set

Set box pressure:
For the time this display is selected the box pressure controller is switched off. With the pedal (gas/evacuate) You can adjust the pressure to any value. The upper and lower setpoint can be set directly with the keyboard. (Point the cursor to the value to change, put in the desired value and confirm with the button.

Until the confirmation of the value with the "Enter" - button the cursor cannot leave the input-position).

The upper and lower setpoints must be within the limits of the alarm setpoints. If the upper setpoint is set lower than the lower setpoint, the upper setpoint cannot be confirmed. In this case, the setpoints are set to the maximum value automatically. The minimum difference value between upper and lower setpoint is 1 mbar (kpa).

set freezer temperature:
The rated temperature can be put in directly with the keyboard (Point the cursor to the value to change, put in the desired value and confirm with the button.

Until the confirmation of the value with the "Enter" - button the cursor cannot leave the input-position).

By pushing You get back to the notice level, by pushing You reach the next parameter.

Mode: parameter set

alarm setpoint analyzer
H2O-alarm setpoint: 200 ppm
O2-alarm setpoint: 50 ppm
<< F1 F2 F3 F4 F5 F6 F7 F8 >>
Set H2O and O2 alarm setpoints:
The alarm setpoints can be put in directly with the keyboard. (Point the cursor to the value to change, put in the desired value and confirm with the button. Until the confirmation of the value with the “Enter” - button the cursor cannot leave the input-position).

If the box-atmosphere exceeds the alarm setpoints, the announcements “H2O too high” or “O2 too high” will appear on the display.

By pushing You get back to the notice level, by pushing You reach the next parameter.

Set antechamber parameter (for automatic antechamber controller):
The parameter can be put in directly with the keyboard (Point the cursor to the value to change, put in the desired value and confirm with the button. Until the confirmation of the value with the “Enter” - button the cursor cannot leave the input-position).

If the values "setpoint endvacuum" und "intermediate refilling" change
You cannot put in the desired value with the keyboard.
You have to push the button to change the set values.

Afterwards You can change the values with ▲ and ▼.

The chosen value has to be confirmed by pushing the button.
intermediate refilling:
until this working pressure is reached the antechamber is refilled.

setpoint end vacuum:
The leaktest is made at this working pressure. After the pump/refill cycles evacuation takes place until this working pressure is reached.

pumping/refilling cycles:
shows how often the antechamber is evacuated and refilled again.
"O" = no intermediate refilling.

maximum evacuation time:
if the pressure value set in "maximum leakrate" is not reached within the set time the loading procedure is stopped and the message "evacuation time exceeded" is displayed.

maximum leakrate:
shows the maximum value the pressure is allowed to reach during the pressure-difference-measurement. 2 steps = pressure rise of 2 units within the measured decade (e.g. From 2 x 10^-1 mbar to 4 x 10^-1 mbar). if this value is exceeded during the leaktest the loading procedure is stopped and the message "leak in antechamber" is displayed.

By pushing \[ F_1 \] You get back to the preceding parameter, by pushing \[ F_8 \] You reach the notice level.
3.9 Service

The mode "Service" You reach via selection menue II and

Choice:
1. Menue 2. 3.

Mode service

The upper and lower setpoints are password-protected. Only specially trained M. Braun service personnel is allowed to change them.

set service parameter:
The parameter can be put in directly with the keyboard. (Point the cursor to the value to change, put in the desired value and confirm with the button.

Until the confirmation of the value with the "Enter" - button the cursor cannot leave the input-position).

offset box pressure:
The offset-adjustment of the box pressure sensor can only be made by specially trained M. Braun service personnel.

By pushing parameter. You get back to the notice level, by pushing You get to the next

Mode service

reset elapse time purifier

working hours purifying unit 1:

<< F1 F2 F3 F4 F5 F6 F7 F8 >>
The function "reset elapse time purifier" is executed after an exchange of the filter loading only by specially trained M. Braun service personnel. This function is password-protected.

By pushing **F1** you get back to the notice level, by pushing **F6** you get to the next

**Mode service**

**enter password:**
After choosing the function "Password" a password-menu is displayed.

**Mode Service**

**Login:**
After selecting the function **F2** you can enter a password via the keyboard.

Confirmation with **F3**

**Logout:**
After selecting the function **F4** the user gets logged out of the program of the OP 17.

The password is no longer activated.
Edit:
After selecting the function the passwords from level 1 - 8 can be put in directly with the keyboard.

(Point the cursor to the value to change, put in the desired value and confirm with the button.)

You cannot change the "Supervisor"-password in level 9.

Password:
Here You can enter a password or create new passwords (only for service-reasons-change of parameter).

SteuVar / StatVar:
In these modes the variables of the SPS-program can be looked at or changed. Only specially trained M. Braun service personnel is allowed to enter these modes.