



Pocket Guide  
**Oxylog<sup>®</sup> 3000 *plus***  
Software version 1.n

The Oxylog<sup>®</sup> 3000 *plus* Pocket Guide is not a replacement or substitute for the Instructions for Use, strict observation of the Instructions for Use is required.

Shown options are at extra cost.

There will be no exchange of the Pocket Guide when the product is updated/upgraded.

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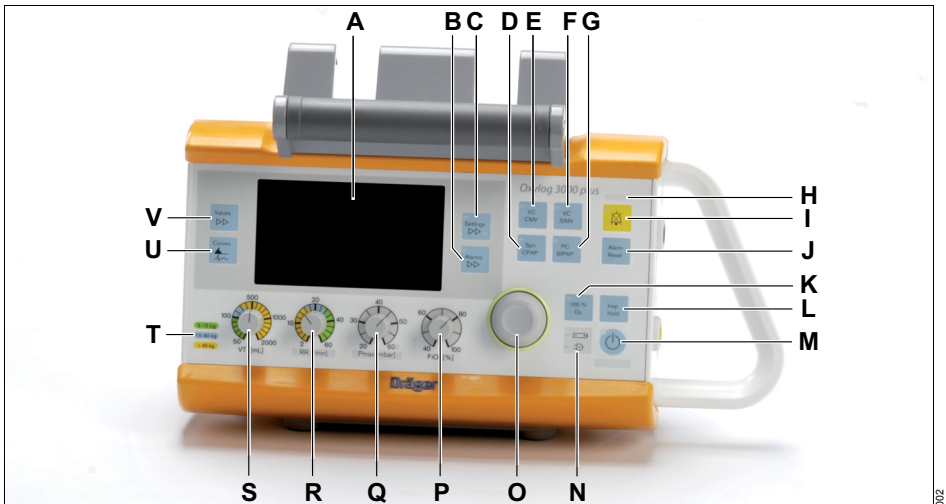
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## System Overview

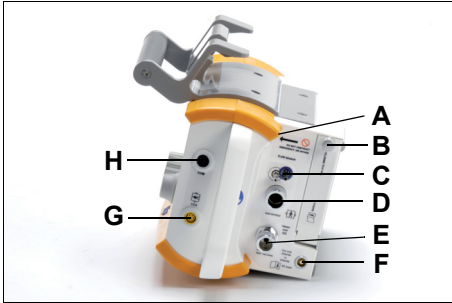
### NOTE

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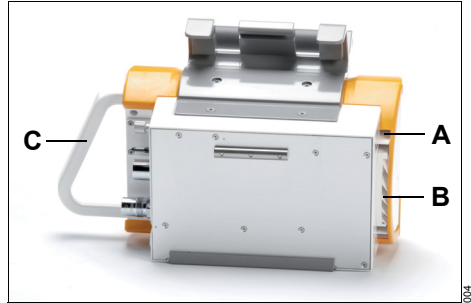
- A** Screen with screen pages for the specific application
- B** Key **Alarms** to display the alarm settings in the "Settings and Alarms" window and to change screen pages
- C** Key **Settings** to display ventilation parameters in the "Settings and Alarms" window and to change screen pages
- D** Key for setting the ventilation mode **SpcCPAP**
- E** Key for setting the ventilation mode **VC-CMV/VC-AC**
- F** Key for setting the ventilation mode **VC-SIMV**
- G** Key for setting the ventilation mode **PC-BIPAP**
- H** Red and yellow alarm indicators
- I** Key for suppressing the audible alarm for 2 minutes
- J** Key **Alarm Reset** for acknowledging alarm messages
- K** Key **O<sub>2</sub>-Inhalation** for O<sub>2</sub> inhalation or key **100% O<sub>2</sub>** for 100% O<sub>2</sub> application, depending on the option installed at manufacture
- L** Key **Insp. Hold** for initiating a manual inspiration or for extending the current inspiration time
- M** Key Start/Standby
- N** Display symbols for the power supply
  - Charge status of the internal battery
  - Mains power supply connected
- O** Rotary knob for making selections, changing and confirming setting
- P** Control knob for setting the O<sub>2</sub> concentration **FiO<sub>2</sub>**
- Q** Control knob for setting the maximum inspiratory pressure **Pmax**
- R** Control knob for setting the respiratory rate **RR**
- S** Control knob for setting the tidal volume **VT**
- T** Explanation of color codes for quick pre-setting of **RR** and **VT**
- U** Key **Curves** to change between the pressure, flow, or CO<sub>2</sub> (optional) curve in small and large presentation
- V** Key **Values** to change screen pages in the "Measured Values" window

### Side view, right



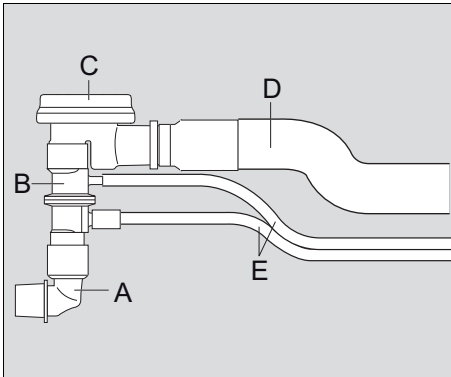
- A Emergency air intake
- B Knob to secure the battery compartment cover
- C Connectors for flow measuring hoses
- D Gas outlet for ventilation hose
- E Connector for O<sub>2</sub> supply
- F Connector for power supply
- G Connector for CO<sub>2</sub> sensor
- H Connector for data communication cable

### Rear view



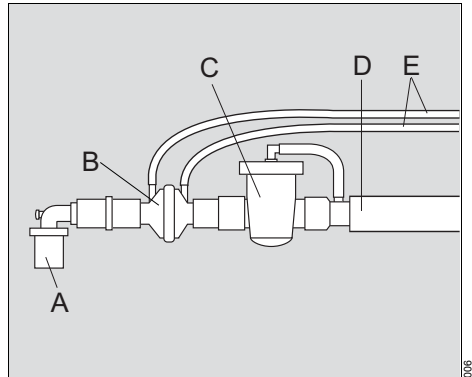
- A Emergency air intake
- B Fresh-gas intake with filter cartridge
- C Protection bracket

### Adult hose system, reusable



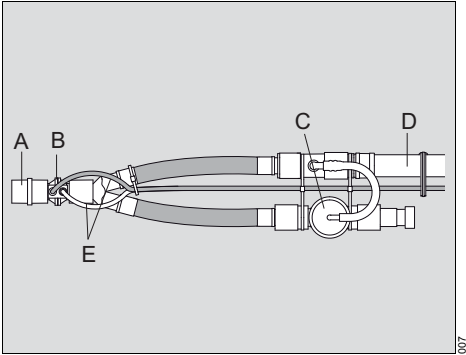
- A Angled connector
- B Flow sensor
- C Breathing valve
- D Ventilation hose
- E Flow and pressure measuring hoses

### Adult hose system, disposable



- A Angled connector
- B Flow sensor
- C Breathing valve
- D Ventilation hose
- E Flow and pressure measuring hoses

## Pediatric hose system, disposable



- A** Angled connector
- B** Flow sensor
- C** Breathing valve
- D** Ventilation hose
- E** Flow and pressure measuring hoses



## Assembly

### NOTE

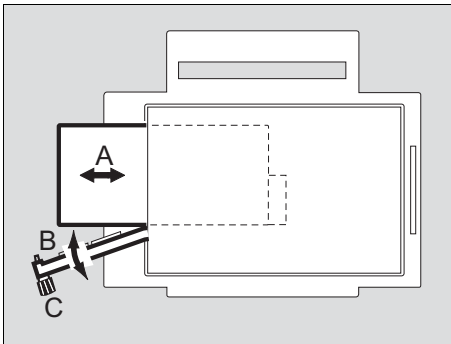
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### Power supply

The Oxylog 3000 *plus* is designed to operate on power supplies with different voltages:

- DC voltage from the on-board power supply:
  - via DC/DC converter
  - with AC/DC power pack
- Internal rechargeable battery

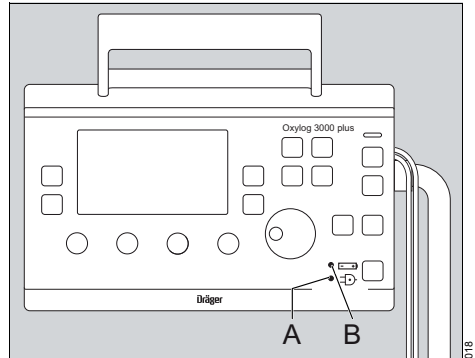
### Installing the battery



- 1 Insert the battery (A) into the battery compartment.
- 2 Close the battery cover (B).
- 3 Tighten the knob (C) by turning it.

### Checking the charge status of the battery

- Press the button on the rechargeable battery. The charge status is indicated as a percentage by an indicator.



- 1 The green indicator (A) lights up when an external power source is connected.
- 2 A three colored indicator (B) lights up to show the current charge status of the internal battery:
  - Green: the battery is fully charged.
  - Yellow: the battery is being charged.
  - Red: a battery is not inserted or can not be charged.

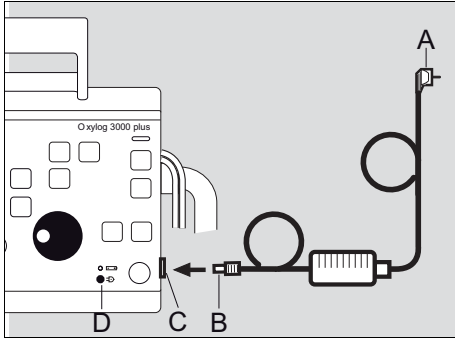
Indicators (A) and (B) remain off while the ventilator is being operated from the internal battery.

Additional alarms can draw attention to the remaining operating time of the battery.

The remaining capacity of the battery is indicated by the Oxylog 3000 *plus* in 25% increments in the lower right section of the information window when power is ON.

The capacity indication is overwritten when other messages need to be shown in the information window.

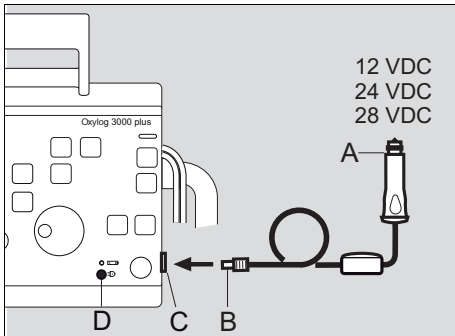
### External power supply from mains power (AC/DC power pack)



- 1 Connect the mains plug (A) to the mains outlet.
- 2 Connect the DC connector (B) to the DC connector (C) of the Oxylog 3000 *plus*.
- 3 When the Oxylog 3000 *plus* is correctly connected to an external supply, the indicator (D) lights up.

### External power supply with DC/DC converter

The DC/DC converter must be used to connect the Oxylog 3000 *plus* to onboard DC power supply systems, e. g. in ambulances. It can be used with the following voltages: 12 VDC, 24 VDC or 28 VDC. The onboard power supply shall have a fuse of 10 to 16 A.

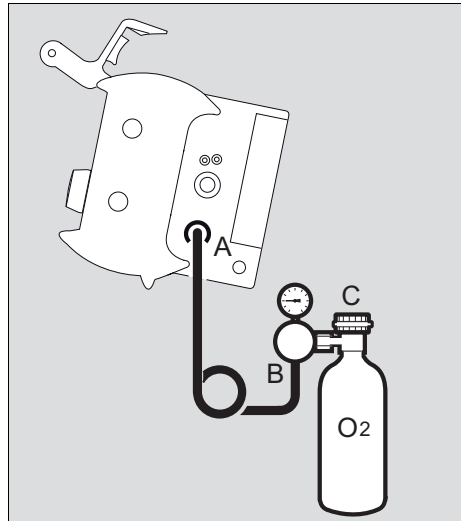


- 1 Plug the large connector (A) of the DC/DC converter into the on-board supply.
- 2 Plug the small connector (B) into the DC connector (C) of the Oxylog 3000 *plus*.
- 3 When the Oxylog 3000 *plus* is correctly connected to an external supply, the indicator (D) lights up.

### Connecting the gas supply

#### Supply from an O<sub>2</sub> cylinder

- 1 Connect the pressure reducer (270 to 600 kPa delivery pressure, 500 kPa nominal pressure) to the O<sub>2</sub> cylinder.



- 2 Connect the O<sub>2</sub> hose (A) to the Oxylog 3000 *plus*.
- 3 Connect the O<sub>2</sub> hose to the pressure reducer (B).
- 4 Rotate the cylinder valve (C) slowly and open fully.

### Determining the approximate pneumatic operating time

Example for supply of O<sub>2</sub>:

- Cylinder pressure measured on the pressure gauge of the pressure reducer: 20000 kPa (200 bar)
- Liquid capacity of the O<sub>2</sub> cylinder: 2.1 L

Supply of O<sub>2</sub>:

2.1 L x 20000 kPa = approx. 420 L at environmental pressure level.

Example for pneumatic operation time:

VC-CMV mode, frequency 10 breaths/min, VT = 0.53 L, O<sub>2</sub> = 100%

Minute volume = 10 breaths/min x 0.53 L = 5.3 L/min

$$\text{Operation time} = \frac{\text{O}_2 \text{ supply [L]}}{(\text{MV} + 0.5^*) \text{ [L/min]}}$$

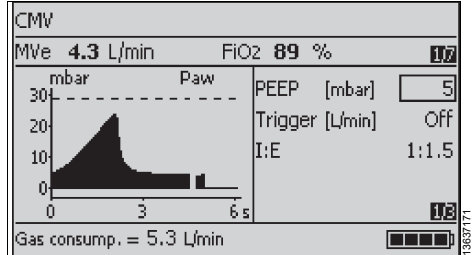
\* Calculated with average gas consumption of ventilator: 0.5 L/min

$$\text{Operation time} = \frac{420}{5.8} = \text{approx. 72 minutes}$$

The pneumatic operation time increases when Oxylog 3000 *plus* operates with O<sub>2</sub> concentration of less than 100% O<sub>2</sub>, as ambient air is drawn into the device.

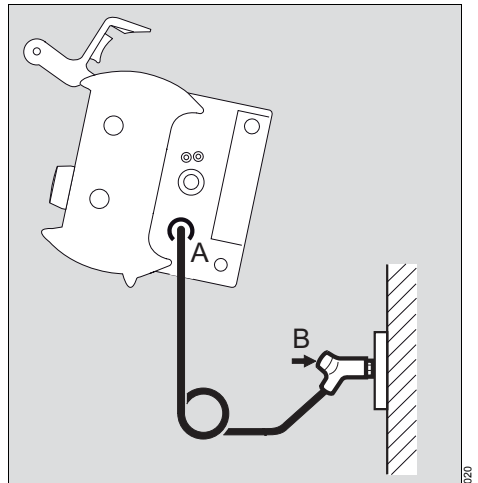
The amount of gas from the high-pressure supply, which is currently being consumed, is indicated by the Oxylog 3000 *plus* in the lower left section of the information window in L/min. This display is overwritten when a higher priority message is activated.

Example:



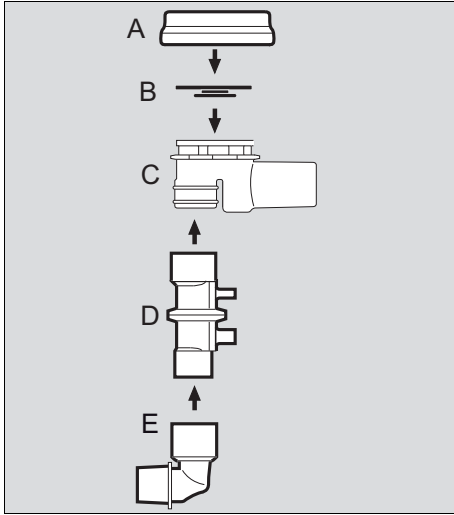
O<sub>2</sub> consumption = 5.3 L/min.

### Supply from a piped O<sub>2</sub> system



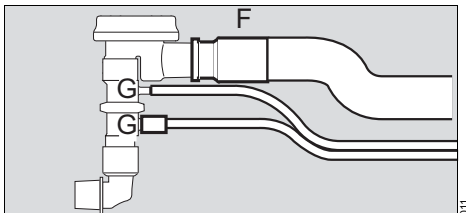
- 1 Connect the O<sub>2</sub> hose (A) to the Oxylog 3000 *plus*.
- 2 Connect the gas probe (B) to the O<sub>2</sub> terminal unit until it has properly engaged and the supply of O<sub>2</sub> is assured.

## Assembling the adult reusable hose system

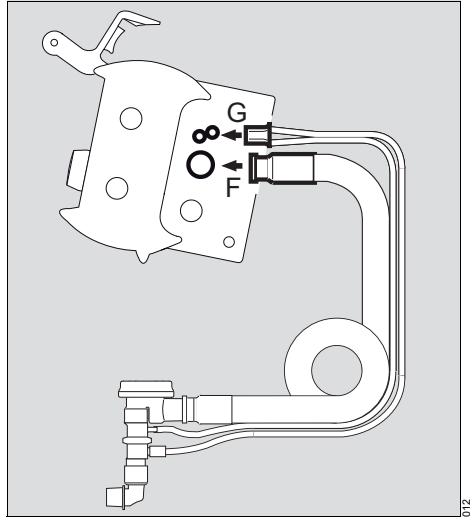


- 1 Place the diaphragm (B) in the breathing valve housing (C). Ensure that it is inserted correctly.
- 2 Fit the cover (A) and turn it approximately 60° clockwise to secure into position (a click can be felt).
- 3 Push the flow sensor (D) onto the breathing valve (C). Note the correct alignment of the parts by the groove in the flow sensor (D) and the notch on the breathing valve (C).
- 4 Push the angled connector (E) onto the flow sensor (D).

## Hose connections



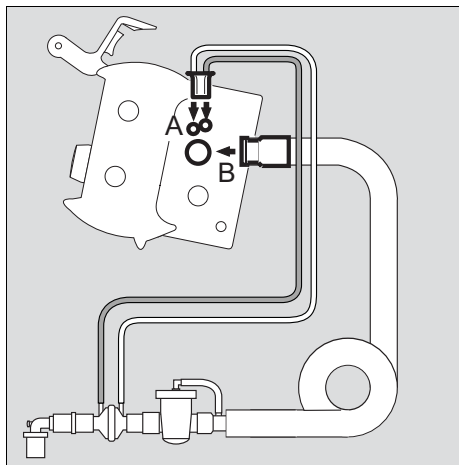
- 1 Connect the ventilation hose (F) to the breathing valve.
- 2 Connect the flow measuring hoses (G) to the nozzles on the flow sensor. Note the different diameters of the hoses and the nozzles when connecting the flow measuring hoses and connect to the correct side.



- 3 Connect the flow measuring hoses (G) to the Oxylog 3000 *plus*. Correct alignment is indicated by a notch on the connector, which must point away from the ventilation hose. Otherwise, the set will not fit and the measured values will be incorrect.
- 4 Connect the ventilation hose (F) to the gas outlet on the Oxylog 3000 *plus*.

When connecting a hose, check that the hose setting in the **Settings** window corresponds to the connected hose.

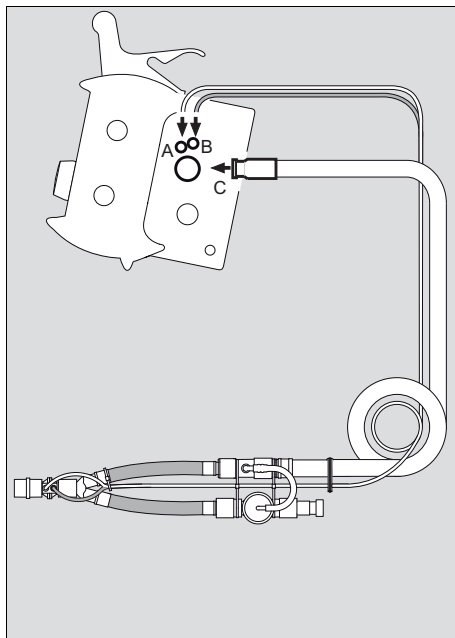
## Connecting the adult disposable hose system



- 1 Connect the flow measuring hoses (A) to the Oxylog 3000 *plus*. Correct alignment is indicated by a notch on the connector, which must point away from the ventilation hose. Otherwise, the set will not fit and the measured values will be incorrect.
- 2 Connect the ventilation hose (B) to the gas outlet on the Oxylog 3000 *plus*.

When connecting a hose, check that the hose setting in the **Settings** window corresponds to the connected hose.

## Connecting the paediatric disposable hose system



- 1 Connect the blue flow measuring hose (B) to the blue labeled connector.
- 2 Connect the transparent flow measuring hose (A) to the other connector.
- 3 Connect the ventilation hose (C) to the gas outlet on the Oxylog 3000 *plus*.

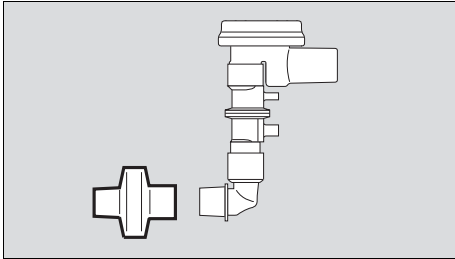
When connecting a hose, check that the hose setting in the **Settings** window corresponds to the connected hose.

## Connecting the bacterial filter or HME

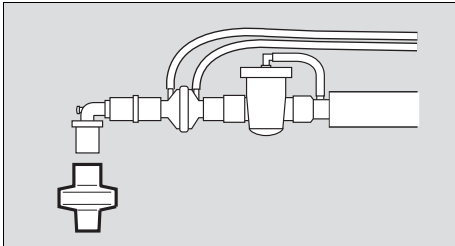
It is recommended to use a bacterial filter between ventilator and patient, to reduce the risk of bacteria, viruses, fungi or spores being present in the inspiratory flow.

- Connect the bacterial filter or HME to the angled connector as follows.

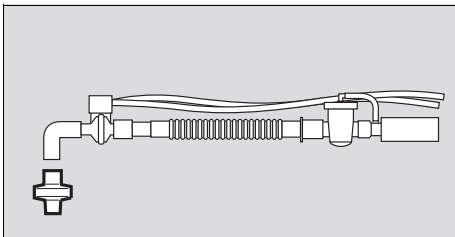
Adult reusable hose:



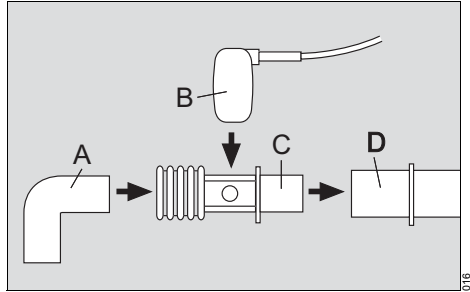
Adult disposable hose:



Paediatric hose:



## Connecting the CO<sub>2</sub> sensor and the cuvette



- 1 Disconnect the angled connector (A) from the flow sensor (D).
- 2 Attach the cuvette (C) to the flow sensor (D), with the cuvette windows facing the side.
- 3 Attach the angled connector (A) to the cuvette (C).
- 4 Push the CO<sub>2</sub> sensor (B) onto the cuvette (C), with the cable towards the device.
- 5 Plug the CO<sub>2</sub> sensor into the connector of the Oxylog 3000 *plus*. For the connector location, refer to the section "Side view, right" on page 6.
- 6 Insert the CO<sub>2</sub> sensor cable in the cable clips on the hose.

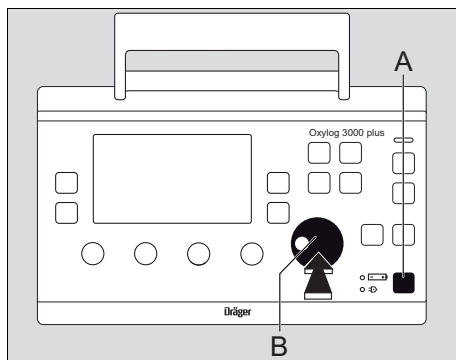
Alternatively, connect the cuvette (C) directly to the patient side of the angled connector (A), without disconnecting the angled connector from the flow sensor (D).


## Getting started

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### Switch the device ON

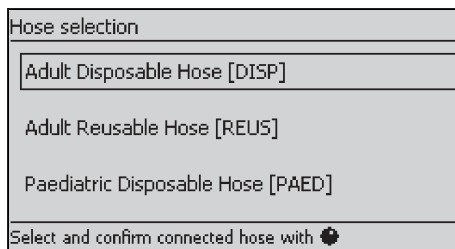


- To switch the device ON, briefly press the  key (A).

The Oxylog 3000 *plus* performs a self-test. The self-test will be completed in approximately 6 seconds.

During the self-test, the system briefly displays the starting page with a bar graph indicating the progress of the self-test, the software version, and a prompt for the operator to activate the device check by pressing the rotary knob (B).

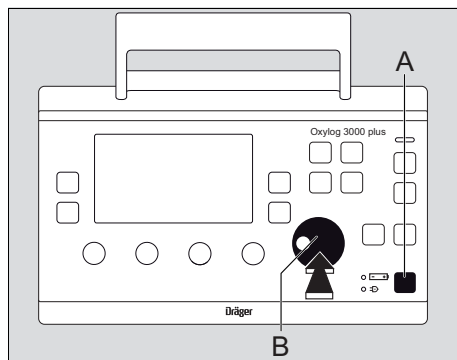
If the rotary knob (B) is not pressed during the self-test, the hose selection page is displayed.




### Switch the device OFF

- After disconnecting the patient:

Switch the device OFF:




- 1 To switch the device OFF, press the  key (A) for approximately 3 seconds.

Ventilation is now stopped and a high-priority alarm is issued.

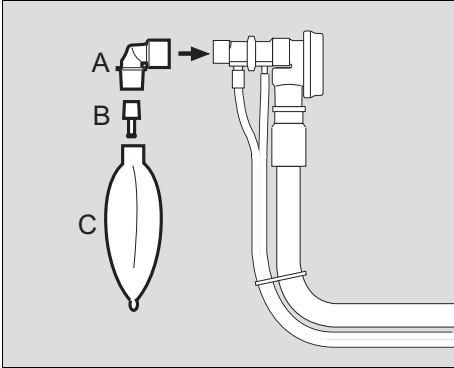
This alarm can be silenced with the  key.

- 2 Either:

- Press the rotary knob (B) to confirm switch OFF.
- Or
- Press the  key (A) to resume ventilation with the previous settings.

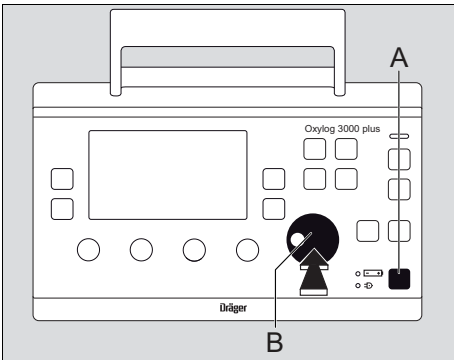
## Perform device check

### Connect the test lung



- 1 Make sure that the angled connector (A) is connected to the flow sensor.
- 2 Connect the catheter connector (B) of the test lung, diameter 7 mm, to the angled connector. The catheter connector simulates the resistance of the airways.
- 3 Connect the balloon (C) of the test lung.

### Switch the device ON

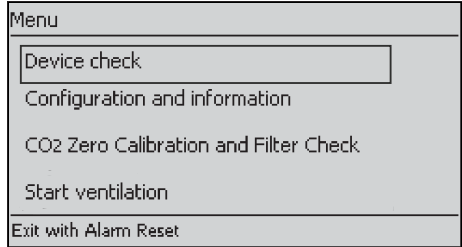


- 1 To switch the device ON, briefly press the key (A).

The device performs a self-test and the operator is prompted, on the display, to activate the configuration menu or device check:

**Press rotary knob for device check and configuration**

- 2 Press the rotary knob (B) to confirm, before the bar is full. The start-up screen appears:



- 3 Select **Device check** in the start-up menu and confirm.

The device check can be aborted at any time by pressing the **Alarm Reset** key.

### Check connections

- 1 Ensure that the gas supply has been connected.
  - 2 Select and confirm the appropriate hose type.
  - 3 Ensure that the test lung has been connected. The Oxylog 3000 *plus* automatically checks if a test lung has been connected. The device check is interrupted if a test lung is not detected within one minute. The check is continued when the test lung is detected.
  - 4 The Oxylog 3000 *plus* automatically checks if the detected hose differs from the selected hose type.
  - 5 Set the controls below the display to the required values.
- The Oxylog 3000 *plus* successively activates the audible and visual alarm signals and prompts the operator to acknowledge each signal.
- 6 Confirm the audible and visual alarm signals. The device check continues automatically.

The bar graph shows the progress made by the device check.

The result is displayed on the last page of the device check screens.

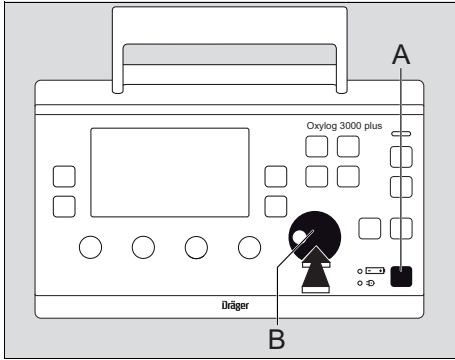



## Error messages during the device check

Message	Cause	Explanation/Remedy
<b>System leakage</b>	Leak in ventilation hose system and/or test lung.	Check hoses, breathing valve, flow sensor, and test lung for leaks and replace if necessary.
	Internal leak in system.	Contact your local DrägerService for additional support.
<b>No test lung</b>	Test lung not connected or major leakage.	Connect test lung.  Check hoses, breathing valve, flow sensor, and test lung for leaks and replace if necessary.
	<b>Breathing valve inop</b>	Breathing valve has malfunctioned.  Check correct condition of breathing valve including diaphragm and rubber disc; fit a new breathing valve if necessary or use a new disposable hose set.
<b>Pressure measurement inop</b>	The ventilation hose system has not been connected correctly.	Connect ventilation system correctly.
	Pressure measurement is not possible.	Contact your local DrägerService for additional support.
<b>PEEP-valve inop</b>	Internal leak in system.	Check hoses, breathing valve, flow sensor, and test lung for leaks and replace if necessary.
	Device defective.	Contact your local DrägerService for additional support.
<b>Patient flow measurement inop</b>	Flow measurement implausible.	Replace flow sensor.  Contact your local DrägerService for additional support.
<b>Hose detection inop</b>	The device check failed on the hose detection.	Connect a different hose or change hose setting.
<b>Detected hose differs from selected hose</b>	The hose that is detected differs from the selected hose type, or the flow measuring hoses are incorrectly positioned.	Connect a different hose or change hose setting.

## CO<sub>2</sub> zero calibration and filter check before ventilation (optional)

The CO<sub>2</sub> zero calibration and filter check only work if the CO<sub>2</sub> option has been installed and if the CO<sub>2</sub> sensor is present.

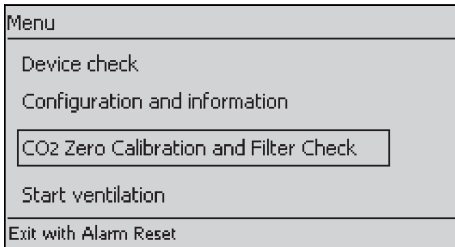


- 1 To switch the device ON briefly press the  key (A).

The device performs a self-test and the operator is prompted, on the display, to activate the configuration menu or device check:

**Press rotary knob for device check and configuration**

- 2 Press the rotary knob (B) to confirm, before the bar is full.



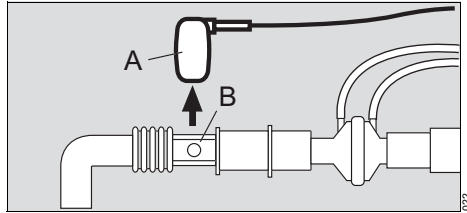
- 3 Select **CO<sub>2</sub> Zero Calibration and Filter Check** in the start-up menu and confirm.

### NOTE

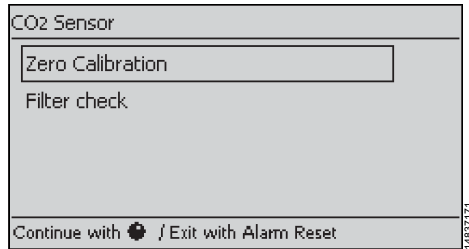
The CO<sub>2</sub> zero calibration and filter check can be discontinued at any time by pressing the **Alarm Reset** key.

## Zero calibration before ventilation

The zero calibration is performed with a clean CO<sub>2</sub> sensor that has been removed from the cuvette.



- 1 Remove the CO<sub>2</sub> sensor (A) from the cuvette (B).



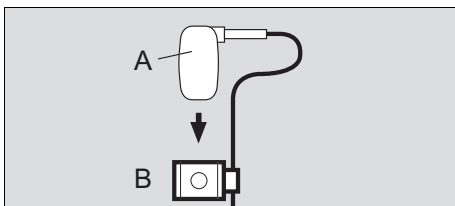
- 2 Select and activate **Zero Calibration**. The screen displays the text **Remove sensor from cuvette. Confirm with rotary knob.**
- 3 Confirm. The zero calibration starts and the line displays **Zero calibration in progress**. After a successful zero calibration, the line briefly displays **Zero calibration OK**.
- 4 Press **Alarm Reset** to exit.
- 5 Attach the CO<sub>2</sub> sensor back to the cuvette.

## CO<sub>2</sub> filter check before ventilation

### NOTE

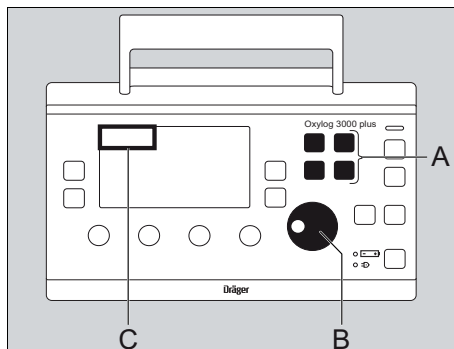
Before the CO<sub>2</sub> filter check, you need to have finished a successful CO<sub>2</sub> zero calibration. Otherwise the CO<sub>2</sub> filter check may be outside of the tolerance range.

- 1 Remove the CO<sub>2</sub> sensor from the cuvette.



- 2 Attach the CO<sub>2</sub> sensor (A) to the test filter (B).
- 3 Select **Filter check**.
- 4 Confirm. The filter check starts and the screen displays **Filter check in progress**. After a successful filter check, the line briefly displays **Filter check OK**.
- 5 Press **Alarm Reset** to exit.
- 6 Attach the CO<sub>2</sub> sensor back to the cuvette.

## Selecting the ventilation mode



- Press the appropriate ventilation mode key (A) for approximately 3 seconds.

Or

- 1 Press the appropriate ventilation mode key (A).
- 2 Press the rotary knob (B) to confirm.

The selected ventilation mode will be activated.

The active ventilation mode is displayed in the upper left corner of the display (C).

## Setting ventilation parameters

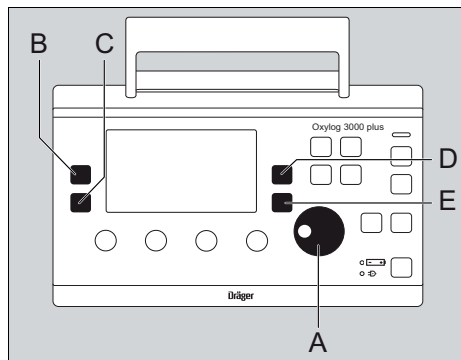
- Set the required control knob below the display.
- Or
- Select, set and confirm a parameter on the display with the rotary knob.

If the changed settings are not confirmed after 5 seconds, the alarm **! Confirm settings** appears. If the settings are still not confirmed after 10 seconds, the alarm **! Settings not confirmed** appears. After that the former settings are restored.

When the PEEP setting is increased above 10 mbar, a message **Confirm PEEP above 10 mbar?** will appear to request confirmation of the change. The PEEP setting can be increased to the desired setting after the message is confirmed with the rotary knob.

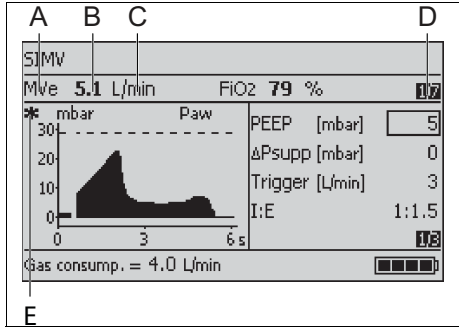
The device can be configured to show **Ti** or **I:E** as a primary parameter that can be set. If **Ti** is configured as the primary parameter, **I:E** will be shown in the information window when **Ti** is selected, and vice versa.

## Display operating controls



- A Rotary knob for making selections, changing and confirming settings.
- B Key **Values**  $\triangleright\triangleright$  to change screen pages in the "Measured Values" window.
- C Key **Curves**  $\left[ \begin{array}{c} \text{Curves} \\ \updownarrow \end{array} \right]$  to change between the pressure, flow or CO<sub>2</sub> (optional) curve in small and large presentation.
- D Key **Settings**  $\triangleright\triangleright$  to display ventilation parameters (ventilation screen) in the "Settings and Alarms" window and to change screen pages.
- E Key **Alarms**  $\triangleright\triangleright$  to display the alarm settings in the "Settings and Alarms" window and to change screen pages.

### Measured values window



- A Parameter measured.
- B Measured value.
- C Unit of measure.
- D Measured values 1/7: 1st page of 7 available pages. If CO<sub>2</sub> option is not installed: 1/6 available pages.
- E Trigger indicator.

### Displaying curves

The curves window can display the airway pressure curve Paw, the flow curve or the CO<sub>2</sub> curve (optional).

To display a different curve:

- Press **Curves**  $\left[ \begin{array}{c} \text{Curves} \\ \updownarrow \end{array} \right]$  key.

### Displaying measured values

Measured values are displayed in the measured values window.

To switch between the values:

- Press the **Values**  $\triangleright\triangleright$  key: the next value pair is displayed on the screen.

### Cardio-pulmonary resuscitation (CPR)

During CPR, the airway pressure **Paw** is increased because of chest compressions.

The Oxylog 3000 *plus* will try to limit the airway pressure **Paw** to the set **Pmax**, without ending the inspiration prematurely.

However, if due to compressions the airway pressure **Paw** exceeds the set **Pmax** by 5 mbar, the Oxylog 3000 *plus* cycles to the expiration phase.

Therefore in general, if **Pmax** is set to a higher value, a higher minute volume is possible. However, this increases the intra-thoracic pressure and may reduce coronary perfusion.

## Operation

### NOTE

The Oxylog 3000 *plus* Pocket Guide is not a replacement or substitute for the Instructions for Use. Any use of the device requires full understanding and strict observation of the Instructions for Use.

## Ventilation functions of the Oxylog 3000 *plus*

### Ventilation modes:

- Volume-controlled ventilation:
  - VC-CMV / VC-AC
  - VC-SIMV
- Pressure-controlled ventilation:
  - PC-BIPAP
- Support of spontaneous breathing:
  - SpnCPAP

### Additional settings for ventilation:

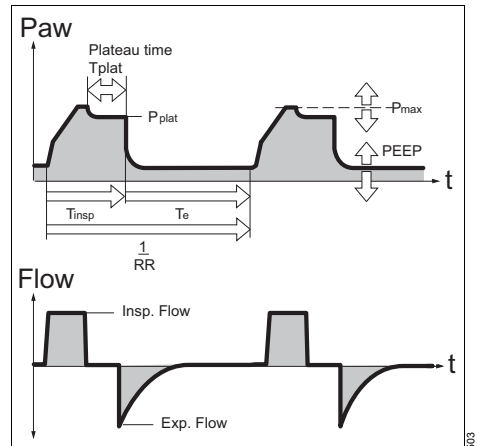
- Pressure support: in the ventilation modes VC-SIMV, PC-BIPAP, SpnCPAP
- Apnoea ventilation: in the ventilation mode SpnCPAP
- AutoFlow (optional): in the ventilation modes VC-CMV, VC-AC, and VC-SIMV
- NIV: in the ventilation modes SpnCPAP (/PS), PC-BIPAP (/PS), VC-CMV / AF, VC-AC / AF, and VC-SIMV / AF

### Special procedures:

- Inspiration hold
- O<sub>2</sub> inhalation (optional), with an inhalation mask

## VC-CMV, VC-AC

Volume Controlled - Controlled Mandatory Ventilation

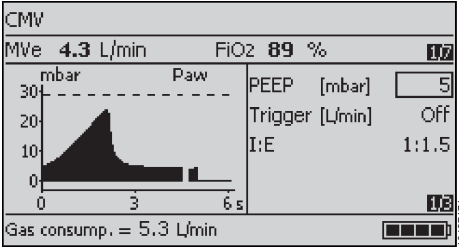


Volume-controlled ventilation with fixed mandatory minute volume  $MV$ , which is set with tidal volume  $VT$  and respiratory rate  $RR$ .

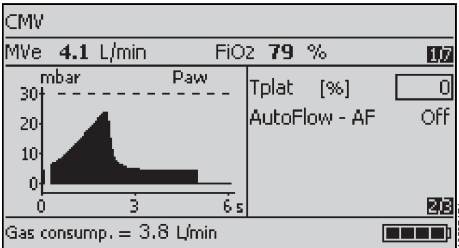
Set the ventilation pattern with the controls below the display:

- Tidal volume  $VT$ .
- Ventilation respiratory rate  $RR$ .  
(minimum possible frequency: 5 per min).
- Maximum airway pressure  $P_{max}$ .
- O<sub>2</sub> concentration  $FI_{O_2}$ .

The following can be set on the display:

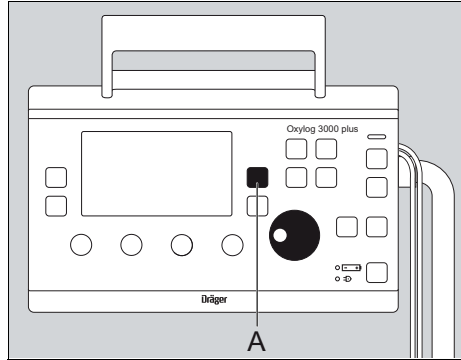



- Positive end expiratory pressure **PEEP**.
- Sensitivity **Trigger**.
- Ventilation time ratio **I:E** or inspiration time **Ti**.



- Plateau time **Tplat** %, in % of the inspiration time.
- **AutoFlow** (optional).
- **Hose type**  
The selected hose type must match the hose type in use. Otherwise a correct volume measurement cannot be guaranteed.
- **Cuvette type** (optional)

### Activating/setting the trigger



- 1 Press the key **Settings**  (A) until the trigger parameter is displayed.
- 2 Select the line **Trigger** on the display and then set and confirm the value with the rotary knob.  
Small value = high sensitivity.

The ventilation mode **AC** is shown on the display.

Successful patient triggering is indicated by an asterisk (\*) on the left side of the curves window.

### Deactivating the trigger

- 1 Set a value less than 1 L/min or greater than 15 L/min (**off** is displayed instead of a value).
- 2 Press the rotary knob to confirm.

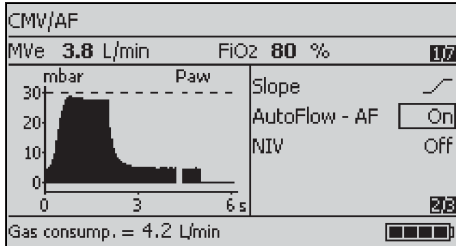
The last effective trigger value is adopted by the ventilator when changing from VC-AC to PC-BIPAP or SpnCPAP.

#### NOTE

When the Oxylog 3000 plus is in the ventilation mode VC-CMV and the trigger is set to a value, the ventilation mode changes to VC-AC.

## Setting AutoFlow (optional)

The following can also be set on the display for VC-CMV and VC-AC:

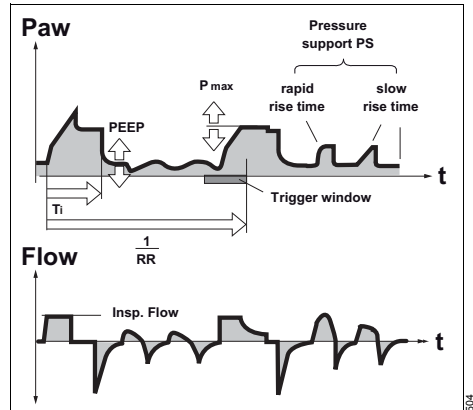


- The AutoFlow function **AutoFlow-AF**.

When AutoFlow is switched on, the setting **Tplat%** is no longer valid, and **Slope** must be set.

## VC-SIMV, VC-SIMV/PS

Volume Controlled - Synchronized Intermittent Mandatory Ventilation



For patients with inadequate spontaneous breathing, or for patients who are to be weaned gradually.

Fixed mandatory minute volume MV is set with tidal volume  $V_T$  and ventilation respiratory rate RR. The patient can breathe spontaneously between the mandatory ventilation strokes and thus contribute to the total minute volume. Spontaneous breathing can be assisted with PS.

Set the ventilation pattern with the controls below the display:

- Tidal volume  **$V_T$** .
- Respiratory rate **RR**.  
(minimum possible respiratory rate: 2 per min).
- Maximum airway pressure  **$P_{max}$** .
- **O<sub>2</sub>** concentration  **$FiO_2$** .

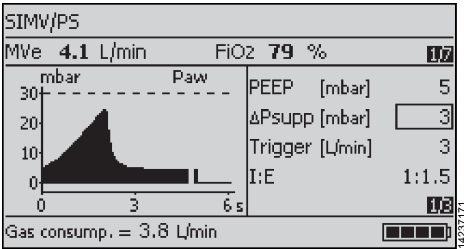
The following can be set on the display:

- Positive end expiratory pressure **PEEP**.
- Pressure support  **$\Delta P_{supp}$**  above PEEP.
- Sensitivity **Trigger**.
- Ventilation time ratio **I:E** or inspiration time  **$T_i$** .
- Plateau time **Tplat %**, in % of the inspiration time.
- **AutoFlow** (optional).

- **Insp.term.%PIF**  
Inspiration termination criterion of pressure supported strokes, as percentage of the peak inspiratory flow (PIF).
- **Hose type**  
The selected hose type must match the hose type in use. Otherwise a correct volume measurement cannot be guaranteed.
- **Cuvette type** (optional)

**Setting pressure support VC-SIMV/PS**

The following can also be set on the display for VC-SIMV:

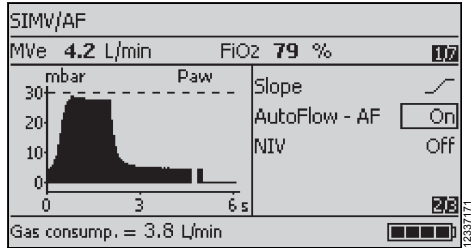


- Setting on page 1: Pressure support **ΔPsupp** above PEEP.
- Setting on page 2: When **ΔPsupp** is set above 0 mbar, the pressure rise time **Slope** can be set.

- ✓ Flat slope = long pressure rise time
- ✓ Medium slope = medium pressure rise time
- ✓ Steep slope = short pressure rise time.

**Setting AutoFlow (optional)**

The following can also be set on the display for VC-SIMV and VC-SIMV/PS:



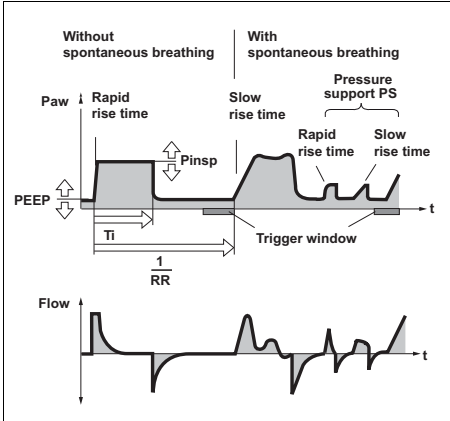
- The AutoFlow function **AutoFlow-AF**.

When AutoFlow is switched on, the setting **Tplat%** is no longer valid, and **Slope** must be set.



## PC-BIPAP, PC-BIPAP/PS

Pressure Controlled - Biphasic Positive Airway Pressure



Pressure-controlled ventilation combined with spontaneous breathing throughout the breathing cycle and variable pressure support at CPAP level.

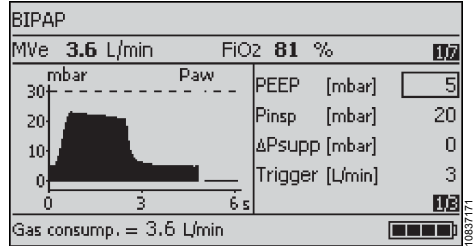
For patients without spontaneous breathing, to spontaneously breathing patients shortly before extubation. The patient is weaned by gradually reducing the mandatory portion of the total minute volume MV and by reducing the pressure support  $\Delta P_{supp}$ .

The mandatory portion of the total minute volume MV is set via the inspiratory pressure  $P_{insp}$ , PEEP and ventilation respiratory rate  $RR$ .

Set the ventilation pattern with the controls below the display:

- Respiratory rate  $RR$ .
- Maximum airway pressure  $P_{max}$ .
- O<sub>2</sub> concentration  $FiO_2$ .

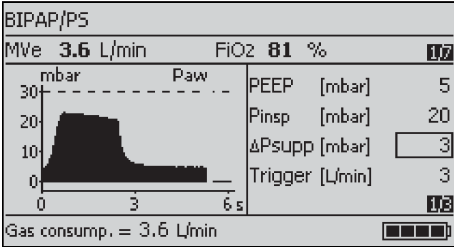
The following can be set on the display:



- Positive end expiratory pressure **PEEP**.
- Inspiratory pressure **P<sub>insp</sub>**.
- Pressure support  $\Delta P_{supp}$  above PEEP.
- Sensitivity **Trigger**. Successful patient triggering is indicated by an asterisk (\*) on the left side of the curves window.
- Ventilation time ratio **I:E** or inspiration time **T<sub>i</sub>**.
- Pressure rise time **Slope** (effective for the PC-BIPAP stroke and pressure support  $\Delta P_{supp}$ ).
- **NIV** - Non-invasive ventilation.
- **Insp.term.%PIF** Inspiration termination criterion of pressure supported strokes, as percentage of the peak inspiratory flow (PIF).
- **Hose type** The selected hose type must match the hose type in use. Otherwise a correct volume measurement cannot be guaranteed.
- **Cuvette type** (optional)

### Setting pressure support PC-BIPAP/PS

The following can also be set on the display for PC-BIPAP:



- Setting on page 1: Pressure support  $\Delta P_{supp}$  above PEEP.
- Setting on page 2: Pressure rise time **Slope**.
  - Flat slope = long pressure rise time
  - Medium slope = medium pressure rise time
  - Steep slope = short pressure rise time.

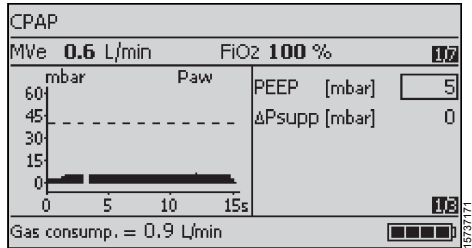
### SpnCPAP, SpnCPAP/PS

#### Spontaneous Continuous Positive Airway Pressure

Set the ventilation pattern with the controls below the display:

- Maximum airway pressure **Pmax**.
- O2 concentration **FiO2**.

The following can be set on the display:

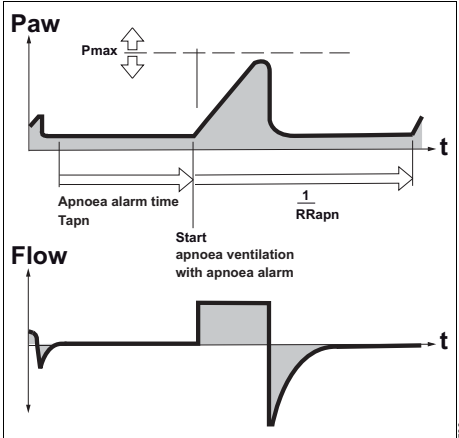


- Positive end expiratory pressure **PEEP**.
- Pressure support  $\Delta P_{supp}$  above PEEP.
- **NIV** - Non-invasive ventilation.
- **Insp.term.%PIF**  
Inspiration termination criterion of pressure supported strokes, as percentage of the peak inspiratory flow (PIF).
- **Hose type**  
The selected hose type must match the hose type in use. Otherwise a correct volume measurement cannot be guaranteed.
- **Cuvette type** (optional)

If  $\Delta P_{supp}$  is set above 0 mbar, the following can also be set on the display for SpnCPAP:

- Sensitivity **Trigger**.  
Successful patient triggering is indicated by an asterisk (\*) on the left side of the curves window.
- Pressure rise time **Slope** (effective for pressure support  $\Delta P_{supp}$ ).

## Apnoea ventilation



Apnoea back-up ventilation is only applicable when using the SpnCPAP mode. In the event of an apnoea, the ventilator will automatically activate volume-controlled mandatory ventilation (VC-CMV).

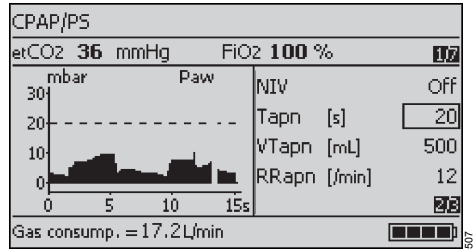
When an apnoea occurs, the device simultaneously issues an alarm signal and switches to volume controlled ventilation with the parameters respiratory rate  $RR_{apn}$ , tidal volume  $VT_{apn}$ , and the maximum airway pressure  $P_{max}$  when the apnoea time  $Tapn$  has been reached. The ventilation time ratio I:E = 1:1.5 and the plateau time  $T_{plat} \% = 0$  are preset during apnoea ventilation.

### Setting apnoea ventilation

On the display:

- 1 Set  $Tapn$  with the rotary knob to a value between 15 and 60 seconds.

The parameters  $RR_{apn}$  and  $VT_{apn}$ , which are required for setting apnoea ventilation, are now displayed:



- 2 Set  $RR_{apn}$  and  $VT_{apn}$ .
- 3 Set  $P_{max}$ . This determines the maximum airway pressure allowed during apnoea ventilation.

### To end apnoea ventilation

- Press the **Alarm Reset** key.

The ventilator resumes ventilating with the original mode and parameter settings.

### To disable apnoea ventilation

- Set  $Tapn$  to OFF.

## NIV – Non-invasive ventilation (mask ventilation)

### Use of NIV

NIV can only be activated as a supplementary function in the ventilation modes SpnCPAP (/PS), PC-BIPAP (/PS), VC-CMV / AF, VC-AC / AF, and VC-SIMV / AF. The Oxylog 3000 *plus* automatically adjusts to the requirements of mask ventilation. Mask leakages are detected by the device and compensated for. Therefore, the displayed measured values  $VT_e$  and  $MVE$  do not include the leakage. The leakage alarm is inactive.

When NIV is switched on, the supplement NIV appears in the ventilation mode window.

#### NOTE

Refer to the NIV section in the Instructions for Use for a clear understanding of risks associated with NIV use.

## Special functions

### Manual inspiration / Inspiration hold

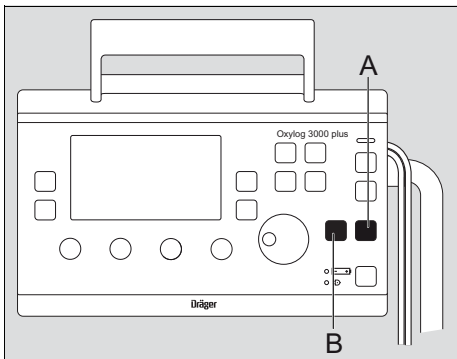
The function Manual inspiration / Inspiration hold will either initiate a new (manual) ventilation stroke or hold the inspiratory phase of the current ventilation stroke for a maximum of 15 seconds.

The pattern of the manually started ventilation stroke corresponds with the set ventilation mode.

This function is not available for:

- SpnCPAP without PS,
- O<sub>2</sub> inhalation (optional).

#### To activate Manual inspiration or Inspiration hold



- Press key **Inspiration hold** (A) for as long as inspiration is required.

### 100 % O<sub>2</sub> (optional)

To apply 100 % O<sub>2</sub> for 3 minutes regardless of the momentarily set value.

- Briefly press key **100 % O<sub>2</sub>** (B).  
Its indicator lights up for 3 minutes.

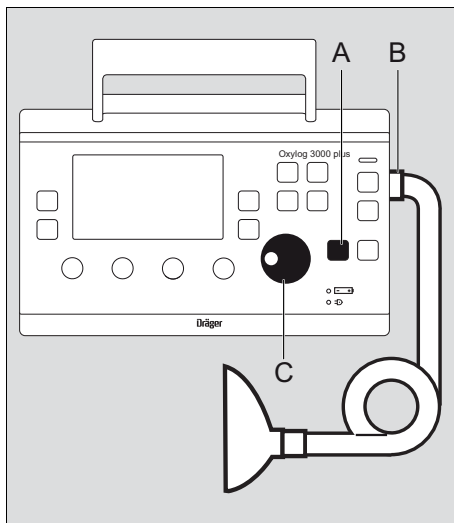
The set value is resumed by the ventilator upon expiry of these 3 minutes, or when the 100 % O<sub>2</sub> is pressed again. The indicator dims.

### O<sub>2</sub> inhalation (optional)

The O<sub>2</sub> inhalation function is not a ventilation mode.

It may only be used for patients with spontaneous breathing who receive a constant O<sub>2</sub> flow of between 0 and 15 L/min via a mask.

#### To activate O<sub>2</sub> inhalation

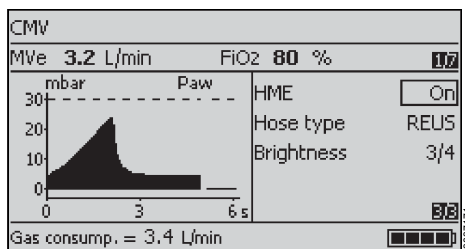


- 1 Connect the inhalation mask to the gas outlet for ventilation hose (B).
- 2 Press and hold key **O<sub>2</sub>-Inhalation** (A) for approx. 3 seconds.  
O<sub>2</sub> inhalation is performed with the previously effective setting.
- 3 Set and confirm the required O<sub>2</sub> flow via the rotary knob (C).

## Setting HME correction

When using an HME, the measured flow may deviate from the actual expiratory flow, as temperature and humidity of the gas are reduced. The flow and volume measurements can be corrected for use with an HME.

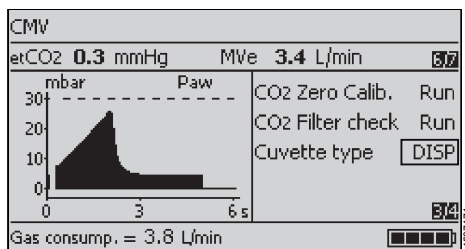
When using HME, select, set and confirm **HME - On** in the Settings window with the rotary knob.



## CO<sub>2</sub> measurement (optional)

The CO<sub>2</sub> measurement only works if the CO<sub>2</sub> option has been installed and if the CO<sub>2</sub> sensor is present.

### Cuvette type setting



To set the cuvette type (reusable or disposable):

- 1 Press the **Settings**  $\triangleright\triangleright$  key.
- 2 Select and activate the line **Cuvette type**.
- 3 Set the cuvette type and confirm.

### NOTE

The cuvette windows of the reusable cuvette and disposable cuvette have different optical properties. Therefore, the correct cuvette type must be selected in the Setting menu. Otherwise the zero point is shifted by up to  $\pm 8$  mmHg of CO<sub>2</sub>.

## Checking the CO<sub>2</sub> sensor during ventilation

The following checks are necessary for the CO<sub>2</sub> sensor during ventilation:

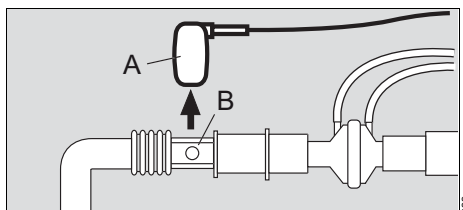
Check	Interval
CO <sub>2</sub> zero calibration	Required before measurement and when changing the CO <sub>2</sub> sensor to another unit. Required if the CO <sub>2</sub> sensor shows an offset after a warm-up phase.
CO <sub>2</sub> filter check	Required in intervals of one month.

## Zero calibration during ventilation

The zero calibration is performed with a clean CO<sub>2</sub> sensor that has been removed from the cuvette.

To perform zero calibration:

- 1 Connect the CO<sub>2</sub> sensor and wait at least 3 minutes for the CO<sub>2</sub> sensor to complete its warm-up phase.



- 2 Remove the CO<sub>2</sub> sensor (A) from the cuvette (B).
- 3 Press the **Settings**  $\triangleright\triangleright$  key.
- 4 Select and activate the line **CO<sub>2</sub> Zero Calib - Run**. The screen displays the text **Remove the sensor from cuvette then press rotary knob**.

- 5 Confirm. The zero calibration starts and the line displays **Busy**.  
Note the possible warm-up time. During zero calibration, ventilation settings can be changed. After a successful zero calibration, the line briefly displays **Pass**.
- 6 Attach the CO<sub>2</sub> sensor (A) back to the cuvette (B).

If zero calibration was not successful:

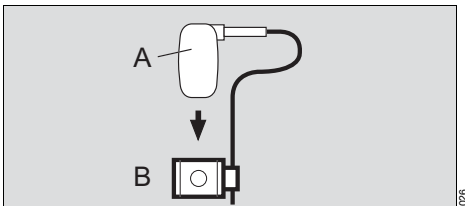
The Oxylog 3000 *plus* displays the alarm **!!! CO<sub>2</sub> Zero calib. failed**.

- Repeat zero calibration

If zero calibration is still not possible:

- 1 Check whether the sensor (A) is soiled and clean if necessary. If the sensor is defective, replace the sensor.
- 2 Repeat zero calibration.

## CO<sub>2</sub> filter check during ventilation



To perform CO<sub>2</sub> filter check:

- 1 Remove the CO<sub>2</sub> sensor from the cuvette.
- 2 Attach the CO<sub>2</sub> sensor (A) to the test filter (B).
- 3 Press the **Settings** key.
- 4 Select and activate the line **CO<sub>2</sub> Filter check - Run**.
- 5 Confirm. The filter check starts and the line displays **Busy**.  
During the filter check, ventilation settings can be changed.  
After a successful filter check, the line briefly displays **Pass**.
- 6 Attach the CO<sub>2</sub> sensor (A) back to the cuvette.

If the check was not successful:

The Oxylog 3000 *plus* displays the alarm **!!! CO<sub>2</sub> Filter check failed**. The test value is outside the permissible tolerance.

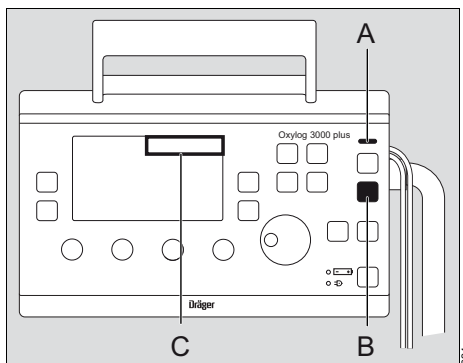
- 1 Check whether the sensor (A) or test filter (B) is soiled and clean them if necessary. If the sensor is defective, replace the sensor.
- 2 Check the CO<sub>2</sub> calibration with test gas or calibrate the CO<sub>2</sub> sensor.

## Alarms

### NOTE

The Oxylog 3000 *plus* Pocket Guide is not a replacement or substitute for the Instructions for Use. Any use of the device requires full understanding and strict observation of the Instructions for Use.

### In the event of an alarm



- The indicator (A) flashes red or yellow, or lights up yellow.

And

- The alarm message appears on the upper right corner of the screen (C). In addition, alarm tones are issued.

When the fault has been remedied the alarm tone is cancelled.


Alarms, which have been remedied and remain on the display, can be acknowledged (reset):

- Press the **Alarm Reset** key (B).


The alarm message is now removed from the display.

Every alarm which has been remedied, but not acknowledged, will be overwritten when a new alarm is issued.

### Suppress alarm tones

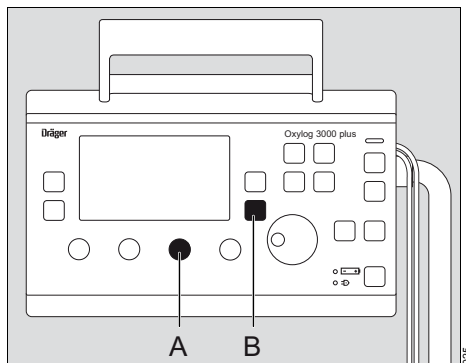
- Press the key . The alarm indicator remains active and all alarm tones are suppressed for approximately 2 minutes. Alarm tones are resumed by the device after these 2 minutes.

If alarm tones are to be heard again before the 2 minutes have expired:

- Press the key  again.

### Setting alarm limits

#### Setting upper alarm limit for P<sub>aw</sub>



- Set the maximum airway pressure P<sub>max</sub> via the **P<sub>max</sub>** control (A).

### Lower alarm limit for Paw

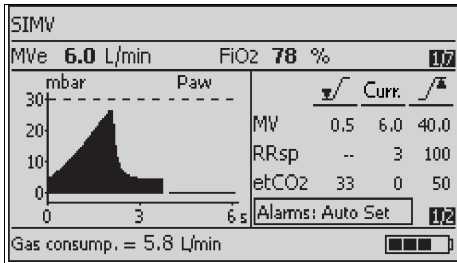
The Oxylog 3000 *plus* automatically generates an alarm when it no longer detects a pressure difference of more than 5 mbar between the inspiratory and expiratory pressure; for more than 20 seconds.

### Setting alarm limits for MVe, RRsp and optional etCO<sub>2</sub>

- 1 Press the key **Alarms**  $\triangleright\triangleright$  (B).
- 2 Select and activate the low alarm limit  $\nabla/\surd$  or high alarm limit  $\surd/\blacktriangle$  for **MVe**, **RRsp** or **etCO<sub>2</sub>** on the display.
- 3 Set and confirm the value.

If the CO<sub>2</sub> sensor cable is disconnected, etCO<sub>2</sub> alarm limits are not visible. If the CO<sub>2</sub> sensor cable is disconnected and then reconnected, the previously set alarm limits will still be valid.

### Alarms window



The auto alarm limits are based on the actual measured values as follows:

Alarm	Setting
MVe $\nabla/\surd$	Current value -20 %, with a minimum of 0.5 L/min. Below 0.5 L/min the limit remains unchanged.
MVe $\surd/\blacktriangle$	Current value +30 % or +2 L/min, whichever is smaller.
RRsp $\surd/\blacktriangle$	Current value +5/min, with a minimum of 10/min.
etCO <sub>2</sub>	Based on the current value.

The etCO<sub>2</sub>  $\nabla/\surd$  /  $\surd/\blacktriangle$  auto alarm limits are based on the actual etCO<sub>2</sub> value as follows:

Lower alarm limit [mmHg]	Current measured value [mmHg]	Upper alarm limit [mmHg]
Unchanged	<15	Unchanged
Current -5	15 to 35	Current +15
Current -7	35 to 45	Current +10
Current -10	>45	Current +5

Lower alarm limit [kPa] or [Vol. %]	Current measured value [kPa] or [Vol. %]	Upper alarm limit [kPa] or [Vol. %]
Unchanged	<2.0	Unchanged
Current -0.7	2.0 to 4.7	Current +2.0
Current -0.9	4.7 to 6.0	Current +1.3
Current -1.3	>6.0	Current +0.7

### Setting alarm limits automatically

The function **Alarms: Autose**t sets the alarm limits on the basis of the actual measured values at the time of activation. This automatic setting of alarm limits is performed only once, when confirmed with the rotary knob.

- 1 Press the key **Alarms**  $\triangleright\triangleright$  (B).
- 2 Select and activate the line **Alarms: Autose**t on the display.
- 3 Press the rotary knob to confirm **Alarms: Autose**t, or press the **Alarm Reset** key to leave the settings unchanged.



## Problem solving

### NOTE

The Oxylog 3000 *plus* Pocket Guide is not a replacement or substitute for the Instructions for Use. Any use of the device requires full understanding and strict observation of the Instructions for Use.

The Oxylog 3000 *plus* classifies alarm messages according to three priority levels and identifies these accordingly with the aid of exclamation marks:

- !!! **Warning** High priority alarm message
- !! **Caution** Medium priority alarm message
- ! **Advisory** Low priority alarm message

In the following table, the alarm messages are listed in alphabetical order. If an alarm occurs, the table helps to identify causes and remedies. The different causes and remedies should be worked through in the order listed until the cause of the alarm has been resolved.

When multiple alarms occur, they are displayed according to their Alarm Rank, as illustrated in the table below. A lower number has a higher rank.

### Messages in the alarm window

Alarm	Cause	Remedy	Alarm Rank
!!! <b>Apnoea</b>	Spontaneous breathing by the patient has failed, or disconnection.	Check patient condition. Ventilate in VC-CMV mode. Ensure that hose connections are tight.	8
	Faulty flow sensor.	Replace flow sensor.	
!!! <b>Apnoea ventilation (only for CPAP)</b>	The ventilator has automatically switched over to mandatory ventilation after detecting an apnoea (only in SpnCPAP mode).	Check patient condition. Check ventilation settings. To return to the original ventilation mode: Press the <b>Alarm Reset</b> key.	7
!! <b>Charge int. battery</b>	The Oxylog 3000 <i>plus</i> draws its power from the internal battery due to the absence of an external power supply. There is only approximately 10 minutes of operating time remaining in the internal battery.	The ventilator must immediately be reconnected to the mains supply or an onboard power supply, or a fully charged battery must be installed (ventilation stops while installing the battery).	31
!!! <b>Check measuring lines</b>	The flow measuring hoses are connected incorrectly.	Connect the flow measuring lines correctly.	9

Alarm	Cause	Remedy	Alarm Rank
<b>!! Check settings flow</b>	The flow resulting from the settings for "Tidal volume <b>VT</b> per unit time" is not possible.	Change tidal volume <b>VT</b> or inspiratory time <b>Ti</b> or ventilation time ratio <b>I:E</b> , plateau time <b>Tplat%</b> , or respiratory rate <b>RR</b> .	27
<b>! Check settings FiO2</b>	The set FiO2 concentration cannot be achieved with the set flow.	Adjust inspiratory flow or FiO2 concentration (in accordance with measured value).	42
<b>!! Check settings time</b>	The inspiratory and / or expiratory time resulting from the settings for <b>RR</b> and <b>I:E</b> or <b>Ti</b> are not possible.	Change <b>RR</b> or <b>I:E</b> or <b>Ti</b> .	26
<b>!! CO2 Filter check failed</b>	The sensor reports a reference check failure.	Clean the CO2 test filter or the CO2 sensor and cuvette windows. <hr/> Recalibrate the sensor.	19
<b>!! CO2 sensor?</b>	The connector of the CO2 sensor was removed during operation. <hr/> The CO2 sensor has a hardware failure.	Reinsert the connector. <hr/> Replace the CO2 sensor.	15
<b>!!! Clean the CO2 cuvette</b>	The sensor or cuvette window is soiled.	Clean the sensor and cuvette windows.	16
<b>!! CO2 Zero calib. failed</b>	The sensor window is soiled. <hr/> Zero calibration of the CO2 sensor failed.	Clean the CO2 sensor window. <hr/> Redo the zero calibration.	18
<b>!!! CO2 Zero calib. request</b>	Zero point of the CO2 sensor is outside the tolerance range.	Perform the zero calibration.	20
<b>! Confirm settings</b>	Changed setting has not been confirmed with the rotary knob.	Press the rotary knob to confirm the setting change.	43
<b>!!! Constant CO2 value</b>	An incorrect cuvette type selected. <hr/> Cuvette or sensor soiled.	Select the correct cuvette type. <hr/> Clean the cuvette or sensor.	17
<b>!!! Continuous high pressure</b>	Breathing valve or hose system obstructed. <hr/> Increased expiratory resistance. <hr/> Technical defect.	Check patient condition. Check breathing valve and hose system. <hr/> Check bacterial/HME filter. Replace it if necessary. <hr/> Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	4

<b>Alarm</b>	<b>Cause</b>	<b>Remedy</b>	<b>Alarm Rank</b>
<b>!!! Device failure</b>	Technical defect.	Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	1
<b>!!! Display inop</b>	Technical defect.	Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	38
<b>!! etCO<sub>2</sub> high</b>	The upper alarm limit for end-expiratory CO <sub>2</sub> concentration has been exceeded.	Check patient condition. Check alarm limits. Adjust the alarm limit, if necessary.	21
<b>!! etCO<sub>2</sub> low</b>	The lower alarm limit for end-expiratory CO <sub>2</sub> concentration has been exceeded.	Check patient condition. Check alarm limits Adjust the alarm limit, if necessary.	22
<b>!! Flow measurement inop</b>	Measurement hoses for flow measurement kinked, disconnected or leaking. Flow sensor defective. Technical defect.	Ensure that the flow measurement hoses are connected correctly. Replace flow sensor. Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	37
<b>!! High respiratory rate</b>	Patient breathes at a high spontaneous rate.	Check patient condition, check ventilation pattern, correct alarm limit <b>RRsp</b> if necessary.	28
<b>!! Int. battery charging inop</b>	The internal battery is not being charged due to a battery failure. The internal battery is not being charged due to a device failure.	Exchange internal battery. Call DrägerService. Continuous ventilation with this device is only possible with an external power source. Call DrägerService.	32
<b>!!! Int. battery discharged</b>	The operating time for operation with the internal battery has expired and an external power supply has not been connected.	The ventilator must immediately be reconnected to a mains supply, an on-board DC supply or a fully charged battery must be installed.	2

Alarm	Cause	Remedy	Alarm Rank
<b>!! Int. battery in use</b>	<p>During ventilation, when the external power source has been disconnected, the internal battery becomes the main power source.</p> <p>When starting ventilation while using the internal battery this alarm will not be issued.</p>	Connect an external power supply. Press the <b>Alarm Reset</b> key to confirm the alarm.	25
<b>!! Key failed</b>	<p>A key is pressed for longer than 30 seconds.</p> <hr/> <p>Technical defect.</p>	<p>Press keys only briefly.</p> <hr/> <p>To continue ventilation with this device, verify the ventilation settings and continuously monitor the device functions. Call DrägerService.</p>	33
<b>!!! Leakage (not in NIV)</b>	<p>The measured expiratory tidal volume VT is approximately 40 % lower than the inspiratory value.</p> <hr/> <p>Faulty flow sensor.</p> <hr/> <p>Technical defect.</p>	<p>Repair leaks in hose system and / or patient connection.</p> <p>Use a new hose system.</p> <hr/> <p>Replace the flow sensor.</p> <hr/> <p>Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.</p>	14
<b>!! Loss of data</b>	No logbook data or clock available. Actual settings will be lost in case of a power loss.	Ventilation functions are not affected. Call DrägerService.	35
<b>!! Loudspeaker inop</b>	Technical defect.	To continue ventilation with this device, continuously monitor the device functions. Call DrägerService.	36
<b>!!! MVe high</b>	<p>The upper alarm limit for the minute volume MVe has been exceeded.</p> <hr/> <p>Faulty flow sensor.</p> <hr/> <p>Technical defect.</p>	<p>Check patient's condition, check ventilation pattern, adjust alarm limits if necessary.</p> <hr/> <p>Replace flow sensor.</p> <hr/> <p>Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.</p>	13

Alarm	Cause	Remedy	Alarm Rank
!!! <b>MVe low</b>	The minute volume MVe has dropped below its lower alarm limit.	Check patient's condition, check ventilation pattern, adjust alarm limits if necessary.	12
	Leak in exhalation system.	Ensure connections in exhalation system are tight.	
	Faulty flow sensor.	Replace flow sensor.	
	Technical defect.	Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	
!! <b>No int. battery ?</b>	Internal battery not installed, faulty or wrong battery installed.	Fit battery or press the <b>Alarm Reset</b> key to confirm the alarm or change internal battery.	39
! <b>No int. battery ?</b>	Internal battery not installed, faulty or wrong battery installed.	Advisory message, is displayed continuously when confirmed. Fit battery or change internal battery.	40
! <b>No int. battery charging</b>	Internal battery cannot be charged due to a faulty battery or too hot or cold environment.	Press the <b>Alarm Reset</b> key to confirm the alarm. Change internal battery.	41
!! <b>Only 100 % O<sub>2</sub> to patient</b>	Technical defect.	Independent of the set <b>FiO<sub>2</sub></b> , the device supplies 100 % O <sub>2</sub> to the patient. Other ventilation functions remain unchanged. Call DrägerService.	34
!!! <b>Paw high</b>	The alarm limit <b>Pmax</b> for the airway pressure has been reached. Patient "fights" the ventilator, coughing.	Check patient's condition, check ventilation pattern, adjust alarm limits if necessary.	3
	Ventilation hose kinked, or obstructed.	Check hose system, breathing valve and tube.	
!!! <b>Paw low</b>	The set pressure level is not achieved or no pressure difference >5 mbar between inspiration and expiration. Leak in cuff.	Inflate cuff and check for leaks.	6
	Leakage or disconnection.	Check hose system for leaking connections. Ensure that the breathing valve has been installed correctly.	

Alarm	Cause	Remedy	Alarm Rank
!!! <b>Paw measurement inop</b>	Fault in flow measurement hoses.	Check hose system for loose connections. Ensure flow measurement hoses are connected correctly.	5
	Technical defect.	Disconnect the patient from the device and continue ventilation without delay using another ventilator. Call DrägerService.	
!!! <b>Reselect hose type</b>	The detected hose type is not the same as the selected hose type.	Change hose type setting. Connect a different hose type.	10
! <b>Self test OK</b>	The device has been switched on and the self-test completed successfully.	The message disappears automatically after approximately 15 seconds.	46
! <b>Settings not confirmed</b>	Changed setting has not been confirmed with the rotary knob.	Redo the setting change.	45
!! <b>Supply pressure low</b>	Supply pressure <1800 mbar.	Ensure that supply pressure exceeds 1800 mbar. Disconnect the patient from the device and continue ventilation without delay using another ventilator.	24
!! <b>VT high for hose</b>	The measured <b>VT</b> is above 250 mL, while using a paediatric hose.	Set a lower VT or press the <b>Alarm Reset</b> key to confirm the alarm.	11
	An incorrect hose connected.	Use another hose or press the <b>Alarm Reset</b> key to confirm the alarm.	
! <b>VT high for hose</b>	The measured <b>VT</b> is above 250 mL, while using a paediatric hose.	Advisory message, is displayed continuously when confirmed. Set a lower VT.	44
	An incorrect hose connected.	Advisory message, is displayed continuously when confirmed. Use another hose.	
!! <b>VT low, pressure limit</b>	During <b>AutoFlow</b> additional pressure is necessary to achieve the set tidal volume <b>VT</b> . (Pressure is limited to Pmax - 5 mbar.)	Check patient condition. Check ventilation settings	29

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