

### Specifications:-

**Flow Range VARIFLOW:** Adjustable 5 -17 l/min (with 0.8 micron cellulose filter)  
**Flow Range VARIFLOW 8:** Adjustable 5 -10 l/min (with 0.8 micron cellulose filter)  
**Flow Stability:** +/- 3%  
**Battery Pack:** (1x) 12 Volt (8.5 amp min) Lead Acid  
**Charge Time:** 6 - 8 Hours Max  
**Continuous Duration VARIFLOW:** 3+ Hours @ 16 l/min, 8+ Hours @ 8 l/min (with 0.8 micron cellulose filter)  
**Continuous Duration VARIFLOW 8:** 8+ Hours @ 8 l/min (with 0.8 micron cellulose filter)  
**Display:** OLED, elapsed run time and battery indicator  
**Material:** HF ABS  
**Waterproof:** To IP65  
**CE Marked:** Yes  
**Dimensions:** H38cm x W24cm x D12cm  
**Mast extends to:** Up to 2.0 metres

### Warranty Registration

Don't forget to register your new Airbox product by filling in the registration form provided and returning it to us at the address below.

Alternatively you can do this online at: [www.airboxsp.com](http://www.airboxsp.com)

### Technical support

For all technical support or customer service enquiries please contact us:

**telephone:** +44(0)1903 524 600

**email:** [sales@airboxsp.com](mailto:sales@airboxsp.com)

**web:** [www.airboxsp.com](http://www.airboxsp.com)



■ ■ ■ thank you for choosing this Airbox product

**Dear Customer**

Thank you for purchasing this Airbox product. To ensure that you get the best possible use from it, please read this manual carefully.

You can also find a 'Using the Variflow' video on the website at [www.airboxsp.com](http://www.airboxsp.com) under the Resource Centre tab.

Your sincerely  
**The Airbox Team**

**Declaration of conformity**

We herewith confirm, that the unit to which this manual belongs meets the necessary requirements to obtain the sign



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Airbox Sampling Products is a wholly owned subsidiary of:

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Technology Centre,  
Easting Close, Worthing  
West Sussex BN14 8HQ



# The VARIFLOW/VARIFLOW 8



## 1. Setting up and using the VARIFLOW/VARIFLOW 8 pump

Before you use the VARIFLOW/VARIFLOW 8 pump make sure it is fully charged. A battery level indicator shows the available power when the unit is first switched on.

### 1.1 Charging the battery

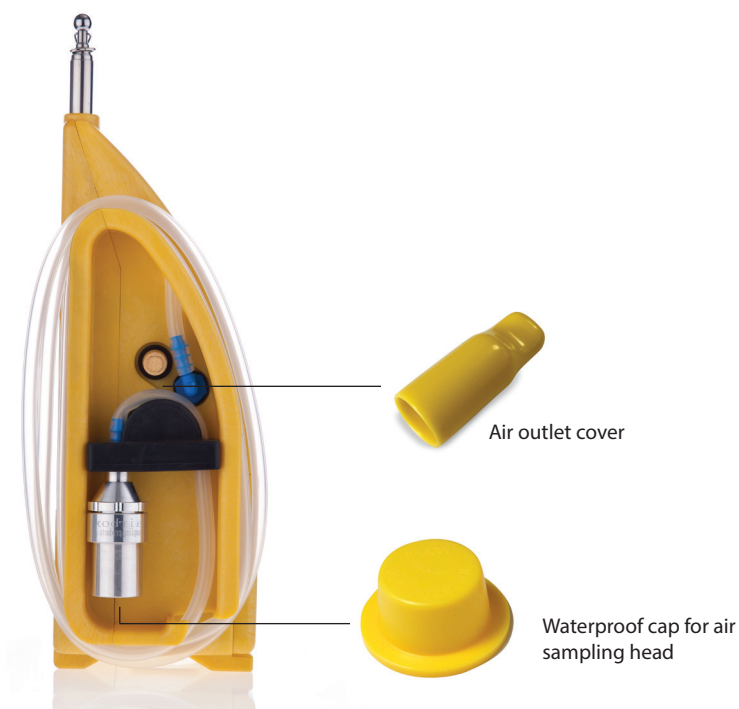
When the charger is plugged into the charging socket a red LED will be illuminated. The LED will change to green when the battery is fully charged. It takes approximately 6-8 hours to completely charge the battery.

### 1.2 Running the VARIFLOW/ VARIFLOW 8 from the mains

The VARIFLOW/VARIFLOW 8 can be run directly from the mains but only when used with the optional 4A charger (Product Code: PT30592LF) **NOTE:** Battery must be attached.

### 1.3 Removing the waterproof covers

**IMPORTANT:** Before switching the unit on, ensure the yellow waterproof covers are removed from the air outlet and from the bottom of the air sampling head.



## 1.4 Switching on and setting the flow rate

**NOTE:** The two models are slightly different, please make sure you read the correct model instructions.

### VARIFLOW

Before switching on the VARIFLOW connect a flow meter to the air sampling head.

Press **start/pause** to switch on the unit. The display will show, in this order, the serial number, the current firmware version and the battery status.

Press **start/pause** the display shows 'Flow not set'.

Press either **arrow** to open **Calibration Mode** and to **Set Flow**.

Press **arrows** to select **Low** or **High**. (**Low** is approx 8 l/min, **High** is approx 16 l/min).

Press **start/pause** to start the pump. **NOTE:** Run for 45 seconds to allow to stabilise.

Press **up/down arrows** to adjust flow rate. (A single press advances the display by one increment, holding while pressing advances the display by 10 increments).

Check the flow rate against the flow meter and adjust according to flow requirements. (Any increment changes will be saved for the post test flow check, see 1.6/1.7).

To confirm and set the flow rate press **stop**.

**IMPORTANT:** If pump is shutdown between setting the flow and starting the test, flow will have to be reset by repeating the steps above.

### VARIFLOW 8

Before switching on the VARIFLOW 8 connect a flow meter to the air sampling head.

Press **start/pause** to switch on the unit. The display will show, in this order, the serial number, the current firmware version and the battery status.

Press **start/pause** the display shows 'Flow not set'.

Press either **arrow** to open and start **Calibration Mode** and to **Set Flow**.

The pump is set at approx 8 l/min as a default, to fine tune this:-

Press **start/pause** to start the pump. **NOTE:** Run for 45 seconds to allow to stabilise.

Press **up/down arrows** to adjust flow rate. (A single press advances the display by one increment, holding while pressing advances the display by 10 increments).

Check the flow rate against the flow meter and adjust according to flow requirements. (Any increment changes will be saved for the post test flow check, see 1.6/1.7).

To confirm and set the flow rate press **stop**.

**IMPORTANT:** If pump is shutdown between setting the flow and starting the test, flow will have to be reset by repeating the steps above.

## 1.5 Setting test mode

Press **start/pause** the display will show 'Set test mode'.

Press **arrows** to select 'Free Running' or 'Timed test'.

### 1.6 If Free Running is selected

Press **start/pause** the pump runs and the timer starts counting, (you can pause during the test by pressing **start/pause**)

Press **stop** when the test is complete and the display shows 'Test Stop? Are you sure?' If you are not sure, press **start/pause** to continue test, if you are sure:-

Press **stop** display shows 'Test completed - Check Flow'.

Press **stop** display shows 'Connect flow meter' (now reconnect your flow meter to check the flow rate).

Press **start/pause**, display shows 'Flow Check' (any increment changes made when setting the flow rate (see 1.4) will be shown).

**NOTE:** Wait 45 seconds for flow rate to stabilise.

Press **stop** display shows 'Flow Check Complete'.

Press **stop** to shutdown.

### 1.7 If Timed Test is selected

Press **start/pause** the display shows 'Enter Run Time'

Press **arrows** to adjust time:-

Press **start/pause** to move between (Hrs) 00 (Mins) 00 (Sec) 00.

Press **start/pause** the pump runs and the timer starts. When the time has elapsed the display shows 'Test Completed - Check Flow'.

Press **stop** display shows 'Test completed - Check Flow'.

Press **stop** display shows 'Connect flow meter' (now reconnect your flow meter to check the flow rate).

Press **start/pause** display shows 'Flow Check' (any increment changes made when setting the flow rate (see 1.4) will be shown).

**NOTE:** Wait 45 seconds for flow rate to stabilise.

Press **stop** display shows 'Flow Check Complete'.

Press **stop** to shutdown.

**NOTE:** If the pump switches itself off during either Free Running or Timed Test (i.e if the battery dies or the sampling head gets blocked) on restart it will either show:-

1. 'Test Incomplete, Restart Test?'; in which case just recommence test.
2. 'Test Completed Check Flow'; in which case continue as instructions above.
3. 'Low battery'; in which case either replace battery (within 10 minutes of disconnecting old one) or charge pump directly from the mains for a short time to complete the flow check.



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## 2. Maintenance

### 2.1 Replacing the battery

The **VARIFLOW/VARIFLOW 8** pump has been specifically designed to make replacing the battery a quick and easy task. Simply undo the two screws on the front of the battery housing, pull off the terminal connectors, remove the battery and replace.

**NOTE:** This process is made easier if pump is lying on it's back.

**IMPORTANT:** The terminals on the battery are colour coded red and black to match the red and black wires of the unit. When fitting a new battery make sure that these match up correctly.

### 2.2 Replacing the mast

The mast is secured on the unit in a threaded housing, so to replace just unscrew and remove.

**IMPORTANT:** Please do not lift the pump by the mast.



### 2.3 Cleaning the unit

The casing of the **VARIFLOW/VARIFLOW 8** pump is made from a hard wearing ABS structural foam, making it incredibly rugged and also very easy to clean. Tested to IP65 standards ('Protected against low pressure water jets from any direction.'). The unit can be cleaned under a shower hose.



## 2.4 Servicing & Warranty

The **VARIFLOW/VARIFLOW 8** pump is covered by our exclusive warranty and in the event that the unit fails we will undertake the repair free of charge for up to 2 years from the date of purchase. The warranty covers the costs of materials and labour (with the shipping costs to be covered by the customer) and is valid under the following conditions:-

- a) Please complete and return the warranty registration card.
- b) The defect must not have been caused by improper handling or misuse.
- c) Return the unit to us in the decontamination bag provided by Airbox. We will not assume responsibility for transport damage under any circumstances.
- d) A short description of the defect must be included with the returned unit.

A full warranty statement is available on our website or from our customer service team.

## 3. Troubleshooting

### 3.1 Pump will not start, red LED illuminated

Battery voltage may be too low, check the battery level and recharge the battery. If the pump still doesn't start, contact the Airbox service department.

### 3.2 Pump will not start, no display

Flat battery, recharge or replace the battery.

### 3.3 Flow rate doesn't reach required level

Ensure the yellow waterproof safety caps have been removed.

Check tube for kinks and that the sampling head is not blocked.

If flow rate is still insufficient, contact the Airbox service department.

### 3.4 Pump stops while running, red LED illuminated

Check tube for kinks and that the sampling head is not blocked.

If the flow rate is still insufficient, contact the Airbox service department.

Check the battery level and recharge if required. Replace the battery if necessary.

### 3.5 Pump fails to run for specified duration

Check the battery level and recharge if required. Replace the battery if necessary.

## 4. Parts

Spare parts for the **VARIFLOW/VARIFLOW 8** pumps can be ordered from our online shop at [www.airboxsonline.com](http://www.airboxsonline.com) using the following part numbers:-

Product Code	Name	Description
PO1554	VARIFLOW	VARIFLOW Air Sampling Pump (with UK/EU charger)
PO1554/KIT	VARIFLOW	VARIFLOW Air Sampling Pump (with UK/EU charger, sampling head & spare mast)
PO1764	VARIFLOW 8	VARIFLOW 8 Air Sampling Pump (with UK/EU charger)
PO1764/KIT	VARIFLOW 8	VARIFLOW 8 Air Sampling Pump (with UK/EU charger, sampling head & spare mast)
PO1617	Sampling head	Air sampling head
PO2934347LF	1Ah Variflow charger	Battery charger VARIFLOW 12V 1A SLA (standard supply)
PT30592LF	4A Variflow charger	Battery charger 4A Lead Acid
PT27259	Lead acid battery-Variflow	Battery 12V NP sealed- lead acid 8.5Ah, (min) Rechargeable.
PT29482LF	Variflow mast	Telescopic mast for VARIFLOW -2m
PT28297LFKIT	Cap & Plug Kit (x10)	Sampling head cap & plug kit - (pack of 10)
PT28299LF	Filter support pad	Filter support pad 25mm porous plastic pack (10)
PT28301LF	Sampling head O ring	25mm/OD 1.9mm/CS Virgin PTE (pack 10)