User Manual

Specifications:- (tested with 8.0µm MCE filter)

Flow Range: Adjustable 5 -17 l/min
Battery Pack: Battery for Variflow/V8/Lowflow - Lead acid 12V 9Ah Recharge
Charge Time: 6-8 hours
Duration: 2+ Hours @ 16 l/min, 8+ Hours @ 8 l/min
Display: OLED, elapsed run time and battery indicator
Material: HF ABS
Waterproof: IP65
Dimensions: H38cm x W24cm x D12cm
Mast extends: (Up to 2 meters)
Weight: 4.6kg
CE Marked

Issue 1
220223

VARIFLOW

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

Technical support

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

telephone: +44(0)1903 524 600

email: sales@airboxsp.com

Airbox Sampling Products , Technology Centre,
Easting Close, Worthing, West Sussex BN14 8HQ

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

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1. Setting up and using the Variflow pump

Before you use the VARIFLOW 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 Removing the waterproof covers

IMPORTANT: Before switching the unit on, ensure the gold air outlet valve and sampling head are not covered.

2. Switching on and setting the flow rate

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.
If **start/pause** is pressed the display shows 'Flow not set'.
Press either arrow to open and start Calibration Mode and to Set Flow.
The pump is set at aprox 8 l/min as a default, to fine tune this:-

Press **start/pause** to start calibration. 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 acording to flow requirements. (Any increment changes will be saved for the post test flow check, see 2.2 & 2.3).

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 re-calibrated by repeating the steps above.

2.1 Setting test mode

Press **start/pause** the display will show 'Set test mode'.
Press arrows to select 'Free Running' or 'Timed test'.

2.2 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** during test 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 2) will be shown).
NOTE: Wait 45 seconds for flow rate to stabilise.
Press **stop** display shows 'Flow Check Complete'.
Press **stop** to shutdown.

2.3 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 2) 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?', Press **start/pause** to resume test and see where the previous test got to.

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.

3. Maintenance

3.1 Replacing the battery

The VARIFLOW 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.

3.2 Replacing the mast

The mast is secured on the unit in a threaded housing, so to replace just unscrew and remove. We would also recommend removing the mast when cleaning the unit (3.3).

3.3 Cleaning the unit

The casing of the VARIFLOW 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.

NOTE: Do NOT Submerge the product fully in water.

3.4 Servicing & Warranty

The Variflow 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.

4. Troubleshooting

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.

Pump will not start, no display

Flat battery, recharge or replace the battery.

Flow rate doesn't reach required level

Ensure any 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.

Pump stops while running, red LED illuminated

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

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

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

Pump fails to run for specified duration

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

5. Parts

Product Code	Name	Description
P01554	VARIFLOW	VARIFLOW Air Sampling Pump (with UK/EU charger)
P01554/KIT	VARIFLOW	VARIFLOW Air Sampling Pump (with UK/EU charger, sampling head & spare mast)
P01839	Sampling head	AIRBOX SAMPLING HEAD + 2x O-rings + 2x Filter support pads
P029347LF	Charger for Variflow 1Ah	Charger for P029347LF - 12V 1Ah Lead acid SLA - (Choose lead)
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)