



# AirBench™ FX

## Operation and Maintenance

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## CAUTIONS



It is your responsibility under ATEX regulations to ensure the AirBench is located in an area rated suitable for the specification of the AirBench.



Use the AirBench only for the designed duty – consult the manufacturer on any change of use.

Each unit is marked with its design application, which is also shown on the commissioning certificate.



The filters are not self-cleaning.

They must be maintained / cleaned / replaced as described within.



Do not mix incompatible materials e.g. steel and aluminium.

It is the users' responsibility to comply with this legal requirement.

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# INTRODUCTION

## Overview

Thank you for choosing AirBench as your fume or dust control system. Please read this document before installation and use.

This document details maintenance activities which are essential to the safe use of your AirBench. We recommend that the Responsible Person reads this manual fully prior to installation and operation of the AirBench.

This document refers to the AirBench FX type. Models of this type are available with a range of filter configurations. The filter configuration in use is detailed on the system Commissioning Certificate and is used within this document to provide filter-specific maintenance information.

## About AirBench

AirBench is a self-contained down draught extraction bench which utilises a fan and filter combination selected for your specific application, to extract and filter dust/fumes and return filtered air to the work place.

Some models vary in filtration and filtered air delivery point.

It is used by running the fan at either fixed speed or variable speed (if speed controller fitted) to draw the pollutant down and through the filters, allowing the process to proceed on the surface.

## About this Document

This document provides general maintenance and operation instructions for the AirBench FX range. It should be read in conjunction with the Commissioning Certificate supplied with the unit. If you have any concerns or doubts about maintenance or operation of this unit, contact the manufacturer.

Alongside this document, we have provided ATEX certification and instruction manuals for:

- Fan
- Filters
- DOL Starter (if ATEX DOL Starter supplied)

You should ensure that all documents are present and understood before commencing work.

## Suitability

This unit is marked with an ATEX coding. This coding defines the zones for which the unit is suitable:

- Units marked 3G: Suitable for zone 2 only.
- Units marked 3D: Suitable for zone 22 only.

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# INSTALLATION

## General

Unpack the unit and check for damage, if not already completed.

The AirBench must be installed on a flat and level floor capable of carrying the weight of the unit. For nominal unit weights, see Specifications section at rear of manual. When determining an installation location, be aware that the air exhaust must discharge somewhere. Do not position the unit so all outlets are blocked.

These models are designed to be moved into place using a forklift or pallet truck, taking care not to damage fittings on the base of the unit.

## Electrical

### WIRING

AirBench FX is supplied with EITHER a DOL starter suitable for the same ATEX zoning as the unit; OR an unrated DOL starter.

If the DOL starter supplied does not have a suitable ATEX marking, it MUST be installed outside your explosion risk area.

If the DOL starter supplied has a suitable ATEX marking, it may be installed close to the unit.

Any plug supplied is non-rated and must only be used outside explosion risk areas.

Electrical connection should be completed by a suitably qualified electrician.



**It is essential to install both AirBench and starter in suitable ATEX zones. If you are in any doubt, contact the manufacturer or your Explosion Risk Consultant for guidance.**

### FAN DIRECTION

On installation, always check that the fan is rotating in the correct direction by following the procedure below. To check fan rotation direction you will need to either look through the fan outlet in the base of the bench, or remove the surface and filters, taking care not to approach the fan when it is operating:

- Wire starter to mains supply.
- Start fan by pressing green button on DOL Starter.
- Check direction of fan rotation. Low airflow in operation is a key indicator of incorrect fan connection.

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- If looking into the inlet, it should be rotating counter-clockwise – ie, rotating towards the outlet, or as indicated on the face of the fan.
  - If into the outlet through the base of the unit, impeller blades should be seen to move towards outlet when fan is running.
  - If fan is rotating incorrectly:
    - Stop the fan using the red button on DOL starter.
    - Switch off the electrical supply.
    - Swap any two phases to reverse the direction of the motor.
    - Check again using the procedure above.

If you have any queries regarding this procedure, contact the manufacturer.

## Ducted Units

As standard, AirBenches are configured to discharge through the base of the unit without ductwork. Ducting should not be retrofitted to the base of the unit without consultation with the manufacturer.

When configured for exhaust to atmosphere via ductwork a discharge spigot will be visible.

Ducting should be installed by a professional and should not provide greater than 100 Pascals resistance. Flexible ducting should be avoided as it may cause excessive back-pressure on the fan, and lead to reduced airflow.

Any other configuration is non-standard and should be discussed with the manufacturer.

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## Assembly of Accessories

These items apply only when they have been ordered with the AirBench.

### FRONT DEFLECTOR

If a deflector skirt is supplied loose with the unit, the unit must be raised slightly to allow the skirt to be fitted.

A pack of fixing bolts is supplied with the skirt; threaded inserts are fitted to the base of the bench to allow attachment of the deflector. To fit, position the deflector skirt, and use the bolts to fix to the base of the bench.

**Where a front deflector is supplied, ensure air is allowed to exhaust from sides or rear to avoid motor overload.**

### ENCLOSURE

Enclosures are supplied fully assembled where possible. Where shipping does not permit assembly prior to dispatch, enclosures should be assembled as follows using bolts supplied:

- Loosely fit left and right panels to left and right frame of bench.
- Loosely fit rear panel with assistance if required.
- Lay top panel (if supplied) on top of enclosure and bolt into position.
- Tighten all bolts.

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# COMMISSIONING

## General

The initial commissioning and testing of your AirBench has been performed prior to delivery. However, as part of in-house commissioning we recommend that you complete the following tasks and record the results as appropriate in the system logbook.

## In House Commissioning

Following installation, the following tasks should be completed by a responsible person; for example, the Health and Safety Officer, or Director, responsible for this process.

- Review the commissioning certificate for this unit, in particular any notes made by our engineer in relation to use.
- Ensure all operators are trained to use this machine and are aware of the effective capture zone in which they should aim to work.
- Ensure all operators are aware of the filter maintenance routine required for this machine.

Once complete, you should note this on the commissioning certificate and retain the certificate for future reference.

As operating conditions vary, each installation will vary in maintenance needs and this is best established by empirical means, regularly checking filter condition in the first weeks of operation to establish a procedure. Reduced airflow is a key indication of filter condition. If the filter pressure gauge on the front of the unit is showing in the red zone, this indicates low airflow and filters should be checked and cleaned or changed promptly, according to the instructions contained within this manual.

We recommend keeping the commissioning certificate, Quick Start guide, and logbook with the machine at all times for operator access.

If in doubt please contact the manufacturer quoting the machine serial number.

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## OPERATION

This page contains the same information as the Quick Start guide provided with your AirBench.

### Prior to use

Check the system logbook to ensure no routine maintenance is required.

### General use

To use AirBench, ensure it is plugged in to a mains socket and the socket is switched on. Turn on the switch on the front of the bench.

Your AirBench has a zone above the surface in which capture is most effective, in a straight line upwards from the ventilated area. The extent of this zone is detailed in the commissioning certificate supplied with the unit.

This zone forms a box in which you should aim to do the majority of your work. Working outside this zone may reduce the effectiveness of the extraction.

Work as normal, aiming to work within the extraction zone described above. On completion of work, switch the AirBench off using the switch on the front. Record any maintenance you have undertaken, or any that is required, in the logbook.



**To avoid fan overload, do not block more than 95% of the work surface or the air outlet.**

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## MAINTENANCE



**Maintenance tasks may only be performed when no explosive atmosphere is present.**



**AirBench must be disconnected and isolated before maintenance tasks are performed.**

### Filter care

The filters are not self-cleaning and must be maintained / cleaned / replaced as described below. Proper filter care is essential for the effective operation of your AirBench. If in doubt, contact the manufacturer for advice.

When changing filters, the seals on which the filters sit should be checked for damage and replaced if necessary.

All filters should be regularly checked for wear, damage, or by-passing.

When completing filter maintenance activities these should be recorded in the accompanying log sheet.



**Take precautions and wear appropriate PPE when handling filters.**

**They may contain hazardous dusts.**



If using a vacuum cleaner to empty filters, excessive cleaning will reduce filter life.

Remove excess dust only.

### FILTER ACCESS

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Filters are accessed by removing the top surface, taking care as the surface may have sharp edges. The surface must first be unbolted by removing the 4 retaining bolts.

Once the surface is removed, a clamp bar is exposed which holds filters down against rubber seals. The filters should then be lifted slightly to break adhesion to the filter seals, and can now be lifted upwards to remove.

Filters can also be accessed for cleaning by lifting the top surface.

Filter clamp bar and filters are connected in turn by earthing straps. When replacing filters, it is essential that earthing straps are reconnected to avoid static build-up.

Replace surface mounting bolts on removal.



**Surfaces can be heavy and have sharp edges.**

**Wear appropriate hand protection.**



**Ensure all earthing connections are restored after filter servicing or replacement.**



**Do not clean filters using compressed air.**

**This will damage media and spread dust.**

## Spares

See the specific list for your machine shown on the commissioning certificate.

When ordering, please contact the manufacturer quoting the serial number of this machine.

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## Other routine maintenance

We recommend the following tasks be performed on a regular basis. Suggested intervals are shown and these should be reviewed dependent on level of use. Actual completion of these operations and any variation to these recommended maintenance intervals should be recorded in the system logbook.

If completion of routine maintenance tasks suggests additional issues, contact the manufacturer for advice.

### **FILTER SEALS**

These sit beneath the filters and prevent dust passing into the body of the bench and the exhaust airstream. It is important the seals are in good order. Check the condition of the filter seals every time filters are changed or removed.

### **SURFACE**

At least monthly, or as routine, check the surface condition. Clear any blocked holes.

### **FAN CHAMBER**

At least every 6 months, check the fan chamber. Remove any debris and clean.

### **FAN**

At least annually, check and tighten fan fixings, impeller fixings, and electrical connections.

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## ACCESSORIES

Some accessories are only supplied if specified with purchase.

### **Filter Pressure Gauges**

A filter pressure gauge is fitted to the front of each AirBench. This indicates performance of the unit as a whole, and filter condition. Certain models show a red zone on the filter gauge; when the gauge indicates within this zone, filters may be blocked or require cleaning. Turn the AirBench off and inspect the filters.

Where no red zone is shown, a filter inspection pressure drop will be recorded on the Commissioning Certificate. When pressure loss is greater than that shown on the Commissioning Certificate, follow the above procedure.

A high pressure reading may also indicate a blocked surface. Inspect the surface for blockages and clean if required. Do not operate AirBench continuously with more than 75% of the surface blocked.

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## THOROUGH EXAMINATION AND TESTING

If AirBench is used as an LEV system it must be tested at regular intervals, as specified below, and certificated under the COSHH regulations. This service is available from us, or our approved testers.

Thorough examination and test should include:

- Ensuring the prescribed maintenance routines are being completed and recorded within the system logbook.
- Condition check of fan, filters, electrics.
- Performance testing according to recommended face velocities.
- Visual check that operators are working within effective area.
- Visual check of effectiveness using, for example, smoke tubes.

Statutory test intervals are:

<b>Process</b>	<b>Minimum Frequency</b>
Jute cloth manufacture	1 Month
Processes in which blasting is carried out in or incidental to the cleaning of metal castings, in connection with their manufacture	1 Month
Processes, other than wet processes, in which metal articles (other than of gold, platinum or iridium) are ground, abraded or polished using mechanical power, in any room for more than 12 hours in any week	6 Months
Processes giving off dust or fume in which nonferrous metal castings are produced	6 Months
All other processes	14 Months

Recommended face velocities are as follows:

Fume control: Minimum 0.5m/s

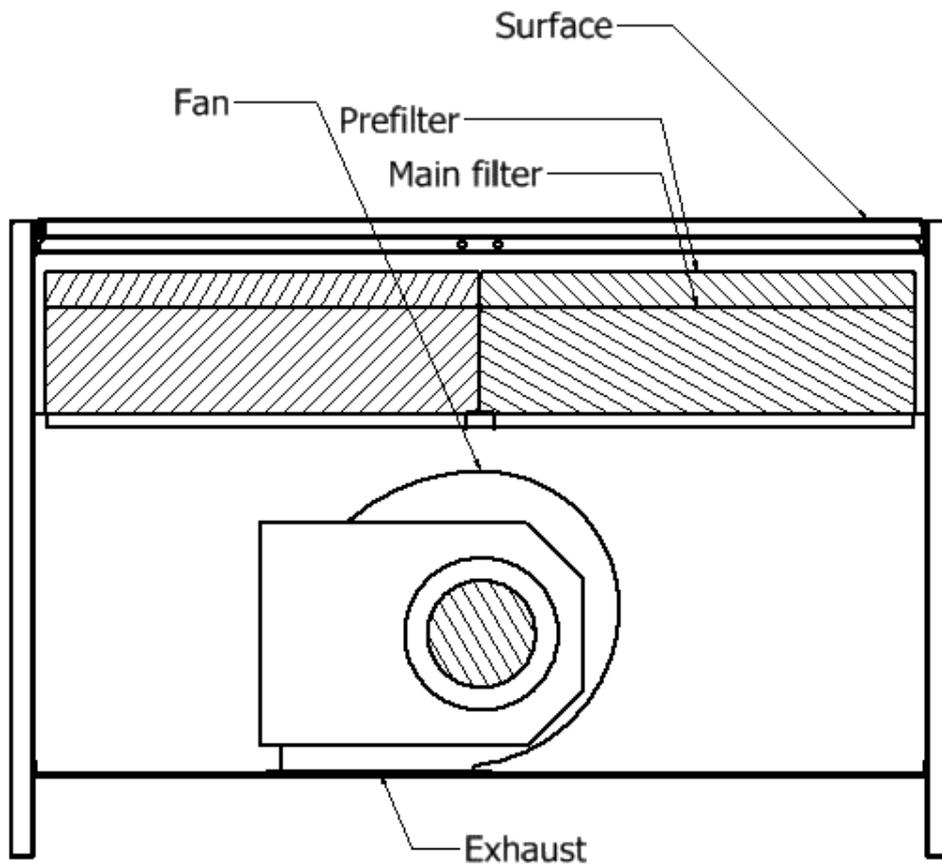
Light dust control: Minimum 1.0 m/s

Heavy dust control: 1.2 – 1.5m/s

Completion of Thorough Examination and Testing should be recorded within the system logbook.

# TECHNICAL

## Arrangement



## Technical Data

Model	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Fan Power (kw)	Max Current (a)
<b>FX076790</b>	730	660	900	80	0.55	1.7
<b>FX136790</b>	1310	660	900	105	1.1	3
<b>FX196790</b>	1930	660	900	160	2.2	5.2

Data shown is for standard models. Check the Commissioning Certificate for details specific to your unit.

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# DECLARATION OF CONFORMITY

Manufactured by:

AirBench Ltd.  
6b Commerce Way,  
Colchester,  
CO2 8HR

Responsible Person:

Simon Cook

Description:

Ventilated work bench known as "AirBench"

## DECLARATION OF CONFORMITY BY AIRBENCH LIMITED

### RELEVANT DIRECTIVES

Compliance with the Essential Health and Safety Requirements of the ATEX directive 94/9/EC has been assured by compliance with:

EMC Directive 2004/108/EC (when connected to standard mains sinusoidal supply).

Machinery Directive 2006/42/EC

Low voltage Directive 2006/95/EC

BS EN IEC 60079

BS EN ISO 80079

This product contains Ex components which are certified by their own manufacturers as complying with the above directive. Instructions and declarations of conformity for all components are provided as annexes to this document.

We; AirBench Limited, declare that "AirBench FP-X" when supplied as self contained equipment complies with the directives detailed above.



Simon Cook