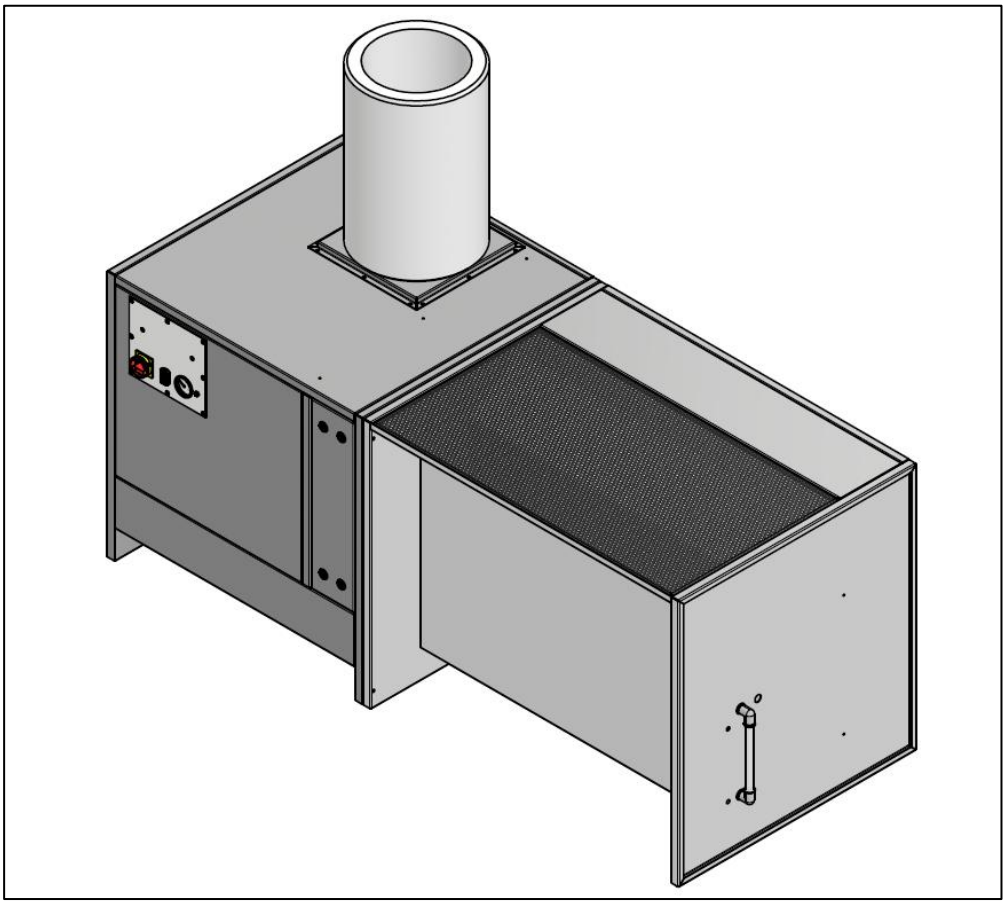
AirBench™ WB



Operation and Maintenance

This Edition: 16 June 26

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Table of Contents

1.0 Cautions 4
2.0 Introduction 6
2.1 OVERVIEW 6
2.2 ABOUT AIRBENCH 6
2.3 ABOUT THIS DOCUMENT 6
3.0 Installation 7
3.1 GENERAL 7
3.2 ASSEMBLY 7
3.3 ELECTRICAL 8
3.4 DUCTED UNITS 8
3.5 ASSEMBLY OF ACCESSORIES 8
4.0 Commissioning 10
4.1 GENERAL 10
4.2 IN HOUSE COMMISSIONING 10
4.3 FILLING BENCH – WATER LEVEL 10
5.0 Operation 11
5.1 PRIOR TO USE 11
5.2 GENERAL USE 11
5.3 GENERAL CONTROLS 11
6.0 Maintenance and Cleaning 12
6.1 GENERAL 12
6.2 MESH FILTER ACCESS 12
6.3 WATER ACCESS 13
6.4 BAFFLE ACCESS 14
6.5 FILTER CARE 14
6.6 WATER CARE 15
6.7 DUST/METAL REMOVAL 16
6.8 SPARES 16
6.9 OTHER ROUTINE MAINTENANCE 16
6.10 GENERAL MAINTENANCE AND CLEANING ROUTINE 17

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7.0 Accessories 18
7.1 FILTER PRESSURE GAUGES 18
7.2 HOURS RUN METER 18
7.3 WHEELS 18
8.0 Thorough Examination and Testing 19
9.0 Technical 20
9.1 ARRANGEMENT : FRONT VIEW 20
9.2 ARRANGEMENT : TOP VIEW 21
9.3 WIRING DIAGRAM 22
9.4 COMPONENT DIAGRAM 23
9.5 TECHNICAL DATA 24
Declaration of Conformity 25

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1.0 CAUTIONS

Regular cleaning and maintenance is essential for the safe operation of the unit. Unit must be cleaned internally on a weekly basis.

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.

Run unit for 2-3 minutes prior to starting work to vent internal spaces.

The mesh filter is not self-cleaning.

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

This unit is not ATEX rated.

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

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Water must be changed regularly to comply with legionella regulations

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2.0 INTRODUCTION

2.1 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 WB type. The filter configuration in use is detailed on the system Commissioning Certificate and is used within this document to provide filter-specific maintenance information.

2.2 About AirBench

AirBench is a self-contained down draught extraction bench which utilizes 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 fixed speed to draw the pollutant down and through the water chamber and out to the mesh filter, allowing the process to proceed on the surface.

2.3 About this Document

This document provides general maintenance and operation instructions for the AirBench WB 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.

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3.0 INSTALLATION

3.1 General

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

The AirBench WB 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.

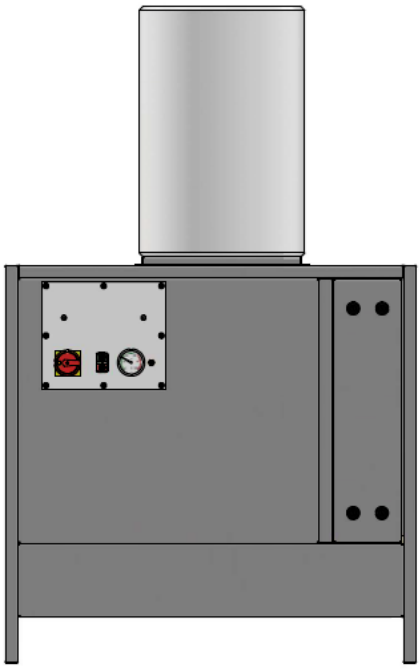
These models are designed to be moved into place using a forklift or pallet truck, taking care not to damage fittings on the base of the unit.

Please note installation may be required when using certain accessories, external fansets, or ducting (see below).

After shipment, filter may be dislodged. Always check mesh prefilter (dry side of bench) prior to first use.

3.2 Assembly

Before the AirBench WB can be commissioned the two halves require assembly together. Push both the wet and dry sides against each other.



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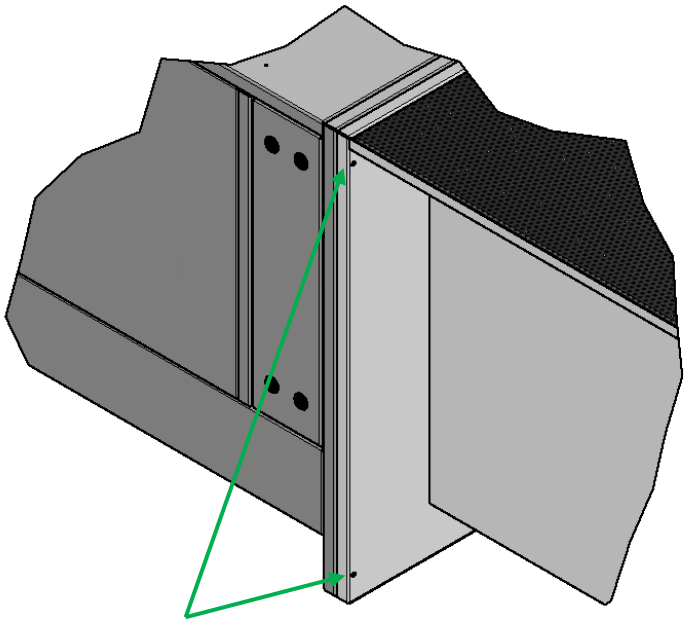
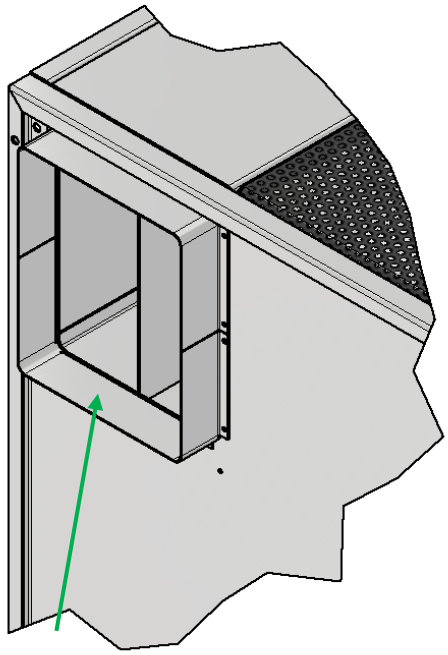
Once both sides have been pushed together they can be fixed using the 4 holes found on the wet side of the unit. Two are found at the front and two found at the back of the wet side bench.

The exhaust of the wet side should insert into the dry side opening if aligned correctly. With the two sides fixed together the bench can be commissioned and operated.



Front two fixing holes



Wet side exhaust

3.3 Electrical

3.3.1 WIRING

AirBench WB is supplied as standard with an internal fan or fans. These are pre-wired to a switch or speed controller and fitted with a lead and plug for your convenience. Standard electrical supply is 415V/3Ph/50Hz.

BS7671 requires that the lead is appropriate for the working environment and you must satisfy yourself that the pre fitted lead is satisfactory.

3.3.2 FUSES

Switched units: Fuses are provided behind the control panel, mounted in holders on DIN rail.

3.4 Ducted Units

This unit is not suitable for connection to ducting.

3.5 Assembly of Accessories

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

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3.5.1 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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4.0 COMMISSIONING

4.1 General

The initial commissioning and testing of your AirBench WB 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.

4.2 In House Commissioning

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.

4.3 Filling Bench – Water Level

The AirBench WB will require filling once initial commissioning is completed. On the right hand side of the bench there is a hose inlet that can be connected to the water mains. Using the ball valve on the inlet the bench can be filled up to the desired level that is shown on the water gauge level.

Once the required water level is achieved, turn off the ball valve to stop more water entering the bench. With the correct water level the bench is ready to use.

Water level should be monitored daily and adjusted where needed.

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5.0 OPERATION

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

5.1 Prior to use

Check the system logbook to ensure no routine maintenance is required. Check water level before use. Top up to the top of the green line if needed. Do not overfill beyond this line.

5.2 General use

To use AirBench WB, ensure it is plugged in to a mains socket and the socket is switched on. Turn on the isolator switch on the front of the bench to the ON position, within 30 seconds the fan should be running at full speed and the AirBench WB is ready to be used.

Residual noise hazard: Wear suitable hearing protection while operating this machine.

Check the filter pressure gauge on the front of the bench. If the needle on the gauge is showing within the RED zone, check the filter condition – they may require cleaning or replacement.

Your AirBench WB 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 WB 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.

5.3 General Controls

Once the AirBench WB is installed and commissioned, the bench can be powered on. The control panel can be found at the front of the unit on the dry side. By turning the rotary isolator, power is provided to the circuit and the bench will switch on and be at full power after 30 seconds. The rotary isolator is used to switch power on and off and can cut power to the bench in the case of an emergency.

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6.0 MAINTENANCE AND CLEANING

6.1 General

The AirBench WB requires periodic maintenance for optimum performance. The maintenance period will vary based off use or the bench

6.2 Mesh Filter Access

The filter for the bench can be found from the front panel. There are four latches at the front of the bench that can be turned to remove the filter front door. Once the door is removed the filter can be slid out and replaced, if required.

Resistance will be felt as filters removed/replaced due to internal springs that push against the filter to create a sealed connection.

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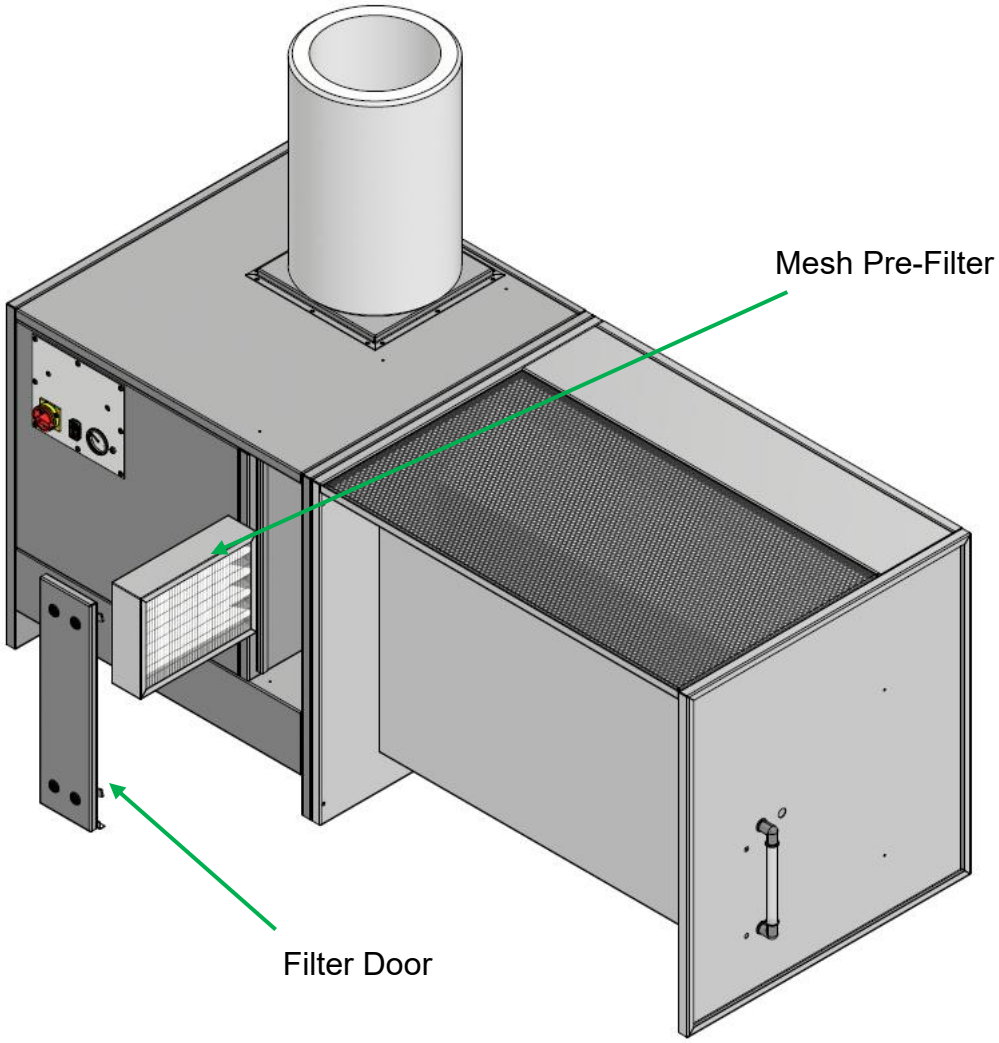
The diagram below shows the access to the filter.



Take precautions and wear appropriate PPE when changing water.

They may contain hazardous dusts and metals.

6.3 Water Access

To check the water condition, remove the top surface. After using the bench the water will fill with the dust and metals extracted from the air, darkening its colour and transparency. To drain the water, turn the ball valve located at the base of the bench where a hose can be connected.

Follow any local regulations for drainage water when water is removed.

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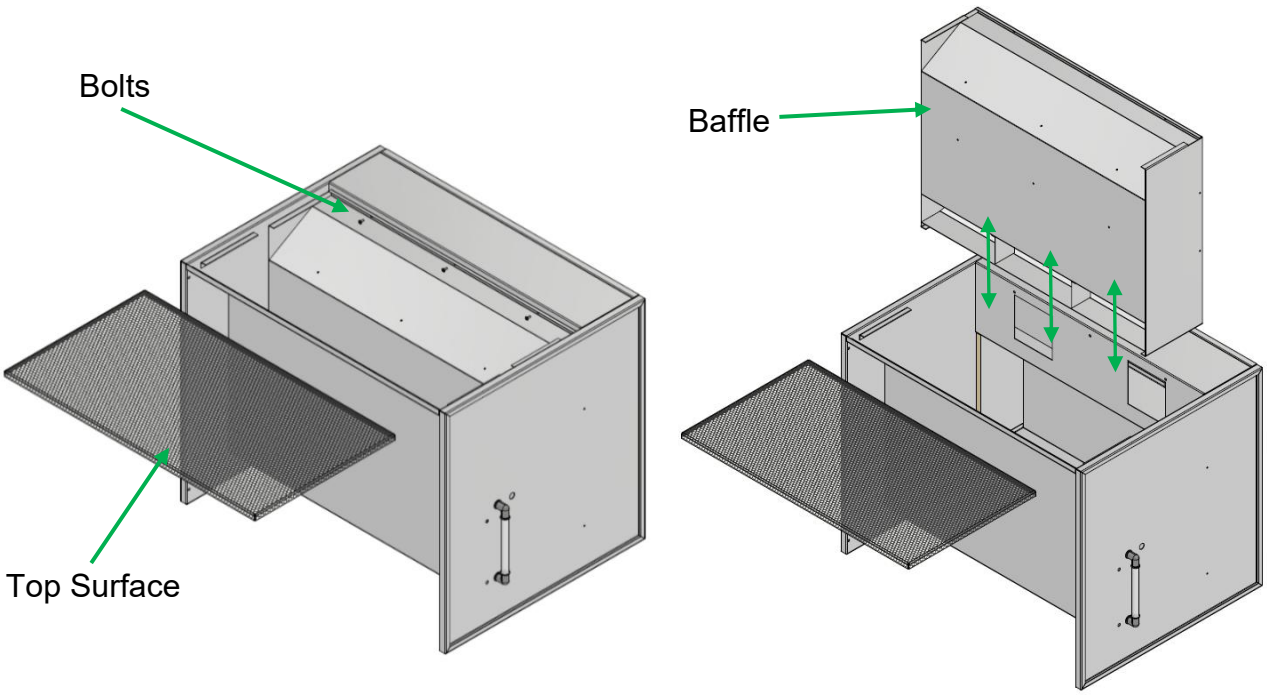
6.4 Baffle Access

Once water in the bench has been drained the baffles within the bench can also be removed and cleaned before refilling the bench.

Remove the three flanged bolts holding the baffle to the bench. Once bolts removed, using two people lift the baffle out from the bench itself.



Surfaces can be heavy and have sharp edges.

Wear appropriate hand protection.

6.5 Filter Care

The filter is 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.

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

Take precautions and wear appropriate PPE when handing filters.

They may contain hazardous dusts.

Do not clean filters using compressed air.

This will damage media and spread dust.

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

Remove excess dust only.

6.6 Water Care

The water within the AirBench WB acts as filter medium and therefore over time will need to be replaced. When this will be required will depend on how often the bench is in use, as well as the amount of material going into the water.

6.6.1 LEGIONELLA AND BACTERIAL RISKS

Due to the nature of stagnant water there is a potential of Legionella and bacterial build-up. Any build-up of bacteria will depend on how often the bench is in use, temperature, amount of water in the bench etc.

Therefore, a Legionella risk assessment can be carried out by the operators. This can be downloaded from the HSE website.

However, it is stated that PPE should be worn when carrying out any maintenance on the bench that would have come into contact with the water. Correct gloves and eye protection will mitigate the user coming into contact but a bacterial risk assessment should still be carried out to make sure that any operator is safe using the bench with their application.

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6.6.2 WATER CLEANING

As part of the risk assessment and good practice, the water can be treated with a corrosion inhibitor and biocide. Such chemicals can be mixed with water in parts in order to provide a safer cleaning method, anti-corrosion properties and even reduce any odor from a bacterial build-up in the water.

6.7 Dust/Metal Removal

After the water has been drained and baffles removed there will be a certain amount of dust and metal in the bottom of the bench. This will need to be removed correctly and contained as hazardous materials.

Use proper PPE and scoop to remove the excess waste at the bottom of the bench and store it in safe containers as per the material.

6.8 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.

6.9 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.

6.9.1 FILTER SEALS

These sit behind 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.

6.9.2 SURFACE

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

6.9.3 FAN CHAMBER

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

6.9.4 FAN

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

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6.10 General Maintenance and Cleaning Routine

The below table sets out the general cleaning routine that should be carried out on the bench. The frequency of cleaning is outlined below however, depending on the application and amount of usage of the bench these periods of cleaning my need to be increased.

Daily:

- Check work surface condition and clean any excess dust before using
- Check water level periodically throughout the day to maintain desired water level
- When bench is initially turned on, check moisture level of the outlet to make sure too much water hasn't been put in
- Inspect filter panel condition and clean/replace when applicable

Weekly (1-2 weeks):

- Remove water from bench using drain outlet and replaces
    - Remove waster material from bench when water is drained
    - Apply any additional treatment if required
- Remove baffles from bench and clean

Monthly – Yearly

- Inspect basic components of unit for damage
- Inspect all electrical connections to make sure they are not loose

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7.0 ACCESSORIES

Some accessories are only supplied if specified with purchase.

7.1 Filter Pressure Gauges

A filter pressure gauge is fitted as standard 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.

7.2 Hours Run Meter

The meter is not resettable and operates at all times when the speed control or switch is powered.

7.3 Wheels

Standard industrial rubber wheeled swivel castors are used. The two front wheels are lockable. Lock by pressing on the lever and trip by flicking (models and operation vary slightly). Do not attempt to move while brakes are on.

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8.0 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:

Process	Minimum Frequency
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.

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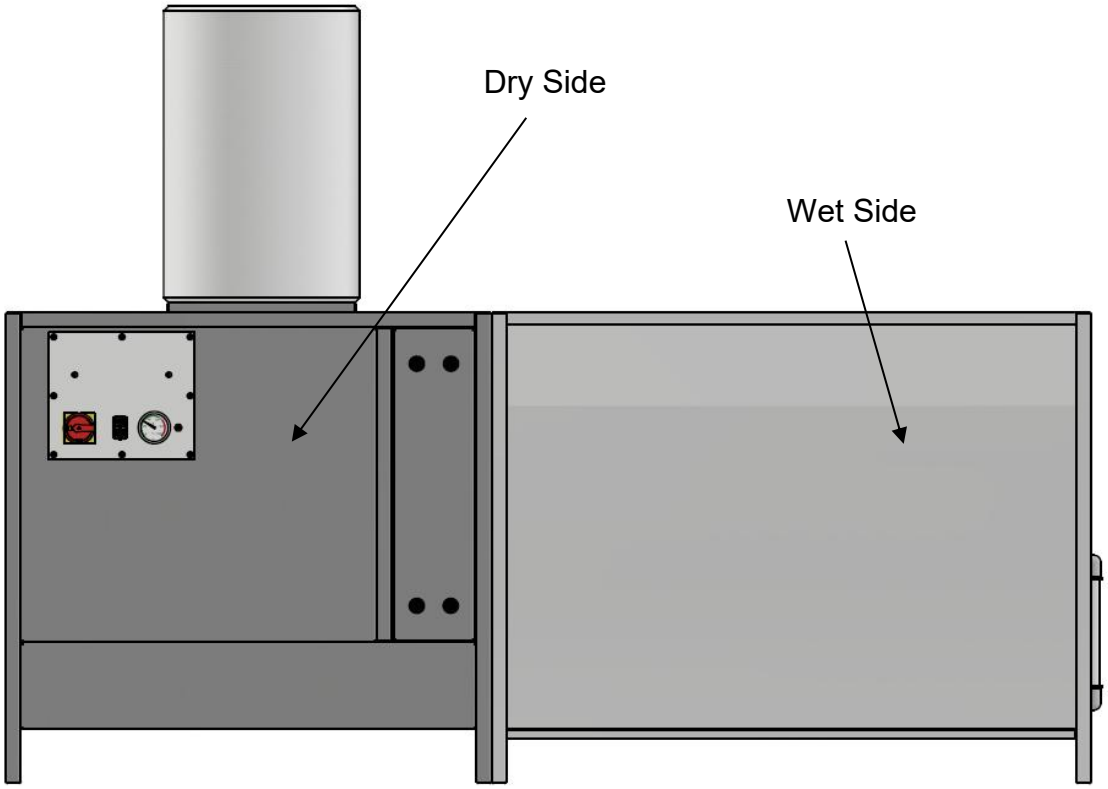
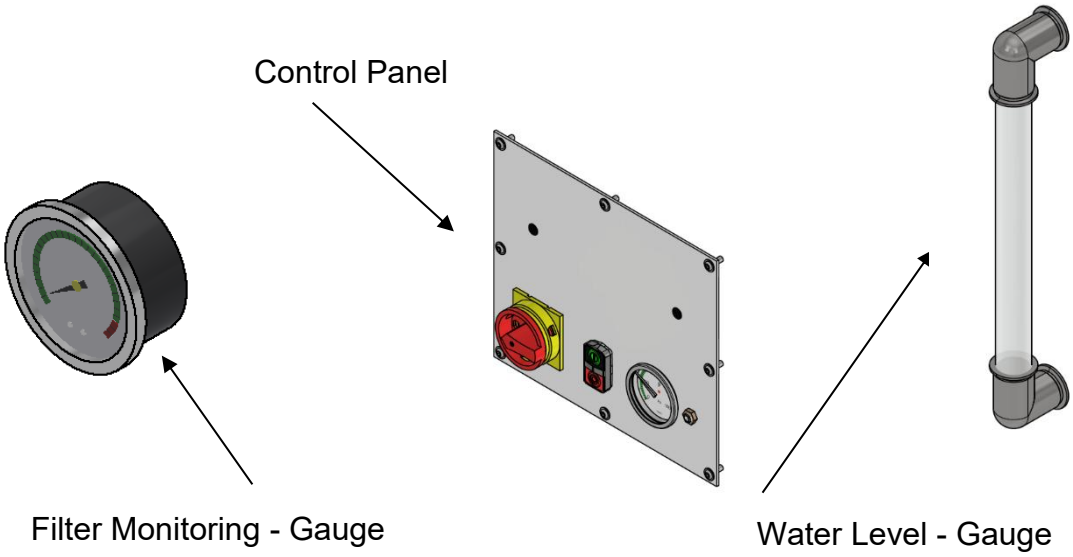
9.0 TECHNICAL

9.1 Arrangement : Front View





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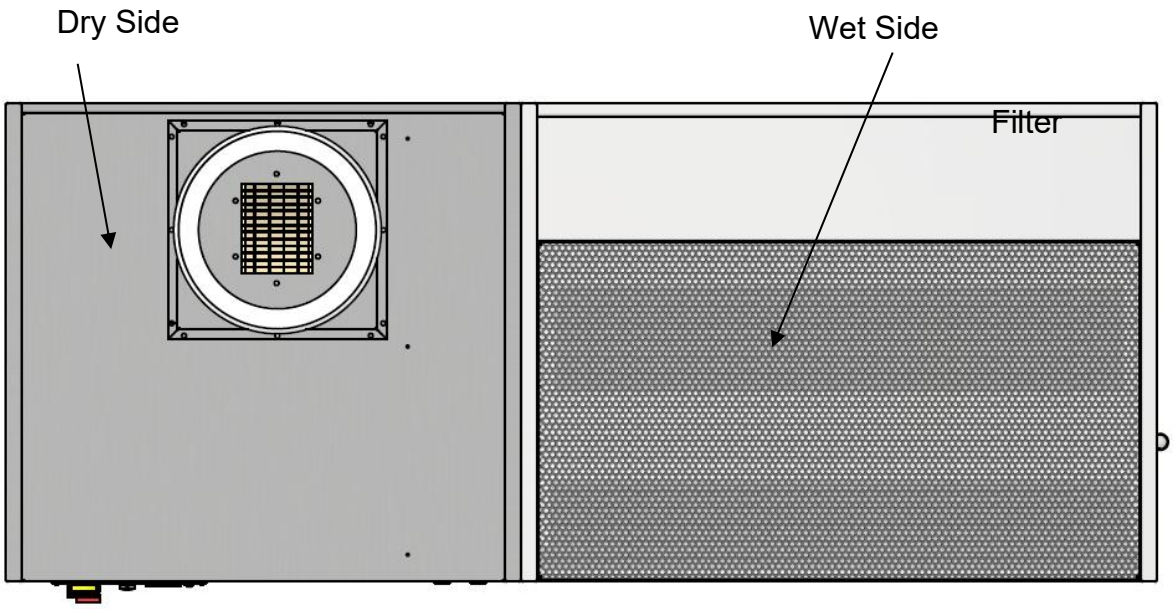
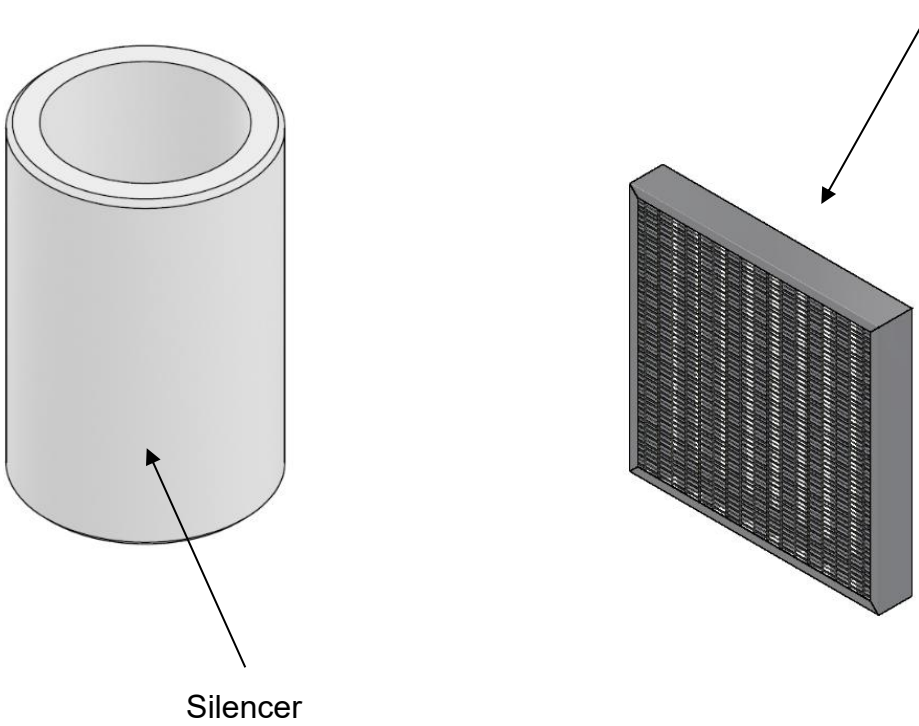
9.2 Arrangement : Top View





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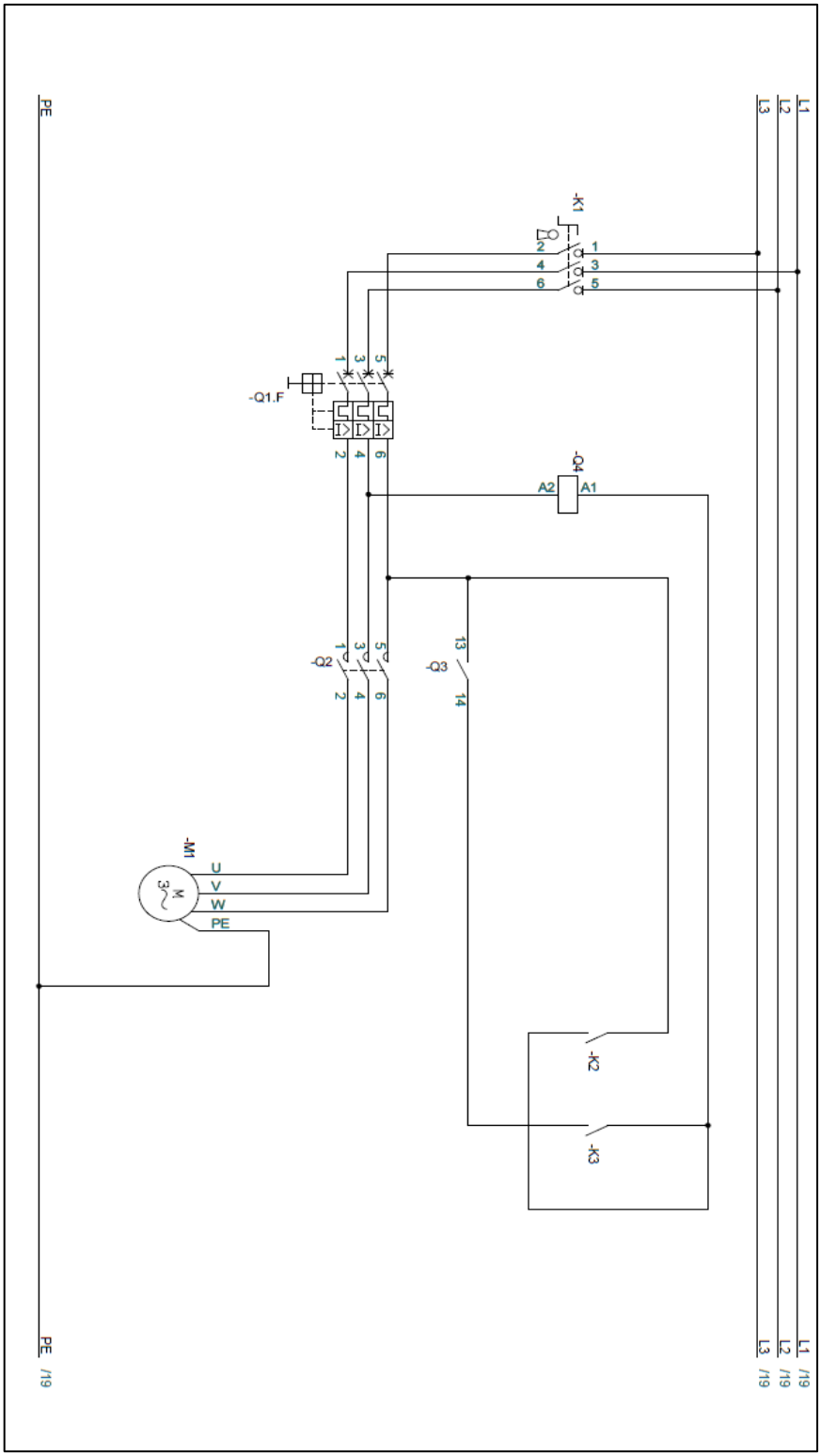
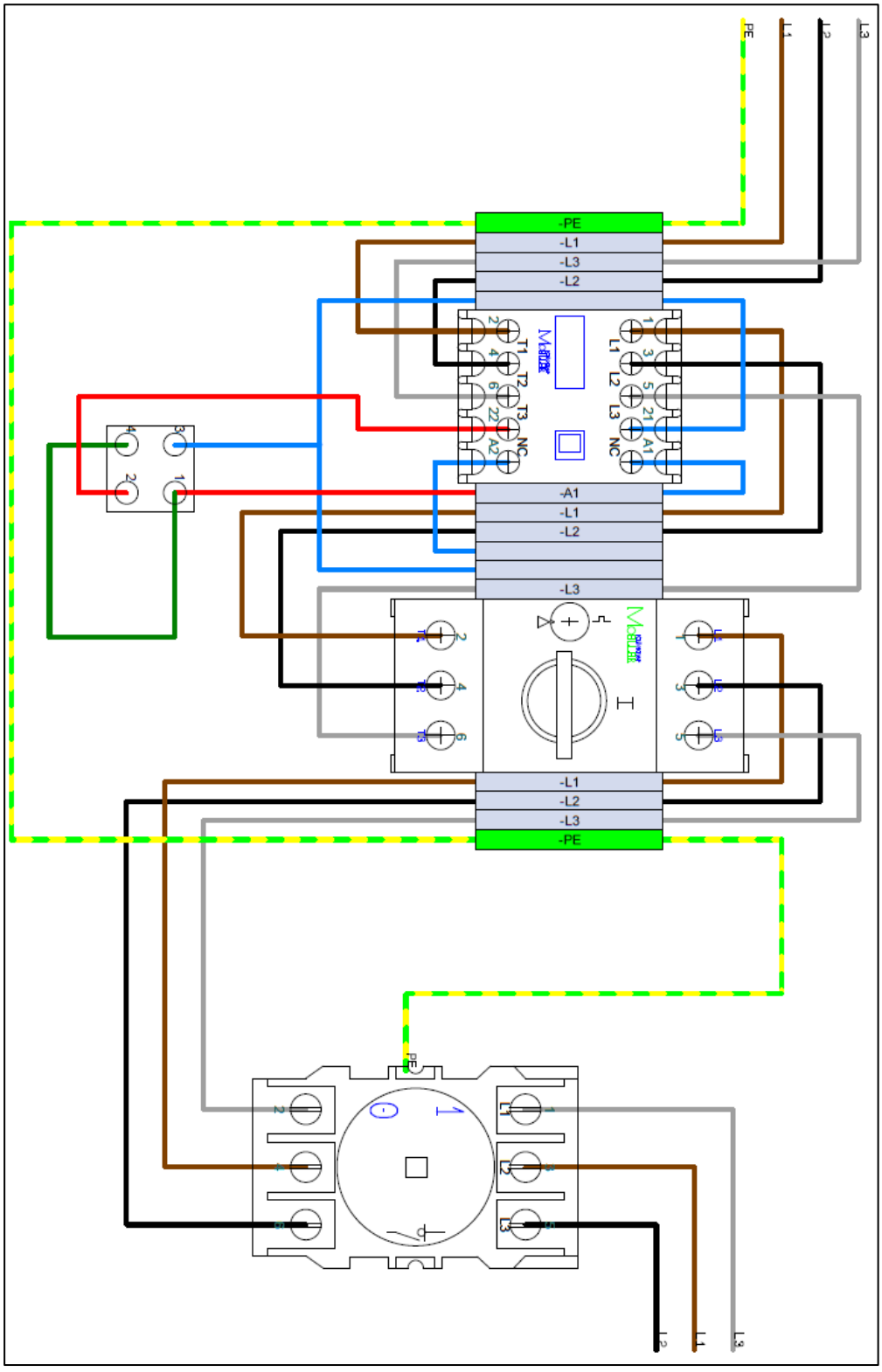
9.3 Wiring Diagram



9.4 Component Diagram



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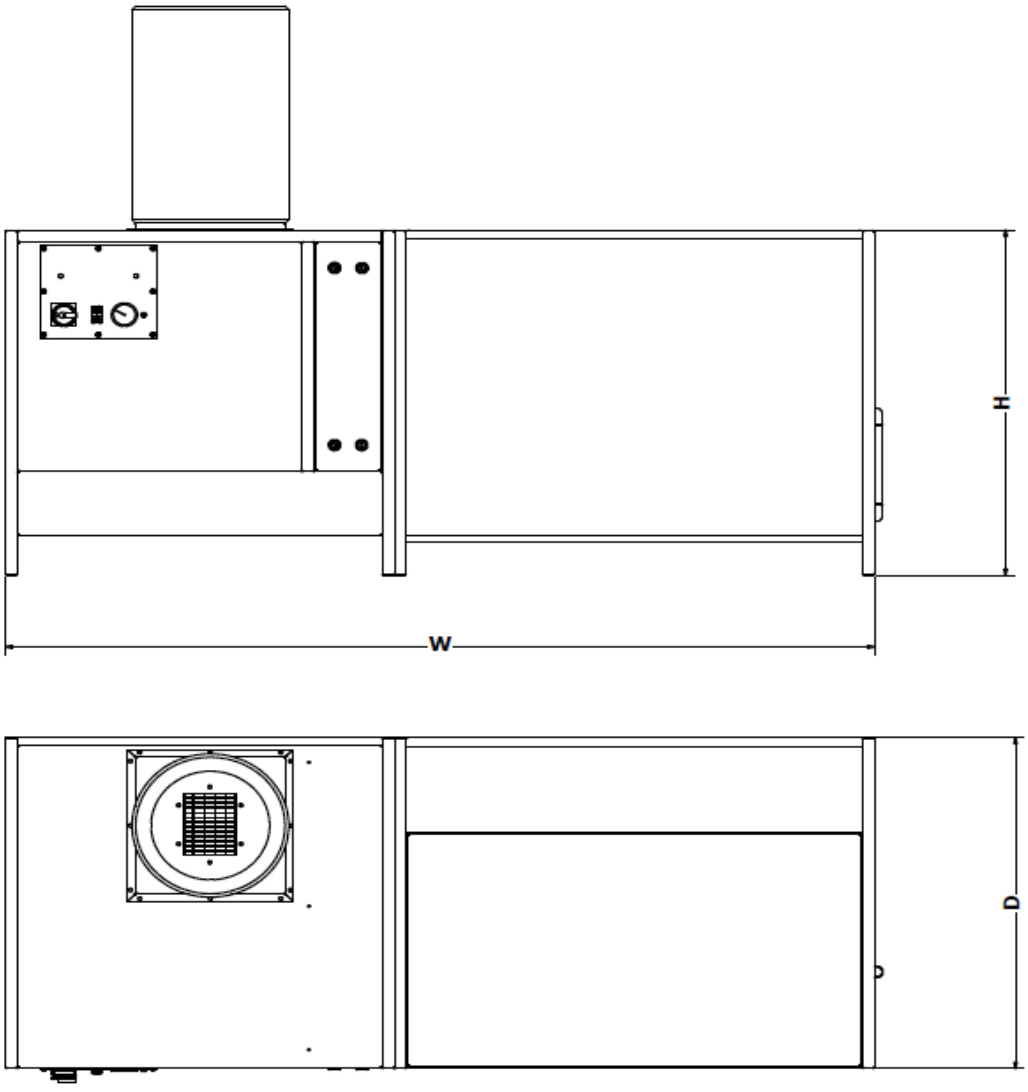
9.5 Technical Data

MODEL	OVERALL WIDTH A	OVERALL DEPTH B	OVERALL HEIGHT C	VENTILATED AREA WIDTH D	VENTILATED AREA DEPTH E	POWER kw	VOLUME M3/h	NOISE dB at 1m	NOISE dB machine	WEIGHT (Inc. Water) kg
WB0697	1710	960	1000	610	680	2.2	1500	<80dBA	<90dBA	412
WB1297	2310	960	1000	1210	680	4	3000	<80dBA	<90dBA	517
WB1897	2910	960	1000	1810	680	5.5	4500	<80dBA	<90dBA	622

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, Essex. CO2 8HR
Responsible Person:	Simon Cook
Description:	Ventilated work bench known as “AirBench”

DECLARATION OF CONFORMITY

BY AIRBENCH LIMITED

RELEVANT DIRECTIVES

EMC Directive 2014/30/EU (when connected to standard mains sinusoidal supply).

Machinery Directive 2006/42/EC

Low voltage Directive 2014/35/EU

- EN-60204–1:2018 (Safety of machinery, electrical equipment of machines, general requirements).

- EN-60335-2-80 (Safety requirements for electric fans and regulators).

We; AIRBENCH Limited, declare that “AirBenches” when supplied as self contained equipment comply with the directives detailed above and therefore comply with requirements of the Low Voltage Directive.

Simon Cook / Managing Director / 5th March 2021

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

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