Installation and Operation - OMF4000

Issue Date: 19th November 2019

CAUTIONS

Directions for Use

The OMF4000 is built to CE standards (1995) and conforms to HSG258 (controlling airborne contaminants at work). As such, it must be operated in strict accordance with this manual.

The OMF4000 is designed for indoor installation only and must be protected from excessive moisture. Always make sure that good access is provided for the maintenance of the OMF4000.

WARNING! Risk of personal injury, fire or explosion.

- The OMF4000 must not be used in an environment where there is a risk of explosion from dust or gases in explosive concentrations
- The OMF4000 must not be used for extracting toxic substances
- The OMF4000 must not be used without filters
- Always isolate the mains power before changing filters or removing any components from the OMF4000

PRIOR TO USE

PREPARATION

Immediately upon receiving the OMF4000, examine the packaging for any damage that may have occurred during shipment. In the event of any damage please contact the supplier immediately.

INSTALLATION

The unit must be installed on a suitable level floor that is able to support its weight. Before installation, check that adequate space is available for replacement of filters. See detailed assembly instructions later in this manual for units shipped as modules.

ELECTRICAL CONNECTIONS

The unit is pre-wired and fully tested for operator safety. Unscrew 2 retaining screws at the right hand side of the control panel and open. The electrical connections will be found on the electrical panel. The cable entry is located on the left hand side.

Where fitted, cable entry for ancillaries such as a transfer tank is to the left hand side, towards the rear of the unit; with cable run through two cable glands into the control enclosure.

Take care not to pinch the flexible tubes, or electrical cables.

Switch on unit to check the electrical installation/ fan rotation. Incorrect fan rotation will result in poor performance.

COMMISSIONING

The unit should undergo commissioning testing by the installer. A commissioning certificate is provided at the rear of this manual.

OPERATION

PRINCIPLE OF OPERATION

The OMF4000 is supplied with:

- Mesh Demister or Stage 1 Pre Filter
- Stage 2 Pre Filter
- HEPA filter H10
- Centrifugal fan assembly

Air is drawn through the three filters in an upward direction, and the clean air expelled at the rear. The condensate will collect in the base where it is discharged through the drain provided.

CONTROLS

All electrical equipment and controls are located in the electrical enclosure.

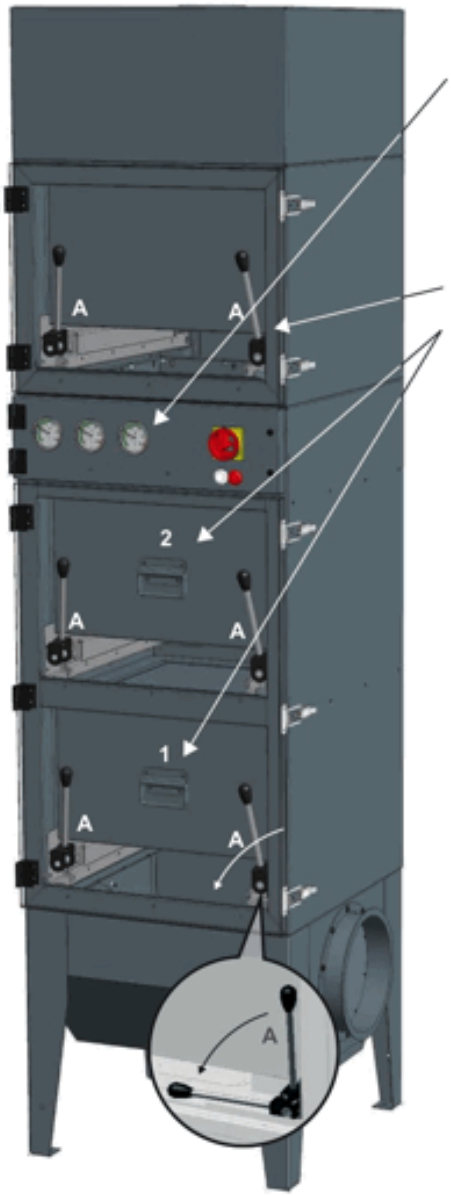
1) MAINS ISOLATOR	Power on/off
2) FILTER GAUGES	Indicates filter condition with ‘filter full ’indicator
3) RED LIGHT	Advises motor overload
4) WHITE LIGHT	Power on

FILTER REPLACEMENT

When filter 1, 2, or 3 (mesh demister or Stage 1 prefilter, Stage 2 prefilter) are full they can be cleaned. For the best results apply a degreaser to the dirty face and allow to absorb. Rinse, applying the process to the top of the filter to allow the dirt to be washed out downwards. Allow to drain until dry. The HEPA Filter cannot be cleaned and must be replaced when full.

FILTER ACCESS

The pressure gauge will indicate the initial (clean) pressure of the system.
Note this initial reading when the filter is commissioned. (see ‘commissioning ’within this manual).
To gain access to the filter, release the door latches and open the door.
Lower levers (A) into the horizontal position.
The filters can now be withdrawn.



The pressure gauge will indicate the initial (clean) pressure of the system.
Note this initial reading when the filter is commissioned. (see ‘commissioning ’within this manual).
To gain access to the filter, release the door latches and open the door.
Lower levers (A) into the horizontal position.

The filters (1), (2) and (3) can now be withdrawn.

To refit the filters, place in the runners with seal uppermost and push fully home.
Then raise both levers (A) into the vertical position, and the filter(s) will be locked into place. Close the door.

WARNING! Risk of personal injury.

- **Always isolate the mains power before changing filters or removing any components from the OMF4000.**
- **Use necessary PPE**

NOTE: Filters 1 and 2 weigh 15kg dry. However, when wet they will be considerably heavier.

Parts list schematic

PARTS LIST

Description	Part Number	Qty
Mesh Demister Stage 1 (if fitted)	420004	1
Prefilter Stage 1 and 2	450330	1
Filter 3 (HEPA Filter)	450329	1
Fan RH35	301027	1

FAULT FINDING

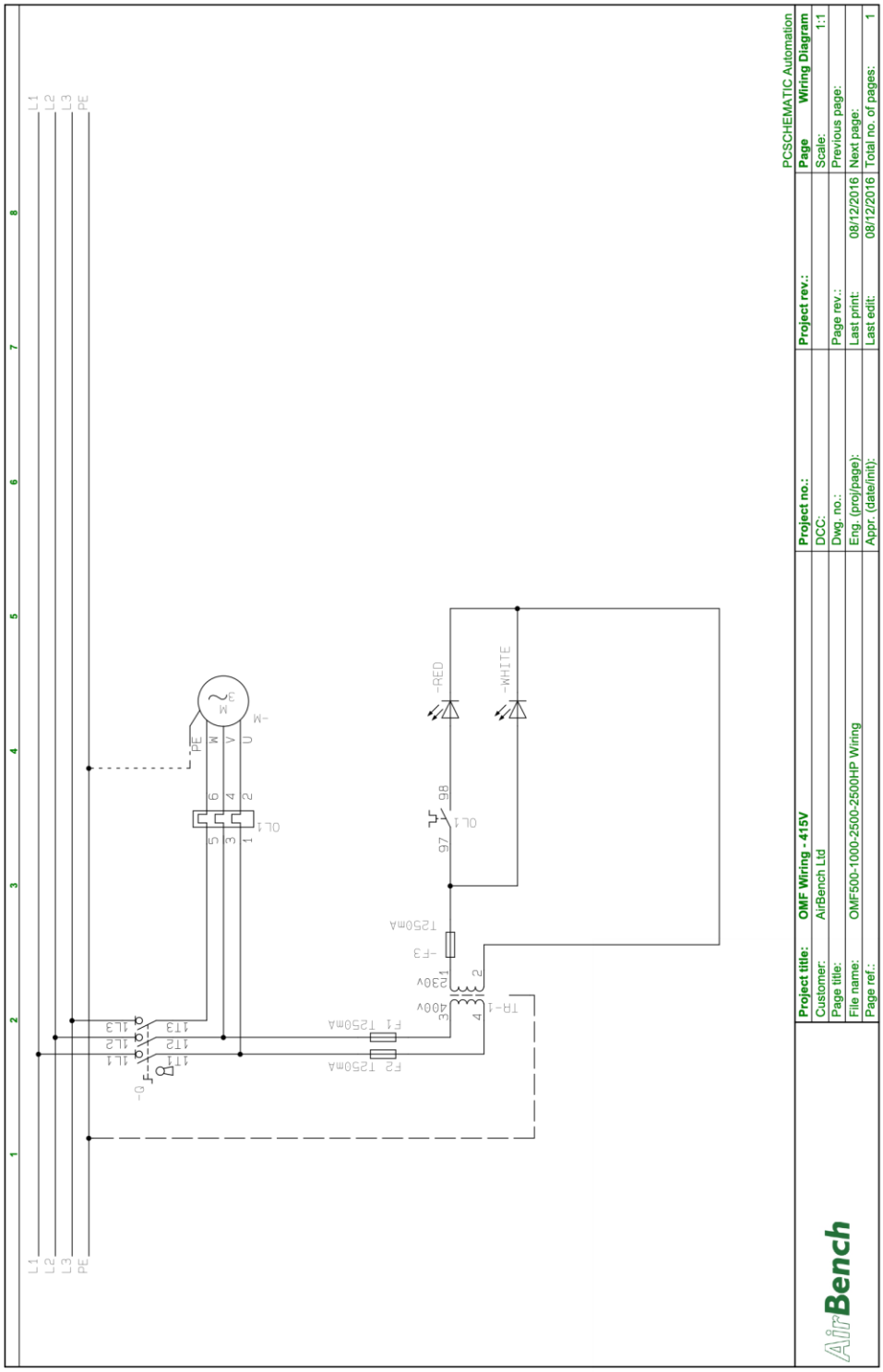
Fault	Remedy
Lack of Suction	Dirty filters (see page 4)
Motor does not operate	Motor tripped - reset trip in elec panel Faulty motor (motor needs replacement)
Fan discharge air is contaminated	The filtration system is being by-passed. Check for damage or incorrectly fitted filter(s), and replace as appropriate.

WARNING! Risk of personal injury.

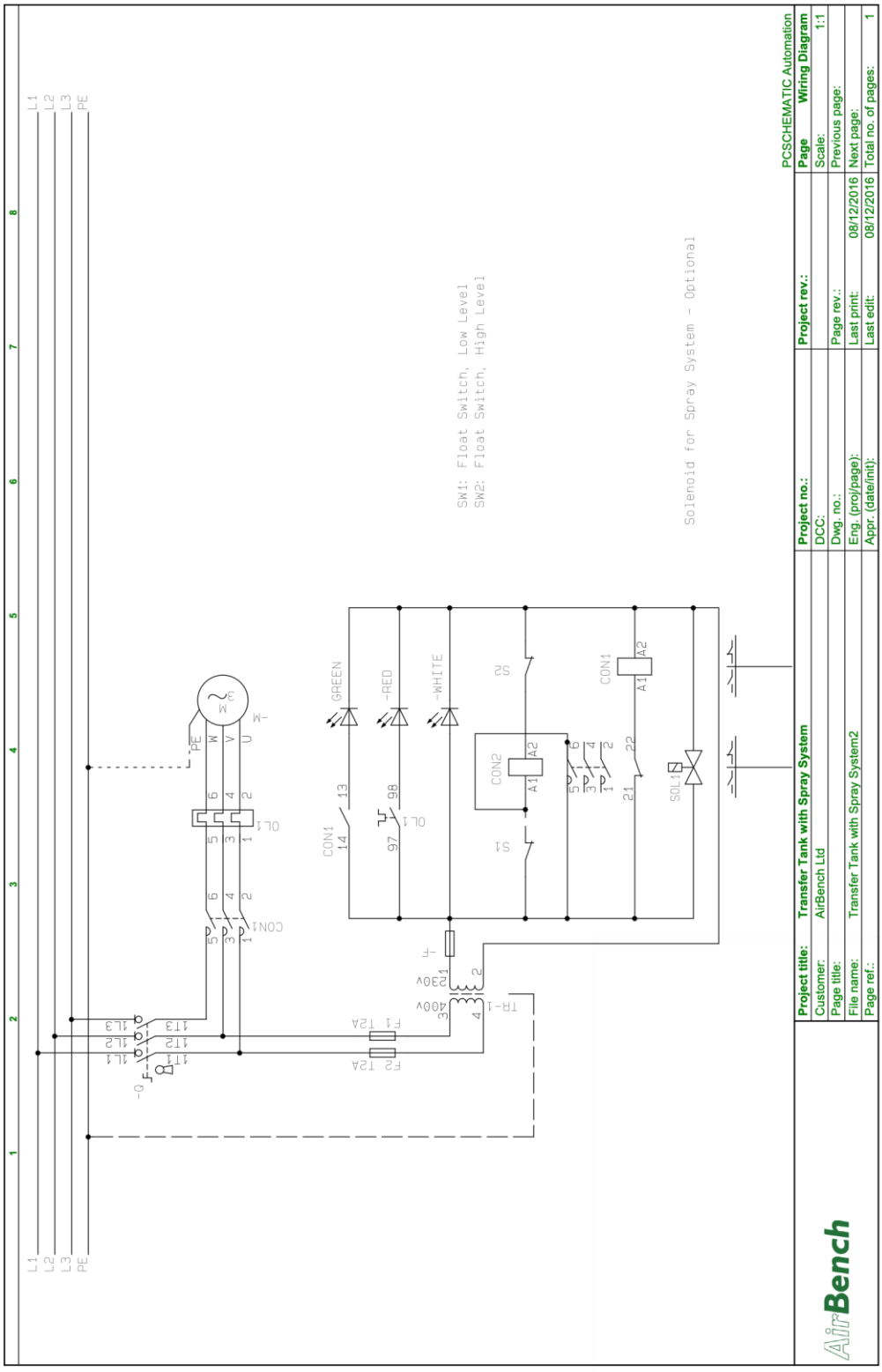
- **Always isolate the mains power before changing filters or removing any components from the OMF4000.**
- **Use necessary PPE**

NOTE: Filters 1 and 2 weigh 15kg dry. However, when wet they will be considerably heavier.

Wiring Diagram - OMF - 415v



Wiring Diagram - Transfer Tank



COMMISSIONING

Complete the following information following installation:

Serial Number: _____

Installlation Date: _____

Installer Name: _____

Duct Velocity: _____

Filter 1 gauge reading: _____

Filter 2 gauge reading: _____

Filter 3 gauge reading: _____

Signed (Engineer): _____

SUPPORT

Contact your supplier, or the manufacturer:

AIRBENCH LTD

6b COMMERCE WAY, COLCHESTER, ESSEX, CO2 8HR, UK

Tel: 01206 791191 Fax: 01206 791091 Web: www.airbench.com Email: sales@airbench.com

MAINTENANCE RECORD / LOGBOOK

Test Date	Duct Vel	Gauge 1 Reading (Pa)	Gauge 2 Reading (Pa)	Gauge 3 Reading (Pa)	Initial

Business Name:	AirBench Ltd 6b Commerce Way, Colchester, Essex. CO2 8HR
Responsible Person:	Simon Cook
Description:	Mist Filter Unit known as “OMF”

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 “OMF” when supplied as self contained equipment complies 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.

APPENDIX 1 - MECHANICAL ASSEMBLY

OMF4000 may be shipped in two sections for ease of transport.

The lower section consists of the sump; filter 1, filter 2; and controls.

The upper section consists of filter 3, and the fan unit.

The upper section must be gently lowered onto the lower section and bolted into position.

When assembling the two sections:

- the electrical power cable must be fed down into the control cabinet, as seen below:

- the pressure sensor hose must be fed up into the fan section, as seen in figure 2.

APPENDIX 2 - ELECTRICAL ASSEMBLY

After assembling the two sections of the unit, the fan must be connected to the fan overload terminals within the OMF control enclosure.

The transfer tank, if provided, must be connected to the Pump / Tank L1-3 terminals within the OMF control enclosure. To connect the transfer tank power supply, remove Filter 3. Feed the power cable through the rear gland on the outside of the OMF unit, and through the second gland into the control enclosure.

The power supply to the unit must be connected to Supply L1-3.

Earth - Pump																		
E	E	L1	L2	L3	F4	F5	F6	P1	P2	P3	Overload - Fan			F	F	F	F	F	F
Earth - Supply	Earth - Fan Out	Supply L1	Supply L2	Supply L3	Fan - Control 4 - 10V DC	Fan - Control 5 - 10V DC	Fan - Control 6 - 10V DC	Pump / Tank - L1	Pump / Tank - L2	Pump / Tank - L3	Fan - L1	Fan - L2	Fan - L3	250mA - Trans. Supply	250mA - Trans. Supply	250mA - Trans. Live 240/1	2A - Pump / Tank	2A - Pump / Tank	2A - Pump / Tank

The following diagram shows the layout of the control enclosure:

Contact the manufacture prior to making electrical connections if you are unsure of how to proceed.