AIRBENCH LTD



AOF Operation and Maintenance

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CAUTIONS



Do not place this product near a powerful magnetic field or expose to static electricity.

Do not drop unit or damage the unit body.



Do not clean with corrosive products.



Pre filter system must be washed periodically. When cleaning pre filter, we recommend also cleaning the interior of the machine.



This unit is not ATEX rated.

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



We do not accept responsibility for any inconvenience or damage caused by unusual or unspecified applications. If the product is damaged or service is required, please contact us.

INTRODUCTION

Overview

Thank you for choosing AOF as your mist control system. Please read this document before installation and use.

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

This document refers to the AOF range. 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 on order.

About AOF

AirBench is a dedicated coolant mist / smoke filter system designed for installation to machine tools, for the removal of contaminants from most types of machining.

AOF is currently patent pending.

About this Document

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



SCHEMATIC AND NUMBERING

NO.	Part			AF-10	AF-20	AF-30
			Туре	H-150	H-150	H-150
1 F	Flexible hose (std.)		Outside dia.	Ø150	Ø150	Ø200
	Flexible hose clamp	\cap	Туре	HB-165	HB-165	HB-215
2	(std.)	\bigcirc	Outside dia.	Ø150	Ø150	Ø200
	Air inlet adaptor with	\square	Туре	PM-150	PM-150	PM-200
3	Jacobs connection (std. x 1)		Outside dia.	Ø150	Ø150	Ø200
4	Anti-vibration mount (std.)		Туре		AV-832	
5	Oil resistant cable		Туре	CA-1.25mm ₂ x4C		C
			Outside dia.	1.2	25mm2x4C x3.3	BM

6	Oil drain hose (std.)	0	Туре		DH-300	
7	Pre-filter system (std.)		Туре	PF-250	PF-250	PF-300
8	After-filter system (std.)		Туре	S – St P – Pr	andard (Coo actical (Oil s	olant) moke)
9	Telescopic stand (opt.)		Туре	1100	SU-1800 I-1800mm h	eight

SCOPE OF SUPPLY

Name		Quantity
	Air inlet adaptor	
	Flexible hose clamp	2
	Jacob Hose Connector	2
\bigcirc	Jacob Clamp	2
	Jacob U-Seal	2
A the	Anti-vibration mount 8mm	4
	Flexible hose 1.5M	1
	1.25 four-core oil proof cable 3.3M	1

Oil drain hose 3M	1 Pre-installed
Power switch (optional)	1

INSTALLATION

General

- 1. Installation must only be performed by an authorized technician who has carefully read the installation guide. This is to prevent electric shock or machine damage.
- 2. To ensure performance, the air cleaner should be properly installed on the machine tool. The installation area must be stable and vibration-resistant. If the machine is not capable of supporting the weight of the AOF, use a stand or mount to a wall.
- 3. To maintain efficiency, maintain high bend radius in hoses.
- 4. The electric wiring must comply with electrical standards and should be completed by a qualified electrician.
- 5. AOF is wired for 3 phase supply and may be configured for 415 or 230v, 3ph. For further electrical information, refer to the label attached to the air cleaner.
- 6. When installing the unit motor / overload protection must be provided. A suitably sized DOL starter or motor protection circuit breaker should be used.
- 7. Do not change the power wire length or use extension wire.
- 8. After installation, the installer should complete commissioning tests as detailed within this document.

Installation Guide

	Locate a free area on the top of your machine which is suitable for installation; confirm suitability for both the extraction point, and the AOF unit. When determining an installation location, consider the optimum extraction point from the machine tool; airflow should pass through the whole machine to minimize escape of contaminated air through small openings. (If you already have a hole on the top of your machine provided by the manufacturer for an extraction pipe, use this and modify install location to suit).
	Place the air inlet adaptor on the hole, fix the four corners and fill the four sides with silicone.
	Choose a flat area near the hole to house the AOF. Drill the screw holes (depending on your model) and affix the AV mounts.
A Bandh	Install the oil mist collector on the mounts and fix them with a tool such as a spanner.

	Apply silicone to hose connector; fit hose and clamp into position.
AmBendu	Complete connection of AOF to machine using silicone to ensure leak- proof connections to flexible hose.
	Install the oil proof pipe under the AOF (front side), make a loop and fix it. Fill the coolant into the oil pipe to isolate the air from outside (failure to do this will reduce performance).
	Remove rear cover to allow access to electrical connections. Check supply voltage matches AOF voltage (see below for voltage change instructions).



Connect the collector to power, reconfiguring voltage if required.

Check fan rotation direction matches arrows on machine.

Phase Change

To change the unit from 230 > 415V, proceed as follows. To change from 415 > 230V, reverse this procedure. Before beginning work, ensure the unit is disconnected from the power supply.



Remove wires 5 and 6
Join 4,5,6 at arrow
Replace connection block and remove 220v label.

FOR UNITS WITH LED INDICATOR ONLY – ADDITIONAL STEP



Add the white power cable to the white cable and the black power cable to the black cable.

Adjustment of LED Warning Indicators

For units fitted with LED indicators, the LEDs are operated by pressure switches housed within the unit. Follow the steps below to recalibrate the trigger points for these LEDs. Ensure tasks are completed by an electrically competent person and units are isolated while working with electrical components.





Replace ducting, pressure switch cover plates, and exterior cover plate.

COMMISSIONING

Following installation, the installer should commission the unit.

Commissioning should follow procedures described in current HSE guidance.

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

MAINTENANCE

Cleaning prefilters

South and the second se	If the needle of the dial is in the yellow part, the pre-filter has to be cleaned out and/or the prefilter sock replaced. If the needle of the dial is on the zero (severe blockage), the pre-filter must be cleaned out immediately. For LED systems, a yellow LED indicates a blocked pre-filter.
	If the prefilter sock appears blocked or heavily contaminated, it must be replaced. Typically these require replacement every 1-3 months.
	The pre-filtering system should be checked and cleaned at least every 3 months with neutral cleaner. The cleaning time depends on the mist thickness, type, working time and flow rate; adjust cleaning intervals based on your own experience.
	Use an air gun to blow out the remaining water inside and let it dry for 4 to 6 hours. Then, reinstall the filter.

When to replace the after-filter



If the needle of the dial reaches the red zone (eg 10), the after-filter is slightly blocked.

If it goes to the top (30), the after-filter requires immediate replacement.

For LED systems, a red LED indicates a blocked after-filter.

TROUBLESHOOTING

The following instructions are intended for qualified service personnel only. Disconnect power before servicing the unit.

The motor is operating, but no air is drawn into the unit.			
Reason	Solution		
The fan is rotating in wrong direction. (The fan must be rotating clockwise)	Turn off the power. Swap each 2 of the R/S/T cables in the main power supply unit. Turn on the power again and make sure the fan is rotating clockwise.		

The motor does not start after switching the power on.				
Reason		Soli	ution	
Α.	Incorrect power voltage is supplied.	Α.	Check whether the supplied power voltage is correct.	
В.	Power switch is faulty.	В.	Please contact us to replace the power switch	

Machine is making a loud noise.			
Rea	son	Solu	ution
А. В.	The air inlet is jammed The air hose is deformed or squashed	А. В.	Check and clean the shielding net of the inlet. Check the position of the air hose to make sure the air is flowing smoothly.

Machine is vibrating during operation.							
Reason	Solution						
A. Improper installation area.B. The oil mist collector is positioned without anti-vibration screws	А. В.	The oil mist collector must be installed on a proper area that is stable and vibration resistant. Anti-vibration screws are necessary for positioning the oil mist collector (It is a standard accessory in the package).					

THOROUGH EXAMINATION AND TESTING

If AOF is used as an LEV system it must be tested at regular (normally 12 month) intervals 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 duct velocities.
- Visual check that operators are working within effective area.
- Visual check of effectiveness using, for example, smoke tubes.

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

TECHNICAL



Model	Power Source	Motor	Air Flow Rate (m³/min) (50Hz/60Hz)	Static Pressure (kPa) (50Hz/60Hz)	Noise Value db(A) (50Hz/60Hz)	Filtering Effect	Weight (kg)	Air Inlet Port	Effective Filtration
AF-10P	3Ø	0.2 KW	11/14	0.78/1.15	60/63	99.97%	39	Ø150	<4m ³
AF-20P	AC220V or 0.4 KW	19/22	1.71/2.06	66/71	EU E12	42	Ø150	<12m ³	
AF-30P	AC380V	1.15 KW	37/42	1.92/2.35	68/73	Standard	66	Ø200	<24m ³

Above table is showing the testing results from the P series models.

Model	А	В	С	D	D1	E	F	G	н	I	J	к	L
AF-10P	613	379	726	231	148	300	335	283	25	25	426	355	313
AF-20P	653	379	736	231	148	320	350	298	25	25	426	355	313
AF-30P	765	432	808	290	200	388	420	368	25	25	492	408	313

WARRANTY TERMS

- 1. During the warranty period, we will provide free repair or part replacement for issues arising as a result of manufacturing defects.
- 2. The warranty period is one year following date of supply (or date of installation if installed by us or our approved installers)
- 3. During the warranty period, if any of the following conditions occur, we will charge for the maintenance cost:
 - 3.1 Improper operation or use in a special working environment (For example: high temperature or aggressive chemical environments)
 - 3.2 Self-repair or self-modification, breakage or trouble caused during transportation.
 - 3.3 Problem caused by abnormal power supply or incorrect voltage or frequency.
 - 3.4 Used in a location containing too much dust or oil dust without proper maintenance.
- 4. If any of the following conditions occur, we will charge the actual costs:
 - 4.1 The warranty period is over.
 - 4.2 The warranty is not shown.
 - 4.3 The contents of warranty are illegible (not caused by original writer) which cannot be read or modified.
 - 4.4 The contents of warranty (such as model and serial number) do not comply with the actual product.
 - 4.5 Problem is caused by natural disaster.
- 5. When installing the oil mist collector, if service space and personnel safety are not considered, it may result in service difficulty. The user shall be responsible for the cost of dismantling.
- 6. If the replacement part is not available after five years from the date of purchase, we will provide the equivalent for repair. However, in some cases, we are sorry for not being able to provide an equivalent for replacement.
- 7. The warranty is effective only for the original purchaser. If the product is resold other than by an authorized distributor, the warranty will be terminated.



AIR-O-FILTER ENVIRONMENT SYSTEMS, INC.

<u>http://www.air-o-filter.com</u> No. 611-6, FengZhou Rd., ShenGang Dist. TAICHUNG CITY 42949, TAIWAN TEL+ 886 4 25280316 FAX: +886 4 25280336 E- Mail: aof.filters@msa.hinet.net

CE DECLARATION OF CONFORMITY

Machine Manufacturer	:	AIR-O-FILTER ENVIRONMENT SYSTEMS, INC.			
Manufacturer's Address	:	No. 611-6, FengZhou Rd., ShenGang Dist. TAICHUNG CITY 42949,			
		TAIWAN			
Machine Type	:	Oil Mist Collector			
Machine model	:	AF-10P			
Machine's serial number	:	NLAF10P15011			
Date of Issue	:	AUGUST .25, 2015			
Place of Issue	:	No. 611-6, FengZhou Rd., ShenGang Dist. TAICHUNG CITY 42949,			
		TAIWAN			

DECLARATION:

We, AIR-O-FILTER ENVIRONMENT SYSTEMS, INC. , hereby declare that the above mentioned machine fulfills all relevant provisions of following directive:

2006/42/EC Machinery Directive (Article 12, paragraph 2 and Annex VII)
2004/108/EC Electromagnetic compatibility
2006/95/EC Low voltage Directive

Date :

Signature of Authorized Representative:

AUGUST .25, 2015