OPERATOR'S MANUAL

AirMax™
Total Exhaust Fume Hood

AirClean® Systems
"THE FUME CONTROL EXPERTS"

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* Product designs are subject to change without notice.

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GENERAL INFORMATION

AIRMAX™ TOTAL EXHAUST FUME HOODS

Thank you for choosing the AirMax™ Total Exhaust Fume Hood for your laboratory safety requirements.

The AirMax™ Series of Total Exhaust Fume Hoods have been developed by AirClean® Systems over the last 10 years.

The experience gained during this period has helped our team to develop the various models and sizes that are currently available. Unlike many manufacturers who are limited to the specific mold sizes, AirClean® Systems prides itself on being able to offer design flexibility to provide the client with the most efficient and user friendly fume hood on the market.

All AirMax™ Fume Hoods exceed all relevant ANSI standards.

Further, all AirMax™ Fume Hoods are rigorously tested in our test facility prior to delivery and installation.

STANDARD TECHNICAL SPECIFICATIONS

Airmax™ Total Exhaust Fume Hood					
Description	**3030TE**	**4030TE**	**5030TE**	**6030TE**	**8030TE**
External width	36"	48"	60"	72"	96"
External depth	29.5"	29.5"	29.5"	29.5"	29.5"
External height	59"	59"	59"	59"	59"
Internal width	24"	36"	48"	60"	84"
Internal depth	22"	22"	22"	22"	22"
Internal height	43"	43"	43"	43"	43"
Maximum Sash height	25.5"	25.5"	25.5"	25.5"	25.5"
Volume @ 0.50 inches H_2O	510 CFM	680 CFM	900 CFM	1100 CFM	1250 CFM
Nominal Weight	180 lbs.	220 lbs.	290 lbs.	330 lbs.	440 lbs.

GENERAL INFORMATION

MATERIALS OF CONSTRUCTION

Exterior:
The AirMax™ Total Exhaust Fume Hood front fascia and side panels are manufactured with white PVC. White PVC offers good general chemical resistance, especially with corrosives. It also provides an aesthetic appeal that blends with almost any laboratory color scheme.

The fascia is manufactured with a proven aerodynamic design that provides smooth and uninhibited air flow into the fume hood. The taper and radius of the sill and mullions minimizes turbulence and dangerous eddying effects. The overall finish of the AirMax™ Fume Hood is a clean and aesthetically pleasing look without compromising safety or performance.

Sash:
Each AirMax™ Total Exhaust Fume Hood is supplied standard with a 1/4" safety glass counter-balanced sash that is raised and lowered with ease. Even on larger units, the sash moves effortlessly. Every sash comes fitted with the proprietary AirMax™ air foil sash handle, which is radiused to enhance the air flow efficacy into the fume hood.

Interior:
The contoured interior design of the AirMax™ Total Exhaust Fume Hood provides the end user with a chamber that is easy to clean. The contoured design also eliminates the potential for chemical and particulate build-up. The polymer chambers have fully-sealed welds with radiused corners resulting in a one-piece inner chamber. All welds are factory tested for integrity, guaranteeing a full seal.

GENERAL INFORMATION

MATERIALS OF CONSTRUCTION

The AirMax™ Total Exhaust Fume Hood is delivered standard with an integral sump and sink to contain spills and allow for full wash down in the event of a major spill or during routine maintenance. A unique feature of the AirMax™ Total Exhaust Fume Hood sump is that it provides ventilation under the work surface while the fume hood is operational. This feature reduces vapor build up under the work surface if a spill goes unnoticed.

Listed below are the standard materials of construction for the inner chamber.

- Fire-retardant polypropylene – is appropriate where more aggressive chemicals are used and greater heating is required. Fire-retardant polypropylene, over PVC, offers a greater tolerance to solvent attack and has an intrinsically higher tolerance to heat. Fire-retardant polypropylene is the premium material of choice in fume hoods being used for acid digestion or trace metal analysis.

- Work Surface – Solid-Core Laminate is a non-porous, highly chemical resistant solid work surface. The work surface is extremely important as it is the primary point of contact for chemical attack and heat damage. Careful consideration needs to be given to the work-surface material as it needs to be suitable for the application. Our solid-core laminate surface provides the best general purpose material for use with heat and chemicals. Different surfaces may be available for laboratories that require specific materials for their application.

Baffles:
Baffle configuration is one of the most important aspects of fume hood design. AirClean® Systems has spent many years designing and testing different configurations to establish one of the most unique baffle systems available on the market.The AirMax™ baffle system provides complete scavenging from low, medium and high levels in the internal chamber as well as scavenging from under the work surface.

The quad-level baffle system allows for even air flow throughout the fume hood independent of sash height and has been designed to take into consideration equipment being used in the fume hood. When spray bars are included, the spray system can wash down the rear of the baffle at any time, even during operation, without water splashing onto the work surface.

Please Note:
This manual has been issued as a guide only and may not reflect the current specifications as requested by our clients and manufactured by AirClean® Systems.
AirClean® Systems reserves the right to make changes to this document, without notification.

MAINTENANCE

General

The whole system, from fume hood to discharge stack, should be inspected on a regular basis.

Decontamination

Staff engaged in maintenance operations shall be advised through the laboratory safety officer or supervisor of the need for any decontamination procedures, which shall be implemented before any maintenance has commenced.

MAINTENANCE SCHEDULE

Bi-Annually

The following maintenance and testing operations should be carried out every 6 months:

a. Perform a smoke test.

b. Perform a face velocity test.

c. Inspect and maintain fans, their motors, drives (including belts) and bearings. Lubricate where appropriate.

d. Check that the scrubber and wash-down facility, if fitted, is functioning efficiently.

e. Inspect the fire damper and the release mechanism, if fitted, and replace fusible link, if required.

f. Check that any air-cleaning device, if fitted, is operating efficiently and maintain if required.

g. Remove baffles and clean both the baffles and the rear of the fume hood chamber.

MAINTENANCE

Annually

a. Wash entire interior surface of the chamber including the aerofoil, if fitted, with dilute detergent solution and repair defects as necessary.

b. Check condition of the services to the hood and ensure that all are properly identified and operational.

c. Check stability and condition of the discharge stack.

d. Inspect condition of the exhaust ducting, where possible, particularly the joints and ensure drain points are clear.

e. Check make-up air balance.

f. Check condition and satisfactory operation of the fume hood control system.

g. The system shall be tested for overall compliance with applicable standards.

h. Attach a self-adhesive label to the fume hood showing the inspection date, name of inspector, report number, overall test result (pass or fail) and the date the next inspection is due.

It may be necessary to take special measures (material selection or protective covering) to ensure the label and markings are legible for the duration of the period between inspections.

Preventative Maintenance

The user of the fume hood can reduce the need for maintenance by regularly using the water wash facility, if fitted, or manually wash down the fume hood periodically, so that aggressive substances are removed from the interior before any damage occurs.

CLEANING

OUTER WALLS:

We recommend detergent and warm water. DO NOT use abrasive cleaners.

INNER WALLS AND WORK SURFACE:

Use varies, cleaning agents are best chosen by the operator. Flooding with aromatic solvents or use or abrasive cleaners IS NOT recommended.

DOOR

Pulleys are self-lubricating and require no maintenance. A periodic six (6) month inspection of cords is recommended. Clean with mild detergent and warm water.

BAFFLES

To remove, pull down from top clips, lift from lower and remove.

To re-install, fit lower edge to clips, push top towards upper clips until they snap into place.

FLUORESCENT LIGHT:

Remove light fitting from runners, replace tube and replace fitting in runners over top of the fume hood or through the access panel on the front of the fume hood.

FAN P.V.C. CENTRIFUGAL

Motor: T.E.F.C. and requires no maintenance.

EMERGENCY PROCEDURES

Fan Failure:

The AirSafe™ automatic safety controller, if fitted to the fume hood, is equipped with a sensor, which indicates fan failure with an audible and visual alarm.

Standard safety laboratory codes and procedures should be followed in all instances.

FAULT FINDING GUIDE

Fan Failure

- Check fan (electric motor).
- Check V.S.D. screen display for status.
- Check power supply.

Fluorescent Light Failure

- Check tube and starter if malfunction occurs.

MISTLINE FUME SCRUBBER

Mistline is a contact scrubber suitable for Water Soluble Gases. All other non water soluble contaminates would require specific evaluation and consultation for treatment.

Materials of Construction are chosen for their resistance to the gas to be cleared, and is usually either P.V.C. or polypropylene.

Mistline incorporates a water washed packed bed of contact media, plus multi spray water jets between the contact media and the moisture eliminator pad. The contact media used provides maximum contact between gas and wetted media for all pollutants generated within the Fume Hood.

MAINTENANCE

A clear viewing panel is provided to facilitate day to day checking of spray operation; however we recommend the following maintenance be carried out on a regular basis not exceeding six (6) month intervals.

1. Remove spray assembly and clean spray heads - replace if damaged or inoperative.
2. Slide out eliminator pad, if fitted, and thoroughly wash all surfaces.
3. Remove and wash contact media.
4. Re-assemble all components and check operation.

HOLDING TANK AND RECIRCULATING PUMP

1. Check height of water in Holding Tank - adjust water level ball valve if necessary.
2. Check operation of pump to assure that the pump starts and operates correctly when the Fume Scrubber switch is activated.
3. Check that the discharge pipe between Scrubber and Tank is clear and water is recirculating.

HOUSEKEEPING

The pH of the liquid in the Holding Tank must be checked - frequency will depend on Fume Hood usage.

The pH can be controlled via the Bleed Valve fitted to the tank, draining a variable amount of liquid to waste - this liquid loss is replenished by the operation of the ball float valve.

INSTALLATION GUIDE

Please find the following details which relate to basic - simple installation of fume hoods, fans etc.

i. Check access of fume hood to final site.

ii. Place fume hood onto underbench, check duct route. The ideal duct route would be vertical rising up from the fume hood through the roof.

iii. Duct would then rise through the roof and roof flashing, install a 90° bend onto rising duct, at a height to match the fan inlet height. Then install fan (see item iv) and approximately 3 feet of duct between the 90° bend and the fan.

iv. Fan should be placed on some form of platform. Our standard is to use 2" x 4" x 30" long treated pine placed onto the roof deck and fixed by small pieces of angle to the sides, which in turn are fixed to the roof ribs or corrugations, the fan rubber feet can then be secured to the treated pine.

v. Secure fan flexible to the fan and duct. Install fan outlet stack, bird proof top and stack support as an assembly.

Please Note: This is a guide only and Airclean® Systems will take no responsibility for the content of this guide.

SPARE PARTS

Fume Hood Components:

Contact AirClean® Systems

Controls:

AirClean® Systems
3248 Lake Woodard Drive
Raleigh, NC 27604

Phone: (919) 255-3220
Fax: (919) 255-6120

Mistline Scrubber:

Contact AirClean® Systems

Electric Motors:

T.E.F.C. standard motor selection. Refer to motor tag details.

Fan:

VSB Series
Contact AirClean® Systems

Tapware:

H_2O Saver (AirClean® Systems)

V.S.D.

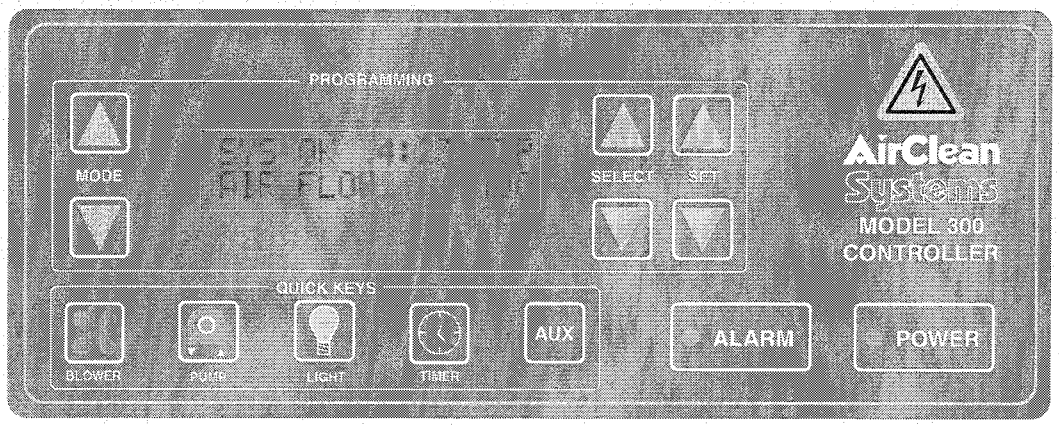
GE (AirClean® Systems)

TECHNICAL DATA

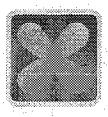
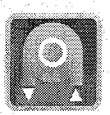
AirMax™ NOMINAL WEIGHTS

Fume Hoods	
3' (3030TE)	180 lbs.
4' (4030TE)	220 lbs.
5' (5030TE)	286 lbs.
6' (6030TE)	330 lbs.
8' (8030TE)	440 lbs.
Fans	
VSB 25	65 lbs.
VSB 30	80 lbs.

CONTROLLER INSTRUCTIONS



Microprocessor automatic safety controller layout.

QUICK KEYS	
	**FAN** - Default screen will continuously display face velocity while blower is activated.
	**SPRAY BAR** - Activates wash down spray bar.
	**LIGHT** - One touch to enable fluorescent light, if installed.
	**TIMER** - User definable lab event timer.
	**SCRUBBER** - Activates wet-based scrubber package.

• *All other settings are factory pre-set and should not be changed.*

PROGRAMMING KEYS

The Automatic Safety Controller is the first of its kind on the market. This breakthrough was designed to give the user a variety of options with the ease of fingertip control. The controller board consist of 13 keys, each with a specific function:

MODE Allows the operator to move between different program screens.

SELECT Allows movement within each program screen. The user modifiable portions of the screen will blink.

SET Allows operator to adjust the following user definable settings:

- Face velocity
- Time/Date
- Lab event timer

**** All other settings are factory preset and should not be changed.***

ALARM Allows deactivation of the audible alarm but keeps the visible alarm armed.

POWER Turns on/off power to the controller and its keys. This DOES NOT cut off power to the entire enclosure.
(The main power switch is located above the power inlet on the back, right-hand side of the enclosure.)

PROGRAMMING MENUS

MAIN MENU - Displays the time and date when the main power is on and the controller power is off. When controller power is activated the screen will display one of the following and may be changed by pressing the "Select" down arrow key:

- Airflow Monitor (Measured in Linear Feet per Minute)
- Lab Event Timer (Preset at 20 minutes)

NOTE: Activating the Lab Event Timer (by menu or Quick Key) will automatically switch the main menu to display the timer countdown. To switch the display back to the Airflow Monitor, just toggle with the "Select" up arrow key.

PROGRAMMING MENUS

FAN CONTROL – This menu is preset at the factory to meet O.S.H.A. face velocity standards while in AUTOMATIC mode. From this screen you can:

- Turn the blower on/off.
- Switch from automatic to manual blower speed based on the application.
- Change the output of the blower.

TIMER – This menu allows the operator to turn the timer on/off and to program an appropriate event time. Once the operator has programmed the desired time, the Timer can be activated by touching the Timer Quick Key on the front of the controller.

TIME/DATE – The operator can change displayed time and date.

ALARM SETTINGS – All alarm points for face velocity have been preset by the manufacturer and should not be altered.

ALARM SCREEN – Allows the operator to turn the low airflow alarm on/off in this screen. This controls both the audible and the visible alarms. If the operator turns off the alarm in this screen, nothing (audible or visible) will alert you if the airflow is below the selected face velocity.

NOTE: The operator can deactivate the audible alarm, when it sounds, by touching the alarm button on the controller. The visible alarm will still work.

BLOWER HOURS – Displays the hours and minutes that the blower has been active.

ADDITIONAL INFORMATION

- The workstation should not be placed near doors or high-traffic areas.
- To avoid confusion, each alarm has a distinctive sound and will flash what the problem is on the display screen.
- Unless the operator turns the blower off (by Quick Key or in the blower menu) before turning the power off, the blower will automatically come on each time the operator activates the unit.
- Anything the operator changes within the program is automatically saved.
- Allow each workstation to run for at least 5 minutes before use so the airflow sensor can warm up, stabilize, and settle at the correct airflow.