

# PAC600

AIR PURIFIER



USER MANUAL

# CONTENTS

Contents.....	1
Unit Description .....	3
Nomenclature.....	3
Unit Application Parameters.....	4
Unit Selection .....	4
Unit Size Calculation .....	4
Installation Guide.....	5
Important Safety Instructions.....	5
Location of Unit .....	5
Start / Stop .....	5
Maintenance guide .....	6
General Maintenance .....	6
Maintenance Schedules .....	6
Filter Maintenance .....	7
General.....	7
Test points.....	7
Filter Pressure Drop .....	7
Filter Replacement.....	7
Safety Precautions .....	8
Unit Specifications .....	9
Applications .....	9
Electrical .....	9
Filters .....	9
Nominal Air Flow Rates .....	9
Fan Data.....	10
Sound Data .....	10
Spare Parts List.....	11
Unit Drawings .....	12
Option 1: Horizontal Blow (One-Way).....	12
Option 2: Horizontal Blow (Four-Way) .....	13
Option 3: Verical Blow .....	14

Electrical Wiring Diagram .....15

## UNIT DESCRIPTION

The PAC600 portable air purifier has been designed to provide a significant level of air filtration in high-risk environments.

During operation surrounding air is drawn into the PAC600 via an integral high-pressure fan which is then passed through three, **high capacity** series flow air filter elements:

**Element 1:** F9/M9 deep bed

**Element 2:** H13 HEPA

**Element 3:** Activated carbon (**optional**)

Air is then discharged out through the top of the PAC600 having removed dust and specific biological particulates from the circulated air, to the performance criteria of the nominated particular filter elements.

A range of air diffusers are available to suit different applications.

## NOMENCLATURE

Affixed on the rear of the PAC600 Air Purifier is the product name plate containing key information about the equipment.



P A C			6 0 0			H4		T		F9	H13	C
Series			Air Flow			Diffuser		Electrical Cover		Filter 1 Type	Filter 2 Type	Filter 3 Type
P	Portable		6	Nominal Air Flow (Dirty Filters)		H	Horizontal	T	Tamper Proof	F9		
A	Air		0			V	Vertical	N	Not Tamper Proof			
C	Cleaner		0			4	4-Way Blow					
						1	1-Way Blow					

# UNIT APPLICATION PARAMETERS

## UNIT SELECTION

**Careful consideration must be taken to ensure that the correct unit is selected for the given application.**

Generally accepted practice in the use of supplementary air purification systems such as the PAC600 is to create additional air movement within the area being treated.

Air Change Rate (p/hr)	Application
6	Office
12	GP Waiting Room, Nursing Home
10-20	Medical, Industrial

Professional advise must be sought to enable correct specification of required air changes per hour (ACH) and level of filtration.

## UNIT SIZE CALCULATION

### Example Calculation:

Application: Office

Air Change Rate: 6ACH

Floor Area: 81m<sup>2</sup>

Ceiling Height: 2.7m

Required Capacity = Room Volume x ACH

$$= 81 \times 2.7$$

$$= 218.7 \text{ m}^3$$

$$= 218.7 \times 6$$

$$= \mathbf{1312.2 \text{ m}^3/\text{hr}}$$

### Conclusion:

In this example our calculated air flow rate for the office application is **1312.2 m<sup>3</sup>/hr** hour. Given that the PAC600 has a nominal air flow rate of **2160 m<sup>3</sup>/hr**, one unit would easily meet the required capacity and could be run at a lower fan speed. In the instance that we exceed the nominal air flow rate, multiple PAC600 units would need to be used.

# INSTALLATION GUIDE

## IMPORTANT SAFETY INSTRUCTIONS

### IMPORTANT SAFETY INFORMATION

**WARNING – THESE INSTRUCTIONS MUST BE READ AND ACTED UPON.**

- Connection of Power
  - Only plug into a power outlet that incorporates an earth leakage circuit breaker and only direct to the outlet.
  - Using more than one device on a single outlet may create a circuit over temperature and cause a fire.
  - Do not allow the power lead to be crushed by furniture or the air purifier.
- Always switch off the unit and disconnect the plug from the outlet before the unit is opened for filter changes or maintenance.
- Do not place fingers or hand inside the fan inlet or discharge opening as fan blades can cause significant physical damage.
- Do not move the unit when operating.
  - Always switch off and remove the plug at the power outlet before relocating.
- Do not use any combustible spray near the unit when operating and allow the unit to dry, following cleaning with an inflammable liquid.
- Take appropriate precautions when touching the unit casing to prevent the transfer of contamination matter.
- Filter removal and replacement shall incorporate bag in and bag out procedures. See filter maintenance section.

## LOCATION OF UNIT

- Ensure air discharge point is greater than 2100mm
- Ensure that a clear area of 600mm is maintained around the entire unit
- Where possible locate the unit under an air conditioning unit return or supply-air grille to assist in distributing air within the occupied space.

## START / STOP

Following connection to the power outlet, switch on at outlet and activate the unit via the front panel switching and set the fan speed to your preferred operating speed or that stated for various filter element combinations. The unit will then remain in operation 24/7 until switched off.

# MAINTENANCE GUIDE

## IMPORTANT SAFETY INFORMATION

**UNIT MAINTENANCE AND REPAIR MUST BE CARRIED OUT BY APPROPRIATELY QUALIFIED PERSONS**

### GENERAL MAINTENANCE

The PAC600 requires regular maintenance to ensure correct operation. The following schedules have been provided strictly as a guide. It is important to note that each site is unique and increased / additional maintenance may be required.

### MAINTENANCE SCHEDULES

#### General

Check / Test	Frequency	Pass / Fail
Clean internal surfaces with antibacterial cleaner	6 monthly	
Clean external surfaces with antibacterial cleaner	6 monthly	
Transport wheels and handle condition	6 monthly	
All fixings & seals	6 monthly	
Paint condition	6 monthly	
Electrical terminals & components	6 monthly	

#### Unit Operation

Check / Test	Frequency	Pass / Fail
On/off switch	6 monthly	
Fan speed selector	6 monthly	
Variable Speed Drive	6 monthly	
Noise & Vibration	6 monthly	

#### Filter Testing (per Filter)

Check / Test	Frequency	Pass / Fail
Visual inspection	6 monthly	
Ensure no air leakage	6 monthly	
Housings & clips	6 monthly	
Seals & gaskets	6 monthly	
Filter pressure drop (via tapping points)	6 monthly	

## FILTER MAINTENANCE

### GENERAL

As each of the filters collects dust and other matter the pressure drop increases resulting in a reduction of airflow.

The unit has been fitted with a fan speed control dial to enable the user to adjust the airflow rate as the filters clog up.

### TEST POINTS

Individual filter condition can be checked via the test points provided.

### FILTER PRESSURE DROP

The following table identifies the maximum allowable pressure drop across each filter type at the nominal airflow rate of 600 litres per second.

#### Standard Unit

Filter Type	Filter Grade	Max. Pressure Drop (Pa)
Deep Bed	F9/M9	110
HEPA	H13	415

#### Standard Unit with Optional Carbon Filter

Filter Type	Filter Grade	Max. Pressure Drop (Pa)
Deep Bed	F9/M9	110
HEPA	H13	350
Activated Carbon (optional)	C	65

### FILTER REPLACEMENT

New filter elements must be of the same type and filtration grade for the specified unit. This is particularly important as some units are made to order. Always refer to unit model number, associated nomenclature and technical specifications.



## SAFETY PRECAUTIONS

Filters may contain harmful contaminants which can become airborne during routine maintenance and therefore extreme care must be taken. The following minimum requirement must be adhered to

- Must ensure that all legislative requirement is met
- Must only use appropriately qualified persons
- Must complete a thorough risk assessment
- Must use appropriate personal protective equipment
- Filters must be wrapped and sealed when removed
- Filters must be appropriately disposed of
- Must ensure disturbed filters have not contaminated the discharge air stream
- The unit must be wheeled into an appropriate location for filter maintenance

### *BAG IN & BAG OUT FILTER CHANGE PROCEDURE*

All filter handling comprised of new filter fitting and old filter replacement is to incorporate bag in and bag out methodology. Bags are to be plastic, totally without perforations or damage and airtight when zip tied. This involves removal of existing filter elements via immediate bagging of each filter as it is removed from the mounting location. Bags must be of a suitable size to allow full enclosure of a used filter with the bag top zip tied. Follow correct approved disposal methodology of the bag with filter remaining sealed inside.

Once the old filter element is bagged, the air purifier internals including the fan body is to be wiped clean with antiseptic wipes suitable for the filtered space area applicable. Utilise owner recommended methodology applicable to the purpose.

New filters and replacements are to be similarly bagged and only opened at the air purifier unit immediately before installation.

# UNIT SPECIFICATIONS

## APPLICATIONS

The PAC600 is suitable for indoor use in most commercial/industrial applications.

## ELECTRICAL

Item	
Power Supply Voltage	240
Phases	1
Frequency	50Hz
Power Rating	0.75Kw
Speed Controller	Variable
Electrical Connection	Three pin plug with C13 connector
Power Feed Compatibility	Must be connected to a type B RCD per AS/NZS 3000.2018

## FILTERS

Filter Designation	Filter Class	Standard	Dimensions L x W
Element 1	M9/F9	EN779:2012	592 592
Element 2	H13	EN1822: 2009	575 x 575
Element 3	C	EN1822: 2009	594 x 594

## NOMINAL AIR FLOW RATES

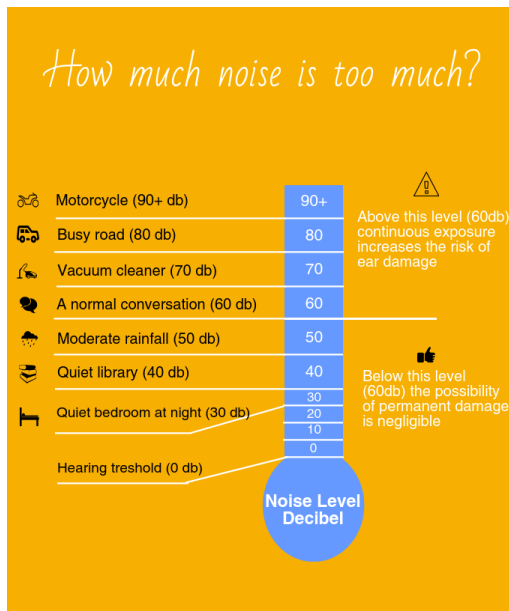
Mode	Cubic meters per hour (m <sup>3</sup> /h)	Litres per second (l/s)
Low Speed	717 m <sup>3</sup> /h	200 l/s
High Speed	2160 m <sup>3</sup> /h	600 l/s

## FAN DATA

Item	
Impellor Type	Centrifugal
Diameter	450mm
Speed	24 r/s @50 Hz

## SOUND DATA

Unit Type	The predicted reverberant sound pressure level in a 100m <sup>2</sup> floor area room with clean filters (dB(A))			
	50Hz	40Hz	30Hz	20Hz
Horizontal Blow (One-Way)	47-50 dB(A)	46-48 dB(A)	39-42 dB(A)	35-38 dB(A)
Horizontal Blow (Four-Way)	50-52 dB(A)	48-50 dB(A)	42-45 dB(A)	38-41 dB(A)
Vertical Blow	47-50dB(A)	46-48 dB(A)	39-42 dB(A)	35-38 dB(A)



## SPARE PARTS LIST

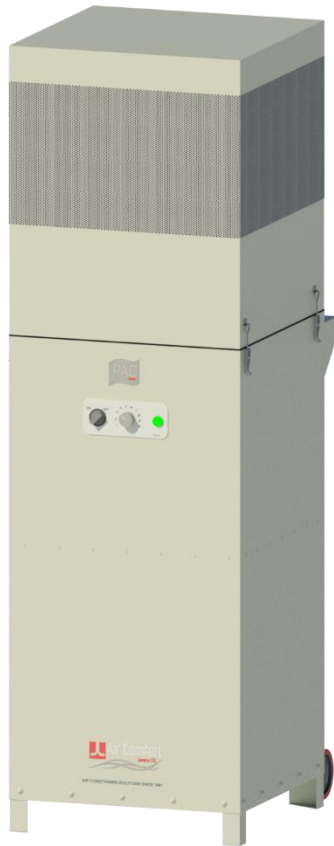
Description	Part Number
Fan Module	PAC600 – CF1
Fan Speed Controller	PAC600 – CF1 FSC
Activated Carbon	595 x 595 - 5103011
Deep Bed Filter M9/F9	592 x 592 - 3105006
HEPA Final Filter H13	610 x 610 - 2440001
HEPA Final Filter H14	610 x 610 - 1700016
Unit Wheel – 2 off	PAC600- UW1

# UNIT DRAWINGS

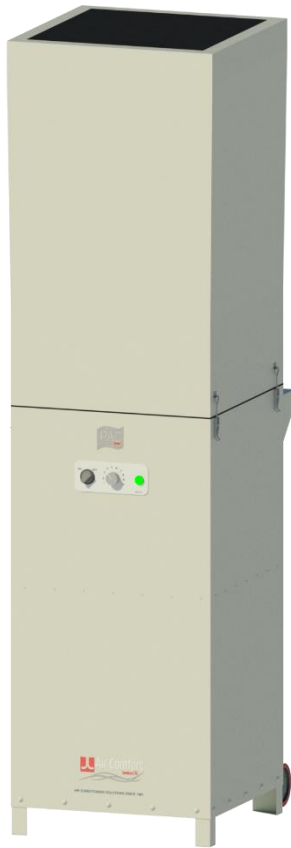
## OPTION 1: HORIZONTAL BLOW (ONE-WAY)



OPTION 2: HORIZONTAL BLOW (FOUR-WAY)



OPTION 3: VERICAL BLOW



# ELECTRICAL WIRING DIAGRAM

Electrical Drawing Revision A – For Manufacture

