

MANUAL – INSTALLATION + SERVICE

Overhead Air Purifier

OAP Series

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OVERHEAD AIR PURIFIER

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OVERHEAD AIR PURIFIER

PRODUCT OVERVIEW

Safety Precautions

- A. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- B. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- C. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer:

OAP Product Support

New Zealand

Ph: 0800 114 810

Australia

Ph: 1300 465 962

- D. Before servicing or cleaning the unit, switch power off at service panel and lock service panel to prevent power from being switched on accidentally.
- E. The manufacturer assumes no responsibility for personal injury or property damage resulting from improper handling, installation, service or operation of the product.
- F. When performing any type of maintenance on the OAP, be careful to reduce the entrainment of dirt, dust, and debris that may be present in the unit's external environment. Recirculating fan wheels can become coated in construction dust, resulting in an unbalanced wheel. This in turn can contribute to reduced motor life.

Receiving Inspection

Shipping Information

All overhead purifier units are inspected before shipment. After unpacking the assembly, check it for damage. If any damage to the products is found, report it immediately to the shipping company and file a freight damage claim. When unpacking the unit, ensure that all packing material is removed from the inside of the unit, especially around the blower wheel.

Filter Information

Ensure that any additional HEPA filters are stored in a clean, dry location in a vertical position, as labeled on the carton. Do not open any additional HEPA filters until they are ready to be installed in the OAP units. All construction in the space should be complete, the site should be clean so as not to unnecessarily load the filter.

NOTE: Extreme caution should be taken to avoid contact with filter media. Touching filter media may result in filter failure. Damage to filters can occur during installation or during leak qualification testing. The filters supplied by Price Holyoake have been 100% tested and certified by the manufacturer to be free of defects and leaks. Price Holyoake cannot accept responsibility for damage that occurs after shipment, whether through transit, handling or installation, and will not replace filters under Price Holyoake standard warranty.

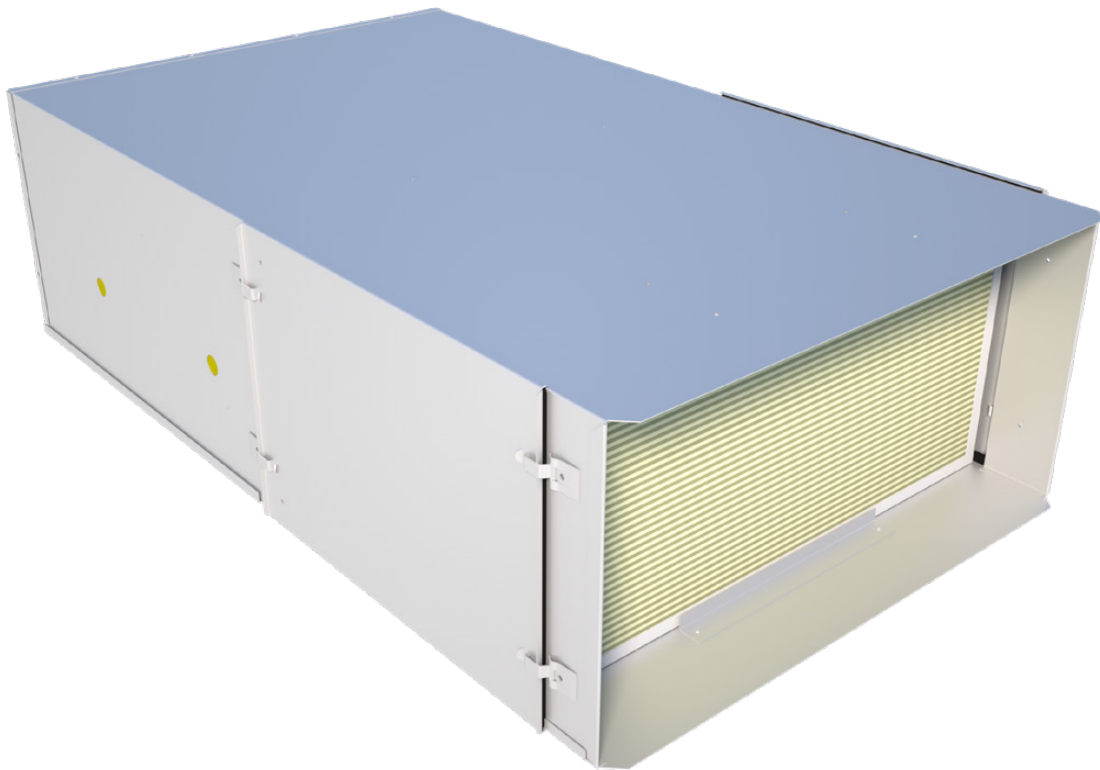
OVERHEAD AIR PURIFIER

PRODUCT OVERVIEW

Introduction

The Overhead Air Purifier (OAP) is an ideal option for improving indoor air quality and filtration wherever and whenever you need it. It is an excellent solution for high-density areas such as office spaces, classroom, fitness centres, retail, and restaurants.

The OAP uses an internal fan to draw air from the plenum space or through a return duct that passes through the unit's HEPA air filter, and circulates the air back into the space through a diffuser. With the fan continually running, the air in the occupied space or plenum is consistently filtered to provide purified, clean air.



OVERHEAD AIR PURIFIER

INSTALLATION INSTRUCTIONS

Overhead air purifier units are designed to be durable and manufactured for sturdy construction. When handled, the unit should be carried in an upright position holding onto the mounting points. The fan coils are not suitable for outdoor installations. The units should never be stored or installed where it may be subjected to a hostile environment such as rain, snow, or extreme temperatures. Care must be taken during and after installation to prevent foreign material such as paint, drywall mud, or dust from entering the filters, motor, or blower wheel. Failure to do so may have serious effects on the unit performance and may cause premature failure if foreign material is allowed to be deposited into the motor or blower.

Mounting the Unit

Use trapeze hangers or optional factory supplied hanger brackets as illustrated. Hanging rods should be securely attached to joists or to mounting anchors which are properly secured to slab construction with lugs or poured in place anchors. Price Holyoake overhead air purifier units are designed to be mounted in the direction indicated by the Control Assembly Label found on the protective shroud. Adequate clearance must be provided for the OAP for service and the removal of the internal equipment. Correct installation of the trapeze bars will not block access for service. Do not install tight to slab, avoid contact with other obstacles such as rigid conduit and sprinkler piping. This can cause excessive vibration and noise transmission. Ensure main power to the unit has been disconnected prior to performing any electrical work or inspection of the circuitry.

FIGURE 1: OPTIONAL HANGER BRACKETS ▼

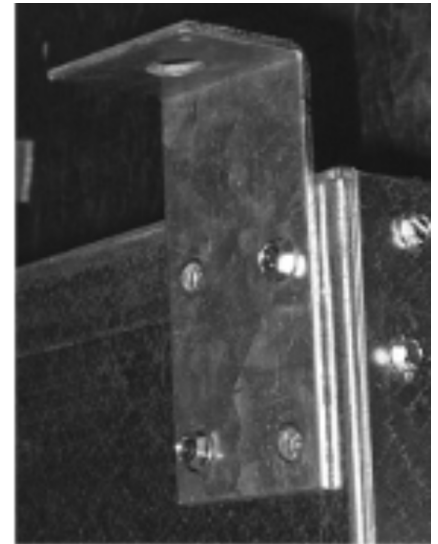
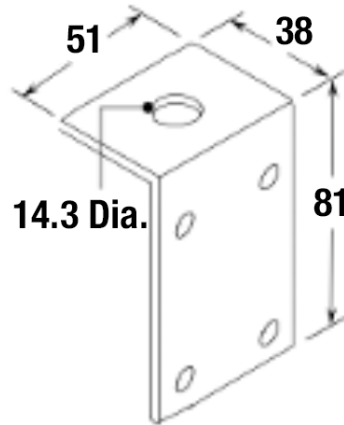
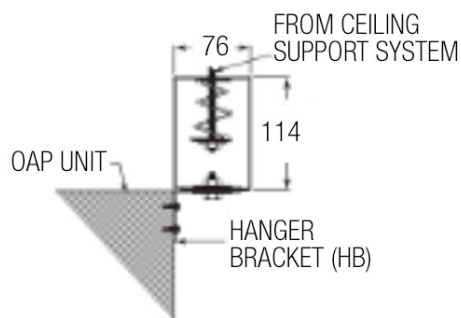


FIGURE 2: OPTIONAL SPRING HANGER BRACKETS ▼



OVERHEAD AIR PURIFIER

INSTALLATION INSTRUCTIONS

Electrical Connections

CAUTION: Disconnect all incoming power before any electrical installation or service is performed on the unit(s). All field wiring is to be in accordance with the National Electrical Code ANSI/NFPA No. 70 or the Canadian Electrical Code, Part 1, CSA Standard C 22.1. Refer to the product identification label on each unit for information to determine the field wire size. Check voltage requirements prior to power supply connection. Refer to the electrical label located near the electrical control box and also refer to the schematic drawing provided on the underside of the electrical control box cover. If upon energising the electric motor excessive noise is apparent, shut down the unit. Determine the cause by checking for packing materials, etc. and re-energise after corrective action has been taken.

Start Up & Operation

General

Before beginning start up operation, familiarise yourself with the unit, options, accessories, controls so you understand proper system operation. All personnel should have a good working knowledge of general start-up procedures and have the appropriate start-up and balancing guides available for consultation.

Airflow Balancing

The OAP is furnished with an ECM motor, and an ECM speed controller. The ECM speed controller allows for ON/OFF and 0-100% speed control of the ECM motor (230VAC). They have two available operation modes: Manual adjustment and BAS (BAS stands for Building Automation System).

The ECM speed controller has a manual adjustment potentiometer that allows for modulation of airflow. This can be accessed on the back of the speed card and modulated with a slotted control screwdriver.

NOTE: This potentiometer has voltage output for multi-meter reading. This is not required for setting airflow, but can be utilised. The potentiometer's voltage range is equivalent to the following motor control range:

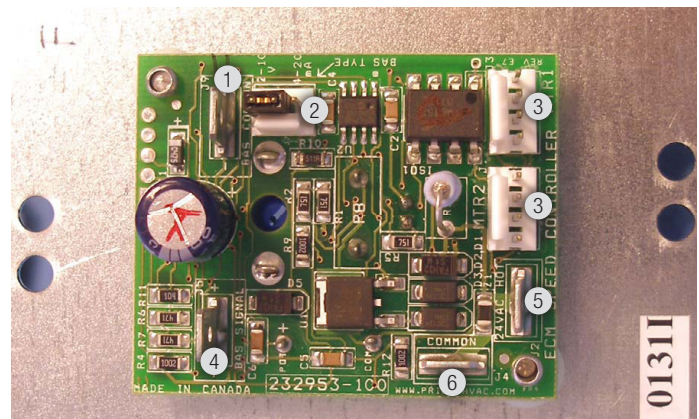
Measurement Tab Voltage	Motor Control
0 - 1 VDC	Off
1 - 4.5 VDC	0 - 100%
4.5 - 5 VDC	100%

Remote field adjustment of the fan speed can be achieved with the BAS input. The following chart describes the controller response to a 0 - 10 VDC input:

Input Voltage	Mode of Operation
0 - 1 VDC	Manual Control
1 - 2 VDC	Fan Off
2 - 10 VDC	Remote Control 0 - 100%

NOTE: Sending 1 - 10 VDC BAS signal to the speed controller will override manual control setpoints.

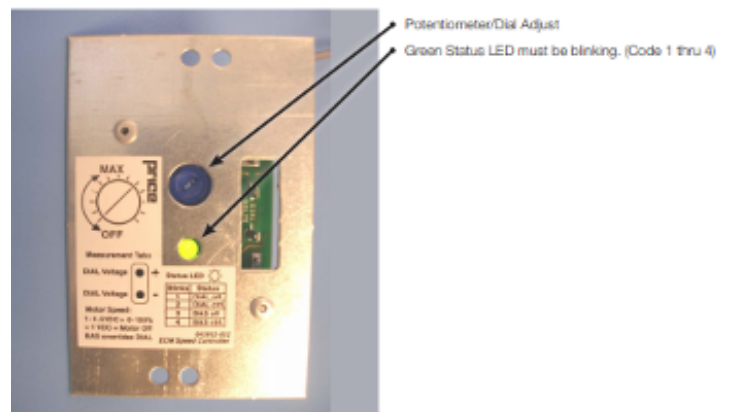
FIGURE 3: ECM STANDARD SPEED CONTROLLER ▼



1. BAS Common (**NOTE:** Same as 24 VAC Common)
2. BAS Input Type Voltage or Current - Shown set to voltage
3. Control Cable Jacks
4. BAS Positive Input (MAX +10 VDC)
5. 24 VAC HOT Power
6. 24 VAC Common (**NOTE:** Same as BAS Common)

NOTE: BAS Common is connected to 24 VAC Common. If 24 VAC is earth grounded then BAS Common will be earth ground as well. Polarity must be observed when connecting multiple speed controllers and transformers.

FIGURE 3: ECM SPEED CONTROLLER FACE ▼



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SERVICE INSTRUCTIONS

Filter Replacement

Step 1: Gain access to the unit filters by removing one of the side access panels.

Step 2: Remove filter by pulling the filter through removed access panel.

Step 3: Replace with a new filter.

NOTE: Recommended filter life for the MERV 8 pre-filter is 4,000 hours. Recommended filter life for the HEPA filter is 20,000 hours. Filter life is variable based on airflow set point, and air quality.

Motor Blower Replacement

Tools you will need to replace the motor/blower assembly in the field:

- Cordless drill with a 1/4 inch (6.4mm) nut driver bit
- 3/8 inch (9.5mm) nut driver bit
- Wiring diagram (located in control panel)

Recommended, but not required:

- Right-angle attachment for drill
- 12 inch (300mm) drill bit extension

Removal Instructions

1. Disconnect all power to the unit.
2. Remove the bottom access panel.
3. Remove the 1/4 inch (6.4mm) screw attaching the power and control cables to the side of the blower. Once that is complete, unplug the power and control wires from the motor.
4. Remove the four 3/8 inch (9.5mm) retaining bolts holding the blower assembly in place while supporting the blower assembly.

NOTE: If working from below, remove the top two bolts first, then allow the unit to rotate around the bottom two screws before removing them. Support the motor/blower assembly while removing the last two screws.

Installation Instructions

1. Lift the blower assembly up and tilt into place. Start with the bottom two bolts first and tighten them by hand.
2. Rotate the blower into position so the top two holes line up. Insert the bolts and hand-tighten them in place.
3. Use the 3/8 inch (9.5mm) nut driver to tighten them.
4. Plug the control and power cables into the motor. The connectors are keyed and will only go in one way.

FIGURE 4: OAP HEPA AND MERV8 PRE-FILTER ▼



FIGURE 5: BOLT LOCATION ▼



5. Attach the 1/4 inch (6.4mm) screw holding the wires to the side of the blower assembly.
6. Install the access panel.

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MAINTENANCE

Troubleshooting

General	<ol style="list-style-type: none">1. Confirm fan coil size and rating with blueprint and schedule (check Control Assembly label on terminal unit).2. Visually check electrical connections with the Control Wiring diagram(s) located inside the electrical enclosure or in the applicable controls brochure.3. Verify that the supply voltage is the same as specified on the control diagram(s) or Voltage Information label.
Excess noise	<ol style="list-style-type: none">1. Foreign material in fan.2. Fan or duct size selection too small for application causing high air velocity.3. Vibrating duct work.4. Unbalanced fan wheel causing it to hit the housing.
Fan does not operate	<ol style="list-style-type: none">1. Check the unit wiring against the provided Control and Wiring diagrams. See inside cover of the electrical enclosure for diagrams.2. Verify that the disconnect switch or breaker is not opened.3. Check for proper control signal from thermostat. See thermostat for full heating and monitor output.4. Fan wheel may be touching the housing.
Air volume not as specified	<ol style="list-style-type: none">1. Check filter for excessive dust build-up.2. Check fan for particle blockage.3. Measure downstream static pressure; compare to fan curve.4. Verify that the supply voltage is the same as specified on the wiring diagram. See Wiring diagram pasted on the inside of the electrical enclosure or in the applicable controls brochure.5. Insulating duct liner loose.

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MAINTENANCE

Replacement Parts

MERV Filters

Size (WxHxT)	Quantity	Description
610mm x 305mm x 25.4mm	1	Filter, MERV8
610mm x 305mm x 102mm	1	Filter, HEPA 99.97%

This document contains the most current product information as of this printing.
For the most up-to-date product information, please go to www.holyoakepureair.com

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