

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

# Dayton® Multi-Stage Air Purifiers

## Description

The Dayton Commercial Multi-Stage Air Purifiers 2HNP4, 2HNP5, and 2HNP6 have HEPA filter systems, electrostatic precipitation, and activated carbon filters. Their ceiling-mounted design makes them ideal air cleaners to supply fresh, clean air for installations in houses, guest rooms, hospitals, offices, labs, conference rooms, computer rooms, cinemas, and bars or any other place where people gather.

## Unpacking and Inspection

Handle carefully. Check the packing list to account for all items. Visually inspect for shipping damage. If damaged, immediately file a claim with the carrier.

## General Safety Information

In order to prevent the risk of fire, electrical shock, injury to persons or damage to property: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE USING THE PRODUCT. When using any electric appliances, basic safety precautions should always be followed, including the following:

1. Never attempt to disassemble the unit or insert any metal objects into it, as this may cause an electrical shock.

**NOTE:** If the unit needs repair, have the repairs fixed by a qualified technician; problems caused by an unauthorized person will void the warranty.

**⚠ DANGER** Never attempt to disassemble or alter the unit in any way not instructed by this manual. Electric shock may occur, resulting in injury or death.

2. Do not install this unit on any metal surfaces or appliances.
3. Set "H" to clean indoor air rapidly with "H" light on, then set lower speed after half an hour; set the speed to "L" to keep the air fresh and clean at night.
4. Unplug the power cord if the unit will not be used for long periods.

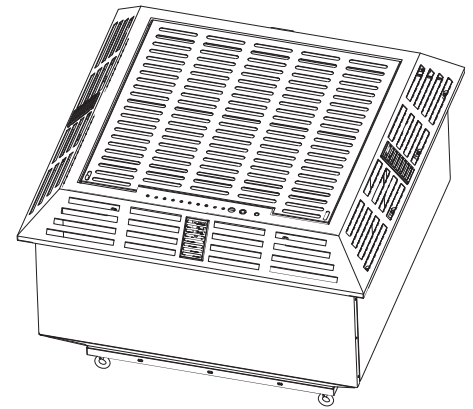


Figure 1

5. Damaged power cord must be replaced with exact grade by a qualified electrician.
6. Unit has been equipped with an automatic safety switch which automatically shuts off power when panel has been opened.

## Specifications

Model	Input Power	Power Consumed	Motor	Dimensions (H x W x L)
2HNP4	120 V / 60 Hz	1A, 98 W	1/20 HP, 3 speeds, ball bearing	15.6 x 24.4 x 24.4" (396 x 620 x 620 mm)
2HNP5	120 V / 60 Hz	1A, 98 W	1/20 HP, 3 speeds, ball bearing	15.6 x 24.4 x 24.4 (396 x 620 x 620)
2HNP6	120 V / 60 Hz	1A, 98 W	1/20 HP, 3 speeds, ball bearing	15.6 x 24.4 x 24.4 (396 x 620 x 620)

Model	Weight lbs. / (kg)	Shipping Weight lbs. / (kg)	Sound Rating	Safety Feature
2HNP4	47.4 (21.5)	56.9 (25.8)	20, 25, 35 dB	Filtration Module Interlock
2HNP5	55.1 (25)	64.6 (29.3)	20, 25, 35 dB	Filtration Module Interlock
2HNP6	47.4 (21.5)	56.9 (25.8)	20, 25, 35 dB	Filtration Module Interlock

# Dayton® Multi-Stage Air Purifiers

## Features

Feature	2HNP4	2HNP5	2HNP6
Control	Remote control, 3-speed selection Timer: 2h, 4h, 8h AUTO/MANUAL mode		
Installation	Surface mounted, recessed into suspended ceiling		
Air flow	80, 120, 150 CFM	150, 340, 300 CFM	
Function indicator	•	•	•
UV lamp indicator			•
ESP indicator		•	
Anti-arc circuitry		•	
Air inlet	•		•
Automatic dust and odor sensors	•	•	•
Remote control	•	•	•
Pre-filter	•	•	•
HEPA filter	•		•
UV + TiO <sub>2</sub> filter			•
Activated carbon filter	•	•	•
Electrostatic Precipitator		•	

Table 1

## Features and Functions

### HOW THEY WORK

Model 2HNP4 utilizes the principle of HEPA and absorbs small particles down to 0.3 µm in size.

Model 2HNP6 combines a UV lamp with effective TiO<sub>2</sub> and activated carbon filter, with the excellent air routeway to decompose and kill almost all the contaminants in the air.

Model 2HNP5 utilizes the technology of electrostatic precipitation. Air is firstly drawn into the intake, through the prefilter which absorbs large particles.

The remaining particles pass into a strong electrical field (ionizing section) where the particles are charged. The charged particles pass onto a series of equally spaced parallel plates (collector section). Each alternate plate is charged with the same polarity as the particles, which are repelled, while the interleaving plates are grounded, and therefore attract and collect the particles. Then the cleaned air should pass through the activated carbon filter to oust odors and finally return to the room. At the same time, the unit can also release a large quantity of negative ions from the four ionizers to freshen the air.

## THE FILTER SYSTEM

There are four kinds of filters in your air cleaner.

### PRE-FILTER

This is the mechanical filter that lies behind the inlet grill. It is designed to remove large particles and can be washed many times before replacement.

### HEPA FILTER (Models 2HNP4 and 2HNP6)

This is the fiber paper filter that lies behind the pre-filter, which absorbs particles as small as 0.3 µm in size.

### UV LAMP AND TiO<sub>2</sub> PHOTOCATALYST FILTER (Model 2HNP6)

The TiO<sub>2</sub> photocatalyst filter exposed to the UV lamp efficiently kills bacteria, mold spores, viruses, and especially decomposes VOCs.

### ELECTROSTATIC PRECIPITATOR – ESP FILTER (Model 2HNP5)

The complicated aluminum assembly (collector cell) located behind the pre-filter is the heart of the air cleaner. An electrostatic charge removes particles so significantly that it would take a pile of many millions of particles to cover a pinhead. When dirty, it can be washed and reused indefinitely.

# Models 2HNP4, 2HNP5 and 2HNP6

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## Installation

**NOTE:** The most effective location for the air cleaner is the center of the area to be cleaned because the dirty air is pulled into the center of the unit and discharged equally out the four sides. If more than one unit is required, they should be evenly installed in the area.

**CAUTION** *Electronic air cleaners (such as model 2HNP5) cannot be used in areas where combustible gases or vapors are used.*

**CAUTION** *It is the responsibility of the installer to ensure adequate mounting components are used. Do not allow weight of the unit to rest on suspended ceiling support rails.*

The unit has been designed to fit either surface mounted into the ceiling or semi-recessed into a T-Bar suspended ceiling. When installed with a T-Bar suspended ceiling, NEVER support the unit from the T-Bars, the unit must be supported from the permanent ceiling.

### SUSPENDED CEILING INSTALLATION

To hang the unit into a suspended ceiling, proceed as follows:

1. Unpack the unit, open filter access door and remove pre-filter and cell. See the "Filter Removal" section.

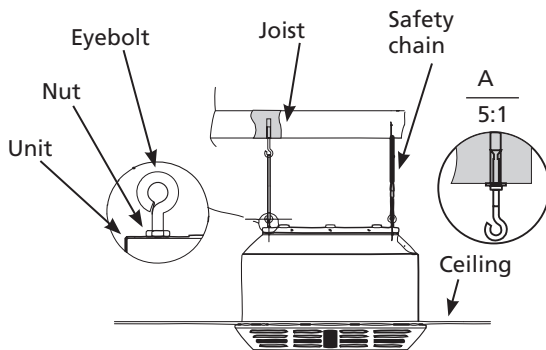


Figure 2 – Suspended Ceiling Installation

2. Install M8 eyebolts into mounting slots with washers and lock-nuts as shown in Figure 2.
3. Install trim as shown in Figure 9, page 4.
4. Select and remove a ceiling tile near the center of the area to be cleaned by unit.
5. Drill four holes into ceiling of 11 mm in diameter and 40-60 mm in depth. Secure M6 anchoring screws into the holes.

**NOTE:** Anchoring screws must be penetrated 40-60 mm in depth. Ceiling must be a concrete structure with a thickness of more than 70 mm.

6. Attach a length of safety chain to each of the four eyebolts or fit the threaded rod. Fasten securely. See Figure 2.
7. Lift unit into place and support unit while securing to permanent ceiling, ceiling joist, etc. See Figure 2.
8. Re-install filters.
9. Close access door and unit is ready for operation.

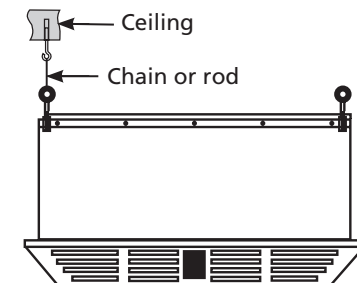


Figure 3 – Solid Ceiling Installation

### SOLID CEILING INSTALLATION

To mount the unit into a solid ceiling, proceed as follows:

1. Unpack the unit, open filter access door and remove pre-filter and cell. See the "Filter Removal" section.
2. Select a location near the center of the area to be cleaned. If you are fitting to wooden ceiling joists, locate the position of joists.
3. Drill four holes into the ceiling and fit four 5/16" lag screws in the joists. Hex-headed screws will give easier access for final tightening. Do not overtighten screws.
4. Lift the unit to where the large end of the keyhole slots in the top of the cabinet fit over the screw heads. Slide the unit so that the narrow ends of the mounting slots are located under the screw heads. Fully tighten the screws.
5. Install the lockdown location screw as shown on template.
6. Make electrical connections as detailed in the "Wiring Diagrams" section.
7. Re-install filters.
8. Close access door and unit is ready for operation.

**Anchor Screw Installation**

1. Drill hole larger than dimension of anchoring screw for 1 to 2 mm.
2. Insert the anchoring screw.
3. Securely tighten the screw.

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## Installation (Continued)

**⚠ WARNING** *Make sure this appliance is electrically grounded.*

**NOTE:** This unit is designed to be permanently connected to fixed wiring. Installation must comply with all applicable electrical codes.

### POWER REQUIREMENTS

#### MAIN UNIT

Main power to the unit is 120 V, 60 Hz, 1PhM, rated 1 Amp.

For connections between units, 3 Amp wiring or more is required. See the "Wiring Diagrams" section for details.

#### INFRARED CONTROL

Power: DC3V or 2 AAA type batteries.



Figure 6



Figure 9

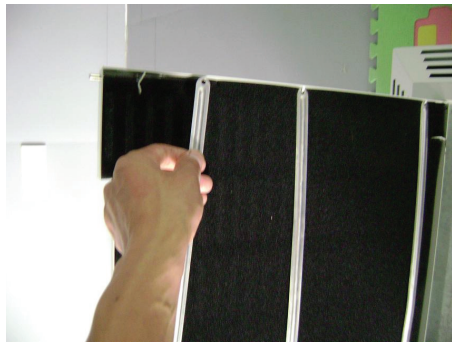


Figure 4



Figure 7



Figure 10



Figure 5

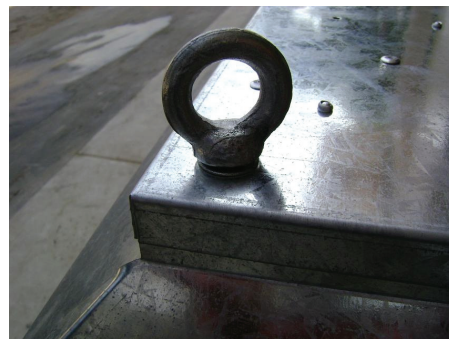


Figure 8



Figure 11

# Models 2HNP4, 2HNP5 and 2HNP6

## Maintenance

**⚠ WARNING** *To reduce the risk of electric shock always unplug the unit before servicing or cleaning. Do not immerse in water or any other liquids.*

### DAILY MAINTENANCE

1. Due to dust and debris, unit will require an occasional wipe down with damp cloth; minimal maintenance required.
2. This air cleaning system has been designed to collect airborne particulate matter and requires routine servicing to remove accumulated dirt and debris.
3. The service interval varies considerably with applications. For example, when used in highly contaminated areas, service is required in 30 day intervals. If the air cleaner is used in less contaminated areas, such as an office setting, it could take several months to become fully contaminated.

4. During normal operation, the electrostatic unit (Model 2HNP5 only) will make an occasional snapping noise. This is caused by large pieces of dirt accumulating on the electronic filter and presents no danger. This unit has anti-arcing circuitry to eliminate the nuisance of constant arcing. If arcing occurs frequently, or the "ESP" light is flashing, it indicates the unit requires cleaning.

### FILTER REMOVAL

Unplug the unit before removing the filters. Pull the two access latches and open the hinged door. Remove the pre-filter by pressing and removing the three flake aluminium (Figure 4, page 4). To remove the collector cell or HEPA filter when the unit is flat, just turn the four clips (Figures 5-7, page 4). While the unit is suspended, support the collector cell or HEPA and turn the four clips. To reinstall the filter, simply reverse the above procedure.

### ADDITIONAL MAINTENANCE TIPS

1. Do not put the unit in areas with high temperature, high humidity, combustible gas or liquid.
2. Do not clean the unit with organic solvent. Clean the unit with a soft cloth and non-caustic detergent when the power to the unit is turned off. Do not allow any liquids to enter the unit.
3. Remove the pre-filter and either wash with water or with a little detergent every one or two months. Allow the filter to dry thoroughly before placing back into unit.
4. To keep the dust collecting efficiency high, replace the activated carbon filter every one or two years.
5. Periodically wipe dust from outlet with a dry cloth when unit has been turned off.

## Wiring Diagrams

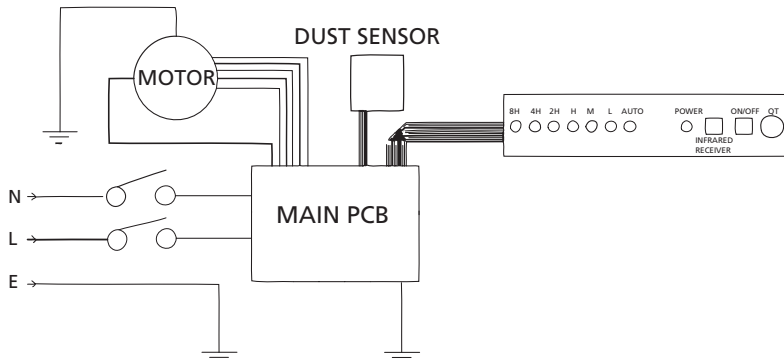


Figure 12 – Model 2HNP4 Wiring Diagram

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## Wiring Diagrams (Continued)

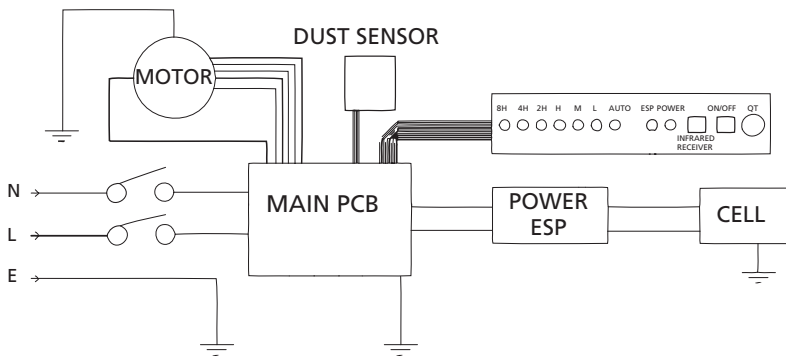


Figure 13 – Model 2HNP5 Wiring Diagram

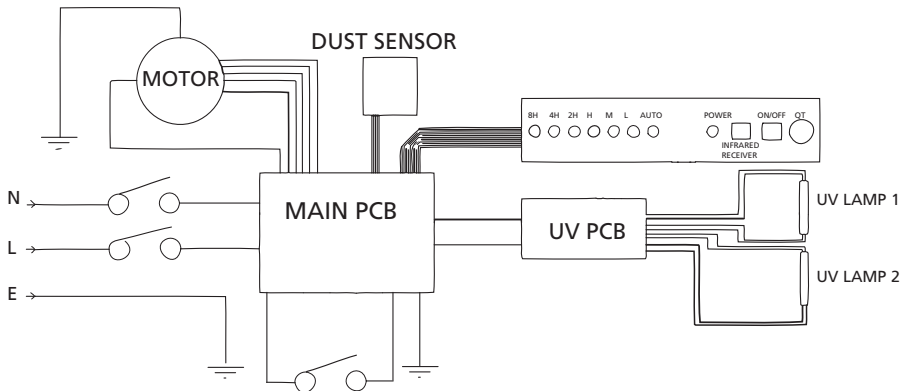


Figure 14 – Model 2HNP6 Wiring Diagram

## Models 2HNP4, 2HNP5 and 2HNP6

### Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
The air purifier will not turn on	<ol style="list-style-type: none"> <li>1. No power</li> <li>2. Top cover is open or not fully closed</li> <li>3. No filters are installed</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power supply to the unit</li> <li>2. Close the cover</li> <li>3. Install filters. The unit will not work unless filters are installed</li> </ol>
Reduced air flow or poor filtering	<ol style="list-style-type: none"> <li>1. PE packs of filters are not removed</li> <li>2. Filters are not properly installed</li> <li>3. Inlet grid or outlet grid may be blocked</li> <li>4. The pre-filter may be dirty</li> <li>5. The HEPA or activated carbon filters may be clogged</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove PE packs</li> <li>2. Check the filters and reinstall</li> <li>3. Check that nothing is close to the front or sides of the air purifier</li> <li>4. Clean the pre-filter every 2 months</li> <li>5. Clean the filters or replace them, if necessary</li> </ol>
Remote control doesn't work	<ol style="list-style-type: none"> <li>1. The battery may be dead</li> <li>2. Improper angle or distance away from the unit</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the battery</li> <li>2. Make sure you are using the remote at the correct angle and distance from the unit</li> </ol>
Auto mode doesn't work	The unit is not set to AUTO mode	Set the operation mode to AUTO
Germicidal UV bulb does not light	<ol style="list-style-type: none"> <li>1. UV switch may not be on</li> <li>2. The fan may not be running</li> <li>3. The bulb may be burned out or loose</li> </ol>	<ol style="list-style-type: none"> <li>1. Check that the UV switch is on</li> <li>2. Check that the fan is on. The UV bulb will not work unless the fan is on</li> <li>3. Check or replace the bulb</li> </ol>
The ESP cell makes a frequent snapping noise	The ESP cell may be dirty or blocked	Clean the collector cell or remove the clog

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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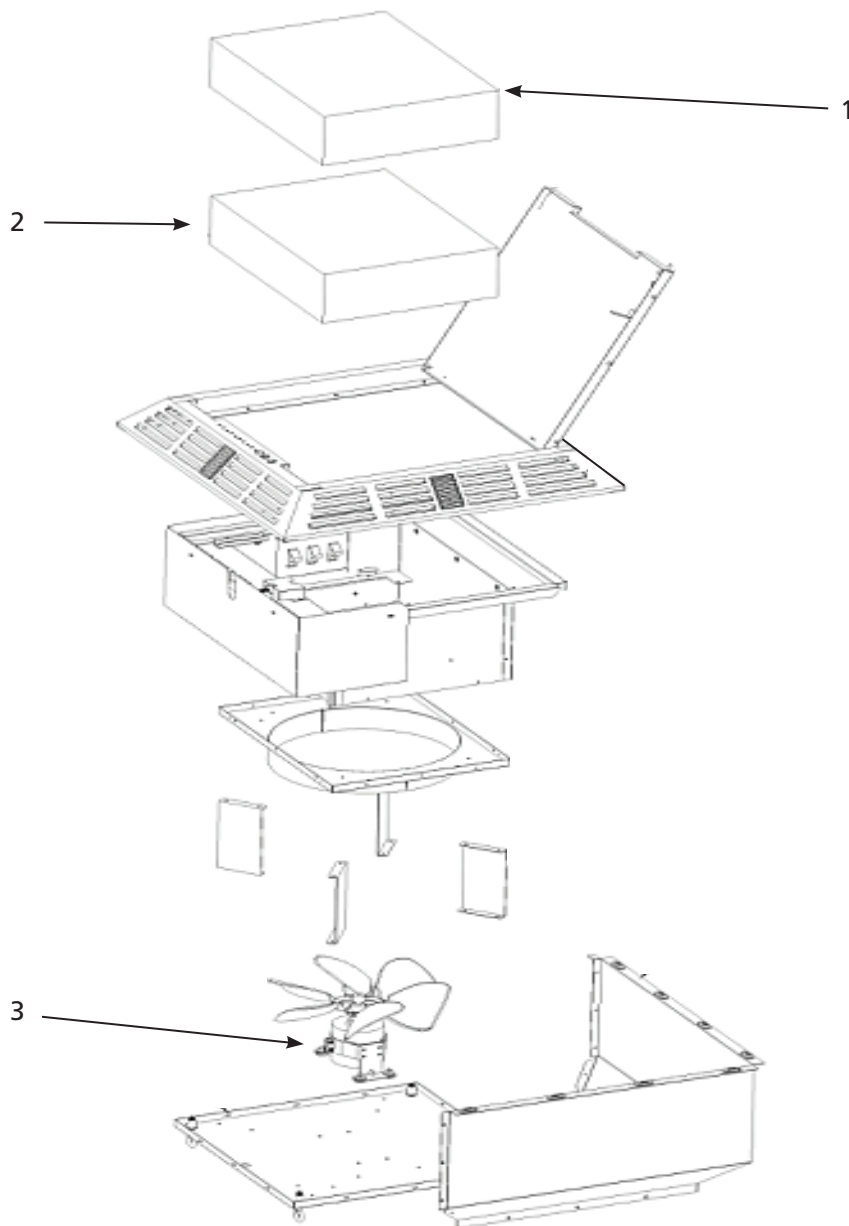


Figure 15 – Repair Parts Illustration for Multi-Stage Air Purifiers (Models 2HNP4 and 2HNP5)



# Repair Parts List for Multi-Stage Air Purifiers

Reference Number	Description	Part Number for Models:		Quantity
		2HNP4	2HNP5	
1	HEPA filter	HV00012PG	N/A	1
1	ESP filter	N/A	HV00011EG	1
2	Carbon filter	HV00013RG	HV00013RG	1
3	Motor	HV010203MG	HV010203MG	1
Δ	Microswitch	HV000103SG	HV000103SG	1
Δ	Main PCB	HV010203PG	HV010203PG	1
Δ	Switch control panel	HV010203CG	HV010203CG	1
Δ	Dust sensor	HV010203DG	HV010203DG	1
Δ	Remote control	HV010203RG	HV010203RG	1
Δ	ESP PCB	N/A	HV000003EG	1

(Δ) Not shown.

## For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

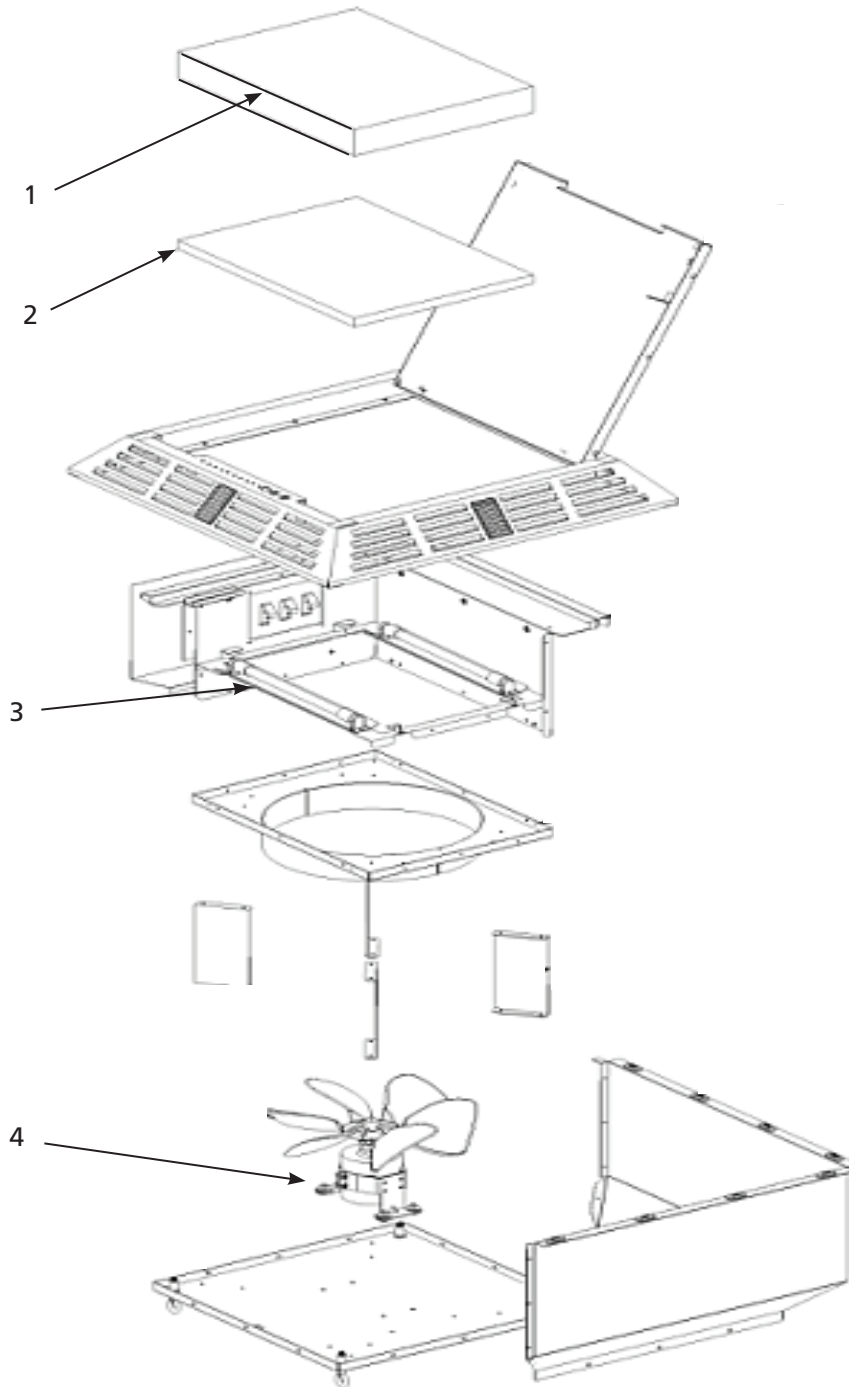


Figure 16 – Repair Parts Illustration for Multi-Stage Air Purifier (Model 2HNP6)

## Repair Parts List for Multi-Stage Air Purifier

Reference Number	Description	Part Number	Quantity
1	HEPA / Carbon filter	HV00010HG	1
2	TiO <sub>2</sub> filter	HV00011TG	1
3	UV lamp	HV000002LG	2
4	Motor	HV010203MG	1
Δ	Microswitch	HV000002SG	1
Δ	Main PCB	HV010203PG	1
Δ	Switch control panel	HV010203CG	1
Δ	Dust sensor	HV010203DG	1
Δ	Remote control	HV010203RG	1
Δ	UV PCB	HV000002UG	1

(Δ) Not shown.

# Dayton® Multi-Stage Air Purifiers

## LIMITED WARRANTY

**DAYTON ONE-YEAR LIMITED WARRANTY.** DAYTON® MULTI-STAGE AIR PURIFIERS, MODELS COVERED IN THIS MANUAL, ARE WARRANTED BY DAYTON ELECTRIC MFG. CO. (DAYTON) TO THE ORIGINAL USER AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS UNDER NORMAL USE FOR ONE YEAR AFTER DATE OF PURCHASE. ANY PART WHICH IS DETERMINED TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP AND RETURNED TO AN AUTHORIZED SERVICE LOCATION, AS DAYTON DESIGNATES, SHIPPING COSTS PREPAID, WILL BE, AS THE EXCLUSIVE REMEDY, REPAIRED OR REPLACED AT DAYTON'S OPTION. FOR LIMITED WARRANTY CLAIM PROCEDURES, SEE "PROMPT DISPOSITION" BELOW. THIS LIMITED WARRANTY GIVES PURCHASERS SPECIFIC LEGAL RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION.

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Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some jurisdictions do not allow a limitation on how long an implied warranty lasts, consequently the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of implied merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

**Prompt Disposition.** A good faith effort will be made for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

**Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714-4014 U.S.A.**