

As we continue to learn more about the short-term and long-term health implications of poor indoor air quality, homeowners are turning to air scrubbers to ensure their home is a healthy place to live.

Have you or a loved one experienced relentless allergies or asthma symptoms within your own home? Has your daily life been affected by unexplained headaches or dizziness?

Whether you're looking to address specific health-related symptoms or you'd like to make your home a healthier place to live for the years to come, it's time to learn about indoor air quality.

Indoor pollutants, also known as volatile organic compounds (VOCs), can range from being relatively harmless to containing toxic carcinogens.

While there are a few different ways to improve your indoor air quality, one device that has emerged as an effective household appliance for eliminating VOCs is a gadget called an air scrubber.

There are some common misconceptions about the differences between air scrubbers and air purifiers, as they both work towards improving your indoor air quality but do so in different ways.

The HVAC team at Mattioni has been assisting homeowners across the Greater Philadelphia region with their indoor air quality for decades. Our expert HVAC installers can get a whole-house air scrubber up and running in your home, but we know that many people are still unaware of what exactly these systems do, and the benefits they provide.

In this article, we'll explain how air scrubbers work and review the core differences between air scrubbers and air purifiers. We'll also answer some of the most common questions people have about air scrubbers and the extent of their effectiveness.

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After reading this article, you'll have a good understanding of what an air scrubber is, and the differences between air scrubbers and air purifiers. You'll be well-prepared to evaluate how installing a whole-house air scrubber can improve your home's indoor air quality.

1. UNDERSTANDING THE TECHNOLOGY BEHIND AIR SCRUBBERS

Air scrubbers can eliminate close to 100% of the VOCs in your home by attacking them microscopically while they linger in your home's air using ionizers and UV light. Here is the science of how they do so.

Most VOCs are positively charged ions, so air scrubbers emit negatively charged ions into the air. The effect of this ionization causes the VOCs to cling together, which increases their size. This process gets VOCs large enough to either be removed through your air filter system or sanitized as they land on surfaces in your home.

An air purifier will provide the most effective resolution to capturing VOCs after they have been ionized by an air scrubber.

Air scrubbers also attack VOCs using UV light which breaks down airborne bacteria similarly to how UV light from the sun can cause a sunburn. At Mattioni, we specialize in UV-C light air scrubbers installed directly into your home's ductwork to treat your entire home's air supply.

2. HOW IS AN AIR SCRUBBER DIFFERENT FROM AN AIR PURIFIER?

It's not uncommon to confuse air scrubbers and air purifiers, as they're both tasked with the same mission of improving indoor air quality.

While air scrubbers do this by using the ionization process we just covered, air purifiers go about improving your indoor air quality by housing a series of industry leading, high-grade air filters that capture VOCs.

3. HOW DOES AN AIR PURIFIER SUPPORT AN AIR SCRUBBER?

While an air scrubber alone will improve your home's indoor air quality, we recommend installing an air purifier alongside it as the two systems support one another by addressing different stages of VOC remediation.

The high-grade filters within an air purifier are well-suited to capture the larger, clumped-together VOCs that an air scrubber works to create.

Without an air purifier, the larger VOCs will end up landing on surfaces in your home. These surfaces can be sanitized, which works as a solution to the larger issue, however cleaning must be done regularly and thoroughly.

4. WHAT ARE THE DIFFERENCES BETWEEN STANDALONE AND "DUCTED IN" AIR SCRUBBERS?

Both air scrubbers and air purifiers can be purchased either as a standalone unit or installed directly into your home's ductwork. This gives you some flexibility in how you want to address your indoor air quality.

Both standalone and ducted-in equipment will improve your indoor air quality, however "ducted in" air scrubbers are more effective at treating a larger volume of air, as it will have access to home's entire air supply.

Setting up a standalone air scrubber is a good way to treat one specific room in your home, but treating your whole house will require several standalone units.

At Mattioni, we specialize in whole-house air scrubbers, which require some industry knowledge of how to be properly installed into your home's ventilation system.

5. WHAT ARE THE SOURCES OF VOCs?

Indoor pollutants are commonly called volatile organic compounds, or VOCs, and come from a few different sources.

Chemicals used in the manufacturing of paints, plywood, drywall, hardwood floors, and carpets can slowly seep into your home for years. These chemicals, along with those found in hairsprays and cleaning products, can add up if left unmitigated.

Automotive chemicals, solvents, cleaners and disinfectants should be stored in airtight containers to minimize their impact on your indoor air quality.

Any cooking device or fireplace that uses an open fire, kerosene, or coal also produces VOCs. The byproducts of these burning devices linger in the air long after the fire is out and are harmful to inhale. Tobacco smoke is also going to damage your indoor air quality.

Pet dander is an allergen that many people don't consider when adopting a dog or cat. We love our furry friends, however regularly vacuuming your home is only step one for maintaining healthy indoor air quality with a pet.

If you or someone you live with is sensitive to your pet's dander, installing indoor air quality products like an air scrubber can be an effective

If you or someone you live with is sensitive to your pet's dander, installing indoor air quality products like an air scrubber can be an effective remediation. Other allergens that air scrubbers address include pollen and dust.

One of the more serious VOCs that sometimes requires a more extensive solution than just an air scrubber is mold. Dehumidifiers are more suited as a first step to address mold spots in your basement or elsewhere in your home.

However, an air scrubber should be installed to prevent another mold outbreak. If you find mold in your home, reach out to an HVAC professional for a solution as soon as possible, as it can cause long-term health effects if left untreated.

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6. WHAT ARE THE HEALTH EFFECTS OF VOCs?

The health effects of VOCs vary significantly. They can be relatively harmless, but also can cause or exacerbate things like irritation of the eyes, nose and throat, headaches, nausea and dizziness.

Skin problems can also occur, and asthma symptoms can be heightened. There are also some VOCs that can cause cancer.

7. WILL AN AIR SCRUBBER HELP WITH ALLERGIES AND ASTHMA?

An air scrubber will eliminate the common triggers of allergies and asthma like pollen, pet dander, and dust. This improvement in indoor air quality provides relief to asthma and allergies throughout all weather conditions.

By mitigating these allergens with an air scrubber, your asthma and allergy symptoms will be minimized, and you'll be able to breathe easier in your home.

8. ARE THERE ANY OTHER BENEFITS TO INSTALLING AN AIR SCRUBBER INTO MY DUCTWORK?

Although it's not talked about frequently, an air scrubber will also extend the life of your heating and cooling systems and minimize money spent on repairs.

By attacking and trapping VOCs and allergens like cooking byproducts, pollen, pet dander and dust before they get into your HVAC system, the volume of these particles that end up damaging your AC, furnace or boiler will be minimized.

This will help keep your heating and cooling systems running smoothly for a longer period, and can also support energy efficiency.

9. HOW ELSE CAN I IMPROVE MY INDOOR AIR QUALITY?

A holistic approach that the HVAC team at Mattioni prescribes to most thoroughly address your indoor air quality includes installing an **air scrubber, air purifier, and an energy recovery ventilation system**.

Energy recovery ventilation systems (ERVs) involve a small amount of piping that's directly installed to access outdoor fresh air and connected to your ventilation system. Dampers then control the amount of fresh air let in.

By combining these three systems, your house will constantly receive an influx of fresh air while attacking and capturing VOCs already in your home.

10. DO I NEED AN AIR SCRUBBER?

Your need for an air scrubber will depend on your current indoor air quality and how much you want to prioritize improving it.

There are VOC sensors available to buy or rent, commonly available at your local hardware store, which can give you a measurement of the concentration of VOCs currently in your home.

It's also a good decision to talk with an experienced HVAC professional before and after using a VOC sensor on your own. Talking it through with a professional will give you an idea of just how urgently you should be taking further steps to improve your indoor air quality.

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For answers to all your questions about indoor air quality and all IAQ products, you can contact the friendly team at Mattioni by calling **484-617-3619** or, if you haven't already, by scheduling a consultation with one of our HVAC professionals.

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