

Introduction

There are a variety of spray paint booths available, ranging from basic systems designed to collect some fumes to completely insulated, filtered chambers with their own air systems. The variety is necessary since spray booths are used in furniture making, automotive, industrial manufacturing, powder coating, aviation, and many other industries.

A high-end, custom-sized spray booth can be a very expensive purchase, but many businesses can get by with more modest booths. You can save even more by choosing a used paint booth, although finding a used paint booth that meets your exact needs can be a challenge.

This **BuyerZone Spray Paint Booths Buyer's Guide** will help you understand how to evaluate your spray booth needs, describes the features you should look for, and outlines basic pricing considerations.

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Pricing guidelines

Prices for spray paint booths vary widely according to size, filtration system, and other features. Here are some very rough estimates – we'll go into more detail in **Phone system pricing** on page X.

Type of Booth	Notes	Estimated cost
Basic industrial booth	Open cheaper than closed; crossdraft cheaper than downdraft	\$2,000 to \$10,000
Very large booths	Includes custom-sized	\$15,000 to \$20,000
Auto industry booths	Includes air make-up units	\$6,000 to \$50,000

Deciding what you need

Whether used to paint a car or furniture, spray paint booths serve two main purposes. First, these self-contained ventilated work areas collect "overspray," the paint or other coating that gets into the air during application, and prevent it from spreading around your shop or being released into the atmosphere. This is essential to employee safety: many types of sprays are hazardous to breathe and/or flammable, so confining them to a specific area is critical.

Second, they can filter incoming air to remove dust and other airborne particles. Filtered air is important to creating mirror-smooth finishes and preventing contamination.

What do you need from your booth?

There are several basic decisions to make when choosing a spray booth. Depending on the application, booths can be closed or open, filter incoming and outgoing air or exhaust only, and vent directly outdoors or just into the surrounding room. Determining what setup you need will depend on the environment you'll be working in and what you'll be painting.

The **air quality** in your workspace will define whether you need an open or closed booth and what type of airflow you need. For example, furniture makers and other woodworking applications tend to produce a great deal of sawdust that can ruin finishes. As a result, most require spray booths that are physically separated from the rest of the shop, and that filter both incoming air and exhaust. However, if you have a dedicated room for spraying that is separated from activities that produce dust or debris, you may be able to get a less expensive open-sided booth.

A second consideration when considering air quality is the **type of finish** you're applying. Automotive spray painting requires a very clean working environment because the smallest pieces of dust can ruin the finish, while basic coatings for industrial equipment may be more tolerant of imperfections. The more demanding the finished product, the more restrictive you'll need your booth to be.

Sizing your spray paint booth

There are two sets of dimensions to consider when preparing to buy a spray paint booth: internal and external.



Internal dimensions are based very simply on the largest part or product you need to paint. Measure the width, length, and height of the item, then add at least three feet on each side to give your workers space to move around. If you use an automated spraying system, you may need to allow even more space for the machinery to operate. This will give you the minimum dimensions you need inside your spray booth.

The **external dimensions** are limited by the room where your booth will be housed. Typically, spray booths are placed within existing buildings, so they have to fit between existing machinery and support columns, and below HVAC ducting or other overhead

obstacles. Measure the available space to determine the maximum external dimensions you can accommodate.

In general, booths are sold by internal dimensions as that's usually the more critical measurement. Standard booths are offered in two-foot internal increments starting at six feet long, but you can get custom sizes to fit almost any space.

Spray booth basics

One of the defining characteristics of a spray booth is what type of airflow it uses to remove overspray. The three

basic types are open front booths, crossflow booths, and downdraft booths.

Open front booths have only three walls. They take in unfiltered air through the open front, through the work area, and into an exhaust filter at the back. These are the least expensive type of spray booth, and are sufficient for situations where the main concern is containing overspray. Open front booths are no help in preventing contaminants from getting into your finishes, since the air they pull in is no cleaner than the rest of your shop air.

Crossflow (or crossdraft) booths draw air in horizontally through an intake filter and pull it straight through the chamber to the exhaust filter on the opposite side. They expel the filtered exhaust into the room or vent it outside. These are the most common and least expensive fully-enclosed spray booths.

Downdraft booths pull air in through ceiling-mounted filters and direct it out in one of several patterns. In order of increasing effectiveness and price, they include:

- In **modified- or semi-downdraft booths**, the air flows down along the length of the booth and out the back.
- **Side downdraft booths** pull air down via filters that run along both sides of the booth at floor level.
- **Pitted downdraft booths** draw air straight down into a cavity underneath the floor.

Downdraft booths are usually more expensive than crossflow booths, but downward airflow does the best job of removing overspray from the work environment.

The majority of buyers choose open booths. The expense of adding intake filtration is significant, and in many situations it's overkill. However, exacting applications such as automotive or aircraft finishes and industrial coatings require precise tolerances. Filtered intake is essential for achieving the results those applications demand.

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Filters

Intake and exhaust filters can last for years. To let you know when the filter needs to be replaced, the booth you buy should come with a manometer. Manometers measure the air pressure on both sides of the filter, and as the filter gets dirty, that pressure difference increases. When it hits a preset limit, the booth should indicate that it's time to install a new filter.

Some manufacturers require that you buy filters directly from them while others let you use generic filters you can buy at a paint supply store. While this isn't a critical factor, it can be convenient to buy replacement filters on your terms, not the manufacturer's. Make sure the filters you use are appropriate for the contaminants you're trying to remove: dust filters work well for large particles, but not as well for aerosols or fine mists.

Water-filtered booths used to be popular for heavy-duty painting applications since recirculating water trapped airborne particles without clogging up filters. These systems are rarely used any more, since improved environmental regulations have made disposal of the contaminated water much more expensive and difficult.

Additional spray booth features

Once you know what size booth you need and the type of airflow you want, you'll have to consider several other options, including air make-up units, lighting, and safety features.

Air make-up units

Adding a spray booth inside your plant or shop can wreak havoc with your HVAC systems. Consider that small booths can have an airflow of several thousand cubic feet per minute (CFM), while larger booths can reach 50,000 CFM or more. All that air is being pulled into the booth and vented to the outside, and it has to come from

somewhere.

Without an air make-up unit, that air is being drawn from the rest of your building. As the pressure inside starts to drop, outside air will be sucked in through every tiny gap and crack in the walls to replace it. If you're heating or cooling your building, the difference in temperature will cause your energy costs to skyrocket.

An air make-up unit solves this problem by providing a direct source of air for the booth. The air make-up unit pulls in outside air through a dedicated vent, heats it if necessary, and supplies the resulting air directly to the intake filter.

Air make-up units add quite a bit to the initial purchase price of a spray booth – frequently more than the booth itself. However, to avoid serious air quality problems and uneven heating or cooling, they can be worth the expense.

Lighting

Adequate lighting is essential to many spray booth applications. Most booths come with several banks of special explosion-proof lighting. Make sure the location and number of lights is appropriate for your work, because you can't simply install additional lights on your own.

Also, consider access to the lights when choosing a location for your booth. In most cases, lights are accessed from outside the booth, so putting the structure against a wall could prevent you from changing burned-out bulbs.

Safety features

Operators of spray paint booths are required to comply with a myriad of federal, state, and local regulations to protect both employees and the environment. These rules vary quite a bit, but the most important aspect to remember is that your local regulations trump any others.



Because of this, meeting with your local fire marshal or building inspector is the most important step in compliance. The vendor you choose should be able to provide general guidelines, but the local authorities have the final word on what type of installation, safety equipment, and operating procedures are required.

The safety features you may need include a fire suppression system, either dry chemical or water-based, depending on the substances being used in your application. There may be specific airflow requirements based on the type of spraying you do and the size of the booth. And you'll have to comply with standard regulations concerning electrical wiring and fire exits.

Other features

- **Sound blocking:** If the noise of the fan and spray equipment is a problem, double walls can help.
- **Auto shutdown:** Cuts off power to spray devices if the filters are clogged or booth air flow drops below safe levels.
- **Powder coat finish.** White powder coating helps improve overall brightness in the booth and protects the steel.
- **Doors.** Choose from drive-through, bi-fold, standard walk-through, or other types of entry doors to match your needs.

Choosing a dealer

Whether you go through a manufacturer or a dealer, choosing a reliable source for your spray paint booth is important. Simply picking a booth out of a catalog is rarely the best way to approach the purchasing decision.

Above all, look for a company that tries to understand exactly what you need and provides a solution to match. Many will come to your location to evaluate the location for the booth. This can be a big help, since they may suggest construction and ventilation options you hadn't considered. They can also help with decisions about sizing, airflow, and other choices.

If you're not buying from a manufacturer, make sure you know exactly who has responsibility if anything needs repair. If something does go wrong, you don't want finger pointing between the dealer and the manufacturer as they try to decide who should address your problem.

Be prepared to ask a lot of questions. For example:

- What kind of airflow do I need in my booth?
- How soon can you deliver and/or install a booth?
- How will the booth contribute to heat loss in my building?
- What kind of warranties do you provide?
- How upgradeable are your booths?
- Does this booth meet OSHA and other requirements in my area?

Installation options

Installation can be handled in several ways. The most basic and least expensive is delivery of a spray booth kit that you put together yourself. Manufacturers who follow this model provide detailed plans and simplify the construction process: some require little more than a drill, ladder, and other basic tools.

No matter how simple the instructions, there's always a chance that something could go wrong, so make sure the vendor provides a help line you can call if you run into problems. And even with these simplified booths, you may need professional help for more complex tasks such as installing vents that go through a roof, or connecting to existing HVAC equipment.

More typical is full installation – you pay for a crew to come out and put the booth together. This ensures professional-quality results and minimizes disruption of your regular work. It also protects your business if something goes wrong – if there's a problem with the installation, the crew is responsible for resolving the issue.

A third choice that can be a great money-saver is "supervision-only" assistance. In this model, you pay for one professional installer to come out and manage the construction process, but you provide the manpower. This is a great choice if you have reasonably qualified mechanics or builders, but don't have expertise in spray booths. It provides the expert oversight without overextending your budget.



Spray paint booth pricing

Prices for spray paint booths vary widely according to size, filtration system, and other features. Overall, they can range from \$2,000 to \$100,000, but the majority cost less than \$20,000.

Basic industrial booths usually go for between \$2,000 and \$10,000. Open booths are less expensive than closed booths, and crossdraft booths are less expensive than downdraft booths. Very large or custom-sized booths may reach \$15,000 to \$20,000.

Air make-up units can cost more than the booth they connect to: a \$10,000 downdraft booth might require a \$10,000 to \$20,000 air make-up unit. Booths for the automotive industry – where air make-up units are commonplace – are more typically \$6,000 to \$50,000.

Vendors may present their pricing in different ways: some vendors will simply provide a package price that includes everything – the parts, installation, delivery, filters, and more. Others will present one price during negotiations, then tack on additional fees for all of these items and more. As you're comparison shopping, make sure you get the total, installed price up front from each vendor.

Most booths are modular, so you can start small and expand as your business grows. Do consider spending some extra money on your initial purchase to ensure that your booth is upgradeable. For example, many booths can be purchased without an air make-up unit but support the later addition of one. If you plan to expand or add features to your booth, you may have to spend an extra one to two thousand dollars initially, but doing so will help you save money in the long run.