

CHOOSING THE RIGHT CONVEYOR DRYER

FIVE FACTORS YOU NEED TO
UNDERSTAND BEFORE BUYING



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INTRODUCTION

A conveyor dryer is one of the most important pieces of equipment you have in your shop. Along with your screen printing press, your conveyor dryer determines not only your production capacity but also the quality of your product. To be successful in screen printing, you have to be able to cure your prints thoroughly and efficiently. That means buying the right conveyor dryer for your shop. Choosing a conveyor dryer might seem straightforward enough; all you need is a dryer that will get your inks to the proper temperature to cure. But it's not that simple...

- Different conveyor dryers rely on different sources of energy.
- Conveyor dryers come in all different sizes.
- There are different options for circulating air within the dryer.
- Some types of conveyor dryers work better for certain types of ink than others.
- Some dryers come with different programmable options to improve ease of use and efficiency.

As you look for a new conveyor dryer, there are five factors you should understand before you buy.

- 1. Gas or Electric: Which is Right for You?**
- 2. Finding the Right Size Dryer**
- 3. Air Circulation and Replacement**
- 4. Your Choice of Ink Matters**
- 5. The Importance of Programmable Settings**

GAS OR ELECTRIC: WHICH IS RIGHT FOR YOU?

As you shop for your new conveyor dryer, one of your first choices will be whether to power your conveyor dryer with **gas** (natural or propane) or electricity. Unlike other appliances, choosing between a gas or **electric** conveyor dryer isn't just about efficiency. Gas and electric conveyor dryers work in dramatically different ways to heat and cure your ink, and that can have a major impact on your operation.

Gas Dryer

Gas conveyor dryers are heated through a process called convection. Air is heated over a gas burner and the warm air circulates through the dryer chamber. The hot air created within the dryer is what heats your ink and allows it to cure. The major advantage of a gas conveyor dryer is that the temperature inside is highly controllable and highly consistent. Gas dryers allow for incredibly accurate and reliable curing temperatures and times.



ANATOL VULCAN
gas conveyor dryer

CONCLUSION

In the end, choosing the conveyor dryer that's right for your shop comes down to:

- **Selecting gas or electric power to fit your budget and your curing needs.**
- **Choosing a size that fits your production, your products and your floor space.**
- **Making sure that your dryer model has air circulation you need for proper curing.**
- **Considering the inks you most often print with and how they need to be cured.**
- **Finding a dryer with programmable settings that will help you cure your prints easily and accurately**

As long as you carefully contemplate those five factors, you should have no problem finding a conveyor dryer that will fit right into your screen printing.

GOT MORE QUESTIONS?

We know the right conveyor dryer is essential to maximizing your screen printing shop's production – and with it, profit. That's why we'll do all we can to provide you equipment that'll meet your needs perfectly not only now, but as you continue to grow.

If you have more questions about conveyor dryers or any of our other equipment, we'd love to have a conversation to help you find a setup that's just right for you.

Anatol Equipment
(847) 367-9760

GAS OR ELECTRIC: WHICH IS RIGHT FOR YOU?

Electric Dryer

In an electric conveyor dryer, infrared panels heat the ink directly through radiation to bond and cure the plasticizers. That means that electric dryers do their work quickly, but they aren't without their drawbacks. Because the panels are usually segmented throughout the drying chamber, there tend to be hot and cold spots.

In an electric conveyor dryer, it's more difficult to create and sustain a consistent curing temperature throughout the drying chamber.

That can lead to scorching or inconsistent curing.

Some electric conveyor dryers place the infrared panels within a ceramic housing; because the ceramic holds the heat, the ceramic housings can reduce heat fluctuations within the unit and lower the risk of scorching substrates.



ANATOL SOLUTIONS
electric conveyor dryer

GAS OR ELECTRIC: WHICH IS RIGHT FOR YOU?

Choosing Between Gas and Electricity

When you're deciding between gas and electric dryers, your decision probably won't rely solely on performance. There are both practical and financial factors in making your decision. If you have a small shop, an electric dryer might be ideal because it will usually have a smaller footprint, and some models come mounted on wheels so they can be moved in and out of the production area as needed. Conversely, large gas dryers require a static gas line and an exhaust hood, so once a gas dryer is in place, it's there to stay.

Which Makes Financial Sense?

There is also a significant difference in the purchasing and operating costs of a gas dryer and an electric dryer. Up front, a gas dryer can cost two to three times as much as an electric model, and there are the added costs of installing the gas line and exhaust vents. Long term, however, if you plan to regularly use your machine for large press runs, an electric dryer can raise your shop's utility bills.

In the end, your decision to purchase a gas or electric dryer will depend on your shop's needs, space and financial situation. It may even come down to your own personal preference. However, many industry experts advise screen printing shops to opt for a gas dryer if they can afford one, because of the ability to more accurately control ink curing conditions.



FINDING THE RIGHT SIZE DRYER

A second major factor in choosing your conveyor dryer will be the size of the machine. The size of your conveyor dryer will impact your production capacity, and the size of the dryer you choose will be impacted by your shop's available floor space.

Capacity-wise, if your conveyor dryer is too small, your dryer will serve as a pinch point in the production process, slowing down your ability to complete orders efficiently. As you look to purchase your new conveyor dryer, you will need to consider not only your daily production average, but your production peaks and the growth of your business. You don't want to feel the crunch of slowed production during your busy season, and you don't want to feel like your shop has outgrown your conveyor dryer's capacity six months or a year after you purchase it.

Consider the following:

- How fast your shop has been growing
- Whether you expect to see your growth rate continue, increase or slow
- Your growth goals for your shop

If you're working hard to keep your shop growing, make sure you factor that in when selecting your conveyor dryer.

FINDING THE RIGHT SIZE DRYER

So how do you determine the capacity of different conveyor dryer models? The manufacturer will often list the dryer's output, but there are some things to consider:

- **The average smaller model will cure about six dozen shirts an hour.**
- **The longer the dryer belt, the higher the production capacity; the belt moves faster to cure more shirts in less time.**
- **You can also choose extra wide belts or dual-belt models to increase your shop's curing capacity.**
- **When a dryer manufacturer lists a dryer's output, that output is usually computed based on a 16-inch print – generally a large or extra-large shirt – so keep in mind that the dryer's capacity will be impacted by the size substrate you print on.**
- **Belt widths generally run between 18 and 72 inches in 6-inch increments.**



To handle big production, conveyor dryers can get truly massive!

FINDING THE RIGHT SIZE DRYER

Measure Your Space

Finally, you will have to factor in your shop's available floor space when choosing a conveyor dryer. Conveyor dryers are large pieces of equipment, with total length running anywhere from 48 inches to 20 feet, including the infeed, heat chamber and outfeed. You will have to measure the entrances to your shop before installation to make sure the dryer can easily fit through your door.

You will also have to measure your available shop space to make sure that the dryer will be open for access on three sides and that everyone working on your shop's floor will have ample space to load, unload, operate and work around the conveyor dryer.

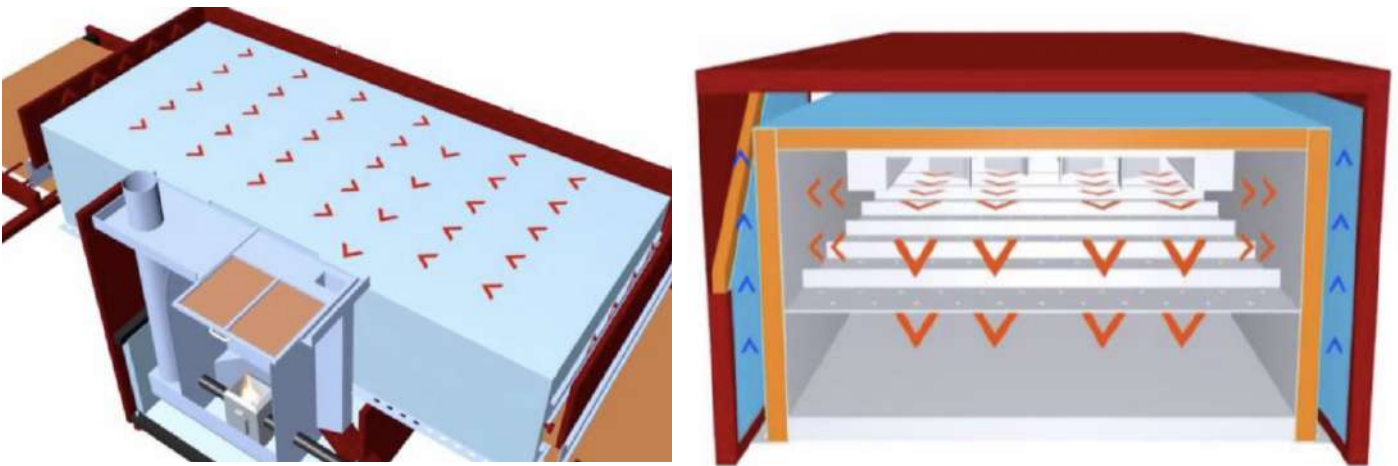
If the space for your conveyor dryer is cramped, it will slow production and frustrate you and your employees, It can also make maintenance difficult – if repairs are necessary, it should be easy to access any part of the dryer that might need fixing.



AIR CIRCULATION AND REPLACEMENT

Gas dryers have an air circulation and replacement process that allows for the exhausting of excess moisture created during the ink curing process. Getting moisture out of the conveyor dryer helps keep the dryer operating efficiently, and it reduces the chance of moisture-related damage to the dryer's mechanics.

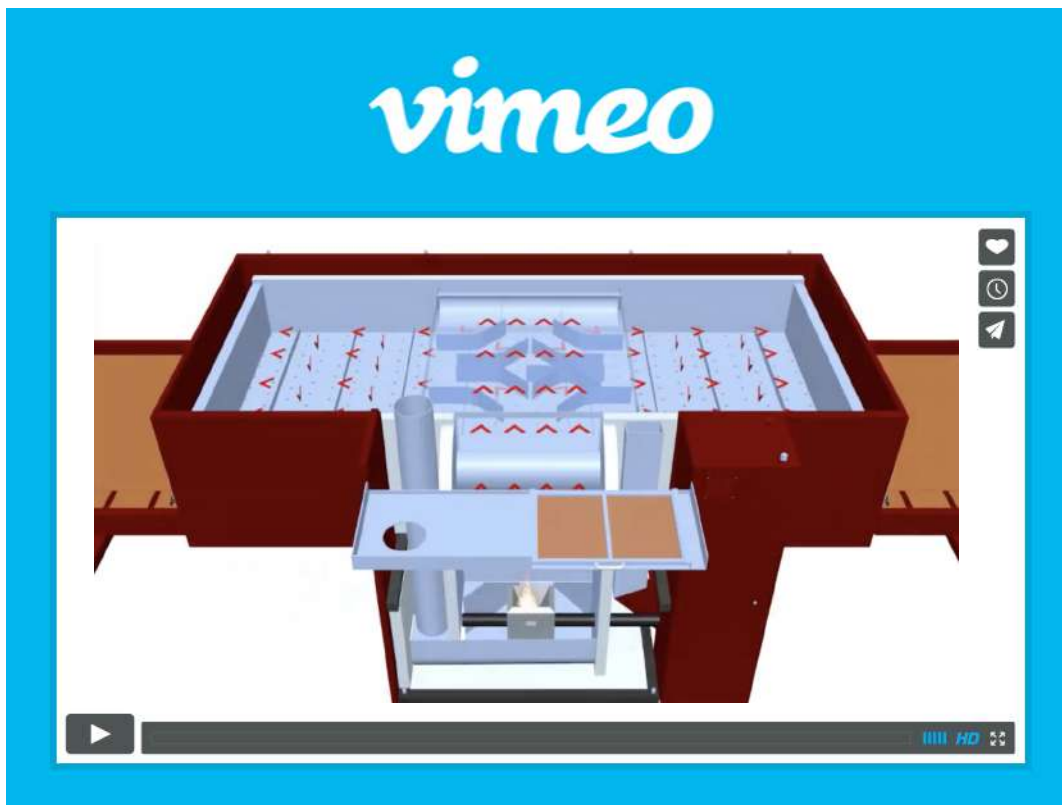
Dryers with air circulation systems work in one of two ways. Either outside air is drawn in, heated and circulated around the garments before being expelled along with the moisture absorbed from the garments and ink, or air from the chamber itself is recirculated after a controlled amount of moisture has been released. Dryer systems that recirculate air are generally considered more energy efficient because they don't have to work as hard to heat air for the dryer chamber because the warm air is constantly recirculating.



Air circulation throughout the chamber of a conveyor dryer helps cure inks – especially water-based inks – quickly and efficiently.

AIR CIRCULATION AND REPLACEMENT

While electric dryers are not commonly outfitted with an air circulation system, many do feature forced-air fans. These fans can help keep a more consistent temperature along the conveyor belt, and they can be helpful when curing water-based or discharge ink. However, it is important to note that electric conveyor dryers outfitted with fans can be less efficient and more expensive to operate.



[Click Here](#) to open a video showing how air is circulated inside the Anatol Vulcan gas conveyor dryer.

YOUR CHOICE OF INK MATTERS

When it comes to choosing a conveyor dryer, the types of ink your shop uses matter. Convention calls for the use of a gas dryer when curing water-based and discharge ink because water-based and discharge ink require evaporation as part of the curing process.

While **plastisol** ink only has to be brought to curing temperature – generally around 320 degrees Fahrenheit – for a matter of seconds for the cured bonds to be created within the ink, **water-based ink** cures in a two-step process. First, the water has to be fully evaporated out of the substrate and the ink; then the binder and pigment in the ink can cure and bond with the fibers in the fabric. This process generally takes between 2 and 3 minutes once the ink has been brought to curing temperature.

Because of the constant air circulation through a gas dryer, the moisture that is pulled out of water-based inks is quickly expelled from the machine and replaced with drier air. This allows water-based inks to cure thoroughly and efficiently.



YOUR CHOICE OF INK MATTERS

While gas dryers are the convention for curing water-based and discharge ink, that's not to say that water-based inks can't be successfully cured in electric conveyor dryers. However, curing water-based inks in an electric conveyor dryer does dramatically slow down curing times. Drying water-based inks in an electric infrared dryer generally means curing at about 30 percent of the curing speed of plastisol inks in the same electric conveyor dryer.

In the end, that means you will need to consider which types of ink your shop uses most often and how it will impact your dryer choice. If you print solely with water-based ink, or if you use it regularly in your shop, you might want to purchase a gas conveyor dryer to keep your production times up and ensure that your inks are curing thoroughly. If you only do the occasional water-based or discharge print and you otherwise favor purchasing an electric dryer, a good electric conveyor dryer likely will suffice as long as you take care when curing water-based and discharge inks.



THE IMPORTANCE OF PROGRAMMABLE SETTINGS

Running your prints through your conveyor dryer will be fairly straightforward most of the time. You will turn on your dryer, set it to the usual temperature and belt speed, and get to work. Occasionally, however, you will have print runs that call for a more exact curing process. In those instances, you will want a conveyor dryer with accurate, easy-to-control programmable settings.

Programmable settings on your dryer will come into play in a variety of situations. For example:

- **When drying on delicate substrates, you will want to turn down the temperature of the dryer and slow down the belt. This allows the ink to come to curing temperature slowly while lessening the risk of scorching your fabric.**
- **Similarly, if you are printing white ink on brightly colored polyester, you will want to cure slowly at a lower temperature to prevent dye migration.**
- **When curing a thicker ink deposit, you might want to slow your belt down to give your ink ample time to thoroughly cure.**

What that means when shopping for a conveyor dryer is that you will want to choose a dryer that allows you to customize settings for different print runs. There are a host of convenient options when it comes to programmable settings on your conveyor dryer. Some models have touch screens for easy operation. Some allow you to save your frequently used dryer settings so that you don't have to reenter them every time you run your dryer.



Of course, when it comes to programmable settings, accuracy reigns supreme. The most convenient controls are no use to you if you can't be sure that the dryer speed and temperature you set on the screen are in line with the dryer's actual performance. Make sure that you look for a dryer model that touts the accuracy of its dryer settings. Inaccurate settings can lead to scorched fabrics and under-cured prints, among other issues.