

AIRBRUSH TROUBLESHOOTING

Airbrushes are remarkably simple pieces of machinery. In general they require only a little bit of care and they will provide years of service. Occasionally things do go wrong though. Parts wear out or break, nozzles split or needles get bent.

A word of advice ... Before you blame your airbrush for a problem make sure it actually is the airbrush. There is more to using an airbrush than just taking it out of the box, hooking up an air source, pouring some paint in, and immediately start turning out immaculate paint jobs. Unless you happen to be unusually talented it is never going to work that way. Using an airbrush properly takes a lot of practice and, for most of us, a lot of mistakes.

If you are pretty sure you have a problem with your airbrush, here are a few troubleshooting hints to use when things don't work properly. When reading them keep in mind that I do not claim to be an airbrush expert, I do not have all the answers, and I do not know everything about all the airbrushes on the market. I'm familiar with the few that I own, but not other brands or models. These instructions are generic in nature, and as such you'll have to use them for what they are worth.

A NOTE ABOUT CLEANING

Improper or incomplete cleaning that has allowed paint to dry somewhere in the airbrush causes the vast bulk of airbrush problems. If paint is allowed to dry in the airbrush, even a very tiny amount, it IS going to cause problems. Keep your airbrush clean because if you don't you are going to have problems with it.

You do not have to completely disassemble your airbrush every time you use it. When you are finished for the day, some light cleaning is all that is necessary. Pour some thinner in the paint cup or bottle. Use a Q-Tip or paint brush to clean the cup or bottle, then spray the thinner through the airbrush. Put some more clean thinner in the cup or bottle, and spray again. If the thinner sprays out clean you are done. If it has coloration from the paint, continue spraying until it comes out clean. Usually a second paint cup of thinner through the brush is plenty.

IMPORTANT NOTE NUMBER 1! ALWAYS check your airbrush instructions to determine what thinners or solvents to use when cleaning it. Some airbrushes are not tolerant to high-strength solvents such as laquer thinner. Before using anything to clean your airbrush, it is up to you to insure that it will not harm it.

IMPORTANT NOTE NUMBER 2! Even airbrushes that are advertised as being "Solvent Resistant" frequently have seals in the air valve that are not solvent resistant. This phrase refers to the seals that are in the paint path and the air valve should never be in the paint path. You should NEVER soak your air valve in any kind of thinner or solvent.

IMPORTANT NOTE NUMBER 3! Any time you are painting with your airbrush or cleaning it out you need to insure that you have adequate and proper ventilation. Paint and solvent fumes can be toxic and were never intended to be breathed.

From time to time, completely disassemble your brush and clean it thoroughly. Be careful not to get thinner on parts that are not resistant to solvents. I normally use pipe cleaners dunked in laquer thinner to get down in all the crevices in the airbrush, and also soak the nozzle in laquer thinner for a few minutes.

I also like to use needle lubricant when I reassemble the airbrush. Airbrush lubes are marketed under various names. I use Medea SuperLube, but that's only because it was the brand that was locally available. Airbrush lube will help prevent paint from adhering to the needle and nozzle surfaces, and will also make the action smoother. Properly formulated airbrush lubricant will not blow off the airbrush and affect the paint in any way. I have heard of people using WD-40, Vaseline, mineral oil, and several other

home remedies, but a small tube of real airbrush lube costs about \$5 and will last forever. I usually rub a little on the needle as well as all threaded parts on the airbrush. This helps prevent them from binding, and a bit on the o-rings will help prevent them from drying out.

Disassemble the airbrush completely per the manufacturer's instructions, and soak the nozzle in thinner overnight. The type of thinner depends on the type of paint used, however if you airbrush can stand it laquer thinner is the best general purpose solvent for cleaning airbrushes. It will dissolve most laquers, enamels, or acrylics.

PAINT / AIR FLOW PROBLEMS

If you have never used an airbrush before, or your airbrush is brand new, and you are having problems getting it to spray there is a good chance that the problems are not with the airbrush but in the way that you are thinning the paint or trying to use the airbrush. The paint must be thin enough to spray and there must be enough air pressure to pick up and atomize the paint. The two documents on Thinning and Air Pressure may help.

The first thing to do when you have a problem with paint or air flow is to thoroughly clean the airbrush. Disassemble it according to the manufacturer's instructions, and thoroughly clean all parts. Pay particular attention to the nozzle and needle. If possible, look through the nozzle and you should be able to see light at the end. If not, it is probably still plugged up. Make sure there is no dried paint anywhere in the paint path that could cause air or paint flow problems.

Next, insure that you have a constant supply of air to the mixing chamber of the airbrush. Connect your air supply to the airbrush without any paint in the brush. Turn on the air supply, press the airbrush trigger, and see if you have a good supply of air coming out of the nozzle.

If not then your problem is with the air flow. Disconnect the hose from the airbrush and, if necessary, turn on your air source. You should have air coming through the hose. If you do then the problem is in the airbrush itself. If not then the problem is in the air supply. If the air and paint paths in your airbrush are perfectly clear then you may have a bad air valve, or you may have gotten some paint in the air valve that has dried and is plugging it up. Some of them can be disassembled and cleaned, others just require replacement.

Many brands allow the air valve to be removed from the airbrush and the hose connected to it. If yours is like this, remove the air valve from the airbrush body, connect the hose to it, and if necessary turn on the air supply. When you push on the air valve it should open and allow air to escape. If not, and assuming that your air supply is ok, then you probably have a bad air valve.

If you have air but the airbrush won't spray paint, see if it will spray water. Water is thin enough that it will spray when paint won't. If you airbrush will spray water but not paint then most likely your paint is not thin enough or you do not have enough air pressure to pick up the paint. This can be caused by an exhausted air supply, problems with the air supply, or dried paint in the air path.

AIR SUPPLY PROBLEMS

I am not going to try and go into all of the problems that are associated with compressors and air supplies, however I will point out a few things you can look for if you have problems in this area.

If you are using canned air (i.e. Propel or other brands of compressed air in small cans) do not expect them to last very long at all. These air supplies are a constant source of problems. As they are used they

get very cold very quickly which causes the pressure to drop dramatically. As they warm back up the pressure will rise again. This results in an air supply that is always changing pressure, and it is very, very difficult to use an airbrush when your air supply is not constant. This can be somewhat alleviated by sitting the can in a pan of warm (not hot!) water.

Air hoses tend to split from time to time. If you hear a hissing sound and you are not triggering your airbrush then you probably have a leak somewhere. Leaks can easily be found by brushing or spraying soapy water over the hose and connectors. If there is a leak you will see bubbles being formed.

Connections that leak can frequently be resolved by using a layer of Teflon tape. Teflon tape is available at most hardware stores in the either the area that has air compressor accessories or in the plumbing section. Cut off a piece that is long enough to go around the threads of the connector, and wrap it in the direction that the outer shell will be threaded on (normally clockwise when looking at the end of the threaded part). Wrap it around the threads, and then thread the connector on. The Teflon tape will provide an airtight seal.

PHYSICAL AIRBRUSH PROBLEMS

Airbrushes seldom wear out, but they are frequently subject to problems caused by use. That isn't really a contradictory sentence, it's just that that use exposes the parts to damage.

The most common problems I have run across are needles and nozzles.

Nozzles tend to split, open, or bell. When this happens you will frequently see a wider than normal spray pattern, the spray pattern may have a radial line going off to one side, or something along those lines. If your spray pattern is not normal, and what is "Normal" varies from one airbrush to the next and only experience with a particular brush can tell you what that is, look at the nozzle under a magnifying glass. If it is split you should be able to see a dark line on the edge of the nozzle or actually be able to see the split.

Another common nozzle problem that I occasionally run into is that they get pushed open. The needle is tapered, and if for some reason it gets pushed too far into the nozzle it can cause it to be stretched open or bell shaped on the end. I normally notice this when I start to get pricked by the needle.

If you have a problem with a nozzle don't even bother to try and repair it, just replace it and be done with it.

Needles will occasionally develop a hook or bend on the end. This can happen if they are dropped on the point or for whatever reason the tip is damaged. When this happens the paint spray will hit the hook and go off in a different direction resulting in a spray pattern with an odd looking lobe on one side. Take the needle out, and while holding it at an angle pull it across a fingernail. If there is a hook or bend you should feel it grabbing at some point. Sometimes just pulling it along a fingernail is enough to bend it back into alignment. Other times pulling it very lightly along a very fine whetstone will smooth it out again. Worst case, just replace the needle.

OTHER PROBLEMS

Keep in mind that the vast bulk of problems associated with line widths and drying problems can be blamed on a combination of paint, how it is thinned, pressure, and operation. These are all closely related. An airbrush must be able to blow the paint through the nozzle. If the paint is too thick it won't pass through, and this can be solved by either thinning the paint more or increasing the pressure trying to

push it through the nozzle. Doing either one of these poses new problems of their own though. Using an airbrush properly is always a balancing act of what the airbrush, paint, air source, and user are capable of. Changing one parameter will frequently solve one problem only to introduce a different one.

- **PRACTICE!** -- This is the number one problem associated with airbrushes. Too many people think that an airbrush is the answer to all of their problems, they run down to the store and buy one, hook everything up, and expect to produce the same quality paint jobs as someone who has spent years using an airbrush. Unless you happen to be some sort of prodigy who can just pick up something for the first time and immediately master it, this is never going to happen. If you are new to airbrushing the solution to this problem is practice, practice, and yet more practice.
- **Graniness or "Orange Peeling"** -- This is frequently caused by the paint drying too quickly. In fact a lot of times this problem is caused by the paint partially drying between the airbrush and the surface of the model. It is a common problem with acrylic paint because it already dries so quickly. Some things you can try: Reduce air pressure, reduce the distance between the airbrush and the surface, thin the paint a little bit more or a little bit less, if you are using acrylic paint add some acrylic retarder to the paint mix.
- **Drying At The Tip** -- Also a very common problem with acrylic paint. Sometimes a problem with enamels or laquers, but not nearly as common as with acrylic. Try thinning the paint a little bit more, a little less air pressure, using acrylic retarder (with acrylic paints only). I normally ignore the problem and just wipe the tip of my airbrush off every time I sit it down. I keep a Q-Tip moistened with thinner handy and just wipe it off as necessary.
- **Spiders** -- These are usually caused by not moving your hand. When you push the trigger on your airbrush your hand should already be moving. When you let the trigger up your hand should still be moving. If your hand is not moving at the beginning and end of the stroke you will get a pattern that looks like a ball with lines radiating out from it. They can also be caused by a split nozzle or bent needle.
- **Unable To Get Fine Lines** -- This is one of the things that most new airbrush users think they will get right out of the box (see the "Practice" section above!) and is also one of the things that they NEVER get right out of the box. Fine lines take practice and lots of it. To get fine lines you are going to need: 1) Thin paint; 2) Low pressure; 3) Close distance to the model surface; 4) Steady hands; 5) Lots of practice. The pressure needs to be as low as possible while still getting good atomization of the paint and good paint flow. The paint needs to be thin enough to flow at low pressure but still give good coverage. The distance to the surface needs to be as close as possible without allowing the paint to splatter or run. If all of these sound like ambiguous clues that is because YOU will have to determine what works best for you. I run my pressure down so low the gauge doesn't even register, adjust the paint viscosity so that it will flow at that pressure, and paint about a half inch from the surface. Even then I usually have to go back and forth with the two colors to get the lines as tight as I want them.
- **Pulsation In Airflow** -- This is a common problem if you are using a diaphragm-type compressor. It is just a function of the way the compressors are constructed. About the only thing I know of that can be done to resolve the problem is to install a tank between the compressor and airbrush. The tank will act as a buffer and smooth out the pulsations. Keep in mind that the tank installation MUST be done properly or you run the risk of injuring yourself or damaging your equipment.

Another possibility, if you own a Badger 100 or 200 airbrush, is that the Teflon washer that goes between the head and body of the airbrush has gotten worn or flattened. This happens over time and

when it does the airflow will start to pulsate. The only way to resolve the problem is to replace the washer (the Badger part number is 50-055 and they usually cost around \$2). You can help prevent the problem if you loosen the head of your airbrush before storing it. This is mentioned in the instructions for the Badger 200 but I don't recall seeing it in the instructions for the 100.

- O **Erratic Spraying** -- If you push the trigger on your airbrush and all you get is a hiss of escaping air and then occasionally you will get a spurt of paint the problem is most likely that the paint is not thin enough. This assumes, of course, that 1) There is something in the paint cup or bottle to spray, and 2) That your airbrush is clean and the nozzle is not plugged up. Try thinning the paint a bit more and see if that helps.
- O **Metallic Paints** -- Metallic paints have pigments that are quite large. In many cases this pigment is just too large to pass through some airbrush nozzles. This problem is made worse by airbrushes with a very fine nozzle. In some cases you can remedy the problem by reducing the pressure. Reducing the air pressure allows you to move the needle back further yet maintaining the same volume of paint flow. When the needle is moved back further more of the nozzle is open, thus allowing paints with larger pigments to pass through

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