

# AIRBRUSH 101

A simple guide to understanding airbrush terminology, types of airbrushes, and their recommended uses

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This guide is offered to help airbrush users select the best airbrush for their application, and to provide important usage/maintenance information.



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# AIRBRUSH TERMINOLOGY, TYPES, SELECTION, AND OTHER BASIC INFO

## ACTION – refers to trigger functions of the airbrush

**SINGLE ACTION** refers to airbrushes on which the trigger controls only the airflow. The amount of sprayed material is adjusted by turning/setting a needle (color) adjustment screw. When the trigger is depressed, a pre-set amount of material is sprayed.

**DUAL ACTION** refers to airbrushes on which the trigger controls both air and material flow (press down on the trigger for air, pull back on the trigger for material flow adjustment). This style airbrush allows the user to adjust line width while spraying.

Single action is simpler for applying uniform even coats of color without any notable shade or tone variation, and is almost always preferred for single color and basic spray coating applications. Dual action is preferable for “artistic” applications as it allows the user to vary spray pattern while spraying the airbrush, this enables the artist to go from fine to wide lines (and vice-versa) without limitation. Dual action is preferred for shading effects and color gradations, as well as being more proficient for detail airbrush applications and truer realism effects.

## MIX – refers to the manner in which air and material come together (atomize) while airbrushing

**EXTERNAL MIX** indicates that air and paint mix outside the airbrush, producing a coarse round spray pattern.

**INTERNAL MIX** indicates air and paint mix inside the airbrush, producing a precisely atomized “fine dot” spray pattern.

Airbrushes spray a series of dots (atomized material). An external mix airbrush sprays a larger coarser dot pattern, which is preferable for larger surface coverage and volume spray applications. An internal mix airbrush sprays finer “softer” dots, and is preferred for precision finishing needs, such as color gradations, shading effects, and fine lines.

## FEED – refers to the place of entry and manner in which the sprayed material enters the airbrush

**BOTTOM FEED** refers to airbrushes on which material enters through a siphon tube or color cup attached to the bottom of the airbrush. This type of airbrush should have at least 18 PSI while spraying to operate properly.

**GRAVITY FEED** refers to airbrushes on which material enters at the top of the airbrush through a top-mounted color reservoir. Gravity draws the material into the airbrush. This type of airbrush can be operated at spray pressures as low as 8 PSI.

**SIDE FEED** refers to airbrushes on which material enters at the side of the airbrush through a side attached color reservoir. This type of airbrush operates best at approximately 12 PSI.

**DUAL FEED** refers to an airbrush that has the ability to be used as either gravity feed or bottom feed depending on the user’s varying application needs. This type of airbrush is patented and exclusive to Badger Air-Brush Co.

**The Bottom Feed airbrush is best for general and production applications. The bottom feed airbrush facilitates the use of more material without having to frequently fill the material reservoir. The bottom feed airbrush also allows (or causes) the artist to work at a brisker pace, enabling faster spray application when desired.**

**The Gravity Feed airbrush, alternatively, allows the artist to slow down. Gravity pulls material into the airbrush, so the airbrush can be operated at a lower pressure for improved airbrush control. This makes it easier to do finer detail work as the finishing process can be done at a more deliberate pace. Gravity feed is usually the best choice for detail airbrushing.**

**The Side Feed airbrush allows the user to work with a swivel side cup which allows more flexibility for airbrushing in difficult to reach areas or on contoured pieces. Many artist prefer side feed airbrushes for detail applications because the side feed cup also eliminates any sight line obstruction to the needle tip when doing “close in” intricate detail work.**

**What is PSI? Pressure per square inch, it is a measurement of the level of air pressure.**

When setting air pressure for airbrushing it is best to depress the airbrush trigger, allowing air to flow through the airbrush. This will enable the accurate setting of spray pressure while the airbrush is in use/

**Nozzle sizes** - There are varying airbrush nozzle sizes for spraying a range of materials. Although they have some effect on the line an airbrush produces, nozzle sizes (Fine, Medium, Heavy or 1, 3, and 5) apply more to the material that should be sprayed through the airbrush than the fineness of line an airbrush will produce. The line fineness is ultimately determined by multiple factors – nozzle size, the needle’s linear air flow angle, pigment/base ratio of paint, pigment size, operating pressure, etc.

**NOTE: You need to have the right nozzle/needle size with the right spray medium for optimum airbrush performance.**

**Fine/1:** Best suited to spray thin, low viscosity mediums (inks, water colors, dyes, stains and gouache).

**Medium/3:** The most popular choice; will spray airbrush ready paints, properly thinned acrylics, lacquers, enamels, urethanes, and special application materials (food airbrushing colors, tanning solutions, airbrush cosmetics, body paints, etc.).

**Heavy/5:** Best for heavily pigmented and higher viscosity materials (glazes, gesso, latex, and varnish)

# SPRAYING AND CLEANING THE AIRBRUSH

## Spraying –

The key factors in properly spraying an airbrush are operating air pressure, amount of material being released by the airbrush, and the distance the airbrush is being held from the surface being sprayed.

For fine lines the airbrush should be held as close as possible to the surface with a small amount of material being released, for broader spray coverage the airbrush should be held 4” to 6” from the surface being sprayed with a larger volume of material being released.

NOTE: The airbrush will produce overspray. This is the “fuzz” of dots that sprays outside of or around the spray’s desired focal point. If a sharp edge is desired, a masking medium (stencil, frisket, low-tac masking tape, spray shield, etc.) must be utilized when airbrushing.

There are some simple learning exercises that can be practiced to help develop skill, comfort, and confidence in using the airbrush: creating a grid of dots (on a blank sheet) with your airbrush – then going back and connecting the dots, drawing figure eights, and/or simply writing your name with the airbrush. These are all basic, but effective, airbrushing exercises. To practice airbrush technique on three dimensional objects, paint items such as scratch plastic/metal, pop cans, shampoo bottles, or other contoured items that are of little or no value.

**THE ONLY THING THAT CANNOT BE TAUGHT RELATED TO USING AN AIRBRUSH IS PRACTICE.**

## Cleaning –

**Step one:** The key to keeping an airbrush clean is to not let material set up (dry) in it. This can be done by simply spraying the appropriate cleaning agent through the airbrush with reasonable frequency (when changing color and when setting the airbrush to rest for any period of time). Three important things to remember: 1. Your cleaning agent should be determined based on the material you are using, not the airbrush you are using 2. Material dries as fast in an airbrush as it does on the surface it is being sprayed on to. 3. Anything you think will take 2 seconds will take 2 minutes, and anything you think will take 2 minutes will usually take at least 20 – so spray the cleaner.

**Step two:** Should material set up (dry) in the airbrush, it may be necessary to back flush the airbrush. This is done by suffocating the air flow of the airbrush at the nozzle (while spraying cleaner) by carefully “pinching” a soft cloth over the nozzle’s end. This deflects air back into the airbrush chamber - loosening dried material and sending it into the cleaning bottle/color cup. If done correctly, the cleaner will bubble during back flushing. After back flushing, dump/remove back flushed material from the airbrush – don’t spray it out of airbrush. Spray fresh cleaner through the airbrush after you have back flushed it.

**Step three:** On what should be rare occasions it may be necessary to disassemble some parts of the airbrush for more thorough cleaning. This should only be necessary if the previous cleaning steps are not done regularly or are unsuccessful in cleaning the airbrush. If disassembly is required, it should only be of parts that come in contact with the sprayed material; from the material’s point of entry into the airbrush and forward. This includes are the nozzle assembly and the needle. To thoroughly clean the nozzle assembly, use an ultrasonic cleaner or denture cleaner (yes, denture cleaner – follow the directions on the package). The needle should be wiped down with a soft cloth saturated with the appropriate cleaning agent. If residue on the needle is still apparent it may be removed by gently rubbing a fine steel wool over the residual deposit area. While the needle and nozzle are removed from the airbrush it is OK to run a pipe cleaner saturated with cleaning agent through the chamber of the airbrush, following the same path as sprayed material, and out the airbrush front. For bottom feed airbrushes that is up the jar adaptor stem and out the front, for gravity feed airbrushes it is down the color cup and out the front. Only do this when the needle and nozzle are removed - forcing anything through the nozzle will damage it. A cleaner saturated cotton swab can also be used to clean the airbrush’s jar stem and the airbrush’s paint tip housing. Be careful not to scratch or damage any seal requiring surfaces. After using the pipe cleaner/cotton swab, blow out the airbrush to remove any “fuzz”. After all nozzle/needle cleaning steps are complete the airbrush can be reassembled and will be ready for use. This disassembly process should be rarely necessary if steps one and two are followed, but it is recommended if storing your airbrush for an extended period of time.

# OTHER AIRBRUSH RELATED EQUIPMENT, MATERIALS, AND ACCESSORIES

## Air Sources

**COMPRESSORS** - A unit that generates at least 30 PSI is recommended to start airbrushing. Some applications, such as T-shirt painting or other fabric painting, may be more efficiently done at higher pressures (up to 65 psi). Other applications, such as finger nail art and illustration may be more effectively done at lower pressures (as low as 10 psi). For applications requiring higher and lower pressure it is recommended to use a regulator (described below).

**CO2 (or other inert pressurized gas)** - A pressurized tank of inert gas can be used to operate an airbrush. A CO2 regulator is required to connect the air hose and moderate the air pressure.

**AIR TANK** - A compressor filled air tank (or spare tire of a car) can be used for short term project oriented airbrush applications.

**PROPEL** - A can of "air" that enables spraying for 5 to 15 minutes (dependent on can size) can also be used to operate an airbrush. This is best for beginners and those not certain they will continue airbrushing after trying it. After 5 cans start looking at compressors.

## Air Hoses

**BRAIDED air hoses** are the most common and most durable type of airbrush hose. A braided air hose can handle over 100 psi (more than enough for airbrushing). Braided air hoses are available with in-line moisture traps and quick disconnects.

**CLEAR air hoses** are best for airbrushing in environments where in-line moisture or contaminants may be a concern, because the user can see any material passing through the hose before it reaches the airbrush. A clear air hose can handle up to 50 psi and airbrush applications performed up to that pressure. Clear air hoses are available with moisture traps.

**RECOIL air hoses** are best for small work area airbrushing, because they stay out of the way. Recoil air hoses handle up to 50 psi and can be used in airbrush applications performed up to that pressure.

**VINYL air hoses** handle up to 40 psi and are primarily for use with propel. Vinyl air hoses are not recommended for compressors.

## Compressor Regulators and Moisture Traps

**AIR REGULATORS WITH A GAUGE** allow the airbrush user to set air pressure to exact psi levels with a dial setting.

**AIR REGULATORS WITHOUT A GAUGE** allow the airbrush user to adjust air pressure based on a "trial and error" setting process.

**MOISTURE TRAPS** capture moisture produced by a compressor when air cools. They are desirable in high humidity areas to prevent moisture from flowing through the air hose and out the airbrush on to a work surface.

**AIR REGULATORS WITH A GAUGE AND MOISTURE TRAP** combine the two items described above.

## Accessories

A **stencil cutting knife** is used to cut custom stencil designs in stencil film (described below) and acetate.

**Airbrush needle lubricant** helps prevent paint from drying on the nozzle/needle tip, reducing related airbrush clogging.

An **airbrush holder** provides a much needed a place to set your airbrush when you're not using it. That need is usually realized when your holding your paint filled airbrush looking for a place to set it down.

**FastBlast jar adaptors** connect the jar to a bottom feed airbrush. The FastBlast one piece siphon tube design is much easier to clean and is available in a variety of jar mouth sizes. Many professional artists put an adaptor on each color they're using.

**Siphon filters** slide over the jar adaptor siphon tube, preventing un-sprayable particles from entering and clogging the airbrush.

## Masking Mediums

**STENCILS** are pre-cut design masks used to aid in the creation of an image. Stencils make airbrushing easier for beginners, and are an excellent tool for producing recurring designs time and cost effectively. Stencils are available with and without adhesive backing.

**FRISKET FILM** is a low tack adhesive backed film used to cut and mask designs or cover a specific area of an image to prevent sprayed material from going on to it. Frisket film is available in gloss or matte finish. The matte finish enables the artist to draw on the frisket film. There is also "liquid" frisket for easier masking off of contoured shapes.

**STENCIL FILM**, an uncut (usually non-adhesive backed mylar) film used to create custom masking designs for airbrushing.

**Paints** - The rule of thumb for preparing paints (or other materials) for airbrushing is to reduce them to the approximate visual viscosity of 2% milk. As starting paint viscosities often vary from color to color, even within a specific paint brand, it is best to avoid fixed thinning ratios. It is also best to vigorously mix/stir paint rather than shaking it before use because mixing/stirring paint better blends pigment and base creating a more consistent paint from the top to the bottom of the bottle, and causes pigment to re-settle slower. Various paint types and materials, including acrylics, lacquers, enamels, urethanes, inks, water colors, dyes, stains, cosmetics, and food colors can be applied with an airbrush if properly reduced for spraying. Airbrushing can be done on canvas, paper, textiles, plastics, metals, wood, etc. Even the human body (skin/nails) can be airbrushed.

## Paint Accessories

A **paint mixer** should be used to properly prepare and mix paint for airbrushing. It is always best for paint consistency to mix it rather than shake it, or better said "stirred not shaken".

**Color mixing kits**, which consist of a small cup and stir sticks, can be used to mix colors, creating new colors.

**Learning Aids** - Books/DVDs on general usage and/or specific technique provide excellent instruction for the aspiring airbrush artist.

# **CHOOSING THE RIGHT AIRBRUSH FOR YOUR APPLICATION**

So you want to know which airbrush is best for you (or better said for your application). Or In the words of many curious aspiring airbrush users “what’s a good airbrush to start with?” The simple and best rule of thumb when selecting an airbrush is “figure out which airbrush best does what you want to do, get it, and learn to use it”. Airbrush should not be a graduated process. There are different types of airbrushes designed for different applications. Within each airbrush type different airbrush models may perform at varying levels of proficiency (depending on various factors such as media type and preparation, nozzle/needle design and size, correct air pressure settings, user experience/skill), but for the most part for each application there is a best type of airbrush for the job, and that’s the type of airbrush you should get and learn to use for your specific application.

Below is a listing of various airbrush applications, an indication of what type of airbrush is best for the application and a brief explanation why. To preface the information below one should know that for general purpose applications and general spray needs a bottom feed airbrush is usually preferable and most efficient. For detail applications a gravity feed airbrush is usually preferred because it enables better control (through lower operating pressure), thus making detail easier to achieve. If your airbrush needs involve the usage of both general purpose and detail airbrushes, and your budget only allows purchase of one airbrush, it’s also good to know (because of the increased control) it is usually easier to adapt a detail airbrush to a general purpose task, than it is to adapt a general purpose airbrush to a detail task.

**NOTE:** Although referenced only once below, the most versatile airbrushes are the Badger Universal 360 and the Thayer & Chandler Matrix, which are efficient in virtually any airbrush application. These two airbrushes have the unique patented feature of a rotational front end that enables their usage as either a bottom feed (general purpose) airbrush and/or a gravity fed (detail) airbrush depending on the user’s need at any given time during an airbrushing project.

## **Art - Commercial Illustration and/or Pin Up Art**

Best airbrush type: Double/Dual action, gravity feed, internal mix  
SOTAR 2020, Renegade Velocity (Jet), 100G/LG, OMNI 4000/5000

Professional illustration/pin up art is about exact dot control and manipulation more than it is about fine lines. Generally a masking medium is used to create the illustration’s defined “sharp” edges, and the airbrush element of illustration is about fine dot control and manipulation. Illustration and pin up art requires maximum airbrush control and fine “soft” dot patterns that can be more easily controlled and manipulated by the illustrator to form the exact detail finishes the artist desires. A gravity feed airbrush, that can be operated at low air pressures, is necessary for maximum control. An internal mix airbrush, that sprays finer dots, is necessary to achieve maximum spray pattern precision. Additionally, as many illustrations require the ability to vary spray pattern while spraying, it is necessary to use a double/dual action airbrush for illustration and pin up art applications.

Commonly Used Media – Acrylics, Inks, Watercolors, Dyes, Air-Opaque, Spectratex

## **Art - Fine Art**

Best airbrush type: Double/Dual action, bottom feed, internal mix  
Badger 150, 155 Anthem, 175 Crescendo, VEGA 2000, OMNI 3000

The airbrush is the best kept secret in the fine art world. Nonetheless, the airbrush is an excellent tool for painting canvas backdrops and backgrounds. It is also an excellent, usually more efficient, tool for shadowing, color gradations, and antiquing effects that are common in fine art. As many of these effects involve adjusting spray pattern while spraying, a double/dual action airbrush is usually best for fine art applications. Usage of a double/dual action airbrush dictates usage of an internal mix airbrush (there is no double/dual action external mix airbrush), which is a good thing because an internal mix airbrush is a better choice to precisely achieve effects that are desired in fine art applications. Additionally, much of fine art airbrush usage is general in nature and can be most efficiently done with a bottom feed airbrush, using just a color cup for smaller projects.

Commonly Used Media – Acrylics, Enamels, Inks, Watercolors, Dyes, Air-Opaque, Spectratex

## **Art - Mural Painting/Large Canvas (see Automotive custom painting for mural/large canvas detail)**

Best airbrush type: Double/Dual action, bottom feed, internal mix  
Badger 150, 155 Anthem, 175 Crescendo, VEGA 2000, OMNI 3000

Mural painting is an application that involves the use of varying types of airbrushes for different aspects of the job. As mural painting is a large scale application there are aspects of it that are best done with a spray gun rather than airbrush simply due to the large spray needs for most mural backgrounds. Due to work size, spray gun applications aside, the larger airbrush oriented task in mural painting are usually best done with a bottom feed airbrush that can accommodate a larger color reservoir and perform more efficiently for larger area coverage needs. Regardless of the scale of work, mural artist still need to vary spray patterns while spraying to better create realism effects and color gradations, so a double/dual action airbrush is usually preferable for mural painting applications. Usage of a double/dual action airbrush dictates the usage of an internal mix airbrush for mural painting airbrush applications, which is preferable nonetheless for more accurate spray control and image creation. Additionally, within many murals there are areas of finer scale detail (the art within the art), for these aspects of mural painting the recommendations above related to Automotive/Hard Surface Custom Painting can be applied to airbrush selection.

Commonly Used Media – Acrylics, Enamels, Lacquers, Urethanes, Imagineaire, Mural-Air

## Art - Photo Re-touching

Best airbrush type: Double/Dual action, gravity feed (or side feed), internal mix

SOTAR 2020, Renegade Velocity (Jet), 100G/LG, OMNI 4000/5000, (100, Renegade Spirit)

Professional photo re-touching is about good masking technique and exact dot manipulation. A masking medium is required to create defined “sharp” edges within the photograph, and the airbrush is then used to recreate or edit desired areas within the photograph. Photo re-touching requires maximum airbrush control and fine “soft” dot patterns that can be more easily manipulated and built up to the photo re-toucher’s requirements. A gravity feed airbrush, that can be operated at low air pressures, is necessary for maximum control. Many photo re-touchers alternatively use side feed airbrushes, so the gravity feed cup does not obstruct their sight line for close in work. The ability to swivel the side feed cup if working on a completely horizontal work surface is also a benefit of the side feed airbrush. An internal mix airbrush, that sprays finer dots, is necessary to achieve maximum spray pattern precision. Additionally, because photo re-touching often requires the ability to vary spray pattern while spraying, it is necessary to use a double/dual action airbrush for photo re-touching applications.

Commonly Used Media – Inks, Dyes, Acrylics, Air-Opaque

## Art - T-shirt/ Textile Painting

Best airbrush type: Double/Dual action, bottom feed, internal mix

Badger 150, 155 Anthem, 175 Crescendo, Renegade Rage, VEGA 2000, OMNI 3000

T-shirt painting is a high volume application. It is best done with a bottom feed airbrush that allows use of larger color bottles and quick color changes. Because fabric absorbs paint rapidly, most T-shirt artists spray at higher pressures allowing for a faster more proficient work pace. Additionally, the creative designs and free hand styling often used in T-shirt art requires the ability to frequently vary the airbrushes spray pattern from fine to wide and back, so a double/dual action airbrush is a necessity for T-shirt airbrushing. For maximum production efficiency many T-shirt artist use “multi-gun” set ups, assigning an airbrush to each color they regularly use.

Commonly Used Media – Acrylics, Spectratex

## Automotive - Hard Surface Custom Painting (cars, motorcycles, helmets, skateboards, snowboards, etc.)

Best airbrush type: Double/Dual action, gravity feed, internal mix

Badger 100LG, 105 Patriot, Renegade Velocity, OMNI 4000

Custom painting is about details. For quality custom finishes a detail capable airbrush is critical. Detail for an airbrush artist relates to two key factors – the first being the quality and precision of the airbrush itself and the second being the control the artist has with the airbrush. There are other contributing factors, but these two factors are paramount in a custom painting airbrush. Regarding airbrush quality, there are various precision made and performing airbrushes, including the Badger and Thayer & Chandler models listed above. In regards to control, a gravity feed airbrush will always provide better user control – thus making a gravity feed airbrush a more proficient custom painting airbrush. Because a gravity feed airbrush utilizes gravity to pull color into the airbrush, rather than the siphon process of a bottom feed airbrush, the gravity feed airbrush can be operated at a lower air pressure. This lower operating pressure allows for a more deliberate hand movement when airbrushing thus giving the artist greater airbrush control, making detail easier to achieve. Additionally, for many custom painting effects it is necessary to adjust spray pattern while spraying. Such spray pattern adjustment is more easily accomplished using a double/dual action airbrush. And as a finer softer dot/spray pattern is more desirable for the fine detail custom painting, an internal mix airbrush is also a better choice for custom painting airbrush applications.

Commonly Used Media – Lacquers, Urethanes, Water Bourne Enamels, Imagineaire

## Automotive – Mobile Tech (Nick/Scratch Repair and Touch Up, Interior Vinyl Repair)

Best airbrush type(s) – Interior Vinyl: Single action, bottom feed, external mix - Badger 250, Badger 350 Easy

Exterior large surface area repair: Single action, bottom feed, external mix - Badger 350 Easy

Exterior small nick/scratch repair: Single action, bottom feed, internal mix - Badger 200 Precise, VEGA 600

The key to quality nick and scratch repair is smooth color gradation/build up and undetectable repair blending. Some of this is accomplished through fine spot sanding and buffing, but a precise uniform spray pattern is a must when doing quality nick and scratch repair. As this application is simplified by finding and setting a spray pattern relative to the repair size, it is much easier and more efficiently done using a single action airbrush. Additionally, as nick and scratch repair often involves the mixing of color to properly match an existing finish, most “mobile techs” find it more efficient to use a bottom feed airbrush so they can mix the desired color in a mixing jar and then attach it directly to the airbrush to perform the repair. As generally vinyl repair involves the usage of a higher viscosity media it is more easily done using an external mix airbrush, like the Badger 250 or 350 Easy. The 350 Easy is also suitable for larger exterior repairs that involve larger areas of spray coverage. Smaller exterior nick and scratch touch up is best done using properly reduced automotive paints, which can be sprayed through an internal mix airbrush, like the 200 Precise or Vega 600 to better minimize overspray and enable easier color blending. So for smaller finer scratch repair an internal mix single action airbrush is best for the job.

Commonly Used Media – Lacquers, Urethanes, Water Bourne Enamels

## **Bakery - Home/Small Bakery Decorating (cup cakes, cookies, round cakes, some ¼ sheets)**

Best airbrush type: Single action\*, gravity feed, internal mix w/ free flow air valve  
100GB/LGB, BakeAir 4000/5000, VEGA 1000B

\*the term single action when referring to specially set up bakery airbrushes differs from than the conventional airbrush related definition of single action. Whereas single action usually means the trigger's only function is the on/off for air (passing through the airbrush), in the case of specially set up bakery airbrushes the air is continually on, and flowing through the airbrush, and the trigger's sole function is adjusting color volume and spray pattern width by its being moved back and forth by the decorator.

The airbrush is the only effective tool for applying creative color gradations and stencil designs on bakery treats. Whether adding color to cup cakes/cake edges or stenciling a name or team logo on to fondant ice cookies, the airbrush is a fun and useful tool. As finer "softer" spray is preferable for creative control, an internal mix airbrush is the best choice for home or small bakery decorators. Additionally, most small bakery and home decorators' airbrush projects are smaller in size and require small amounts of airbrush food color – making a gravity feed airbrush, that only needs a few drops of color, ideal for small bakery/home decorating applications. For small bakery decorators who may have occasional larger or production oriented projects, a larger cup gravity feed airbrush (100LGB or BakeAir 4000) is a better choice than the smaller cup airbrushes (100GB, BakeAir 5000, or VEGA 1000B). Gravity feed is also beneficial for many bakery airbrush applications because it allows for low pressure operation of the airbrush, thus eliminating any possible disturbance of frosted surfaces that higher air pressures might cause. The continuous flow of air through the airbrush aids in preventing airbrush food color from drying while the airbrush is not being sprayed. For this reason, a "bakery" single action airbrush is a better and more common selection for small bakery/home decorators.

Commonly Used Media – Airbrush Food Colors

## **Bakery - Large/Production Bakery Cake Decorating (volume ¼ sheets and larger)**

Best airbrush type: Double/Dual action, bottom feed, internal mix  
Badger 150, BakeAir 3000, 175 Crescendo, VEGA 2000, Badger 360, BakeAir MATRIX

Production bakeries apply a large volume of color on a large number of sizeable cakes (mostly ¼ to full sheet). Because of the amount of airbrush color used in production bakery airbrush applications, a bottom feed airbrush that allows usage of larger volume attached jars is best. Additionally, as desired spray width can vary on different areas of each cake and from cake to cake, dependent on each cake's design, a double/dual action airbrush - that will enable the applicator to vary spray pattern while spraying is best for production bakery airbrushing. The primary reason airbrush is used on cakes is its ability to apply creative color effects without coming in contact with the cake's surface, so the finished/frosted surface is not disrupted while the color effects are applied. In order to create the often desired "soft" color gradations and other creative color effects the airbrush is used for, the fine atomization pattern of an internal mix airbrush is preferable in production bakery airbrush applications.

Commonly Used Media – Airbrush Food Colors

## **Bakery – Chocolate (cocoa butter)**

Best airbrush type: Single action, bottom feed, external mix  
Badger 250, Badger 350 Easy

The coloring of chocolate candies by coating the chocolate mold with colored cocoa butters has become a popular technique for chocolate artisans. The two key elements to performing this technique are the proper heating of the cocoa butter (85-95 degrees) to get it to a spray-able viscosity, and the usage of an external mix airbrush. AN INTERNAL MIX AIRBRUSH **CANNOT BE USED EFFECTIVELY TO SPRAY COCOA BUTTERS**. If simply coating the entire mold to create a uniformly colored chocolate shell, a basic inexpensive Badger 250 basic spray gun is the best and easiest to use tool. If desiring to create some color gradations and exterior shell effects the Badger 350 is a better choice as it allows setting spray width variations, and is still external mix so it can spray the heavier viscosity cocoa butter. All external mix airbrushes are single action, so they are simple to learn and use. They are also all bottom feed and accept glass jars (33mm mouth size), that can hold a larger volume of material and can handle the levels of heat the cocoa butter has to be at in order to be sprayed.

Commonly Used Media – Cocoa Butter

## **Base Coating and Backdrops - most applications**

Best airbrush type: Bottom feed, internal mix (external mix)  
Badger 150, 155 Anthem, 175 Crescendo, Badger 200, VEGA 2000, VEGA 600, OMNI 3000 (Badger 350)

Many airbrush projects/applications require the spraying of initial basecoats. This is usually an application that requires more material and spraying at higher pressures for greater spray volume if done by airbrush. Thus it is best to use a bottom feed airbrush that allows use of larger jars to hold a greater amount of material. As the underlying basecoat affects the fineness of the finish applied over it, an internal mix airbrush is usually more desirable for base coating because it will provide a finer more uniform base surface for airbrushing on to. As the key to applying good base coats is good even surface coverage, it does not particularly matter if a single action or double action airbrush is used. The key to good base coats is more in the proper application technique, which can be done with either a single action or double/dual action airbrush. So the airbrush selection for base coating and backdrops may be better if based on which airbrush might be best for the balance of project (if it can be done with the same airbrush used for the basecoat/backdrop application). If the balance of the project/application is better suited to be done with a single action or double/dual action airbrush, use that airbrush type for the base coating/backdrop application as well. (For basecoat/backdrop applications in which spray fineness is not as critical as simply applying an even coat of coverage in an efficient controlled manner, a single action, bottom feed, external mix airbrush, like the Badger 350, is the most cost effective airbrush for the job.)

Commonly Used Media – Acrylics, Enamels, Lacquers, Urethanes, Spectratex, Air-Opaque, MODELflex, Imagineaire

## Beauty - Airbrush Tanning

Best airbrush type: Double/Dual action, bottom feed, internal mix

Totally Tan 3000, 155 Anthem, 175 Crescendo, VEGA 2000, (Badger 350)

A professional salon applied airbrush tan generally requires 1-1.5 oz. of tanning solution to complete, which makes a bottom feed airbrush with a 2 oz. attached jar - that will hold enough solution to complete a full tan, the best feed selection for airbrush tanning. The best method of airbrush tanning is to use a broader spray on larger areas (back, torso, upper legs, etc.) and a thinner spray pattern in more intricate areas (face, feet, under arms, hands, etc.). In order to complete both area types efficiently with a single airbrush a double/dual action airbrush is the best choice. As a soft fine dot atomization provides the best control and most efficient use of solution for the airbrush tanning technician, an internal mix airbrush is generally best for professional salon tanning technicians. (In instances where speed and simple coverage without much attention to more intricate areas is sufficient, for the client and technician, a less expensive - less precise single action, external mix airbrush can be used for applying airbrush tans in a less “pampering” manner.)

Commonly Used Media – DHA Tanning Solution, Totally Tan

## Beauty - Body Art/Temporary Tattoos

Best airbrush type: Double/Dual action, bottom feed, internal mix

Badger 150, 155 Anthem, 175 Crescendo, VEGA 2000, Body Art 3000 (Badger 200 Precise, VEGA 600)

Usage of the airbrush in body art is comparable to its usage in Fine Art applications. The artist is simply using the human body as his/her canvas. The airbrush is the best tool for applying background, foundation color, shadowing effects and color gradations that are common in body art. As many of these effects involve adjusting spray pattern while spraying, a double/dual action airbrush is best for body art. On the other hand, most temporary tattoo applications are more efficiently done with a single action airbrush (because most temporary tattoos are done using stencils). However, most temporary tattoo artists also do full body art, and will occasionally add free hand art to stenciled tattoo designs – so most temporary tattoo artists still use a double/dual action airbrush for their temporary tattoo applications. Usage of a double/dual action airbrush dictates usage of an internal mix airbrush (there is no double/dual action external mix airbrush). An internal mix airbrush will provide a finer atomization pattern, which allows easier spray manipulation and better artistic control. Additionally, with the exception of minimal free hand detail spraying most body art airbrushing is general in nature and can be most efficiently done with a bottom feed airbrush, using just a color cup for smaller areas of work. When doing temporary tattoos the artist will usually set up a color jar with an adaptor for each color they are using – this facilitates faster color changes. (If it is certain all the airbrush will be used for is the application of stenciled temporary tattoos, a single action, internal mix, bottom feed airbrush like the Badger 200 Precise or VEGA 600 is the best choice.)

Commonly Used Media – Water and/or Alcohol Based Body Paints, Totally Tattoo, BodyAire

## Beauty - Cosmetic/Make-up Airbrushing

Best airbrush type: Single action\*, gravity feed, internal mix w/ free flow air valve

100GC, Air Elegance 5000, VEGA 1000C

\*the term single action when referring to specially set up cosmetic airbrushes differs from than the conventional airbrush related definition of single action. Whereas single action usually means the trigger’s only function is the on/off for air (passing through the airbrush), in the case of specially set up cosmetic airbrushes the air is continually on, and flowing through the airbrush, and the trigger’s sole function is adjusting color volume and spray pattern width by its being moved back and forth by the technician.

The airbrush is the most effective tool for applying beautiful natural appearing make-up. For the salon cosmetologist, theatrical make-up artist, or mortician, whether applying undetectable foundation or perfect blush tones, an airbrush is the most efficient tool for applying perfect make-up. A fine “soft” spray is required for creative control. Thus an internal mix airbrush is the best choice for cosmetic/make-up airbrushing. Additionally, it takes a very small amount of airbrush cosmetic to complete a cosmetic/make-up application, so a small cup gravity feed airbrush (100GC, Air Elegance 5000, or VEGA 1000C) that only needs a few drops of cosmetic, is ideal for cosmetic/make-up airbrushing. Gravity feed is also beneficial for cosmetic airbrush applications because it allows for low pressure operation of the airbrush, thus eliminating any discomfort for the client that higher air pressures might cause. The continuous flow of air through the airbrush aids in preventing airbrush cosmetic from drying while the airbrush is not being sprayed. For this reason, a “cosmetic” single action airbrush is a better and more common selection for cosmetic/make-up airbrush applications.

Commonly Used Media – Airbrush Make-up, True Air (mortuary), Air Elegance (salon/glamour), Pixel (HD/theatrical)

## Beauty - Fingernail Art

Best airbrush type: Double/Dual action, gravity feed, internal mix

100SG/G, Renegade Velocity Jet, VEGA 1000/Nailaire, OMNI 5000/Nailaire, 105 Patriot Arrow (200SG, 200G)

Because of the detail nature of fingernail airbrushing a gravity feed, internal mix airbrush is the best, easiest to use, airbrush type for fingernail airbrushing. A gravity feed airbrush allows better user control, and an internal mix airbrush provides a fine precise spray pattern, which is more desirable to fingernail airbrush artists/technicians. As many fingernail airbrush artists/technicians do some freehand airbrush design, most prefer double/dual action airbrushes that allow them to vary their spray pattern while spraying. Because of the small amount of material (only 2 or 3 drops of color at a time) and minute size of the artwork, most fingernail airbrush technicians use airbrushes with very small or no color reservoir. These small color reservoir airbrushes allow the artist to visually work right over the needle/nozzle tip, giving them better creative control as their fingernail airbrush art develops. (If exclusively using stencils to create fingernail airbrush designs, a single action airbrush is easier and simpler to learn and use)

Commonly Used Media – Acrylics, Air-Opaque, Nail Flair

## Decorative Painting - Ceramics

Best airbrush type: Single action, bottom feed, internal and/or external mix

Badger 350 Easy, Badger 200 Precise, VEGA 600

Although many ceramicist use the airbrush in a fine art oriented manner, for which the above fine art airbrush recommendations apply, most use the airbrush for base coating and applying glazes to their ceramic pieces. In these most common ceramic applications the artist simply requires a consistent uniform spray for good even surface coverage. As in other similar applications the best type of airbrush for this usage is an easy to use single action airbrush. Additionally, because most ceramicist work in a wide range of sizes they are best served to use a bottom feed airbrush that gives the ability to attach a jar for using larger volumes of material if the size of work they are spraying requires it. On smaller pieces the bottom feed airbrush can be used with an attached color cup that will allow the use of smaller amounts of material. Often times the size of work will contribute to determine whether the ceramicist should use an internal mix or external mix airbrush. For larger pieces an external mix airbrush, like the Badger 350, is more efficient because of the larger pattern and greater material volume it is capable of spraying. For smaller ceramic pieces, that an external mix airbrush may hide detail on, an internal mix airbrush, like the Badger 200, will provide a finer more controllable spray.

Commonly Used Media – Acrylics, Enamels, Glazes, Ceramic Stains, MODELflex

## Decorative Painting - Scrapbook/Stenciling

Best airbrush type: Single action, bottom feed, internal and/or external mix

Badger 350 Easy, Badger 200 Precise, VEGA 600

The airbrush is a unique and fun addition to the creativity bin of any scrapbooker or stencil artisan. Whether being used for accenting page or picture edges or adding decorative stencil patterns on craft/scrapbook projects, airbrushing can be a fun and easy new technique for the scrapbook/stencil artisan to add to their artistic process. To simplify the technique a single action airbrush is best. The stencils will create desired images and patterns, and a simple light spray of color around a picture space or on a page edge are easily applied with the pre-set spray pattern of a single action airbrush. Where a softer spray pattern for color gradations and stencil pattern edging is desired, an internal mix airbrush will work best. For larger stencil designs or larger page coverage an external mix airbrush is best. As many scrapbookers work on multiple pages during a scrapbook session, a bottom feed airbrush that will hold enough material to spray multiple project pages or stencil designs is usually more efficient for scrapbook/stencil airbrushing.

Commonly Used Media – Acrylics, Watercolors, Spectratex, Air-Opaque

## Dental

Best airbrush type: Single action, bottom feed, internal mix

Badger 200 Precise, 200-20, VEGA 600 Badger 350

The airbrush is used by many dental laboratories for the proper coating of crowns and implants with porcelains and veneers. This application requires a precise uniform spray pattern to ensure even and complete coverage of the dental enhancement. This is best accomplished using a single action airbrush that provides a fixed pre-set spray pattern. As the spray media for this application is sometimes of heavier viscosity many dental lab technicians use external mix airbrushes, which are easier to spray heavier viscosity materials through. However, this generally means more material will be used and the application control is less refined because of the larger atomization process of the external mix airbrush. Other dental lab technicians prefer to use an internal mix airbrush that has a more precise atomization pattern, which will use less material and provide a finer coating. In either case, because of the amount of material required in the coating of most dental enhancements, it is most common and efficient for the dental laboratory airbrush technician to use a bottom feed airbrush.

Commonly Used Media – porcelain, veneers

## Fishing Lure Painting

Best airbrush type(s) -

Single action, bottom feed, internal and/or external mix – Badger 350 Easy, Badger 200 Precise, 200-20 detail, 200 gravity feed

Double/Dual action, bottom feed, internal mix – Badger 150, Anthem 155, Crescendo 175, VEGA 2000, OMNI 3000

Good fishing lure painting is about consistent spray control and even surface coverage. Most lure painters utilize stencil patterns and uniform spray gradation to create attractive “real” looking fishing lures. Both of these techniques are more easily done with a single action airbrush. For more artistic free hand lure painting, it is best to learn to use a double/dual action airbrush. As fine dots are most desirable for soft gradations and easier color depth building, an internal mix airbrush is best for most fishing lure painting applications. Larger game fish lures (and basic complete color coating of smaller lures) can be effectively done with an external mix airbrush. Many lure painters paint multiple lures at once, thus making use of a bottom feed airbrush more efficient to minimize how often color needs to be re-loaded. For smaller lure painting projects a color cup can be used to hold the smaller amount of paint.

Commonly Used Media – Acrylics, Enamels, Lacquers, Urethanes, Woods & Waters (with UV clear coat)

## **Hobby Model Finishing - fine scale detail (figures, z/n scale RR, museum/competition finishing)**

Best airbrush type: Double/Dual action, gravity feed, internal mix

100G/LG, 105 Patriot (Arrow), Renegade Velocity (Jet), SOTAR 2020, VEGA 1000, OMNI 4000/5000

The detail aspect of model finishing equates to that of a fine illustrator who has selected a static model as his work surface. Precise detail model finishing requires maximum airbrush control and fine “soft” microscopic dot patterns that can be controlled and manipulated by the artist to form the exact detail finish the artist desires. A gravity feed airbrush, that can be operated at low air pressures, is necessary for maximum control. An internal mix airbrush, that sprays fine “hair-line” dots, is necessary to achieve maximum spray pattern precision. Additionally, as many detail finishing applications require the ability to vary spray pattern while spraying, it is recommendable that the artist use a double/dual action airbrush for detail oriented fine scale model finishing applications.

Commonly Used Media – Acrylics, Enamels, Lacquers, MODELflex (freakflex, Marine & Military MODELflex)

## **Hobby Model Finishing - prototypical finishes, simple color coat application, figure base coating**

Best airbrush type(s): Single Action, bottom feed, internal mix

Badger 200 Precise, 200-20 detail, 200 gravity feed, VEGA 600

If only applying prototypical finishes on models or base coating figures, an airbrush that can apply simple even coats of color is best and most cost effective. This makes a single action airbrush that provides a pre-set spray pattern for uniform color coverage an excellent choice for this application. In order to achieve model detail enhancement, rather than hide model detail, an internal mix airbrush that provides finer color atomization is preferable. The choice of bottom feed or gravity feed is dependent on the scale of model being finished. Medium to large scales are most efficiently finished using a bottom feed airbrush, whereas small scales can be done using a gravity feed airbrush with a small color reservoir because very little paint is required to finish an entire small scale model or base coat a miniature figure. It is not uncommon for small scale modelers to use bottom feed airbrushes with color cups instead of jars, rather than trying to locate sometime hard to find single action gravity feed airbrushes. Either gravity feed or bottom feed airbrushes can be used to properly apply precise even coats of color for prototypical model finishing or figure base coating.

Commonly Used Media – Acrylics, Enamels, Lacquers, MODELflex (freakflex, Marine & Military MODELflex), RC-Air

**Remember because of the greater control enabled by a gravity feed detail airbrush; you are generally more able to adapt a detail airbrush to a general purpose task, than you are able to adapt a general purpose airbrush to a detail task.**

## **Hobby Model Finishing - Radio Control (lexan bodies/canopies)**

Best airbrush type(s) - Single Action, bottom feed, internal mix – Badger 200 Precise, Vega 600

Double/Dual action, bottom feed, internal mix – Badger 150, 155 Anthem, 175 Crescendo, Renegade Rage, VEGA 2000, OMNI 3000

The same airbrushes that are best for static model prototypical finish applications are also the best airbrushes for airbrushing Radio Control (RC) car/plane bodies and helicopter canopies. The difference in painting RC subjects is that the application of color is in reverse – meaning the color to appear on top is the first color applied. RC subjects are painted on their underside with the first color applied being the most visible when the body/canopy is viewed from its outside. The actual application of color is most similar to applying nice even coats of color as in prototypical static model finishing. This is best done using a single action airbrush that provides a pre-set spray pattern for uniform color application. Much of the graphic art effects applied to RC bodies/canopies is done through the use of masking mediums that create the graphic image to a greater extent than the airbrush does. For RC body/canopy finishes having artistic color gradations and freehand effects, usage of a double/dual action airbrush is highly recommended. The fine dot pattern of an internal mix airbrush is most preferable in RC body/canopy painting so the color depth can be carefully built up to the painter’s desire. As most RC body/canopy painting is medium to large in its scale, a bottom feed airbrush is usually more efficient. The primary exception is smaller slot car bodies, which require much less paint and can be efficiently done with a gravity feed airbrush. Many slot car painters simply use bottom feed airbrushes with color cups instead of jars.

Commonly Used Media – Acrylics, Enamels, Lacquers, MODELflex (freakflex, Marine & Military MODELflex), RC-Air

## **Hobby Model Finishing - scenery/structure (diorama and layout), model bases**

Best airbrush type: Single action, bottom feed, internal and/or external mix

Badger 350 Easy, Badger 200 Precise, VEGA 600

Applying paint to scenery, structures, and/or model bases is usually a simple basic process requiring a consistent uniform spray pattern applied from an equal distance across the entire painted surface. This type of application is most efficiently done with a single action airbrush that enables usage of a pre-set spray pattern. Additionally, these applications often involve usage of more material, which usually means they are best done with a bottom feed airbrush that enables usage of more paint through use of an up to 2 ounce attached jar. The determination of what type mix airbrush is most dependent on the scale being worked on. Generally for Scenery, structures, and bases for HO / 1/35<sup>th</sup> scale or smaller an internal mix airbrush is best as it enhances detail well still providing a broad enough spray pattern to efficiently finish a piece from a time standpoint. For larger scales, where details are more pronounced because of the larger scale, an external mix airbrush can be used effectively and is generally a less expensive option than the internal mix airbrush.

Commonly Used Media – Acrylics, Enamels, Lacquers, MODELflex (freakflex, Marine & Military MODELflex)

## **Industrial - low volume/small scale production**

Best airbrush type(s) - Single action, bottom feed, internal mix – Badger 200 Precise, VEGA 600

Double/Dual Action, bottom feed, internal mix – 155 Anthem, VEGA 2000

Anything production will usually involve the usage of larger volumes of media, so it will be more efficiently done with a bottom feed airbrush. As smaller, non-basecoat, production projects (i.e.; spraying stripes on stuffed animals or resin toys, coding or marking applications) usually require smaller more controlled spray patterns they are usually more internal mix airbrush spray pattern oriented. If the application project requires recurring usage of a uniform spray pattern it will be most efficiently and cost effectively done with a single action airbrush. However, if the production project does require a variance of the spray pattern throughout the production process it will require learning and usage of a double/dual action airbrush.

## **Industrial - non-spray gun high volume production**

Best airbrush type(s) - Single action, bottom feed, external mix – Badger 350 Easy

Double/Dual action, bottom feed, internal mix – 175 Crescendo with large needle/nozzle, VEGA 2000 with large (# 5) needle/nozzle

Anything production will usually involve the usage of larger volumes of media, so it will be more efficiently done with a bottom feed airbrush. As larger, non-basecoat, production projects (i.e.; marking construction equipment, stenciling shipping crates) usually require wider spray patterns to maximize production speed and efficiency they are usually better done with an external mix airbrush, or a large nozzle internal mix airbrush. If the application project requires recurring usage of a uniform spray pattern it will be most efficiently and cost effectively done with a single action airbrush. However, if the production project does require a variance of the spray pattern throughout the production process it may require learning and usage of a double/dual action airbrush.

## **Sign Painting**

Best airbrush type: Double/Dual action, bottom feed, internal mix

Badger 150, 155 Anthem, 175 Crescendo, VEGA 2000, OMNI 3000

Every complete service sign shop should have and use an airbrush. In sign painting the airbrush can be used for highlights, color gradations, and free hand art - such as airbrushed lettering or image creation. Sign painting applications are very similar to both mural painting and T-shirt airbrushing. The same airbrushes that are best for those applications are also best for sign painting. Double/dual action triggering enables spray adjustment while spraying, which is necessary for most sign painting applications. An internal mix airbrush provides a finer more precise atomization, which is preferred for many of the artistic effects used in sign airbrushing. And lastly, because of the sizable nature of most sign painting projects, a bottom feed airbrush that can hold larger amounts of material is best for sign airbrushing applications.

Commonly Used Media – Acrylics, Enamels, Lacquers, Urethanes, Spectratex, Imagineaire

## **Taxidermy and Woodcarving Detail Finishing**

Best airbrush type: Double/Dual action, gravity feed, internal mix

SOTAR 2020, Renegade Velocity (Jet), 100G/LG, OMNI 4000/5000, VEGA 1000

Taxidermy and woodcarving (real life sculpture and decoy) detail painting is about exact replication of real life appearance and characteristic. For perfect accuracy a fine atomizing, absolute control providing, airbrush is necessary. This means usage of a gravity feed internal mix airbrush that can be operated at very low air pressure and spray microscopic dots. Additionally, many realistic effects involve precise undetectable color gradations that require the ability to vary spray pattern width during the painting process. These techniques can be more easily and efficiently done through learning and usage of a double/dual action airbrush. The above listed airbrushes are all excellent for taxidermy and woodcarving detail, and are regularly used by World Champion taxidermists and wood carvers.

Commonly Used Media – Acrylics, Enamels, Lacquers, Woods & Waters taxidermy paint

## **Taxidermy Base Coat Applications (see base coating)**

### **Woodworking and Antiquing**

Best airbrush type: Single action, bottom feed, internal and/or external mix

Badger 350 Easy, Badger 200 Precise, VEGA 600

The airbrush is an excellent tool for applying base coats and properly reduced sealers to woodwork. It provides a far more controlled spray than spray cans, and enables precise color gradations for artistic effect and antiquing. The airbrush is also an efficient controlled spray tool for stenciling patterns often used in woodworking as well as lawn ornament production. As most woodwork applications are most efficiently done with a controlled pre-set spray pattern a single action airbrush is best suited for woodwork applications, and as there is little if any finite detail in these applications a bottom feed airbrush, accommodating larger jars, will allow for more efficient work at a faster pace. The type of mix for the airbrush is dependent on the user's need for a finer dot/spray pattern (internal mix) versus a larger broader spray pattern (external mix) for faster "heavier" color coverage. For antiquing, an internal mix airbrush will provide better spray control and more precise color gradations.

Commonly Used Media – Acrylics, Enamels, Lacquers, Urethanes, Wood Stains, Spectratex, Air-Opaque

# TOP TEN AIRBRUSH TROUBLESHOOTING TIPS

**1) Bubbling in color reservoir (color cup or jar).** When this occurs it is the result of air entering into the paint channel. This concern can have several causes; the most common are a bad seal somewhere in the nozzle, tip dry, incorrect spray regulator/air cap alignment, or a split paint tip.

-If a bad nozzle seal is the cause, in the case of a threaded paint tip nozzle, make certain the paint tip thread is properly sealed with beeswax or other sufficient sealing agent. In the case of a drop in paint tip nozzle, make certain the paint tip is properly seated in the angled recess of the airbrush body, and that all surfaces between the two components are cleared of any debris and are not marred or scratched. Lastly, in the case of airbrushes that require a “head” seal between the nozzle assembly and the airbrush body, be certain the head seal is in place and is in proper condition to create the necessary seal at this point of air flow.

-If tip dry is the cause, remove the dried paint from the needle/nozzle tip by either picking it off with your finger tips/nails or spraying cleaner through the airbrush. If tip dry occurs frequently in your application it may be helpful to keep a paint brush and small container of water nearby to wet the nozzle and get your airbrush spraying properly again when necessary. Tip dry will usually occur more frequently in detail airbrushing applications.

-If you think the bubbling may be occurring due to incorrect spray regulator/air cap alignment tighten or loosen your spray regulator/air cap in ¼ turn or lesser increments to determine if that is the certain cause of the problem. If it is, your airbrush will stop bubbling and resume spraying once you hit the spray regulator/air cap’s “sweet spot”.

-If a split paint tip is the cause of the bubbling, the only corrective measure is to replace the paint tip.

**2) Off-center spray.** This is caused by a bent needle tip. As media exits the airbrush it “rolls” off of the needle. If the needle is bent it will cause the spray to “lean” to one side or the other. To correct this problem carefully attempt to straighten the needle tip. A grooved sharpening stone is an effective device for trying to straighten airbrush needle tips. If you are unable to straighten the needle tip, a replacement needle will need to be installed to correct the off-center spray concern.

**3) Spray will not shut off and/or occurs without sliding the trigger back.** This concern can have several causes; the most common are improper seating of the needle in the paint tip, a “flared” paint tip, or partial tip dry.

-If the needle is not seated properly in the paint tip, it is necessary to re-seat it. To do so access and loosen the needle chuck, slide the needle forward until it stops and seats in the paint tip, and re-tighten the needle chuck. DO NOT USE FORCE when seating the needle in the paint tip, when it stops it should be seated properly.

-If the spray will not shut off due to a flared tip, it is necessary to replace the paint tip.

-If the spray will not shut off because of partial tip dry/clogging remove the dried paint from the needle/nozzle tip by either picking it off with your finger tips/nails or spraying cleaner through the airbrush.

**4) Spray pattern pulsation.** This concern can have several causes; the most common are a bad seal (usually one that cannot be trained to properly play well with other seals, LOL, just kidding – we do have a sense of humor though), inconsistent media viscosity (usually paint being too thick), or an inadequate or improperly performing air compressor.

-A bad seal can occur anywhere air could potentially leak from while traveling from the air source through the airbrush. Although some low levels of air leakage are common, and may not adversely affect an airbrush’s spray performance, if you are experiencing a pulsation in your airbrush’s spray pattern, you should check all threaded parts and seals to ensure there is no excessive air leakage at any of these points. Airbrushes that require a “head” seal between the nozzle assembly and the airbrush body may leak air, causing a pulsating spray, if the head seal is not properly in place. If this occurs it is advisable to reposition or replace the “head” seal. Additionally, many airbrushes have inner seals (inside of the airbrush body) that the needle passes through. These seals are designed to make sure paint is properly directed to the airbrush nozzle and does not flow to the rear of the airbrush. If the airbrush’s inner seal is broken, it can also cause a pulsating spray. To fix a bad inner seal it is necessary to replace it. In many instances this seal replacement is best done at the factory by the airbrush’s manufacturer. (This is a lifetime warranted part on Badger airbrushes). Lastly, although not likely to cause a pulsating spray, the hose connections at the airbrush and the air source should be properly sealed. This can usually be done effectively with the wrapping of Teflon “plumber’s” tape around the male threaded part.

-If spray pulsation is caused by an inconsistent paint viscosity, the paint should be adjusted to proper spraying viscosity. It is also important to make sure that paint is properly blended so that pigment is evenly distributed through the paint to ensure spray consistency. The rule of thumb for preparing paints (or other materials) for airbrushing is to reduce them to the approximate visual viscosity of 2% milk. As starting paint viscosities often vary from color to color, even within a specific paint brand, it is best to avoid fixed thinning ratios. It is also best to vigorously mix/stir paint, rather than shaking it, before use. Mixing/stirring paint better blends

pigment and base creating a more consistent paint from the top to the bottom of the bottle. Mixing/stirring paint also causes pigment to re-settle slower.

-If paint pulsation is caused by an inadequate or improperly performing air compressor, it may be necessary to have the compressor repaired or replaced. Over time air compressors can incur diminished performance that can adversely affect their performance efficiency. This is especially noticeable with small “tankless” diaphragm compressors that can present pulsation of the diaphragm action in an airbrushes spray pattern if the compressor operates inefficiently.

**5) Grainy spray.** This is caused by paint (or other media) not being properly reduced, meaning it is too thick to atomize properly, or not operating the airbrush at a high enough pressure.

Paint (or other media) should be the viscosity equivalent of 2% milk to spray properly through an airbrush. Sparingly add the appropriate thinner to the paint (or other media) until it is the proper sprayable viscosity. Also check the needle tip and nozzle tip to make sure no tip dry has formed on the nozzle.

A bottom feed airbrush should have at least 16 PSI (higher for heavier media) while spraying to operate properly. A gravity feed airbrush can be operated at spray pressures as low as 8 PSI. Check the pressure you are spraying at to be sure it is high enough for the type of airbrush you are using, and the type of media you are spraying.

**6) Buckling surface.** This is caused if paint (or other media) is too thin or “runny” or applied too heavily on a thin porous substrate (usually a rag type paper). If working close to the surface take care not slide the airbrush trigger back too far releasing more paint than desired and over saturating the surface you’re spraying. You should only work close to the surface when wanting to do fine lines, and only sliding the trigger back a little bit. If working with an extremely thin media apply it in fine coats, letting one coat dry before applying another. This will prevent over saturating your surface and give you greater control in developing your artwork to your desired end.

**7) Paint blobs at the ends of the stroke or barbell patterns.** This is caused by sliding the trigger back before beginning your hand movement and stopping your hand movement before and not sliding your trigger forward to shut off paint flow before stopping your hand movement. This can only be remedied by being aware of your triggering and practicing proper triggering techniques. Practice, practice, practice. Creating a grid of dots (on a blank sheet) with your airbrush – then going back and connecting the dots, drawing figure eights, and/or simply writing your name with the airbrush all airbrushing exercises. Using your airbrush to color in coloring books is also a very helpful, skill developing, method of airbrush practice. Practice, practice, practice.

**8) Flared ends or curved stroke.** This is caused by turning the wrist at the end of the airbrush stroke or arcing closer to the surface during the airbrush stroke. Unless these spray pattern effects are desired, it is important to maintain consistent parallel distance from the surface you are spraying through your entire airbrush stroke. This again is best corrected by practicing and developing your skill level and a comfort with how the airbrush works.

**9) Centipede or spidering spray patterns.** This is caused if paint (or other media) is too thin or “runny” or applied too heavily on a non-porous substrate (metals, plastics, etc.). If working close to the surface take care not slide the airbrush trigger back too far - releasing more paint than desired. On hard surfaces excess paint cannot be absorbed and will scatter over the surface in a centipede or spidering pattern. When wanting to do fine lines and working close to the surface you should only slide the trigger back a little bit to release a small amount of media. If working with an extremely thin media apply it in fine coats and let one coat dry before applying another to avoid a “scattering” effect when air (and additional paint) passes back through still wet paint. The probability of this undesired effect is increased if spraying your airbrush at too high of an air pressure, so check to make sure your air pressure is properly set for the type of airbrush you are using, the media you are spraying, and the type of surface you are finishing.

**10) Dot blotching or splattering at the start of end of spraying.** This is caused by an incorrect triggering technique of stopping air flow (releasing downward trigger pressure) before turning off paint flow (sliding trigger/needle forward to close off paint tip). By turning air flow off before paint flow, paint goes around the needle and “floods” the nozzle. The result of this “flooding” is either one of two things. 1. As the needle returns forward upon releasing the trigger, it pushes the paint that has flooded the paint tip out in a burst or splatter of blotched dots. 2. If possibility 1 does not occur the “flooded” paint remains in the nozzle and is blown out in a burst or splatter of blotched dots when the trigger is depressed to resume airbrushing. This is another technique issue that can be prevented by learning and developing proper triggering technique. Remember to carefully slide the trigger back forward to stop paint flow, don’t let it “snap” back.

The only thing that you cannot be taught is practice. The more you practice your airbrushing the greater your airbrush skills will become and the more your airbrushing confidence and enjoyment will increase.