BADGER

MODEL 200™

BOTTOM FEED, SINGLE ACTION INTERNAL MIX

INSTRUCTION BOOK



Photo may not represent actual airbrush.





At BADGER AIR-BRUSH CO. we are extremely proud of our people and our products. Our continued growth and success is based upon high quality and conscientious craftsmanship in the manufacture of each and every BADGER product. At BADGER AIR-BRUSH CO. there is a feeling of accomplished pride and dedication to *you*, the BADGER airbrush user, that bonds the entire BADGER family, and goes into the design, development, and manufacture of every airbrush we make.

Each air brush and all of its components are carefully machined, inspected, assembled by hand, and **tested in actual use to be certain it meets BADGER'S and your high standards of quality.** Then, and only then, the BADGER name is put on it.

This dedication to excellence and commitment to your satisfaction prompts us to stand behind all of our products and offer the following warranty.

WARRANTY

Your BADGER airbrush is warranted against all manufacturing defects of material and/or factory work-manship origin for a period of one year. Any part or material that becomes defective or is worn so as to not be usable within one year of purchase will be *repaired or replaced* at our discretion and expense. **Your BADGER airbrush has a lifetime warranty for any necessary factory labor** (After the first year, the only cost of factory repair will be the cost of shipping to the factory and repair related parts). These warranties do not cover damage caused by negligence, accidents, misuse, or units that have been abused or altered in any way. The PTFE needle bearing has a lifetime warranty and if ever necessary will be replaced at the factory without cost, except for to the factory shipment cost, to the air brush owner.

CONGRATULATIONS on your purchase of the Model 200, a superior quality-precision crafted airbrush designed, engineered, and manufactured by BADGER-AIR-BRUSH CO. The Model 200™ has a single-size paint tip, spray regulator, and needle that work with any properly reduced medium, including acrylics, gouache, inks & dyes, enamels, lacquers, stains, etc. The Model 200™ works especially well with BADGER Air-Opaque™, Air-Tex™, and *MODELflex*™ paints.

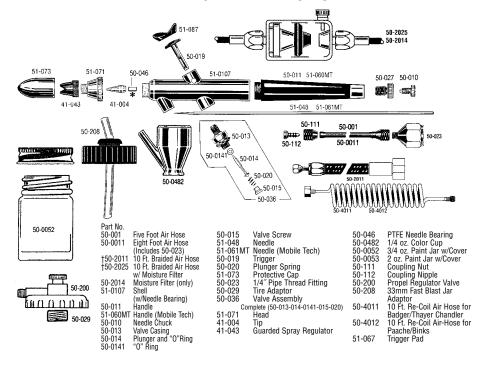
The Model 200^{TM} bottom feed is an ideal tool for artists, high school students, hobbyists, van painters, taxidermists, etc.

READ INSTRUCTIONS CAREFULLY BEFORE OPERATING

TO OPERATE

- Attach hose to air supply (CO₂ tank, compressor or aerosol propellant can) then holding air hose in hand, attach airbrush to air hose by gently turning in clockwise motion on to fitting. Tighten air hose snugly into place with wrench provided in set.
- When air is regulated, pressure should be between 15 to 50 p.s.i. Normal operating pressure is 30 p.s.i. We recommend a pressure gauge (No. 50-054) and/or water trap (No. 50-051) in conjunction with compressor
- where humidity is a problem. A compressor or CO_2 tank is more practical for larger jobs and prolonged spraying.
- 3) To attach jar or color cup, insert stem from jar into hold located in bottom of airbrush near head. Insert the stem into the airbrush and give a 1/4 counter clockwise turn. This will lock your jar (bottle) or color cup assembly in place. To remove, pull down and rotate jar (or cup) assembly counterclockwise again.

REPLACEMENT PARTS LIST



*The PTFE Needle Bearing Carries a Lifetime Warranty and Free Replacement at the Factory only †Hose can be used with compressor fitting or propel valve.

READ INSTRUCTIONS CAREFULLY



TO ATTACH

- 1. Attach air-regulator to air-hose.
- Attach air-regulator to propel can.
- Attach other end of air-hose to airbrush by turning in a clockwise motion on to fitting.

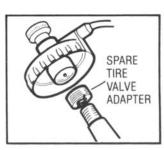


TO TURN ON AIR

- Turn adjusting screw clockwise to desired pressure.
- For less pressure or to turn off, turn adjusting screw in counterclockwise direction.

The air-regulator valve is designed for propellant cans. It will adjust pressure from 15 to 50 PSI. For larger jobs and prolonged spraying a compressor or CO_2 tank is recommended.

When air is regulated, pressure should be between 15 to 50 PSI. Normal operating pressure is 30 PSI.

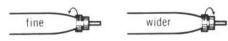


SPARE TIRE VALVE ADAPTER

A spare tire from the family car can be used as a power source in place of a can of propellant. Simply inflate tire (must be on a rim) to 40 lbs. of air. Adapter screws are sold through dealers.

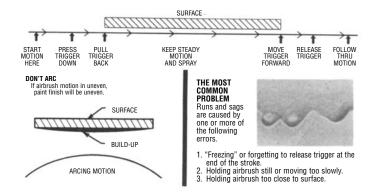
TO ADJUST PAINT FLOW

Paint flow controlled by moving needle adjusting screw forward for fine spray, back for wider spray. NOTE: NEEDLE IS PRE-SET.



LEARN TO TRIGGER

Best results are achieved by a good constant motion. Start motion before pressing trigger, follow through motion after releasing trigger. Do not hesitate while spraying or you will create what is called the Barbell Effect. See Figure 3 pg. 9.



MAINTENANCE AND CLEANING OF YOUR AIRBRUSH

Careful maintenance of your airbrush is essential if it is to continue to work effectively. One of the most important factors that affect the performance of the airbrush is cleanliness. The small passages inside the airbrush can become blocked easily by dried paint if the airbrush is not cleaned after each use. if there is still a useable amount of color in the color cup or reservoir when you have finished spraying, pour the remainder back into the original paint bottle. Operate the airbrush, spraying on a scrap piece of paper until the color is gone and only air is sprayed. Spray with clean water first, then Air-Opaque™ Cleaner or an appropriate solvent recommended by paint supplier until the spray is colorless. Always clean the airbrush every time you finish spraying. Some types of paints can dry remarkably fast. If the paint is allowed to dry inside the airbrush you may be able to dissolve it with clean water. Cleaning with solvent is the next step. If cleaning with solvent does not dissolve the blockage, you will have to disassemble the airbrush.

REMOVING AND REPLACING THE TIP

When replacing the paint tip (41-004), it is important to loosen the needle chuck)50-010) and partially retract the needle (51-048). This will ensure that no damage will occur to the tip or needle as the head assembly is tightened.

Unscrew the Spray Regulator (41-043) and the head (51-071). The tip can now be removed from its tapered seat in the airbrush body. Make sure there is no dried paint on any part of the airbrush

head or body that would interfere with proper tip seating. Even a small amount of dried paint can cause tip misalignment, which could lead to uneven or pulsating spray pattern. Dried paint can be removed using a moist cotton squab.

Place the new tip into its seat in the airbrush body (see photograph 1), and then screw the head and spray regulator onto the airbrush body. The head

assembly on the Model 200 is designed to be tightened firmly by hand - use of pliers or other tools should not be necessary!

Before spraying, reseat the needle into the new tip by



pushing the needle forward until it stops. Do not push forcefully or the tip could split at the end. The Needle Chuck should then be retightened.

MANUFACTURER'S NOTE: Although the nozzle and needle assemblies of this airbrush are manufactured to easier maintenance "finger tight" tolerances, the initial removal of some components may require the use of a small pliers. If a pliers is necessary for initial component disassembly, just finger tighten it when reassembling and the pliers should not be required for assembly/disassembly thereafter.

CLEANING OF YOUR AIRBRUSH

To clean the airbrush, take a clean color cup or jar full of cleaner. Insert it into the airbrush, spray some cleaner through the airbrush at broad and small patterns. After removing color cup or jar, turn brush upside down and press trigger. This will remove any material still in the brush.

Another method of cleaning the airbrush is back flushing. Take a soft cloth and cover the spray regulator—depress and pull back on the trigger. This will cause a bubbling in the color cup or jar. Take away the cloth and spray and repeat this procedure several times. After this is done you should remove the needle for cleaning.

Spray regulator should be cleaned using a soft bristle brush. Insert into the cavity of the spray regulator and rotate until the paint is removed.

If the needle is stuck in the airbrush, carefully loosen the needle chuck, then grasp the end of the needle with a pair of pliers and twist in a counter-clockwise direction to release the needle. Inspect for hardened paint, which causes the needle to bind. If there is a residual stain on the needle, it can be polished off using a pink eraser. Hold the needle flat on a worktable. Rund the pink eraser the full length of the needle, turn the needle slowly by rolling it towards yourself and repeat the process. Be careful not to bend the tip. Remove all eraser particles by running the needle between your thumb and fore-finder.

To replace a bent needle, set needle adjusting screw all the way forward.



Loosen needle chuck and slide out needle.



Insert new needle. Slide it forward with slight pressure from index finger until the needle stops.

Do not push forward with great pressure, as the needle may split the delicate paint tip and also damage the needle point. To lock the needle in place tighten needle chuck into needle adjusting screw. Turn needle adjusting screw to desired spray pattern.

A bent needle will prevent you from airbrushing a fine line and will cause an erratic direction of spray. A bent tip does not always have to be discarded. Place the needle on a firm surface at the angle of the tip. Straighten the bent tip by running your fingernail across it on the tabletop while you turn the needle slowly. Run your fingernail from the body of the needle outward towards the tip.

You can custom mix any color combination you wish. REMEMBER: Paints must by compatible...that is, mix enamels with enamels, lacquers, etc. Mix thoroughly. Make sure paint is free of lumps...strain if necessary. To help prevent your airbrush from clogging, Badger offers a Fluid Filter (50-2018 sold separately). The filter slides on and off the siphon tube for quick and easy cleaning.

THINNING

Most jar paints are too heavy to spray. Enamels should be thinned approximately 1 part paint to 1 pat thinner, and lacquers approximately 1 part paint to 1 part thinner. TO thin automotive lacquers, consult the spraying directions on the side of the paint container.

WHEN USING LACOUER

Lacquer dries very quickly. For best results the operation should be continuous, that is, air airbrush should not be set down for more than a few moments before resuming spray. Keep an extra paint jar of thinner handy...remove lacquer jar, attach jar of thinner and spray to clean out any lacquer that may dry in airbrush. Also refer to cleaning instructions for additional information.

TO SPRAY

After mixing and thinning paint, fill paint jar about 2/3 full (or less). Attach jar of paint to airbrush, turn air on and press trigger. Test your spray on old newspaper or other material, make any necessary spray adjustments, and get the "feel" of your airbrush. (Be sure that paint or fumes cannot reach any flame. Also make sure that there is adequate ventilation).



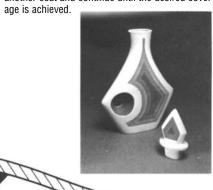
MANUFACTURERS NOTE

For larger jobs and prolonged spraying, a compressor or CO₂ tank is recommended. A 1/4" pipe thread fitting (50-023 sold separately) is needed to adapt air-hose to air-supply. When using a "Bleeder Type" compressor, a pipe thread fitting (50-0231 sold separately) must be used to prevent compressor from stalling out or overheating when airbrush is not in use.

PAINTING PROCEDURE FOR THREE DIMENSIONAL OBJECTS

Prepare the object to be painted, masking off any area that should not be painted (be sure object is clean and free of dust, grease, etc.). Small objects such as models, etc. should be hung or placed on a pedestal so all areas to be sprayed can be easily reached (a stand may be fashioned from an ordinary wire coat hanger or bottle etc.). Hold the tip of the airbrush about 6 inches from the surface. Use short strokes, moving the airbrush constantly at a steady rate parallel to the surface. Don't spray too

heavily. Apply a light coat, let dry, then apply another coat and continue until the desired cover-





KEEP AIRBRUSH PARALLEL TO SURFACE



FIG. 1 FIG. 2 FIG. 3

This exercise shown in fig. 1, will enable you to draw straight lines without forming dots or puddles at the beginning and end of each line. This is triggering again, see page 3. Fig. 2 is parallel line graduating from narrow to broad. These are made by releasing more color and at the same time, lift-

ing the airbrush away from the surface. Practice daily to develop trigger action control. Fig. 3, layout in pencil 1/2 inch squares. Airbrush the dots as small as possible and connect dots with straight lines of even tone. Practice every lesson carefully before proceeding to the next one.

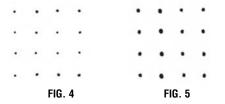
EXERCISE TWO

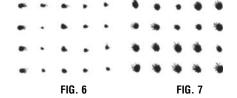
On a board or paper, lightly pencil in a number of 1/2 inch squares. Hold the airbrush about 1/2 inch from the surface and spray paint small dots on the intersecting lines, as shown in fig. 4. Use lig-

uid food coloring. When you are able to place the dots accurately, begin enlarging the size of the dots (fig. 5) by allowing more color to flow through the airbrush. At the same time increase

the distance between the airbrush and the paper or board. If the airbrush is held too closely to the paper with the trigger pulled all the way back and down, "puddles" will form and spread (as in figs. 6 and 7). Aim for accuracy not speed and continue

practicing until you can spray paint any size dot exactly where you want it. This simple lesson will give you control of position and density of dots or shapes you require, which are important for touch-ups and fill-in work.





MASKING OFF

In the next several exercises you will need to mask off a square area. Make a mask from 4 pieces of scrap paper (fig. 8). These masks are held in place by masking tape, keeping the atomized material from creeping into the margins around the area. When using masks spray over the edge.



EXERCISE THREE/EVEN TONES



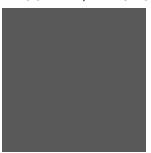




FIG. 9

FIG. 10

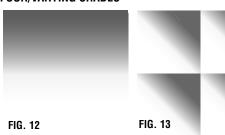
FIG. 11

To accomplish a flat tone, we will airbrush a fine consistency of paint from left to right at the top of the taped area. Hold the airbrush about four inches from the surface of the sheet. Be sure to spray a portion of the tape so that no light line shows when the masking tape is removed. Use the trigger technique on page 3 throughout this lesson. Now airbrush from right to left, overlapping the previously airbrushed strokes. Continue down the entire sheet, trying not to create a line pattern with the airbrush. Overspray the tape, both right and left and top and

bottom. Begin at the top again and do the entire page. Repeat the exercise until you reach the desired smooth coverage of the entire area. Do not attempt to cover the entire sheet with a heavy tone at one time. Build the tone gradually (figs. 9-11). Make sure the work and tape are dry before removing the masking tape. This should be done carefully to avoid tearing the surface of the paper it is adhered to. If your first results are not satisfactory, repeat the lesson until you are satisfied.

EXERCISE FOUR/VARYING SHADES

This lesson is similar to the previous one. This time you will start at the top and gradually fade into white (fig. 12). Do not fade abruptly and do not carry the tone further than 2/3 or 3/4 of the page. Remember, you must stop your tone shorter each time, since the overspray will build up. Fig. 13 is a combination of masking and varying shades. The important thing in this exercise is to train your eye so that all the small squares have the same tone value.



TECHNIQUES TO USE

Masking or frisket is used mostly when more than one color is applied. A new frisket is cut for each color and covers any area that should not be sprayed. Badger's Foto/Frisket™ Film is specially formulated for use on all surfaces commonly used for airbrushing.

For contour masking (models, ceramics, etc.) use masking tape, scotch tape or Foto/Frisket™ Film and cut to desired shape. Make sure the edges are pressed firmly against surface to prevent underspray.



A flat surface mask can be cut from Foto/Frisket™ Film. For a sharp edge, hold the mask flat in position. For a softer edge, elevate the mask slightly by resting on a ruler or other flat object.

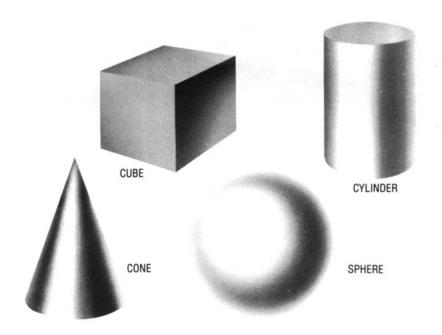


STENCILS



Stencils are used when a design needs to be duplicated, as in posters and decorating. Cut from stiff paper, Foto/Frisket™ FILM or NO-TACK Stencil Film, hold the stencil firmly in position and spray starting with the edges and work inward. A reverse stencil can also be used, spray along the stencil edge.

EXERCISE FIVE/THREE EFFECTS USING MASKS OR FRISKETS



Rendering these basic forms will provide instruction and sequence in shading these shapes, which comprise all of the shapes you will encounter. Combinations of these forms make up all of the various products, etc. In airbrushing these shapes, it is a general rule to have the light source coming from the upper left hand corner at about a 45 degree angle.

CUBE Make a line drawing lightly about twice the size of the above illustration. Cut a frisket for the outline and dividing lines of the separate sides. At this time remove the frisket from the side farthest from the light source. Gradually airbrush a tone from the upper left corner to the lower right hand corner. Repeat the gradual dark tone as necessary, then remask the finished side and start the other sides until the desired effect is achieved.

CYLINDER Note how the light varies on the cylinder and makes the top flat surface different from the curved area. The frisket is cut along the curved line and while the top is masked, the side is sprayed. Then the side is masked and the top is sprayed.

Only practice will enable you to know how dark to paint one side of the subject while the other is masked.

CONE Again cut a frisket of a cone shape. Remove the cone shape from the frisket. Start airbrush action from the top. Paint and flair slightly towards the curved base. Repeat the action on the right side until you achieve the tapered appearance as illustrated above.

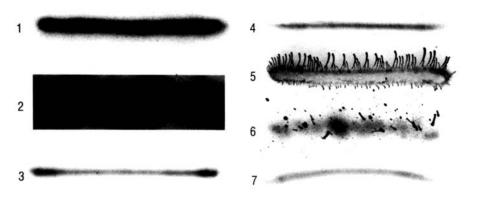
SPHERE Place a frisket on the board making sure the remaining portion of the board is not exposed to airbrushing overspray. Use a compass knife and cut your circle and remove. Gradually airbrush lightly around the entire edge of the circle in a curved, rocking, back and forth motion. Next, start from the bottom right hand portion of the circle and airbrush upwards towards the center not quite reaching the center. Allow a high lighted circular portion of the sphere near the upper left hand portion. Continue until the sphere takes on a three dimensional appearance.

TROUBLESHOOTING YOUR AIRBRUSH

- GRAINY SPRAY. Caused by paint being too thick. Add water or thinner sparingly to the mixture and check the needle and regulator tip for dried paint. Also check the air supply to make sure airbrush is being operated.
- 2) **BUCKLING PAPER**. Paint may be too thin or you may be applying paint in too heavy a coat.
- 3) PAINT BLOBS AT THE ENDS OF THE STROKE. You are spraying paint before moving your hand and stopping the movements before shutting off the paint flow.
- 4) FLARED ENDS. Caused by spraying too much paint too close to the paper. If a fine line is desired, lightly pull back on the front trigger.
- 5) CENTIPEDES. Caused by spraying too much paint too close to the paper. If a fine line is desired, lightly pull back on the front trigger.
- 6) SPLATTERING. Caused by permitting the needle to snap back into the tip. Always release the trigger gently. Check for dried paint on needle or tip. Also may be caused by triggering. See page 3 for proper triggering.

- 7) CURVED STROKE. Caused by arcing arm too close to the paper. Arm should always be parallel to the work, unless this effect is desired.
- 8) BUBBLES THROUGH THE COLOR CUP. The spray regulator might be turned out too far, or the head may be loose. Check both and tighten if necessary.
- 9) COLOR SPRAY CANNOT BE SHUT OFF. Tip may be clogged. This is recognized by a "spongy" feel when needle is set into tip. Remove the head from the airbrush and clean the tip – see Maintenance and Cleaning, page 3.
- 10) PULSATING. This is caused by the head being loose or the tip not seated properly. See page 3, Replacing the tip.

The only other reason that the brush may begin to pulsate is if the needle bearing wears down or falls out. There is a lifetime warranty on this part because the owner cannot replace this part. If this occurs send back to factory for no-charge service (see warranty, page 2).



Air-Opaque™ the ready to use airbrush colors.

Offers you a choice of 35 colors plus 8 pearlescent colors. All 43 are pre-reduced for instant use, color-fast, waterproof, vibrant, quick drying, non-bleed paints. They are formulated for use with airbrushes, technical pens or artist brushes. All Air-Opaque™ colors are non-toxic and completely intermixable.

Foto/Frisket™ Film

Foto/Frisket™ Film is a transparent self-adhering masking and stenciling material which is cut directly on your work. It is available in both matte and gloss finish. Both matte and gloss are available in 8-1/2″ x 11″ 10-sheet pack., 12″ x 15′ roll, 24″ x 15′ roll.

Brite-White™ Airbrush Paper

Designed for airbrushing techniques, it is a super, strong surfaced 50% rag, 145 pound sulfite paper. Brite-White™ holds up extremely well to frisketing material, drafting tape and adhesive. This paper has an extremely bright white surface which adds vividness and life to airbrushed colors. Brite-White™ will not buckle when sprayed on. Both sides can be used. Brite-White™ will accept all airbrush media and is available in 10-sheet, 18″ x 24″ packages.

VOLUME II AIRBRUSHING TECHNIQUES FOR CUSTOM PAINTING

By Carl Caiati - 48 full color pages.

HOBBY AND CRAFT GUIDE TO AIRBRUSHING

By Carl Caiati - 32 page book.

STEP-BY-STEP MODELER'S GUIDE TO AIRBRUSHING

By Susan Harris and Evan Roark

32 full color pages. Subjects include: Military Modeling, Figures, Diagrams and Scale Modeling of 69 Camaro.

VIDEOTAPES

30 minute tapes, perfect for classroom teaching BV-001 Introduction to Airbrushes, Accessories, and Airbrushing Mediums by Robert Paschal BV-002 Vol. I The Fundamentals of Airbrush Technique: Basic Exercises by Robert Paschal

BV-003 Vol. II Intermediate Airbrush Technique: Working in Color by Robert Paschal

BV-004 Vol. I The Art of Airbrushing Fingernails: A Basic Course by Elizabeth Anthony

BV-005 Vol. II The Art of Airbrushing Fingernails: Advanced Design Techniques by Elizabeth Anthony **BV-006** Vol. I T-Shirt and Fabric Airbrushing:

BV-000 Vol. 11-Shirt and Fabric Airbrushing:
Techniques for Getting Started by Tim Mitchell
BV-007 Vol. II T-Shirt and Fabric Airbrushing for the
Intermediate Artist by Tim Mitchell

BV-008 Cake Decorating with the Airbrush by Jerry Manderfield

BV-011 Aging & Weathering (& Stuff) with an Airbrush by Mac McCalla

BV-020 The Art of Airbrushing Wildfowl Carvings by George Krath

22-425 Tanning Application Instruction Video BV-009 Basic Model Painting with the Airbrush by John lee & Dan Osborn Available Soon BV-010 Tips, Tricks, and airbrush techniques for superdetailing models by Joe Porter Available Soon



AIR-OPAQUE™ AND AIR-TEX™ COLORS



Foto/Frisket™



AIRBRUSH HOLDER



PLEASE READ CAREFULLY BEFORE USING YOUR BADGER AIRBRUSH

Your new BADGER airbrush should provide you with many hours of enjoyment. However, because of the nature of airbrushing and of the composition of materials which you may use in your airbrush, we are providing you with information about potential hazards.

Many materials commonly used in arts and crafts projects (such as lacquers, varnishes, adhesives, fixatives, powders, acrylics and solvents) can be extremely hazardous. Not all of these materials will be used in your airbrush, but may be used in some other phase of your project. We recommend that you always find out what is in the material you use. We suggest that when using **any** chemical substance that you request a copy of the manufacturer's **Material Safety Data Sheet** from your art supply dealer. This will give you some indication of the dangers posed and some of the precautions you need to take.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS CAREFULLY.

CHILDREN Hazardous materials pose an even greater risk to children due to their lesser body weight and frequent lack of care in following directions. CHILDREN SHOULD ALWAYS BE SUPERVISED WHEN USING AN AIRBRUSH OR ART MATERIALS (unless the materials have been certified by the Crayon, Watercolor and Craft Institute). An airbrush is not a toy. It should not be pointed at anyone or at oneself.

GOOD HYGIENE IS IMPORTANT ANYTIME YOU ARE WORKING WITH ART MATERIALS.

- · Do not smoke, eat or drink while airbrushing.
- Avoid putting your fingers in your mouth while working on art projects.
- Be sure to clean your fingernails and wash your hands when you are finished.
- Be especially careful of the materials you use if you have cuts or open sores.
- STOP WORK AT THE FIRST SIGN OF DIZZINESS, NAUSEA, HEADACHE, BLURRED VISION, OR SKIN IRRITATION. Seek fresh air
 immediately, and call a doctor if the symptoms persist or are severe.

VENTILATION An open window does **not** provide adequate ventilation when working with hazardous art materials. When working with these materials, you should have an exhaust ventilation system (one which removes vapors, dusts, etc., from the area in which you are working and vents to the outside). A general ventilating system dilutes toxic vapors with fresh air to lower their concentration to a safer level.

Many factors have to be considered to determine the kind of ventilating system you should have. We suggest that you contact the National Institute for Occupational Safety & Health, (NIOSH), Robert A. Taft Laboratories, 4676 Columbia Parkway, Cincinnati, Ohio 45226 for publications which they have dealing with ventilating systems.

RESPIRATORS A respirator may pose more of a hazard than a help unless:

- vou get one designed to filter out the specific hazardous substance you are working with
- one that fits properly
- · you keep it properly cleaned and maintained.

We suggest you buy only a NIOSH* approved respirator and read and follow carefully the instructions which come with it.

A respirator may not be suitable for some people with heart or breathing problems. Information on respirators is also available from NIOSH at the address above

RESOURCES In addition to NIOSH, you might want to read Health Hazards Manual for Artists by Michael McCann, PhD (published by the Foundation for the Community of Artists, 280 Broadway, Suite 412, New York, New York 10007) or contact the Consumer Products Safety Commission. Washington. D.C. 20207.

BA327 Made and Printed in U.S.A. 10/05

© BACo.2005





9128 W. BELMONT AVE • FRANKLIN PARK, IL 60131 www.badgerairbrush.com



