

## SPA COSMETIC REPAIR WITH THE **QUICK-GLAZE** SYSTEM (GRANITE, PEARL, METAL, or MARBLE COLORS)

### DESCRIPTION

The **QUICK-GLAZE** repair system has been formulated for repairing marble and solid color spas. It is commonly used by professional repair people, since it can provide a high performance repair, and can be completed quickly. However, a clean environment is required to avoid airborne contaminants from affecting the appearance of the repair. If necessary, the finished repair can be buffed and polished if it is allowed to fully cure, which takes a few hours.

Multi-Tech Products also provides a “MMA” system for repair. It can be buffed sooner to provide maximum surface gloss and smoothness. Even though it is designed primarily for factory use, it must be fully cured before it is buffed. However, it is only recommended for repairs that do not extend into the wet areas of the spa. Please visit us at [www.multitechproducts.com](http://www.multitechproducts.com) for more information as well as procedures for repairing other types of spa defects, such as blisters and delamination.

Multi-Tech Products offers repair materials that match all popular colors and textures that are commonly sold in the industry. Refer to our website for more specific information on colors that are available. Repairs to spa surfaces start with a special filler, designed to avoid failure problems seen with polyester body fillers and putties due to the effects of water, spa chemicals, and sunlight. A high performance acrylic resin is the recommended filler for spas. It should always be used when there is long exposure to water and spa chemicals. We also offer an improved polyester filler, primarily for bathtubs, but it can be used for spa repair areas that are not exposed to these conditions. See the Bath Repair procedure to learn how to use it. The filled repair is then spray-coated (using an air brush) with a color matched basecoat. Toners allow adjustment of the basecoat color to be lighter or darker. The repair is finished by applying a protective, polyurethane, clear topcoat. These repair coatings allow the damaged surface to be repaired to an appearance almost like new.

While there is no implied warranty, the materials and techniques described in these procedures have been designed to withstand the normal operating conditions of spas. However, success of the final repair also is dependent on the experience and skill of the individual repair technician.

NOTE: The use of conventional automotive repair products such as polyester type fillers (Bondo, Evercoat, Akemi and Duraglass), lacquer spot putties and primers (although labels may read “acrylic” or “water-proof”) absorb water and are not recommended with this system, especially in spa applications. Substitution of alternate products can have a severe detrimental effect on the performance and durability of the repair.

### MATERIALS

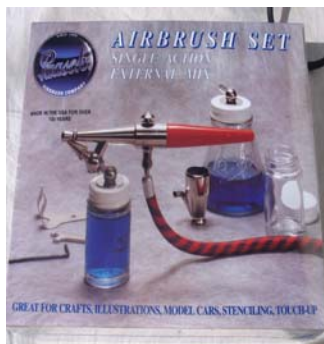
- A special high performance, white acrylic filler
- A special granite filler for granite spas
- Primer coat(used only with pearl/metal colors)
- Hardener for Primer coat and Base coat
- Base coat(s) matched to the spa color
- Top coat, thinner/reducer and hardener
- Toners for adjusting color for a better match or used as an accent color for marble
- Quick Glaze Finishing Solvent for Primer coat and Base coat
- Hand glaze, a non-silicone/non-wax surface cleaner
- Isopropyl alcohol



## EQUIPMENT

The equipment listed below is needed to use the **QUICK-GLAZE** repair system. Similar equipment made by other manufacturers may be substituted. This equipment is available from Multi-Tech Products. A working knowledge of the equipment and application techniques is assumed for these repair procedures.

- A 1/4" Die Grinder (electrical or pneumatic) with cylinder grinding points (Dremel-type tools typically are not robust enough for this job)
- Industrial Heat Gun (Again, a hair blow dryer is not sufficient)
- A 3/8" Variable Speed Drill (electrical or pneumatic)
- A rubber 3-inch diameter disc assembly for the drill (similar to the Roloc Disc pad)
- 3" Sanding Discs - 50, 36, 24 grit. (50 grit is optimum.)
- Wet/dry sandpaper in 80, 100, 220, 320, & 400 grit
- A single action airbrush with a "3" or "5" tip (kits include a 2 1/2 oz. and a 1/2 oz. spray cup, a cloth braided hose). Extra spray cups for mixing and utilizing different colors may be necessary.
- For large (> 1 sqft.) repair areas, a Touch Up Spray Gun with siphon cup is useful. The spray gun can also be gravity fed.
- High pressure (45 to 55 psi) and airflow (1 CFM) air source – A compressor needs to be a tank-type, to provide adequate CFM
- Variable Speed, Heavy Duty Polisher/Buffer - at least 2500 – 3500 rpm capability is recommended
- Buffer Pad (industrial quality) - purchase the pad first and then match it up to the appropriate buffer.
- Rubbing Compound or Buffing Bar.
- Clean wiping cloths or white paper towels
- Vapor/Particulate Respirator - NIOSH/MSHA TC-23C.



Airbrush Set



Industrial Heat Gun



Grinder & Drill




Heavy Duty Buffer

## SAFETY PRECAUTIONS

Spa repairs require personal contact with a variety of components, each having its own unique characteristics. When handling these materials, read and follow the safe handling procedures on the labels and the applicable MSDS. During grinding, drilling, sanding, etc., eye and hand protection is required. Do not breathe vapors or mists. Individuals with a history of lung or breathing problems should not use or be exposed to this product. Keep away from heat, sparks and flame. Vapors may cause a flash fire. Close containers after each use. Dispose of properly.

Wear a vapor/particulate respirator (NIOSH/MSHA TC-23C) while mixing hardener with coatings, during application (especially when overall refinishing) and until all vapors and mists are exhausted. Individuals with a history of lung or breathing problems or prior reaction to isocyanate should not use or be exposed to this product. Do not permit anyone without protection in the painting area. Follow the respirator manufacturer's directions for respirator use.

## PROCEDURE

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| <p>Before a repair can be started, the spa must be drained of water, and be dry and clean. The steps used to repair a surface crack are:</p>   | <p>Spa surfaces clean and dry</p>   |
| <ol style="list-style-type: none"> <li>1) Crack preparation (grinding and sanding)</li> <li>2) Filling the crack</li> <li>3) Applying the spa color coating</li> <li>4) Applying a protective clear topcoat</li> </ol>   |   |
| <p>It is recommended that the surface be allowed to fully cure for at least <b>7 days</b> before water is re-introduced to the spa. Place the spa cover in a position to allow air ventilation during the drying process. Cool temperatures will lengthen the cure time. If condensation occurs on the repair coatings during curing, it will affect the quality and time to cure.</p> <p>Down load "Curing Guide" from our website under our procedure section.</p> | <div style="text-align: center;">  <p><b>LET CURE FOR 7 DAYS<br/>BEFORE FILLING WITH WATER</b></p> </div> |
| <p>Before starting a spa repair, the jets and other areas that should be protected from overspray should be masked.</p>  |   |
| <p><b><u>Preparing the crack and filling</u></b></p>   |   |
| <p>Spas are produced using a plastic (normally an acrylic) sheet that is reinforced from the back using a fiberglass composite or other strong plastic.</p>  |   |

Preparation and filling of the crack are the same regardless of the color or texture of the spa. As a general rule, we recommend using only the acrylic filler on spas. This provides a very hard, non-porous surface that resists the spa's environment.

It is a two-part resin.

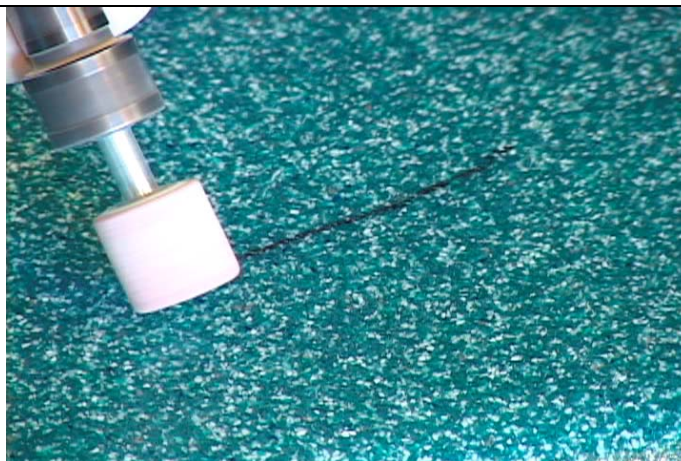


A poly-filler is available for jobs where the repair will not be constantly exposed to water, moisture or chemicals. It uses a cream hardener, and is easier to grind and sand. The optimum area for the use of poly filler on a spa's surface would be on the outer lip where the cover does not retain moisture.



**The steps for preparing the crack for filling are:**

- 1) Terminate the crack by routing it out from one end to the other using the rotary grinder.



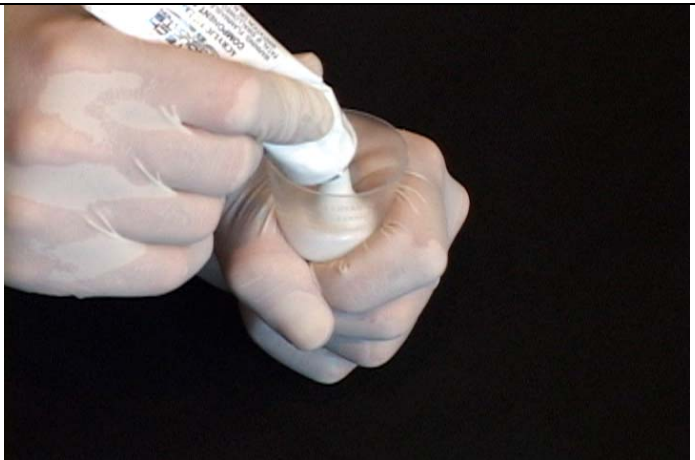
2) Remove all loose fragments from the edge by sanding with 100 grit wet or dry sandpaper. Control the sanding to the immediate area of the defect to minimize the size of the repair.



3) Clean the area with a soft cloth or paper towel slightly dampened with isopropyl (rubbing) alcohol.

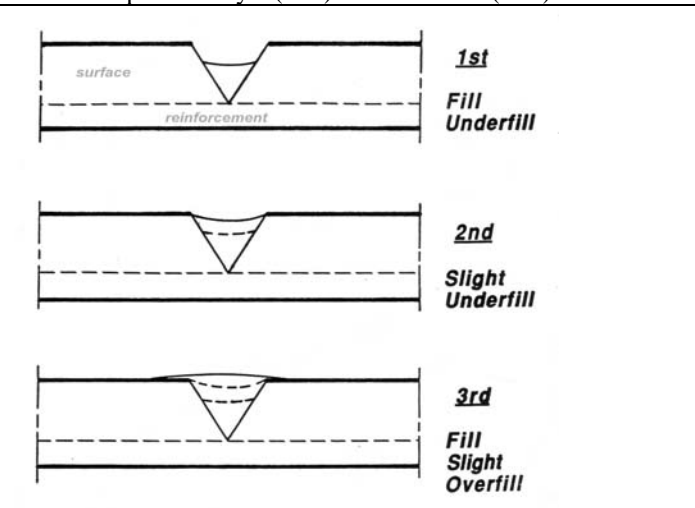
4) Chemical components should be at room temperature.



5) Prepare the acrylic filler by dispensing the desired amount of component "A" into a plastic graduated mixing cup. Add 30 drops of component "B" per each 1/2 ounce of "A". Mix thoroughly with the wooden stirrer. Use immediately, since it will harden within 15 minutes.



30 drops of catalyst ("B") to 1/2 oz. filler ("A")

6) Fill the crack with the acrylic resin to slightly below the spa surface. Use gentle continuous heat with the heat gun around the edge of the crack, without pointing the gun directly on the crack. This will accelerate the curing process. Allow to cure for 5 to 10 minutes. Now, immediately, fill again. Filling should still be below the spa surface.



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| <p>7) Grind any excess white acrylic filler from around the crack to avoid bleed-through in the final repair. Repeat the curing process.</p> <p>Use 36 to 50 grit sanding discs.</p>  |    |
| <p>8) Immediately, fill again (3<sup>rd</sup> time) so that the fill is slightly above the spa surface. Sand with 100 grit wet or dry sandpaper if more than 15 minutes expire between applications. The filler should be mostly cured but still soft to the fingernail at the tack coat. This promotes adhesion of the separate applications. Using too much filler in a single coat can result in excessive heat, which may result in air bubble formation.</p> |  |
| <p>9) This stage filling process is the same for the acrylic filler and granite paste repair systems to avoid air pockets. The green granite surface is used for demonstration purposes although it does not represent the marble effect.</p> <p>After final filling and curing, grind the filled area with the grinder. Use a slow speed to prevent excessive heat buildup and melting. Continue until the surface is flat and even with the spa surface.</p>    |  |
| <p>10) Dry sand lightly with 100 grit sandpaper.</p>  |  |
| <p>11) Now you may wipe the surface with a very thin coat of a new batch of the acrylic filler to fill in imperfections such as pin holes or grinder marks. Do not use anything other than the acrylic filler for this purpose.</p>   |  |
| <p>12) Allow a few minutes for curing, and then begin wet sanding with a progression from 220 to 320 to 400 grit wet/dry sandpaper. Now the surface is ready for application of the spa color matching system for marble, solid and pearl colored acrylic effects.</p>  |  |
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## Repairing Granite Surfaces

Granite surfaces are generally the easiest to repair.

An acrylic resin, with colored particles like the sheet, is used to match the appearance and texture of the surface. Multiple particle ingredients can be ordered from Multi-Tech to better match the particle size in the spa, which have been deformed in the manufacturing process.



Aristech Teal

1) Starting from a crack filled with the white acrylic resin filled in stages like the above filling procedure, grind a depression that is about 1/16" below the spa surface.

This void will be filled with the colored filler. In fact, the colored filler can be used for the entire filling process for small cracks, or when acrylic filler is not available.



2) Using the mixing cups, combine component "A" with component "B" in the ratio of 30 drops of "B" to each 1/2 oz. of "A". Mix well.



3) Apply this material in the depression and fill so that it is above the spa surface.



4) Allow it to cure for about ½ hour. The heat gun can be used to accelerate. Direct heat to the immediate surrounding area, and not directly on the filler.

5) Grind the area smooth with the drill and disc pad. Use a 50 to 36 grit disc.



6) Sand the surface to the desired smoothness using a progression from 100 to 320 grit sandpaper.



Now you are ready to apply the protective, clear topcoat. We recommend using only the K2000 product since it withstands the effects of spa water and chemicals. The required components include a hardener, thinner/reducer, and the topcoat.



1) Pour an ample amount of K2000 topcoat into a mixing cup or airbrush bottle. Add the hardener in the ratio of 1 part hardener to 3 parts topcoat.

1 part hardener to 3 parts topcoat



If desired, a texture enhancer can be added. It is added in the ratio of 1 part enhancer to 32 parts topcoat.



2) Apply this mixture to the repaired area by dabbing with a small paintbrush.

Allow up to 7 days before filling spa with water, keep the surface dry to prevent damage to the repaired surface until it is ready to be filled. (See beginning of procedures.)



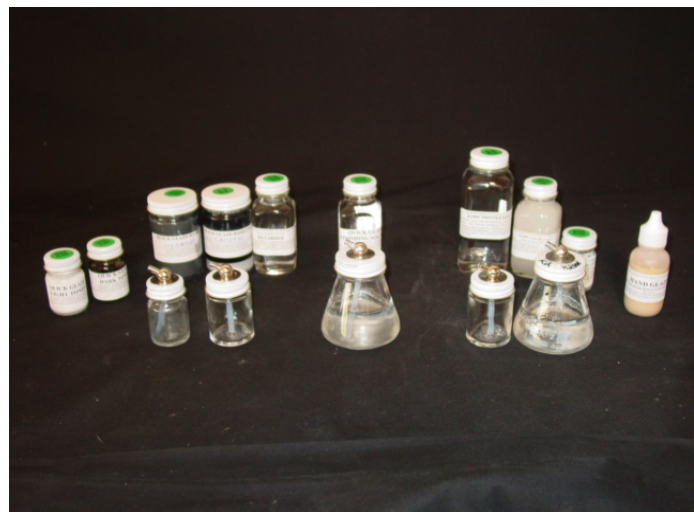
### **Finishing a smooth, solid color, pearlescent or metal spa surface defect**

The materials needed to complete this repair include a primer coat, a base coat, and the K2000 top coat. The Quick Glaze hardener is substituted with the K2000 hardener for the primer coat and base coats. The Quick Glaze Retarder is used to thin these color base coats in all temperature environments in replace of the Quick Glaze Reducers. The Quick Glaze Finishing Solvent is required to allow “feathering” to minimize the paint “halo” effect on the color base coats as well. The K2000 top coat, hardener and thinner/reducer are required for protection and finishing. A hand glaze cleaner minimizes static and film from the surface. The primer color coat is only used for pearlescent colors. We will explain this process.



**alba**  
**LS8001**

Lucite® pearlescent color



## PEARL COLORS

1) Starting from a smooth, filled crack, the first step is to apply the primer coat



2) Start by pouring an ample amount of the primer coat into a mixing cup. Add the K2000 hardener to the cup in the ratio of one part hardener to eight parts basecoat. Mix well.

Now add the retarder in the same ratio of 1 part retarder to 8 parts basecoat/hardener mix. Mix again. *When using the K2000 topcoat, its hardener and thinner is substituted into the Quick Glaze products for the basecoat and primer color coats.*



3) Perform a test spray on paper or other substitute. Additional thinning with the retarder may be required. If so, add an additional 25% of retarder to achieve smoother spray out with the airbrush.

4) Now prepare the base coat that matches the pearl base color of the surface in the same procedure as the primer coat. Perform a test spray to confirm smooth spray out and adjust retarder accordingly.

5) Finishing solvents are used with each coating to promote good wetting and gloss. The Quick Glaze finishing solvent is used for the primer coat and base coat. An ample amount should be poured into a separate larger airbrush bottle.



6) The topcoat should be prepared prior to starting the process to avoid excessive time between coats. Pour the desired amount of the K2000 topcoat into a mixing cup or airbrush bottle

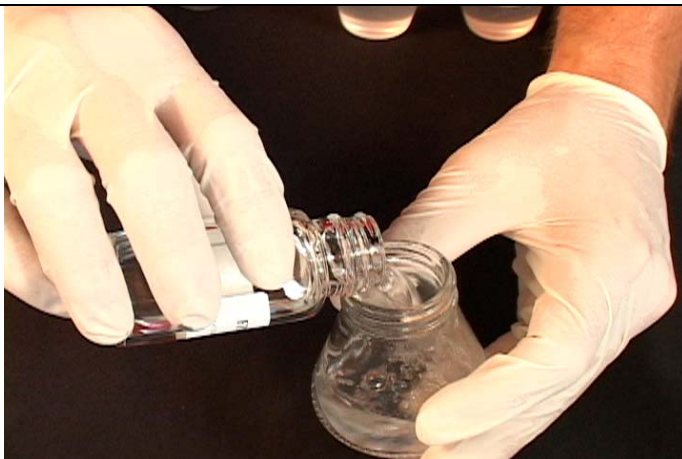
Add the K2000 hardener in the ratio of 1 part hardener to 3 parts topcoat.  
Mix thoroughly.

Now add some of the K2000 thinner/reducer in an amount equal to about 10% of the topcoat volume.  
Mix again.

Test spray. Additional thinner/reducer can be added to increase thinning, if required. Add more in 10% increments to avoid over dilution.



7) The K2000 thinner/reducer is used as the finishing solvent for the protective, clear top coat. Pour an ample amount in a separate larger airbrush bottle.



8) Prepare an area around the repair that is significantly larger than the repair by cleaning with a clean soft cloth moistened with isopropyl alcohol.

9) With a clean cloth, now apply a generous amount of Hand Glaze to the cleaned surface. Apply the Hand Glaze only on the area surrounding the filled area. Avoid putting the Hand Glaze right on top of the filled zone. Feather it into the sanded area.

With another clean cloth, work the hand glaze into the surface achieving a nice clean and glossy surface. This may require several clean cloth to achieve a film free finish.

Be sure to extend the cleaned area much larger than is expected to spray. For example; if the repair is in the center of the lip, clean the whole length of the lip in both directions. For seat areas, clean the whole seat stopping at the appropriate radius.

Use a tack cloth to remove any dust or foreign particles.



10) Begin spraying the primer coat by holding the air brush 2 to 3 inches from the surface, with the air pressure set at 45 to 55psi. Feather the paint from the center to the outer edge.

The goal is to achieve a shine in the center of the sprayed area covering the acrylic filler. The outer edge will feather with a diminishing affect.

Typically, two passes are required for complete coverage. A dry film thickness of 0.002" is generally adequate. Thicker coats will greatly increase drying time.



11) Immediately upon completion, spray some of the Quick Glaze finishing solvent on the outer edge of the sprayed area. The finishing solvent can be used at any convenient time to promote a good final appearance and wet out the coating.



12) Begin spraying the pearl basecoat by holding the air brush 2 to 3 inches from the surface. Feather the pearl basecoat from the center, covering the primer coat to the outer edge again. Two passes are generally required. Use finishing solvent again, particularly on the outside edges for smooth wet out.



13) With the base coat(s) applied uniformly and smooth, you are ready to apply the clear top coat, supplied as a matte finish for metals or a gloss finish for pearl-like colors. It should be applied no later than 30 minutes after completing the basecoat. Apply it using the same techniques, and use the K2000 thinner/reducer for the Finishing Solvent. Be sure to cover the entire coated area to achieve a good even gloss. Feather the clear top coat to create a smooth transition by wetting out with the Finishing Solvent.

TIP - Adding a little basecoat to the clear topcoat can help achieve a better pearl effect.

The topcoat should be tack-free In ½ hour.



The polyurethane clear topcoat can be buffed and polished provided at least 3 hours are allowed for curing, and the buffing process stays within the sprayed areas to avoid line formation.

See Multi-Tech Products Buffing and Polishing Video on our website.



Allow up to 7 days before filling spa with water, keep the surface dry during the curing period. (See beginning of procedures.)

Down load “Curing Guide” from our website under our procedure section.

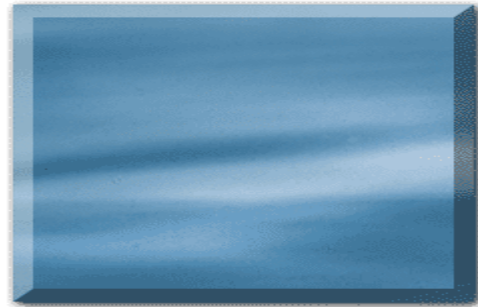


**LET CURE FOR 7 DAYS  
BEFORE FILLING WITH WATER**

The airbrush should be disassembled and cleaned after each use.

**Finishing a multi-colored, random-patterned marble or swirl spa surface defect**

Marble colored sheet (spas) are manufactured by using a combination of two or three colors of liquid resins that are poorly mixed, creating a random pattern at the sheet surface. Forming the flat sheet into the spa shape will cause additional variations in the appearance as it is stretched into a mold. Repair of these surfaces are the most challenging of any spa repair, but these multiple color, random patterns can be closely duplicated by well-trained repair professionals using two or three basic colors and special air brush techniques. Visit our website for additional techniques and training assistance.



Aristech Navy

The following airbrush techniques have been developed to recreate these effects. We recommend practicing the defined airbrush strokes on a separate piece of paper to perfect the technique.

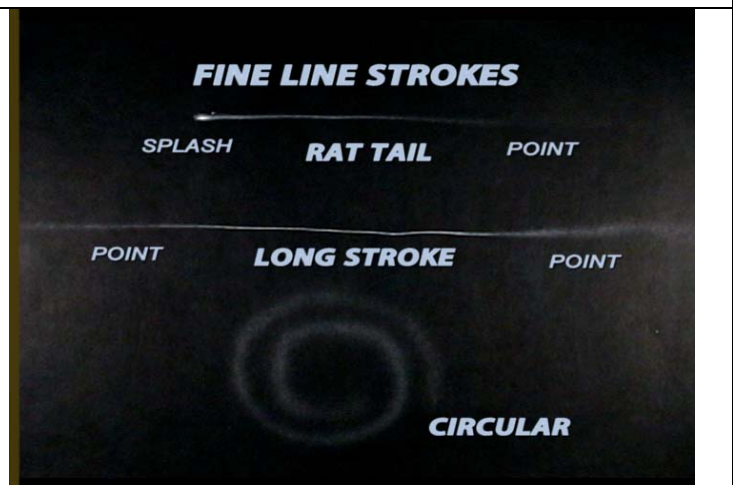
The process for repairing a marble pattern has been simplified by defining several different airbrush strokes used to duplicate the appearance.

These special strokes are called the rat tail, long stroke, and circular stroke.

The basic stroke is produced by adjusting the airbrush tip to yield a fine line when held very close (1/8") to the surface. The rat tail stroke starts with a splash and ends as a point.

The long stroke starts and ends as a point. Increasing the distance between the tip and surface, and opening the tip to produce a wider pattern, creates a fading spray pattern. You use a slight fade adjustment to create the circular stroke.

Note: The coating liquid being sprayed may require more reduction to create finer lines and smooth fade strokes. A 25-50% product reduction may be required.



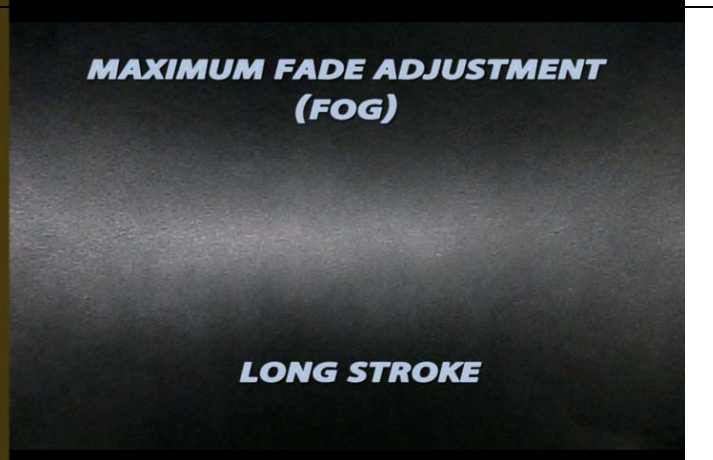
A useful deviation from these basic strokes is a larger fade adjustment. Here is what the rat tail and long strokes look like with a fade adjustment.



Here is what the circular stroke with a fade adjustment looks like.



Finally, a fog coat is produced with an open tip and a gap of 10 to 12 inches between the airbrush and surface. You use the long stroke for this effect.



The materials required for this procedure are:

- Quick Glaze basecoats in each of the primary spa colors
- Quick Glaze finishing solvent
- K2000 Topcoat
- Hand Glaze
- Light & Dark Toners
- Quick Glaze Retarder
- K2000 Hardener
- K2000 Thinner/Reducer
- Lacquer Thinner
- Rubbing alcohol
- Tack Cloth



Five separate airbrush bottles are needed.

Jets and other areas that need protection from overspray should be shielded with a high quality tape.

Starting from a filled and sanded defect, you are ready to start the procedure.



1) Prepare the basecoat(s) in each color and the K2000 clear topcoat as described in the pearl procedure. Intermediate colors and tones can be created by combinations of the base coats with the light and dark toners. The toners can also be used as base coats alone to achieve the color effects and mixtures.




2) Check the color match of these basecoats by dabbing some on the spa surface near its color. Let it dry. Adjust colors as needed. Refer to our website for more information on this subject. The dried coating dabs can be removed using lacquer thinner.

See our Spa repair video for a closer demonstration of this.



3) Clean an area around the repair with isopropyl alcohol, apply and wipe the Hand Glaze as instructed in the pearl section.



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| <p>The steps to create the marble pattern are:</p> <ol style="list-style-type: none"><li>Create a body to cover the filled area</li><li>Add lines to the circumference of the body</li><li>Fade the edge of the body using feathering</li><li>Connect the lines through the body</li><li>Darken</li><li>Blend</li></ol>   |  |
| <p>4) Use a test spray to confirm the ability to duplicate the brush strokes, and to verify the quality of the spray.</p>   |    |
| <p>5) Start spraying the basecoat (lightest color first) with the airbrush as you would spray over the filled area on a pearl or solid pattern. The second layer should create a gloss area over the filled area covering any minor pinholes and sanding marks. This will create the "body".</p> <p>The heat gun should not be used to accelerate drying, but the airbrush can be used by blowing air onto the sprayed coating.</p> |   |
| <p>The airbrush should include a desiccant filter to avoid introducing moisture.</p>  |  |
| <p>6) Liberally use the Quick Glaze finishing solvent to assist the wetting of the coating and eliminate orange peel between any of the color coats.</p>  |  |

7) Now use the rat tail stroke to create lines from the body center to the right edge, and then from the center to the left edge. Be sure to use the flow of the lines and follow the direction of the pattern with the creation of the lines.



8) Now, using a fade adjustment with the rat tail stroke, feather the coating from the center to the outside region of the repair. Spray enough so the outline of the body disappears.



9) The darker color is now applied. Look for a dominating linear line (streak) running through the repair area. This becomes the reference line. Often, it is the center of the body. Now, using the dark color, and the long stroke, spray a similar line connecting the end points through the repair. Following the reference line pattern, continue to create lines from the reference line, which are consistent with the overall orientation of the pattern. Work from the reference line out to the right edge. Repeat this process on the left side. This should be continued until a satisfactory duplication of the marble pattern is achieved. The finishing solvent should be used to improve lay down and control orange peel and to generate a glossy surface.

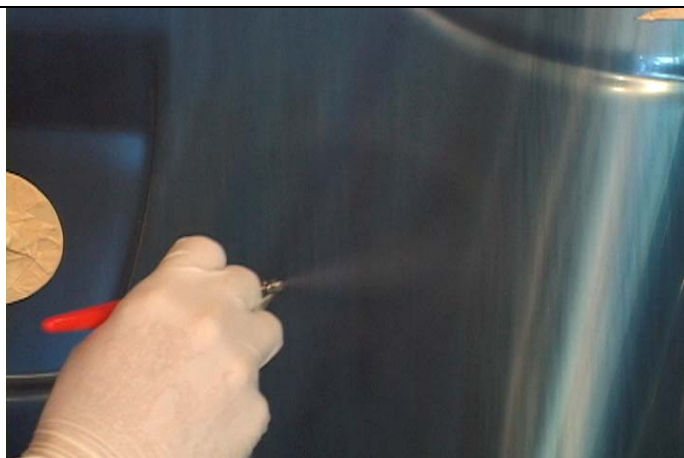


10) Sometimes the light and dark toners are needed to recreate all of the existing tones and cross patterns. This is accomplished while maintaining consistency in the overall look of the spa surface pattern.

11) A final layer of the initial light color is now sprayed using a light to heavy fog spray to soften the lines, and blend the various color tones. At any step of the color application, colors and effects can be repeated and or sprayed over.

12) Finally, apply the K2000 protective topcoat as described in the pearl section, utilizing the finishing solvent to wet out the edges of the complete spray area.

Try to complete this entire process within 30 to 45 minutes.



The repair is finished.

Allow up to 7 days before filling spa with water, keep the surface dry during the curing period. (See beginning of procedures.)

Down load “Curing Guide” from our website under our procedure section.



**LET CURE FOR 7 DAYS  
BEFORE FILLING WITH WATER**

## DISCLAIMER

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While there is no implied warranty the materials and techniques described in these procedures have been designed to withstand the normal operating conditions of spas, bath ware, boats and utility applications. However, success of the final repair also is dependent on the experience and skill of the individual repair technician.

FOR ORDERS AND INQUIRIES CONTACT:

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**April 11**