



**AQUALUTION**

WATER EVOLVED

# TRAINING MANUAL



**MATRIX**  
**SYSTEM**  
AUTOMOTIVE FINISHES



# Transition to Waterborne Basecoats



# Welcome To The Future

Matrix System is committed to providing our customers with high quality refinishing products at prices they can afford. Thank you for joining us today as we take these next steps together in providing you with the solution to the new Waterborne Revolution... Aqualution™.

The face of the refinish industry is changing rapidly as chemical technologies continue to evolve we find ourselves increasingly reducing our environmental footprints. No where else is this more apparent today than in the state of California; where new more stringent state mandated regulatory changes have been adopted in order to further the progress that clean air legislation has made in the last 10 years. This new legislation mandates that basecoat color systems be converted from solventborne to waterborne technologies by January 2009. Matrix System is prepared to meet these challenges today and intends to work with you as our partners as we make this transition together.

Aqualution™ by Matrix System has been developed to provide the body shop with the ability to respond to these challenges today, as we all make the transition into tomorrow's technologies. As we introduce the Aqualution™ waterborne basecoat system it is important to provide you and your employees with the training and support this important transition demands. Please do not hesitate to ask any questions you may have. We appreciate the time and effort you have taken to "Put it to the Test" in the past and look forward to working with you as we dive into the future of automotive refinish.



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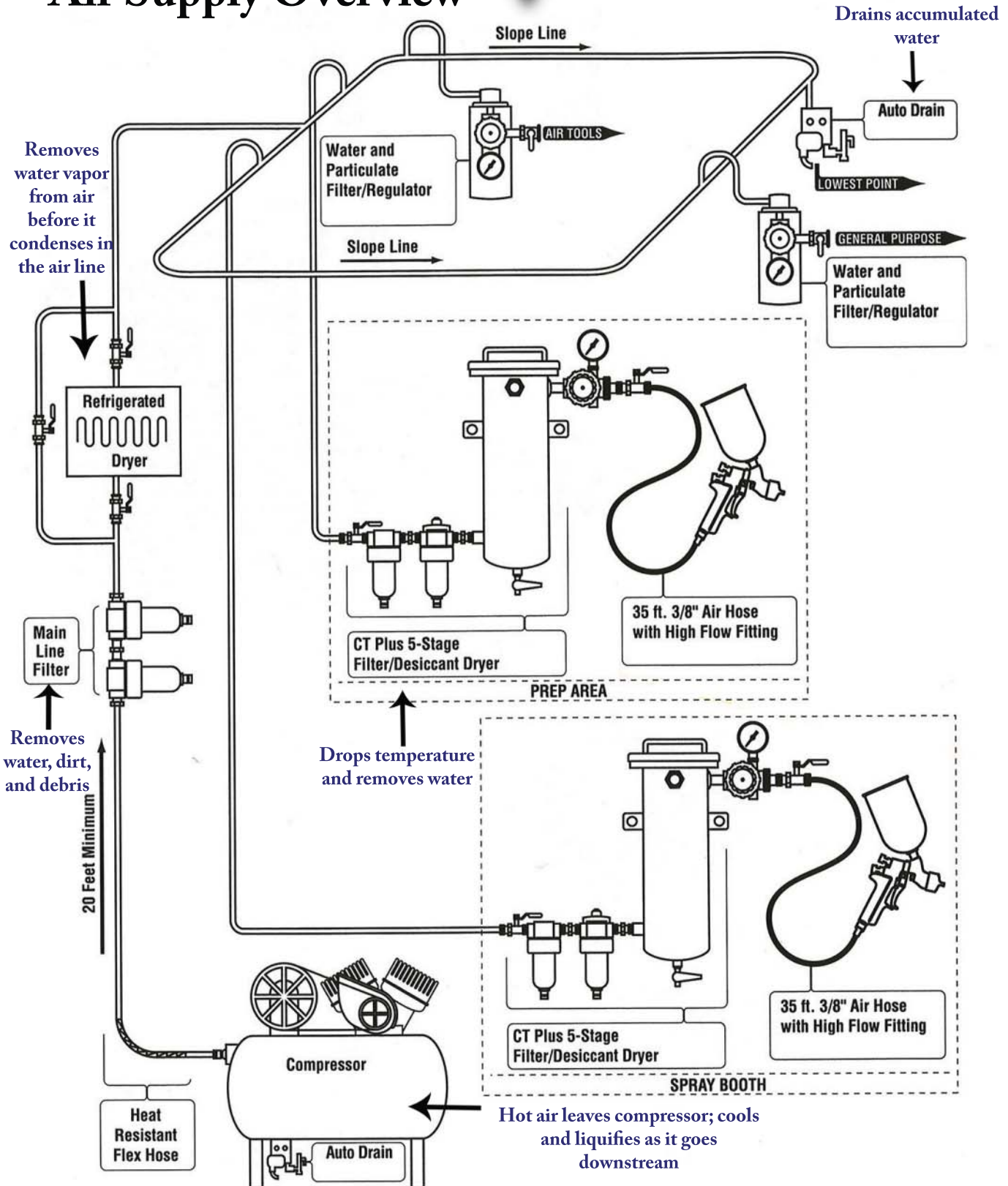
## **Air Supply Analysis**

The use of waterborne basecoats definitely requires new air treatment tools. When spraying waterborne paint it is required that the air is free of oil vapor and dirt. Even the slightest amount of contamination can cause coating imperfections. It is highly suggested that your shop is properly piped and has an adequate air filtration system. Check compressor ratings to ensure it can meet the air supply demands of the equipment used in a shop – including dryers, filters, and spray guns. The CamAir® auto drain by DeVilbiss® will help eliminate moisture from the compressor and will assure a superior finish. Install either the CamAir® 2-stage filter/regulator or the CamAir® 5-stage filter/regulator/dryer for the cleanest, driest air possible.

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## Air Supply Overview





## Climate Care for Waterborne Paints

Conversion to waterborne paint products is environmentally responsible, but also comes with additional forms of maintenance. When working with water-based products it is extremely important to pay attention to proper climate control, especially in locations that have cold winters or exceptionally hot summers.

Two key components involved in working with waterborne paints are temperature and humidity. Neither of these factors should be taken lightly. Low temperatures can cause your product to freeze. The optimal temperature that you should store your waterborne paints should be above 35° F. If the temperature falls lower you could risk damaging your entire supply. If your paint has experienced a shift in its color or if it has started to gel, then you are going to need to re-evaluate how you're storing it.

Humidity plays a huge part in how quickly paint dries. If there is too little humidity, then the paint will dry too quickly causing you to lose some of your luster. Too high and some moisture will get caught beneath the clear coating, which will eventually cause "popping" and "blushing."



## Enhance Drying Productivity

In order to prevent excess or insufficient moisture from causing a problem there are different types of equipment. The most conventional method is using air drying machines. By having a constant stream of air blowing parallel to the surface, you will help move away layers of humid air that will linger above the coating during drying. The most economical and flexible choices are portable, hand-held dryers like the DMG™ dryer from DeVilbiss®. The DMG™ dryer is very effective in creating air movement while using less air volume than competitors. Please note that any type of portable dryer should be used in a clean environment since the turbulence may lift contaminants from floors and transfer onto the paint surface.

Another method of drying is through infrared curing. Many large shops will want to have their spray booths installed with heating and air movement devices primarily to increase production. This type of equipment along with air movement will significantly reduce the time needed to cure waterborne coatings. Fillon Technologies® features two compact and mobile quick drying systems ideal for saving time. The Spot™ Infrared Drier (800 Watts), which is a lightweight, short wave mobile infrared is easy to handle and includes a portable stand and mechanical timer. This lamp can also be positioned to sit on the floor at a 45° angle to cure rocker and underbody panels. The Spot™ has a drying area of 18" x 12" with a drying height of up to 57". The Quatro™ Infrared Drier (3200 Watts) is the most flexible lamp for adjusting the bulbs to reach many different drying positions. The lamps can be adjusted to any vertical or horizontal position for curing body panels below the roofline. The Quatro™ has a drying surface area of 43" x 35" with a drying height of more than 6'.



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## **Preparing your Paint Mix Room and Prep Station for Waterborne**

The most important issue with waterborne paints is keeping a clean prep station and paint mix room. This can be accomplished by doing the following: 1) wash the vehicle thoroughly before work begins, 2) keep the floors and surrounding areas clean and dust-free, 3) change filters regularly, 4) dispose of all used rags and other waste immediately, 5) do not store jackets, shirts, or other sources of fibers in the mix room, 6) keep paint canisters sealed and stored properly, and 7) ensure that the airflow system is working at all times. To ensure that you have a well kept prep area, develop a daily cleaning schedule to minimize dust and dirt and keep tools and materials clean and stored away to avoid reintroducing dirt.



## Spray Equipment

Matrix strongly suggests using separate spray guns for waterborne coatings in order to avoid contamination and material clotting. If water and solvent borne base coats are used in the same spray equipment this could cause equipment damage, contamination, and costly redoes. Waterborne guns should have corrosion-resistant fluid passages, gun body, and paint cup. DeVilbiss® offers the CVi™ Waterborne Gravity Gun (HVLP or Trans-tech high efficiency), GTiW™ Waterborne HVLP Gun (HVLP or Trans-tech high efficiency), and SRiW™ (HVLP) all proven with European and waterborne materials.

In addition to the waterborne spray guns, Matrix recommends the use of a disposable cup system. Disposable cups make paint clean up easy and cost effective. It also expedites color change, reduces time and material clean up, and is safe from outside contamination. DeVilbiss® DeKups® are a perfect size for any repair job and come in a variety of sizes.

Stop wasting your time cleaning when you could be painting! A separate gun cleaner is highly suggested for waterborne materials. These are made of non-corrosive materials and use water to clean spray equipment. Fillon Technologies® offers the Aqualine 50™ and the Aqualine 30™. The Aqualine 50™ washes up to 150 guns before the 60-liter tank needs to be drained and water and paint are separated in only 3 minutes by accelerated flocculation using mixing and bubbling. This cleaning equipment is green friendly, using only disposable filters and waste is recycled according to local regulations and guidelines. It must be noted that water and solvent waste streams must be kept separate and not mixed together.



## FAQ's

### **Is it necessary to replace my existing mixing machine?**

That is your choice. Our Aqualution™ basecoat system uses specially designed plastic bottles. There are several options for storage: 1) ER-110 Waterborne Paint Cabinet which is an “economical” shelving unit or 2) Aquastore Water Cabinet, which is the deluxe upgrade. If you currently use the FAS Vario Mixing Machine, the adapter plates may be used, or you can simply purchase a shelving unit from your local home improvement store.

### **Will my shop need any new or special equipment to spray waterborne basecoats?**

A lot will depend on the equipment that the shop already has in place. With waterborne technology, it is beneficial to have some degree of climate control (temperature and humidity). Shops can benefit from portable blower systems. These portable blowers offer drying productivity and are fairly low cost. Their limitations are the size of the repair and the ability to create the turbulent air over the entire repair surface. The incentive for these blowers is the reduction of dry times depending on film thickness and climate. The blowers will be essential in conditions of very high humidity. Additional equipment will include dedicated waterborne basecoat spray guns and gun washer; separate waste streams and waste removal. The use of stainless steel needles and fluid tips along with plastic cups are necessary to avoid internal corrosion of the equipment. Product contamination may result if the same gun is used with both solvent and waterborne products, resulting in possible product failure. Recommended capabilities for a well-equipped shop include: uniform air flow; efficient/sufficient heating system; clean and sufficient process air for spray guns and air blowers.

### **Will I need to perform major modifications to my cross-draft or down-draft spray booth?**

No. Both cross-draft and down-draft spray booths will work just fine. Equipment is available to increase productivity for this new technology, such as air movement nozzles or fans. The key to success with waterborne basecoat systems is air movement. Air temperature and humidity are important factors for basecoat drying for both water and solvent based products. Consult with your booth manufacturer for specific recommendations.



**Do I need to change any other products or procedures to be able to use Aqualution™?**

No. You will be surprised how similar Aqualution™ applies to our AccuShade® Intermix System. Standard repair and blending procedures should be used with Aqualution™ basecoat. Be sure to use the recommended Matrix primers, sealers, and clear coats that meet the VOC regulations for your area.

**Can I use existing lids for Aqualution™?**

No. Our new packaging requires the use of FP-WS35 dosing lids.

**How many Aqualution™ toners will I have to inventory?**

There are approximately 66 Aqualution™ toners that complete the mixing bank. Additional items will include ADT-01 Deionized Thinner, gun cleaning solution, and a coagulant type product. A complete list of part numbers can be found on page 4 of our Aqualution™ TDS.

**Are the Aqualution™ formulas the same as my Matrix System formulas?**

Yes. Aqualution™ formulas can be located on the AccuShade® 5.0 formula retrieval disk. Currently more than 25,000 formulas are available. Updates will be provided on a routine basis or you may call our Color Service Department at 888-61-COLOR for help during business hours.

**Are waterborne basecoats compatible with solventborne undercoats and clear coats?**

Yes. Waterborne basecoat is compatible with solventborne undercoats (including UVA cured primers and sealers) and clear coats.

**How does the productivity of waterborne basecoats compare with solventborne basecoats?**

Waterborne basecoats can meet or exceed the productivity of solventborne basecoats in a well-equipped shop. Most waterborne basecoats hide in 1.5 coats with no flash between coats, providing a distinct productivity advantage compared with poor hiding solventborne colors. For good hiding solventborne colors, the waterborne basecoat is equal or slightly faster for cycle time. Air blowing systems will be the key to achieve the productivity advantages of waterborne basecoats.



### **What does freeze/thaw stability mean?**

As chemists develop waterborne coatings, one of the considerations is the freeze/thaw stability of the product. It simply means, the product is frozen, and then allowed to thaw. Chemists inspect and apply the product to determine if it is useable. This cycle continues until the product fails.

### **What do waterborne basecoats look like if frozen too many times?**

Typically, the product will have a “chunky” or “cottage cheese” appearance. Under no circumstances should this product be used.

### **How is Aqualution™ protected from freezing?**

First of all, chemists have formulated our product to have very high freeze/thaw cycling; in other words, the product will remain stable if frozen several times which is highly unlikely. Second, our logistics team works closely with freight carriers monitoring weather patterns and freight lanes. If necessary, we will ship Aqualution™ on heated carrier service to protect your product. Matrix warehouses also work with logistics to ensure packages are protected and inventory levels are appropriate for cold temperatures.

### **Will cooler temperatures cause Aqualution™ to slow down the production of my paint shop?**

Yes. Cooler temperatures will affect waterborne just like solventborne products. However, the use of air movement systems along with infrared drying units may actually speed up the process.

### **What is the mix ratio?**

Solid colors – Reduce 10% using ADT-01 Deionized Thinner  
Metallics – Reduce 20% using ADT-01 Deionized Thinner



**What type of reducer can be used?**

Use Matrix ADT-01 Deionized Thinner.

**How many coats are required?**

1 medium coat, 1 full wet, and 1 drop coat (if necessary with metallics).

**Can I dry sand Aqualution™?**

Yes. Then recoat for color correction if necessary.

**Can I wet sand Aqualution™?**

It is not recommended due to the saturation of base.

**Do I use the same clear coat as with solventborne products?**

Yes.

**Can I spray as many vehicles in one day with Aqualution™?**

Yes, possibly more with air movement systems.



## Things to Remember

Maintaining waterborne basecoats is not more complicated than maintaining solventborne basecoats. Almost everything you already know about storing and applying coatings applies to waterborne.

Some adjustments will be needed when changing from solventborne to waterborne products. The curing time for waterborne coatings is mostly dependant on air movement in the spray booth so you need to plan accordingly. Review your current procedures and schedule coating applications to allow for more drying time or use specialized drying equipment. Involve your employees in planning your scheduling and equipment changes.

Matrix System is devoted to assisting you as you prepare your shop for the Waterborne Revolution. We are confident that with the right combination of support, training, and equipment that you will have a piece of mind along with a great finish.

# Dive into the future of auto refinishing!

The face of automotive refinishing is changing rapidly.

Matrix System is moving forward and making it happen with the arrival of Aqualution™. This waterborne basecoat system was developed to provide body shops with the ability to respond quickly and efficiently to the VOC requirements of today, as we all make the transition into tomorrow's technologies. As with all Matrix System solutions, it is our goal to provide body shops with the right combination of support, product, training and equipment that this revolutionary transition demands.

Aqualution™ Waterborne Basecoat System...“Put it to the Test” and dive into the future of auto refinishing today! Moving forward and making it happen is what Matrix System is all about. For more information, contact your local Matrix distributor or sales representative.



## AQUALUTION BASECOAT: BORNE READY



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1-800-735-0303  
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