



# Technical Manual

Professional Headlight Restoration Systems



A step by step guide and troubleshooting manual for better headlight restoration

[www.deltakits.com](http://www.deltakits.com)

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# Before You Start

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Thank you for your purchase of this Delta Kits ClearPro PLUS Professional Headlight Restoration System with Infinity coating.

Please look over your new Delta Kits headlight restoration system carefully and make sure that everything on the check list is included before reading this instruction manual.

This manual provides instructions for successfully restoring polycarbonate headlights using Delta Kits Headlight Restoration systems. While every effort has been made to cover the most common issues that a technician will encounter in the field, this manual may not address every situation you encounter.

Please keep this instruction manual with your headlight restoration system as a handy reference. In the event you encounter an issue that is not addressed in this manual, we invite you to contact us via e-mail or telephone. All technical support is free of charge for as long as you own your Delta Kits Headlight Restoration System. We hope you will be successful in your business and will work to do everything possible to help you prosper.

Thank you for your business!

Sincerely,



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# Standard Headlight Restoration Procedure

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## 1. Setting the customer's expectations

- 1.1. Only headlights made from polycarbonate can be restored, including marker and tail lights. Headlights, taillights, and marker lights made of glass cannot be restored using this method.
- 1.2. Drive away time (the time between when you apply the coating and when the car can be driven) for Infinity Headlight Coating is approximately 30 minutes. See **Section 9**, [Drying the Lens](#) for detailed instructions.
- 1.3. Be sure the customer understands that you will be restoring the outside surface of the lens. Cracks, condensation, dirt, or damage to the inside of the lens cannot be restored using this procedure.
- 1.4. The vehicle should not be hand washed for at least 24 hours after the headlight restoration has been completed and you should wait at least 1 week before going through an automatic carwash. Also, never pressure wash the restored headlights. Failure to follow this recommendation may result in scratches, spotting, or other damage to the coating.

## 2. Location & environmental considerations

- 2.1. For optimal results the vehicle should be parked in an area where it will stay clean and dry, preferably in a shop or garage and out of the heat generated from direct sunlight. Application in direct sunlight can cause the coating to dry prematurely and not coat evenly.
- 2.2. A minimum temperature of 50 °F is recommended for best results. When the ambient temperature is below 50 °F, store Infinity in a heated location until you are ready to use it. A heater, heat lamp or hair dryer may be used to warm the headlights to the proper working temperature and leaving the headlights on will help warm the lenses from the inside.
- 2.3. A maximum relative humidity of 85% is recommended as high humidity will increase the required dry time. If applying in conditions where relative humidity is greater than 85%, use a hair dryer or other heat source to expedite drying.
- 2.4. The random orbit sander requires an appropriate power source. (120v standard outlet in the United States)

## 3. Personal protection

- 3.1. Always wear safety glasses, a dust mask, and skin protection. You may also wish to wear an apron to protect your clothing. Gloves or a barrier cream are recommended for protection of sensitive skin.

## 4. Prepping the vehicle and lenses

- 4.1. If the hood of the vehicle overlaps the headlight lens, lock it into the upright position for easier masking and cleanup.
- 4.2. Mask around the headlight using an abrasion resistant masking tape. This will help protect the vehicle's paint during the restoration process.
- 4.3. As an option, covering the engine compartment and all exposed painted surfaces with plastic or paper masking material will make cleanup easier. Plastic dust from sanding can drift ten feet or more!
- 4.4. Thoroughly wet the entire surfaces of each headlight lens with Clean2Prep, wait 10 seconds, and wipe clean with a lint free paper towel. Avoid contact with painted surfaces.
  - 4.4.1. Should accidental contact with painted surfaces occur, immediately spritz with clean water and wipe dry.

## 5. Examine the lens for imperfections

- 5.1. Cracks or crazing (a network of fine cracks below the surface of a material) that may not have been visible before cleaning should be pointed out to the customer.
- 5.2. Dust, moisture, and other contaminants on the inside of the lens will not be removed by this headlight restoration process.
- 5.3. Explain to the customer that damage below the surface of the lens and contaminants inside the light cannot be removed by sanding and polishing. This restoration process will improve the appearance of the lens but cosmetic imperfections will still be visible if one or more of the above conditions exist.

## 6. Sanding the headlights

Sanding the headlights is a multi-step process that first removes the factory protective coating, oxidation and contaminants from the surface of the headlight lens. A random orbit sander is used for even sanding and to minimize the risk of leaving burns or blemishes that can occur with the use of a rotary sander or drill. After each sanding step the lens should be smooth and clean. It is very important to sand evenly using long strokes with light pressure, keeping the sanding tool moving at all times.

**Let the tool do the work; the disc should be spinning throughout the process.**

- 6.1. Sanding with 320 grit
  - 6.1.1. Begin by attaching the foam interface pad to the backing plate on the random orbit sander. Be sure the pad is centered on the backing plate. The interface pad will remain on the sander for the remainder of the sanding process.
  - 6.1.2. Attach a 320 grit sanding disc to the interface pad and make sure it is properly centered.

### Sanding Quick Chart

*These times are recommended minimums. Longer times will not harm the lens and may be necessary depending on the extent of the oxidation.*

Disc Grit	Random Orbit Speed	Approx. Time per Light
180*	5	2 minutes
320	5	2 minutes
500	5	2 minutes
800	5	2 minutes
1200	5	2 minutes
1500	5	2 minutes
3000	6	2 minutes

**\*Some vehicles have an extremely hard factory finish on their headlights. If after 1 minute of sanding the contamination and original coating does not appear to be coming off with the 320 grit disc, switch to a 180 grit disc, then proceed with the 320 grit disc after the hard finish has been removed.**

**Note: Experienced technicians may start with a 500 grit disc if the lens has minimal deterioration but new technicians should always start with a 320 grit disc for best results.**

While sanding, if the disc becomes clogged at any time, simply tap it against a damp lint free paper towel. If this problem persists, replace the disc with a new one.

6.1.3. Using speed setting number 5, sand the lens with light even pressure until you have achieved a surface that is white in color with no yellowed polycarbonate visible. Take your time on this step as the success of each additional sanding step is dependent on the thorough removal of contaminants and oxidation. If you notice streaking, spots or discoloration during the sanding process, check the disc for contaminants. Tape, rubber or plastic picked up from the edge of the lens is the primary cause of these anomalies in the sanded lens surface.

6.1.3.1. Using a lower speed may be preferable when sanding around the edges, alignment tabs and other tight spots.

6.1.3.2. You may need to remove the sanding disc from the sander and hand sand to adequately sand extremely tight areas.

6.1.4. Spray the lens with clean water and wipe dry to remove sanding dust.

6.1.5. Thoroughly inspect the lens to insure the surface has been sanded evenly and all traces of contamination removed. If any inconsistencies remain, sand, rinse, dry and inspect the lens again. Repeat as often as necessary until the desired results are achieved. The lenses should now be smooth, white, and uniform in appearance.

6.1.6. Repeat this process on the second headlight using the same sanding disc, tapping the disc on a damp, lint free paper towel to clean before proceeding.

6.2. Sanding with 500 grit

6.2.1. Repeat the sanding, cleaning and inspection procedure used with the 320 grit disc, sanding for approximately 2 minutes per lens. It is critical to remove all sanding marks from the 320 disc with the 500 disc before proceeding to the 800 grit disc.

6.3. Sanding with 800 grit

6.3.1. Repeat the sanding, cleaning and inspection procedure again, sanding for approximately 2 minutes per lens.

**Sanding correctly and completely with the 500 and 800 grit discs will have the greatest impact on the final result of your headlight restoration job by minimizing or eliminating swirl marks.**

#### 6.4. Sanding with 1200 grit

6.4.1. Repeat the sanding, cleaning and inspection procedure again, sanding for approximately 2 minutes per lens.

#### 6.5. Sanding with 1500 grit

6.5.1. Repeat the sanding, cleaning and inspection procedure again, sanding for approximately 2 minutes per lens

#### 6.6. Polishing with 3000 grit

6.6.1. The 3000 grit disc is a foam polishing pad that does not require the use of any polishing compounds or water and works best at a slightly higher speed than a sanding disc.

6.6.2. Increase the variable speed setting to (6) and polish each lens for 2 minutes or longer. The goal is to achieve the clearest and glossiest finish possible *before* applying Infinity coating.

You now have a very important decision to make. If you will not need to move this vehicle and can wait a half hour or so before removing the masking tape and cleaning up, go to section **7.1.1**. If you will need to move this vehicle or if you are a mobile technician and need to leave immediately after the protective coating has been applied, proceed to section **7.1.2**.

### 7. Final cleaning of the lens

#### 7.1. Cleaning the lens

7.1.1. *Recommended – Leaving the tape in place:* Wipe or brush loose dust from the tape around the lens. You may also want to take this opportunity to remove any dust from the paint and surrounding areas. The goal is to prevent any dust from getting on and sticking to the surface of the lens as the coating dries.

7.1.2. *Alternative – Removing the tape:* Remove the masking tape and any other masking materials used to protect the vehicle during the sanding process. Clean up any sanding dust from the vehicle's surface and your work area.

7.2. Wet the entire lens with Clean2Prep and wipe thoroughly, removing all dust from the lens.

7.3. Wipe the lens with a clean and dry with a lint free towel. Pay special attention to the edges where liquid and dust tends to gather. **The lens must be completely dry before applying the headlight restoration coating.**

7.4. Repeat these steps for the second headlight.

7.5. If you removed the masking tape, take extra care when applying the coating to ensure no coating comes in contact with painted surfaces.

### 8. Mixing & Applying the Protective Coating

#### 8.1. Mixing instructions for **Infinity 4.1 Headlight Restoration Coating**

8.1.1. Infinity Headlight Restoration Coating is mixed in a 4:1 ratio. Use the graduated cylinder to measure and mix the chemicals in the mixing cup.

8.1.2. Measure 12 ml of part A (Part #54111) into the mixing cup and add 3 ml of part B (Part #54112).

8.1.3. Mix thoroughly by stirring being careful not to incorporate any air into the coating. After mixing the coating will have a pot life of approximately 1 hour. However, when applied to the lens in a thin coat, the coating will begin to dry immediately with a working time of 15 – 20 seconds.

## 8.2. Application of Infinity Headlight Restoration Coating

8.2.1. Fold the lint free towel into a square shape that will fit inside the mixing cup and dip it into the coating solution until saturated, but not dripping.

8.2.2. Using even strokes that overlap slightly, apply the coating to the lens using horizontal strokes. Be sure to inspect the lens from multiple angles to ensure complete coverage.

8.2.2.1. Avoid excess wiping and runs by moving quickly across the entire surface of the lens without stopping. A thin coating is all that is required. Coat the entire lens within 20 seconds to avoid streaking.

8.2.2.2. It is normal to see wipe marks from the paper towel immediately after application. If the lens has been lightly and evenly coated with no drips or runs, the wipe marks will self-level and be invisible by the time the lens is dry to the touch.

8.2.3. After the coating has been applied, clean the mixing cup and graduated cylinder using Clean2Prep and a clean paper towel. If the cup is not cleaned thoroughly after each use, future coating applications may be contaminated with tiny fragments of dried coating that can compromise the cosmetic appearance of the completed restoration.

## 9. Drying the lens

9.1. Dry time for Infinity is approximately 30 minutes if you are going to allow the coating to air dry. The coating must be dry to the touch before cleaning up and allowing the vehicle to be driven.

9.1.1. Circulating air over the lenses will accelerate the dry time by as much as 50%. A simple fan works well for this. Warm air will provide the fastest dry times.

## 9.2. Clean up

9.2.1. If you did not clean up the vehicle prior to the application of the coating, do not start cleaning up until the coating is dry to the touch. Test for this in an inconspicuous spot with your finger tip.

9.2.2. After testing the coating's dryness carefully remove the masking tape and wipe the surrounding areas to remove any remaining sanding dust.

9.2.3. Advise the customer to wait at least 24 hours before hand washing their car, wait at least 1 week before going through an automatic car wash, and to never pressure wash the restored headlights. Failure to follow the recommendations may result in scratches, spotting, or other damage to the headlights.

# Frequently Asked Questions

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For answers to the most commonly asked questions about headlight restoration, visit our frequently asked questions page at [www.DeltaKits.com/tech-support/FAQ](http://www.DeltaKits.com/tech-support/FAQ). If you don't find the answer you are looking for please be sure to give us a call or drop us an email. One of our friendly staff members will be happy to assist you.

# Replacement Parts & Supplies

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For a current list of replacement parts, supplies and pricing, orders can be placed anytime online at [www.DeltaKits.com](http://www.DeltaKits.com) or by calling 1-800-548-8332, Monday through Friday from 8AM to 5PM Pacific Time.

Orders placed before 2:30PM Pacific Time will generally ship the same day.