

**Cerakote™**  
CERAMIC COATINGS

**GLACIER  
SERIES**

# TRAINING MANUAL

**THE COOLEST IN HIGH TEMPERATURE CERAMIC COATINGS.**



TRAINING VIDEOS AVAILABLE AT  
[YOUTUBE.COM/NICTRAINING](https://www.youtube.com/nictraining)



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

# **PLEASE READ**

Cerakote™ Glacier Series Coatings are designed for professionals and should be applied by NIC – trained applicators and coating professionals with proper training and equipment. This training manual is intended to be used as a supplemental guide for certified and professional applicators only. It is critical to follow all instructions in this manual. If for any reason you are not willing to, or cannot follow the steps in this manual, do not attempt to coat any product using Cerakote™ or any other NIC product. If you have any questions please contact NIC Industries.

Thank you

**Cerakote High Temperature Coatings**  
**A Division of NIC Industries, INC.**  
**866-774-7628**  
**[www.CerakoteHighTemp.com](http://www.CerakoteHighTemp.com)**

# PHASE 1: SURFACE PREP

## Degreasing:

The parts must be free from any oils and moisture prior to sandblasting. Degreasing can be achieved by baking the parts off in an oven at 400F to 800F for 45 to 60 minutes, depending on the condition of the substrate.

If baking the parts off in an oven is not an option, the parts can be thoroughly sprayed or soaked in an aggressive degreasing solvent such as a non-chlorinated brake cleaner. Ensure the parts are completely dry prior to coating application. Degreasing is only required if the parts are oily.

Do not wash or wipe the substrate with soap, water, alcohols, oils or water-miscible solvents (common examples include acetone, MEK, isopropyl alcohol, etc).

## Media Blasting:

A blasted profile must be applied to the substrate to remove any rust, scale or other coatings and to establish a profiled surface to assist coating adhesion. To achieve maximum adhesion at high temperatures, grit blasting is essential. Blast the parts with 100 to 120 grit garnet sand or aluminum oxide at 80 to 100 psi. Strive for an even blast pattern over the surfaces of the parts. Do not use glass beads, as they dimple the surface rather than providing the necessary profile for maximum adhesion. Similarly, other common surface preparations are inadequate. For instance, do not hand-sand the substrate.



### TIPS:

- If the part's surface is still shiny after blasting, you haven't blasted enough.
- If you use too coarse of grit, the microscopic valleys on the part's surface will be too deep for the .001 - .002" (1 - 2 mils) coating to completely fill while covering the corresponding "peaks" sufficiently to assure a satisfactory coating.
- Don't use sand that has been previously used to clean dirty, greasy or oily parts. Doing so will contaminate your parts.
- Be sure the sandblasting media is not worn out. Media will wear to an ineffective dust after many uses.
- Do not touch parts with bare hands, as doing so will leave oily marks which will create defects in the finished coating. Use powder free latex style gloves for handling blasted parts.

## Racking:

Hang or otherwise fixture parts so that you can access all the surfaces of each part with your HVLP spray gun. Metal hooks of different length are ideal for racking exhaust parts. Make sure to rack parts far enough apart so that they will not bump into each other.

Racking Headers



Racking Exhaust Pipes



Evenly Spaced Parts



# PHASE 3: GAS OUT (OPTIONAL)

**Cerakote**<sup>™</sup>  
CERAMIC COATINGS

## Gas Out (Optional):

In humid environments or when blasted parts are not able to be coated immediately after blasting, a low temperature gas out may be necessary to prevent surface rust. If required, heat the parts to 200F – 250F for 30 minutes which will completely dry the substrate of any moisture.

If you are unsure whether or not you should perform the gas out process, please contact Cerakote Customer Service at **866-774-7628**.

# PHASE 4: COATING PREPARATION

## Coating Preparation:

Begin by shaking the bottle until the coating is completely mixed and no solids remain in the bottom of the container. Failure to completely disperse the product will result in poor chemical ratios and product failure. **DO NOT alter the coating by adding other materials, such as solvent. Glacier Series coatings are incompatible with organic solvents that are water-miscible (common examples are acetone, MEK, isopropyl alcohol, etc.)** Pour the coating through a disposable automotive type paint filter or a reusable filter (shown: NIC Part #SE 139). This is done to ensure that no contaminants will be sprayed on the finished product.

When finished using containers and equipment, clean with acetone. Allow containers and equipment plenty of time to dry before re-using.

Shake

1



Pour/Filter

2



Fill HVL Spray Gun

3



Clean with Acetone

4



## Checklist Before Spraying:

- Ensure all parts to be coated are hung securely, ensuring parts do not touch anything during the application process.
- Spray in a well-ventilated area, wear a respirator, protective gloves and safety glasses.
- SDS's and additional safety & handling information are available at [www.CerakoteHighTemp.com](http://www.CerakoteHighTemp.com). **SDS compliance is essential.**

## Suggested Equipment:

### IWATA LPH-80 HVLG GUN FEATURES



#### 1. Fan Pattern

- Controls Spray Pattern of Atomized Fluid
- Adjust In (Clockwise) For Detailed Circular Pattern
- Adjust Out (Counter-Clockwise) For Larger Oval Pattern
- Use Small Circular Pattern With Lower Air Pressure For Detailed Work
- Use Large Pattern For Large Areas Of Coverage

#### Spray Pattern Adjustments



#### 2. Fluid Knob

- Controls The Amount of Fluid Atomized Through the Gun
- Adjust In (Clockwise) For Fine or Detail Spray Areas
- Adjust Out (Counter-Clockwise) For Full Fluid Usage
- This Knob Will Affect the Spray Pattern When Adjusted In or Out
- Use to Achieve Desired Material Thickness

#### Spray Pattern Adjustments



#### 3. Air Pressure

- Regulates Inlet Pressure
- Too Little Pressure Will Cause Spitting & Dry Spray
- Too Much Pressure Will Cause A Split Pattern or Too Much Material Being Applied

### IWATA LPH-80: NIC Part # SE-138

#### HVLP gun with spray characteristics:

- Features adjustable spray pattern from round to full fan shape.
- A stainless-steel nozzle, paint passage and heat tempered needle ensure long-lasting, peak performance spraying.
- Uses the reliable and easy-to-service cartridge-style "air-valve" set, which can be serviced outside the gun and easily placed back into the gun body.
- 4 oz. (110 ml) stainless-steel gravity cup is center-mounted and rotates, allowing for spraying.

# PHASE 5: SPRAYING

**Cerakote**<sup>™</sup>  
CERAMIC COATINGS

## Spraying:

Pour the Cerakote into an HVLP gun with a .8mm tip (NIC Part # SE-138).

30+- psi is the recommended air pressure for spraying Cerakote Glacier Series.

## Practice (If Needed):

Start spraying on a piece of scrap material to adjust the spray pattern and practice your spraying technique. Spray with the gun 3 to 5 inches away from the material and adjust the spray pattern to between 2 and 3 inches wide.



Blow off parts with dry compressed air to make sure there is no trapped blasting media in holes or pockets. Sand or other media left behind will cause surface defects.

**Do Not wipe or rinse blasted metal with any liquid products as this will negatively affect adhesion.**



## Spraying Continued:

Start spraying in the most difficult area of each part, then progress and finish to the easier areas. This should help avoid runs and thin spots. When spraying, strive for even coverage. You are seeking a .001" - .002" coating thickness (1-2 mils). Spray with sufficient volume of coating so that the Cerakote doesn't dry spray, which is when the coating dries in the air before reaching the part.

**IMPORTANT:** The Glacier series should be coated in one continuous process – do not double coat. Particular attention should be made to areas on the part that are curved or have intricate geometries. The tendency is to coat these areas too thick, which results in degraded high temperature performance that could lead to cracking during high temperature use.



### TIP:

- When spraying, the part should appear wet, but not so wet that it wants to run.

# PHASE 6: CURING

**Cerakote**<sup>™</sup>  
CERAMIC COATINGS

## Curing:

Allow parts to air cure. Parts will be tack free after approximately 4 hours and can be packaged or installed 24 hours later.



Cerakote will reach full cure in five days. Prior to full cure, parts should be handled with care, however, you do not need to wait the full five days for packaging or installation.

**Keep in mind, do not use parts until they are fully cured (five days).**

If faster tack free times are desired, parts can be heated in an oven at temperatures no higher than 150F, for no longer than 15 minutes.

**Caution: Exceeding these parameters may cause the coating to fail upon use.**

**Note: DRYING IN AN OVEN DOES NOT CURE THE COATING.**

**Note: If parts are packaged, especially in plastic, before the coating is fully cured, ensure the packaging material is breathable as to not inhibit the curing process or cause defects.**

Coating may cure faster under humid conditions or, similarly, cure slower in drier environments.

## Cerakote™ High Temp Coating Training Program

NIC Industries offers the only one-on-one training program for Cerakote™ High Temperature Ceramic Coatings. With individual training, our instructors speak with the customers prior to the training course to custom design each class to meet the specific needs of each customer. Customers can apply any of NIC's industry leading ceramic coatings on their own parts, or parts supplied by NIC. Courses are taught at NIC's training facility in White City, Oregon, or onsite\*. While every class is custom tailored to meet each customer's needs, below are topics typically covered in most courses.

### Training Topics

- Metal Prep
- Out-gassing
- Racking Techniques
- Coating Selection
- Proper curing techniques and schedules
- Problem solving and troubleshooting defects
- Proper equipment and operation
- Re-works
- Cost analysis
- Marketing

\*Contact NIC for further information about on-site training at 866-774-7628.

### Class Location

NIC Industries, Inc. is located at 7050 Sixth Street, White City, OR, 97503. White City is located in Southern Oregon approximately 5 miles from Medford, Oregon, and approximately 280 miles from Portland, Oregon.

### Transportation

Rogue Valley International Airport (MFR) is located 6 miles from NIC and provides daily flights from several major west coast airports. All major rental car companies are located at the Rogue Valley International Airport.

### Lodging

NIC has negotiated discounted rates with several hotels in close proximity to our facility. Information can be found at <http://www.cerakotehightemp.com/resource/downloads/>





# GLACIER™ TECHNICAL INFORMATION

**Cerakote™**  
CERAMIC COATINGS

Adhesion  
ASTM D3359

Pencil Hardness  
ASTM D3363

Impact  
ASTM 2794

Mandrel  
Bend  
ASTM D522

Salt  
Spray  
ASTM B117

**Glacier  
Series**

5B  
\*Rated  
Excellent in  
Hot Adhesion

7h - 9h

Scratch Hardness  
ASTM D3363

6h - 9h

72/20  
to  
100/40  
inch-lbs.

2 mm @  
180°  
Rotation

515 - 1051  
Hours  
in 5% Salt  
Concentration  
at 95°F

\*Download Product Specific  
Tech Data Sheets  
at [CerakoteHighTemp.com](http://CerakoteHighTemp.com)



# GLACIER™ PRODUCT SPECIFICATIONS

## APPEARANCE

- Ultra Smooth
- Sleek, Rich Finish

## APPLICATION

- Easy To Apply, Single Coat, Air Cure Formula
- High Solids Yield Higher Coverage Than Any Other High Temperature Coating
- Self-Leveling Properties

## PERFORMANCE

- Better Thermal Barrier Properties Than Any Other High Temperature Coating
- Industry Leading Heated And Un-Heated Corrosion Resistance
- No Discoloration, Even Past 2000°F
- Maximum Hot And Cold Adhesion
- C-7600 Glacier Black Exceeds John Deere JDM F14X1 Class 4 Testing For High Temperature Coatings
- C-7600 Glacier Black Meets Harley Davidson ES805-34307 Test Specification For High Temperature Coatings

## OTHER

- VOC Exempt In All 50 States
- Download Application Guides @ [CerakoteHighTemp.com](http://CerakoteHighTemp.com)









## Need Help?

At any point during the Cerakote™ Glacier Series application you have a question, please contact Cerakote High Temperature Coatings at:

NIC Industries, Inc.  
7050 Sixth Street  
White City, OR 97503

Phone: 541-826-1922  
Toll Free: 866-774-7628  
Email: [info@nicindustries.com](mailto:info@nicindustries.com)  
Web: [www.CerakoteHighTemp.com](http://www.CerakoteHighTemp.com)



You can also view training videos online at:  
[www.YouTube.com/NICtraining](http://www.YouTube.com/NICtraining)



Follow us on Facebook at:  
[www.Facebook.com/CerakoteCeramicCoatings](http://www.Facebook.com/CerakoteCeramicCoatings)

Subscribe to Cerakote's Newsletter via [www.CerakoteHighTemp.com](http://www.CerakoteHighTemp.com) to receive Cerakote news, information, and events.

### *Visit our other divisions:*

#### **Prismatic Powders**

Prismatic Powders offers the world's largest selection of custom colored powder coatings. View over 6500 colors at [www.PrismaticPowders.com](http://www.PrismaticPowders.com)

#### **Cerakote Firearm Coatings**

More manufacturer's choose Cerakote™ than any other firearm finish.  
See why at [www.Cerakote.com](http://www.Cerakote.com)

**Cerakote™**  
CERAMIC COATINGS

**FINISH STRONG™**

**Cerakote High Temperature Coatings**  
**A Division of NIC Industries, INC.**

**866-774-7628**

**[www.CerakoteHighTemp.com](http://www.CerakoteHighTemp.com)**