CERAKOTE®

AN INNOVATION OF **NIC INDUSTRIES, INC.**
866.774.7628 White City, Oregon 97503

C-SERIES

TRAINING MANUAL

TRAINING VIDEO

CLICK HERE TO WATCH THE C-SERIES APPLICATION GUIDE VIDEO

TABLE OF CONTENTS

C-SERIES TRAINING MANUAL

C-SERIES

Cerakote® Ceramic Coatings are performance based coatings that must be applied correctly to achieve the desired performance. 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, Cerakote® has a certified applicator network of professionals at your service. To find a local certified applicator near you, visit cerakote.com.

If you have any questions, please contact us.

A Division of NIC Industries, Inc.
Phone: 866-774-7628
Site: www.Cerakote.com

PHASE 1

DISASSEMBLY

Completely disassemble your project by removing any components that you don't want coated. If you are working with a mechanical part and are unfamiliar with the level of disassembly, have a trained professional perform the disassembly and reassembly.

Once you have completely disassembled your project take a photo of all the parts for accurate inventory. Make a note of the substrate type on each piece (e.g., steel, aluminum, plastic, composite, polymer, etc.).

PHASE 2

DEGREASE

Soak metal parts for 20-30 minutes in a degreasing chemical such as acetone or brake parts cleaner. For substrates that are more delicate to solvents, a water-based degreasing agent like Simple Green® can also be used. Ensure parts are completely dry and free from residue before the coating application.

Using a small Degrease Tank™ (Item SE-518) with a wire basket makes degreasing quick and easy. To avoid losing smaller parts during the soaking process, place all smaller parts in a separate wire basket (Item SE-520). Following the soaking period, remove parts from the degrease tank and allow them to air dry.

Degrease your parts once your item(s) have been completely disassembled.

DEGREASING VARIED SUBSTRATE TYPES

Plastics, polymers, carbon fiber, fiberglass, or composite materials can be thoroughly wiped down using a lint-free cloth and a mild degreasing chemical, such as a wax and grease remover.

PHASE 3

MASKING

To avoid tolerance or functionality issues, masking of some parts is very important.

Now that parts have been degreased, it is imperative that you wear powder free latex or nitrile gloves (Item SE-356) when handling parts.

Mask any areas that you do not want coated.

Plug any areas that you do not want coated.

Trim any excess masking tape.

PHASE 4

SANDBLASTING

A sandblasted profile must be applied to the substrate for optimal coating adhesion! Always wear powder-free latex or nitrile gloves when handling parts. Avoid touching parts with your bare hands.

Ensure your blaster is set-up with 80-100 grit Aluminum Oxide (AO) or Garnet blasting media. Adjust your blast pressure accordingly: 80-100 PSI for metals, 20-40 PSI for non-metal parts such as plastics, polymers, carbon fiber, fiberglass, or composite materials.

Strive for an even blast pattern over the entire surface of the part. If the part's surface retains a shiny appearance after sandblasting, you have not blasted enough.

For harder metals such as stainless steel, Inconel, or tungsten, it's recommended to use only 80 grit Aluminum Oxide or Garnet Sand. This will provide the profile needed for sustained adhesion under thermal cycling.

NOTE

Be sure the sandblasting media is not worn out and replace as needed. Media will wear after several recycled uses and not provide a sufficient profile for mechanical adhesion.

X **DO NOT** hand sand parts as this will not yield a sufficient profile for optimal coating adhesion.

X **DO NOT** use any type of round blasting media such as glass beads or steel shot. Round media will dimple the surface rather than etch it and will not yield a sufficient blast profile for optimum coating adhesion.

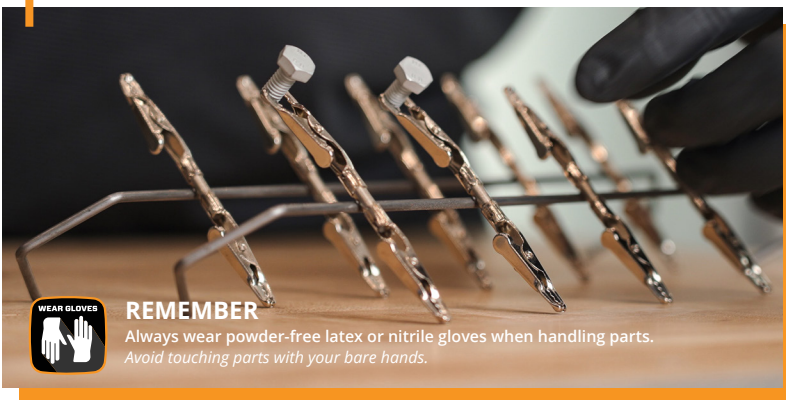
X **DO NOT** use sand or aluminum oxide that has been previously used to clean dirty, greasy, or oily parts. Doing so will contaminate your blast media and cause possible adhesion issues or defects in the finish.

PHASE 5

RACKING

Proper racking methods and equipment must be used to achieve complete coating coverage.

Hang or otherwise fixture your parts so that you can access all the surface areas with your HVLP/LVLP spray gun (Item SE-138).



REMEMBER

Always wear powder-free latex or nitrile gloves when handling parts.

Avoid touching parts with your bare hands.

A variety of metal hooks in multiple sizes (Item SE-195) are ideal for racking larger parts, while thin wire or a small parts rack (Item SE-346 and SE-347) are ideal for fixturing screws, pins and other small parts.

TIPS FOR RACKING SMALL PARTS

- For smaller screws or bolts, clamp gator clip on threads.
- For other small parts, clamp gator clip on a no-show surface.
- Heaviest pieces are placed at the bottom of the rack for better part stability.
- Space parts accordingly for even coverage.

Metal hooks are ideal for racking larger parts.

PHASE 6 - OPTIONAL

GAS OUT

Ensuring your substrate is throughly clean is essential for proper application and adhesion.

The process of gassing out will evaporate any remaining solvents from the degreasing phase while also drawing out any possibly trapped oils or contaminants. Heat metal parts in a convection style oven at 300°F (149°C) for 60 minutes.

VARIED SUBSTRATE TYPES

Plastics, polymers, carbon fiber and fiberglass should be gassed out at a lower temperature, generally between 150˚- 180˚F (65˚- 82˚C) for 60 minutes.

Oil on brake caliper

SEE OIL?

If you see any oil residue or other indications that contaminants were drawn to the surface of the part(s); re-clean the part(s) by repeating phases 2, 4 and 6 (degrease, sandblast, gas out). Allow parts to cool to room temperature prior to re-degreasing.

This step will need to be repeated until no oil residue is visible after gas out. When the part(s) are free of oil following the final gas out process, proceed to Phase 7 Coating Prep.

TIPS FOR GAS OUT

In humid environments or when parts are not able to be coated immediately after sandblasting, gas out will be necessary to prevent surface rust.

PHASE 7

COATING PREPARATION

The coating must be properly agitated and strained to provide the highest quality finish!

Begin by agitating the Cerakote bottle for 5 – 10 minutes until the coating has been thoroughly mixed and no solids remain in the bottom of the container. We recommend a paint shaker (Item SE-369) for pints, quarts, and gallons; for testers, agitating by hand is sufficient. Failure to completely disperse the product will result in poor chemical ratios and product failure.

Using the *appropriate mesh strainer listed on the Cerakote® bottle label (100, 150, or 325 mesh strainer)*, filter the desired quantity of Cerakote into a high-quality HVLP/LVLP detail spray gun with a 0.8 mm tip, such as an IWATA LPH-80 (Cerakote Part #SE-138).

TIPS FOR AGITATION & STRAINING:

- Using a clean glass or wood stir stick, it's recommended to feel for any solid materials at the bottom of the bottle before straining the coating.
- Lightly tapping the in-cup strainers will assist in straining heavy metallic or high-viscosity color more efficiently.
- To prevent coating separation, frequent agitation of the coating in the spray gun is recommended.

CLEANING EQUIPMENT

Clean all containers and equipment with acetone or a compatible degreasing solvent. A Cerakote Wash Bottle (Item SE-396) and Cylinder Bottle Brush (Item SE-389) are helpful tools for cleaning.

PHASE 8

SPRAYING

CAUTION: Spray in a well-ventilated, well-lit spray booth. Wear a respirator, protective gloves & safety glasses. Refer to the SDS for additional safety and handling information at Cerakote.com.

BEFORE SPRAYING: NOTES & TIPS

- Check that all plugged and masked areas are secure. Remember Cerakote is applied very thin, and most areas do not require masking. If you are unsure, contact Cerakote for assistance.
- Ensure all parts to be coated are hung securely to avoid contact during the application process.
- Do not coat mechanical parts that may cause tolerance or functionality issues.
- During the application process, ensure that the coating is properly agitated. Due to the high level of solids, Cerakote settles quickly and should be agitated frequently.

SPRAY GUN SETTINGS

Figure 1

1. PATTERN ADJUSTMENT KNOB

- 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.

2. FLUID ADJUSTMENT KNOB

- Controls the amount of fluid atomized through the gun.
- Adjust in (Clockwise) for fine or detailed spray areas.
- Adjust out (Counter-Clockwise) for full fluid usage.
- This knob will affect the spray pattern when adjusted in or out.
- Use to adjust desired material flow.

3. AIR ADJUSTMENT KNOB

- Regulates inlet air pressure.
- Too low of air pressure will cause splatter.
- Too high of air pressure will cause dry spray.

PHASE 8

SPRAYING CONTINUED

TESTING SPRAY GUN SETTINGS

Practice spraying on an easel pad to adjust the spray pattern and practice your spraying technique. Adjust the spray gun to achieve a 2-3" oval fan pattern while spraying from a distance of 3-5". For hard-to-reach areas, adjust your spray gun settings to achieve a 1" oval with moderate-sized splatter.

Testing spray gun settings before application.

A good practice exercise is to spray and cure a few machine screws and matching nuts. You should be able to screw the nut onto the machine screw without difficulty. If you can't, you may be spraying too heavily. For a more precise measurement of coating thickness, we recommend using a Cerakote Mil Thickness Gauge (Item SE-321).

PRACTICAL DEMONSTRATION

CLICK TO WATCH:

Review the necessary adjustments to achieve a 1/2" to 3/4" circular spray pattern and learn what an ideal pattern looks like.

BEFORE SPRAYING YOUR PART(S)

Blow off the parts with dry compressed air to make sure there is no trapped media in holes, seams, or pockets. Blasting media left behind will cause surface defects. Make sure the parts are at room temperature before application.

Before spraying, blow off all your parts.

APPLYING CERAKOTE

Strive for even coverage when spraying. The coating should appear wet but not so wet that the coating will run. Cerakote will remain wet to the touch until it is tack free or dry to the touch.

Start spraying in the most difficult areas of each part, then progress and finish to the easier areas. This should help avoid runs and thin spots. For best application results, adjust PSI settings for Glacier Series and C-Series to 25 -30 PSI.

NOTE

If any coated parts are touched before the curing phase, they will need to be refinished.

It is recommended to remove wet Cerakote with a degreasing solvent such as Acetone or brake parts cleaner. After washing the parts with solvent, the parts should air dry until the residual coating has become tack-free (dry to the touch). Sandblast to remove any contaminants and re-spray.

When spraying, part should appear wet.

TIPS FOR APPLICATION

- Use an HVLP/LVLP spray gun with 0.8mm tip. Recommended: IWATA LPH-80 (Item SE-138).
- Spray with a 2-3" oval fan pattern from a distance of 3-5".
- Glacier Series and C-Series: 25 – 30 PSI (operating pressure).
- Use proper lighting to assist in seeing coating wet out.

CLEANING UP

Be sure to thoroughly clean all spraying equipment with a solvent, such as acetone or brake parts cleaner. Any remaining coating that has not sat for longer than one hour can be placed back into the Cerakote container for later use (always agitate the coating before transferring). Dispose of any unused Cerakote according to local and state regulations.

PHASE 9

CURING SCHEDULE

Following the standard cure schedule will provide consistency in aesthetics and performance.

Allow coated parts to air-cure; they will be tack-free approximately 45 to 60 minutes after the application. Until this point, the coating is still wet, so take care not to bump or touch the parts. The coating will be partially cured after 24 hours and fully cured after 5 days.

CURING SCHEDULE

TACK FREE	PARTIAL CURE	FULL CURE
45 - 60 Minutes	24 Hours	5 Days

TIPS FOR CURING

- Coating may cure faster under humid conditions or cure slower in drier environments.
- Parts should be handled with care prior to the full cure.
- If parts are packaged before the coating is fully cured, ensure the packaging material is breathable to prevent the curing process from being inhibited.

IWATA SPRAY GUN Item: SE-138
SPRAY GUN STAND Item: SE-301

LPH80 .8 FLUID NOZZLE & NEEDLE Item: SE-142

IWATA SPRAY GUN CLEANING KIT
Item: SE-258

CERAKOTE 15" VINYL CUTTER
Item: SE-349

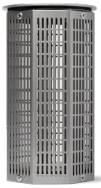
ANTI-STATIC TWEEZER 7 PIECE SET Item: SE-366

HIGH BAKE VINYL FILM
Item: SE-354

PLASTIC RAZOR BLADES - 10 PACK
Item: SE-367

PRICING & COMPLETE LINEUP AVAILABLE AT
WWW.CERAKOTE.COM > SHOP > EQUIPMENT

We recommend the following products for the best results during the Cerakote prep and application process, available at Cerakote.com.



SHAKE N BLAST CANISTER

Item: SE-3115

AIR PAINT SHAKER 1 GAL

Item: SE-369

CERAKOTE DEGREASING TANK

Item: SE-518 (Degreasing Tank)

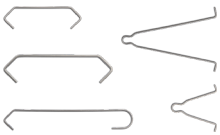
Item: SE-519 (Large Degreasing Basket)

PRO SERIES SWATCH SET

Item: SE-2401

CERAKOTE MIL THICKNESS GAUGE *Item: SE-321*

CERAKOTE INFRARED THERMOMETER Item: SE-322

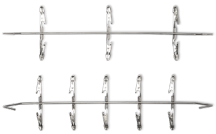


CERAKOTE HOOK KIT

Item: SE-195

HEAVY DUTY SWIVEL HOOK

Item: SE-387



SMALL PARTS RACK - 6 CLIP

Item: SE-346

SMALL PARTS RACK - 10 CLIP

Item: SE-347

TRAINING PROGRAM

Cerakote is a professional-level OEM finish. NIC Industries offers a one-on-one training and certification program. Training is available at our state-of-the-art Headquarters in White City, Oregon, or with our industry partners in Walker, MI, Burlington, NC, and Calgary, Alberta, Canada as well as our distributors in Australia, Germany and the United Kingdom. Our expert trainers provide training for your industry with a two-day class tailored to fit your needs. We provide world-class training to manufacturers, OEMs, and custom shops worldwide.

WHAT WILL I LEARN?

- **Metal preparation**
- **Gas out**
- **Racking techniques**
- **Coating selection for various applications**
- **Basic to Advanced coating application**
- **Proper curing techniques and schedules**
- **Medium-high volume coating processes**
- **Stenciling & camo techniques**
- **Proper equipment and operation**
- **Re-works**
- **Cost analysis**
- **Marketing strategies**
- **Problem solving and troubleshooting defects**

*For more information about the Cerakote Training Program give us a call at **1-866-774-7628**, or email **Certifiedapplicators@cerakote.com**.*

CLASS LOCATIONS

- Cerakote Headquarters: White City, Oregon
- West Michigan Cerakote: Walker, Michigan
- Weapon Works: Burlington, North Carolina

CERAKOTE DISTRIBUTORS

- SLR Coatings: Australia
- PBN Coatings: Germany
- Cerakote UK: United Kingdom
- Cerakote EU: European Union
- Black Box Customs: Canada

CONTACT INFORMATION

If at any point during the Cerakote application you have a question, please contact us at ***Certifiedapplicators@cerakote.com***, or call us toll free at ***1-866-774-7628.***

STAY CONNECTED! **Subscribe to Cerakote's emails at Cerakote.com to receive the latest news, information, and specials. Make sure to check out the links below for more information!**

Additional Training Videos **-** YouTube.com/Cerakote

Web address **-** www.Cerakote.com

Facebook **-** Facebook.com/cerakote

Instagram **-** Instagram.com/cerakote

x **-** x.com/cerakotefinish

SDS Sheets **-** Downloads section at Cerakote.com > Resources > Documents > Safety Data Sheets

Email **-** Technicalsupport@cerakote.com

CERAKOTE®

C-SERIES

TRAINING MANUAL

AN INNOVATION OF NIC INDUSTRIES

V.PRINTv752125

866.774.7628 | 7050 6th Street | White City, Oregon 97503