

# POWERKOTE™ ENGINE KIT INSTRUCTIONS

**IMPORTANT: Read all steps before starting.**



## Preparation and application (CBC1 and DFL-1):

**ATTENTION:** Use clean gloves to protect your hands, and a respirator so as to not breathe the vapors. Clean the parts in a well ventilated area away from sources of ignition such as fire, flame or sparks.

**Do not cure in an oven that is used for cooking food.**

1. Parts must be completely free of oils, grease, moisture, dust, scale or corrosion. Thoroughly washing with acetone or similar solvent will take care of most impurities.

**NOTE:** If you suspect the part may have oil in the metal you can pre-bake the parts at 350°F for approximately 30-minutes before cleaning with acetone, provided that the part would not be damaged at that temperature. This will burn off any residual oils from the machining process or from use. This should be done in a well ventilated area and **do not bake in an oven that is used for cooking food.**

2. Mask off any areas that should not be coated/etched. Next the parts need to be etched to create pores in the substrate for the coating to bond into. A “white metal finish” is the goal, not a rough finish. Use 100-120 grit aluminum oxide, Silica sand, Garnet or similar. Do NOT use glass bead or materials like baking soda or similar. Etch at 25-35 PSI using a suction type blast cabinet. Do NOT use a pressure pot type sandblast unit.



3. After etching, the part must be thoroughly cleaned using air blast, hot water rinse, or a solvent based rinse.

4. Mask off any areas that should not be coated, be sure to wear clean gloves to keep the surface of the part clean. Masking tape will sometimes leave a residue on the part, to avoid this use plain paper on the surface and tape the paper to itself. Blue Painters tape can be used but check for any adhesive residue.

5. **CBC1/DFL-1 Application:** Stir and/or shake well. Critical solids can settle when not in use. Adding clean ball bearings or clean, small nuts to the mix will help break up the settled materials. Filter the coating (use standard paint filter) as you put it into the sprayer.

6. Apply using an air brush or detail touch up gun with a 1MM or smaller nozzle. Application pressure is approximately 60 PSI and will vary depending on the actual spray gun. Minimum part temperature at time of application should be 65°F. The coating will be gray in color while being applied.

Apply in one wet coat. Slight overlapping is acceptable, but *avoid excessive application* as the coatings are designed to be applied at a thickness of .0005” to .001” (approximately 1/5 the thickness of normal paint). More is not better.

7. Allow to dry, inspect for complete coverage and any defects and then bake at 300°F for 1 hour, starting when the part reaches the cure temperature.

8. Inspect for complete coverage and any defects.

9. Clean up with water.

## PKSX and Assembly Lube instructions:

**PKSX:** This material can be applied to a Cylinder Wall, Lifter bore, Valve Guide or similar using a cloth, buffing wheel or similar after normal honing. No etching is required. Simply lace a small amount of powder on a cloth or buffing component and

using pressure and speed apply to the part. **PKSX** can also be applied over **DFL-1** once **DFL-1** has been burnished. Simply buff on as above and the lubrication properties will be enhanced. **PKSX** can be mixed with alcohol to apply to a buffing tool and then allow the alcohol to evaporate before applying. Do not apply any solvent after buffing, just a light film of oil and assemble the components. Clean up with a solvent.

**Assembly Lube:** Apply as grease to Cam, Lifters, Gears or similar components for startup protection.

## Tips for coating specific parts:

**Valves:** An easy way to do valves is to lay them on an oven rack as shown and coat the face with CBC1, let dry, coat half the back and stem with DFL-1, let dry, rotate and coat the other half, let dry and bake.



## Valve springs:

To do valves springs lay them on an oven rack as shown and coat half with DFL-1, let dry, rotate and coat the other half, let dry, and bake.

## Bearings:

Set all of one type of bearing on a rack as shown and coat as a single piece, let dry and bake.



**Cams:** It is not necessary to mask the cam simply etch and coat all surfaces.

**Cylinder Heads/Combustion chamber:** The head surface can be masked using an old gasket so that only the combustion chamber is coated. The valve seats can be covered by the valves allowing for the valve faces to be coated with the chambers and then when dry removed and the back of the valves can be coated and cured. Note: When baking a head have the valve seats turned up so they do not potentially fall out due to metal expansion when heating. This is especially critical on aluminum heads. Secure the valve guides as well.

**Other applications:** Many parts can benefit from coating with CBC1/DFL-1. Feel free to call our technical department at (865) 773-0599 with any questions. You can also find information and Safety Data Sheets on our website: [www.techlinecoatings.com](http://www.techlinecoatings.com).



**WARNINGS/PRECAUTIONS for all components of this kit: Read Instruction Sheet and SDS before use.** Do not handle until all safety precautions have been read and understood. Do not breathe



fumes/mist/vapors/spray. Use only outdoors or in a well-ventilated or exhausted area. Wear respiratory protection, eye protection, face protection, protective gloves, protective clothing. Do not get in eyes, on skin, or on clothing. Wash hands, face and any exposed skin thoroughly after handling. Do not eat drink or smoke when using this product. Keep containers tightly closed.

If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: immediately call a poison center/doctor for medical advice. Rinse mouth with water. Call a poison center/doctor for medical advice.

Disposal: dispose of contents and/or container in accordance with local regulations.

**Keep out of reach of children.**

See the videos: “Uses And Application Of Some of Our Coatings” and “How to Apply DFL-1™ Dry Film Lubricant”. These videos are located at: <http://techlinecoatings.com/hi-performance/videos.htm>