

When applying organic coatings such as liquid, powder and e-coat paints the pretreatment portion of the process is critical to ensure the maximum performance from these coatings.

- All metals must be properly cleaned to remove oils, soils, and materials such as buffing compounds to ensure good adhesion and coverage of subsequent coatings. Specially formulated alkaline cleaners are used at elevated temperatures of 130-150 F to dissolve and remove these contaminants.
- At times substrates can also become heavily oxidized during the manufacturing process. Laser cutting procedures for steel produce a tenacious oxide/scale that is not easily removed unless acid immersions or mechanical means such as abrasive blasting are used. Heavy adherent oxides/scales can also result from heat treat operations on many metals especially if coolants and oils are not removed before this baking operation.
- After parts have been properly cleaned and deoxidized a conversion coating before primer will enhance the adhesion and corrosion resistance of the finished painted product.
- Hexavalent chromium, trivalent chromium, and non-chrome conversion coatings are utilized on aluminum substrates to ensure maximum adhesion of primer paints. In addition these conversion coatings reduce “creep” type corrosion on sharp edges or when the finished painted product has been chipped; when environmental initiatives such as ELV, RoHS and WEEE are required then hexavalent chromium conversion coatings should be avoided.
- Phosphate coatings are utilized after cleaning and before primer paint to also improve adhesion and reduce creep corrosion for steel substrates. Phosphate coatings can also be utilized on other substrates such as aluminum, brass, stainless steel, and zinc plated steel. The two most common types of phosphate coatings are Iron and Zinc Phosphate. Zinc Phosphate coatings provide the best corrosion resistance and are specified for use in all military applications.

At Pioneer Metal Finishing we have the capability to handle all your pre-treatment needs to insure your finished parts perform to their maximum potential.

Cleaning / Pre-Treat Capabilities:

Capabilities	Description	PMF Size Limit	PMF Weight Limit
Steel Shot Blast	Mechanical means to remove oxides, burnt on oils, laser scale & heavy scale removal for all base metals; will provide a roughen surface.	20'L x 3'W x 3'H	5000 lbs *Up to 5000 lb. capacity, contact Pioneer for details
Aluminum Oxide Blast	Mechanical Means to remove oxides, burnt on oils, laser scale & heavy scale removal for all base metals; will provide a roughen surface.	4'L x 3'W x 1'H	100 lbs
Alkaline Clean	Oil & Grease Removal for all base metals.	8'L x 4'W x 4'H	400 lbs
Pickle	Oxide & Laser Scale Removal for all base metals.	6'L x 2'W x 3'H	300 lbs
Zinc-Phosphate	Conversion coating that provides mechanical bond & improves overall adhesion & corrosion protection.	6'L x 2'W x 3'H	300 lbs
Hexavalent & Trivalent, Non-Chrome Conversion for Aluminum (Alodine 5200)	Conversion coating that provides mechanical bond & improves overall adhesion & corrosion protection for aluminum alloys.	3'L x 3'W x 3'H	2000 lbs