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REF: Custom Painting

Painting - Powder Coating

The work involved in powder coating is about 90% Prep. ¹⁾

It's good to bake parts before powder coating at a higher temp than you would powder coat at to bake the impurities out of it.

Also you can flash heat the parts with a propane torch to clear any moisture that may have been attracted to the cleaned part. ²⁾

And preheat any tight areas and drop the powder on the gun as you coat to make sure that it gets coverage there as well.

Ovens Used

You can use a gutted and steel lined upright freezer for an oven. ³⁾



⁴⁾

Homemade Cabinet Oven

Homemade powder coating cabinet made by XLFORUM member simeli:
Using 5000 watts of heater element it reaches 450° in 15 minutes.

I allowed it to stay hot for 45 minutes before shutting it down 2 hours later it was still 180 degrees inside the box.

- 220V, 108 sq. ft. of rock wool insulation, 33 cu.ft
- 20 gauge steel for the heat box faced with cement board
- 4 inches of space packed with 70 sq.ft. of insulation
- The door face is 20 gauge steel (as is the surroundings) with 1-1/2" of space with 30 sq.ft. of insulation packed into it.
- 1/4" gasket on the surroundings.
- Metal studs

Door latches were not installed in the pics below but jack straps were used in their absence.
Total cost: about \$497 (not counting the door latches)

The heat is supplied from the bottom and one side causing a natural air rotation inside the box.
In testing, there was around 10 degree difference in the temp of the rails (rack supports).
(which is actually less than the temp rise and fall between heating cycles)

The only "glue" that is used is 3M "77".

(on the outside of the inner box (steel) and the inside of the outer box (plywood) which is covered with aluminum foil)

The gasket is attached using RTV red and was cooked out during testing.

The cement board is attached by pop rivets and bolts. It was also cooked out during testing.

The oven is also used to gas out the parts during the cleaning process, so everything is gassed out before any coating is done.

Flash heating with propane gets the metal hot enough so that any moisture is evaporated.

Also any lint or dust that may be present is burned off.

Powder is applied quickly after flashing or in the case of larger pieces flashing continues ahead of the powder.

In use is a regular household style oven controller.

But there are four of the internal oven thermometers that will be mounted inside.

Plus an external probe thermometer that goes through the door (noticed in the pictures below).

It should be about 30-35 minutes of actual time to watch the work and manually control.

Homemade powder coating cabinet. ⁵⁾



Pics of Powder Coated Parts

Frame

Prep ⁶⁾



After Pics. ⁷⁾



Fuel Tank

Powder coated fuel tank. ⁸⁾



Carburetor



Individual parts powder coated and installed with the intake manifold done as well. ¹¹⁾



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