DIY POWDERCOATING SYSTEM

DIY powdercoating system.

IN THE AUGUST ISSUE, NIGEL BRIEFLY INTRODUCED KIT CAR MAGAZINE READERS TO THE AMAZING DIY POWDERCOATING SYSTEM FROM ELECTROSTATICMAGIC. OUR MASTER BUILDER WAS SO IMPRESSED HE NOW HAS A SYSTEM INSTALLED IN HIS OWN GARAGE. HERE, NIGEL EXPLAINS HOW SIMPLE THE PROCESS ACTUALLY IS AND DEMONSTRATES THE QUALITY AND VARIETY OF FINISHES AVAILABLE.

I'm a bit of a sucker for tools and the like which explains why I get the job in the Kit Car office of reviewing anything new that arrives on the market. Enthusiasm for this task is never higher than when I'm stuck into a big project, such as my DAX Rush CW460 - there is nothing like trying a new tool in a real-life environment. One such offering I have taken a serious liking to is the DIY powdercoating system from electrostaticMAGIC. It is an absolutely amazing piece of hardware which has been used extensively on my Rush to date, with a further selection of other small components awaiting that ultimate finish.

For those not familiar with the powdercoating process it is a technique which deposits a thin layer of coloured plastic on metal components. Apart from providing exceptional corrosion protection, the finish is both durable and also available in various colours. The ability to easily cover items of almost any size and shape has seen this simple process embraced by numerous industries, our own included. Nearly every kit car manufacturer will offer an option of powdercoating, especially chassis and suspension parts. I have always been an advocate of this technology and have previously accumulated a selection of brackets and components which I subsequently sent for coating at the end of each build. The problem with this approach is fourfold:

1) Most engineering companies will only powdercoat jobs of a certain size or quantity (hence the reason I collate numerous items and have them processed in one hit). This means final assembly of your car is delayed until all the pieces are returned.

2) Occasionally, a small item can go missing. This is a real pain, especially if it is a bespoke bracket which has taken you a couple of hours to fabricate.

3) Many engineering companies have a limited selection of colours.

4) Turnaround times can be excessive depending on the workload of the company in question.

Consequently, when I heard about the DIY system from electrostaticMAGIC I was both a little sceptical and yet hopeful there was a solution to the niggling issues above. Having seen a demonstration of the process I was impressed, but there is nothing like doing it yourself, so I duly obtained a system which now resides in my garage.

WHAT IS INCLUDED IN THE KIT?

The powdercoating kit comes in a surprisingly small box, measuring 12 x 18 inches (surprising because the word 'system' tends to conjure up images of rather hefty pieces of equipment!). On opening the box you will find the following:

- Spray gun & barrel
- A 12 volt foot switch
- Moisture separator
- Two powder containers
- Electrostatic base unit
- Two spare nozzles
- ½ kg of powder Instructions for use
- Instructions for use

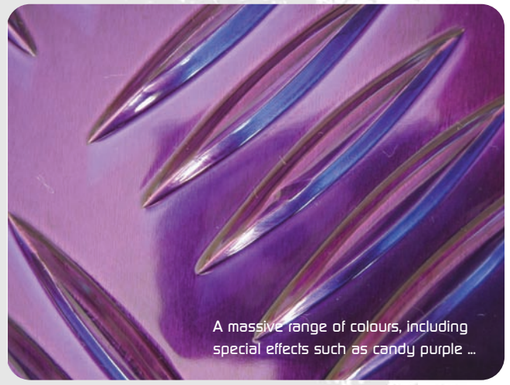
Amazingly this little lot only costs £10(
(plus £10.99 post and packing), not ba
when you consider my usual powdercoatin
outlay for a project is £100 to £150 - an
that doesn't include the time and petro
going to and from the company!

WHAT'S NOT INCLUDED IN THE BOX?

Always a good question to ask, but the onl
additional pieces of hardware you will nee
are a compressor and a heat source. Th
former needs only provide 17 psi, which i
not a lot more than a puff in compressc
terms. An inexpensive unit can be acquire
from companies such as Sealey Tool
(www.sealey.co.uk) for just over £50. As fc
the heat source, the type you need depend
on the size of component and how quickl
you need to process parts. An electric ove
is normally ideal for most items, as it's quic

Coat small components in a matter of minutes.

and simple to use. You could purchase a purpose-manufactured oven costing from a couple of hundred pounds to many thousands, however I simply used a portable caravan gas heater to great effect. Alternatives are bar heaters or infrared lamps. (Ensure you do not use the kitchen oven as the process produces a small amount of toxic fumes.)



A massive range of colours, including special effects such as candy purple ...

... candy red ...

OTHER THINGS YOU MAY NEED

As you can see from the contents list, you are only given one bag of powder. This will keep you going for a while, but if you are intending to coat a fair number of components (especially of differing colours) budget for some extra powder. Prices vary depending on colour but, for example, the usual gloss black comes in at £4.99 plus VAT for half a kilo. That's a fair amount of coating! Other, more complex colours such as the 'candys' cost £4.99 for quarter of a kilo. Obviously, there are postage costs to add due to weight. The colours available are as follows:

Candy colours: blue, gold, red and purple

Metal colours: chrome, antique copper, copper, gold (hammer finish), silver (hammer finish) and satin silver

Gloss colours: black, dark blue, light grey, marine blue, mid blue, mid green, orange, pink, purple, red, satin blue, white and yellow

As you can see there is a huge choice, allowing you to enhance an engine bay or interior with almost any colour scheme. I used this to great effect in my Westfield Seight by getting the rocker covers and plenum powdercoated to match the blue gel coat. The end result was visually striking.

THE PROCESS

Now the important bit, how it all works. The process is quite simple: after preparing and degreasing a component, an earth lead is clipped to it (making the component negative). Powder is positively charged through the gun and sprayed onto the item. Once covered, it is heated and the powder melts to form a coating - simple. Is it as simple in practice? Well, to prove the point here is a step-by-step guide as I coated one of my Rush CW460 components.

Step 1: Preparation

The first stage was to thoroughly clean the component. In my case there was no rust or corrosion but, if present, this would obviously need removing. A lint-free cloth was then soaked in methylated spirits and wiped across all the component's surfaces to remove any grease deposits. Any such impurities (including lint from a cloth) will result in imperfections in the otherwise professional finish.

Step 2: Earthing the component

Using a bent coat hanger the item was suspended and subsequently earthed by attaching the supplied lead. A good earth is absolutely essential to ensure successful final coverage. The only downside was where I connected the lead resulted in a slight imperfection, so this location has to be carefully selected to be as discrete as possible.

Step 3: Powder selection

The gloss black powder was emptied into the supplied plastic container, which was then screwed to the bottom of the spray gun.

Step 4: Pressure adjustment

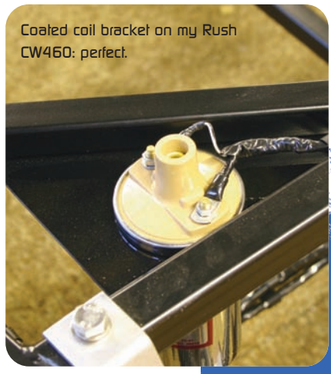
Ensuring the flow screw on the base of the gun was fully closed (clockwise), I pulled the trigger. At the same time I unscrewed the flow screw until the powder was emitted in a cloud.

Step 5: Application

Aiming the gun at the Rush component (from approx 200 mm away) I depressed the foot pedal until the green light on the main unit was illuminated. At this point the trigger on the gun was depressed and the powder directed at the component. You cannot apply too much product as any excess will simply drop off. Once completely covered, the earth clip was removed and a small amount of powder sprayed onto this area, thus minimising any imperfection.

Step 6: Heat cycle

I inspected the item for full coverage, then placed it in front of my heat source. Care needs to be taken at this stage to avoid rubbing any of the powder from the component's surface. The curing process takes place at around 180 to 200 degrees centigrade which took a few minutes to reach in my case. Once the surface had gone completely glossy it was left for ten minutes to cool.



A final word of advice. As you are using a fine powder it is essential you protect yourself from the dust entering your lungs. This can be achieved by working in a well-ventilated area with the windows and doors open and by wearing a quality dustproof mask. In addition you will need to wear safety glasses and latex-type gloves. It's better to be 'safe than sorry' when it comes to your health.

If you are interested in purchasing one of these amazing powdercoating systems, please go to the website www.electrostaticmagic.co.uk (e-mail: sales@electrostaticmagic.co.uk) or contact them at:

Electrostatic Magic
PO Box 9275
Nottingham
NG5 0DY

To sum up, apart from being a very simple and cost-effective system to use, the end result matches the quality you would expect from a powdercoating specialist. This is one product I will certainly be using again and again on future projects.