

What's the deal with Resin?

THE BIG INTERVIEW

Just what are the benefits of working in resin? How does it differ from die-cast? And why is it more expensive? Clive Rigby, one of the partners at Spark - the hobby's leading resin model manufacturer, explains all...

Spark Models

If you're a regular reader of Model Collector, you will already be familiar with Spark models, which frequently tend to score very highly in our New Releases reviews.

Spark, the hobby's leading resin model manufacturer, was founded by Hugo Ripert, who had previously worked on research and development for the Vitesse, Quartzo and Ixo brands. While employed at Ixo, being a real petrol-head by his own admission, Hugo decided to create some of his own models of Le Mans cars from 'the back of the grid' that were being ignored by the mainstream manufacturers. With production dispersed amongst a number of small factories in southern China however, things were far from ideal. It was at this point that his friend, Clive Rigby, a life long collector, suggested he start his own factory and take control of the entire process. Hugo totally saw the sense in this and so he and Clive, together with licensing manager Francois Dennis and factory managers Cecilia and Peter Kou - all of whom are equally driven by their passion for all things automotive - became partners in what was to become a real success story.

The company has since expanded into sports, concept and historic cars, as well as Land Speed Record cars, racing cars transporters, etc, and currently employs over 700 people in its purpose built factory.

For stockist advice, contact Spark's UK distributor Amerang Ltd - Tel. 01903 765 496.



Lindsey Amrani: *First of all can you explain, for any of our readers who don't already know, what resin actually is, ie what it's made from, and also how the process actually differs from die-cast production?*

Clive Rigby: OK. It's in fact a petroleum by-product. Most people will be familiar with resin from things like Araldite, for fixing stuff, where you mix two kinds of resin, two pastes,

together and they harden at different rates. Effectively, it's a two-part plastic that's mixed, then poured into, and cured in, a rubber, or silicon, mould.

The process starts with someone producing a master (or a male) - the original piece that looks like the real car, or parts of a car. The master (male) model, the pattern if you like, is either produced the old fashion way, where someone literally carves it out, or, if you have digital data, the modern way, whereby the whole thing can be

above Left to right - Hugo Ripert, Shirley Ripert (his wife) and Clive Rigby at Zhuhai race track, close to the Spark factory in Southern China.

produced on a computer, in stereo lithography or 3D printing. We do both, depending on what sort of data we have access to. For example, if we're working with a car manufacturer like, say, Mercedes or Peugeot on producing a modern vehicle, typically they'll give us all the data in a digital file. From that the whole thing can then go CAD/CAM [Computer Aided Design/Computer Aided Manufacture]. Of course the data the car manufacturers give us is that used for producing the real thing, so we have to modify it somewhat for a scale model. The model makers' art would be so much easier if a subject translated perfectly just by scaling it down, but unfortunately due to parallax things are a little more complicated than that.

Spark's fantastic 1:43 Mercedes-Benz W196 British GP winner, complete with the legendary Stirling Moss at the wheel.



Anyway, from the master silicon moulds are made. These have hollow (female) parts inside of them into which the resin is poured. They're then put into a vacuum chamber to get rid of any bubbles in the resin and allowed to cure.

Not only are these moulds flexible but also they can be made up of several separate sections, which can be broken apart to create different body parts.

Lindsey: So, it's in fact far less mechanised?

Clive: Yes. The basic difference is that resin model manufacture [as opposed to die-cast production] actually has hobby-based origins. It started out as a cottage industry. You could literally do it in your own home, by yourself, in the kitchen – and a lot of people used to. Many small businesses were begun. For example, Hugo's dad [Hugo Ripert is the founding partner and controlling shareholder of Spark] used to produce models in this way.

right Digital data supplied by the manufacturers of the actual cars is frequently used to create models.

Lindsey: So, what's the first immediately obvious way to spot a resin model from a die-cast when you first see or handle it?

Clive: A lot of people won't notice the difference immediately. If you were shown an unbuilt and unpainted kit, you'd be able to tell straight away. Naked resin tends to be a pale, yellowish-brown putty colour, whereas die-cast has got a clearly metallic look before its painted.

Lindsey: I find one really easy way to tell is that quite often when we unscrew a resin model from its base for New Releases photography we'll see that sort of chalky give-away...

Clive: Yes, what you're getting there is powdered resin coming off the



“In resin it's so much easier, and more cost effective, to make changes to a model.”

model from where the screws have bitten into it.

resin as opposed to die-cast?

Clive Rigby: In resin it's so much easier, and more cost effective, to make changes to a model. And that's important – particularly important when it comes to motorsport models. In any given season there are many changes made to the actual cars from one race circuit to another. For example, a car that runs at Monza will have minor changes on it when it runs at Nurburgring, and more meaningful changes when it runs at Le Mans. There'll perhaps be different scoops cut out, different air dams, different sizes of spoilers, fins, etc.

In resin making these changes are far simpler, and far less expensive than they would be in die-cast. With die-cast you'd be cutting into a steel mould. So, for example, if you had a car without a fin, you could add one, but then taking it back off again would be a problem.

Also, clients know they can come to us for very small runs of a very specific car. Heaven



above and below Craftsmen all working on hand carving the original masters from which Spark produces its moulds. The girl seen bottom right is working on detail pre-paint finishing of resin cast bodies, which occasionally require filling and fine sanding, while he second girl (immediately below) works in assembly and is applying waterslide decals which Spark use in combination with pad printing to finish its models.



knows how many different Porsche variations we've made over the years. Porsche has been coming to us for a long time, because when required we can easily produce say, 500 pieces for an owners' club or a special event without a problem, which would be out of the question if we were talking die-cast.

But if a manufacturer wants say, 10,000-20,000 pieces made, we'll opt for die-cast straight away.

Lindsey: Ah, so you also manufacture in die-cast. I've always thought Spark worked purely in resin.

Clive: A lot of people assume that, but we do actually produce die-cast models as well as resin ones. We don't care what we make a model out of, as long as it looks right.

Lindsey: Would you say there are any disadvantages to working in resin, and if so, what are they?

Clive: Resin models are inherently a lot more fragile. But that said, all models tend to be fragile in the same areas: wing mirrors will easily flip off, spoilers are very delicate, etc.

The only other disadvantage, if you can call it that, is the durability of the moulds. As the silicon needs to expand and contract during the casting process, the moulds used to produce resin models have a much shorter life expectancy than die-cast tooling, so they are only suitable for quite limited production runs.

Lindsey: So how many models are produced in the average Spark production run?

Clive: Once we have a new model on the drawing board, we let our distributors know. They can then check out what sort of orders they're likely to get and feed these back to us. We then can go into production confident that we're not going to over produce – which is never a good thing,

as it can lead to stock dumping and loss of collector confidence.

Of course not all collectors pre-order, and some don't realise that they really want a model until it is sold out and too late. If we're advised demand is high enough in such instances though, we will occasionally reproduce a resin model.

The average resin run for us is around 1,000 pieces, but some of the models, particularly the Land Speed Record cars, are produced in much smaller numbers. With the recent British Steam LSR car, for example, I doubt we issued more than 600 pieces and, unless the sponsor comes back to us, I doubt we'll ever reproduce it. It's a wonderful, a really weird-looking car and it has way more detail than it should for a commercial model, but then we're enthusiasts!

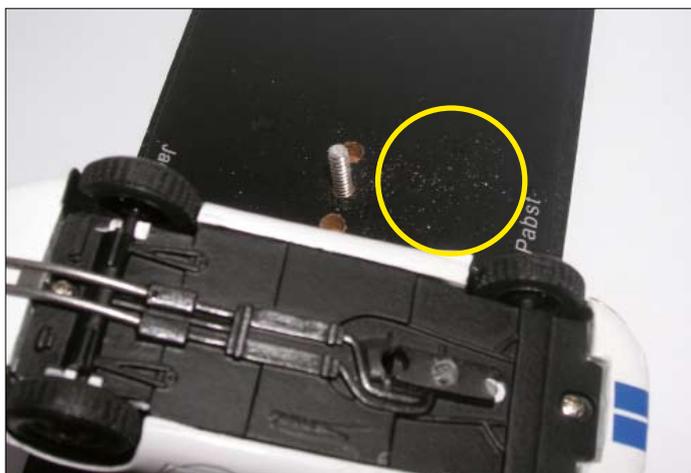
Lindsey: The industry seems to be quite incestuous. Do you ever produce models for other

brands in your factory?

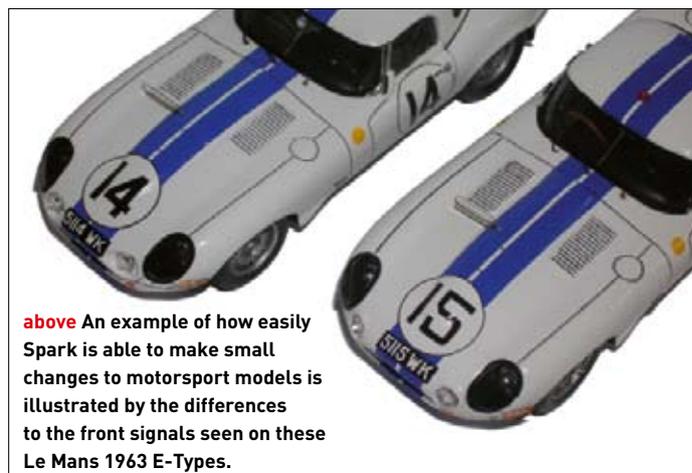
Clive: Oh yes. I'm not going to name any names but we certainly do, because, even with the really big brands, very few have their own factories. Sometimes I get a bit annoyed [he laughs] because I look at some of our branding competitors and we've actually made their best models for them!

Lindsey: We've seen the price of die-cast models rise fairly steeply over the past decade, due in part to continuing increases in the cost of raw materials and more recently developments in China (such as the changes in legislation, wage increases, rampant inflation, etc), but why are resin models still more expensive, on average, than die-cast models?

Clive: Firstly, despite the fact resin models are produced in hundreds,

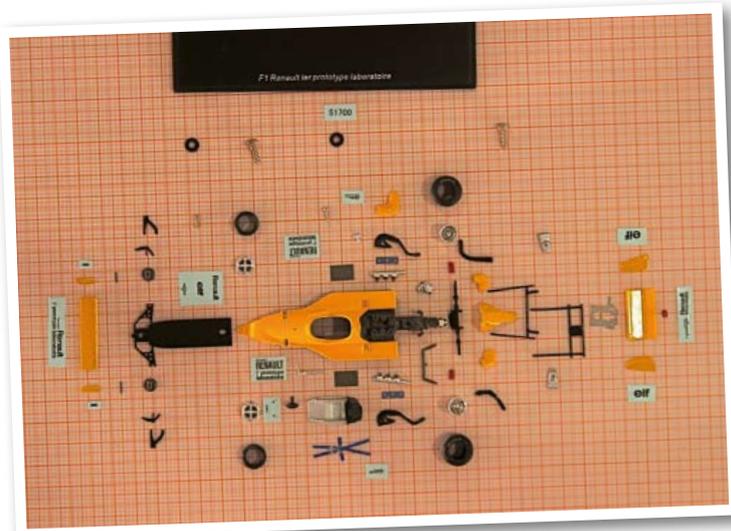


above Tell-tale traces of the powdered resin that can sometimes be seen when unscrewing a Spark model from its base.



above An example of how easily Spark is able to make small changes to motorsport models is illustrated by the differences to the front signals seen on these Le Mans 1963 E-Types.

This Fun Cup model is a typical example of how resin lends itself to more esoteric subject choices.



above Spark models are all hand-assembled from a large number of highly detailed components, and the whole process is extremely labour intensive.

rather than thousands like die-cast models, obviously the same amount of labour intensive research, design, etc, still has to be undertaken and factored into the equation.

Secondly, and perhaps more importantly, it's very much down to the detailing. Once cast, all our models are hand painted and assembled, with a very high degree of attention to detail. There are of course cheaper models, but there are reasons for that. Basically, you get what you pay for.

For example, on cheaper die-cast models the windscreen wipers will be plastic mouldings; ours will be photo-etched, and look far more delicate and realistic.

Exhaust pipes on many of the 1:43 scale models on the market tend to be integral to the plastic injection moulded baseplates. Our exhaust pipes however, are more often than not separate parts,

made from small diameter steel or aluminium tubing and glued on.

Also, if you tip over a Spark racing Aston Martin, a Ferrari or any Le Mans type car, where rear diffusers

“There are of course cheaper models, but there are reasons for that. Basically, you get what you pay for”

[a shaped section of the under body that improves the car's aerodynamic properties] are present, you'll find each of the vanes is a separate, photo-etched part, individually glued on by hand. This level of finesse makes a huge difference to scale realism when compared to the diffuser vanes moulded into the baseplates of

cheaper models. And Spark windows are not merely single plastic injected mouldings popped in and stuck to the roof: ours are each separate pieces and much, much thinner, creating a degree

of transparency and a scale thickness not found on cheaper models.

Lindsey: Die-cast models are best kept at a constant temperature, away from levels of high humidity and out of direct sunlight. Does this also apply to resin models? And are there any tips you can give our readers for best taking care of their resin models?

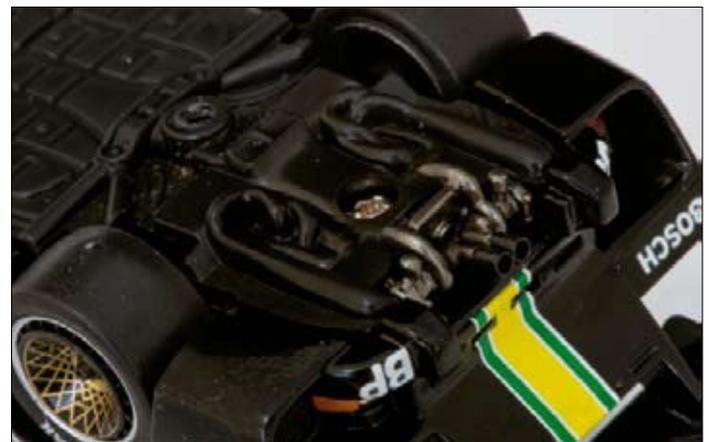
Clive: The paintwork on a

resin model will still fade if subjected to direct sunlight in the same way it will on a die-cast model. Display a model on a sunny window sill, for instance, and it won't be long before you'll see noticeable fading to the side exposed to direct sunlight. So, take the same precautions with your resin models as you would with your die-cast ones in this respect.

Most collectors are aware of the problem with old pre-war die-cast models, such as Dinky Toys, where impurities in the metal in which they've been cast have caused a sort of anode/cathode effect and sadly they begin to crumble. As regards resin though, we certainly haven't seen or experienced any problems.

And one of the reasons it's great having our own factory is that we can keep a tight control on making sure everything is done properly. Where we've seen metal deterioration on more modern die-cast models, chances are these have been caused by bad practice. For example, in some factories any distorted

Fine detail, like the ultra thin windowscreens on this Jim Clark Lotus, really makes the Spark models stand out from the cheaper alternatives.



above Exhaust pipes on Spark models are often separate parts made of aluminium steel tubing, rather than being integral to the baseplate.

above Yet another example of how Spark use separate parts to provide maximum realism, even when it comes to underside and exhaust detail.

castings that come off the production line - perhaps caused where the mould has not been fully filled - may just be thrown down onto a pile on the floor. The pieces that then accumulate in this pile are later melted down and recast. But should any dirt, old cigarette butts, pebbles, etc, from an unclean factory floor also be scooped up and melted down,

this may cause serious impurities in the metal. And later, the consumer will suffer the consequences.

Lindsey: Do you think that resin is the way forward, and that die-cast models will eventually become a thing of past?

Clive: No, absolutely not. It will always be horses for courses. As I've said before, die-casting is far more financially viable when producing larger production runs. But when working in small numbers, particularly on motorsport and F1 cars where later casting variations will probably be required, then resin is the obvious choice.

In our individual roles as collectors, we actually have no preference whatsoever as to whether a model is cast in resin or in die-cast. Hugo and I both have large personal collections and only care whether or not the model is a faithful replica of the real thing. **MC**

WIN!

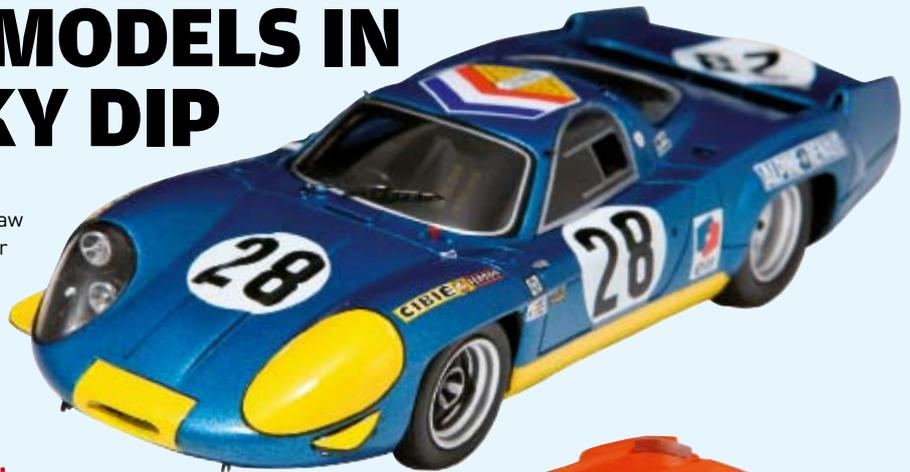
WIN ONE OF FIVE FANTASTIC SPARK MODELS IN OUR LUCKY DIP

If you've never actually seen or handled a Spark model and want to experience the kind of quality and detail described in this interview for yourself, we've got five fantastic examples to give away in our special Spark Prize Draw this month.

To be in with a chance of winning one of these state of the art 1:43 scale resin renditions, all you have to do is complete your details on the entry form below

and mail it to:
Spark Prize Draw
Model Collector
MyHobbyStore
Hadlow House
9 High Street
Green Street
Green
Kent BR6 6BG

**Closing date:
June 20, 2011**



Name

Tel no

Address

Email.....

.....

.....

.....

Postcode

Your details will be processed by MyHobbyStore Ltd and More from Your Garden in full accordance with all relevant UK and EU data protection legislation. MyHobbyStore Ltd. & Model Collector in full accordance with all relevant UK and EU data protection legislation. MyHobbyStore Ltd & Model Collector may contact you with information about our other products and services. If you DO NOT wish to be contacted by MyHobbyStore Ltd & Model Collector please tick here: Email Phone Post
If you DO NOT wish to be contacted by carefully chosen third parties please tick here: Email Phone Post