

**above** The Mustang I Concept, now in preservation at The Henry Ford.  
**right** Ford's celebratory Mustang 50 Years logo.

# From concept to, well, Concept...



**The real time tale of the Mustang I Concept planned for release in 1:43 and 1:24 scale by Automodello this October**

**R**egular readers will be aware that last month Automodello™ announced the forthcoming release the Mustang I Concept – the car that can lay claim to being Ford's first ever pony car. In this, the first part of a series of real time articles, Jim Cowen, CEO, and Raffi Minasian, Design & Development Director of Automodello talk us through the entire process of their creation, from conception to licensing, from research & development to design, and finally through the complex production techniques involved in the creation of these

high spec, handbuilt resin beauties...

**Lindsey:** The Concept I is an interesting subject choice, and obviously an absolute must for both Mustang and classic US car collectors in general. How did you come to decide on modelling this particular prototype?

**Jim:** We first approached Ford about becoming one of its licensees in 2011, a good three years in advance of the 2014 celebrations of the Mustang being in continuous production for 50 years.

In negotiating a license, one of the variables is which vehicles can

be modelled, in other words, Ford doesn't just give out a blanket license... You have to identify the cars you want to do and in which scales.

We had decided early on we wanted to do the Mustang I Concept because although there has been a Hot Wheels rendition, the car has never been done as a handbuilt in 1:43 or 1:24.

To some extent the Mustang I Concept is an anomaly, as it's the first car to carry the Mustang name yet, except for the name and the side scoops, it bears no resemblance to the first production Mustang launched in 1964.

The other key variable is the Mustang I Concept was debuted by Dan Gurney at the 1962 US Grand Prix at Watkins Glen, so we thought it would be neat to ask Dan to be involved in the project, as this would bring everything full circle.

**Lindsey:** Once you've made a decision in regard to a future subject choice, what's the very next step?

**Jim:** At Automodello we respect automotive history and those



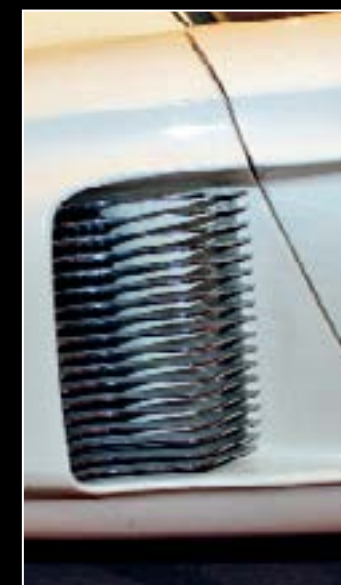
who own the rights relating to it, so we wouldn't even consider proceeding until a license with Ford was in place. Further, and because the Mustang I Concept is owned and resides at The Henry Ford, a secondary license was required with the museum; and, by having Dan Gurney sign a sub set of the models, a third license was required with Dan Gurney's All American Racers. So three licenses had to be in place before we could even make a start on this project

**Lindsey:** Being an officially licensed model, carrying the new Mustang 50 Years logo designed specially for the marque's anniversary in 2014, how difficult and/or expensive was it to get licensing from Ford?

**Jim:** While I'm contractually bound not to give any specifics, suffice it to say that it's not cheap to get a license. Negotiations took almost a year to complete. This was followed by a pre-payment of the royalty,



**above** Full and close up shots of the Mustang I Concept within the friendly confines of The Henry Ford's cordoned space.





## | Automodello Mustang I Concept



**above**  
2x2 Black & White markers help to define contours, depths and relative dimensions for the 1:43 and 1:24 models of the Mustang I Concept scheduled for release this October by Automodello.



which covers the initial development cycle; this means that although Automodello won't release the Mustang I Concept until October, the royalty is paid up-front. As pre-orders are received, and reported quarterly to Ford, the associated royalties are deducted from this fee.

Every detail from model design, prototype, production, packaging, advertising, collateral materials, etc, must be scrutinized and approved by Ford prior to release. So both time and money need to be invested into the licensing aspect. On the plus side, Ford is there to help us whenever we have technical questions, ensuring we absolutely nail all the fine details.

### **Lindsey:**

Having successfully negotiated the license, I assume it's at this stage you considered build quantities, costings and a recommended retail price?

### **Jim:**

Yes. Pricing has gotten a bit easier as Automodello as a brand has matured. For the Mustang I Concept there is only one vehicle. So there's not an opportunity to do multiple colours, eliminating a Homage Edition. And as there's no specific founder still alive or willing to sign (we did approach Lee Iacocca, who is acknowledged as "the father of the Mustang", but as he parted company with Ford many years ago he regretfully declined any involvement in this project), this also eliminated a Founders Edition. We will therefore be releasing only

Standard Edition and Tribute Editions.

Next came the consideration of scale. The two biggest hurdles with the Mustang I Concept is that it doesn't look like a Mustang and most people, even some Mustang enthusiasts, don't even know it exists, or what it looks like. After discussing this with The Henry Ford and some Automodello dealers, we decided to release a Standard Edition in 1:43, with a build of up to 999 pieces, priced at \$119.95 (approx £77).

Once Dan Gurney proved keen to get involved, and endorse 200 special editions with his signature, we decided to designate 50 units in 1:43 as Tribute Edition models, which will retail at \$195 (approx £125.30), a price negotiated with The Henry Ford.

This still left 150 Dan Gurney

signed certificates of authenticity. Automodello has never before done a scale cross-over - by which I mean releasing a particular model in two different scales, but we decided to do this with the Mustang I Concept; so we will also be offering a 1:24 Dan Gurney signed Tribute Edition with a build of 150 pieces, priced at \$350 each (approx £224.90).

### **Lindsey:**

So, dream engaged, licensing in place and scale and build quantities decided on, what came next?

### **Jim:**

The next step was to shoot the car at The Henry Ford. At most shoots the museum or owners simply move the car where there is sufficient space, usually a

circumference of at least 20ft on three sides so you can get the proper perspectives. For the Mustang I Concept this was not possible as the car is located in a public area of the museum, with another car less than 4ft away on one side and a retaining fence on the other three sides. Further, museum insurance required a museum employee to be at the shoot for the entire duration.

Given the restrictions, we still ended up taking 350 to 400 photos of the exterior and interior of the car. Firstly we captured 360-degrees at eye-level (about 6ft on my frame), then 360° at waist level (about 40in on my frame) and then finally 360° from 6in off the ground. These images were followed by some close-up detail shots and numerous

pictures including a 2x2 Black & White [a 2in x 2in set of black and white squares that are used to create perspective views].

In addition a Technical Specifications Sheet (TSS) was completed, covering the key dimensions of the vehicle, such as wheelbase, overall length, height, weight, seat width, etc.

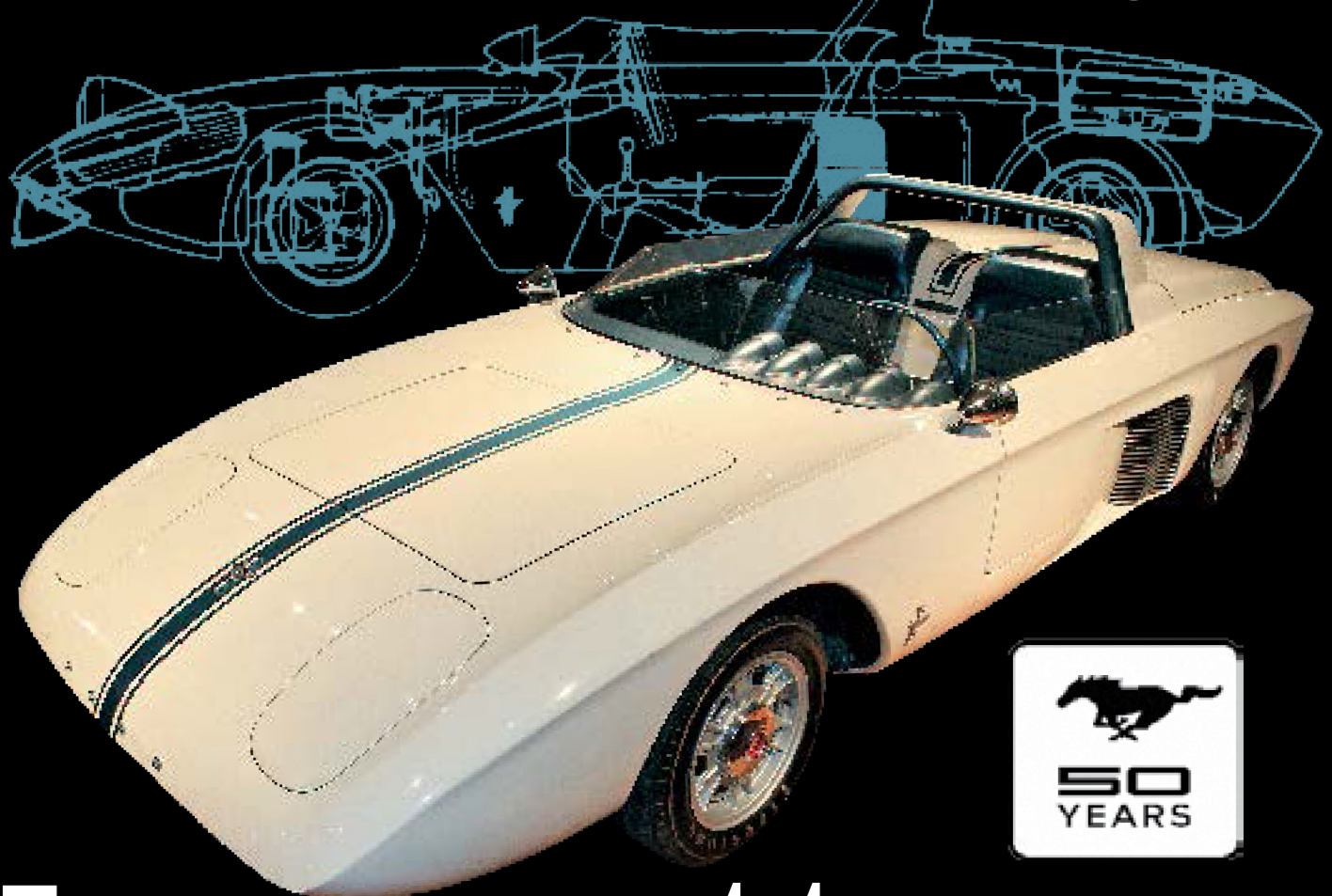
Once these images and the TSS were done, everything was then turned over to Raffi for the design process to begin... **MC**

In the following instalment, we'll be talking to Automodello's Design and Development Director Raffi Miniasan about the fascinating work involved in the next stage of the process.

**below:** The legendary Dan Gurney, who demonstrated the capabilities of the car at Watkins Glen in October 1962, signing certificates for the Automodello Tribute Editions.







# From concept to, well, Concept...

The real time tale of Automodello's 1:43 and 1:24 Mustang I Concept models planned for release this October

## Part 2

**L**ast month we talked to Automodello's CEO, Jim Cowen, about the very first stages of the process. This month, with the dream engaged, things gather pace, as Automodello's Design and Development Director, Raffi Minasian, explains to us the work involved in capturing Ford's first ever Pony car.

### Lindsey:

Once you've been supplied with photographs of the car [taken from every conceivable angle] and the completed technical specifications sheet [covering the key dimensions of the vehicle, such as, wheelbase, overall length, height, weight, seat width, etc] - all covered by Jim in last month's issue - what's the first stage in the design process for you?

### Raffi:

For me, it's important that I start with a general overview of the subject matter. I love cars, not just as objects but as cultural statements and iconic images of past times. So I begin by 'understanding' the themes and historic context of a car when modelling it. Much like a portrait painter or photographer wants to 'know' their subject before doing the portrait, I try to learn as much as possible about the car: its background, the people who worked on it, the visual and mechanical themes and the vehicle's place in history.

This Mustang is the father of 50 years of Mustangs, so it carries some significant visual weight.

In studying the details - in this instance, details such as the horse

emblem, the targa bar, the side scoops, the nose shape, etc, I begin to understand the features in relation to the total form. This is almost the reverse process of designing a totally new car, but since we are replicating an object with history and visual certainty, we have to get all the parts 'right' or it simply does not deliver the memories or pay tribute properly and honorably.

Lastly, as part of the preliminary work, I 'scale' the various pieces both visually and mathematically.

### Lindsey:

Over the years I've talked to a lot of model manufacturers about this. Scaling a model down isn't, as many may expect, an exact science, is it?

**Raffi:** No. Scaling involves an averaging of features on a large

form as it shrinks to smaller proportions. You cannot simply do a mathematical reduction as some parts would simply not be moldable, or not hold up dimensionally when mathematically scaled down. Additionally some parts will need to be slightly larger or the material will need to be thicker to meet structural requirements. We average details out and refine the parts based on each of the chosen manufacturing processes and what is technically feasible.

### Lindsey:

Having got to grips with the look and feel of the car, and having decided on dimensions, how do you create the actual pattern?

### Raffi:

With the 'artistry' as the driving force behind the work, and the basic dimensions determined, we then start to cut a block.

Often we use CAD [Computer Aided Design] drawings, starting in profile and moving inward as we cut into the block form, removing material per the dimensional specs.

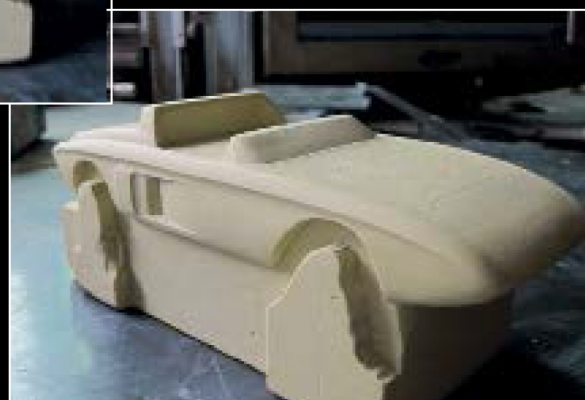
Digitally or physically it is essentially the same process but in CAD it can be both additive and subtractive without the pain of having to add material if you make mistakes.

Not long ago, we did all this in clay or plaster, literally sculpting





## Automodello Mustang I Concept



the shape and having to rebuild material surfaces if we went too far.

Now we use CAD files and cut patterns or 'grow' parts, allowing us to make minor adjustments to the 3D print or just print an entirely new one with the latest corrections.

CAD or not, the hand and eye have the final say, with almost all the final features, crisp edges, and radii or fillet sections done by hand. The finished pattern is cast just slightly larger than the product dimensions because the cast parts will shrink in size and mass. So we over-grow the pattern and then calculate the shrinkage to the final dimensions.

Once the pattern is done, I do a complete visual and dimensional review. If something looks too large or plump or off somehow visually, I will check it dimensionally. But even if it is correct in the math I will often

change it, because more people look at model cars than measure them, so you really want the model to be visually accurate first. Generally speaking the eye is very accurate with measurements, so seldom is the math radically different from the optical effect, but now and then, even after more than 25 years of doing this, I am surprised by an optical effect that defies the math.

With the pattern for the body done, we then move on to the interior parts and details such as the wheels and exterior trim. The same processes apply as mentioned above.

### Lindsey:

Roughly what sort of time scale is involved in getting to this stage? Or more specifically, how long did it take to create the pattern for the Mustang I Concept?

### Raffi:

We spend about a week in a photo shoot for the car and processing and sorting the pics into files that are easily accessed for reference. The master body shape takes about three weeks to complete, since the CAD can be tricky to get just right. Once the body shape model (BSM) is done, the interior and details are added, with another three weeks of development time. Reviews occur at BSM stage and again at complete pattern stage, which often can take three to four weeks longer with approvals from (in this case) Ford Motor Company required. In total we can go from concept photos to completed pattern ready for tooling in as quickly as two months, but often, with corrections and sponsor approval, this is increased to three months.

### Lindsey:

I assume the next stage is to

consider the finish of the model? Is it your job to match paint colours, decide on interior materials, etc? If so, are there any specific problems with recreating the right 'look and feel' of these to scale? And in the case of Mustang I Concept, did Ford or indeed The Henry Ford assist?

### Raffi:

With the casting master, or pattern, done, we move forward to the artwork, colour, textures, and added surface features. This is done with scaling also in mind. The colour on a full sized car reflects more light, since the object is larger and sunlight is very different from indoor light where most models are observed. Pigment therefore needs to be scaled, often increasing the intensity of the color (chroma). When metallic paint is involved, the very finely ground metal flakes incorporated in the micro-flake paint have to be scaled

Once all the ground work (covered in last month's issue) has been done, and calculations have been made, initial work begins on bringing the design to life in the physical world. This begins with a block pattern being cut.

Starting in profile and moving inward, further skilful cutting into the block form, removing material per the dimensional specs, sees the Mustang I Concept's stunning shape begin to dramatically emerge.

Using a neutral monochrome or primer, grey or soft white are best in this process because form becomes the focus. Colour distracts from the shape. It creates a visual signature that overwhelms the eye and causes different perceptual reactions. So using these neutral tones, shadows, peaks and valleys become the dominant visual features of the pattern.



accordingly for the model.

Artwork and logos also have to be scaled down. With stripes and dimensional thicknesses, we will often need to fractionally adjust scale for spacing between dual stripes, pin stripes or lettering, so that, for instance, the typography can still be read without filling in 'O' or 'A' letters. In the case of the Mustang I

Concept, the Henry Ford Museum and Ford Motor Company's Licensing group were instrumental in verifying many of the features and supplying detailed photo reference, aiding greatly in our scaling process.

### Lindsey:

Do you also design the packaging, or is that someone else's job?

### Raffi:

Yes; I design all the packaging and most of the internal promotional materials for the models.

The Mustang 1 Concept uses our 1:24 and 1:43 scale Automodello packaging with Ford's Mustang 50 Years logo and licensing emblems incorporated into the packaging.

### Lindsey:

Once the whole design process is complete, are you responsible for instructing and liaising with factory manufacturing the model throughout the entire production process?

### Raffi:

Yes; I not only follow through with pre-production samples to verify all the molding details, I also have two to four stages of sample production models that are sent during the process so I can evaluate the results as a total composition. This includes reviewing the assembly, gluing, plating, painting, all the material textures, the artwork, confirming the scaling effect, the stance of the wheels as they tuck into the wheel openings, final details like etched metal trim parts and production texture etches.

All the production processes involve making jigs and fixtures that also need to be reviewed to be sure those parts and processes are matched to make the best effects. It is not just good enough to make one model that is correct. We have to concurrently design an entire process to make hundreds of models such that all of them are accurate. Even though we have to do this uniquely each time and for each model car, it is very rewarding to see the final results in the hands of appreciative collectors. **MC**

This is a shell casting of the solid body shape (pictured left). The shell is cored from the solid and made of a durable resin that will hold shape, in order to make the flexible tooling for the final Mustang I Concept bodies.

In the foreground you can see a chunk of material that is the early stages of the seat. This will be carved out and shaped into the final pattern.

The pattern parts are made slightly larger so that when the actual model shells are cured, they shrink to the exact size that's been mathematically calculated.



Future instalments will include details of how a set of tools are cast. You will see a first decorated sample, production jigs and fixtures for paint and graphics and assembly, finally culminating in the finished 1:43 and 1:24 models.

Our thanks to the team Automodello for taking the time to share this fascinating and ongoing insight into the whole process, from concept to Concept!





# From concept to, well, **Concept**...

## Part 3

**Automodello's Design & Development Director, Raffi Minasian**, talks us through the next stage of the real time tale behind the 1:43 and 1:24 scale Mustang I Concept models due for release this October

**Q** In our August 2013 issue you explained the whole design and pattern making process, so now we come to the casting or 'shell' master, a configuration with all the trim and features detailed and from which tooling for the models will be created. Can you tell us a little about this and what needs to be evaluated here before you proceed to the next stage?

**A** The shell master is where we begin to see the model emerge as something more than just a sculpted form. It now has an inside and an outside that needs to scale in harmony with the colours, textures and features of the car. Things have to look "car like" now, as we start to consider emulating the surfaces and the overlapping details and, as we stack tolerances,

how all the forms will come together. Think of it like a shirt pattern, which is laid out in single-toned paper. It has all the makings of an accurate shirt, but it is not a shirt until the materials are selected and it is all stitched together.

**Q** Once you're happy with everything, a décor sample is created. We've already talked about the need to scale down pigment in the paint finishes and the reasons for this while discussing the design process (August 2013 issue), so I assume that the décor sample is the acid test in this respect? What else are you checking for once a décor sample is in your hands?

**A** Once we have the decoration sample we can start to start to look at the car as a whole, rather

than simply the form or overall surfacing. We are now obligated to study the ideas as they come together and create a total image.

This is the challenge with colour... Because the eye is looking at a smaller block of colour than it would be on a real car, we have to slightly increase the hue saturation in 1:24 so that it is slightly brighter, since the eye is seeing just 1:24<sup>th</sup> of the total surface area that it would on the real car. With less surface area for the light to bounce off, you need more chroma to translate the effect/impact.

When a model is to be finished in white it is especially difficult, because there are a lot of variations of white. The Mustang 1 has a distinct white, not off white but not appliance white. And the metallic blue stripe is a light

metallic with just a hint of silver to it that in some light gives almost an aqua effect.

Seat texture needs to be done with the right amount of 'sheen', so that it has a somewhat dulled appearance but also gives a realistic effect of the fabric. This is particularly difficult in resin as the surface is all about the paint. In molded plastic we can get a bit of "squish" and softness to it. Resin makes this much harder to achieve.

Plated pieces, minor trim items and photo-etched parts are all reviewed to ensure that the right texture, colour and thickness have in fact created the illusion of accurate scale. Again, we cannot rely purely on measurements here. Measurements are a starting guide, but artistry and interpretation of the combined look and 'feel' are equally important in establishing the final result.

**Q** Automodello is producing the Mustang I Concept in both 1:43 and 1:24 scale. So when it comes to finish, fitted features and trim, what are the differing considerations, if any?

**A** The smaller the scale, the more you have to adjust to the perceptions of the model and average out that visual compression. The smaller scale requires more refinement due to paint thickness, for example, as the same paint is now twice as thick on a 1:43 model in reality as it is when painted on a 1:24 scale model.

Further items also require more refinement in 1:43, such as grille lines, which might be very small and beyond the physical limits of the casting process. So, for instance, if there are ten blades or fins we might have to reduce to





Following the Mustang's tale in real time, we now see the casting or 'shell' master, from which the tooling for the models will be created. This is where the proposed models (in both 1:43 and 1:24) begin to emerge as something more than just a sculpted form. Design & Development Director, Raffi Minasian explains this with a simple analogy: "This is rather like a shirt pattern, which is laid out in single-toned paper. It has all the accurate makings of a shirt but it not a shirt until the materials are selected and it is all stitched together".



fewer blades per cm to still achieve the same effect while not losing a proper visual impact. Proportions for artwork, decals, and textures too, are all refined to meet the proper visual mass in each scale.

**Q** How detailed does the décor sample get? Does it feature all the trim and materials that will be applied to the finished model, or is it kept fairly basic just to give a rough idea of the finished product at this stage?

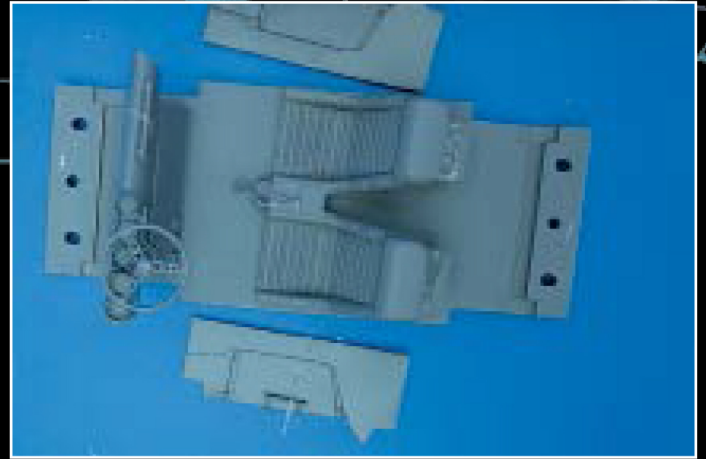
**A** We try to include as many of the production finishes and textures as possible at this time. In some cases, the plated parts will

not yet have been chrome plated, so they will be painted silver. Because the molded ABS requires hard tooling that has a longer lead-time, those plated parts are often delayed by a few weeks while the tool is made, the parts shot, the fit approved, the tool polished and the final parts built. Generally in the decoration sample stage we are anywhere from 80-90% done with the model, and (ideally) 100% done with the master.

**Q** There's no glazing yet, though. When does this come into the equation? Is it manufactured and checked for fit before or after the tooling process begins?

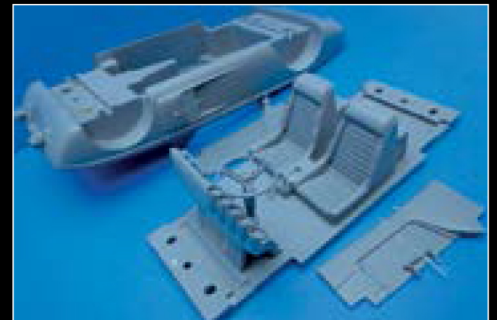






The 'shell' master now incorporates interior detail for the Mustang I Concept and the team at Automodello can start considering how all of the overlapping components will come together and whether any proportions for the artwork, decals, textures, etc, need to be refined to meet the proper visual mass in each scale (1:43 and 1:24).

**A** In the case of this model, there is only one piece: the windshield. Resin models like this are made in low production runs, so we will not use injection molding for the glass or glazing. Instead we use acetate or clear sheets of material in various thicknesses that can be bent or curved to fit the desired shapes and glued into place. The Mustang 1 has only slight curvature to the windscreen, but it is fragile so we will do some tests with a variety of thicknesses of material in acetate and then determine if we need to do a molded clear part in order to satisfy the clarity and curvature. Acetate stays remarkably clean and clear but it is more fragile to the touch.



**Q** With the Mustang I Concept, the model is being produced under official Ford licensing. So does the décor sample have to be approved by Ford at this stage?

**A** Yes. We always want our brand partners to review the models at the body shape, pattern and decorated stages. Their approval is especially important

at these three key milestones.

Often at key reviews like this we learn more about the features that are most important to our brand partners than we do about issues of authenticity. With Ford, my experience is that the staff are quite aware of the historic significance and original details of Ford's vintage products. This is not always the case with other marques.

**Q** From my experience of décor samples, they're usually very fragile to handle. So, provided you're happy with everything first time round, is more than one created in case of mishaps? And what happens to décor samples afterwards, as clearly they are a very special record of the process?

**A** We make two, generally. One to keep as a record and the other as a working sample. The working sample will get shipped to various review stations (brand partners, designer, sales, etc) and often will get photographed for promotions. The first remains with the manufacturer as an historic record but the second working copy remains with the factory in the event of a further production run, in a new color or as a secondary edition.

**Q** Is there anything else that needs to be done before tooling (which we will look at in the next instalment of the Mustang's tale) for the model is created?

**A** Generally we are done with the development once all members of the review team have weighed in on the details. Though the model is far from finished, the direction is clear and understood with this key visual reference tool. The hard part is not making one or two. The hard part awaits - building several hundred, all with consistently meticulous detail, correct placement of features, perfect paint, and accurate assembly for all pieces. To do this, we have to use process engineering and refined assembly methods, and rely on generations of artisanship and hand crafting skills delivered by specially trained and dedicated staff members. **MC**

**right & below** We were hoping to bring you photos of the décor sample in this instalment but, with our series on the development of the Mustang I Concept very much being a real time tale, work on this is currently still in progress. In an exclusive peek behind the scenes though, here are the very first shots showing preliminary colour breaks. We should point out that the blue seen here will not be the blue used, and at this stage the chrome, which is not yet ready to apply, is merely represented by silver paint. In the next instalment however, we will be able to illustrate the far more refined and ready for approval factory décor sample.





# From concept to, well, Concept...



**Automodello's Design & Development Director, Raffi Minasian, provides more exclusive revelations about the 1:43 and 1:24 1962 Ford Mustang I Concept models currently in development...**

## Part 4

**A**s collectors, we see only the finished product, without perhaps fully understanding the sheer volume of work that goes into the model we hold in our hands. So this continuing series, following the real time development of Automodello's Mustang I Concept 1:43 and 1:24 models, provides a real insight into what goes on behind the scenes.

This month, Design & Development Director, Raffi Minasian, talks us through tweaks at décor sample stage, the consequences of necessary corrections and the creation of the moulds from which the production models will be cast...

**Q**In the last instalment in the Mustang's tale, we looked at the shell master and talked in general about how décor samples are evaluated, although at that point you'd yet to receive the prototype for the Mustang I Concept from the factory in China.

Now you have it in your hands, but I know [I've obviously kept in regular touch with Raffi in order to schedule in real time articles at each stage of the process - Ed] that you first receive photographs via email. So do you actually arrange to have 'tweaked' anything you're not happy with 'tweaked' after seeing these, or do you wait until you've had the chance to see the actual décor sample?

**A**I generally will have the samples sent to me for review in person. There is a lot I can change and advise for correction when viewing photos, but it is never the final review. Too much can be missed in a photo and colours are seldom exact when photographed.

**Q**Now the décor sample for the Mustang I Concept has arrived,

is there anything you're still not happy with? If so, can you tell us a little about any adjustments you'll be making?

**A**Yes, there are a quite number of adjustments we'll be making in order to ensure this model is absolutely spot-on, and these are as follows:

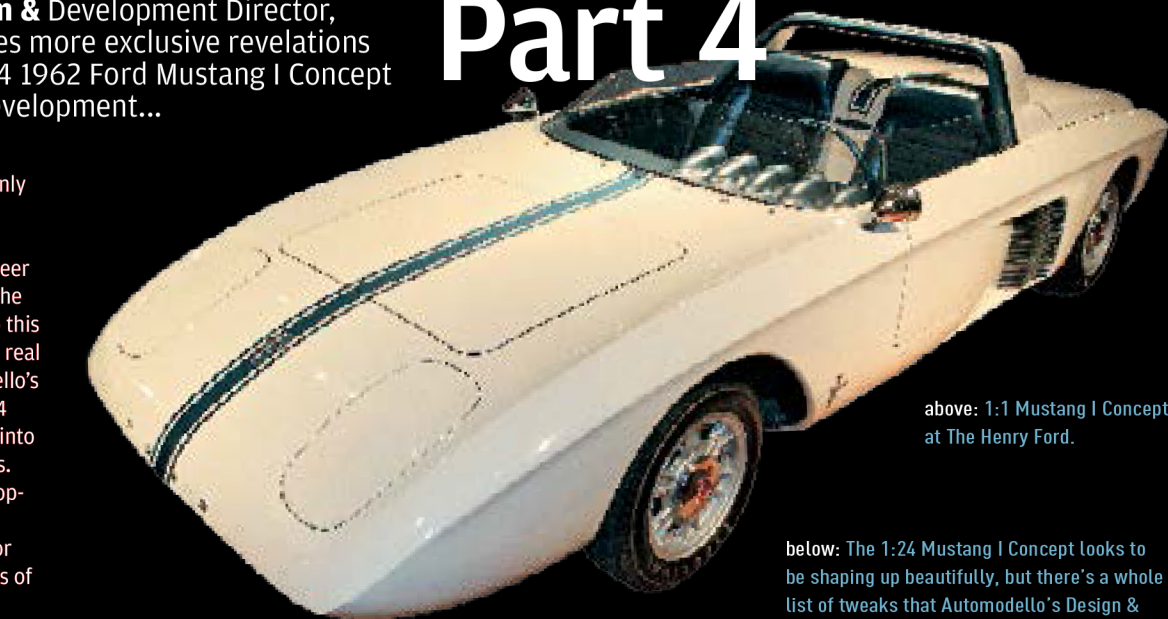
**1** The body stripe on the décor sample is still not the correct colour. We'll match the colour of the stripe with the interior, and the interior needs to be slightly darker. This darker colour will be the same colour used for the body stripe. The stripe, however, will be gloss metallic, whereas satin metallic will be used for the interior.

**below:** The body stripe on the décor sample is still not the correct colour. Automodello will match the colour of the stripe with the interior finish, which itself is to be darkened.

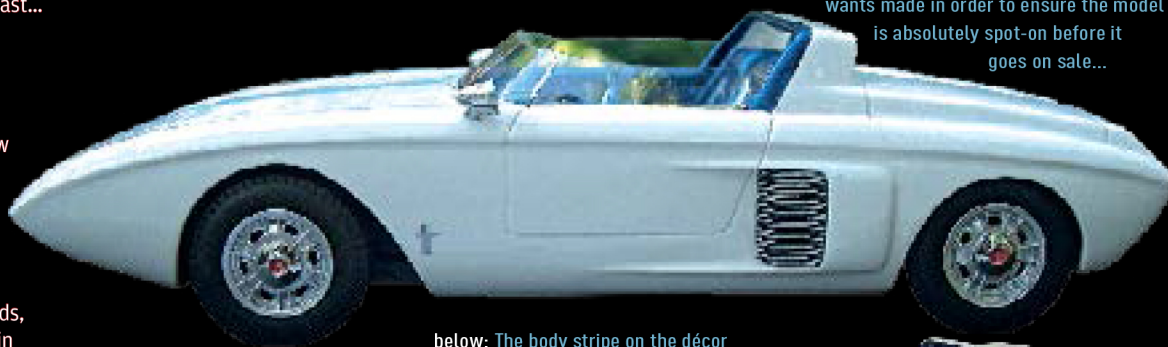
**2.** The clear 'glass' around the car is currently deformed and not properly shaped. So we will experiment with thicker materials to hold the shape or we will use different moulded materials for better effect and rigid construction.

**3.** The chrome trim tape at base of windshield is not applied evenly on the décor sample. This trim will be evenly applied at base of windshield and not show gaps when the model goes into production.

**below:** The 1:24 Mustang I Concept looks to be shaping up beautifully, but there's a whole list of tweaks that Automodello's Design & Development Director Raffi Minasian still wants made in order to ensure the model is absolutely spot-on before it goes on sale...



above: 1:1 Mustang I Concept at The Henry Ford.



**4.** All emblems and logos on the car, as well as lettering, will be crafted in chrome foil rather than the PMS877 silver decals. PMS is the colour system we use for verification. The factory has the same colour guide chart I do, so when I reference a colour the mix is standardized for exact replication. Sometimes, however,





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even those colours can vary, so physical inspection is always needed.

**5.** The tyres will have the Firestone wording and pin stripe. Both wording and stripe will be PMS874 Gold satin.

**6.** The rivets used within the interior (on the seats and to the doors) will be painted in PMS877 silver for a realistic metal effect.

**7.** I want the factory to try to mould in the tiny holes in the seat pleats. The holes in these narrow pleats make a distinct pattern in the material. We may, however, find them too small to hold detail, in which case we will have to leave as is, but I would like to give this a try. To do this, we can use strip moulded perforation inserts for the master and see if the holes can be replicated so that they withstand being filled with paint during finishing.

**8.** The steering wheel spokes will be chrome, rather silver.

**9.** The tail lights are still missing the silver line detail on the red lens. I would like to try and add this detail, provided it is not too small to achieve consistently.

**10.** The first instrument from the driver's side with the red insert is not correct. The trim bezel is painted silver on the sample and this should match with all other instruments and bezels. We will correct this.

**11.** The seat belts are missing. We will add and use photo etched stainless steel for the buckle, and replicate the Ford logo on the buckles and dark blue straps as per our photographic reference material.

**12.** The door panels and floor material should be carpeted or flocked to show difference in material. We will flock using a slightly darker blue, as per the interior seat material. This will help the interior appear more realistic and accurate.

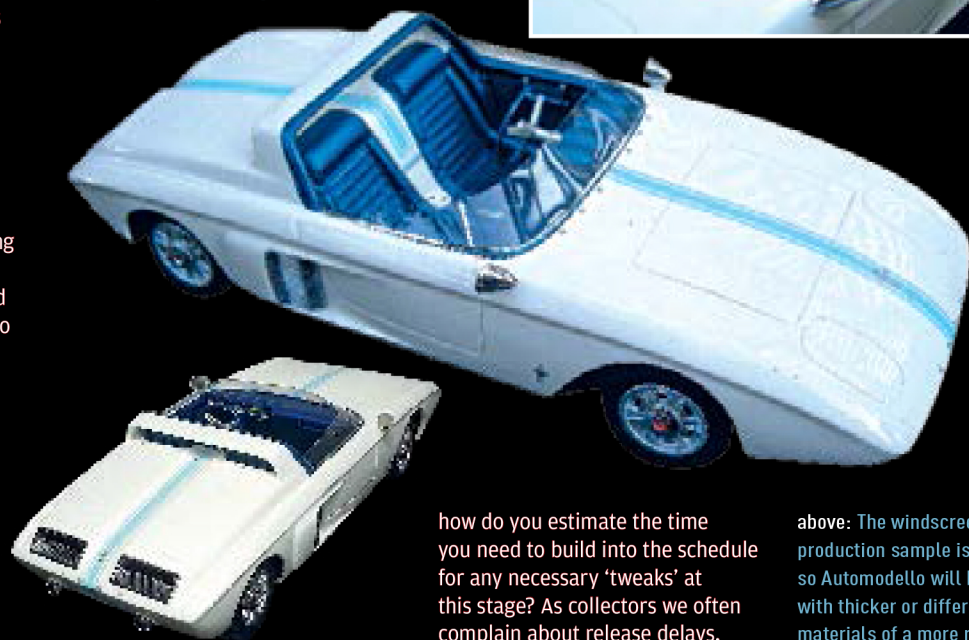
**13.** The floor pad will be dark blue, not black.

**14.** It is hard to see it under the dash but, if possible, we will add the red fire extinguisher on the passenger side.



left & above The interior colour needs to be slightly darker, Raffi tells us.

right: The chrome trim tape at the base of the windshield on the décor sample is not evenly applied, points out Raffi. This will be corrected so that no gaps are visible. Raffi would also like the factory to try and mould tiny holes in the seat pleats, as per the ones on the real car's upholstery. Even at 1:24 scale though, this could prove quite a challenge, as it may prove difficult to stop the paint filling these perforations. The seat belts are not yet present on the décor sample. Production models will feature seat belts with photo etched stainless steel used to replicate the buckles, which will even carry the Ford logo.



above: All emblems and logos on the car will, along with the lettering, be crafted in chrome foil on the production models, rather than being represented by the silver decals seen here on the décor sample.

**Q** This is Automodello's first cross-over model, in that it's being produced in both 1:43 and 1:24, so do you get to see both décor samples at once, or is the production process split and/or staggered?

**A** I will see décor samples in both scales to ensure the colours and trim are absolutely as they should be.

**Q** As each must present different challenges,

how do you estimate the time you need to build into the schedule for any necessary 'tweaks' at this stage? As collectors we often complain about release delays, so it will be interesting to have a manufacturer explain the reasons behind them?

**A** We want to offer our collectors the best model they can find. Even though we are familiar with the process, experienced with the details and eager to take on new challenges, the initial assembly doesn't always come together cohesively. Model cars are a composition, not just a collection of details. No matter how highly detailed a model is, it can look terrible if the complete composition doesn't hold up well. When this happens with a model we're working on, we'd rather delay the release date, if necessary, rather than make compromises. The model cannot just be excellent

above: The windscreen on the pre-production sample is deformed and so Automodello will be experiment with thicker or differently moulded materials of a more rigid construction that will better hold the shape.

in its detail, it has to be excellent in all uniformed ways.

While we are perfecting details or unifying a composition - for example, fussing with more orange in a red metallic paint, scaling 1mm off a wheel diameter, shaving a door handle so it does not stick out too far or changing a material from moulded ABS [Acrylonitrile butadiene styrene: a light weight but tough thermoplastic commonly used by model manufacturers] to photo etched metal - we can of course run the risk of losing our factory line production slot. This can equate to a two to three week delay.

These delays are costly. They present balancing challenges in



above: The steering wheel spokes will be chrome rather than silver (as seen here on the décor sample) on the actual production models. Also, Raffi points out, the door panels and floor material will be carpeted or flocked and the floor pad will be dark blue, not black.



cost vs return, and can mean loss of sales if collectors get frustrated and decide to spend their money elsewhere. But while we know the product does need to land on time, we also know a great product is worth the wait.

**Q** Given what you've told us about your evaluation of the décor sample for the Mustang I Concept, how confident are you that things will run to schedule and the models will be released in October, as announced?

**A** At this point, the October release will probably not happen. Production will commence in early October but that will take three weeks to complete. So realistically we are now looking at a November release date.

**Q** Once the required refinements have been made, you'll then move on to tooling. Automodello manufacturers in resin, so can you give us a brief explanation of how creating tooling for resin models differs from creating tooling for die-casting purposes?

**A** Tooling for resin models is created by using RTV

above: The first gauge, with red insert, from the driver's side is not correct. The trim bezel is painted silver but should match with all the other instruments and bezels; this will be rectified on production models.

[Room Temperature Vulcanizing] silicon. The silicon is poured into a framed structure over the master and cures into a flexible mould, which can be flexed to remove the rigid resin body castings. Within a cycle of 15-20 body parts, the mould begins to show evidence of tears or flaws, so it is taken out of production and another is used in its place. To make 300 models we sometimes will use 20-30 moulds. As long as the master is in good shape, we can get about 1,000 pieces from it. If we are going to make more than that, we will make a duplicate master. More than 2,000 in resin and it starts to make more sense to mould the body shell using a steel tool.

**Q** Are there any specific qualities you can achieve when working in resin that you can't in die-cast?

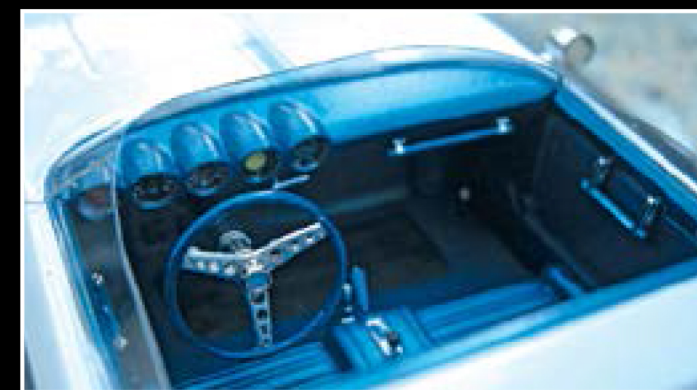
right: The taillights on the décor sample are still missing the silver line detail on the red lens. Raffi hopes this can be added provided it is not too small to achieve consistently.



below: Tyres on the production will in fact have the Firestone wording and pin stripe.



below: Although not yet featured on the décor sample, Raffi tells us a fire extinguisher will be tucked away under the dash on the passenger side.



**A** Resin facilitates minute facets to a much higher degree than die-cast metal, so we can capture a lot of fine detail. However, the paint best suited to resin tends to be thicker than that applied to die-cast models, so we have to take great care that detail is not lost in any way during its application. The big advantage is that resin tooling costs are far lower, so we can make much smaller runs and venture into the more esoteric areas by producing some of the fascinating but lesser known cars often overlooked by die-cast manufacturers.

**Q** You need to make a massive investment in new die-cast tooling but then you can potentially run off thousands and thousands of models to recoup this. With resin the initial outlay is nowhere near as daunting but you still have the same amount of research, design, licensing fees,

etc, to budget for, and presumably a much smaller return, seeing that release numbers are far more limited. So how difficult is it to keep prices to a level the collector will find acceptable, while keeping quality and detail to the standard Automodello has set for itself?

**A** This is a huge balancing act. Investing in the right car is the key decision of course, which even before we begin work on the model takes time as well as resources up front. Obviously we have to calculate our returns to ensure we cover all costs involved, and the prices need to be kept fair and attractive to the collector while still leaving sufficient revenue to fund our ongoing investment in future models. **MC**

### From concept to reality...

In the next instalment we will follow the Mustang I Concept through the production and assembly process.



# From concept to, well, **Concept**...

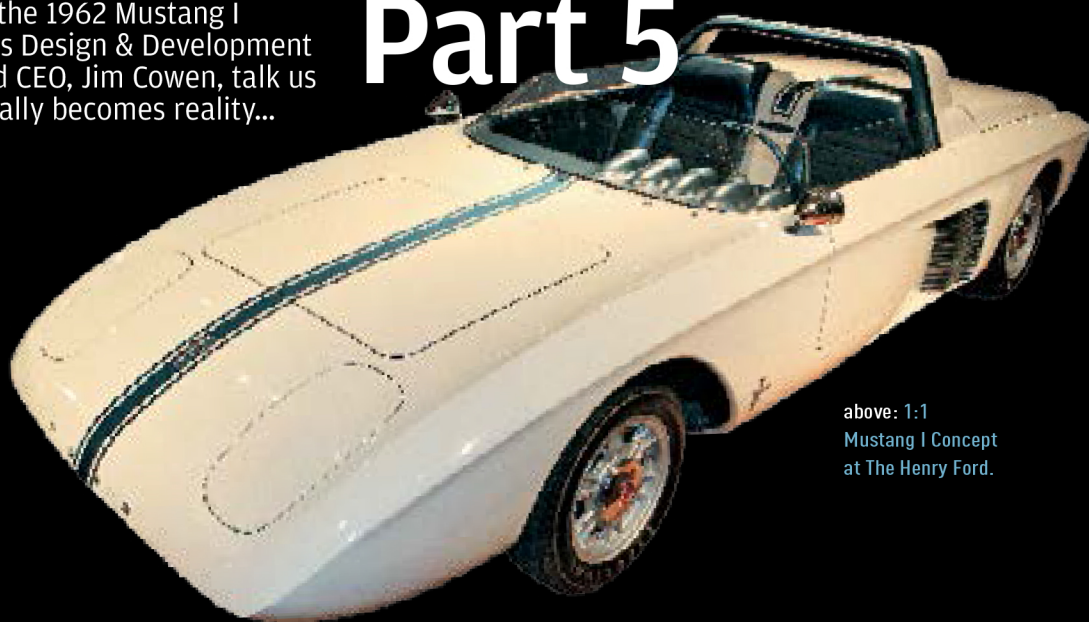


## Part 5

**In this, the final chapter** in the 1962 Mustang I Concept's tale, Automodello's Design & Development Manager, Raffi Minasian, and CEO, Jim Cowen, talk us through how the concept finally becomes reality...

**Q** Following months of research, design work, pattern making, mould making, décor sample inspection, etc, the Mustang I Concept has finally gone into production. In the last instalment of the Mustang's tale [see the December 2013 issue of MC] we talked about the differences in creating tooling for resin and die-cast models. Before we talk about more about the production process however, can you just tell us a little about how you chose the factory in China contracted to carry out production for the Mustang I Concept and who actually oversees production?

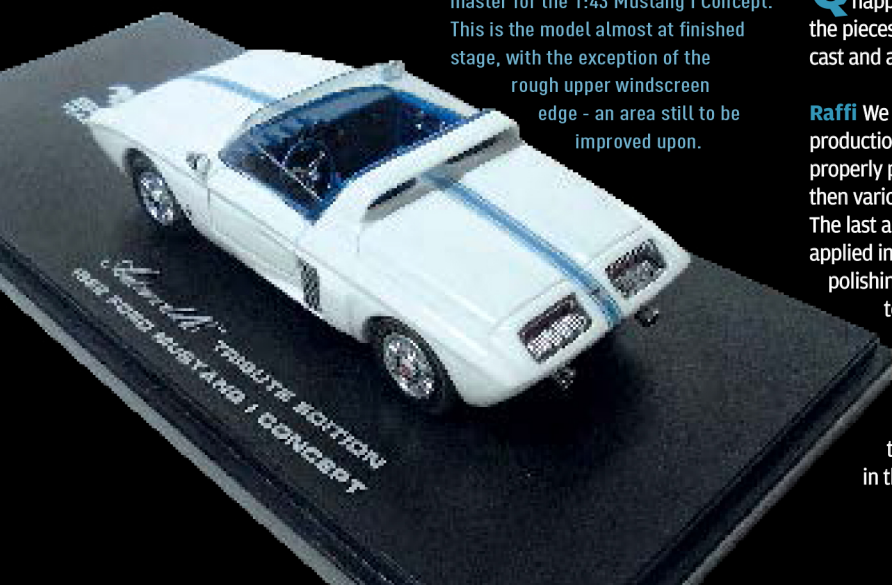
**Raffi** The factory we use is dedicated to working exclusively on our models and we spent several years developing our process and refining the two scale (1:43 and 1:24) features. Working in two scales presents different challenges in both production methods and quality requirements. I oversee every aspect of the development and review all final factory samples. Once I am completely happy with these samples, they are then used on site at the factory as the standard against which to match all aspects at every stage of the process and at the final quality control checks made on production models.



above: 1:1  
Mustang I Concept  
at The Henry Ford.



above below The production/line master for the 1:43 Mustang I Concept. This is the model almost at finished stage, with the exception of the rough upper windscreen edge - an area still to be improved upon.



**Q** Can you talk us through what happens in the factory once all the pieces for the model have been cast and assembly begins?

**Raffi** We schedule the order of production so that all parts are properly painted, decals applied and then various trim features added. The last and most fragile details are applied in final assembly. Hand polishing is done at the very end to remove any finger prints or dust that has been attracted in the assembly process. Models are then attached to their base and installed in their Automodello gift box,

along with their Certificate of Authenticity and story card explaining the history of the car. The individually hand-signed certificates for the Tribute Edition models, which, in the case of the Mustang I Concept, as well as being signed by Jim [Cowen], Automodello's CEO, have also been signed by the legendary Dan Gurney, are added later at Automodello's HQ in the USA.

**Q** How many man hours does this involve per model?

**Raffi** Complete assembly including casting, plating and artwork application can range from eight to ten hours per model, depending on the level of



## | Automodello 1962 Mustang I Concept

detail that is required. In the case of the 1:24 Mustang, we spend a great deal of time on the instrument cluster decals, hand formed windscreen and decal application on the body.

**Q** What sort of wastage do you expect or allow for on average at the quality control inspection stage?

**Raffi** In the early stages of the production run we will waste or run through about ten cars as they first come off the production line. These discarded 'starter cars' set the pace and get the skilled worker up to speed with the refinement needed. While we refer to our Chinese manufacturing facility as a factory, it is really more of a cottage industry with a series of skilled crafts people working closely to match the production quality standard as nicely as they can. Once they have momentum and know the best methods, the production efficiency increases. Naturally, a run of only a few hundred models is often more costly in waste on a percentage basis than a much larger run.

**Q** What sort of mechanism is being used to secure the models to their plinths? From a collectors point view, it's really important that manufacturers consider ease of removal from the packaging and the plinths should we

wish to remove models to display in our cabinets, but all too often this can be over complicated and fiddly. Reassure us!

**A** We actually use very strong and durable screws that hold the model in place on the base. We use springs on the 1:43 only, in order to retain slight flex in the drop due to having less material thickness in 1:43 body bossing. 1:24 is more robust so we use isolation mounts rather than springs. The base attachment is critical to secure the model so that it doesn't come loose in shipping. It's more than just a decorative

attachment to the base or plinth, it has to serve as a complete and secure unit in the gift box. We've found this is the best method to ensure the model is carefully and securely fastened before transit and shipping, but a handheld screwdriver will remove the screws easily and without damage to the model.

**Q** What tests, if any, are carried out before the packaged models leave the factory? As collectors most of us have heard of 'drop tests', are such tests still actually carried out, even for delicate resin models?

**Raffi** We drop test models in general when we design the packaging. Once they are secured to their base and installed in their packaging we do not need to drop test any more. Great care is taken when shipping. We insulate using foam around each gift box within each batch of models packaged.



above Amazingly, it's been possible to mould the tiny holes in the seat pleats. The holes in these narrow pleats replicate the distinct pattern that's a feature of the material used in the seats of real car. Being a perfectionist, Raffi was eager to include such exact detail but had been concerned whether these holes would withstand being filled during the paint process. However, an innovative technique was tried and tested using strip moulded perforation inserts on the master and it worked. The excellent results can be seen here on a 1:24 production sample.



above The detailing to the wheels and tyres looks simply superb.



above In fact the technique worked so well that even on the 1:43 model these tiny seat perforations were able to be included!

left below The Mustang I Concept (seen here in 1:24, left, and 1:43, below) looks tiny on its plinth, but as Automodello's CEO Jim Cowen points out, the car itself is indeed small. A more compact plinth was considered, but unanimous dealer and collector feedback at the start of the project saw this option rejected in favour of keeping the size of the plinth consistent with the standard size used for other Automodello models.



**Q** Once the run is ready to leave, are the models shipped or air freighted to the US?

**Raffi** We ship large orders via sea freight. This takes roughly three weeks of transit (depending on the time of year), plus a few days in customs clearance. Once the product has cleared customs, there is a day or so in ground transit from port to our final destination, where the cased units (six per case in 1:24 or 24 per case in 1:43) are opened, inspected and shipped to collectors all over the world.

**Q** How does the Automodello distribution network work? Have, at this stage, all the models already been allocated to dealers, or will Automodello also be selling these models directly to collectors?

**Jim** Automodello only sells models via its corporate parent known as Diecastm (www.diecastm.com) and our network of specialist dealers, museums and automotive resources around the world. All dealers adhere to the Automodello channel rules and there are some significant benefits here for the collector. Firstly, they will be buying from specialist outlets that are in direct and regular contact with us and will therefore know the



product inside out. Also, they will not be selling at the recommended retail price on release and then throwing caution to the wind, taking a hit and slashing prices wildly a month or two down the line just to make way for the next wave of stock - this means values are held and collectors' investments are protected.

**Q** Numbers have been kept very limited, considering this model captures a car of enormous historic importance; so if it quickly becomes apparent that demand is going to exceed supply, will there be a re-run?

**Jim** No. Never. When we make an announcement of a model car we dedicate that run to the number limit specified and there are no more made. If there are variations of a car (for example, a hardtop version or a

different colour/trim option) and the demand is high enough, we will consider representing these, or perhaps undertake a different series run, but in the case of the Mustang I Concept, the car itself is unique, so the models we've announced will be the full extent of the run.

When I put on my collector's hat, if a manufacturer ups a run from the originally stated number then I feel cheated. Some manufacturers will announce, say, 50, then when demand is 150, they'll pump-up the limited edition to 149. At Automodello we don't do that, whatever we initially state as the run is what it will be. Our Homage Editions, for example, consistently sell out but we don't build more.

**Q** Having seen this project though, from concept to, well, Concept, what are you most of proud of?

**Raffi** Several things come to mind but I am most proud of the dedicated Automodello design and crafting team. The amount of care and diligence taken to replicate each of these model cars is simply superb. As the lead designer, I am always eager to plan and build the best master model for replication. But the real magic comes when we witness multiple pieces executed with equal excellence delivered to appreciative collectors all over the world. We take great pride in knowing our models occupy a special place on the display shelves of passionate enthusiasts. The joy of completing a beautiful run of models gives us the boost to start the next one. And as these sell though, we return to the drawing board, eager to start the process once again. **MC**

## Automodello 1962 Mustang I Concept Prize Draw!



To round off this fascinating series, Automodello has kindly donated a 1:43 hand-built, high-spec, resin model from its very limited edition run of no more than 999 pieces to offer in our exclusive Model Collector Prize Draw this month.

So don't miss your chance to win a meticulously accurate 1:43 replica of this incredibly historic prototype, which can truly lay claim to being Ford's first ever Pony car. The model depicts the car as it was debuted by the legendary motorsport driver Dan Gurney at the October 1962 US Grand Prix at Watkins Glen.

What's more, Automodello is one of just 50 licensees worldwide authorized to make 'Mustang 50 Years' merchandise, and both plinths, certificates and packaging for all the Automodello Mustang I Concept models, including the one offered here, will carry the specially designed logo for the 'Mustang 50 Years' celebrations taking place in 2014.

To be entered, all you have to do is complete this form (photocopies are also acceptable should you not wish to cut your magazine) and mail it to the address below before the specified closing date. Alternatively, you can also enter digitally by visiting our website at **www.modelcollector.com** **Closing date: January 3, 2014**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

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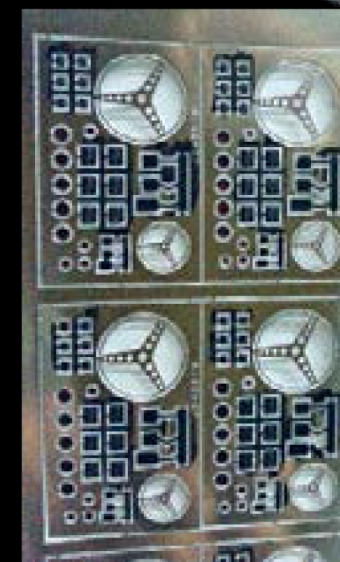
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Telephone no. \_\_\_\_\_

email \_\_\_\_\_

**Send to:** Automodello Mustang I Concept Prize Draw, Model Collector, MyTimeMedia Ltd, P.O. Box 269, Rossendale, Lancs BB4 0DJ

If you do NOT wish to be contacted by Model Collector and MyHobbyStore Ltd please tick here: email ☐ post ☐ phone ☐ If you do NOT wish to be contacted by carefully chosen 3rd parties please tick here: email ☐ post ☐ phone ☐



left & above Carefully crafted fine metal trim and interior features, such as dashboard instrumentation, have all been hand applied to each and every model.