

Hifi Pig

Quarterly

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CARDAS AUDIO'S ANGELA CARDAS
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FACTORY VISIT

ACOUSTIC SIGNATURE, GERMANY



Acoustic Signature are a German manufacturer whose company slogan is “Teutonic Engineering”, Hifi Pig’s Linette and Stuart fly over with Audio Emotion’s Gary Cargill to meet the team, take a look at the company’s turntables and tonearms, and the engineering skills that go into making them.

Hifi Pig
www.hifipig.com

ACOUSTIC SIGNATURE FACTORY VISIT



When we were invited by Audio Emotion to fly out to Germany and visit turntable manufacturer Acoustic Signature, we naturally jumped at the opportunity. I've long admired the company's offerings when I've seen and heard them at shows and so getting to see how they are put together really appealed. The thing is, Acoustic Signature turntables aren't just "put together" in the sense that many turntables are an amalgamation of many bought in parts that are then assembled in-house, at Acoustic Signature pretty much for every part of the turntable a solid block of Aluminium comes into the factory, is machined and then is finally brought together to make the finished product. The company use the slogan Teutonic engineering and as we progress on our tour it becomes self-evident why this slogan has been chosen.

Asking Gunther Frohnhoefer (pictured) what he feels are Acoustic Signature's unique selling points he comes back with a self-assured air that has one feeling confident that he is in control of every aspect of the design and manufacturing process, telling us that they concentrate primarily on their own products (15% of the business is OEM), everything from 3D design to CNC machining and CAM programming is done in-house and that the highest priority is controlling quality by using machines that are so precise that they simply do not make mistakes with the right, and well trained, people behind the machines. This last point is interesting with Gunther telling us it takes six months to train a CNC operator.

Of course, some parts are bought in and here Gunther is keen to point out that the location of the Acoustic Signature premises is no accident. Süßen (or Süssen), where the Acoustic Signature HQ is located, is a town in the district of Göppingen in Baden-Württemberg in southern Germany. It is located on the river Fils 8 km east of Göppingen, near Stuttgart with the region being a centre for engineering excellence meaning that high quality products and services are only a stone's throw away allowing for "just in time" delivery of those items that are being bought in from outside

suppliers. Look at some of the household names and their reputations for solid engineering and you will get an idea; Porsche, Mercedes and Bosch to name but a few.

On the day we arrived a small but hefty delivery of "raw" platters for the £109,000 Invictus turntable had arrived in the loading bay. These, like 90% of what is bought in, came from the area and the whole Made in Germany being a big thing with Gunther saying "Made in Germany is a high standard, Made in Swabia is an even higher standard". So, bigger bought in parts arrive "just in time" whilst the raw materials (aluminium and brass) for smaller parts are bought in in long bars. There are two grades of aluminium used with the black variety being used for parts that do not need anodizing and the more expensive blue aluminium being used for platter, knobs etc that all do need anodizing.

Gunther is keen to point out Acoustic Signature's green credentials stating that ALL waste metal is recycled and that the factory only runs on renewable energy adding that the company recognise that their turntables are a luxury product and that adding a few euros to the overall costs to enable this greener approach is nothing in the grand scheme of things.

Gunther's enthusiasm for his craft, he is an engineer through and through, shines out and he's keen to show us the Boehringer lathe made in 1957 that he learned his trade on and which he later bought.

CAD ROOM

Needless to say, this is where all the programming of the CNC machines takes place and whilst we were in there the designer was working on the armboard for the Invictus Junior. Each armboard takes two hours to produce and there are four armboards on the Invictus – so just for the armboards we are looking at eight hours of machining. Gunther is keen to tell us that everything is machined to very low tolerances and the systems and machines that are in place are there

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to errors are not made - for example when metal is turned it naturally gets hot, expands and if these systems were not in place parts would be produced that were not uniform. For reference the machine that is used for making the armboards costs in the region of €175 000 and they have a new machine arriving for Christmas that will allow for production of three Ascona plinths at once. For a non-engineer type this is all quite fascinating stuff with Gunther explaining that the machine uses forty different tools depending on which part of the process is being carried out and all is done automatically.

You certainly get the impression that this whole process is seriously monitored and governed from start to finish and that once you see this process in action it certainly inspires an innate respect for the finished product.

I mentioned the arrival of the raw materials for the Invictus platters earlier and now we were to see them being milled and lathed on the €300K DMG Mori machine. At this point I spy a micrometer lying on a work bench and is hammers home that what we are seeing here is precision engineering being carried out to the highest of standards.

The next machine the Mori Seiki was making feet for the XX turntable with Gunther pointing out that all the tools here are made from diamond to give a finer finish.

EMPLOYEES

One thing that says a lot about a company is the way that employees are treated on a day to day basis and what I liked here was that everyone was keen to talk and share their experiences with there being a clear pride in the work that they were doing. In a mass-produced age of throwaway this and that this attitude and pride was a great thing to see. Of course, looking after your work force is vital in ensuring the finished product is the best it can be and at Acoustic Signature they seem to have taken this onboard with free soft drinks,

tea and coffee being available to all employees and at noon everyone downs tools and goes for lunch together in the well-appointed and spotless dining room/kitchen. This may seem like a small thing but a real break with your cohorts in nice surroundings goes a long way to creating an atmosphere that people are happy to work in. Likewise, bathroom facilities are clean and really rather nice.

TONEARMS AND CARTRIDGES

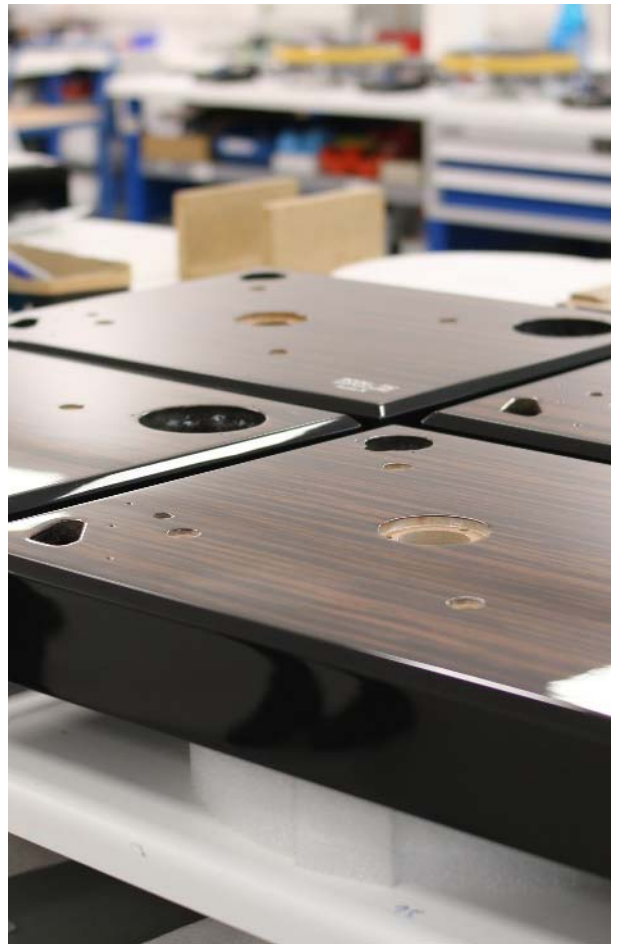
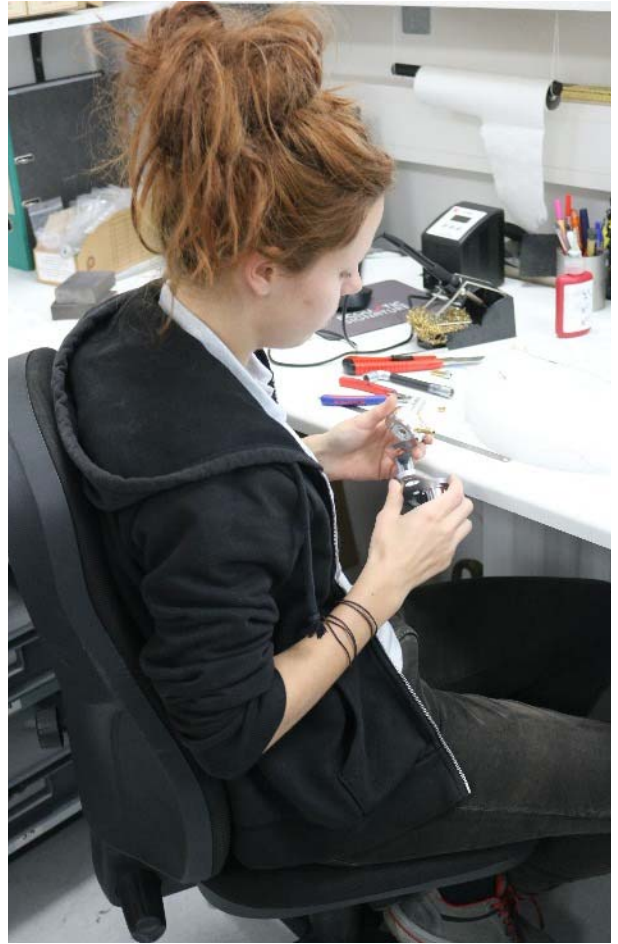
We sit and have a coffee in the dining room and chat about the company a little with us asking about the tonearm part of the business which now makes up 35% of the company's turnover since their introduction in 2014, with Asia being the biggest market. Acoustic Signature employ goldsmiths and watchmakers in the manufacture of tonearms with Gunther pointing out that these skilled craftspeople are used to working with smaller parts and tight tolerances. Later in the tour we are shown the inner structure of one of the tonearm wands by way of a cutaway and told that the internal structure is 3D printed. All the tonearms and all the parts for tonearms are made in-house with all finished tonearms being tested on the test-deck where they are listened to.

He also at this point mentions cartridges which have their housings made in-house but the inner workings being manufactured by external suppliers with Gunther keen to add that he is aware that the skill set of Acoustic Signature is on the machining side of things rather than making cartridges from scratch and so why would they get involved in something that they are not masters of their craft with.

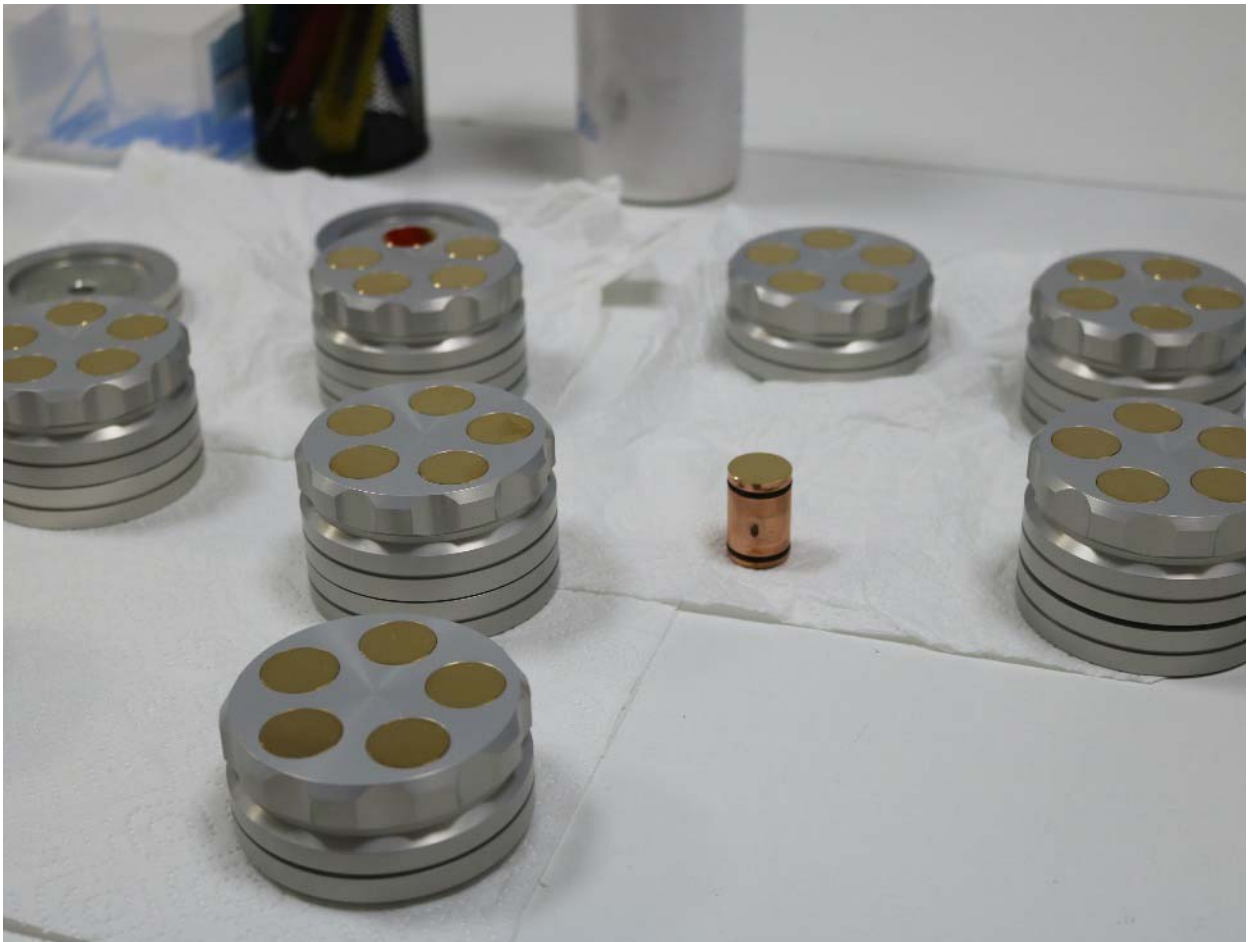
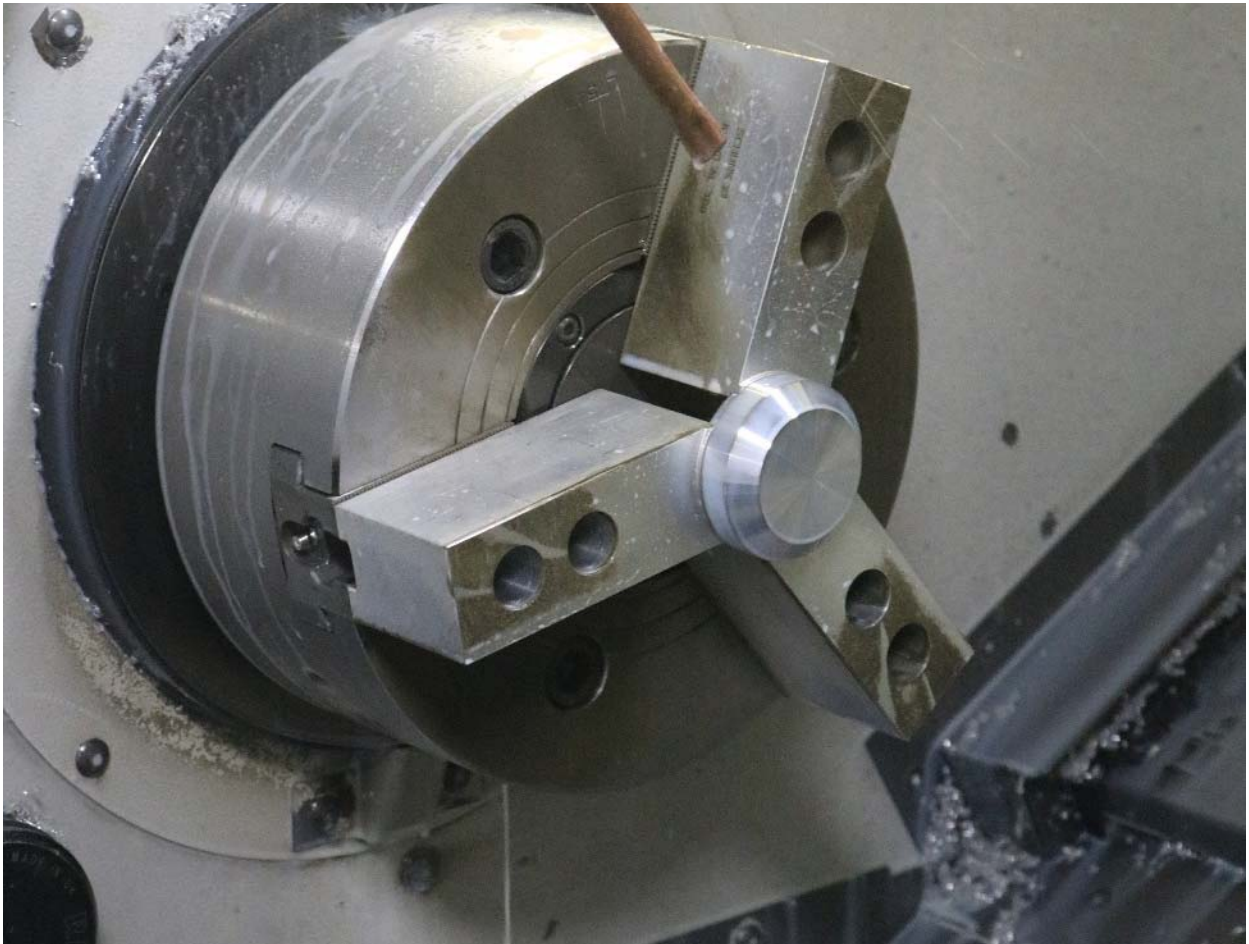
ATTENTION TO DETAIL

As we walk into the assembly room, it's nothing like I was expecting, we are greeted by a whole host of the rather lovely looking Double X turntables (£3399) with their seven layers of piano lacquer ensuring that the locally sourced Palisander and Macassar really shines – it

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has to be said that they really do look beautiful. Behind the Double X turntables is a table full of Merlin (£1999) turntables and I ask the question about the strange band around the platter's rim, only to be told that this is there during production and testing to ensure that when the turntables leave the factory they are pristine and that the band is there to stop the rubber drive belt leaves no mark.

We're also showed the specially bought in printer that adds the company's distinctive logo to turntables. Like the rest of the processes we saw taking place, this printing was fascinating to watch and ultra-precise. I suppose it is this attention to tiny details that impresses most on this tour.

Each turntable has its own set of instructions with regards to its production and its packaging and at each stage of production individuals follow this set of instructions and sign off each step of the way. This perhaps seems an obvious thing to do but it ensures that each turntable is put together exactly the same as the last and that if anything does get sent back to base it is easy to find out who was responsible for each step and so any training needs can be addressed directly.

SILENCE IS GOLDEN – WELL BRASS ACTUALLY

One of the standout features of many of the platters on the Acoustic Signature turntables is the inclusion of what look like brass discs atop each platter. In actual fact these are brass cylinders with rubber O rings around them which are inserted into the platter at points dictated by a very clever bit of software with the aim of stopping the platter ringing – and yes the effect is quite startling with the raw platter ringing like a bell but the finished platter being as dead as a dead thing. The Invictus has no less than 52 of these silencers in place. The Grip S clamp too uses these silencers to reduce vibration from the spindle.

IN CONCLUSION AND A PLAY WITH SOME LEGO

I do like a factory tour and the Acoustic Signature tour has been a bit of an eye opener. Teutonic Engineering is an apt slogan for this company. Every step of the manufacturing process is controlled and regulated with a real eye for attention and innovation. Gunther's enthusiasm for the engineering side of the business is infectious and you can see he is forever looking for where improvements can be made, and rather than creating problems to solve that just don't exist, his way of working is to find and refine the process to give as highly engineered a product is necessary. You'd get the impression that Gunther is a cold and highly focussed individual but that couldn't be further from the truth – he is charming, entertaining but yes, he does know what he wants to achieve from his engineering and it shows in the finished product – look out for our forthcoming review of the company's Novum turntable.

The final thing we are shown on our tour was apparently going to be some Lego. Gary from Audio Emotion turned to me and asked if I knew what Robert Hagemann meant by the word "Lego" to which I jokingly responded "You know, the bricks" thinking that Lego was a German word that I'd hitherto not come across, but no, we were shown green Lego bases with more Lego laid out on them. Gunther had realised that the printing process was being slowed down by only being able to print one piece of product at a time. By making templates in which specific parts fitted and made of Lego, Gunter was now able to print several items in one take. This is the kind of mind the man has – Lego is uber-precise and made exactly the same the world over meaning that each template can be made specifically and accurately for a specific product – genius!

INTERVIEW WITH GUNTER FROHNHOEFER

When did you launch Acoustic Signature?

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Founding was 1996, with the support of Manfred Frohnhofer (a high-ranking police officer and the father of Gunther) with Gunther's ideas on high-end audio.

What was your background before launching Acoustic Signature?

First and foremost, I am an engineer with university degree in electro-mechanics. During university I was a hifi dealer being a small shareholder in a high-end shop in Stuttgart Germany.

What is the over-riding philosophy behind Acoustic Signature and your designs?

The philosophy is clearly not having a certain belief in "esoteric" issues but purely in achieving technical perfection, combined with ultra-low tolerance manufacturing in house and in Germany, using the best available materials. Turntable technology is not something new – is not rocket science, it is the bringing together of existing knowledge with my own attention to technical perfection in control.

Your turntables are all manufactured in Germany, how important is this to you?

That is right, something "Made in Germany" is a kind of quality certificate, but I would go one step further "Made in Swabia" that is the area around Stuttgart, beside Mercedes Benz, Porsche, Bosch there are hundreds of small and middle sized companies being world market leader for whatever machinery and technical products - it is a little bit like what Silicon Valley in California is to IT- Swabia is the same for machinery (mind you I am born here so I may be biased). 95% of our materials, suppliers, machinery come from around this area. This means reliable, high quality and short communication pathways.

You have a wide range of turntables in your portfolio with the Primus being just over £1000 to the Signature Invictus coming in at £109 000, why do you feel it important to offer such a wide-range?

From "normal" people who like listening music and entry level customers to the ultimate top performance high-end customer, we want to make a product available for all of them, but always with the same "philosophy". This overall philosophy being top technology, top musical reproduction, a long lasting reliable product made in Germany. Certainly, among the technical and manufacturing possibilities in the budgets that exist (from entry level to cost no object) we feel we offer the state of the art as to what is possible.

Do you find that once a customer buys into the Acoustic Signature brand they tend to stick with you and move up the range?

Turntable customers in general intend to buy new turntables not very regularly, what I found out is that they are looking for upgrades in the form of additional motors, new arms and new cartridges. People buying a new turntable is of course happening but more on the minority side, but once customers buy Acoustic Signature we have found they stick with it – i.e. we see very few products on ebay or Audiogone. We like to think we offer a reliable product for which (even if 15 years old) there are still parts are available...and of not we produce them. This is one of the big advantages of having a 100% in-house production with various state of the art CNC/drilling and metal manufacturing machinery.

What do you feel stands Acoustic Signature apart from the competition?

Acoustic Signature is a 100% in-house, made in Germany (made in Swabia) manufacturer with in total 22 employees all dedicated with

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degrees in various areas of production, from goldsmith to CAD programming machinery engineer, from technical drawing to mechanical and material specialists. We are a manufacturer not an assembly company.

I love female voices as well as rock music, if it inspires me, well ... I get inspiration also from new machinery, technologies.

What are the features on the higher-end turntables that set them apart?

Depending on price points and what is possible!

- Sandwich platters
- Silencer technologies
- Multiple motors
- Digital motor control

These are the most obvious differences. Certainly, mass turntables at the higher price points can have different layers parts of different aluminium - you remember the black and blue marked in the factory?

Which are the key markets for you and are there areas in the World you would like to be more prominent?

Key areas are of course Asia (as for everyone in every industry, cars, watches and of course Hifi) Europe and the US, in addition to Asia where there are countries that have an analogue history such as UK, US Germany etc. We would certainly like to grow in all areas though due to geographical as well as price point limits we know the trees are not growing into the sky.... But there is a lot of headroom left.

Which of the turntable/arm/cartridge set-ups do you use at home?

At home we have a Ascona with TA 5000 and Ortofon cartridge.

What music inspires you and why?