

LARGE 3D PRINTING

INNOVATORS

MAGAZINE

**AUTOMOTIVE
SPECIAL ISSUE**

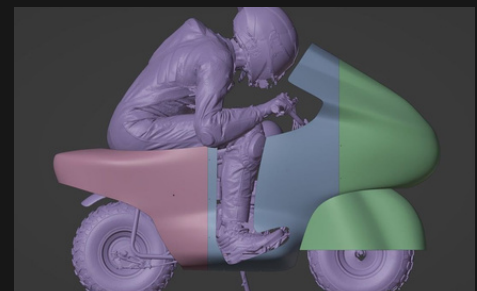
Aptera,
The most efficient electric car



Vital Auto innovates automotive design with a farm of Modix 3D printers



Custom car body parts & kits made possible with Modix large 3D printers



Designing record-breaking motorbike with Modix 3D printers

AMONG OUR VALUED CUSTOMERS

Aerospace



Automotive



Defense



Educational



Consumer Electronics



A SHOWCASE O SUCCESS

**VITAL AUTO
INNOVATES
AUTOMOTIVE
DESIGN WITH A
FARM OF MODIX
3D PRINTERS**



THE COMPANY

Vital [Auto](https://www.vital-auto.com)

WEBSITE

<https://www.vital-auto.com>

PRINTER

A farm of 16 Modix 3D printers including BIG-60, Big Meter and Big-120X

VERTICAL

Automotive

APPLICATION

Prototype & Manufacture

THE COMPANY

Vital Auto is a UK-based design studio specializing in creating full-scale 1:1 3D printed prototypes, demonstrators and concept vehicles predominantly for the automotive industry. Their clients include some of the world's leading OEMs and start-ups.

THE CHALLENGE

Vital faces many challenges within its workflows. One challenge is the need to produce large-scale prototypes within the automotive sector. Another challenge is the need to make high-quality parts that are accurate and durable.

THE SOLUTION AND OUTCOME

To meet these challenges, Vital Auto uses multiple Modix 3D printers of various sizes, including BIG-60, BIG-Meter and BIG-120X of various versions. Modix 3D printers have a large build volume, which allows Vital to print large-scale parts in a single piece. This process eliminates the need for assembly and expedites the workflow, saving clients time and money.

The Modix BIG-60 also produces high-quality parts that are accurate and durable. The Modix BIG-60 is essential for Vital, as their clients expect the highest quality physical properties and prototypes.

Vital has been using Modix for several years. Their large 3D printing farm includes several Modix BIG-60 V2 that are still running, continuing with V3 models and up to the latest Generation 4.0.

The company's Modix fleet was repainted in line with Vital's corporate color system, incorporating RAL 1023 – Traffic Light Yellow, giving the printers an overall distinctive and impressive look and feel.

The machines are constantly printing parts for their various projects and working around the clock, seven days a week.





ACCELERATING DEVELOPMENT OF THE MOST EFFICIENT ELECTRIC CAR

Aptera Motors Uses Modix 3D Printers to accelerate the development of their innovative vehicle.

Aptera: "We're up to 44,000 orders for our vehicles now, has all happened with Modix's help"

COMPANY

Aptera Motors

WEBSITE

<https://www.aptera.us>

VERTICAL

Automotive Industry

APPLICATION

Rapid prototyping

PRINTER

Modix BIG-120X v3



THE COMPANY

Aptera Motors, founded by passionate individuals in California, is fervently dedicated to forging a sustainable transportation future. Leading the charge in innovation, they are not only transforming the landscape of automotive design but are also establishing new standards for vehicle efficiency. Their innovative car can travel up to 1,000 miles on a single charge and it is capable of up to 40 miles of solar powered driving per day. With a rapidly growing customer base and garnering global attention, Aptera is uniquely positioned to spearhead the green mobility revolution.

THE CHALLENGE

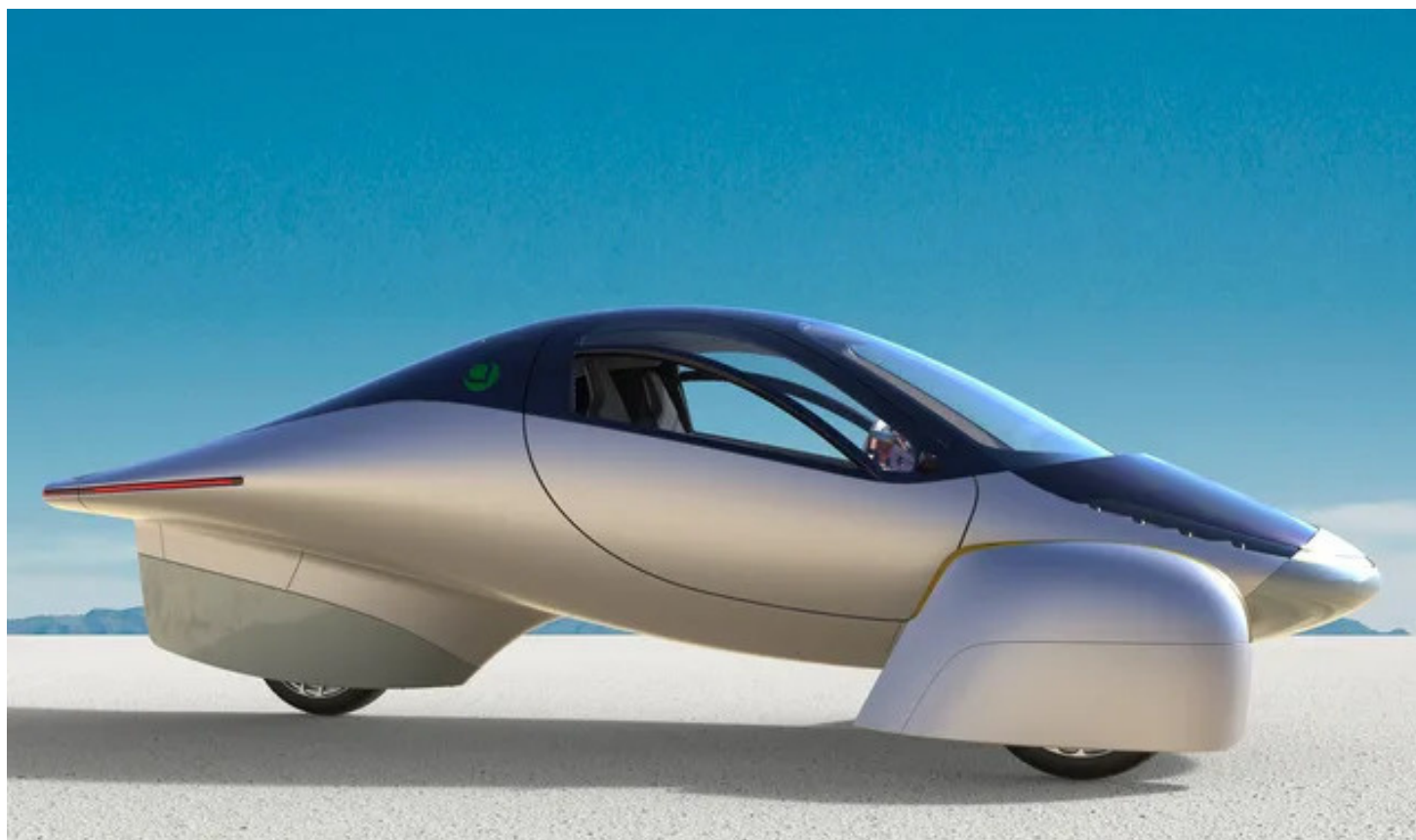
Aptera Motors faced several challenges in the development of its Alpha vehicle builds. One challenge was the need to create complex parts quickly in house. Another challenge was that as a startup, Aptera's budget was tight and needed to be spent wisely.

THE SOLUTION: & OUTCOME

Aptera Motors turned to Modix 3D printers to help them overcome these challenges. Modix printers can create large parts with high precision and fast speed. As the development for their vehicles moved ahead, Aptera could ramp up their prototyping speed with the Modix 3D printer. Modix 3D printers are relatively affordable, making them a cost-effective solution for Aptera Motors, freeing up the budget for other needs.



"We're up to 44,000 orders for our vehicles now and pushing towards first production next summer. It has all happened with Modix's help," said Chris Anthony, CEO of Aptera Motors. "Modix printers have given us the flexibility, speed, and precision we need to bring our vision to life."



In conclusion, Aptera Motors is a prime example of how Modix 3D printing can be used to overcome challenges in the development of new products. By using Modix 3D printers, Aptera Motors has been able to create complex parts with high precision, quickly and cost-effectively. This has helped them to accelerate the development of their Alpha vehicle builds and bring their vision to life.



MODIX TRANSFORMS HARLEY-DAVIDSON AFTER- MARKET ACCESSORIES

Meet Chuck Taggart's custom
loudspeakers housing

THE CREATOR

Chuck Taggart

OFFICIAL YOUTUBE CHANNEL:

<https://www.youtube.com/@CLTaggart>

VERTICAL

Automotive Aaftermarket

APPLICATION

Motorcycle loudspeakers

THE PRINTER

Modix 120X V2

THE CREATOR

Chuck Taggart is a custom motorcycle parts maker and popular YouTube channel creator ([@CLTaggart](https://www.youtube.com/@CLTaggart)) who has been creating custom lowers (loudspeakers) for Harley-Davidson Road Glides. He is passionate about creating high-quality parts that are both stylish and functional.

Chuck's YouTube channel, CLTaggart, features a variety of videos about custom motorcycle parts, including his own set of lowers for the Harley-Davidson Road Glide.

THE CHALLENGES

Chuck was challenged to create a new set of lowers for the Harley-Davidson Road Glide that would address several of the shortcomings of the original lowers. He wanted to create lowers that were wider at the top, sat further out from the bike, and had a cavity inside that could be used to store speakers or other items. He also wanted to make the lowers easier to install and use.

THE SOLUTION AND OUTCOME:

Chuck owns two Modix 3D printers, Modix BIG 120X and BIG-40. These large-format 3D printers can produce parts up to two feet wide, two feet high, and four feet long. The printer are also known for their reliability and ease of use.

Chuck used a Modix 3D printer to solve both challenges and produce his own speaker housing based on this innovative design. The Modix 3D printers' large format and versatility in materials allowed Chuck to print the lowers in one piece, eliminating seams and joints for a stronger, more durable product.

In addition, the Modix 3D printer also allowed him to create a complex and lightweight design for the folding hard top that would have been difficult or impossible to produce using traditional techniques.

The Modix 3D printer was essential to developing both of these products, as it allowed Chuck to create complex and lightweight designs that would not have been possible using traditional manufacturing methods. It also helps the creator to manufacture a small in-house batch of speakers to kick-start production without investing in expensive molds required for injection molding parts.





MAKING AN AFTERMARKET HARDTOP CONVERTIBLE FOR JEEPS WITH MODIX

Chuck Taggart



THE CHALLENGE

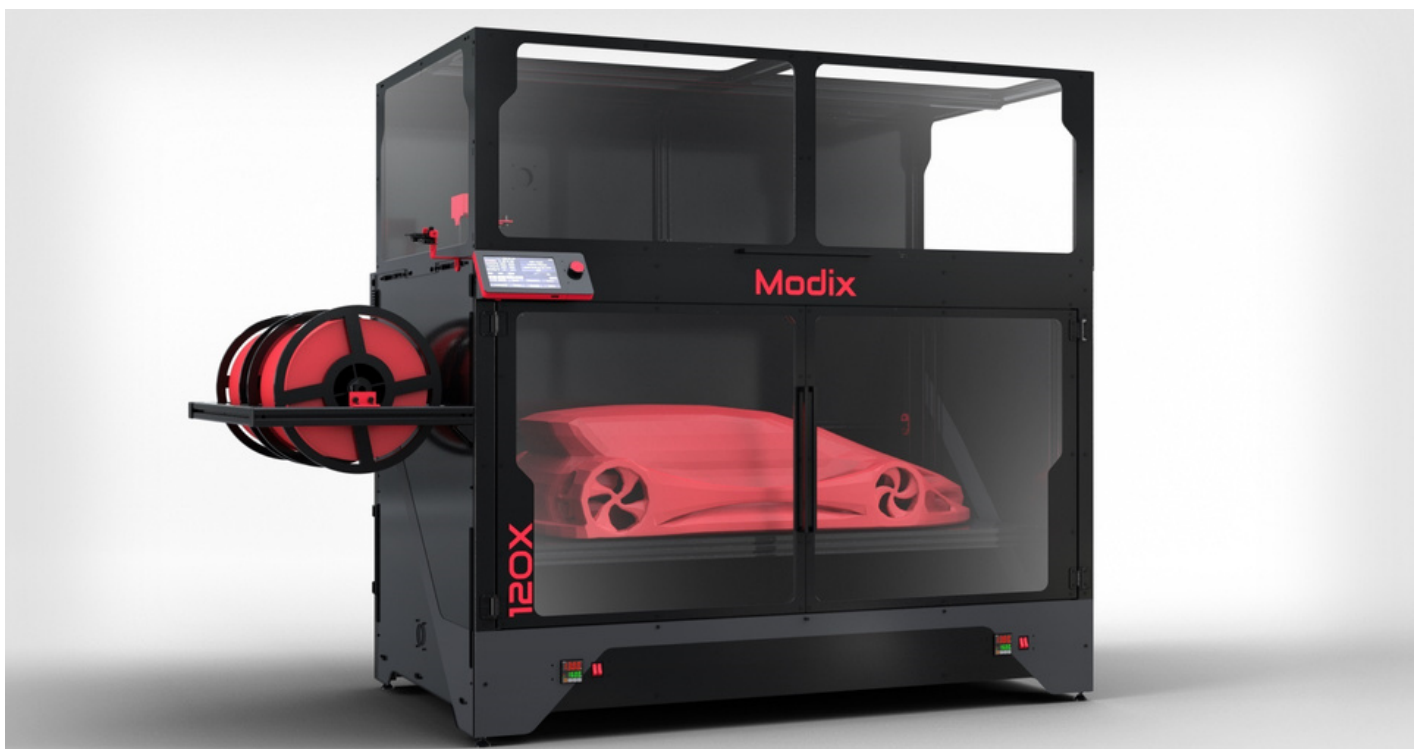
Chuck was challenged to make the world's first hardtop convertible for a Jeep (and a Bronco). Instead of having multiple people necessary to take off a hard top for their Jeep or having a hoist in their garage, what if they could simply fold it into the bed of a Gladiator or the cargo area of a Rubicon or other standard Jeep?

What if instead of traveling and wishing you could take off your hard top but can't, you were able to fold it down?

THE SOLUTION AND OUTCOME

Using his Modix BIG 120X 3D printer Chuck could develop his own unique solution. At less than a foot thick and under 35 pounds (16 kg), the 3D printed hard top consists of a series of panels connected by high end, tungsten zero profile hinges making the hard top solid and durable. He was also able to incorporate recovery boards into the top panels, and he added access ports for a GoPro camera, wiring, or other ideas for them. This entire hard top prototype was 3D printed using a Modix Big 120 and PETG material

In conclusion, The Modix 3D printer was essential to the development of both of these products (speakers and hardtops) as it allowed Chuck to create complex and lightweight designs that would not have been possible using traditional manufacturing methods. It also helps the creator to manufacture a small in-house batch of speakers to kick start production without investing in expensive molds required for injection molding parts.





**ILLUMAESTHETIC'S
CUSTOM
3D PRINTED
AUTOMOTIVE
PARTS**

PART 1:

**RACE CAR
BUMPERS - A
REVOLUTION IN
BRAKE COOLING**



THE CREATOR

Illumaesthetic

WEBSITE

www.illummaesthetic.com

VERTICAL

Automotive, Mass customization,
Product development

APPLICATION

Custom car parts, Prototypes,
Tooling, Repairs

PRINTERS

Modix BIG 180X, 120Xs, 60X.

THE COMPANY:

Illumaesthetic, founded by Adam in 2015, has evolved from a college project into a global force in automotive parts production. With a commitment to innovative designs and unwavering customer service, Illumaesthetic operates on a global scale, catering to car enthusiasts worldwide.



THE CHALLENGE

Adam wanted to make a custom bumper for his drag race car that would fit a larger intake duct and direct more air to the brakes. This was a challenge because most bumpers are not designed to accommodate larger intake ducts or to direct air to the brakes. Adam also wanted to ensure that the bumper was aerodynamic and would not negatively impact the car's performance.

By overcoming these challenges, Adam could create a bumper that improves engine performance, brake cooling, and aesthetics, making it ideal for the race car.



THE SOLUTION:

Adam used a 3D scanner to scan the front of his car and printed it using a Modix 3D printer.

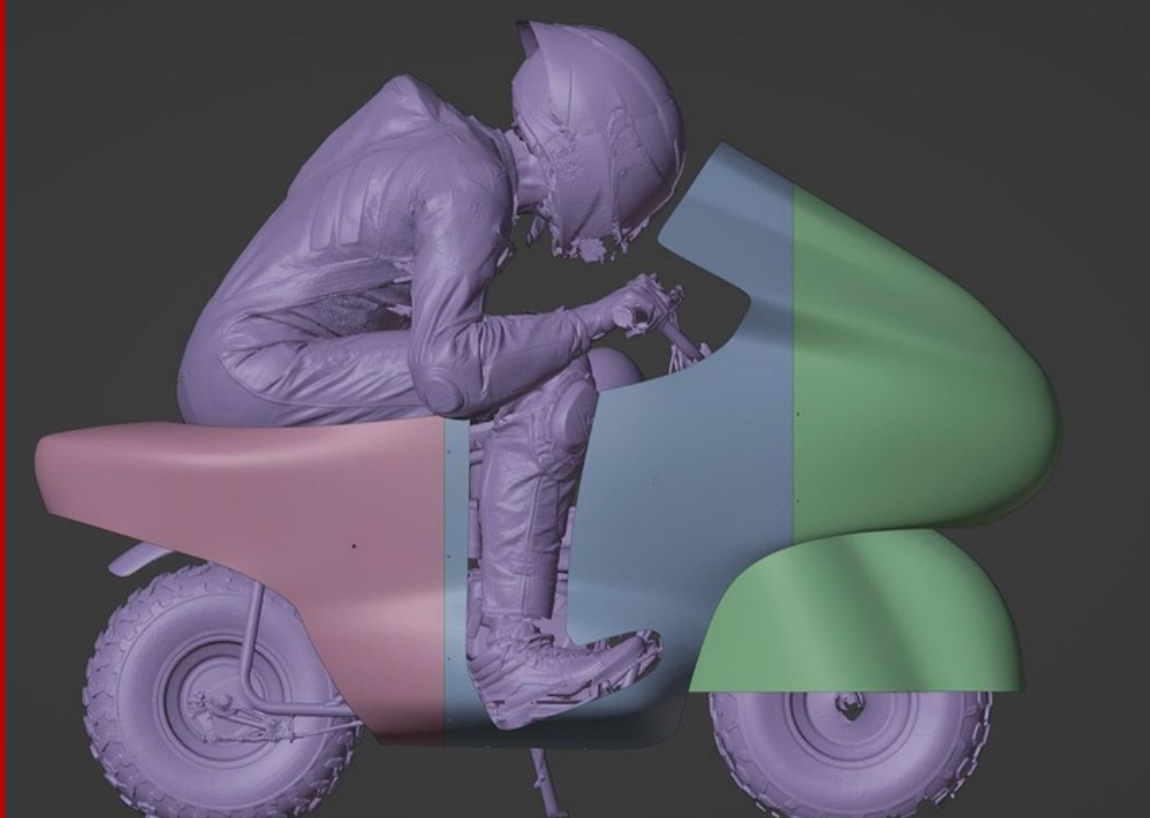
The bumper includes a larger intake duct that is specifically designed to direct air to the brakes, as well as a number of aerodynamic features that help to reduce drag and improve fuel efficiency.

Adam printed the bumper in only five pieces using a Modix 3D printer. Once the pieces were printed, he glued them together and tested the bumper on the car. He made some minor changes to the design to ensure that the bumper fit perfectly and that the air was being directed to the brakes effectively.

Adam's custom bumper enhances the car's power, cooling, and appearance, making it a popular choice for racing enthusiasts.

PART 2:

**DESIGNING
RECORD-
BREAKING
MOTORBIKE
WITH
MODIX 3D
PRINTERS**

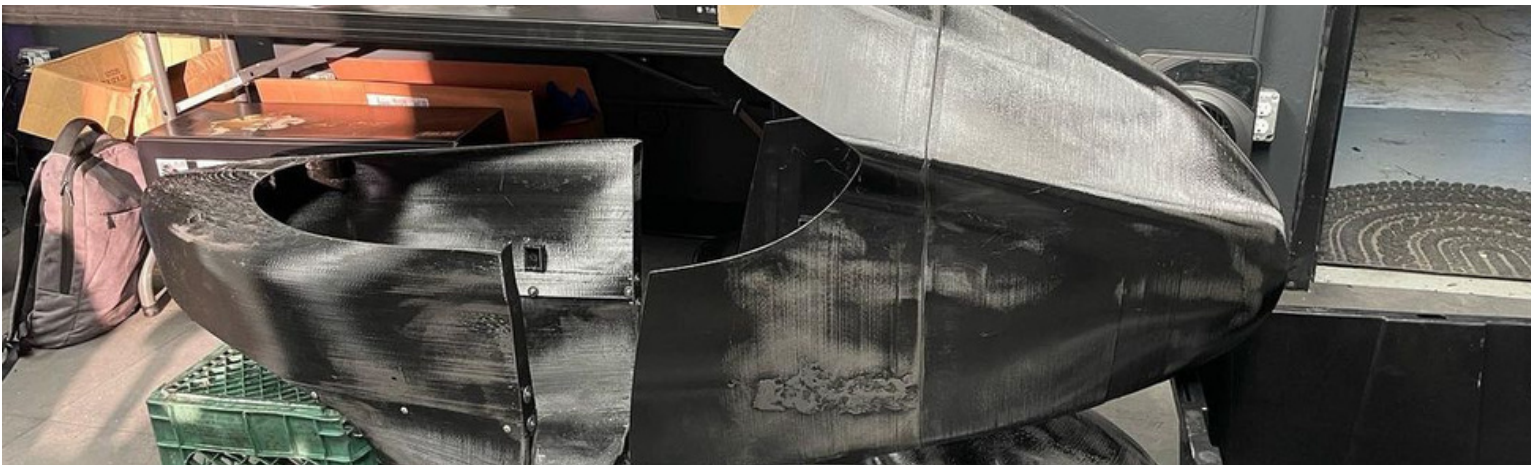


THE CHALLENGE

With more than 8 million subscribers, Donut, a top-tier YouTube channel specializing in automotive content, aimed to maximize the speed of a Walmart minibike. Initial efforts focused on enhancing the engine, yet there remained a need to further increase horsepower and minimize aerodynamics drag resistance.

THE SOLUTION

Donut turned to 3D printing and teamed up with Illumaesthetic, a California company that specializes in 3d printed custom car parts and owns a fleet of Modix large 3D printers. Illumaesthetic scanned the minibike and crafted a fairing tailored to both the bike and its rider for better aerodynamics. Over a week and a half, they divided 25 total days of print time across three different Modix 3D printers. They printed four main parts: the front nose, engine mount, front wheel cover, and rear fairing, all weighing in at 10 pounds (4.5 KG) and made from PETG filament.





THE RESULTS

Donut turned to 3D printing and teamed up with Illumaesthetic, a California company that specializes in 3d printed custom car parts and owns a fleet of Modix large 3D printers. Illumaesthetic scanned the minibike and crafted a fairing tailored to both the bike and its rider for better aerodynamics. Over a week and a half, they divided 25 total days of print time across three different Modix 3D printers. They printed four main parts: the front nose, engine mount, front wheel cover, and rear fairing, all weighing in at 10 pounds (4.5 KG) and made from PETG filament.

PART 3:

**CLASSIC CARS
RESTORATIONS-**

**OVERCOME
RARE PARTS
SHORTAGE
WITH MODIX 3D
PRINTERS**



THE CHALLENGE

As classic cars age, parts become rare and expensive. This can make it difficult to find replacements that are in good condition, and it can also lead to gatekeeping in the classic car community. Gatekeeping is when people who have been in a community for a long time try to control who is allowed to participate in that community. In the classic car community, this can manifest as people refusing to sell rare parts to newcomers, or as people charging exorbitant prices for those parts.

THE SOLUTION

3D printing can be a valuable tool for restoring old cars and breaking down the barriers of gatekeeping in the classic car community. By 3D printing rare parts, restorers can avoid the high cost of buying them from aftermarket suppliers. They can also create custom parts that are not available anywhere else. This means that anyone, regardless of their experience or status in the community, can have access to the parts they need to restore their classic car. Eventually, by using a large scale Modix 3D printer, restorers can save money and get the parts they need to bring their classic cars back to life.

For example a team of restorers used a Modix 3D printer to print a number of parts for a Nissan S13. These parts included a front bumper and a rear bumper. As you can see, the 3D printed parts were indistinguishable from the original parts, and they saved the restorers a significant amount of money and time searching for such parts.

In another example, an original broken grill was purchased on Ebay, scanned and printed with Modix. Later the broken original part was placed back on the market.



PART 4:

CUSTOM CAR BODY PARTS & KITS MADE POSSIBLE WITH MODIX LARGE 3D PRINTERS



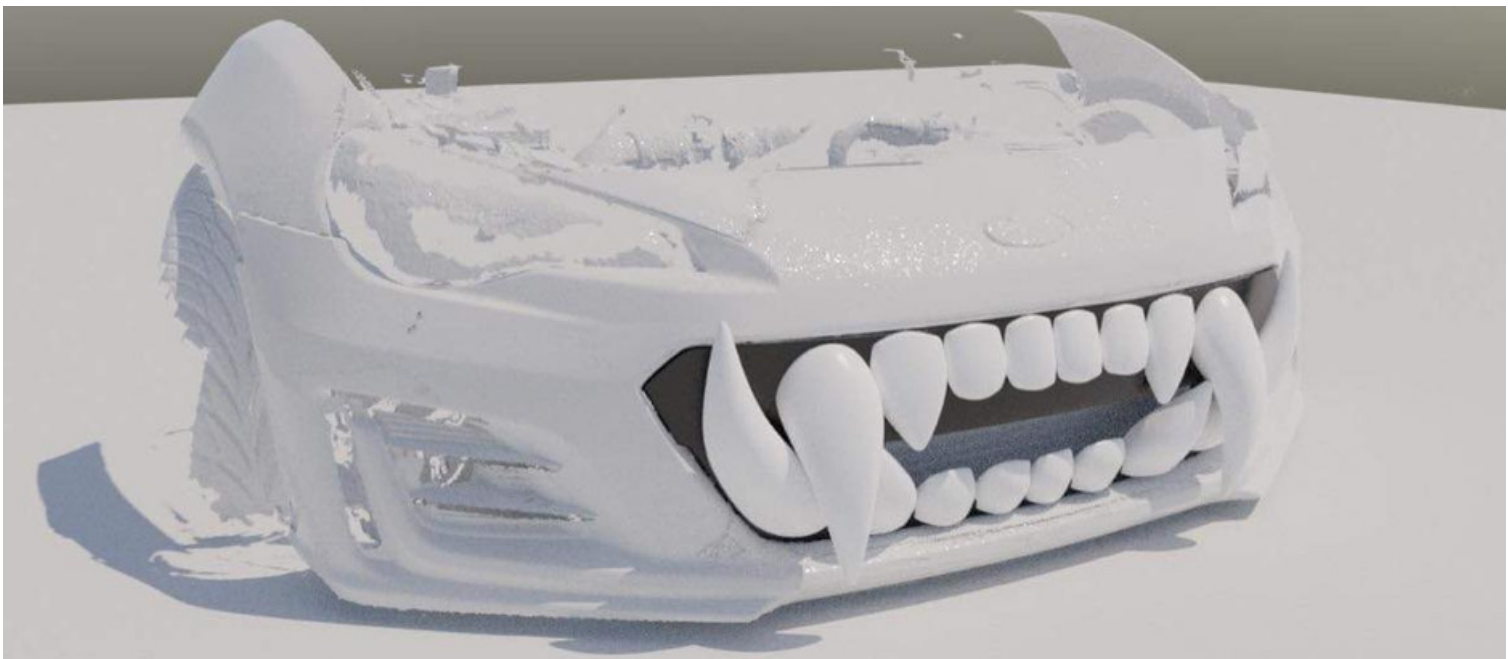
THE CHALLENGE

Illumaesthetic was facing the challenge of finding custom car parts that met their customers' unique needs and own vision. They wanted to be able to create a unique and personalized look for their customers, but they didn't want to spend a fortune or make their customers spend a fortune.

THE SOLUTION

The company decided to use Modix 3D printing to create their products, which allowed them to produce them quickly and affordably. They were able to print a wide variety of custom and special designs of car parts, including bumpers, spoilers, intakes, and more.

Today Illumaesthetic owns five different Modix large 3D printers ranging from BIG-60 all the way up to BIG-180X. Their fleet of printers is constantly producing parts for their clients as well as for internal projects.

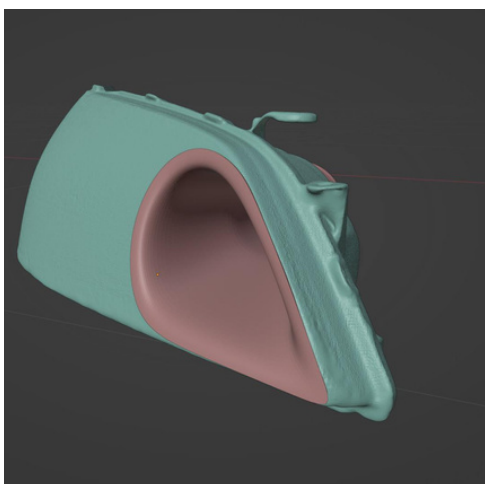


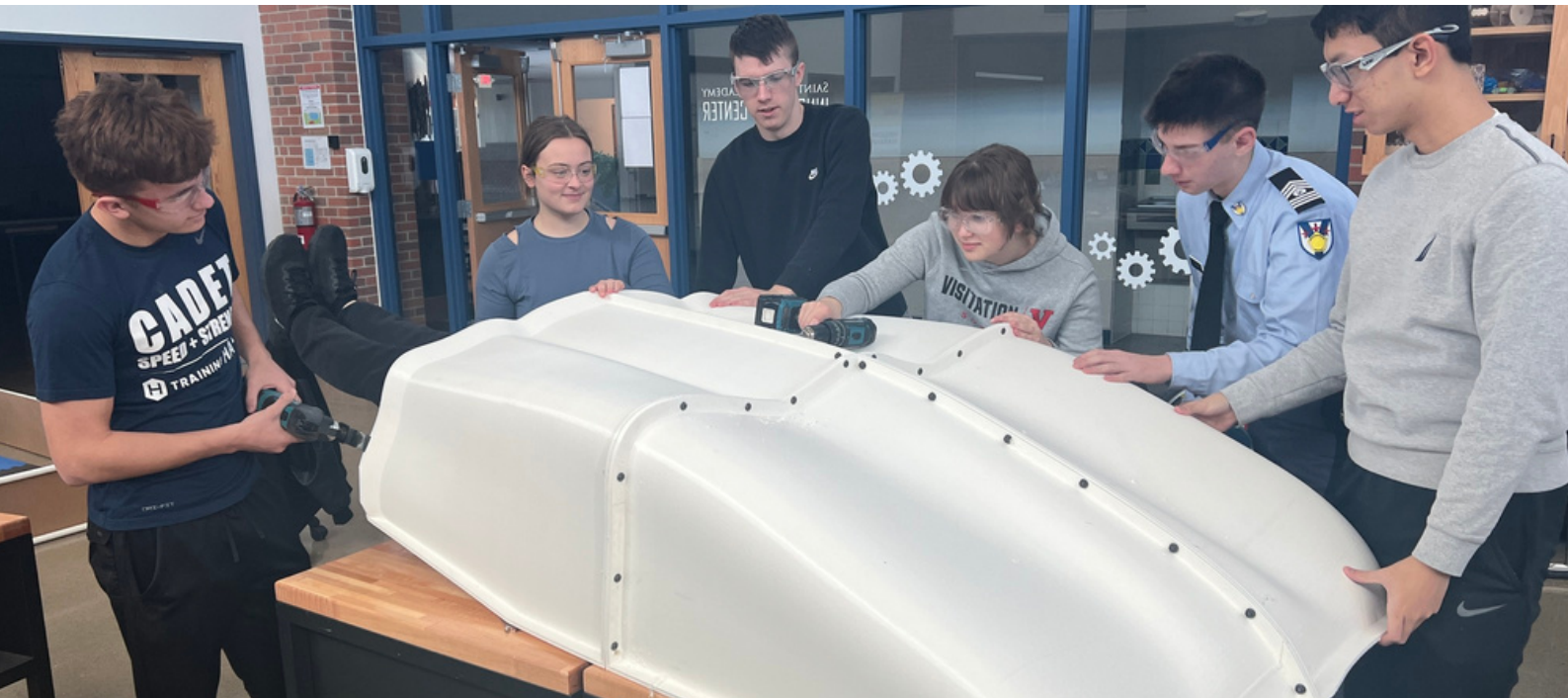


THE IMPACT

Illumaesthetic has had a positive impact on the automotive industry. The company has made it possible for people to customize their cars without spending a fortune. They have also helped to raise awareness of the benefits of 3D printing in the automotive industry.

Are you looking for a way to customize your car without breaking the bank? Modix 3D printers are the perfect solution. Visit the Modix website today and see how you can create the car of your dreams.





REDEFINING CARBON FIBER MOLDS FOR CAR RACING

THE ORGANIZATION

St. Thomas Academy's Experimental Vehicle Team is a high-performing team of high school students that produce and compete in experimental wheeled vehicles. The team uses alternative power sources and composite skins such as hydrogen fuel cells and carbon fiber skins to increase vehicle efficiency and qualify for races.

THE CHALLENGE

The challenge at hand lies in the traditional methods used for crafting large carbon fiber layup molds, which are inherently time-consuming and expensive when outsourced. Additionally, there is a need to address the limitations of these molds making methods in terms of design iterations. Furthermore, the educational sector, with its focus on budget constraints, presents a specific challenge in finding cost-effective solutions.





THE ORGANIZATION:

St. Thomas Academy's Experimental Vehicle Team

WEBSITE

XXXX

VERTICAL

Education, automotive, Student Engineering Competition

APPLICATION

Carbon fiber mold manufacturing

PRINTER

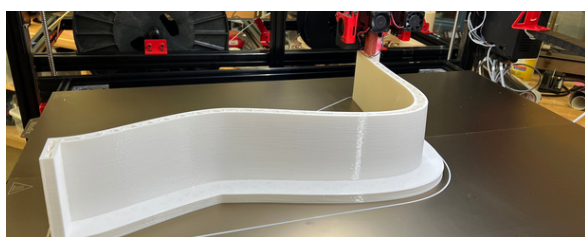
Modix BIG METER

THE SOLUTION & OUTCOME

The Modix BIG METER turned out to be an incredible cost-saving solution to the alternative of traditional molds making. After developing the skin for their experimental Urban Concept vehicle in-house, they were able to 3D print negatives of the skin panels to act as mold surfaces for a carbon fiber layup for each panel. After producing all panels in this way, they were able to try out their innovative vehicle at several races, notably the [Shell Eco-Marathon](#) in which they placed first in their division, prevailing against even several University teams.

THE SOCIAL IMPACT

Needless to say, the BIG METER can do so much when in the right hands. This team of student engineers has gone beyond impressing their colleagues at races with their level of engineering prowess, and the Big Meter has served as a critical tool in helping bring their impressive designs to the racetrack.





GOODYEAR FARM TIRES ARE NOW DESIGNED WITH MODIX BIG-60

COMPANY

Titan International

WEBSITE

www.titan-intl.com

VERTICAL

Engineering Design (tires)

APPLICATION

Rapid Prototyping

THE PRINTER

Modix BIG-60

THE COMPANY

Titan International is one of the world's largest tire manufacturers, as well as a global leader with a full line of tires and wheels for off-road vehicles. The company provides high-quality services and customized products for agriculture, construction, forestry, and mining industries. Titan International is the owner of both Titan & Goodyear® Farm Tire brands, and develops designs for these tires in-house.



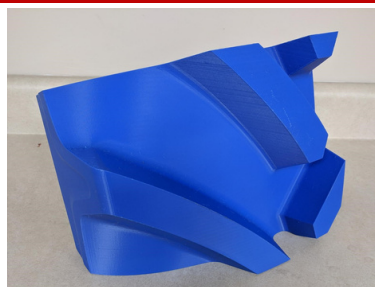
THE CHALLENGE

Tire makers are no different from other manufacturers of modern tools and equipment; tires need continuous improvement. Naturally, this requires constantly making and testing new designs of tires. Creating an entire mold just to make one single tire tread for testing or display, though, is prohibitively expensive. To solve this problem, Titan International invested in a Modix to create models of their tire treads for tractors and other vehicles.

THE SOLUTION AND OUTCOME

Titan's Modix has proven to be a great asset for the team. Within only 72 hours of 3D prints since assembly, they've been able to produce several model tire treads out of PLA, and for a fraction of the price of cutting out a section of a larger tire (which would effectively ruin it), which is also less than the price of making a mold for the section of tire.

Titan is also using Modix to help engineers innovate on vehicle tires via rapid prototyping. In particular, Titan is working on a new tire technology called LSW (Low Side Wall) tires, which allow agricultural professionals to take certain wheeled vehicles to places where, previously, only tracked vehicles could have gone.



Modix

Large Scale 3D Printers

