UnionTech
Create Your Imagination

Case Study

How UnionTech Collaborates with HSL Model to Redefine Industrial Manufacturing with AM Technology

HSL Model is a Zhejiang, China-based service bureau that was established in 2013 and is specialized in creating prototypes for a range of industries, including prototyping production and the automotive industry.

HSL Model is unwavering in its dedication to providing superior prototypes that are customized to meet the particular requirements of each industry service.

Lixiang Xia
Head of HSL Model

"With new 3D printing techniques, the collaboration with UnionTech significantly enhances HSL's ability to meet customer demands for integrated molding and urgent deliveries."

In accordance with a comprehensive understanding of 3D printing technology, Zhejiang Yuyao HSL Model, specializing in large model production for automotive, prototypes, and other industries, has successfully incorporated nearly a hundred units of UnionTech's RSPro series and Lite series products. This strategic implementation signifies the seamless integration of digital production models.

Since its establishment in 2013, HSL has been responsive to evolving market demands. In recognition of the inherent limitations of traditional CNC processes, particularly in addressing the requirements for one-piece molding, high-volume production, and rapid delivery, HSL made a decisive shift towards additive manufacturing technology. This strategic move was aimed at transcending the constraints of conventional processes and facilitating a comprehensive digital transformation in manufacturing.

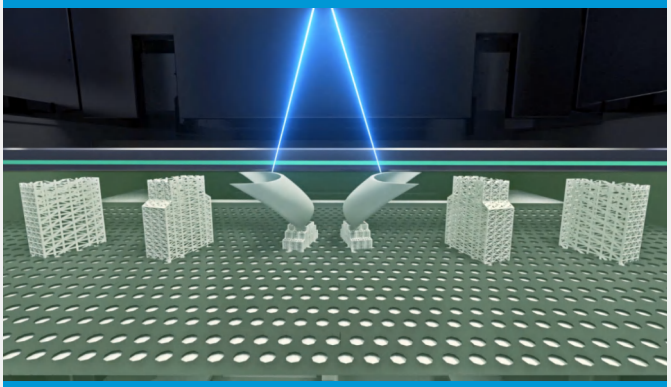
During the exploratory phase of HSL's digital transformation, the team prioritized professionalism as a crucial criterion for collaboration. In evaluating various 3D printer brands in the market, UnionTech emerged as a standout choice. With over 20 years of industry experience, UnionTech has consistently innovated in light-curing 3D printing technology, challenging industry norms and positioning its technology and equipment at the forefront of the sector.

UnionTech's RSPro series equipment, including RSPro1400, RSPro1800, and RSPro2100, has proven highly effective in meeting the specific requirements of large-scale industrial production. Designed to accommodate the intricate and expansive structures of one-piece molding, these printers enable enterprises to achieve high-quality batch production. In light of these capabilities, HSL concluded that a partnership with UnionTech, a distinguished developer in professional 3D printing technology, was the optimal choice.

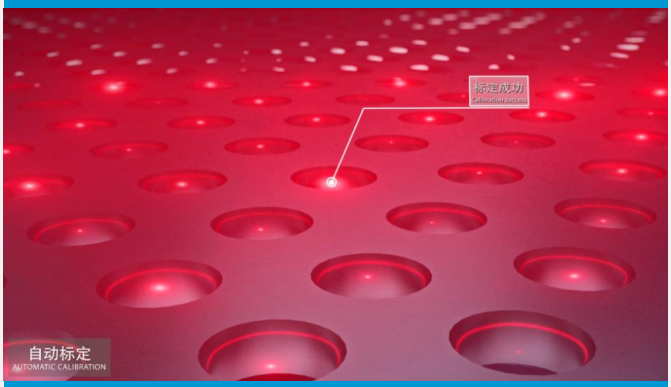
A Mass Production Leap for the Elevation of Clients' Product Core Competitiveness

The RSPro1400, a SLA light-curing 3D printer with large build volume from UnionTech, boasts an expansive molding range of 1400×700×500mm. This capability proves instrumental in facilitating the one-piece molding of large-size parts and the efficient batch manufacturing of smaller components for enterprises. Differentiating itself from traditional single laser printing, the RSPro1400 adopts multiple galvanometer scanner 3D printing technology. Featuring built-in dual laser synchronous operation, this innovation leverages precision algorithms and system upgrades to achieve synchronized control of each independent laser. which not only enhances printing speed but also doubles overall efficiency.

Moreover, UnionTech's RSPro series equipment comes equipped with an automatic calibration function, which utilizes a PSD position sensor to capture the real-time position of the laser and a magnetic displacement sensor to track the PSD's position. The PSD sensor is driven by UnionTech's self-researched carbon fiber coating scraper and the motor on the scraper, enabling the PSD sensor's movement within the device and completing the automatic calibration function. This precise positioning principle eliminates the challenges associated with designing and implementing large-area calibration boards, significantly improving calibration accuracy and flexibility. Combining these features with the advantages of large format and multiple lasers, the RSPro series contributes to efficient batch manufacturing of large-sized products.



UnionTech Large-Size 3D Printer RSPro1400
Dual Laser Synchronous Operation



Principle of Automatic Calibration of UnionTech's
Large-Size 3D Printer RSPro1400

A Technical Leap for the Elevation of Clients' Product Quality

UnionTech's Self-Researched Carbon Fiber Coating Scraper

The RSPro1800 introduces an ultra-large format design measuring 1800 x 900 x 600mm, offering an upgraded build volume that enables the production of daily molds in a single pass without the need for splicing. The innovative carbon fiber-coated scraper design, operating in an up-and-down motion as opposed to the traditional left-to-right approach, significantly reduces the scraper's back-and-forth movement distance. The design enhancement not only boosts daily printing speed but also facilitates material recycling, contributing to cost reduction, improved quality, and efficiency in industrial production. Moreover, this approach makes the production process more energy-efficient and environmentally friendly, playing a crucial role in model manufacturing across various industries.

To address model quality and stability challenges in multi-laser high-efficiency production, UnionTech's RSPro series equipment incorporates China's first splicing scanning algorithm, which seamlessly splices together the two sides of the same molded part scanned by adjacent galvanometer scanners, increasing the contact area between the two sides. This ensures excellent mechanical properties of the molded part in the spliced area. The unique 'cross-splicing' technology guarantees the surface quality of molded parts in the splicing area and ensures the mechanical properties of the spliced area, which are essentially on par with the independently scanned molded parts by the same galvanometer (more than 90%).

Professional Printers, Compatible with Multiple Materials

High-Temperature Resistant Material Models

High-Toughness Material Models

A robust assurance of technology and equipment enhances the compatibility of materials in daily production, resulting in superior printing effects. HSL's models encompass high-temperature resistant and high-toughness materials. The high-temperature resistant materials exhibit resilience up to 260 °C, primarily employed in crafting robust, durable, and precisely detailed parts. Meanwhile, high-toughness materials, characterized by high elongation at break and impact strength, prove especially suitable for producing functional verification models.

In addition to its unwavering commitment to professionalism, UnionTech's after-sales team is guided by the principle of 'responding to requests and delivering on missions.' From humble beginnings symbolized by a 'bowl of noodles' to the establishment of the current after-sales points of presence, UnionTech has consistently progressed. Embracing the concept of 'customer first, service to the end' and fueled by the power of 'belief', UnionTech is dedicated to promptly addressing customer needs and enhancing the overall customer experience. This commitment not only reflects the trust customers place in UnionTech but also underscores UnionTech's responsibility to its customers.

Amidst the expanding market demand and the increasing complexity of industrial production, numerous 3D printer brands have emerged in the flourishing market environment. UnionTech, driven by the spirit of 'creation will beachieved,' has evolved from a one-year equipment turnover to benefiting thousands of customers today. The brand's recognition is a testament to its professionalism and the trust it has garnered.

The collaborative effort between HSL and UnionTech signifies a robust implementation of intelligent transformation in industrial production. And it marks a promising beginning for the continued prosperity of both UnionTech and HSL in the future.

HSL Digital Production Workshop (Part)

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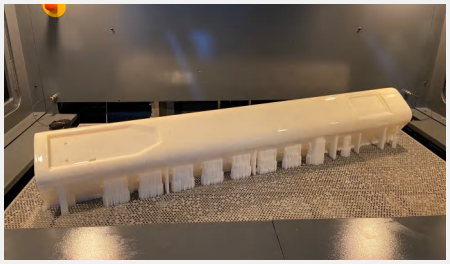
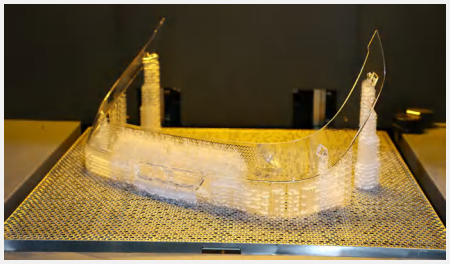
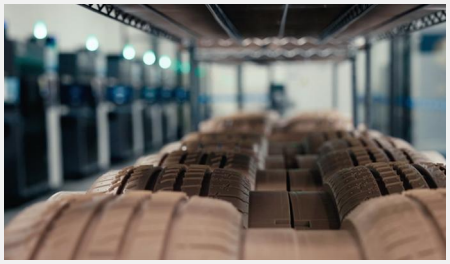
UnionTech - Global Provider of AM Solutions

Established in 2000, UnionTech stands as a global leader in the field of industrial SLA 3D printing. Within the realm of industrial 3D printers, we have successfully introduced 68 distinct products across more than 20 product series, showcasing our dedication to innovation and technological advancement. Our commitment to excellence is underscored by the acquisition of 185 patents, coupled with an investment exceeding 15 million USD in research and development over the past three years.

Presently, UnionTech's product technology encompasses printers, printing materials, and printing applications. This comprehensive approach equips us with exceptional integration capabilities, enabling us to manage the entire closed loop within the industrial printer market, spanning from upstream to midstream and downstream processes.

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